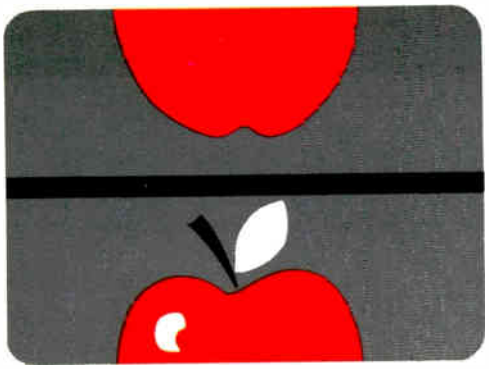
JULY 1973

BM/E

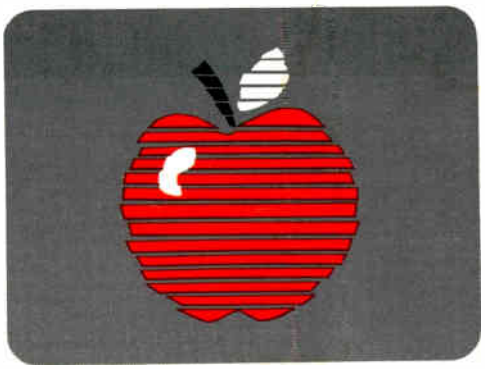
BROADCAST MANAGEMENT ENGINEERING

Automation today offers Chinese menu approach to sources.

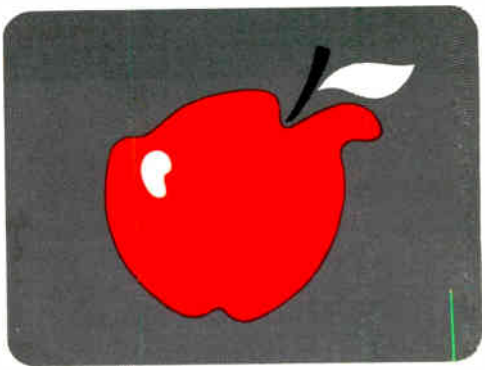
World Radio History



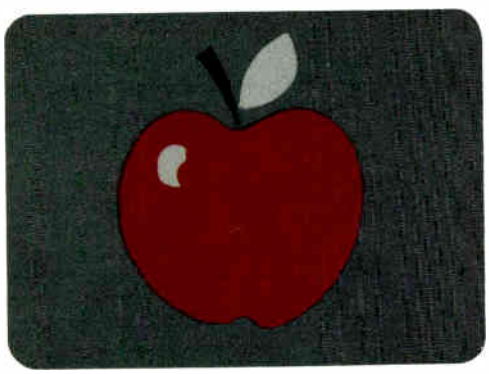
PICTURE ROLLS



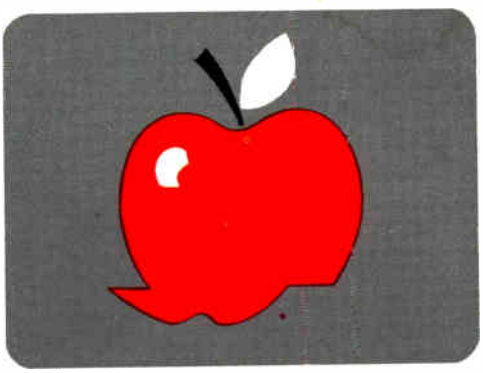
TEARING



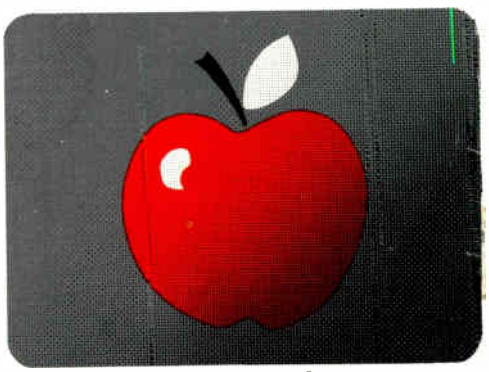
FLAGWAVING



HUE SHIFT



SKEW ERROR



COLOR STREAKING

How do you like them apples?

Like 'em or not, them apples show composite errors in video signals which accumulate every time you use VTR equipment. Errors caused by changing tape geometries, varying tape speeds, fluctuating head velocities.

But how do you get rid of the bad apples?

With a standalone Delta Series TBC from Television Microtime.

Delta TBCs give you broadcast quality from every VTR — 2-inch "quads," 1-inch helicals, ¾-inch cassettes, ½-inch EIAJ — in monochrome, or direct or heterodyne NTSC color. And you can get them with standalone or built-in velocity error correction.

Delta accessories convert V-lock VTRs to H-lock operation and add automatic skew tension correction to low cost cassette and EIAJ VTRs. Our new full line brochure, *Meet The Compatibles*, describes over 20 different models . . . covers time base errors, the causes and the solutions. Use the coupon to send for your free copy. Or send for our special tape demonstration. We're available anytime to tell you how we can help solve time base problems.

Dear Sir,
I want to know more about time base error correction and Delta Series TBCs.

- ☐ Please send me your new brochure: *Meet The Compatibles.*
- ☐ I would like to see your tape demonstration.
- ☐ I want to talk with one of your representatives. My application is:

_____

Name _____

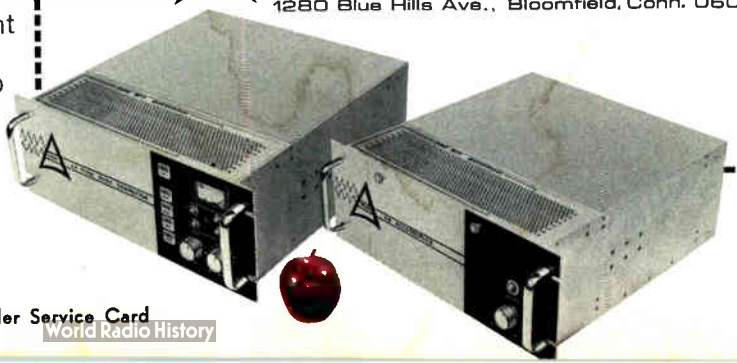
Title _____

Company _____

Address _____

City, State, Zip _____

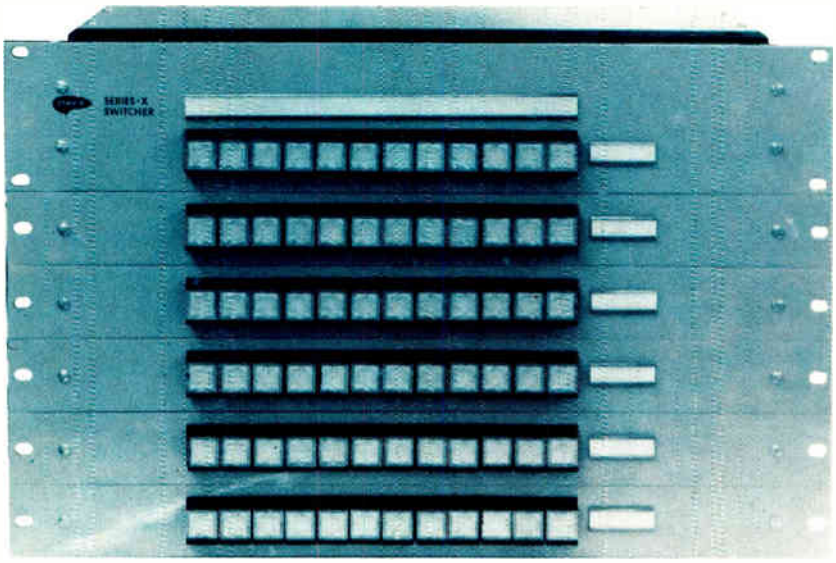
TELEVISION MICROTIME, INC.
1280 Blue Hills Ave., Bloomfield, Conn. 06002



Circle 100 on Reader Service Card

World Radio History

New.



(Patch Cable Eliminator)

Now you can forget about messy patch cables and the tedious task of re-patching to change distribution. DYNAIR's new Series-X Switchers eliminate the costly custom fabrication usually required for routing switchers. These units are totally modular, allowing off-the-shelf assembly of almost any input-output configuration, either video-only, or audio-follow-video. And, expansion is easy too . . . you simply add input or output expansion modules as required. The switchers are field expandable up to 36 inputs and 120 outputs.

The basic unit is video only, with options including audio-follow, sync-mixing and tally provisions. Illuminating pushbuttons are standard, with provisions for easily labeling the individual inputs and outputs. The new Series-X provides exceptional performance at prices which are, in many cases, much less than the earlier version of the Series-X.

TYPICAL BASE PRICES			
Capacity	Video Only	Video and Audio	Panel Height
6 in, 3 out	890.00	1,140.00	7.0
12 in, 3 out	1,220.00	1,570.00	7.0
6 in, 6 out	1,550.00	1,950.00	12.25
12 in, 6 out	2,045.00	2,545.00	12.25
6 in, 9 out	2,210.00	2,760.00	17.50
12 in, 9 out	2,870.00	3,520.00	17.50
6 in, 12 out	2,870.00	3,570.00	22.75
12 in, 12 out	3,695.00	4,495.00	22.75

Other input/output configurations available. Options include terminated inputs, sync-mixing and tally provisions.

Master Switch Unit

Switch Expansion Unit

Wouldn't a Series-X Switcher solve some of your distribution problems? Write today for full details.

DYNAIR

DYNAIR Electronics, Inc.

6360 Federal Blvd., San Diego, Calif. 92114
Telephone (714) 582-9211

Have you seen "Video Switching Techniques"? ☐ Yes ☐ No
Have you seen "Video Transmission Techniques" ☐ Yes ☐ No
Please send information concerning Series-X Switchers ☐

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____

Circle 101 on Reader Service Card

World Radio History

BM/E
BROADCAST MANAGEMENT/ENGINEERING

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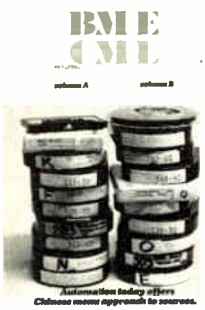

Today's radio automation systems offer almost as much flexibility as a Chinese menu—although we don't know of any station intermixing cassettes, carts, and five-inch reels!

BROADBAND INFORMATION SERVICES, INC.
274 Madison Ave.
New York, N. Y. 10016
212-685-5320

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BPA BM/E, BROADCAST MANAGEMENT/ENGINEERING, is published monthly by Broadband Information Services, Inc. All notices pertaining to undeliverable mail or subscriptions should be addressed to 274 Madison Ave., New York, N.Y. 10016. BM/E is circulated without charge to those responsible for station operation and for specifying and authorizing the purchase of equipment used in broadcast facilities. These facilities include AM, FM, and TV broadcast stations; CATV systems; ETV stations; networks and studios; audio and video recording studios; consultants, etc. Subscription prices to others: $15.00 one year, $25.00 two.
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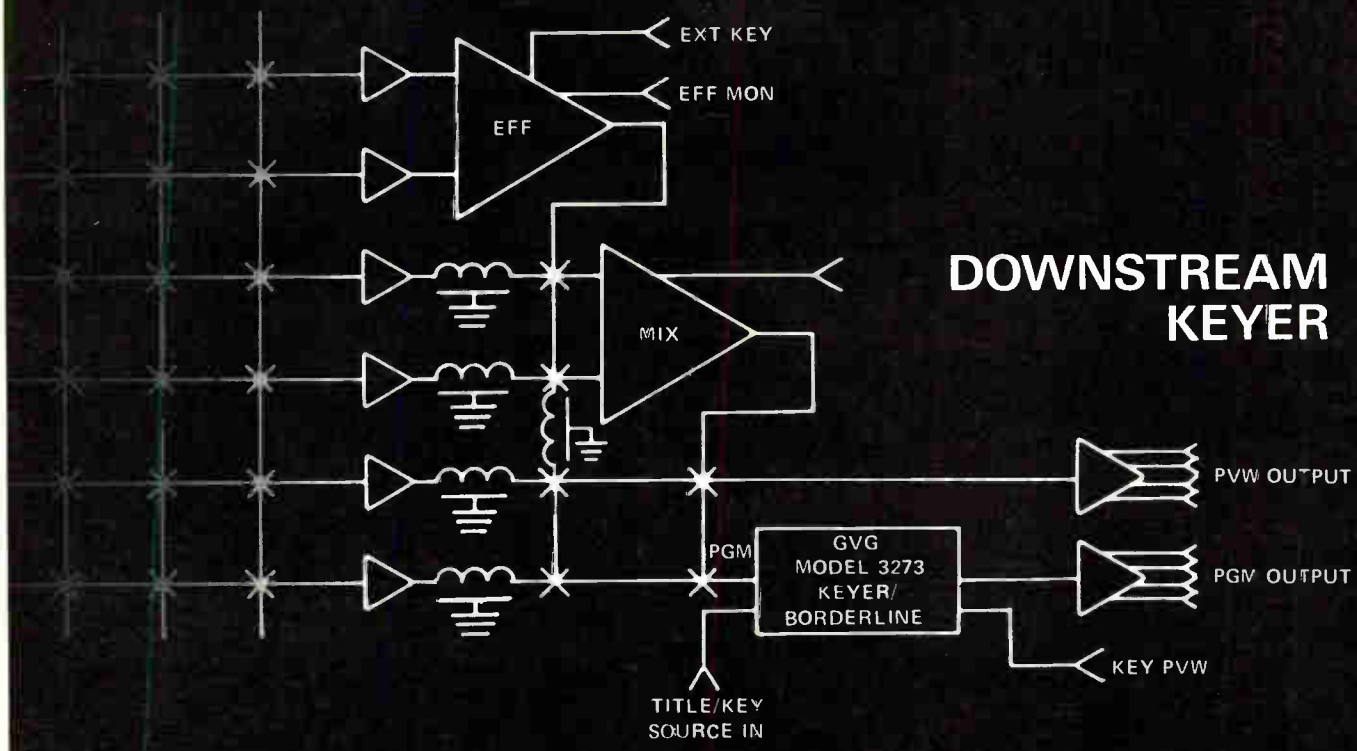

DOWNSTREAM KEYER

3273 REMOTE CONTROL

GVG's Model 3273 is a complete insert keying unit capable of producing electronically bordered titles over any synchronous source. It may be placed in the program line downstream from switching and effects equipment so that matted inserts can be accomplished very simply without the use of a special effects generator. The insert may be previewed and switched, during vertical interval, in and out of the program line. The matte may be colored* and bordered in one of three modes: *BORDER* - bordered symetrically, *SHADOW* - on right and bottom edges only, *OUTLINE* - only the border signal inserted. The Model 3273 offers the keying facility of a second special effects system but without any operational complication. It is an ideal means of interfacing an electronic character generator with a studio or master control switcher.

*Optional accessories include a colorizer and a non-synchronous inhibit for key input.

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OVERSEAS - GRASS VALLEY INTERNATIONAL, BOX 1114, GRASS VALLEY, CA 95945, USA

Circle 102 on Reader Service Card

BROADCAST INDUSTRY NEWS

West Europe in TV Boom; Sales Near U.S. Total

Sales of television receivers are so "hot" in all countries of Western Europe that component shortages are the industry's main problem, according to an on-the-spot report by "Television Digest." Annual totals are approaching 15 million, against recent U.S. totals of about 17 million. "Television Digest" finds European TV technology ahead of the U.S. in some respects; another difference is domination of the market by a single firm, Philips, with about 50% of sales.

FCC Approves A Third Pay-TV System

Another subscription television system, developed by Teleglobe Pay-TV System, Inc., has won approval by the Federal Communications Commission, that agency has announced. Approvals were given earlier to Zenith Radio Corporation's "Phonevision" system and to the Number 4745 system of Blonder-Tongue Laboratories. Teleglobe's system, called the "Teleglobe 410," transmits a scrambled TV signal, which can be unscrambled by a device rented to subscribers.

London EVR Sets Up U.S. Marketing Firm

In a kind of homecoming, the EVR Partnership, London-based company which took over international sponsorship of EVR after Columbia (the U.S. developer) backed off, has set up EVR Systems, Inc., American company with headquarters in Paramus, N.J., to market the system in the U.S. and Canada. EVR Systems will distribute EVR cassettes and establish EVR networks in business, education, government, etc., in this country.

TPT-WLIB Start Joint Public Access Programming

TelePrompTer Manhattan and radio station WLIB, New York, started in May a series of weekly "simulcasts" of public-access programs taped in TPT's studios. The one-hour Sunday programs go out simultaneously over TPT's public access channel and (audio only) over WLIB. Stated objective of the participants is to increase community awareness of and use of public-access communication. WLIB has directed its programming for more than 20 years mainly to the black community in New York.

Renewal Bills Are "Racist, Anti-Capitalist"—Parker

Bills before Congress to extend broadcast license terms are "racist, sexist, elitist, and anti-capitalist," Dr. Everett C. Parker of the United Church of Christ, spearhead of many recent anti-renewal actions, told the House committee considering the bills. Dr. Parker said the laws would unduly restrict minority protests against poor service, and protect broadcasters from normal competitive pressure. He recommended separating protest actions from attempts by new parties to take over a license.

New Company Will Form Video Cassette Net for Business

A new company, Video Product Exposure, Inc., of 230 Central Park South, New York City, announced plans to form a video cassette network to provide both software and hardware for national video exposure of new products and services. The company would also provide business and industry with in-company training, sales, or management communications.

AP, With Student Help, Gives Audio News Service

An audio news service, with recorded interviews and reports available to radio stations over telco lines, is being operated in Ohio by the Associated Press, with students at the Ohio University radio station, WOUB, acting as interviewers and news gatherers. Gathering as many as 30 reports and "actualities" each weekday, the service, called "Buckeye Sound," is feeding more than 30 radio subscribers, commercial and non-commerical, in the state.

Brookings Study Attacks TV "Monopoly"

What the authors call undue concentration of program-selection power, monopolistic profits, and banalization of program content of the TV industry are under heavy attack in a report, "Economic Aspects of Television Regulation," issued at press time by the Brookings Institution of Washington. Recommended are: much more competition (three more networks, full use of cable TV, pay TV, satellite-to-home TV); plus much less Government regulation (the FCC's powers restricted to technical matters, spectrum management).

ASC Buys Four Earth Stations For Domestic Satellite System

Four earth transmit/receive stations for a domestic satellite communications net have been ordered by American Satellite Corporation from ITT Space Communications, Inc. The $4.5 million contract calls for completion in the fall of 1973. The four stations are intended for ASC installations near New York City, Los Angeles, Dallas and Chicago. ASC earlier contracted with Hughes Aircraft Company for three spacecraft for the system, and arranged for launch by NASA in the third quarter of 1974.

Firms Start New Wire News Service for Radio, TV

A new category of wired service to broadcast stations, with air-ready news items coming over telephone wires, was started in May by two firms aiming for national markets. "First Phone," a service of Fleishman-Hilliard of St. Louis, sends clients 45- to 50-second voice-only "actualities," news items gathered around the country. The other firm, Television News, Inc., New York, puts 30-minute segments of filmed news on the wire. Each firm had a number of clients, many on a trial basis, at press time.

continued on page 9

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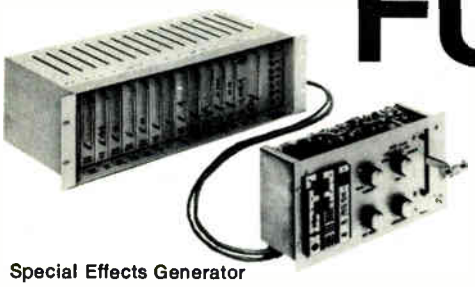
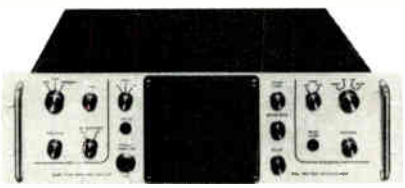
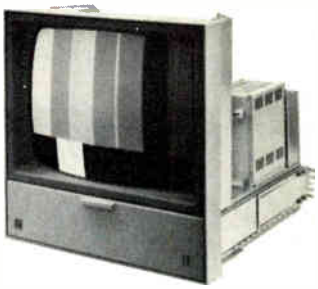
LOOK NO FURTHER!



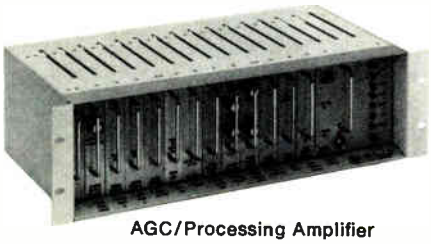
Special Effects Generator

Waveform Monitor

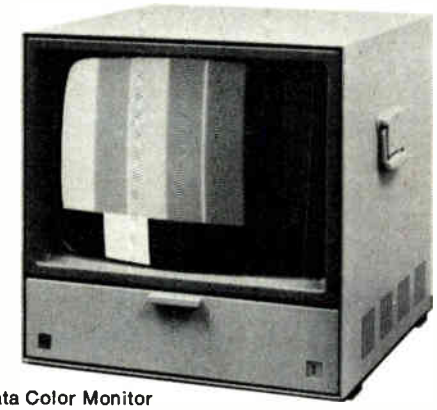




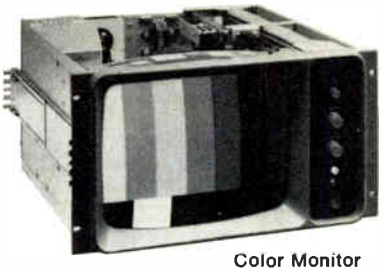
Large Screen Color Monitor



AGC/Processing Amplifier

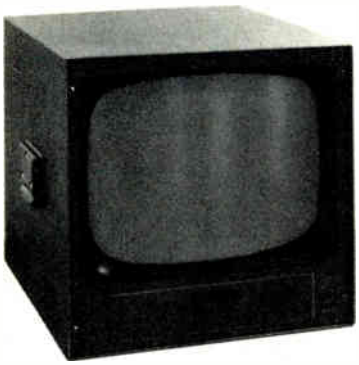


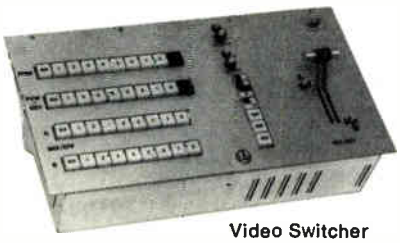
Data Color Monitor



Color Monitor

Large Screen Monochrome Monitor





Video Switcher

Twin Monochrome Monitor

Ball MIRATEL

Look to Miratel for your Broadcast an CATV studio equipment needs.

Who developed the first solid-state broadcast video monitors?

What company has more solid-state experience than any other video/display manufacturer?

Which broadcast equipment manufacturer has developed a long-term reputation for reliability and performance?

That's three for us. Miratel is now the fastest growing manufacturer of TV accessory equipment. Miratel has been turning out the best in solid-state televisual equipment for broadcast and EDP use since 1960. Installations? You'll find Miratel equipment everywhere, from space center installations to large broadcast studios; from mobile production centers to CATV stations. In addition, Miratel is one of the largest suppliers of video displays to the computer industry.

Miratel color monitors have licked stability and service problems through a combination of long-term broadcast experience, and aerospace quality design of critical circuitry. You can't buy more dependable monitors. The same design care goes into our processing/AGC amplifiers, special effect generators, video switchers, and other signal control and conditioning equipment. We stand on our reputation for design sophistication and customer support. Look to Miratel for your broadcast and CATV studio equipment needs.

May we tell you more? Please call or write today.

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Neve Consoles cost less than you think.

You're looking at a Neve PSM (Portable Sound Mixer), fully fitted with 12 input channels. Cost? Only $10,650. If it's partially fitted, the price drops even lower.

In fact, you can buy a Neve Broadcasting Sound Control Console for *as little as $5,500.*

Flabbergasted? Probably — if you know what goes into any Neve Console, and what you'll get out of it.

A money-saving suggestion: compare broadcasting consoles — feature by feature. You'll find that Neve actually costs less than most.

Don't just compare price. Compare performance and quality. For example, any Neve Console (small, large or in between) gives you a total harmonic distortion *guaranteed to be less than 0.075%.*

What's more, typical certified tests have shown less than 0.02% on every channel.

Neve equips broadcasters with everything from compact portables and circular DJ desk installations to giant, ultra-sophisticated TV and radio consoles. R.F. interference? Not with Neve. Our consoles are designed to block it, even in intense fields such as those in Chicago's Hancock Building and the Empire State Building in New York.

Need a customized console? Regardless of the size, we'll install it in your studio *in hours* — not weeks. We'll do it on the day we promise. No waits. No frets. No bother with in-studio modifications later. Before it reaches you, a Neve Console is thoroughly tested, totally perfected.

The sound of Neve is worldwide. Our audio control consoles are now used for broadcasting, music recording, ad commercial and motion picture production in major studios in 27 countries. Why not find out exactly what we can do for you — before you pay too much for too little?

Neve

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Hollywood: Suite 616, 1800 N. Highland Ave., Hollywood, Ca. 90028. (213) 465-4822
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Write for Bulletin B-2

Circle 104 on Reader Service Card

World Radio History

NEWS

FCC Eases Restrictions On Microwave Service For Cable

Microwave common carriers serving cable TV systems need no longer restrict service to transmission of video and associated audio to subscribers at designated drop points, the FCC said in a May announcement. The microwave operators are no longer required to designate such service in applications for authorization, so that there will be no special distinction applying to microwave service for cable systems.

KKEY On-Air Phone Show Violates Rules, Says FCC

Calling a listener and saying, "This is Jack Hurd, we are on the air," or a similar phrase, is not sufficient prior notice to the called party that the conversation will be broadcast, the FCC has notified Station KKEY, Portland, Oregon. The respondent in such cases does not have proper opportunity to agree or disagree with being broadcast: the only choice would be to refuse to go on with the conversation, said the FCC. The FCC also noted that the introduction sometimes used, "This is Jack Hurd on the air," could be interpreted as the name of the show.

Granger Sells Iran $1 Million in Microwave

Microwave terminals and program channels worth about $1 million are going to the National Iranian Radio and Television Authority from the maker, Granger Associates of Menlo Park, California. Operating on 960 MHz, the total system includes 114 terminals that will allow distribution of AM and FM radio programs to every part of Iran, reaching nearly the entire population. Primary programming will be in Teheran, with local centers at other sites around the country.

Sansui Offers Licensing of QS Vario Matrix

Sansui Electric Co. has opened its QS Vario Matrix technique to licensing by other manufacturers. The system can be added to the regular decoder for the Sansui four-channel matrix system to enhance interchannel separation. Also available for licensing is the QS vario matrix synthesizer, which produces four-channel reproduction from two-channel sources. The company also announced that IC chips, for integration of the vario matrix into the regular decoder, would be available in a short time.

"Intravision," New System, Sends Graphics, Etc., Via TV

A new communications system, using regular TV and microwave channels to transmit printed matter, photographs, and other graphic material has been announced by Data-Plex Systems, Inc. of 2 West 45th Street, New York. The invention of Charles A. Morchand, now president of Data-Plex, the system operates by "stealing" a single frame from time to time in an ongoing T transmission by broadcast or microwave, which has no perceivabl effect in the regular program. Special originating and terminatin equipment puts the signal into the TV channel and recovers it at th receiving end. By this method, about one printed page can b transmitted per second—much faster than facsimile—and also, according to the developer's claim, cheaper. Data-Plex's main thrust,

continued on page 11

"live" automation

can increase profits

Now you can modernize with an automated system that protects your air personality and retains your exact format. SMC protects your profits...from Sign-On to Sign-Off. 2048 separate events — music, commercials, P.S.A.s, network breaks or I.D.s, and a complete English log printed automatically. SMC provides either punched tape or magnetic tape memory loading, both furnished for format changes while your system is "on-air". Simple ten-key adding machine console controls the entire system.

An SMC areaman will glady make a survey of requirements for your particular station programming. Phone us now. Find out the complete profit facts today — without obligation of course. SMC — the broadcast systems engineered for station profitability.

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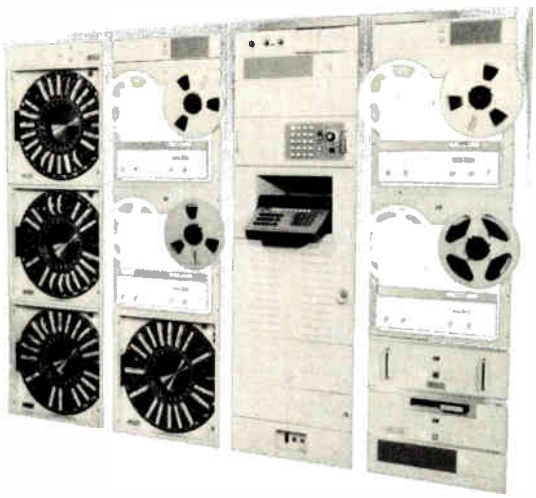

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Manual video correction is no longer necessary...

...so why do it?

The TEKTRONIX 1440 Automatic Video Corrector takes the work and the worry out of video signal quality control . . . with *FULLY AUTOMATIC CORRECTION* of overall video gain, black level, color saturation, burst phase and gain and sync level.

With a VIR on the video signal and a 1440 in your facility, the quality of program signal is stubbornly maintained. Ordinary changes and even many severe distortions are automatically corrected, freeing your engineering people from the task of continuously readjusting controls. Attempting to keep up with continuously varying conditions with manual correction is no longer necessary . . . so why do it? The 1440 only costs $2450.

A TEKTRONIX Video Specialist can demonstrate how the 1440 and other VIRsatile products can work for you at incoming network feed, remote feeds, master switcher output, transmitter input and at other key points. Arrange a VIR signal product discussion or demo through your TEKTRONIX Field Engineer. He and a TEKTRONIX Video Specialist are a team prepared to help you.

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World Radio History

according to a spokesman, will be toward leasing its equipment to microwave carriers and commercial and non-commercial networks that want to offer the service.

Flint Schools Send Still TV On FM SCA Band

The Michigan State Board of Education is distributing slow-scan still-picture TV to classrooms via the SCA band of school FM transmitters, in a program that appears to be effective educationally. The system uses slow-scan TV units made by Colorado Video of Boulder; SCA receivers from McMartin; and standard TV receivers fed by slow-scan converters. Dr. Charles S. Ruffing, coordinator of Instructional Technology, said: " . . . we may find that the motion offered in standard TV transmission is unnecessary in many teaching situations. The controlled-scan system has the potential of adding video capability to all existing FM stations at a minimal cost."

FM Share of Morning Listeners Shooting Up

FM stations' share of the listeners who tune in radio between 6 and 10 a.m. has been rising sharply in the last few years, according to CBS/FM Sales, summarizing ARB Metro figures for the period. The summary indicates that, from October 1968 to October-November 1972, the FM share of morning listeners went up, for example, from 3.4% to 14.7% in St. Louis (332% increase); from 4.8% to 19.5% in Boston (306% increase); from 5.5% to 18.6% in Atlanta (238% increase); from 7.9% to 20.8% in New York (163% increase). Every city surveyed showed an increase, others ranging from about 50% to about 300%.

WNEM Child Program Wins NATPE Award

Another program award, this one from the National Association of Television Program Executives, went to "World of Wonder," a series for children produced on WNEM-TV, in Flint, Michigan. The NATPE citation said of the program, which was written by Sister Maureen Rodgers of the Diocese of Saginaw: "Guidance in a sense of appreciation, respect and love for the beauty and mystery of nature was effectively achieved . . . (helping) children toward a better understanding of basic human values."

FCC Should Not Recover Full Cost, Says NAB

The NAB urged the FCC to abandon the concept of recovering its full operating cost in fees from the industry, pointing out that it would be the only regulatory agency so recovering full payment of expenses. The plan, said NAB, would constitute "undue, unwarranted, and patent discrimination." NAB, projecting current trends, foresaw that in less then ten years the FCC would need $100,000,000 annually. The Independent Offices Appropriation Act of 1952, cited as legal authority for the proposal, actually "recognizes that fees should reflect public policy or interest served," said the NAB filing.

Wasilewski Asks Changes

President Vincent Wasilewski of the NAB urged Congress to extend the campaign reform act to impose a limit on all spending, rather than selective limits on specific media, such as the 60% now proposed for broadcasting. He also asked the Senate Communications Subcom-

continued on page 13

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Use the talents of your best people to their full capabilities. Staff members can actually be in production while they are "on-air" with live automation. The SMC SEQUENTIAL system permits scheduling up to 60 events (spots, music, talk, whatever) from as many as 10 different audio sources. Planned programming is significantly improved with your best talents being used constantly rather than on a "shift" basis.

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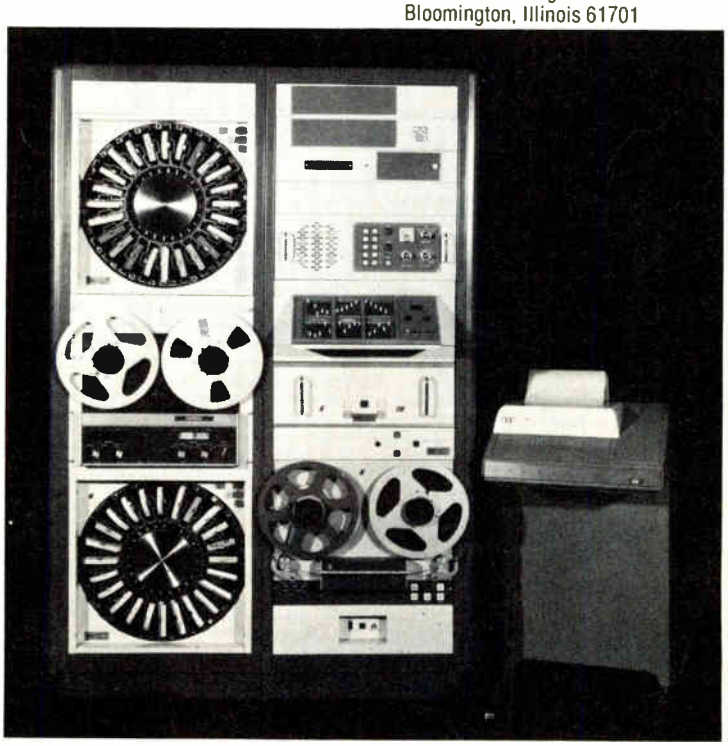

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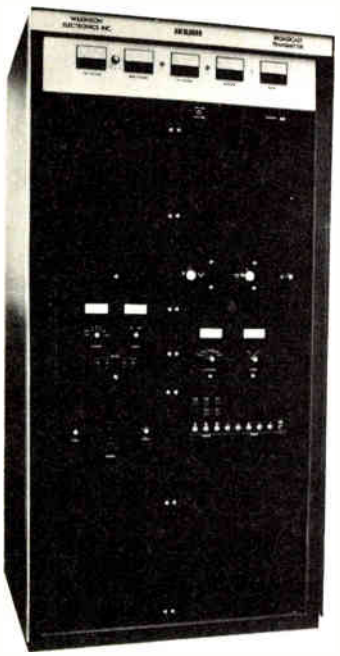
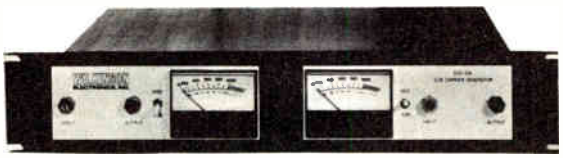
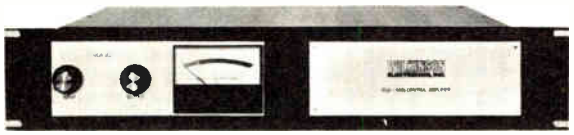


AM TRANSMITTERS - 250 W
1 KW - 5 KW - 10 KW - 50 KW

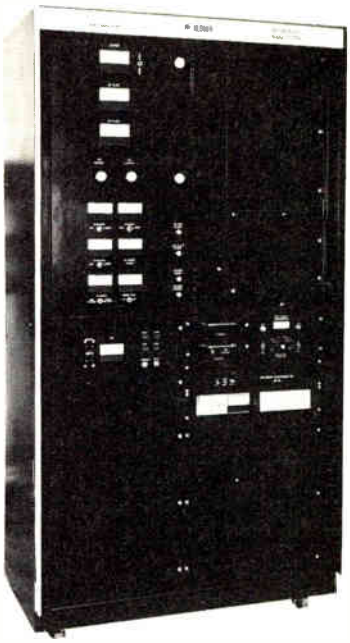


LIMITERS - Mono and Stereo



AGC AMPLIFIERS - Mono and Stereo

REMOTE AMPLIFIERS



FM TRANSMITTERS 10W - 50W
250W - 1 KW - 2.5 KW - 5 KW
7.5 KW - 10 KW - 20 KW - 40 KW

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mittee to eliminate the requirement that broadcasters sell candidates time at their lowest unit rate, while allowing newspapers and magazines to charge comparable rates." The Committee's recommendations had not reached the floor of Congress as this issue went to press.

Survey Finds Newspapers Ranked Best News Source

Newspapers were ranked above radio and television as sources of community information by a sample of people interviewed recently in nine cities coast to coast. The survey was carried out with a Standardized Self Survey Kit developed by the S. I. Newhouse School of Communications at Syracuse University, and the results are summarized in a report from the University, "The Newspaper and the community: Preliminary Findings." The survey also asked respondents, among other things, to rate community organizations (schools, churches, police were put high, local government low), and news topics (taxes, prices, health, ecology, crime, high; entertainment, fashion, culture, social news, low). The kit, and the report, are available from Communications Research Center, University of Syracuse, 215 University Place, Syracuse, N. Y. 13210.

Viewers Okay Delay In "Virginia Woolf" Telecast

Broadcasters trying to hold the line against the wave of sex in current movies may well find their viewers backing them up. In Charlotte, North Carolina, WBTV recently got better than 9-to-1 mail approval of a decision to delay until 11:30 p.m. a telecast of the movie, "Who's Afraid of Virginia Woolf," (a very "mild" picture by current standards) originally slotted for 9 p.m. on the network. Earlier, WBTV got overwhelming approval for refusal to show the movie, "The Damned," X-rated in theatres, but edited to an official R rating for television. It is axiomatic that television, with its large audience of children, cannot follow the movie theatres into raw sex.

NAB Hits Proposed "Open" Station Logs

The NAB has strongly opposed the proposal that station logs be made part of the public file. Against the urging of the National Citizens' Committee for Broadcasting, the NAB told the FCC that the proposed rule would impose a large burden on broadcasters that cannot be justified "since the benefit to the public interest is practically nonexistent." NAB said it was simply untrue that inspection of the log is the only way to determine a station's programming, pointing to the detailed information in the station's public file. Also cited were the enormous bulk, the lack of descriptive material, the great cost of copying, and the confidentiality of rate information on many logs.

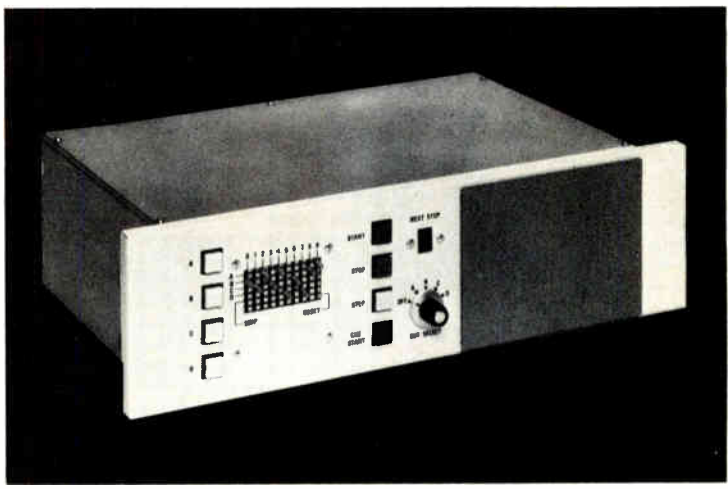
"Beep" Killed For Recorded Phone Material

The Federal Communications Commission has removed the 25-year old requirement that recording of telephone conversations must be accompanied by a "beep" tone, if the recording is made for later broadcast and all the speakers have prior opportunity to agree or disagree on its use. The FCC authorized the

continued on page 14

FORMATTER

"live" automation
simplifies your programming



This new SMC FORMATTER can improve the flexibility of your existing automation when used as a music formatter. The FORMATTER can run your night time virtually unattended. The FORMATTER programs up to 10 events from any four audio sources you may select (recorder, cart. equipment, Carousels, etc.). There's even a provision for a digital clock for network joins.

Best of all a complete system can cost as little as $3000 (U.S.) installed in your rack. Phone or send for complete details today on SMC's new FORMATTER.

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telephone companies to change their tariffs to reflect this rule modification. The change came about largely because broadcasters had pointed out that pre-recording of on-air telephone conversations is now the general practice, allowing speakers to exercise their right to privacy in advance of use.

Neve Merges with Bonochord, London Firm

Neve Electronic Holdings, Ltd., parent company of Rupert Neve, Incorporated, professional console makers, announced a merger with Bonochord, Ltd., a publicly-held company listed on the London stock exchange. The Neve announcement notes that the fast growth made support from a larger firm desirable to allow expanded growth. Rupert Neve, Inc., American subsidiary, will continue with present management based in Bethel, Connecticut.

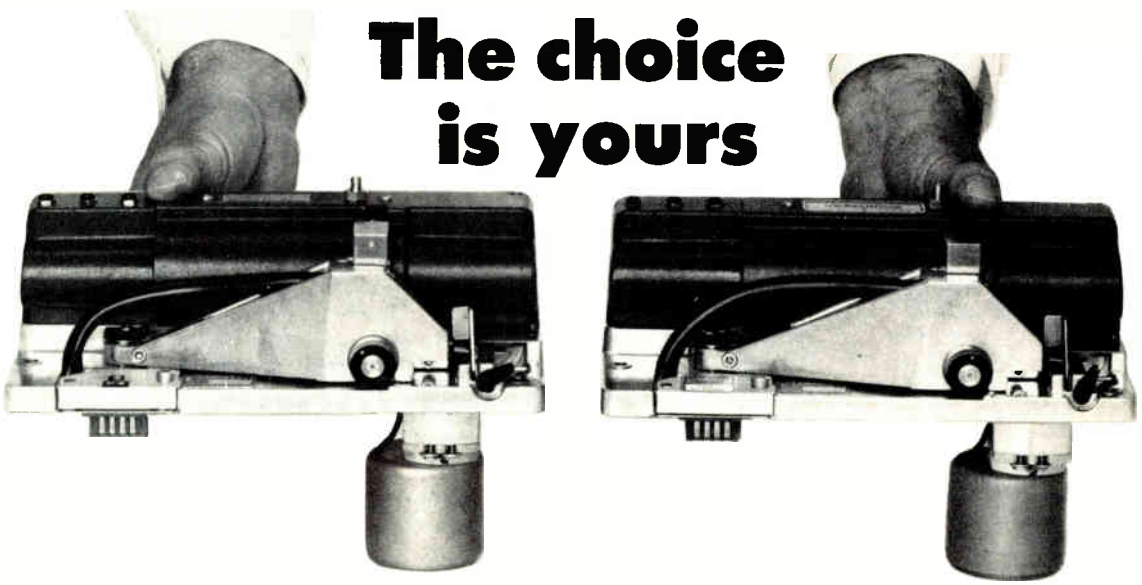
Six Out of Ten Homes Get Seven or More TV Stations

Six out of ten American homes can now tune at least seven TV stations, according to figures compiled by the Television Information Office from a special study carried out by the A. C. Nielsen Company. The figure is up from 57% two years ago, and from 53% four years ago. The study also showed that 20% of homes get ten or more channels, while, at the other extreme, 99% get at least three. Roy Danish, director of TIO, said: "Contrary to some critics of television, there are now more viewing choices available to more people than ever before."

Financial News

Oak Industries said the first quarter of 1973 was the best ever, with sales at $28,263,274 and net income at $1,052,945, up from $430,840 in first-quarter 1972 . . . **C-Cor Electronics** sales in first 12 weeks of 1973 were $967,213, up 113% over the same period last year; net income was $62,890 . . . **Coral, Inc.** announced $2 million in equity placement, with $115 million stock sale to Prudential Insurance Company, and $500,000 debt-to-stock conversion by Chase Manhattan Capital Corporation.

The choice is yours



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News Briefs

Color picture tube sales were up 22.4% in 1972, over 1971, at 8.4 million units, the EIA reported . . . **Political spending for broadcasting** in the 1972 campaigns totalled $59.6 million, up about 1% from the 1968 total, the FCC reported: but the presidential and vice presidential races took only $14 million of the total, down 50% from the $28 million for 1968.

Telaudio Centre, Burbank, California, opened a "low-budget" teleproduction studio, with color cameras, quad VTRs, film chain, ten-microphone capability, audio tape and disc playback, chroma key and other special effects . . . **Broadcast Communications Devices** is a new firm formed by **John Baumann** at Yorba Linda, California, to provide marketing counsel for broadcast processing and automation equipment, and market products of CBS, Datatron, Technicolor, and other firms.

Family Stations, Inc., Oakland, California, operator of stations in San Francisco, Sacramento, Annapolis, Md., Camden, N.J., and other cities, will buy WCAS in Cambridge, Mass., from Kaiser Broadcasting, for $225,000 . . . **WQXI-TV,** Atlanta, awarded $2500 to a "Secret Witness" on a program that invites persons with crime information to submit clues anonymously; the winner had pointed the way to solution of a murder.

Theta-Com won a contract to build an additional 400 miles of cable plant for Gill Cable, Inc., San Jose, California . . . **Video Expo IV,** exposition of private, closed-circuit, and video cassette information delivery systems, sponsored by Knowledge Industry Publications of New York, will run September 18-20 at the Commodore Hotel, New York.

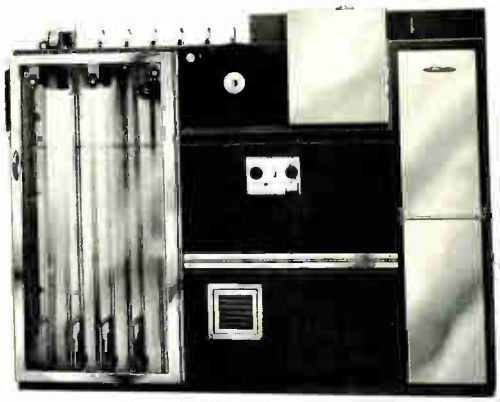
Conrac Corporation will sell in the United States the Eidophor large-screen TV projection systems made by Gretag, Ltd. of Zurich, Switzerland . . . **AEL Communications Corp.** will add 90 miles of cable plant, to 30 already built, to complete system for Lone Star Television Service, Long View, Texas . . . **Anixter-Pruzan** opened a new warehouse, northeastern sales office, and supply center in Plainview, New York, with 12,000 square feet of storage space.

New Jersey's **Public Broadcasting Authority** initiated service early in June from two additional stations, WNJM, channel 50, Little Falls, and WNJB, channel 58, New Brunswick; with previously opened WNJT in Trenton, and WNJS in Atlantic City, the new stations complete the set of four to cover the state . . . Among numerous large sales of communications equipment reported by **RCA Corp.** were a $5 million contract for color television equipment to Brazilian broadcasters; an AN/MPS-36 tracking radar to the Government of West Germany; and a $2 million order for color cameras, VTRs and other items from Scripps-Howard Broadcasting Company.

Auditronics, Inc. of Memphis opened a new distributor division, Auditronics System Division, and a demonstration room and consulting service at 207 Summit Street in Memphis . . . **Tocom, Inc.** opened a new production plant with 8,000 square feet of space in Matamoros, Mexico; establishment of the plant was encouraged by the U.S. "Border Industry Program," which allows duty-free import and export of raw materials and machinery.

Warner Cable Corporation has completed purchase of a cable system in North Canton, Ohio, from Stark CATV, Incorporated: system has 5600 subscribers and passes about 11,000 homes.

Instead of getting a film processor you'll grow out of, why not get one you'll grow into?



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Let's face it. All you need is a processor to match your present capabilities and keep pace with your growth. Today, your primary interest is black-and-white . . . but you know that some day you'll have to go into color. Your customers want color. Local news calls for color. Competition will force you into it . . .

But right now, you don't need color.

What you'd probably like is a small economical 16/8mm B&W reversal processor that you could later change to an Ektachrome color reversal unit. Right?

If so, the Minaflex is ideal for you. No matter what B&W or color process you're interested in, the Minaflex can handle it. In fact, just by making minor plumbing or component changes, the same basic unit can be used effectively for 16 different processes! It never becomes obsolete!

To top it off, the Minaflex runs any size film, with any type perforation. Because it features ultra-smooth SBR-Drive, it handles Super-8mm and 16mm interchangeably. Thus you can "tie" the two different film sizes together as they come in, without modifying the processor.

The Minaflex is easy to install . . . easy to maintain . . . and takes up less space than the average size desk.

Most important of all, it offers better quality at a lower price than any other compact processor we know of! The basic unit starts at only $6600.00, and you buy only the additional accessories you need to give you the exact processing system you want.

SBR Models are available to handle film sizes up to 105mm and to operate at speeds up to 250 fpm.

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October 6, 1972

Mr. Norman L. Bleicher
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Dear Norm:

Thank you for your letter of September 13, 1972.

You mention four areas for information relative to news work, using the CP-16/A, and they are as follows:

1. I feel that the CP-16/A is the best news camera on the market today. All of our news reporters feel the same way. It is extremely portable and we are able to shoot pictures much as we do with our Bell & Howell or Bolex cameras.

   I have designed a small "U" shoulder pod of aluminum, padded with rubber, for use with the camera. The light weight of the camera, "U" pod and magazine make for quick and easy shooting, with comfort and ease for the cameraman as well.

2. As to use under adverse conditions, the camera has performed very well in inclement weather and I see no reason why it should not be the same in the winter as in the summer.

3. Service has been the best. Both you and Cinema Products Corporation have been in close touch with us and we are very pleased with the quick service we are getting.

4. News of Interest: In addition to the shoulder pod, I have installed a Sennheiser MKH-815 shotgun microphone, with a shock-proof mount, on top of the CP-16/A camera. The camera is so quiet that the 815 mike does not pick up any camera noise. With no cables and no power pack to get in the way or restrict your movement, the cameraman can really move in and around, getting the right position to get the best picture. He becomes a part of it all.

The enclosed photographs may be of some help to explain the "U" pod and the shotgun mike. The cameraman is Larry Sales, a reporter here at WAVE News. The other guy holding the camera and mike happens to be me.

In summing up, I am happy to say that we are very pleased with our two CP-16/A cameras (even the price) and I am looking forward to getting another in the very near future.

Sincerely yours,

Edward E. Thompson
Newsfilm Director
WAVE-TV

EET:jk
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Mr. Edward E. Thompson,
Newsfilm Director,
WAVE-TV

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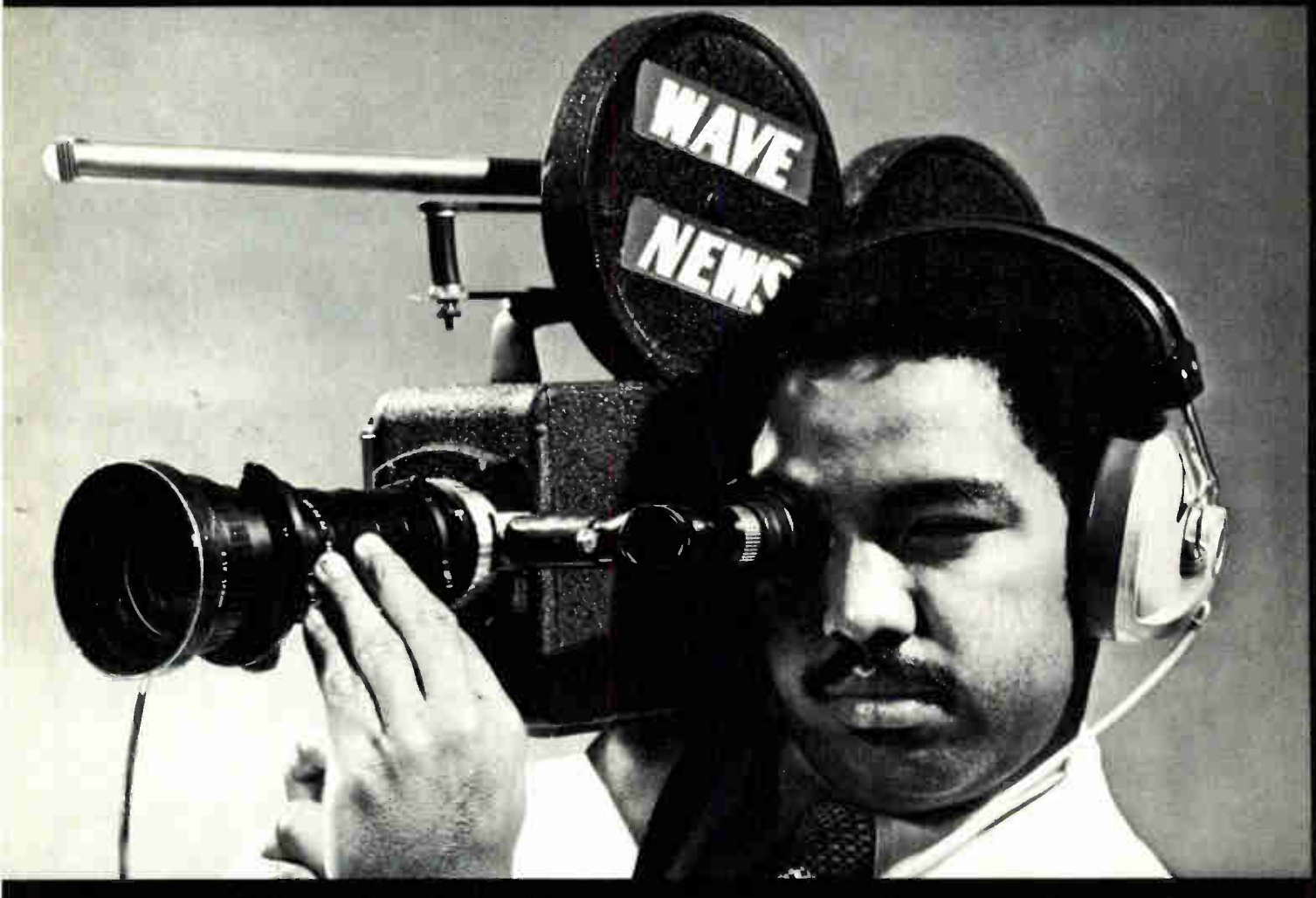
A Cameraman's Kind of Camera.



Mr. Larry Sales, TV-Newsfilm Cameraman, WAVE-TV

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INTERPRETING THE FCC RULES & REGULATIONS

Licensee's Journalistic Discretion Upheld In Supreme Court Decision

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

In a widely-publicized decision at the end of May 1973, the Supreme Court has granted broadcasters significant relief from the growing pressure for "rights of access" for advertising about controversial public issues. The Court upheld the Federal Communications Commission in refusing to ban an individual licensee's policy against such advertising and refusing, itself, to impose rules requiring such access. Certainly, the decision is a vindication of the broadcaster's role as journalist—one who shares the rights to editorial control and coherence associated with First Amendment principles and the most profound traditions of journalism. The decision also removes the specter of another major regulatory burden on the licensee's day-to-day operations.

Yet, in interpreting the decision, it is important for broadcasters to realize what the decision did *not* do. Emphatically, the Court's decision may not be read as the grant of a sweeping First Amendment charter to the industry, such as that enjoyed by newspapers. The decision made no change in the existing structure of regulation over content in broadcasting. Nor did it forbid future imposition of "right of access" requirements of a limited (or possibly unlimited) nature. Misinterpretation of the industry's position under the new decision could have serious consequences. Thus, it is important to analyze the case carefully.

Background Of Case

The case began when Business Executives' Move for Vietnam Peace (BEM) attempted to purchase time on a radio station to air its views against the Vietnam war. The station rejected the request, contending that 1. it had fulfilled its obligations to public discussion of controversial issues through its newscasts, and 2. it enforced a policy against paid announcements of this nature. BEM filed a complaint with the FCC, challenging both the ban and the station's "fairness." The Democratic National Committee (DNC) also asked the Commission to rule against such policies on a prospective basis, although it did not allege that a licensee had refused to sell it time.

The Commission upheld the station, saying that its "fairness" obligations were met, and that its policy against controversial paid announcements was acceptable. Similarly, the FCC declined to rule against any and all such policies, as requested by the DNC. However, it held that political parties could, under the Communications Act of 1934, purchase time to solicit funds.

The rulings on access policy were appealed, together, to the Court of Appeals. The Commission's "fairness doctrine" finding was not appealed. Thus, the case entered the courts in a posture in which the general "fairness" of the licensees' presentations was assumed, and the case was to be argued and decided on the "right to access" issue alone.. The Court of Appeals panel (split 2-1) over-turned the Commission, establishing a "right of access" concept, and remanded the case to the FCC for rules implementing the right.

The appeal to the Supreme Court by the industry and the Commission was heard last October and decided May 29 (*Columbia Broadcasting System, Inc.* v. *Democratic National Committee*). In an opinion by Chief Justice Burger, the Court reversed the Court of Appeals, upholding the Commission's original position on the issue. Only two Justices would have followed the Court of Appeals; however, there was sufficient disagreement among the majority to produce five separate opinions. Two long opinions (by Justices Stewart and Douglas) disagreed with significant portions of the Chief Justice's opinion, while Justice Brennan, joined in dissent by Justice Marshall, disagreed completely.

continued on page 20

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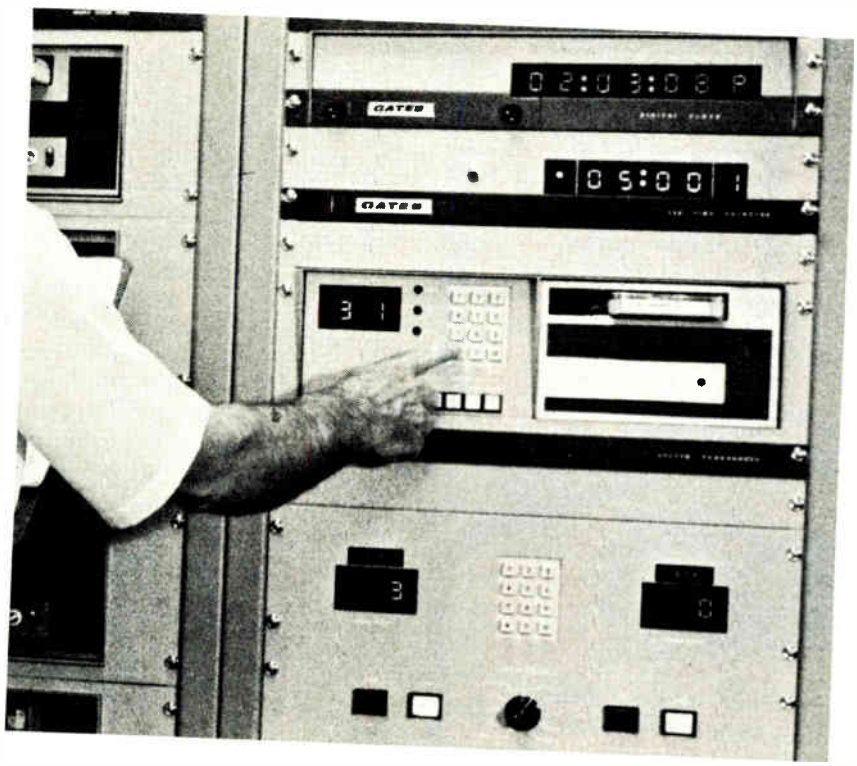
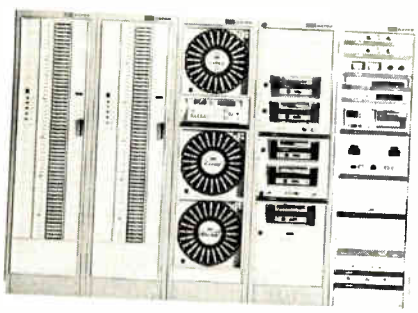
Gates' new Touch-Control Program Automation is custom-tailored to improve your operating efficiency. And profits.



Using advanced digital technology with MOS memory, Gates has developed a flexible program automation system. Custom-tailored to *your* needs.

The Gates system features keyset controls and numerical readouts for fast, easy operation and immediate verification of upcoming events. A new KSP-10 programmer that allows expansion of the number of possible events. And a touch-control system that is easy to use and understand (no special computer language is required). And that enables you to change programming, or correct entry errors, without reprogramming the entire memory.



These are just a few of the advantages. Write us for more details. Gates Division, Harris-Intertype Corporation, Quincy, Illinois 62301.

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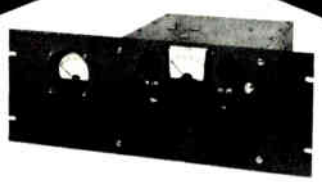
Model OIB-1 Operating Impedance Bridge measures in circuit impedance of networks transmission lines and antennas. Accuracy ±2% ±1 Ohm. Power rating, 5 kW modulated; 10 kW CW – VSWR 3:1.

Model RG-1 Receiver/Generator combines a high output power signal generator with a shielded receiver for use with Model OIB-1 or any other impedance bridge.



Model CPB-1 Common Point Bridge measures resistance to ±2% ±1 Ohm and reactance to ±5% ±1 Ohm at full power.

With Delta's monitoring equipment, you can either "spot check" or continuously and accurately monitor actual "on-the-air" operating impedance of transmission lines, networks and antenna systems to maintain a "clean signal" peak operating efficiency.

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Circle 115 on Reader Service Card

FCC Rules & Regulations

Constitutional Choice

Our analysis will concentrate on the portion of Chief Justice Burger's opinion which represented the majority view. Its implications for the broadcasters are important. Initially, the legal issues in the case must be seen as involving a clash between two species of First Amendment rights, both of which are recognized by the Courts as significant. On one hand, the rights of broadcasters to be free from government censorship and control over programming and editorial decisions must be taken into account. On the other, the rights of the public to be heard on all issues must be considered. This conflict of First Amendment considerations explains the disagreements among usually like-minded Justices. While the Court's balancing found broadcasters' rights more important in this situation, neither the Commission nor any Justice stated that a public right to be heard does not exist.

As broadcasters are aware, the problem is the same one which led to federal regulation in the first place—the scarcity of broadcast frequencies. This unique character of scarcity (*per contra,* anyone, in theory, could start a newspaper) was the source of the "public trustee" concept of broadcasting—which distinguishes the industry sharply from other media. The Supreme Court's decision does not modify the "public trustee" concept. Rather, it strongly reaffirms the concept and *relies on the existing regulatory structure* as the basis for its holding. Expressed simply, the Court held that public access rights are outweighed by broadcasters' "editorial" rights *precisely because there is an existing framework of obligations and constraints on the industry's performance.*

Fairness Reaffirmed

The fundamental source of these obligations is the "fairness doctrine." The essence of Chief Justice Burger's opinion is his finding that the existence of the "fairness doctrine" obviates the need for a new doctrine such as that requested by the DNC. He analyzes the "fairness doctrine's" integral role in the FCC's regulatory scheme and finds it well-fitted to the Congressional policy underlying the Communications Act—i.e., that broadcasting in America should be a private undertaking with a diversity of voices, not a government monopoly. Given the private nature of broadcasting and the strong weight which must be accorded to editorial autonomy in a free press, the "fairness doctrine" is a compromise which preserves the rights of the public as well as those of broadcasters. The Chief Justice found it a sufficient safeguard in this case.

It is important to call attention to the dual nature of the "fairness doctrine." Normally considered only in specific cases where controversy arises or complaints are filed, the doctrine has a more general and more important side. *It imposes an affirmative obligation on licensees to provide discussion of public*

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issues in a full and fair manner. This requirement was perhaps best stated by the Commission in its Editorializing Report of 1949:

> . . . [I]t is evident that broadcast licensees have an affirmative duty generally to encourage and implement the broadcast of all sides of public issues over their facilities, over and beyond their obligation to make available on demand opportunities for the expression of opposing views.

It is this aspect of the doctrine which should command the attention of all licensees. The Court's reliance on the doctrine in the BEM/DNC case constitutes a subtle sharpening of the licensee's traditional "fairness" obligations, if it makes a change at all. Thus, the relief from the clamor for rights of access which the Court grants is conditioned on conscientious adherence to the pre-existing obligations of Commission licensees. No general manifesto of relief from government regulation or discussion of controversial issues is intended and no broadcaster should assume that the decision, however heralded, changes his obligation to present controversial issues or simplifies the difficult task of balancing editorial control with the need to represent divergent views.

Regulatory Framework Upheld

Specifically, the Court alluded to the *licensing process* as an appropriate forum in which to assess a broadcaster's "public trustee" performance, an implication which every licensee will understand. Similarly, the decision in no way modifies existing structures such as the access rules for political candidates

continued on page 43

chroma key from encoded sources

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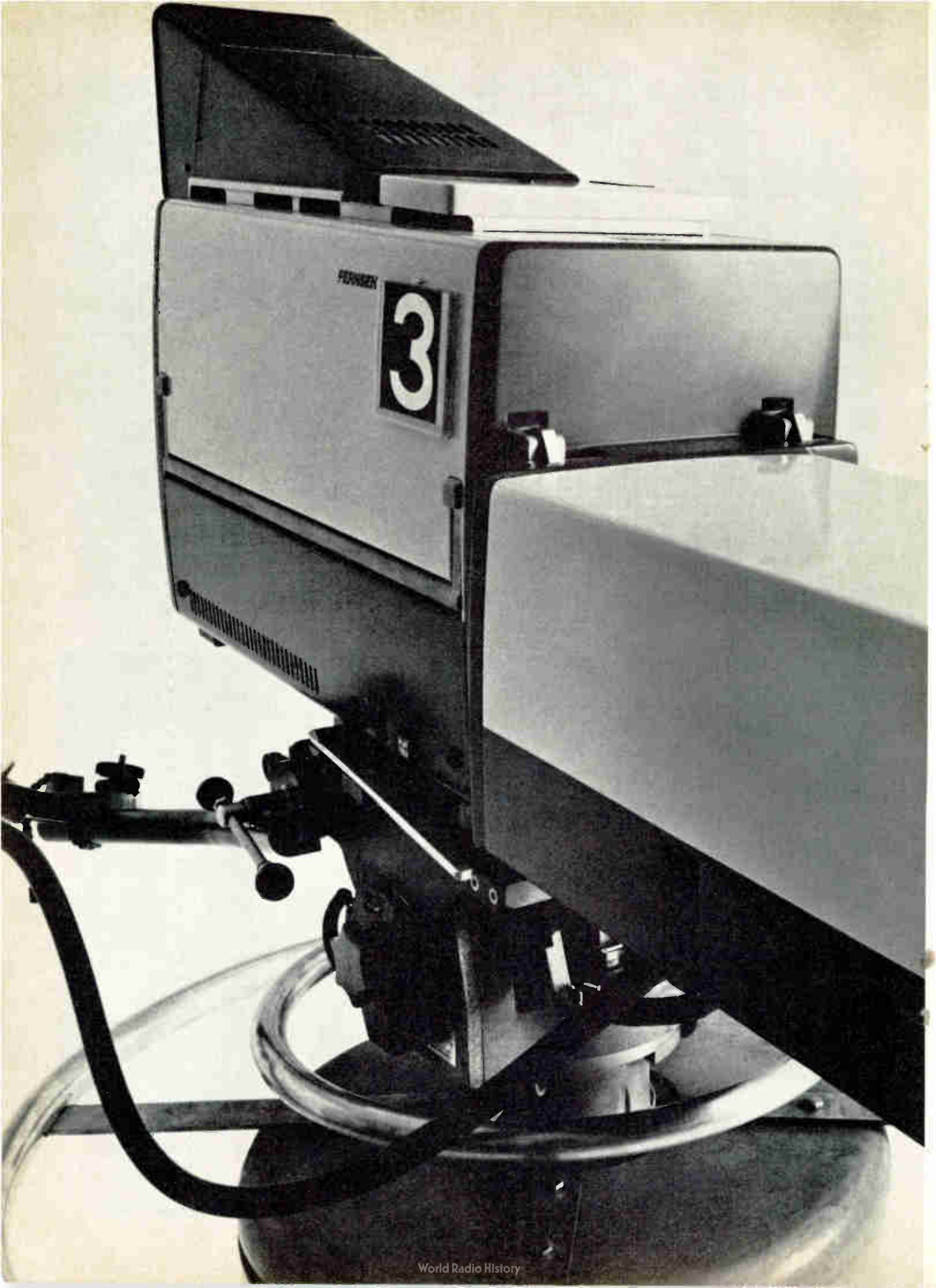

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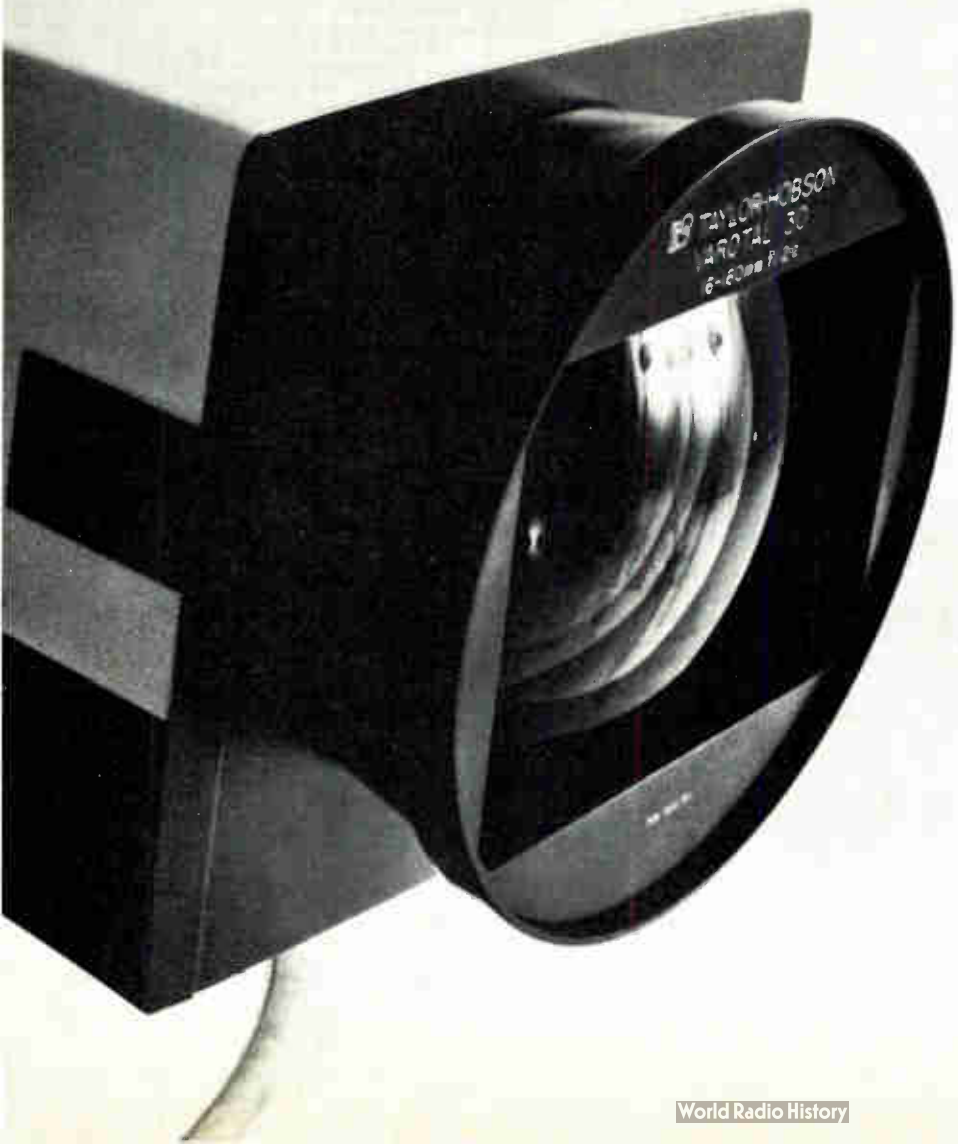

Learning from the mistakes of others was one of the ways we set about designing a new line of color cameras. And it worked. It produced a camera of exceptional quality that didn't have the problems usually associated with many color cameras.

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Ain't nobody else can give you an S/N ratio up to 72 dB. Nobody.

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Briefly, here are the high points, new electronics for up to 72 dB S/N ratio on full track .25" tapes. And a greater dynamic range than you've ever been used to.

Two-track quarter-inch and four track half-inch 280-B lays on a crisp, clean 69 dB on an NAB weighted basis.

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How To Set Up Automation For Popular Program Formats

By Melvyn Lieberman and Wallace Warren, RCA's Radio Station Equipment Product Management Group, Camden, N.J.

THE ADVANCEMENT OF ELECTRONICS TODAY has led to the introduction of new and highly sophisticated automation control centers relying completely upon electronic memories packaged in moderately-sized equipment.

Additionally, the degree of sophistication is such that the control center may be programmed while operational, queried and answered as to what is in its memory, without erasing the memory circuits or disturbing the programming that is on the air.

One example of this new breed is RCA's DAP-5000. This device is a completely solid state automation control center using MOS memories to store all the program information put into it by means of a standard ten-digit keyboard.

The control center has two displays; one display indicates the next memory-stored event to come up as well as the next source or tray to play in the code instructions. The other display permits the operator to look at any event or source that has been stored in the total program memory and allows any change to be made such as last minute cancellations, additions, or even the reshuffling of spots. Thus, the program display might read 0004 1 215. This simply means that when the control center calls for event number "4" it is to play ("1" is a code to tell the programmer to play as opposed to "0" which might mean "skip over) a cart tape in tray 15 of Carousel number 2. Each program source is assigned a number—even the network, if one is employed.

In practice, it is a simple matter to punch up the day's programming, either directly into the memory or on pre-punched tape, from a previously prepared log sheet, Another means would be to instruct the control center to restart the previous day's program sequence if the format remains unchanged from day to day. Then the operator need only insert the right carts or tapes to coincide with a predicted format.

The format remains the same—only the music and spots change. This eliminates programming experiments by the announcer. Memory for up to 2000 separate events from 20 sources is more than enough for an average day's programming. Additional memory can be added if the user wants it, to allow an operator to program several days in advance while the station is on the air without affecting current programming.

The RCA system allows automatic random setup of any carousel cartridge player ahead of the operating program. This means the proper carousel tray is in the play position before the actual event begins.

The key to a successful automated station is proper programming. It is important that, *before* automation equipment is purchased, the station management should plan what is to be achieved in the way of programming. Since an MOS memory-type programmer allows the station to program each block of time as *totally different* from the preceding or next "block," programming is not limited to a segmented repetitious format and/or spot allocation for every hour of the broadcast day. This flexibility permits varying the spot load as conditions dictate; changing music tempo from different sources as the day progresses and inserting last minute additions as the need arises.

Programming will differ widely according to the station's format. For purposes of illustration, we will consider three types of program formats: MOR, Wall-to-Wall, and Top-40. Country-and-Western is omitted because it can be programmed either as MOR or Top 40. The basic format will remain—only the music will change.

Programming an MOR format

The MOR format uses reel-to-reel, carousel, and single-play cartridge machines. The carousels are used for spots and current chart hits; the reels for the standards and gold; and the cart machines for jingles on a rotating basis. Of course, a time announce machine is very desirable as well as two additional cart machines. One is used for dead-roll-back time music for network joining, and the other for weather or even news. PSAs can be recorded on carts and played on a separate carousel, but a more equitable and economical way is to record them sequentially on reel-to-reel tape. Thus all PSAs will get equal airing which should help eliminate the squabbling many station managers find themselves involved in.

A typical MOR system may be configured thusly:

Single play cart—Jingles and IDs
Single play cart—Weather (or News)
Single play cart—Back timed instrumentals for joining network
Reel-to-reel—Up-tempo vocal Gold
Reel-to-reel—Down-tempo vocal Gold
Reel-to-reel—Instrumental up-tempo Gold
Reel-to-reel—Instrumental down-tempo gold

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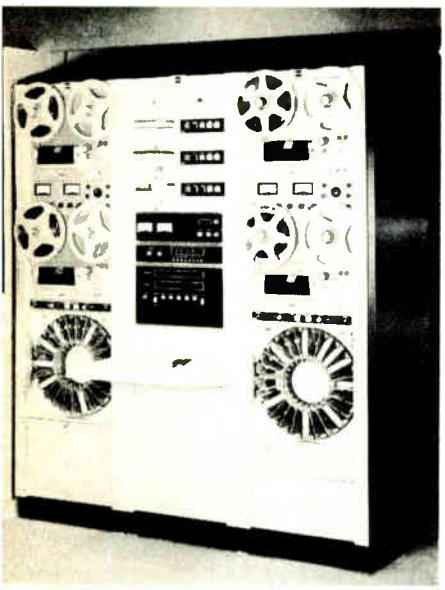

The RCA DAP-5000 digital automatic programmer (center dark panel) is surrounded by carousels, open-reel tape, and single-play cart machines.

A Typical Log for An MOR Format

Operating Log		Programming Log			
Time	Identification	Event	Function	Source	Instruction
12:05:00	W——— I.D.	700	1	0	01
12:05:05	MOR Chart Hit	701	1	1	08
12:08:35	W——— Jingle	702	1	2	01
12:08:40	Vocal up-tempo Gold	703	1	0	0
12:11:45	Time Announce	704	1	0	03
12:11:50	Weather Announce	705	1	0	02
12:12:20	Commercial Announcement	706	1	2	04
12:13:20	Commercial Availability	707	0		
12:13:50	W——— Jingle	708	1	2	01
12:13:55	Instrumental up-tempo Gold	709	1	0	07
12:17:40	PSA	710	1	0	08
12:18:00	Time Announce	711	1	0	03
12:18:05	MOR Chart Hit	712	1	1	10
12:21:10	W——— Jingle	713	1	2	01
12:21:15	Commercial Announcement	714	1	3	01
12:21:45	Commercial Announcement	715	1	2	07
12:22:15	Commercial Availability	716	0		
12:23:15	Male Vocal Gold	717	1	0	09
12:26:35	Commercial Announcement	718	1	3	03
12:27:35	W——— Jingle	719	1	2	01
12:27:40	Time Announce	720	1	0	03
		721	7		
12:27:45	Instrumental back timed to join network with dead roll music and I.D. tag	722	1	0	10
12:30:00	Join Network	723	1	0	20

Reel-to-reel—Instrumental down-tempo Gold
Reel-to-reel—PSAs
Carousel—Commercial announcements
Carousel—Commercial announcements
Carousel—Current chart hits
Time announce system

The actual format is set into the memory exactly as if the DJ were airing it. For instance, the first play out of the "news" would always be an MOR chart hit followed by, perhaps, a hit-bound MOR from another carousel or even a Gold from one of the reel-to-reel machines. The commercials should be set into the carousels so that the machines alternate between spots. In practice, all commercials, music, time checks, weather, PSAs, and the like are programmed in the exact order of play just as if it were live.

To further exemplify how easy an automation log for an MOR format can be, a typical log for a half-hour segment has been reproduced here. The "1" code function, as described before, is an order to the control center to play while the "0" means skip over—it's an availability. Under "Source Instruction," the code is broken down into two groups. The first column refers to a carousel number and the second column refers to a tray in that carousel, or some other source like a cart machine or reel-to-reel, etc.

What happened after 12:27:45 is, when the memory came to event 721, the "7" code triggered the system to correct itself with respect to real time and it started the back-timed tape to join the network. Electronic circuitry keeps the dead roll tape off the air until the last current source has finished. The end of message tone on the running tape will cause the audio from the already running dead roll tape to go on the air. Experience has proven that the dead roll method of network joining is almost unnoticed by the listener and provides for a professionally smooth transition from local program to network.

Wall-to-wall is easy to automate

Wall-to-wall music is perhaps the easiest to program. The basic idea is a cluster of back-to-back music followed by spots and a station ID on the quarter-hour, with news and spots on both half hours, or just news and spots at the top of the hour and spots with station ID for the half hour. Weather and time checks may be added at the quarter hour with little or no upsetting of the music-to-spot balance.

Wall-to-wall programming in automation would require the least investment in equipment. An excellent system may be put together using only two carousels, and four to six reel machines plus cart machines for IDs, weather-and-time announce.

Top-40: its complexity needs automation

Programming for a top-40 sound is perhaps the most difficult of the automated programming processes. The very nature of the top-40 sound, as we know it today, requires the use of many program sources—some of them operating simultaneously. Such programming devices as stringers, bumpers, and short spot and/or music separators are employed to convey the feeling of continuous music, with little or no talk even though a DJ does actually do live record introductions, public service announcements, and commercials.

In live top-40 programming, the announcer has prior knowledge of the length of an instrumental introduction to a vocal number, and times his voice-over announcements or commentary to coincide with that length.

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Radio Automation Can Now Do Any Kind of Show Easily

Top 40 or contemporary with synchronized talk, all-rock, news and weather plus MOR, or whatever else it is—automation will probably help you do it better.

IN THE LAST YEAR, radio automation has fully reached a level of versatility that makes it competent, relevant, and highly advantageous for any kind of program format. This "opening up" of automation coincides roughly with the "opening up" of program formats, with more talk inserted into music sequences, more changes, more fluid forms evolving in the intense competition between broadcast stations for audiences in every market in the country.

The result is that any radio broadcaster who is not automated ought to take a careful look today at what it might do for him. The chances are excellent that he can get a boost from it, probably a big one.

The benefits are not just, or primarily, the reduction in need for hired hands. Probably more important, in most cases, is the creation of efficient, error-free, tight programming that, paradoxically, can be more "creative" than programming manually produced. All the "personality" the station can lay its hands on is easily inserted into the programming sequence. Creativity in programming can be given more careful development. The result is that automated programming can sound more "live," zippy, and "immediate" than manual programming that moves, comparatively speaking, at a ponderous pace.

Automation today is not only versatile in action, but comes in a range of sizes and costs that includes something for the smallest and largest stations, as well as all those in between. A rough measure of "size" is the number of events—switching changes—that can be stored in the memory. With a busy commercial broadcast station of middle size or better needing 50 to 80 events per hour, automation to last through a full day without attention must have a memory for between 600 and 2000 events. This is easy today with the latest in integrated circuit technology, and larger memory is available at reasonably increased cost.

To bring all this from the general to the more specific, we present in this report first an article by Messrs. Lieberman and Warren of RCA, showing how automation is used with several of the popular varieties of program formats. Following that are reports from stations using automation, describing in each case how it is applied to specific operation plans.

The main theme of these capsule histories is *satisfaction*. It is true that some station operators in the past have expressed dissatisfaction with a try at automation. However, what we know about the

Success in Automation Requires Planning

(Editor's Note: The following valuable comments on requirements for successful use of automation, come from James C. Woodworth, president of Broadcast Products, Inc.)

The purchase of an automation system requires very careful planning and consideration. Broadcast programming is very competitive and subject to change. An automation system is generally a rather large capital expenditure, and the station manager should choose a system that will accommodate his needs now with sufficient built-in flexibility to handle any format or programming changes five or ten years from now. In our opinion, the broadcaster should make his decision on automation in the following manner:

1. Economics of automation and available personnel.

2. Is the station going to produce its *own* music format or subscribe to a syndicated music service? If the station subscribes to a syndicated programming service, the configuration of the system and personnel become much less of a problem.

3. After decisions 1 and 2 have been made, then and *only then* should the system purchase be made. It is foolhardy to buy a system first and then find something to run on it. It is more important to remember that you are going to get out of any automation system exactly what you put into it. If you are going to program it sloppy, it is going to sound sloppy. Most major systems on the market today are virtually "goof-proof." We have found that most of the problems with automation are directly attributable to operator error (poorly erased cartridges, misprogramming, no cue tones, *poor maintenance*).

4. *Listen to what the automation representative has to say.* Sure, he's trying to sell you an automation system, but he has had far more varied experience in automation than any station manager or program director and may well be able to save you a lot of money and headaches.

5. Don't buy a system on impulse. All system manufacturers have heard the phrase: "My morning man just quit and I'm going to automate this damn thing." That spells impending disaster, because somebody is going to get stuck with an awful lot of hardware that he may or may not be able to use.

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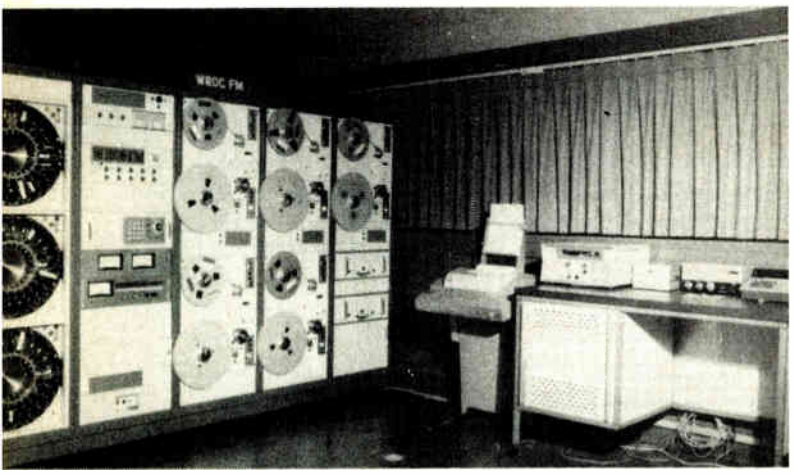
technology today suggests that a failure or semi-success is likely to be caused by a failure in original planning. Station operators who have succeeded with automation say to a man that the broadcaster *must* have a clear idea in advance of what he wants the automation to do, and plan it through with the supplier or a consultant. The supplier can match equipment to a plan and will also be able to enlarge the broadcaster's ideas about how to benefit from the installation.

Editor's note: Although the term "carousel" has come to have generic meaning, readers should bear in mind it is a trademark of Sono-Mag.

Full-Day Automation of Easy Listening

By Bill Breland, production director, WROC-FM, Rochester, New York



Sono-Mag DP-1 at WROC, Rochester, has five Scully tape decks (right-hand bays), three Carousels (at left end), with control equipment in center including full random access, and storage of 2048 events.

WROC-FM BEGAN 24 HOURS A DAY fully-automated stereo programming on April 29 of this year, with an easy-listening format, using the Sono-Mag DP-1 system. One-hundred percent digital-programmed, we employ the use of five Scully tape decks, three Carousels, and two twin-playback cartridge units, and have four spare sources for future additions.

Generally we program one full day in advance, except on Fridays when the complete programming for the following Saturday, Sunday, and half of Monday is entered so that no entries have to be made on weekends. An entire day's format and commercials can be entered in less than 30 minutes. The master format—containing everything but the commercial entries—is entered from standard tape cartridges which have been previously encoded with all the needed information. As only the commercial entries are made manually on the adding-machine-type keyboard, the margin for error is cut to a minimum. Since the system was put on the air, we have had probably less than a half-dozen errors (almost all of which have been traced to operator mistakes) and none of the type that would be noticeable to the listener.

The DP-1, in addition to giving us random access programming ability, also provides the capability of programming for a precise time in and out of an event (such as newscasts) and can be programmed to automatically start or shut down the equipment at any time desired, or after a particular event. If we wish, we can also program the DP-1 to turn on the "live mike" and either come out of the live source at a pre-programmed time, or upon a start signal issued by the announcer touching a button.

All commercials, PSA material, news, and weather are verified as being aired by the automatic logger, which prints out the subject matter aired. Should a cart malfunction and not play, this information will not be printed on the log, since it is recorded on the cue track of the cart through the use of an encoder device. In other words, if the information is printed on the log, you know it was aired and at what time. If a programmed source should malfunction, it would only cause about five seconds of dead air, since a silent sensor unit will automatically advance to the next scheduled event after five seconds.

A novel note—we even have an encoded tape which is programmed to play a reminder to an operator when it is time to change music tapes. This special encoding is put on certain PSA charts which are programmed just prior to tape-change times. While the PSA is being aired, the automatic logger rings ten bells, types a reminder to the operator on the log, and then rings ten bells again—just to make sure he got the message.

Country-and-Western in a Small Market

By Gray Ingram, chief engineer, WHIT, New Bern, N.C.

IF YOU HAVE SPENT HUNDREDS OF DOLLARS on telephone calls to find a "body" ("body" being defined as someone with a third phone who breathes from time to time) only to get into a bidding contest with another station located in a more desirable area . . . then you know exactly why I decided pre-planned programming was the coming thing. Our requirements were simple: It had to sound live—if the listeners could tell it wasn't, we didn't want it; it had to be reliable with a minimum of engineering required; *and* the price had to be reasonable.

In May 1969 we bought a system and went on the air December 26, 1969. That system was educational!

Meanwhile, the makers of the Carousel had entered the automation field and seemed to have a

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good product; too good to be true, we thought at first.

But our SMC DP-1 was delivered in May 1972. After a year of use, we feel it was a very wise decision. The service has been excellent. In fact, I called the company's head engineer, Bill Moulic, with a problem at three o'clock one morning. It took just a couple of minutes for him to tell me not only what was wrong, but why it happened. Now that we have explained which system and why, let's go into detail as to *what* we do.

We program modern Country-and-Western or, if that turns you off, we program the *Now Sound of America.*

Looking at our equipment, one sees: a make-up teletype that also serves as a spare logger, in case something should happen to the main teletype; on top of a desk, the encoding cart machine which places a 4000 Hz interrupted tone on the cue track of all carts as a double check that the commercial or song actually played; below that, in the desk, is the ferrite core memory and associated circuits which tell everything else what to do and when to do it; next, on top of the desk, is a device that lets you communicate with the computer. In racks one, two, and three are seven Carousels, two reel-to-reels. In the fourth rack are the AGC amplifier, switcher, time announcer, two dual-play cart machines, the teletype decoder, Carousel control and, on the end, the logging teletype.

We are able to feed or extract information from the memory in three ways: punch tape at 100 wpm, cartridge, or manual. The first two Carousels hold 48 records and each is straight-wired into half of a dual-play cart to outro the songs. The next five Carousels contain commercials and public service with all sponsors of the same category in the same Carousel to insure that competitors do not get played back-to-back. The top reel-to-reel holds our "extras" and is recorded weekly. The bottom reel-to-reel is "Old Gold" and is straight-wired into another cart for outro. Our time announcer is on carts as well as roll-fill to insure going into network news on time. The logging teletype prints out the source, exact time and *exactly* what was aired.

We can place a person's show in the slot best suited, and not only where the schedule permits. For instance, I have the 5 a.m.-9 a.m. segment (and at my age, 3:30 a.m. is too early to get up). Our two mid-day jocks are salesmen (hopefully on the street, selling). The night shift is farmed out at $25 per week, which provides moonlight money and gives us another voice at a reasonable price.

How does the hired help feel toward the "monster?" When we first started discussing automation in 1968, one of our men said he would quit before he would work with it . . . now the one thing the entire staff agrees on is that they would never go back to "old-style" radio.

We didn't automate to cut out people's jobs . . . we automated because we couldn't, and still can't, get top-quality people to come into a small market for small-market wages. I don't blame the people; I personally feel the broadcast industry as a whole is to blame. For years, dedicated people have worked long hours for lower-than-average wages and *no* job security. Is it any wonder that a lot of them have left broadcasting for better-paying, 40-hour-a-week jobs with fringe benefits?

We didn't automate to save money, although we have reduced our annual payroll considerably *and still pay above-average wages.*

There is one drawback. Not enough people are trained in automation, so each station will probably have to teach its people to think "logically" in order to be compatible with the machine—but what can you expect from a machine that works for $1.33 an hour?

Super—Rocker: KBBC, Phoenix

JACK KELLY AT KBBC (formerly KTAR-FM) in Phoenix is a winner. Jack is working new wonders in the Phoenix market with his Contemporary stereo format. KBBC moves at a consistently tight pace, using all the right ingredients: hit music, good jingles, frequent time and temperature checks, well-done news and, most importantly, identifiable personalities.

None of this may sound new, since most cities have a good FM rocker, but KBBC is a totally pre-programmed radio station running on a Schafer 903 automation system. KBBC is also a winner.

What is happening today at KBBC was virtually impossible five years ago. That's how much automation systems and automation programming have advanced in that short period of time.

KBBC's format is complicated. It's divided into four different 15-minute segments. Each 15 minutes is different—different music mix, different time and temperature placement, different jingle placement, and specific news, weather and PSA time slots. The format also calls for the system to decide whether to play an extra record before the first commercial set in each 15-minute sequence, if time permits.

How is this accomplished? Since radio stations operate using a sequence of events (the format) and time events (commercials, weather, news, PSAs, etc.), this is the way the 903 memory operates. The memory itself is divided into two distinct sections; one section for the format, and the other for time events. In the format area of the memory, KBBC has entered its four 15-minute formats. This was done only once, and the 15-minute format segments can now be called on in any rotation at any time of the day, any day of the week . . . without reprogramming!

Once the format was entered and stored in the memory to be called on when needed, the only additional instructions were for events to be inserted into the format at specific times. This is done in the "time" area of the memory. For example, if you want your first commercial cluster at approximately eight minutes past the hour, then that's where you

World Radio History

enter it. You may want the next set at about 13 minutes past the hour, so that's where you put it. This same procedure is then followed throughout the hour, and throughout the day. The system is capable of storing commercial playback times for up to 24 hours in advance, so the entire commercial schedule can be programmed into the system once a day! (It's such a simple procedure that in most stations the traffic girl does it.)

How does all the format and time information fit together? As in a manual operation, the automation system plays the format until it sees the commercial cluster. It then stops playing the format at the end of the selection that is on the air, and plays the commercials. When it doesn't see any more commercials in the cluster to play, it goes back to the format again. This sequence of combined format and time events happens throughout the day, just as it would in a manual operation, resulting in a smooth on-air presentation.

There are a lot more things you can ask the system to do than just play music and commercials . . . like switch formats every 15 minutes (or whatever you wish), meet the network, decide whether to play a record if time permits, skip past unused fill-music selections or deejay chatter if necessary, turn the transmitter on or off, turn the system itself on or off, drop or raise transmitter power at a precise time . . . and yes, even start your morning pot of coffee! It would take a whole book to list and describe all that today's automation can do.

One essential to success with automation is a program director who not only knows and understands good programming, but also knows the capabilities of the automation system. Jack Kelly has taken the time to find out what his system will do for him and for the ultimate success of KBBC. He uses his system to its best advantage. Before the system was installed, he read, studied, and talked to

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"Big Country" Plus Automation Wins Maine Listeners

By George J. Gonyar, director of operations, and
James E. MacFarlane, operations manager, WBGW-FM, Bangor, Maine

WE (COMMUNITY BROADCASTING CO.) acquired an FM frequency over ten years ago. At the outset we went the separate programming route in the fashion expected at the time . . . classical music, jazz, and similar programs for specific audiences. This attempt to build a saleable audience was not successful—both due to the specialized programming and the lack of FM receivers in any significant numbers.

After two years of riding in the red, we submitted to duplicate programming with our highly successful AM leader in the market and eliminated our overhead.

In 1971 our top management team began discussions in separating the AM/FM operation a second time. The area was pretty well saturated with FM receivers by then and new FM stations were

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Automation — DJ Upgrader

GOOD DEEJAYS GET BETTER, and indifferent ones become good, with automation, says Mel Elza of KGRC, FM station in Quincy, Illinois, that has been pulling the No. 1 rating in the area.

What's more, the good DJ will want to stay with the station, rather than follow the widespread pattern of moving around in search of greener pastures. He won't want to go back to the air mike once he has got used to automation.

Why? Simply because no announcer or DJ, no matter how good he is, can be on "live" for long stretches of the day without goofing, saying something inane, or repeating himself obtrusively. When his talk is pre-recorded, he can concentrate on making it good, without all the distractions or operating the audio input. More than that, he can listen to himself and figure how to improve his material and sound even better.

Thus automation gives the DJ a sense of security, the feeling that he is improving on the job, *not* losing

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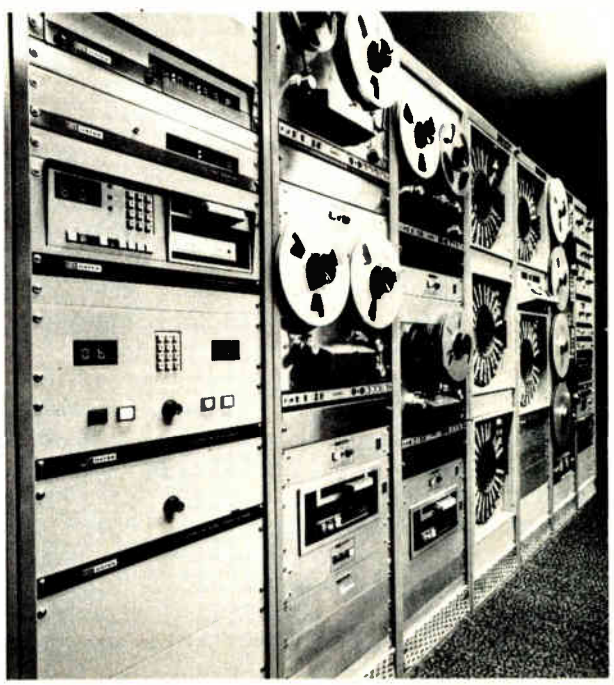


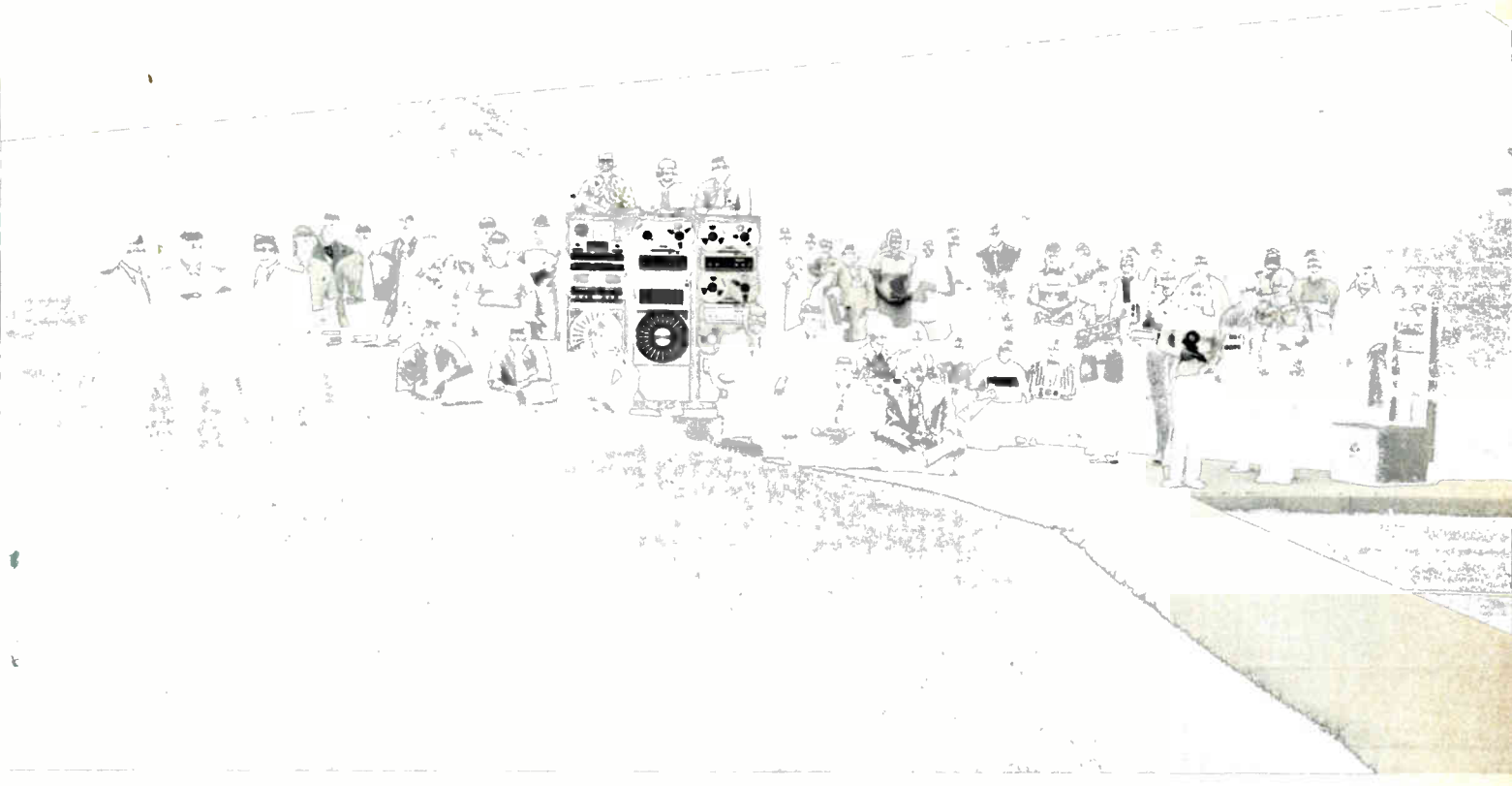
Gates digital touch-control program automation equipment at KGRC.

World Radio History

Automation is more than equipment
It's the people who stand behind it. . . .

schafer

FIRST IN AUTOMATION



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75 Castilian Drive, Santa Barbara Research Park
Goleta, California 93017

Schafer Electronics Ltd.
5824 Burbank Road, SE, Calgary,
Alberta, Canada T2H1Z3

In Hawaii, Mexico, Puerto Rico and the Virgin Islands contact:
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For the rest of the world contact:
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Circle 119 on Reader Service Card

World Radio History

One Computer, Four Big Jobs

Susquehanna Broadcasting uses an NCR 100 to schedule and log recorded music for programming of five FM stations, to do major accounting for the stations, to handle billing for a cable TV system, and orders and billing for a subsidiary pottery business.

YOU ARE FURNISHING ALL THE PROGRAMMING to five FM stations, all recorded, mostly "standards" originally recorded in 1965-70. You want a careful balance of selections on each half-hour recorded segment, with no artist repeated in a four-hour segment, with variety of music sustained, and no single half-hour tape to be repeated in a 68-hour segment. These are all proven elements of the format's success.

Scheduling the recordings to achieve these objectives would be impossible manually: preparing a week's programs for five stations would take more than a week, if it could be done at all. At Susquehanna Broadcasting Company of York, Pennsylvania, an NCR-100 computer does the job in about three hours every Thursday for the week beginning the following Monday.

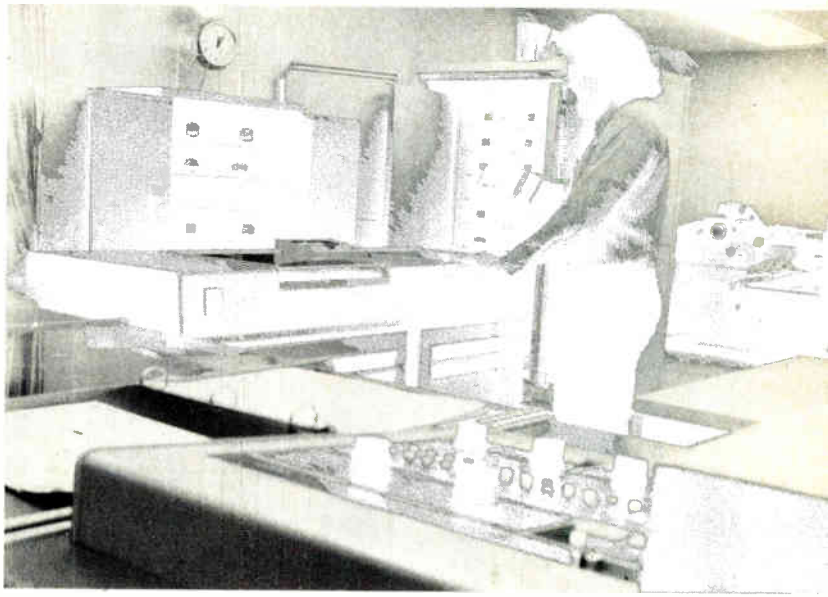
"We could not do what we are doing on a manual basis" says Robert B. Shipley, group FM program director. "The computer enables us to stay on target with the type of music we play, and it controls repeats."

It also permits Susquehanna to operate the FM stations with minimal staffs since the week's pro-

NCR 100 computer (foreground) allows Susquehanna Broadcasting to choose a week's recorded music for each of five FM stations, record the music, and forward it; selection takes only three hours a week.

World Radio History

Recording the tapes for the five FM stations is all done in Susquehanna's "home" station, WSNA-FM in York, Penna. Each station gets 412 tapes a week.



Numbers and artists of each selection are entered on magnetic disc storage in computer, for selection process which maximizes desired format and voids quick repeats of artists.

gram logs and tapes are pre-ordained and need no on-site preparation.

The Susquehanna approach is similar to that of the research laboratory where tests are conducted and the results are analyzed for flaws, re-examined and tried until a logical solution is found. In the same vein, the computer goes through a trial and error process, matching and rejecting half-hour tapes until the log assembled meets Susquehanna's requirements. One result has been an average of less than one hole per week to fill.

Each station is furnished with 412 tapes, half in one tempo for 7 a.m. to 5 p.m. listening and the other half featuring an easier beat for playing 5 p.m. to 7 a.m. The tapes, which include breaks for commercials, news, and weather, are identified by number. The number, selections, and artists on each tape are captured on the computer's magnetic disc files.

The computer not only selects a week's tapes, but also prints a program log for each day's broadcasting. If there are any holes, they are filled manually in York before the logs are distributed to the stations.

While the weekly log indicates when each tape is to be played, a computer list accompanying the tape details the selections, timing, and break points.

Besides serving the stations themselves, the computer draws on its disc files to print an alphabetic list of selections and the number of times they're on the tapes. Management uses the report to determine if the songs are being featured in proportion to their popularity and in keeping with the company's ideas on good listening.

Another computer report shows the frequency each tape is being played. The information alerts the programming staff to examine why one tape may be getting more plays than another, or if a frequently broadcast tape may have outplayed its effectiveness.

But all this accounts for less than 10% of the computer's weekly operation time. Another 6% or so is devoted to doing the billing for Susquehanna's cable TV operation, CATV of York. The rest of the time goes into the accounts receivable records for seven AM and the five FM outlets and billing for a subsidiary pottery business.

Bills are prepared by the AM and FM stations and copies are sent to York where the accounts receivable files are updated and aged and sales are analyzed. Aside from typing the bills, the local stations have nothing more to do with billing and accounts receivable paperwork.

On the other hand, the computer prepares the bills sent monthly to some 17,000 cable TV customers. Bills are prepared weekly on a cycle basis and receipts are posted at random daily, at which time the accounts are updated.

The bills are in continuous card format. The company has delayed making the bill a turnaround document because of a large number of exception payments and because the volume has not yet warranted it. But the bill, according to Larry D. Potteiger, data processing manager, could easily be converted and Susquehanna can do the billing for several additional cable TV companies without appreciably increasing bookkeeping costs.

A diversified company, Susquehanna demands versatility in its data processing, which is listed on the company management chart as a division and viewed by Mr. Potteiger as a "captive service bureau." As such, it post-bills and processes orders for

World Radio History

With names of selections and artists recorded in computer memory, operator starts computer run which will "choose" a week's program log for the five stations.

The computer also maintains records of seven AM stations and prepares a number of reports for station management, one of which is coming out of printer here.

Robert B. Shipley, program director for FM stations of Susquehanna Broadcasting, looks over list of taped music prepared by the computer.

Susquehanna-owned Pfaltzgraff Pottery's three divisions—Stoneware, Metalcraft, and Simpson Limited.

When orders are received, they are edited and the information is entered into the NCR Century 100. The computer stores the data and prints the necessary shipping copies/bills of lading and order register. The shipping documents are sent to the warehouse where the items are picked. Susquehanna makes a point of treating the three divisions as separate companies. Each has its own documents and loading platform.

After the orders, which average 150 to 180 daily for all divisions, are shipped, the computer prints the invoices, updates the accounts receivable file, prepares an invoice register, and reduces inventories.

Sales and inventory reports are produced daily. Open orders, including current, future, and back orders, are reflected in the remaining available inventory. Applying set minimums, the production department can determine output needs.

The reports are broken down by product and line for each of the divisions. Simpson has four major lines and 200 items within each. Metalcraft markets 200 products in each of two major lines, while the Stoneware Division has six lines, also each with 200 items.

The computer performs the usual aging that goes with every accounts receivable record-keeping process. There are 20,000 customer records in the file. It also figures the commissions based on the sales information captured on entering the orders. Performance reports by customer and product sales forecasting are two other computerized summaries.

Bar graphs are prepared by the computer which show each line's production, orders, shipments and inventory. The graphs are used by management in determining output cycles and establishing work schedules.

The computer also processes the weekly payrolls for the manufacturing operation and the semimonthly pay records for the salaried radio personnel.

Meanwhile, inquiries from national advertisements of Pfaltzgraff products are answered by the computer which matches the zip codes of the customers with those of the closest dealers. The letter printed by the computer thanks the customer and gives him the address and name of the nearest dealer which is stored on a master file. At the end of the month, the computer lists the names and addresses of inquiring customers and the information is mailed to the dealers.

The company averages 600 customer responses per week. In the past, the equivalent of one and a half secretaries spent full time matching inquiries to dealer locations and typing response letters. This now takes the computer less than one hour per week.

This non-broadcast use has been detailed to suggest additional ways a small computer might be put to use by other broadcast operations. The moral is the *versatility* of automated data processing, making it adaptable to almost any need. **CM/E**

Tektronix insert: →
Circle 120 on Reader Service Card;
For demonstration, Circle 121.

World Radio History

Color Monitor Setup ...more than meets the eye.

Improve color monitor performance with the TEKTRONIX J16-TV Photometer/Radiometer. Monitor screen color temperatures may be quickly and accurately adjusted or matched, even by unskilled personnel. No individual judgement is required as with visual comparison techniques.

The red, green, and blue guns are individually adjusted to predetermined intensities, both at 10 and 100 IRE units. Tracking problems between low and high levels are observable and can be corrected before becoming appreciable.

A monitor adjusted today with the J16-TV can be adjusted to give exactly the same color a week, month, or year from now. Two or more similar monitors may be matched for identical color.

With optional accessory probes, the J16-TV can be also used to measure luminance of both color and black and white monitors, and for measurement of studio or remote illumination.

Contact your nearest Tektronix field engineer for a demonstration, or copies of application notes describing the television applications of the J16-TV. Priced at $895.

the J16 digital photometer an eye for color

TEKTRONIX®
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World Radio History

Subscription TV — Will It Really Pay?

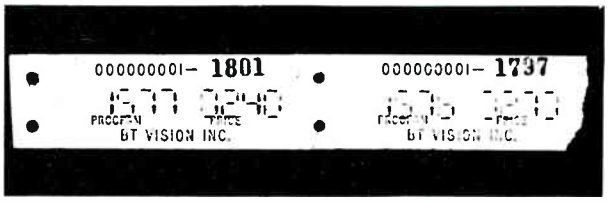
Definitely yes, say three companies contending for the STV subscriber dollar in the newest round of CPs and planned station openings. 1974 should be the shakeout year once and for all.

PAY TV, OR SUBSCRIPTION TELEVISION to be more precise, is still on the come. There's not a single such system now on the air pulling in subscribers' dollars. But there is action. Recently, the two existing systems from Pay Television Corp. (nee Zenith) and Teleglobe have been joined by Blonder-Tongue. Zenith gave up the ghost after more than six years of pay-TV telecasting in Hartford and sold its system and all rights to a new Chicago-based company called Teco, Inc. Then Teco changed its name to Pay Television Corporation, because there was already a Teco registered in Delaware, where it incorporated.

"A system that's been around for a little while is Teleglobe Pay-TV Systems, Inc. In the process of development and promotion for several years, the company is ready to go on the air now as soon as its station is ready in Milwaukee. The FCC is still considering the company's CP application.

Newest star in the arena is BTVision—Blonder-Tongue's brainchild. This one has several features that make it especially attractive, including a full-time "barker" audio channel that advertises the latest offerings continuously when the set is turned on. Key element here is impulse-buying of pay programs by the subscriber—something that's not possible with the Teleglobe.

"Phonevision," Zenith's pay-TV system, produces scrambled picture (like that on left set above) if no decoding is available. With decoder (top of right set) the picture is restored to full visibility.



Strip ticket printed automatically when subscriber pushes button on decoder in Blonder-Tongue's "BTVision" subscription system, identifies for billing the program watched.

"BTVision" decoder has roll of strip tickets inside with complete record of programs watched. The roll is collected monthly for billing.

Just how important a factor subscription TV is today is exemplified by the wholesale installation of STV systems in hotels across the nation. One such operation, Trans-World Communications (a subsidiary of Columbia Pictures), cites figures of some 29,000 hotel rooms that now have STV installations.

The system now used by Pay Television Corp. is basically the same as it was during the Hartford tests. Both audio and video are scrambled—the video scramble being done by displacing alternate groups of eight-line scanning segments, causing a jitter type of effect. The starting block for each of these eight lines is constantly changing, giving a kind of "crawling" effect. The audio is scrambled by moving it to a frequency that the TV receiver can't handle. This frequency-shifted signal is the simplest part to unscramble.

Billing consists of a ticket almost as large as a credit card. This ticket contains some electronic circuitry—a matrix that can handle up to five incoming frequencies, and provides up to six output frequencies. This makes the number of possible combinations huge, according to PTC's President, Peter Vanbeek.

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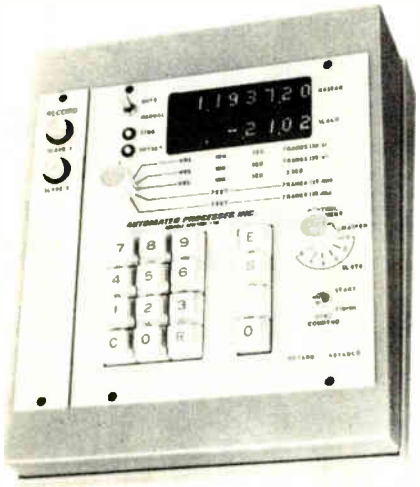
World Radio History

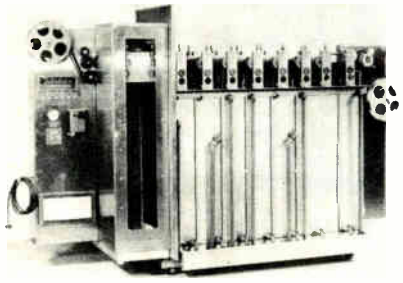
BROADCAST EQUIPMENT

Synchronizer for all magnetic recording machines uses time-code system to control audio, video, and magnetic film units. Maglink can lock any combination of magnetic recording units in sync, even during fast motion, offset them a determined amount, start



and stop according to a preset program. Sync resolution is 1/300 second and typical search accuracy is 0.2 seconds at 15 ips. AUTOMATED PROCESSES, INC. **275**

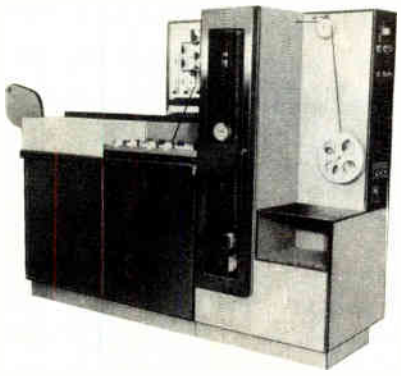
Processor for Kodacolor II handles all film sizes from 8mm to 35mm. Model KC-735 has Micro-Demand film transport which provides self-compensating tension control. It has temperature



control with thermistor sensor, air squeegee, dry box with dual heat input. FILMLINE CORPORATION. **276**

Safety climbing system attaches to CATV towers, permits compliance with OSHA safety standards. APC "Safety Rail" includes the rail, attachable to tower ladder, the sleeve which slides up and down rail, and safety belt attachable to sleeve. Rail comes in 21-foot lengths, has positive stops every six inches to prevent falls. ANIXTER-PRUZAN. **278**

Processor for Super 8mm and 16mm Ektachrome is fully automatic, entirely self-contained. Houston Cine Pro

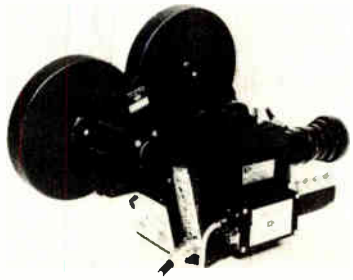


has a processing speed of 24 feet/minute, and a bottom-tendency drive system that minimizes film tension. HOUSTON PHOTO PRODUCTS, INC. **277**

Field strength meter operates on any single AM band frequency, as set by plug-in modules. FSM-1 can be shifted to any other frequency by module replacement, reads 100 microvolt/meter to 1 volt/meter directly on front-panel meter. Harmonics and other spurious signals are at least 50 dB down. Operation is on 6 standard D-cells. DELTA ELECTRONICS. **279**

Bridging sequential video switcher has maximum video output of 2 volts, P-P, frequency response ± 1.2 dB to 12 MHz, switching time less than 1 microsecond. Model V150BSS provides audio-follow-video operation, three position toggle control and variable switching interval. VICON INDUSTRIES, INC. **280**

Preamplifier for condenser microphones and magnetic recording head are two new accessories for 16mm

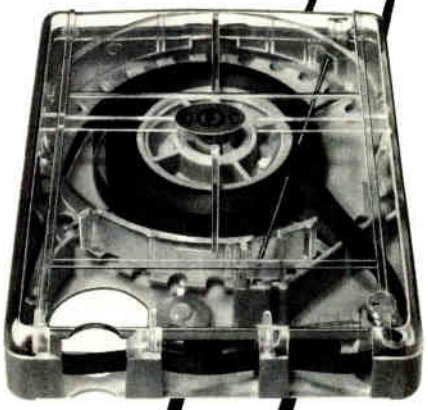


camera sound systems. Preamplifier, for CP-16/A cameras, adds capability for one Sennheiser 804/805 microphone; system retains inputs for two

continued on page 39

Inter-Track Phasing Problems?

Not with FIDELIPAC'S new Model 350 Adjustable Automatic Tape Cartridge.



The one designed especially for applications requiring extreme accuracy of tape guidance at the corner post. No modification of your cart machine, the Corner Post guide height is easily user-adjustable to suit specific needs with range of adjustment well beyond even that needed to cover extreme cases.

No need for Inter-Track Phasing Problems anymore!

Ask your Fidelipac Distributor for complete information and a sample.

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With our mono recorder you get the low end of our line. Not the short end of the stick.

If you've heard our 24-track recorder, you've heard our mono, two and four track units—they're like peas in a pod.

Because while our new low end Series 79 mono, two and four track Professional Audio Recorders are priced like the competition, they're built like our high end eight, sixteen and twenty-four track machines.

You get the same Isoloop® differential drive transport, with its extremely low flutter and wow, automatic tape tensioning and easier editing.

The same electronics, with built-in overdub, three selectable speeds and state-of-the-art signal-to-noise ratios and frequency response.

The same dc servo capstan with external input to enable the use of synchronization and resolving equipment.

Even the same convenient, high-performance options: A synchronizer/reader for instant sound sync. Selectake® for automatic tape positioning. Remote transport controls. A 5 to 45 ips variable speed control. And an update kit for adding more tracks to the mono or two track units.

At their new prices, the 3M Series 79 mono, two and four track recorders are more than competitive for mastering, mixdown, editing or station automation. We don't give you less machine when what you want is fewer tracks.

For the full price and performance story, contact one of the listed dealers or Professional Audio Products, 3M Company, 300 S. Lewis Rd., Camarillo, CA 93010. Ph: (805) 482-1911. TWX:910-336-1676.

We've been there. And brought the answers back.

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Aengus Engineering, Inc.
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Audio Designs & Mfg. Inc.
16005 Sturgeon
Roseville, Mich. 48066

Audio Recorders of Arizona
3830 No. 7th St.
Phoenix, Arizona 85014

Automated Processes, Inc.
80 Marcus Drive
Melville, N.Y. 11746

Fidelity Sound Company, Inc.
GSA Dealer
1200 18th St., N.W., Suite 105
Washington, D.C. 20036

Gill Custom House, Inc.
8813 W. 95th St.
Palos Hills, Illinois 60465

High Fidelity Showroom
6383 Clayton Road
Clayton, Missouri 63105

Houston Electronics
5709 Savoy Lane
Houston, Texas 77036

Jackson Sound Productions, Ltd.
1403 So. Lipan
Denver, Colorado 80223

Martin Audio
320 W. 46th St.
New York, N.Y. 10036

The Maze Corporation
1900 First Ave. No.
Irondale, Birmingham, Ala. 35210

Milam Audio Corp.
700 West Main St.
South Pekin, Ill. 61564

Pams, Inc.
4141 Office Parkway
Dallas, Texas 75204

Sound Specialties
2009 Naudain St.
Philadelphia, Pa. 19146

Westlake Audio, Inc.
6311 Wilshire Blvd.
Los Angeles, Calif. 90048

Sales Offices:

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P.O. Box 76
West Caldwell, New Jersey

3M Company
P.O. Box 28158
Dallas, Texas

3M Company
220 E. 21st Street
Chicago, Illinois

International Sales Offices:

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3M Building 1-21 Akasaka 7
Chome Minatoku
Tokyo, Japan

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P.O. Box 5757 Terminal "A"
London, Ontario, Canada

3M U.K. Ltd.
3M House
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Mincom Products, Sales and Service
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Greenford, Middlesex, England

3M France
135 Boulevard Serurier
75019 Paris, France

PRODUCTS

low impedance mikes and line input. $175. The 3XL record/playback head is encapsulated in a single module, fits all cameras that accept Auricon-type heads. $660. CINEMA PRODUCTS CORP. **282**

Audio frequency power meter has direct-reading impedance setable from 2.5 ohms to 20,000 ohms in 40 steps.

Model OP-963 covers 0.01 watt to 100 watts, over 20 Hz to 20 KHz, and is also calibrated from −10 to + 10 decibels. MCGRAW-EDISON CO. **283**

Lighting kit for closed-circuit television includes units needed for many CCTV installations. SMITH-VICTOR. **285**

Stand-by generator produces 80 kilowatts, is driven by a gas turbine, starts automatically if power fails. Entire set is about four feet long, two feet wide and five feet tall, runs on unleaded gasoline, kerosene and some diesel fuels. ROHR INDUSTRIES, INC. **286**

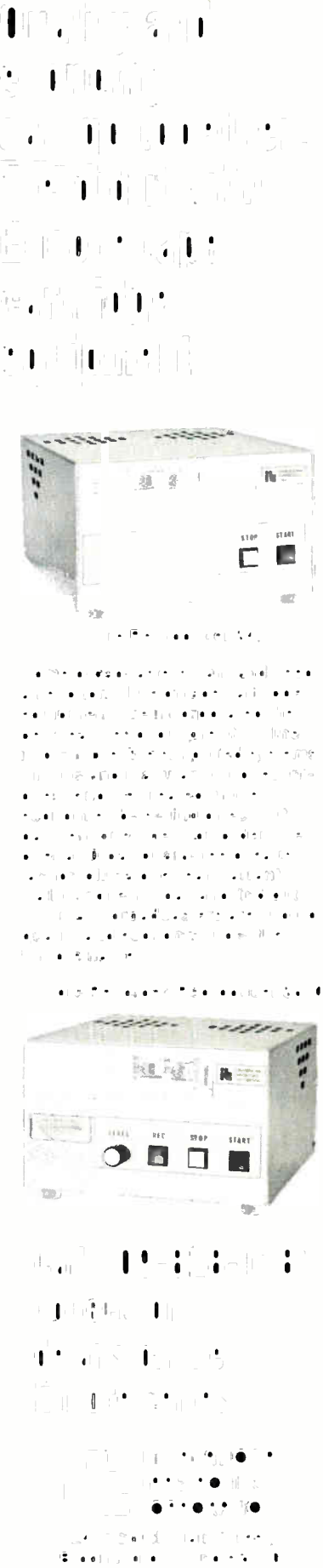
Trencher has 30-horsepower drive, hydraulic steering and hydraulic control of all working systems. Model R30 digs to depths of six feet, widths of 18 inches; it has four digging-chain speeds, plus reverse. Backfill blade is hydraulic. DITCH-WITCH (CHARLES MACHINE WORKS). **287**

Head demagnetizer has a flexible probe for reaching hard-to-get-at heads.

Model QM-202 is designed to demagnetize heads, capstans, and tape guides in open reel cartridge and cassette machines. NORTRONICS COMPANY, INC. **288**

Phono pickup cartridges have very low

continued on page 40



Circle 124 on Reader Service Card

World Radio History

RCA's lead-oxide Vistacons make the scene.

They do it by giving you the kind of performance you need for top-quality pictures. Each one delivers the scene virtually 100% free of microphonics. And every Vistacon is pre-tested in an actual TV camera before shipment!

It's easy to replace with RCA Vistacons, too. Types 4591/R, G, B, and L, respectively, are direct replacements for types 55875R, G, B, and L. And RCA's 4592/R, G, B, and L, respectively, are directly interchangeable with the XQ 1020R, G, B, and L.

So next time you need a lead-oxide replacement, check out RCA Vistacons. You'll get the performance you want with the service you've come to expect from the pioneering leader in TV camera tube technology. Call your RCA Camera Tube Distributor for complete information. Or write RCA, Commercial Engineering, Section 21G/G10, Harrison, N.J. 07029.

RCA Electronic Components

Circle 125 on Reader Service Card

PRODUCTS

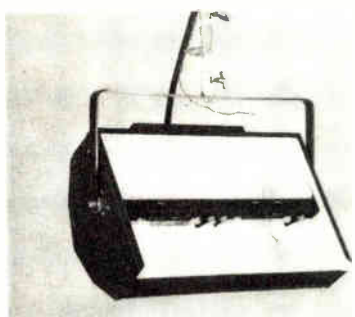
tip mass. 600 series is made in three models: 600A, spherical tip, 2 to 4 grams tracking force; 600E, elliptical, 1½-3 grams; 600EE, eliptical, 1-2 grams. STANTON MAGNETICS. **289**

Single-channel AML transmitter operates between 10.5 GHz and 13.25 GHz, carries a standard color video signal, plus audio, in a 6 MHz bandwidth. Model STX-141 has a peak video carrier level of 5 watts, is intended primarily for studio-transmitter and studio-headend links, and long-haul importation of video signals or multichannel distribution with long paths. THETA-COM. **290**

Solder-feeder adds one-hand soldering to most standard solder guns. "Free Hand" solder feeder has spool and

thumb-operated feeder mechanism delivering controlled amounts of solder at tip of gun. $8.95. SCHURMAN PRODUCTS. **291**

2000-watt softlight collapses for easy transport or storage. "Zip-Lite" produces smooth, shadowless lighting, holds two 500W, 750W or 1000W



quartz lamps. $195. BARDWELL AND MCALISTER. **292**

Power signal generator for 225 to 400 MHz range maintains any level from 1 to 50 watts within 0.5 dB over the range. Model 473 can be a cw signal source, linear sweeper, FM or AM generator. Reflected power limiter keeps reflected power to 10 watts maximum. AILTECH. **293**

Portable microwave TV field survey meter is primarily for MDS service,

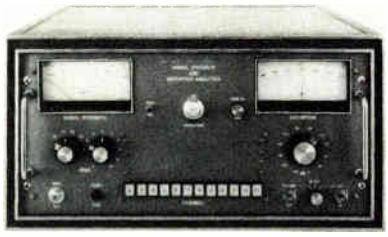
World Radio History

operates at 2150 MHz. Model MDS-1 Field Survey Meter holds a 5-inch crt for observing picture quality, and a meter for signal strength. DC-to-DC converter is included to power down converter on 2150 MHz or the 2500 MHz instructional TV band; unit is also usable on TV channels 2 thru 13. VARIAN MICROLINK. **294**

Time code generator and time code reader form system for putting SMPTE 80-bit code on video and audio tape, and using code for indexing, searching, precise timing. Model TCG-80 generator can be used for real or arbi-

trary elapsed time, or as station master clock. Model TCR-81 reader decodes recording, has single-frame freeze and precise scene logging. TCR-80, $1900; TCR-81, $1975. KAITRONICS CORP. **295**

Signal-strength meter and distortion analyzer for CATV is available for any 12, 24, or 36 channels. Model R12 operates at +20 to +70 dBmV output, measures cross mod to −110 dB, 2nd and 3rd order products to −90 dB,

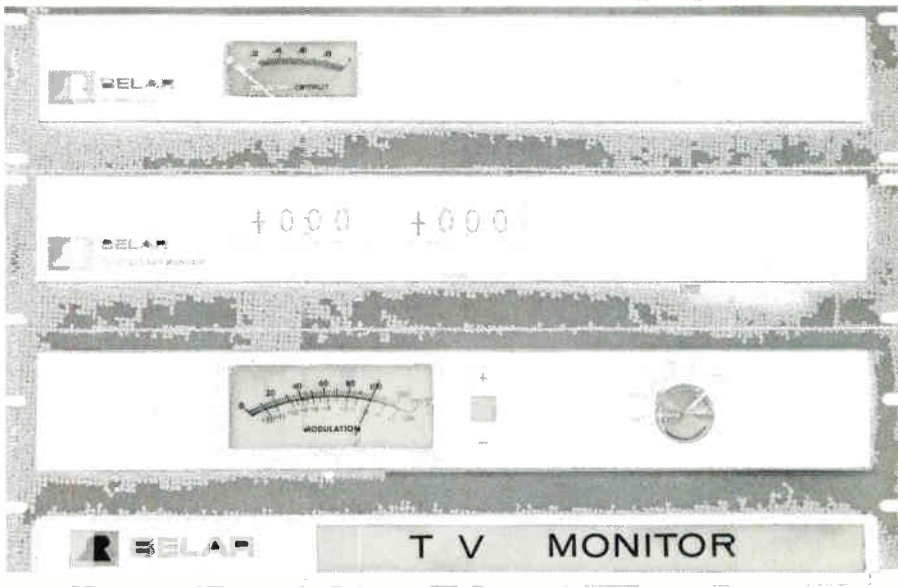


signal strength in dBmV. 12-channel version, $5,800. DIX HILLS ELECTRONICS. **296**

Audio console series includes models for mono, stereo, and stereo/mono with 5, 8, or 10 mixing inputs. Series has plastic faders, momentary push-button on/off controls and machine control circuits for each fader. SYSTEMS ENGINEERING CO. **297**

Tape recorder for broadcast and studio use has editing mode with reel motors in balance opposing torque, allowing for highly precise manual movement. Model 1001 has tach-controlled motion sensing for smooth shift out of fast speeds, closed-loop dural capstan drive, pause control. $1695. TAPE-ATHON. **298**

REQUIRE ACCURACY . ....THEN BUY BELA MONITORS



The least you can afford is the best possible monitoring of your program material. The Belar TV Monitoring System (VHF or UHF) guarantees your getting what you need . . . accurately.

The Belar TVM-1 Modulation Monitor *is* the most accurate monitor available. Our advanced design starts where others leave off. TVM-1 Monitors both positive and negative modulation simultaneously and registers the higher of the two. Yes, it even tells you whether the modulation is positive or negative and calibration accuracy can be checked from the front panel modulation calibrator at any time.

The TVM-2 and TVM-3 Digital Frequency Monitors will measure TV visual carrier and aural carrier independently or aural intercarrier. These monitors provide continuous monitoring with inhibited off-frequency alarm drivers, switch settable to either ±500 or 1000 Hertz. It requires three successive errors to produce an alarm. This means *no* false alarms for you.

For remote control operations add the RFA-3 for off-air monitoring.

If your TV monitoring requirements include ease of operation, functional checks and ACCURACY, call or write today for more information. We know you'll make the right decision and BUY BELAR.

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Where Accuracy Counts . . . Count On Belar
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World Radio History

CCA SOLID STATE 40 WATT HI FIDELITY TRANSMITTERS AND RECEIVERS permit you to originate programs from remote locations — designed for 115VAC or mobile use. Three inputs with mixing — 15 Kc response.

SAVE ON TELEPHONE EXPENSE with CCA REMOTE PICK UP and STUDIO TRANSMITTER LINKS

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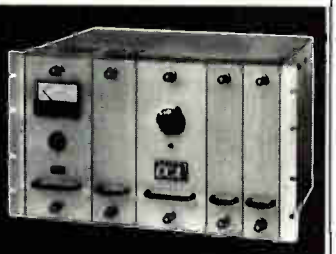

CCA SOLID STATE STUDIO-TRANSMITTER LINKS available for 200 Mc, 300 Mc, 450 Mc and 900 Mc. 10 Watts output High Fidelity good for Mono or composite input. Plug-in modular construction.

CCA "CITADEL" CARTRIDGE MACHINES feature direct drive, built-in 150 cycle, at no additional cost, plug-in electronics — full accessibility — Playback $495 for Mono, $725 — Stereo; Record/Play $695 — Mono, $995 — Stereo.

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CCA "CITADEL" PLAY UNITS are only 5¾" wide. Thus, three can be mounted side by side in a standard 19" rack.

CCA offers a complete line of solid state AM transmitters 4 to 50 watts for campus radio and broadcast emergency service.

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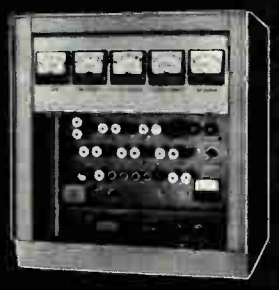

CCA offers both vacuum tube and solid state FM transmitters from 10 to 100 watts for low power and emergency application.

MINI

Perfect for limited automation operation. Can be expanded to complex format.

Priced less than $6,800 includes controller (2) Revox, (1) carousel and external Citadel Record/Play.

CCA AUTOMATION MINI to MAXI

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MAXI

For the most complicated format. Can control 12 different sources for as much as 600 events . . . Approx. $15,000.

NEW LIT

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

"Guide to Cassettes" is a 48-page brochure for the layman and advanced amateur on the **use of audio cassettes.** TDK Electronics Corporation. **200**

Application note gives extensive technical detail on **switching high-frequency wideband RF signals** with analog integrated circuits. Siliconix Inc. **201**

"Aligning Your Cartridge System" is a new booklet covering every aspect of **cart machine adjustment** including head azimuth, height and insertion; tape guide and pinch roller adjustment; etc. Fidelipac. **202**

Real time spectrum analyzers and digital integrators are the subject of 8-page catalog with comprehensive technical applications data. Honeywell. **203**

Materials handling equipment is covered in "One Source" catalog, including rolling tables, drum lifters, drum stands, dollys, etc. Economy Engineering Co. **204**

How to make tests required by FCC system performance regulations is covered in application note #21C. Singer Instrumentation. **205**

"Tests—Answers For FCC First and Second Class Commercial License" is a comprehensive review of typical exam questions, with answers, available at $9.95 from Command Productions, P.O. Box 26348, San Francisco, Calif.

Selection of **fuses for essentially 100% protection of semiconductors** is subject of engineering article in "Rectifier News," available as reprint. International Rectifier Corp. **206**

Tools and systems for rework and repair of electronic systems, including solder removal, coating removal, miniature machining, etc. are covered in 32-page catalog, with extensive application information. Pace, Inc. **207**

"Federal Telephone Directory" is a new updating of **listings for all major government departments, agencies and commissions** in Washington, D.C.; it includes organization charts, marketing aids, etc. Federal Telephone Directory. **208**

World Radio History

FCC Rules & Regs

continued from page 21

(BM/E, June and July, 1972) or the more subtle and unexplored "fairness" aspects of commercials exemplified in the cigarette controversy.

More generally, it must be emphasized that in declining to *require* the Commission to implement right of access rules, the Court did not disable it from doing so on its own at some point. Notably, the CATV public access requirement was mentioned with approval. This statement can be interpreted to mean that scarcity of frequencies may be the key to the Court's choice, and that access rights would outweigh editorial rights where scarcity is not a problem.

Nonetheless, broadcasters have been greatly assisted by the decision. Serving the public interest conscientiously and being excessively regulated are both major burdens. Yet public service is the role broadcasters have chosen and that which they do best. In reaffirming the preference for responsible, independent judgment over paternal governmental requirements, the Court is merely reminding licensees of the obligations they have already assumed.

A major consideration in the decision was the enormous *administrative burden* visited on the FCC and on broadcasters by the Court of Appeals' decision. Another strong element was the problem of controlling the economic aspects of access rights—that such a system would be "so heavily weighted in favor of the financially affluent or those with access to wealth." These expressions of concern, like the constitutional balancing, reflect the Court's choice of independent responsibility over detailed regulation.

In summary, the decision in *CBS* v. *DNC* is, indeed, a victory for the industry's liberty, as trumpeted. But it also reminds the broadcaster that the "fairness doctrine" is a necessary element of this freedom and that "fairness doctrine" obligations go well beyond the redress of specific complaints. Broadcasters should temper their satisfaction with a strong awareness of the responsibility which accompanies their independence. **BM/E**

Change Sound to Silence with a

TABERASER

This rugged, heavy duty bulk tape eraser wipes sound from all magnetic tapes, cartridges, cassettes and magnetic film stock; handling up to 2".

It erases with minimum residual noise because the field automatically diminishes at the end of each 30-second cycle.

A thermal control and blower keeps the unit below 71° C.

Priced at only $395.00.

For the distributor in your area—Call or write:

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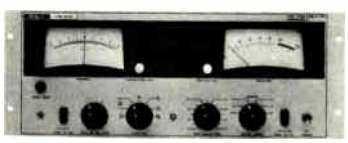
"a complete monitoring system"

FM • STEREO • SCA

monitors

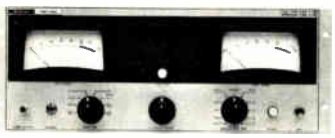
TBM•3700 this is for FM MONAURAL

internal calibration • measures internal S/N • carrier failure indication • full remote metering available • combined frequency/modulation • **$1,450.**



TBM•2200 A add this for FM STEREO

simultaneous left/right • reading of modulation metering function on one switch • direct reading of • separation and crosstalk **$1,200.**



TBM•2000B add this for SCA

internal calibration of • SCA injection, frequency and modulation plug-in modular design • **$1,200.**

TBM•2500C add this for OFF AIR monitoring

excellent sensitivity • superb selectivity • 45 dB AGC range • phase linear for • excellent stereo/sca recovery **$485.**

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World Radio History

DJ UPGRADER cont. from pg. 30

his "sparkle," and his employability, as the difficulty of on-air operation erodes his creativity.

KGRC-FM is fully automated with a Gates digital touch-control system. The program format is "Contemporary Music" and Elza says that the automation allows control of the format at a very high level, with careful selection of the music that they have found most appealing to their listeners. The audience includes a very high ratio of young marrieds. This group is "motivated" toward FM *and* toward contemporary music.

The audience, however, is much broader than that, as evidenced by recent surveys showing KGRC with 48% of the local audience during a number of prime periods. The management puts a large measure of the reason for their success squarely on automation, which has allowed them to make the most of the available talent, as well as program the music most effectively.

"Automation is the frontier of creativity in radio," says Elza, pointing, as do so many other successful users, to the *flexibility* of today's better equipment. KGRC can put in talk wherever they want—and they do, with, among others, a regular local news program, and a couple of morning chatter programs—all taped and sharpened for the most effective presentation.

The station has attracted so much approval for its smooth, effective sound that others—non-competitors—have asked for help, and the management plans a consulting service for stations that feel they are not getting what they want from automation. Anyone interested should address Mel Elza at KGRC, 8 East Plaza, Quincy, Illinois.

B-E Spotmaster®

CONSOLE YOURSELF!

Model 5S11 Stereo

Model 5M11 Mono

SPOTMASTER IS HERE . . .

with outstanding new audio consoles from $825

Here are the audio consoles for stations whose standards are higher than their budgets. Look what you get:

Model 5M11 Mono—11 HI/LO inputs into 5 mixers
Model 8M20 Mono—20 HI/LO inputs into 8 mixers
Model 5S11 Stereo—11 pairs of HI/LO inputs into 5 mixers
Model 8S14 Stereo—14 pairs of HI/LO inputs into 8 mixers

- Electronic switching of input channels via FET's
- Low and high level preamps for each channel
- Top quality ladder attenuators (Daven or equiv.); carbon pots optional at lower cost in mono models
- Identical program and audition output channels for dual console capability
- Individual program, audition, monitor, cue and headphone amplifiers, plus mono mixdown amps in stereo models
- Solid state construction throughout; modular, plug-in circuitry; superb specs; complete with self-contained power supply
- Beautiful as well as functional; wood grain side panels

Write or call for details about the budget-pleasing prices:

BROADCAST ELECTRONICS, INC.
A Filmways Company
8810 Brookville Road, Silver Spring, Maryland 20910 • (301) 588-4983
TWX 710-825-0432

BIG COUNTRY cont. from pg. 30

popping up all around us.

Our decision to go to a Country-and-Western format was not unanimous. There were some strong arguments to go to a format with a younger skew (soft rock) or a format with a universal audience appeal (beautiful music). The increasing national popularity of C&W, the large rural element in our coverage area, and the absence of *any* C&W music in the market were the main supports for the final decision.

At this point (September 1972), our engineering people had been approached by International Good Music to look at a new automation system they had devised. They also called our attention to a compatible syndicated format called "Big Country" produced by Programming DB, Hollywood, in which IGM owns a sizable interest. The primary features of this total program service from hardware to software seemed to meet our needs to the fullest degree.

The IGM 760 computer can carry seven days of programming in its memory. This system can be built in a tailor-made fashion to handle any mode of operation you wish. Our main concern, based on our previous experience, was to keep our operating costs at a minimum. The 760 opened the way to prepackage one week's programs with a minimum of manpower. We

World Radio History

knew that low costs were absolutely essential to our financial survival in our small but highly competitive market (4 VHF TVs, 3AMs, 3FMs).

The "Big Country" format from Programming DB featured separate voice tracks with new shows . . . dated by the DJs pertinent comments . . . for each day. Our hardware consists of seven Revox tape machines and two IGM Instacart tape decks (48-cart capacity each), along with the computer, a teletype log print-out, and various other components which enable us to program "Big Country" with separate voice tracks, a basic music library on ten-inch reels, and weekly updated top hits on cartridge. Together the hardware and software make a beautiful marriage.

In the beginning, though, there were some problems. IGM had a delivery problem which delayed our air-date. The system was assembled and put on the air (March 15) in a little more than three days . . . not enough time to eliminate the bugs. For the first two months of operation we had a lot of down time. We had to employ a staff of announcers to keep us on the air. IGM technicians and our own engineers worked around the clock to correct these problems. The week after an automation system is installed you will absolutely hate the man who designed it, and yourself for having anything to do with it. But as soon as you get the hang of the system, you'll be wondering why someone didn't think of this earlier.

Now we are operating WBGW with four people (not including top management). One of us (MacFarlane) is a combination "morning man"/operations director; there is a combination secretary/traffic director and two sales people (a guy and a gal). Our automation system is really doing what we wanted it to do . . . presenting a great sound and keeping operating costs at a minimum. Our billing increases with each week. We now have plans to go stereo as soon as practical. We can't predict the future mode of communications . . . developments come so fast . . . but we do feel that separate voice tracks with a *live* sound and computerized systems may reverse what many were calling a trend away from automation.

With the scarcity of good-quality announcers in a small market, automation plus a music/program service just has to be the answer. We don't have to worry about announcers being sick or about selections that a DJ might decide to play which wouldn't conform to our programming policies. We have better control over our programming giving us a constant good-quality sound seven days a week.

Here is a brief rundown of everyday operation. Along with m normal duties as operations mana er of WBGW, I (MacFarlane) als do an early-morning air shift wit the use of the automation equip ment facilities. As a "live" on-the air personality, I find the automa tion much more beneficial to th overall sound of the station than "live" announcer who must do hi own engineering. With simple pro gramming of the computer, I ca leave to others all the minor engi neering functions such as makin sure record/tapes are cued, com

continued on page 4

Paragraph 73.69 of the FCC's Rules and Regulations state

. . . every standard broadcast station employing a directional antenna must use a type-approved phase monitor.

FCC Approval No. 3-204

OUR AM-19 (204) IS THE ANTENNA MONITOR THAT MEETS ALL FCC REQUIREMENTS!

WHAT THIS MEANS TO YOU

1. If you're a new station or if you're making significant changes—you must have a type-approved antenna monitor by June 1, 1973.
2. If you operate your station with less than a first class radiotelephone licensed engineer, you must have a type-approved antenna monitor by June 1, 1974.
3. If you are presently operating your station by "remote control", you must have a type-approved antenna monitor Now! Or—you can use a monitor "properly configured", if such a monitor was manufactured after 1965.
4. Every other directional station must have a type-approved antenna monitor no later than June 1, 1977.

YOUR BEST CHOICE?

The AM-19 Antenna Monitor from POTOMAC INSTRUMENTS. The proven instrument for measuring phase and loop current ratio, the AM-19 can monitor up to 12 towers and accommodate DA-1, DA-2 and DA-3 patterns. Phase meter resolution is 0.5 degrees. Loop current accuracy is ±1.0% with a 0.5% resolution.

AND—the AM-19 (204) is the only *type-approved* antenna monitor that meets all FCC requirements NOW!

YOU MUST HAVE A *TYPE-APPROVED* ANTENNA MONITOR — CHOOSE THE AM-19 (204) TODAY!

For complete information, please write or call:

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Producers of NEMS-CLARKE Broadcast Equipment

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Phone: (301) 589-3125

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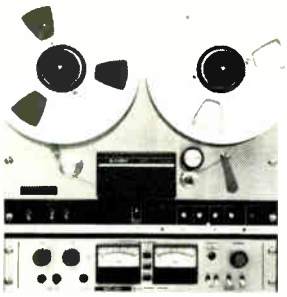
World Radio History

Loaded with Schafer value.



Schafer's new Model RP720-2 professional tape recorder and reproducer provides excellence in craftsmanship and performance at an unbelievably low price. Value-packed features include:

• 3 speeds • Ferrite heads • Positive reel locks • Hysteresis synchronous capstan motor • Plug-in head assembly • Tape index counter

For details on the remarkable performance-to-price ratio of this new tape recorder, contact Schafer Electronics Corp., 75 Castilian Dr., Goleta, Ca. 93017, (805) 968-0755. In Canada: Schafer Electronics Ltd., 5824 Burbank Rd. SE, Calgary, Alberta, Can. T2HIZ3, (403) 253-0351.

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Circle 142 on Reader Service Card

AM·RF amplifier

TBM—8800
$485

1.0 mV sensitivity•
excellent selectivity•
minimal•
signal degradation
remote/local•
high-low
power operation
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$2,000

. . . for LPB's dj5 mini-studio systems, delivered complete and ready for on-air, recording studio or remote operation.

Included are:

- Console.
- 2 Professional 3-speed 12-inch Turntables.
- 2 12-inch Tone Arms.
- 2 Stanton Cartridges, with styli.
- Turntable Equalizer/Preamplifier . . . 2 for stereo.

Nine systems to choose from . . . each with sturdy, handsome, white Formica® top furniture over blue textured finish steel legs and supports.

Other dj5 systems start as low as **$1125.** The larger dj8 systems from **$1225.**

LPB offers a complete line of broadcast audio equipment. Call or write us for all your audio needs, from microphones to tape recorders.

LPB

LPB Inc.
520 Lincoln Highway, Frazer, Pa. 19355 (215) 644-1123
In Canada: P.O. Box 669, Orleans, Ontario (613) 824-3232

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BIG COUNTRY cont. from page 45

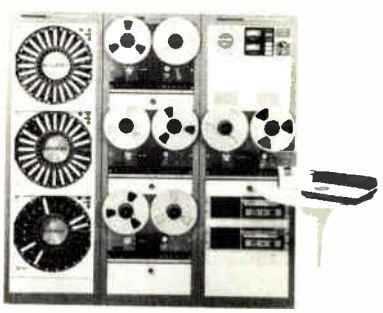
mercials are ready for airing, etc. I can concentrate on producing a better quality sound along with having more time to be creative.

After our "live" morning show we switch to full automation with the use of the music service. We can correct the programming at the end of each half hour, join network news, and also run the voice track and music on the air at the same time: a "live/in-studio" sound so true it's hard to believe it's taped.

Programming the computer's memory bank takes only three hours for a full broadcast day, including additions and deletions of commercials and changing music selections. System set-up (loading music and voice tracks daily) takes only about an hour per day. Maintenance on the systems, primarily cleaning, takes about two hours a week. We can program a full six days if we want to.

Automation is freedom!

SUPER ROCKER cont. from page 30



Schafer 903 system.

the manufacturer about all the things he could do with it.

So if you want to be a winning rocker like KBBC, or a personality MOR, or a top Country station, it's a matter of understanding the advantages of using today's automation. There are virtually no limitations on what you can do with a pre-programmed radio station. In fact, just think of the productive time your air personalities would have to produce better commercials, spec tapes, and station promotions if they weren't tied down to a "live" studio four hours a day! You might even find that your station could become more actively involved in the community! **BM/E**

World Radio History

SUBSCRIPTION TV Continued from page 36

Incoming frequencies are routed by the ticket's circuitry to some five or six outputs. If this is done correctly, decoding will take place. The system transmits—in addition to the basic audio and video signals—a "keying" signal, this is sent during the vertical interval. These signals are routed through the decoder and ticket, and if the right kind of ticket is being used, the program is unscrambled for the viewer. The ticket is mailed to the subscriber each month, and each month the electronic code changes. Every time the ticket is used, a perforation is made in it (electronically) for end-of-month billing. The ticket's capacity is 96 programs total. The ticket is returned to PTC, is read electronically, and the bill is prepared.

PTC's predecessor had been on the air for six years in Hartford. PTC has contracted to buy a TV station in Los Angeles (Channel 52) from Kaiser Broadcasting, and applications for approval of the transfer are now before the FCC. Vanbeek feels that this transfer of ownership should be completed within six to nine months. The company's present status: it's making a private stock offering to raise much-needed capital.

BTVision bows

Introduced at the NAB this year, this newest member of the STV family differs from PTC and Teleglobe mainly in its billing procedures. It's also more promotion-oriented as a system. Added to that is the fact that Blonder-Tongue now holds the only FCC license approval for STV broadcasting in the New York Metropolitan area. The Blonder-Tongue CP was purchased from Atlantic Video Corp. and the broadcast facility is planned for East Orange, N.J.

In the BTVision system, the transmitter's encoder suppresses the horizontal sync and alters the vertical sync pulse. The result at the receiver is a picture that has continuous random horizontal tear with a 10-Hz vertical oscillation. The program's audio goes out on a subcarrier, leaving the regular TV audio channel clear. This is used as a barker channel which makes continuous announcements to the potential viewer about the available program fare.

In the subscriber's home, the received signal goes through a decoder which is activated by a single pushbutton when the subscriber wants to watch a program. The barker channel also operates through the decoder's speaker, when the viewer doesn't want to turn on the TV set itself.

When the decoder button is pushed, a "real time" ticket is generated in the decoder by a built-in strip

continued on page 48

Replace your Ampex or Scully motor with a
BEAU MOTOR
Hysteresis-Synchronous Motor

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Crystasound Auxiliary Mixer for CP-16/A Cameras

The Crystasound Auxiliary Mixer is an integral part of the total Crystasound Recording System for CP-16/A cameras, the most versatile and efficient recording system for TV-news/documentary 16mm cameras available. The Crystasound Auxiliary Mixer is basically designed for those filming situations where it is not feasible for the cameraman to handle the sound recording process by himself. It is also required in situations where additional microphones are needed beyond those which can be accommodated by the Crystasound built-in Amplifier. The Auxiliary Mixer is an extremely lightweight (3 lbs. 1 oz.) and compact (6½" X 2½" X 6") unit, designed to accommodate four low impedance dynamic microphones, one condenser microphone and one line input, with individual mixing pots and on-off switches for each of the six inputs. The Auxiliary Mixer plugs in directly to the mixer socket on the Crystasound built-in Amplifier and draws all its power from the very same NC-4 nicad battery pack which powers the entire CP-16/A camera system.

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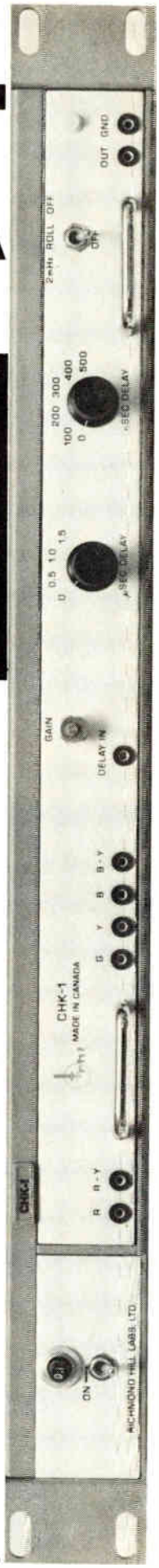

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SUBSCRIPTION TV Continued from page 47

printer. The ticket is marked with program identification number and price, and is stored in the decoder until it's mailed in with the monthly payment.

Security is a little sticky with BTVision. B-T spokesmen admit that congenital system-beaters may be a problem, but the initial installation in a subscriber's home would contain only enough blank billing tape to last for about a month. When a subscriber's credit rating or experience with the company is established, then longer tape rolls would be supplied. The tape is sequentially coded, so the subscriber who tries to tear off part of it before mailing it in would be spotted immediately.

The B-T decoder has a couple of other special features. Since it has its own audio, bilingual programs will be possible, with one language going out on the main channel; the other on the subcarrier through the decoder speaker. This can make possible such niceties as simultaneous sound tracks for foreign films—something you certainly couldn't get in a first-run movie theater. Another decoder feature is its lock. When the subscriber is away from his set and wants to prevent unauthorized use of the decoder, he can simply lock it and pocket the key.

The West Orange facility is being readied for Spring 1974 operation. In the meantime, B-T officials see a potential market of more than a half million homes in the greater New York area. The new production plant building in suburban Old Bridge is being expanded to handle the anticipated production of decoders.

There will continue to be some controversy over the superiority of STV over-the-air or via cable. Over-the-air proponents can point out several advantages:

- Consistant subscriber cost, since only antenna access is needed. In some cable systems, where only one in five households subscribe, the cost per subscriber can run as high as $400.
- If, as expected, only 10% of TV homes are willing to pay for STV, a cable system would need 200,000 subscribers to get a minimum of 20,000 STV viewers—the figure cited as the break-even point. Capital investment for a CATV system this large would be prohibitive.
- No municipal franchises are needed. The STV operator can install decoders without regard to municipal boundaries, and can do so quickly, without public hearings, agreements, and time lost to enormous installation procedures.

With all this going for it, and the fact that three different but not-too-dissimilar systems are competing for the viewer's dollar, STV is still very much alive and looking toward a resurgence. By this time next year, if current schedules are maintained, there should be at least three stations telecasting STV programs—along with their required 28 hours a week of free (sponsored) programming. Where it goes from there is still the big question. **BM/E**

World Radio History

PROGRAM FORMATS Continued from page 26

The automated top-40 station can provide a similar effect through the use of tertiary control of an independent voice source. An automation system at a top-40 station would use more carousels, as opposed to the reels at a wall-to-wall station. Because of the nature of the top-40 music, and because of the "tight" sound required, it is advantageous to put the station's music on cartridge tape. Actually, most live top-40 stations already do this, so there is no drastic change.

Formatting a top-40 station can also take on several different approaches. Our format calls for a top-10 song coming out of news, followed by the announcer telling us that the station doubles the music, followed by a solid Gold, followed by a station ID, spot, spot separation and so on.

While one obviously doesn't have to follow this specific format, it has been devised to demonstrate flexibility and tight program switching available with a modern automation system.

A typical program wheel used by a successful medium market station is as follows:

1st record—top-10
2nd record—Gold
3rd record—hit-bound
4th record—top-11-20
5th record—standard
6th record—top-20-40
7th record (if time permits)—a choice of either top-11-20 or 20-40
On the half hour—news
8th record—top-11-20
9th record—top-10
10th record—Gold
11th record—top-20-40
12th record—top-10
13th record—Gold
14th record—top-11-20

After every second record, the station inserts a stop set—which is a cluster of spots that can appear up to three times per half hour. Bumpers and separators can be used between records and spots. All the top-40 music is on cart, while the Gold is put serially on a reel. Spots, PSAs, and jingles are put on cart for carousels, and time-and-weather are left for the single play cart machines. Network joining is also adaptable with this format.

Automation in modern programming can be a valuable asset in reducing overhead, making a station more efficient and maintaining control of the desired format. A broadcaster will get out of automation exactly what he puts into it. If personnel operating the equipment are diligent, the equipment will work well. Most of all, the broadcaster should decide beforehand what he wants from his system, and carefully plan the system for today as well as for the future. In this manner, program automation can be most efficient for management, and pleasing to the listener.

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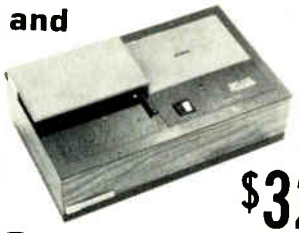

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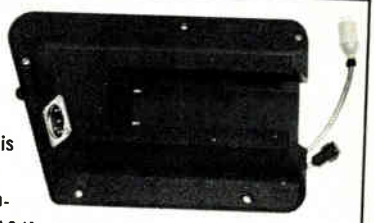

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Rear of Auxiliary Side Cover showing the 8-pin sound cable connector, compatible with all Auricon-type amplifiers.

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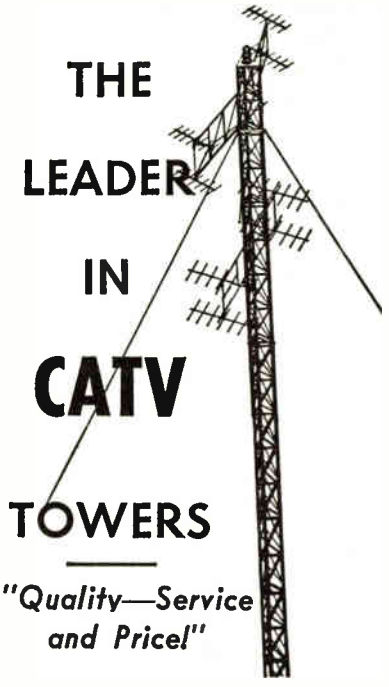

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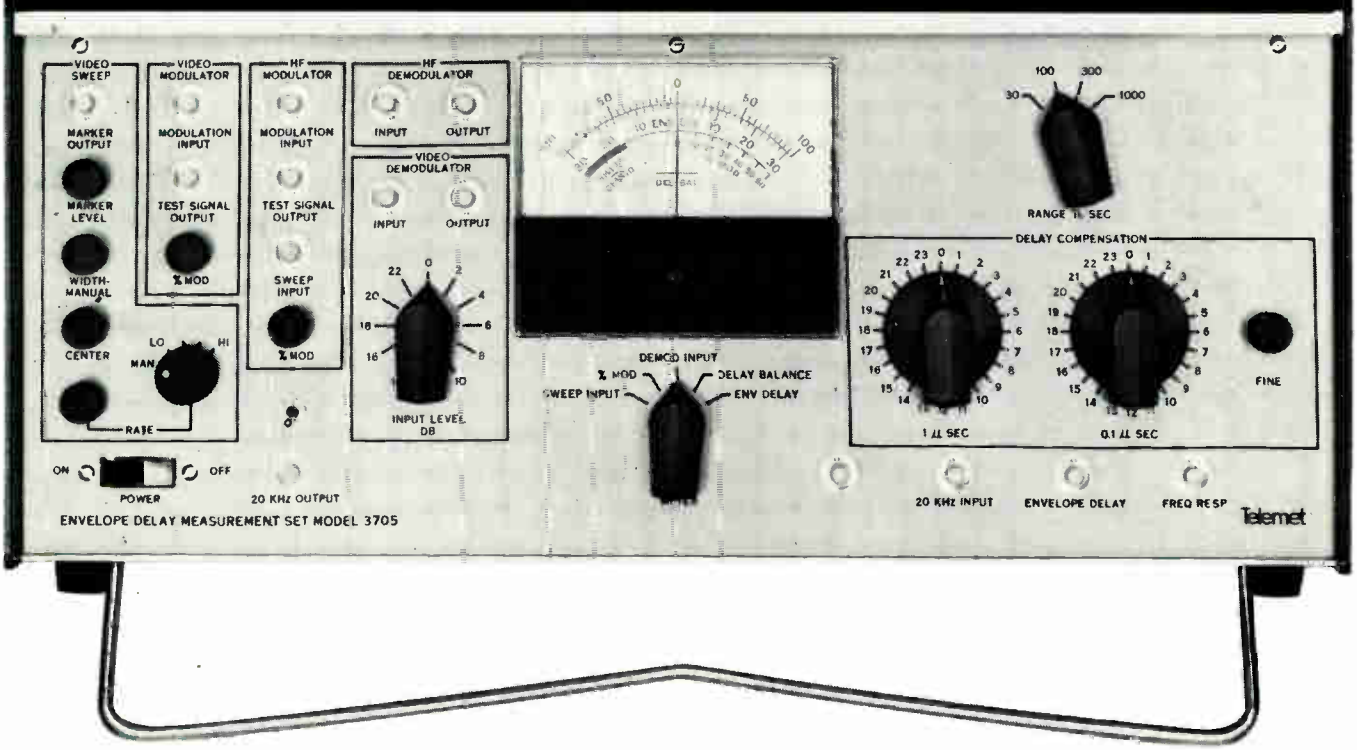

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