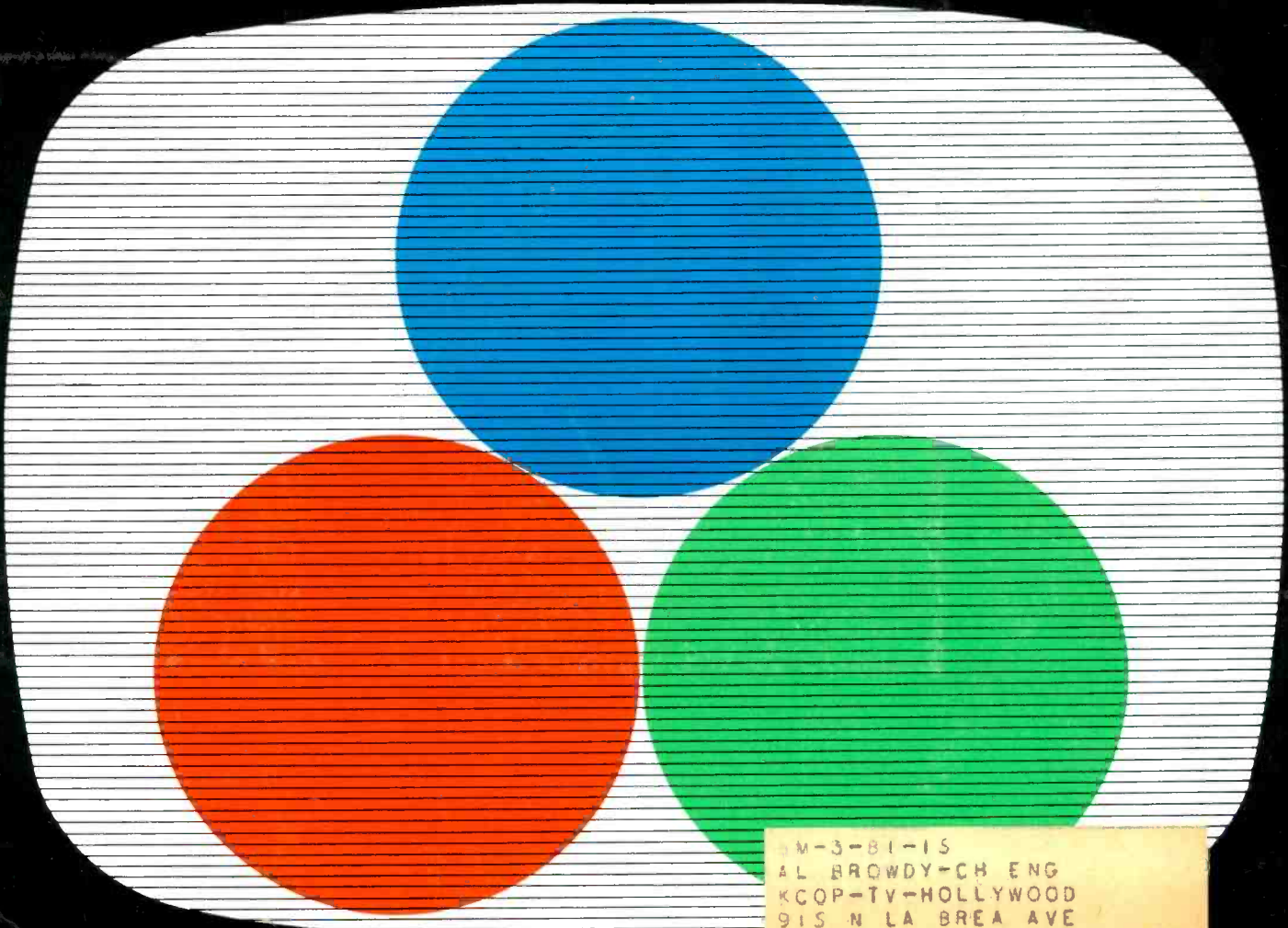
A MACTIER PUBLICATION / JUNE 1965

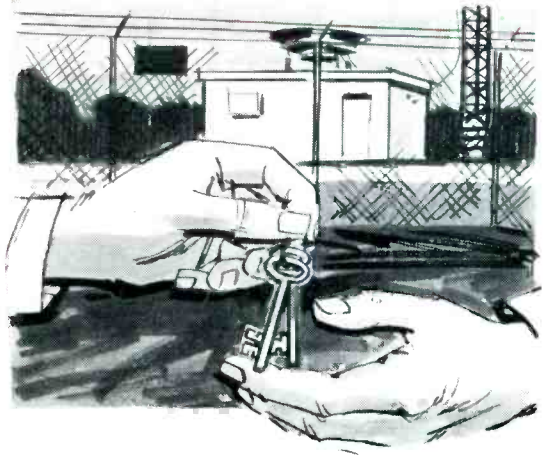
BM/E

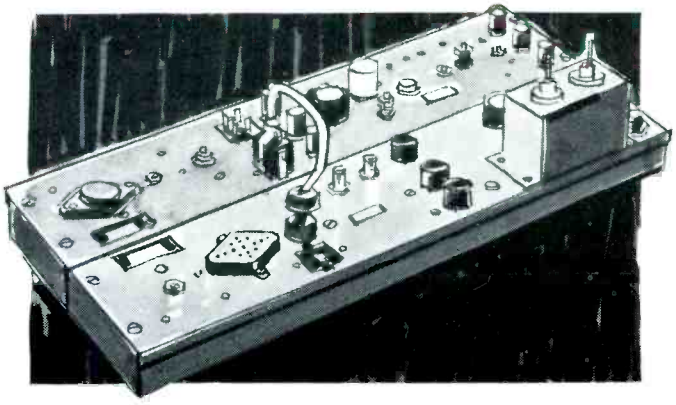
THE MAGAZINE OF BROADCAST MANAGEMENT/ENGINEERING

FOCUS ON COLOR TELEVISION



YOU CAN RELY ON JERROLD'S 15 YEARS OF CATV EXPERIENCE





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Don't contract for less than the best.

Jerrold has built more systems on a turnkey basis than any other manufacturer-contractor in the CATV business. When you contract with Jerrold for a turnkey system, you get a complete job, including:

- ☐ Market and Feasibility Surveys
- ☐ Cost Estimates
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- ☐ System Engineering
- ☐ System Financing
- ☐ System Construction, by the industry's most experienced crews

Also, Jerrold will supply any or all of the above services on an individual basis.

THE CATV INDUSTRY'S MOST RELIABLE SOLID-STATE TRUNKLINE EQUIPMENT

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THE NATION'S LARGEST AND MOST EXPERIENCED MANUFACTURER-SUPPLIER OF CATV EQUIPMENT AND SERVICES

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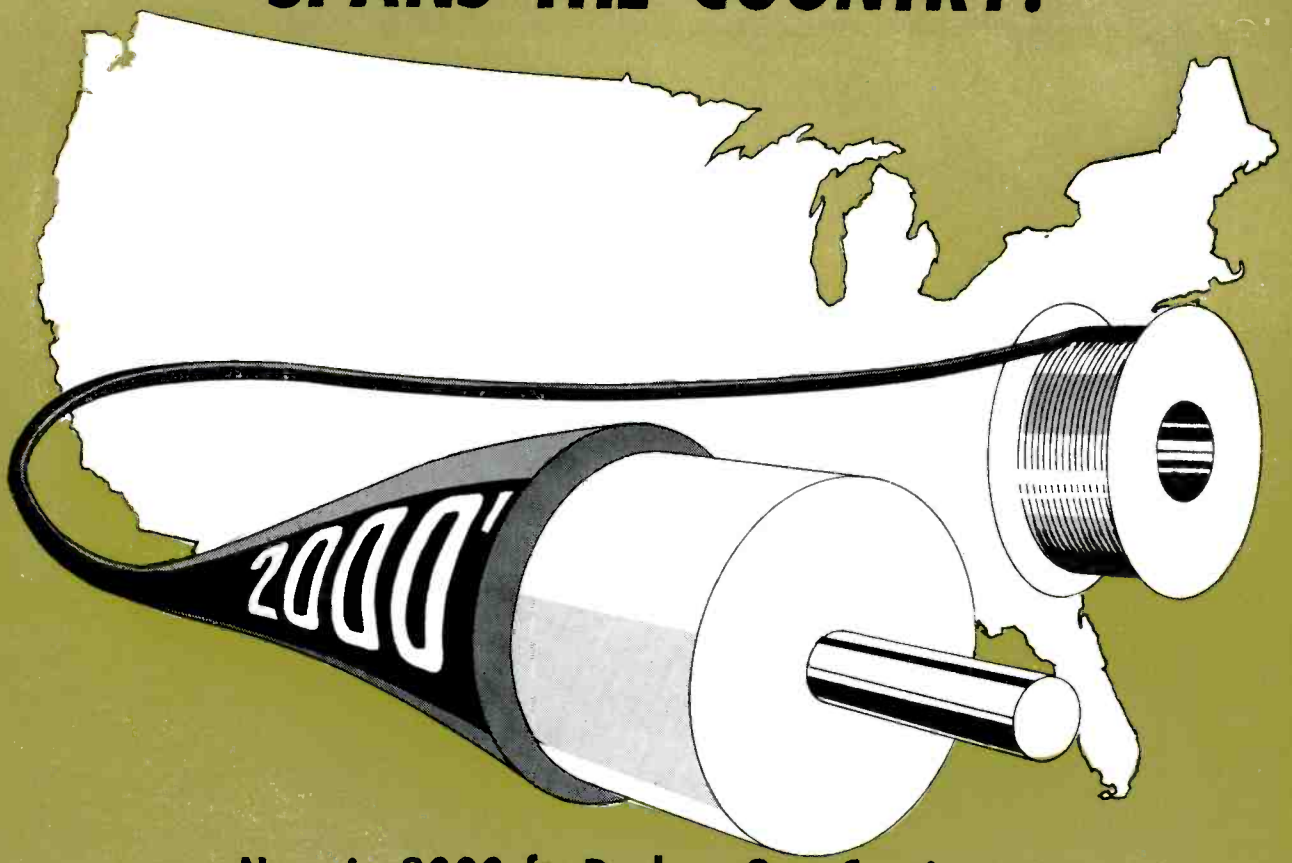

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This extra length is available on all our solid seamless aluminum cable:
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Think ONCE! Think RIGHT! Think VIKING!

WHY THIS EXTRA LENGTH?

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JUNE 1965 / VOLUME 1 / NUMBER 6

BM/E

THE MAGAZINE OF
BROADCAST
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After nearly 12 years, Color TV has finally come of age. This is the year of the big "break-through," as depicted by this month's cover. Just how important is it for stations to be equipped for originating color? How should stations plan for color? To find out, we checked with over 50 of the leading TV stations. If you're concerned about where you stand in the color TV race, check your plans against the facts in the 7-page Focus feature beginning on page 30.

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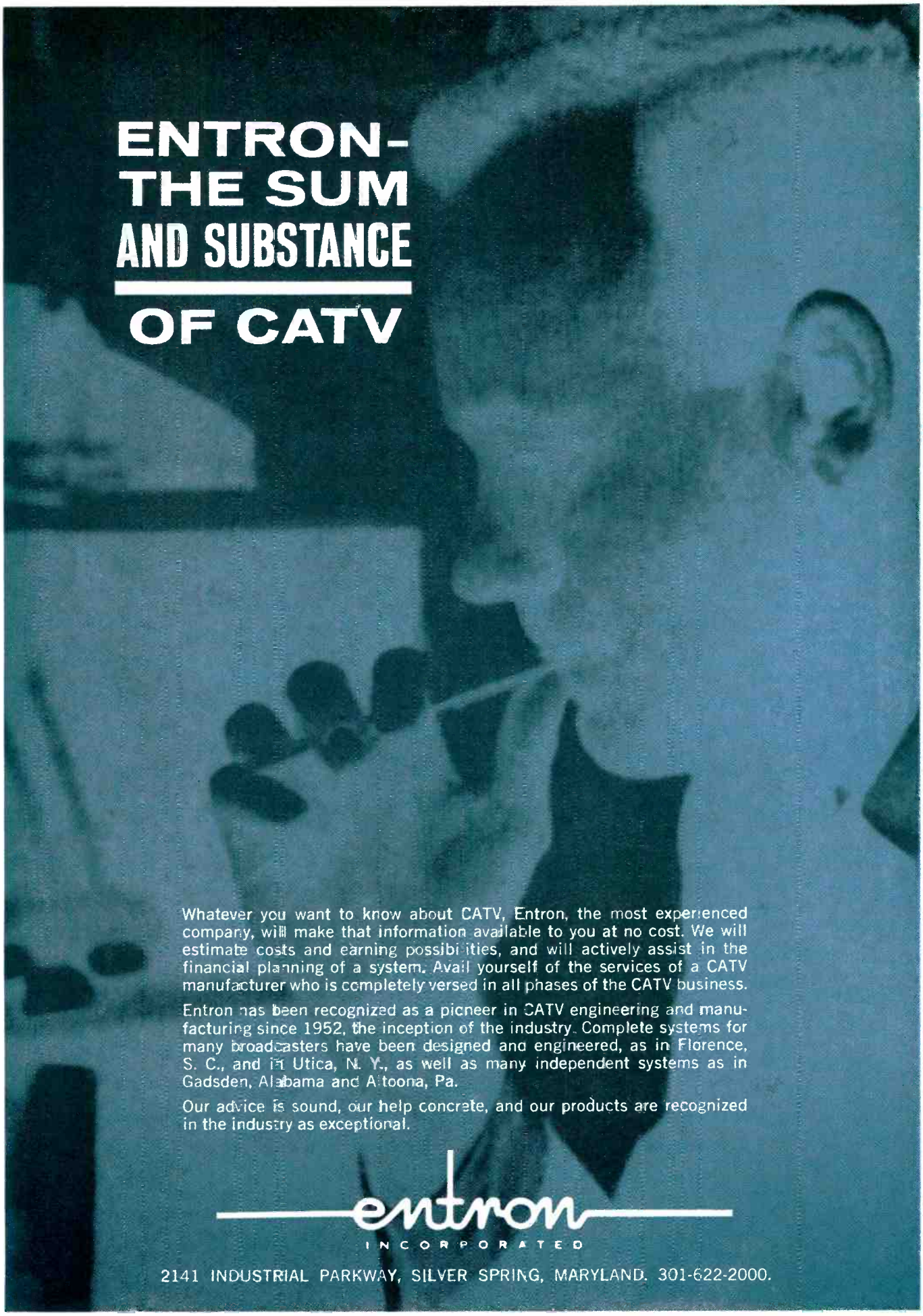


Circle 5 on Reader Service Card

BROADCAST INDUSTRY NEWS

'65—The BIG Year for Color

Without question, color will be the biggest factor in TV viewing this year (see Focus feature story this issue). Color is playing an important role in station and network ratings. More and more advertisers are considering color in their plans. And the public, entranced by the increased entertainment value of color TV, are spending more dollars for color sets than for black and white.

Stations, too, are quietly pursuing plans to provide local color programming this fall. Many are not making too much hullabaloo just yet, hoping to gain a competitive edge on neighboring stations. Having facilities to carry spot commercials and movies in color seems to hold the greatest interest. G-E's Visual Communications Dept. has been shipping 4-V color film camera systems as fast as they can be built, and expects more than 100 units to be in operation this fall. As an indication of the interest in camera equipment, RCA is reportedly back-ordered on 4-channel models to the tune of $10 million. Many deliveries cannot be made until after the first of the year. Rumor has it that some stations are even willing to accept delivery of last year's 3-tube models, anything to get color-originating equipment into operation. Norelco's 3-tube Plumbicon models are also selling at a strong pace. Many VTR's are being converted to provide the color handling capabilities for taping network shows for delayed broadcast, and for producing and airing color commercials.

Is this the big year for color? Read the feature beginning on page 30 and judge for yourself.

New CATV Group

The major CATV operators in New Jersey have formed a state Community Television Association, with Mr. J. Phil Franklin, Exec. V.P. and general manager of South Jersey TV Cable Corp., as president. Purpose of the organization will be to further development of quality TV reception by providing subscribers with multichannel, interference-free reception.

GAB "Radar" Report

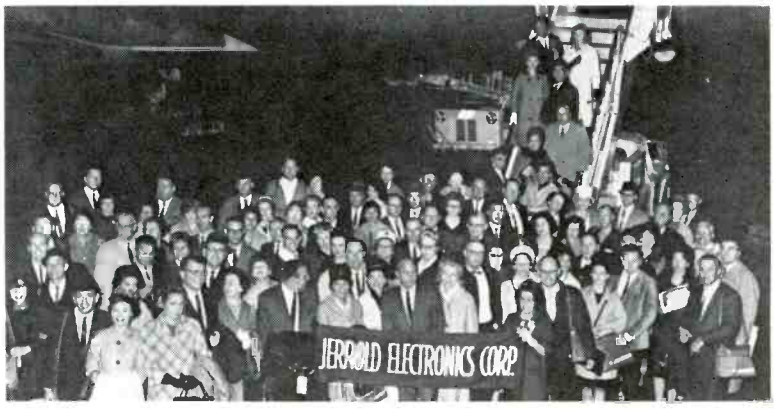
During routine technical investigations, announcers in several Georgia stations were asked by the FCC inspector if they knew how to adjust power and modulation. This is in the rules and it must be posted for all announcers. They must be able to answer "yes."

MRIA & EIA to Merge

The Magnetic Recording Industry Association and the Electronic Industries Association have agreed to merge under a plan adopted by members of both groups. Approval was announced jointly by W. G. Paradis, MRIA pres., and James D. Secrest, EIA exec. V.P. "The combined organization will operate under the name of EIA because of its comprehensive character, representing manufacturers of all electronic products. However, members of MRIA will have a 'home' in EIA which will adapt its organization and services to meet the requirements of the producers of magnetic recording equipments and components."

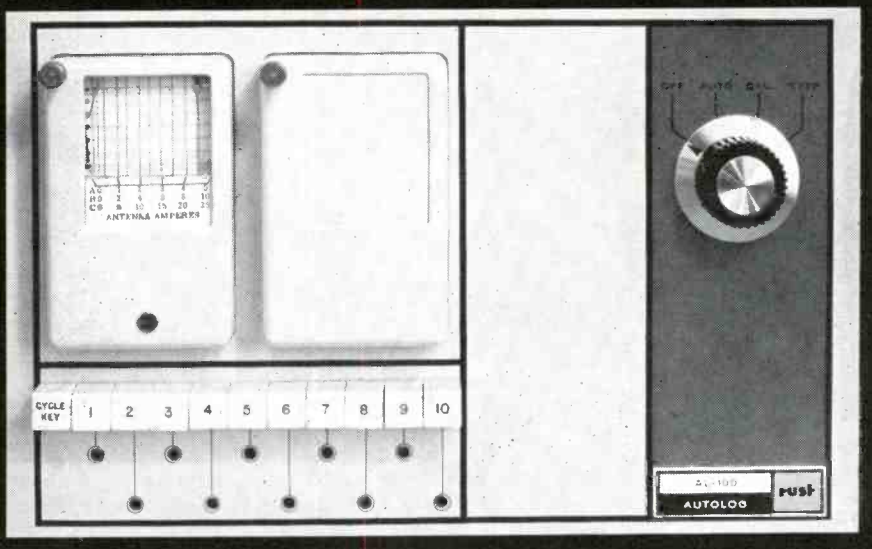
New UHF Assignment Plan

The revised Table of Assignments adopted by the Commission reserves Channels 70 through 83 for a new class of low-power community TV stations, with maximum power of 10w and antenna height of 300′, to meet the needs of medium and small communities for local TV service. Transmitter sites would be located within 25 miles of the post office, or within 10 miles of the city boundary, whichever is least restrictive.



Phila., Pa—A planeload of happy CATV operators and their wives return from a 9-day holiday in Rome and Paris, courtesy of Jerrold Electronics. 130 persons made the trip, which included an audience with the Pope, a visit to the Sistine Chapel, Versailles, the Arc de Triumphe, and the Folies Bergere.

THIS IS THE NEW AL-100



The Automatic Transmitter Log System that obsoletes every other system in the country . .

YOU are looking at the new AL-100 — the AUTOLOG — Automatic Logging System by Rust . . . The AL-100 will cut down your overhead as never before possible. It will free station personnel . . . Allow announcers to concentrate on error-free production and commercials with sell . . . It will free engineers for more important functions. The AL-100 eliminates chicken tracks . . . It offers easy to read straight line recordings on 10 parameters. It uses only 6 chart rolls per year . . . Each roll lasts 62 days . . . Compare this with other units It's so far advanced.

The AL-100 has a front adjustable point with front view and front lighting.
The AL-100 will save you more time and money than you ever thought possible.
The AL-100 will obsolete every transmitter log chart in the country.
Incidentally, you will be amazed at the comfortable price.

Send today for information on the new AL-100 to:

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Eastern Division
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Washington, D.C.
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Western Division
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Omaha, Nebraska

RUST FM STEREO TRANSMITTERS • AUTOLOG • RUST REMOTE CONTROL

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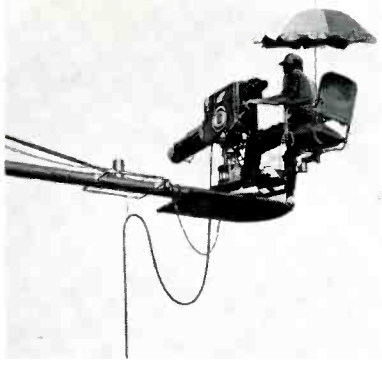


Six versatile camera cranes, previously used in filming classics like "Cleopatra," were used in televising the second annual "CBS Golf Classic." Camera booms on the self-propelled vehicles stay level, even on hillside positions. Cranes and cameras are battery-powered for "silent" operation. The entire event of 14 elimination matches, each 18-holes, was recorded on Scotch video tape and later televised on Saturday afternoons over CBS network.

Raytheon Acquires Dage-Bell

Raytheon Co., Lexington, Mass., has acquired Dage-Bell, Michigan City, Ind., closed-circuit and broadcast TV equipment manufacturer, in exchange for 161,534 shares of Raytheon common stock. Thomas L. Phillips, Raytheon president, said, "Dage-Bell will provide us with a strong marketing organization and an established position in the growing educational electronics field." Seymour J. Ziff, Dage-Bell president, said, "With the technical and financial backing of a company like Raytheon, we can greatly accelerate our already rapid growth in the education market."

Anaconda CATV Offers Turn-Key

In support of the Total Communications concept adopted by the independent telephone industry, Anaconda Wire & Cable, N.Y.C., is now offering complete CATV system service, including feasibility studies, design engineering and full system installation. A CATV Operations Group has been organized at Sycamore, Ill., designated to handle everything from initial financial studies and market surveys to engineering and construction. Each complete package, backed by a full system warranty, will use the finest components available, including new flexible, moisture-proof Sealmetic(TM) coaxial cable manufactured by the company.

TV Pics via Phono Disc

An electronic system that plays still pictures from a phonograph record, called Phonovid, was recently unveiled by Westinghouse. As many as 400 still pictures and 40 minutes of audio can be simultaneously recorded on a 12" 33⅓-RPM disc (two sides). A specially developed slow-to-fast scan converter permits a TV picture to be displayed every 6 seconds. As one picture is being shown, another is being picked up and stored to provide the next presentation. Westinghouse is developing equipment for recording and play-back, priced at $10,000.

Big CATV Affair Coming in July

National Community Television Association (NCTA) will conduct its 14th Annual Convention July 18-23, Hilton Hotel, Denver, Colo. More than 40 manufacturers will exhibit wares of interest to CATV operators, starting at 3 P.M. Sunday. Monday through Wednesday, many industry leaders will speak on subjects relating to CATV business operations. Thursday will be Technical Day, and the Annual Banquet is scheduled for Thursday eve. BM/E will publish a complete NCTA Convention Guide in next month's issue. In addition, BM/E will publish the official Convention Daily, on July 19th, 20th, and 21st.

Expanded Tape Mfg. Facilities

Memorex Corp., Santa Clara, Cal. magnetic tape manufacturer, has acquired a 16-acre site adjacent to its present facilities. Laurence L. Spitters, Pres., says present plant and office property was purchased only 4 years ago. Since then, he reports, the company has grown into nation's second largest magnetic tape producer, with sales last year just over $8 million.

Added Income for FM?

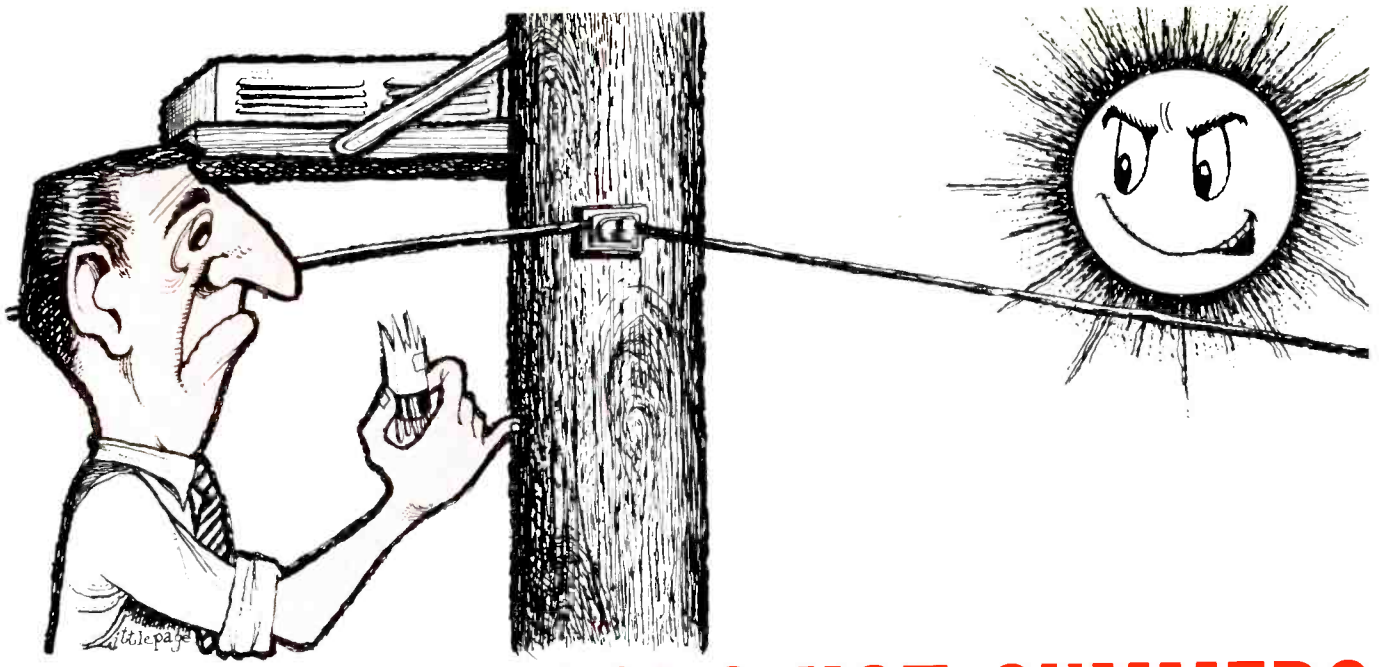
Educasting, a new teaching system utilizing FM radio SCA subcarriers, is designed to provide individual instruction to students anywhere within reception area. Developed by TuTorTape Laboratories, Inc., N.Y., and programmed by International Correspondence Schools, the plan offers courses for home or classroom instruction.

The FM transmitter unit provides four subcarriers, carrying material from a 4-track tape. Students use a receiving unit which includes a four push-button "examining" box, designed to permit a multiple-choice "programmed-learning" type of instruction.

Proposed marketing plan includes offering exclusive franchises to FM stations. Necessary transmitting and receiving equipment will be provided on a monthly rental basis. Market research already has been conducted to determine what courses will have the greatest appeal in a given area. The firm's analysis for potential station income, based on sales of four courses per set per year, forecast that a station with 100 sets could realize a profit of $6,300 on an investment of $13,700. With today's growing market for educational programming, the company envisions excellent response to this service.

NET Engineers Meet

The annual National Educational Television (NET) engineering meeting at WETA, Washington, D.C., was attended by chief engineers from more than 50 ETV stations. Much attention was devoted to VTR equipment operation. Also discussed were the new FCC proposals regarding low-power VHF channels and high-power translator stations.



Dreading the LONG HOT SUMMER?

Facing those hot summer months with an increase in tube replacements got you down? Cheer up! There's still time to do something about it!

The something to do is **preventative installation** of temperature compensated Ameco solid-state amplifiers. An Ameco solid-state mainline amplifier can save both time and money through a reduction of maintenance and operating costs.

With Ameco solid-state you no longer have to anticipate tube replacements. You don't have unexpected tube failures when the temperature begins to go up. Your system is more dependable.

The Ameco ATM-70 Mainline Amplifier is available now and can provide you with performance you need for new system life.

Consider the following:

- *uses less power*
- *lower noise figure*
- *provides higher output*
- *wider operating temperature range*
- *greater cascadability*
- *dependable etched circuitry*

Don't wait for hot weather to catch you. Get all the details on the Ameco ATM-70 solid-state Mainline Amplifier now. Contact your convenient well-stocked Ameco Warehouse today!

AMECO, INC. P.O. Box 11326 Phoenix, Arizona 85017 Phone: 602-252-6041	3443 S.E. 31st Street Portland, Oregon 97215 Phone: 503-232-7051	349 Peachtree Hills Ave., N.E. Atlanta, Georgia 30305 Phone: 404-261-1951	6111 Harry Hines Blvd. Dallas, Texas 75235 Phone: 214-351-1567	P.O. Box 3343 Harrisburg, Pa. 17101 Phone: 717-737-0487

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SEE THE AMECO SOLID-STATE DISPLAY AT THE NCTA CONVENTION!
BOOTHS 49 through 53, 75, 76

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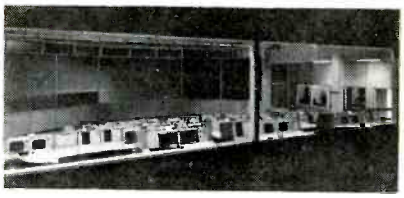


Over 300 of the TV monitors used to follow progress of Gemini 4 were new transistorized units from Miratel Electronics, Inc., St. Paul, Minn. Photo of one of the many control rooms at NASA's new Mission Control Center, Houston, Tex., shows specialized electronic equipment required for Gemini 4 effort.

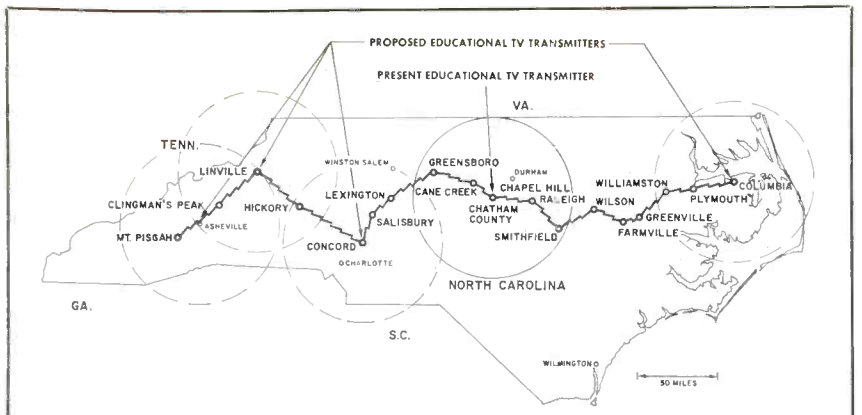
CATV Wheels Are Dealing

NCTA Pres. Fred Ford is buying Blythe, Cal., CATV system from Bruce Merrill (Pres., Ameco Corp. and NCTA Board Chairman). Price and terms are undisclosed, but American TV Relay, Inc., a microwave common carrier controlled by Mr. Merrill, has applied to FCC for approval to relay Los Angeles stations KABC-TV, KNBC, KNXT, and KTLA to the Blythe system and a proposed system in Havasu City, Ariz. Blythe 12-channel system has less than 1,000 subscribers, with present potential of 2,500, already carries 4 Phoenix and 4 L.A. stations (including KTLA, but not other 3 proposed in latest application).

More M'wave for CATV

Golden West Communications has been granted approval to use its microwave station near San Luis Obispo, Cal., to relay six L.A. TV stations to a CATV system operated by Central California Communications Corp. (owned by John C. Cohan, licensee of KSBY-TV).

Colorado Springs, Colo.—Ampex Corp. manufacturing plant was scene of formal dedication ceremony at 600 Wooten Way on May 8. Ampex moved into plant this January, is now manufacturing professional audio recording equipment for master recording, radio broadcasting, industrial and educational uses.



A $380,000 contract for a state wide ETV microwave network has been awarded to Raytheon CADPO, Norwood, Mass., by the University of North Carolina. KTR-II terminal equipment and KTR-III repeaters will be used in the 460-mile system. Raytheon recently completed a similar system linking 5 ETV stations in three New England states.

NAMES IN THE NEWS

Robert E. Lauterbach

Robert E. Lauterbach has been appointed Manager, Broadcast Sales, General Electric Visual Communications Products, Syracuse, N. Y. **Harry E. Smith,** Div. Manager, Marketing, says the appointment is part of a G-E headquarters realignment to better serve customers in a steadily expanding market. Lauterbach succeeds **John Wall,** recently appointed Manager, Industry Relations. Appointed to Mr. Lauterbach's previous position as district sales manager is **Curtis I. Kring,** who will headquarter in Leawood, Kas. R. **Donald Peterson** has been named to fill the Calif. district sales manager post vacated by **Robert W. Cochran,** new manager of field sales.

Eugene L. Rogers is new Director of Corporate Planning for Memorex Corp. He will be responsible for market research, long-term planning, annual operating plans, public relations, product advertising, and legal matters.

Robert H. Huston has joined Cox Broadcasting Corp., Atlanta, Ga., as director of public relations and information. Cox prexy **J. Leonard Reinsch** says the newly created post is on a corporate level, with duties encompassing all the company's diversified fields. Huston was in a similar post with Ameco, Inc., Phoenix CATV equipment manufacturer.

J. C. Sparkman has been added to the Tech Rep staff of Viking, Hoboken, N. J. Formerly with North West Electronics, Spokane, Wash., he will cover the northwest for Viking.

Fred J. Nataly is newly appointed promotion manager for the Electronic Components Group of Sylvania Electric, at the firm's New York City headquarters. Nataly, formerly with GE, will be involved with the company's Tube and Semiconductor Divisions.

Executive V.P. **Robert H. Beisswenger** has been elected to the Board of Directors, Jerrold Corp., Philadelphia, Pa. He joined the firm as general sales manager in 1961. **Jerry Hastings** is the newly appointed manager of the CATV Div., responsible for development and marketing of all Jerrold CATV equipment and services.

James Peterson

Don Davis

John A. Moseley, Pres., Moseley Associates, Inc., Santa Barbara, Cal., has announced that **James Peterson,** solid-state specialist, has joined the firm as Senior Design Engineer. Mr. Peterson has 16 years of design experience with Stoddart Electro Systems, Collins Radio Co., and Summers Gyroscope.

Don Davis moves up to a newly created post as sales manager for the audio controls line, Altec Lansing, Anaheim, Cal. Davis, with the company as regional sales manager since 1959, will direct OEM sales of a new line of precision switches.

Levi E. Moone is newly appointed Rep for Filmline Corp., film processing manufacturer, in the D. C., Va. and Md. area. He has had 25 years' experience in the sale of this type of equipment.

Circle 10 on Reader Service Card

BROADCASTERS SPEAK

We received your March issue, with thanks; however, the "Reader's Service" card was missing. We would appreciate your indicating to Ward Electronic Industries that we are interested in the TV Programmer mentioned on page 52.

Richard McR. Barton, C.E.
Telecasters North Queensland, Ltd.
Queensland, Australia

The "Tall Towers" feature in your May issue was particularly interesting to us, since three of the towers were erected by our company (WRDW-TV, KTHI-TV, and KTBS-TV). We feel sure that WBIR-TV and KTVD-TV were erected by our men while working with the tormer company, J. M. Hamilton, Inc. We are proud of our contribution to the success of TALL TOWERS.

Mervin L. Roberts, Pres.
Hamilton Erection, Inc.
York, S. C.

In your April issue on page 35 a new product is shown — the "Quickfax Facsimile" SCA unit. Please send name and address of the manufacturer.

Ken Green
Tulsa, Okla.

We assumed the name Ray McMartin would be sufficient to identify the manufacturer. It's McMartin Industries, of course, 605 N. 13th St., Omaha, Nebr.—Ed.

Thanks for the very accurate write-up in your April issue. I might point out that it is much more accurate and factual than that done by ———.

Lee Facto, V-P
International Good Music, Inc.
Bellingham, Wash.

I felt I had to write and let you know how much copies of your magazine are appreciated. Situated in Australia and comparatively isolated, your publication fills a much needed want and it gives us in this part of the world up to date details of the latest trends in equipment for broadcasting.

Wishing you every success.

M. Folie, Manager
Sunraysia Broadcasters Pty. Ltd.
Mildura, Victoria
Australia

Your recent issues have been excellent; and Madison Avenue is beginning to buzz about this new and exciting publication!

David H. Pollinger, V-P
Broadcast Div., Friendly Frost, Inc.
Fresh Meadows, N. Y.

EDITOR'S NOTE

We've received several bouquets on "Dual Polarization—A Boon to FM Broadcasters," published in our April issue; however, special mention for their help is due to Harold Kassens of FCC's Broadcast and Facilities Div., Dr. Frank Kear of Kear & Kennedy, and Lew Wetzel, Asst. Dir. of Eng'g, Triangle Stations, who supervised the Hartford-New Haven tests.

Jim W. Cooper, Director of Engineering, WFAA-TV.

G-E 4-V wins WFAA-TV's "slide test"

Jim W. Cooper, Director of Engineering at WFAA-TV, Dallas-Fort Worth, came to the recent NAB Convention in Washington to make a decision.

WFAA-TV wanted the finest 4-V color film camera available. Jim had carefully compared all the available data on the two competing cameras. The final, deciding item on his check list was to be his own personal evaluation of picture quality.

He had his own resolution chart slide put up first in the competing unit, then in the General Electric 4-V. Immediately he saw the difference. G-E 4-V picture quality won Jim Cooper's unqualified vote — and the WFAA-TV order.

Two G-E 4-V's will be installed at WFAA-TV this summer. *This is the kind of customer acceptance that will put more than 100 G-E 4-V's on the air by autumn. No other manufacturer can even approach this record of field-proven performance and market approval. For details on broadcasting's most-accepted 4-V color film camera — the G-E PE-24 — contact your G-E Broadcast Equipment Representative, or: General Electric Company, Visual Communications Products, #7-315, Electronics Park, Syracuse, N.Y. 13201. (Phone AC 315, 456-2105).* GE-16.

Visual Communications Products

GENERAL ELECTRIC

Electronics Park, Syracuse, New York

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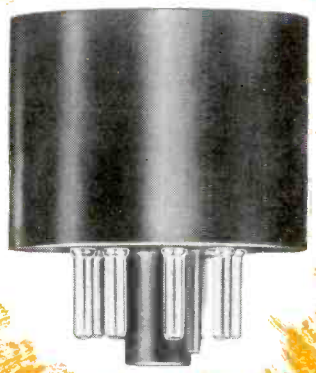
SYNTRON

SILICON AVALANCHE ASSEMBLY

A NEW CONCEPT IN REPLACEMENT FOR RECTIFIER TUBES

Eliminate the undesirable features of mercury or vacuum tubes. Replace them with Syntron Silicon Avalanche Assemblies. PRV ratings to 500 KV, current ratings to 1.75 amperes half-wave. Ideal for radio and TV stations.

Increase efficiency and reliability, lengthen life, reduce maintenance and downtime.



Write for complete information today—add dependability and save m

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2240 LEXINGTON AVENUE • HOMER CITY, PA.

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INTERPRETING THE

FCC RULES & REGULATIONS

Program Logs — Problems & Suggestions

With increasing frequency, the FCC has been cracking down on licensees who fail to observe proper program logging practices and procedures. Licensees have been cited for (1) failing to maintain "complete" program logs, (2) making false or misleading entries, (3) including classifications or columns that are unclear to the Commission, (4) keeping sloppy logs, and the like. Penalties have included fines ranging from $100 to as much as $10,000, deferred renewals, a "cloud" on basic qualifications as a licensee, or the institution of revocation proceedings. With such ominous and foreboding actions, all licensees are well advised to take a closer look at their logging practices.

The Basic Problem

Fundamentally, the problem exists because the Commission has never promulgated a standard, classic, or recommended form for program logs. As a result, the program log rules are very broad and quite vague, and few licensees fully comprehend the Commission's policies. The net effect is that there are as many forms for program logs as there are days in the year—an almost infinite variety of styles, program classifications, descriptions, and methods. As the Commission becomes more bold in the area of programming, it has begun to require clear, accurate, and definitive logs.

FCC Inspection Procedures

You may normally think that discrepancies in program logs are most apt to be uncovered at renewal time. The fact is that the Commission's Renewal Branch rarely raises questions concerning program logs, unless they are blatantly incomplete or incorrect. If the Renewal Branch can understand the logs, it is not prone to pursue the matter.

Improperly maintained logs are most commonly discovered during periodic field inspections, made by the Commission's Field Engineering and Monitoring Bureau. FCC Inspectors conduct their probing forays at irregular intervals—at least once during each 3-year license period. If an Inspector is dissatisfied with program logging procedures, he may (1) instruct the licensee to modify station practices, (2) have his office issue a citation seeking information as to the licensee's corrective measures, and/or (3) encourage the Commission's Complaints and Compliance Branch to review the case with an eye towards a fine or more serious action.

Naturally, the licensee is well advised to settle the matter with the Inspector, if possible, and institute the corrective measures he suggests. However, in dealing with the Inspector or the Commission's main office, the licensee is in a better position to protect himself if he fully understands the rules.

Program Types vs. Program Sources

Why contrive some mystery code of abbreviations that merely makes logging more difficult for employees? Every program source is either commercial ("C") or sustaining ("S"). Every program source is network ("N"), recorded ("R"), wire ("W"), or live ("L").

Thus, every program source must be: (1) **network** plus "C" or "S"; (2) **recorded** plus "C" or "S"; (3) **wire** plus "C" or "S"; or (4) **local-live** plus "C" or "S." It can only be one of these four; it can't be a combination.

The greatest confusion in log entries stems from combining abbreviations and descriptions of program types and program sources. Would it not be simpler, more effective, and facilitate renewal percentage computations, if the licensee kept the two basic classifications entirely separate? Next to the customary column for "Title and Sponsor," the log could have two narrow columns headed "Program Type" and "Program Source." If it seems desirable to describe some programs further, such notations as "dramatic play by local Theater in the Round," "high school basketball Brown vs. Tech," "speech by candidate Smith for national Congress," and the like, could be entered in the column entitled "Title and Sponsor."

In short, licensees are urged to keep special classifications and peculiar distinctions out of the columns for program type and source. Such practice will protect against criticism for failure to maintain a **clear and understandable** log. Also, it will augment the understanding, of announcers and employees generally, of the terms and classifications used by the Commission. Often, the greatest misunderstandings and misinterpretations exist in the minds of those employees entrusted with the job of posting in the program log. This has and will continue to result in poorly maintained logs, scrutiny and censure by the Commission, and fines and forfeitures.

Licensees should seek approval of legal counsel before instituting changes in log entry methods. If nothing else, licensees should at least check into their station logging practices. The wise owner or manager will ascertain whether or not his key staff personnel really comprehend the basic distinctions made by the Commission.

What the Rules Say

The Commission's requirements for logs are set forth in Sections 73.111 through 73.116 (AM), 73.281 through 73.286 (FM), and 73.669 through 73.674 (TV). For all practical purposes, rules for the different facilities are identical.

Basically, these rules require each licensee or permittee to (1) maintain logs; (2) have a competent person, with actual knowledge of the facts, sign the appropriate logs when going on and off duty; (3) maintain logs "in an orderly and legible manner, in suitable form, and in such detail that the data required is readily available"; (4) have the person making corrections, deletions, additions, or other changes initial and date each change; and (5) keep the logs for a period of two years.

The rules state further that "An entry" should be made indicating (1) station I.D.'s; (2) program description, together with sponsor's name and beginning and ending times, specifying whether it is *record, network, film,* or *live* (live or recorded, or filmed live by the licensee); and (3) that each program has been "announced as sponsored, paid for, or furnished by the sponsor."

Commercial or Sustaining?

The Commission requires the licensee to break down his programming, for purposes of analysis of commercials and sustaining time, into 14½-minute segments. Many stations show an unnecessarily high percentage of commercial time. By carefully scheduling airing of spot announcements, sustaining time can be increased. An entire 14½-minute segment must be classified as commercial, if even one spot announcement is carried during this time. However, if the one spot announcement can be relocated into another 14½-minute segment, this will decrease commercial and increase sustaining time. On the other hand, the Commission is extremely interested in having the licensee report instances in which more than 5 announcements have been broadcast during 14½-minute periods. With better and more even distribution of spot-announcement scheduling, the licensee can improve his "image" with the Commission.

Additionally, the requirement that programs be logged "announced as sponsored" does not include commercial spot announcements, as distinguished from commercial continuity. The latter, of course, refers to sponsored programs, be it by one sponsor or participating sponsors, while commercial spots are those unidentified with any program on a continuing basis. Thus, technically, the licensee need not indicate that commercial spots are "announced as sponsored."

Difficulties At Renewal Time

In preparing the renewal application, the licensee is required to compute program type and source percentages from program logs. In the vast majority of cases, the code of abbreviations used by the licensee is much different from that employed by the Commission. As a result, many percentages are improperly figured, and the Commission is unable to check readily for errors. Commission inquiries can result. Thus, it is recommended that the licensee endeavor to record his programming information in a manner similar to that used by the Commission. Specifically, the licensee should use the abbreviations set forth in Section IV of the applications for construction or modification of construction permits (Form 301) and renewal of broadcast license (Form 303).

Definitions of Program Types

The Commission requires that programming be identified by *types*, of which there are seven: entertainment, religious, educational, agricultural, news, discussion, and talk. Definitions of these program *types* and suggested abbreviations for use on the logs, are:

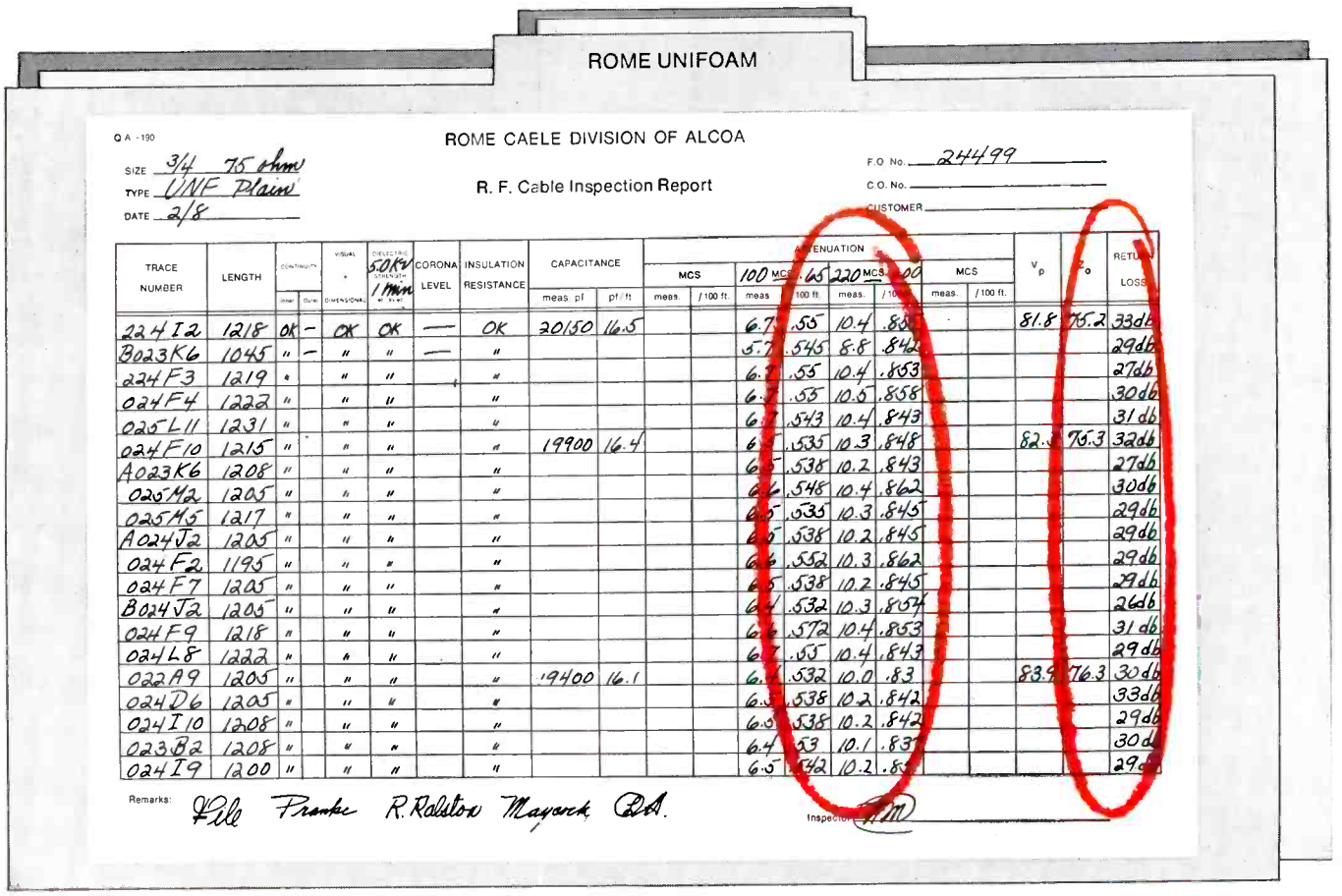
(1) Entertainment ("En.")—All programs intended primarily as entertainment, such as music, drama, variety, comedy, quiz, breakfast, children's, etc.
(2) Religious ("Rel.")—Includes sermons, religious news, music and drama, etc.
(3) Agricultural ("Ag.")—Includes programs containing farm or marketing reports or other information specifically addressed to the agricultural population.
(4) Educational ("Ed.")—Includes programs prepared by or on behalf of educational organizations, exclusive of discussion programs which are classified below.
(5) News ("News")—Includes news reports and commentaries.
(6) Discussion ("Disc.")—Includes forum, panel, and roundtable programs.
(7) Talk ("T.")—Includes all conversation programs not in the above, including sports.

Definitions of Program Sources

If the definitions of program *types* create problems in semantics, the distinctions between program *sources* result in havoc. The definitions, with the suggested abbreviations in parentheses, are:

(1) A *commercial program* ("C") is any program time paid for by a sponsor, or any program interrupted by a spot announcement at intervals of less than 14½ minutes. Thus, when carrying a *network* program which is *sponsored* ("NC"), the program should be logged as commercial—unless all commercial announcements have been deleted from the program by the station. It should be observed that *any* 14½-minute segment of a program which is interrupted by a commercial announcement is classified as a commercial program, even though there are no other commercial announcements during the entire 14½-minute segment. Because of this requirement of the Commission, "participating" programs are classified as Commercial.
(2) A *sustaining program* ("S") is any program which is neither paid for by a sponsor nor interrupted by a spot announcement.
(3) A *network program* ("N") is any program furnished by a network or another station. *Delayed broadcasts originated by networks* are classified as "network," and *not* as "recorded." Cooperative programs, furnished to affiliates by a network and available for local sponsorship, are network sustaining programs ("NS") if no local sponsorship is involved. Where there is local sponsorship, even though the commercial announcement is made by the local announcer, cooperative programs are classified as network commercial ("NC"). Pro-

The monotonous uniformity of our CATV cable



ROME UNIFOAM

Q A - 190

ROME CAELE DIVISION OF ALCOA

SIZE 3/4 75 ohm
TYPE UNF Plain
DATE 2/8

R. F. Cable Inspection Report

F.O. No. 24499
C.O. No.
CUSTOMER

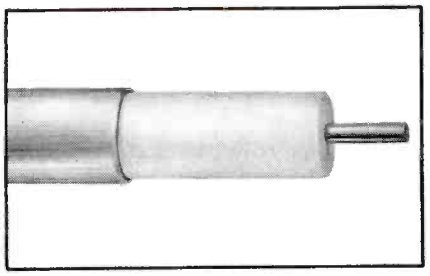
TRACE NUMBER	LENGTH	CONTINUITY	VISUAL DIMENSIONAL	DIELECTRIC STRENGTH 50KV 1 MIN	CORONA LEVEL	INSULATION RESISTANCE	CAPACITANCE meas. pf	CAPACITANCE pf/ft	ATTENUATION MCS	ATTENUATION MCS	ATTENUATION 100 MCS meas.	ATTENUATION 100 MCS / 100 ft.	ATTENUATION 165 MCS meas.	ATTENUATION 165 MCS / 100 ft.	ATTENUATION 220 MCS meas.	ATTENUATION 220 MCS / 100 ft.	ATTENUATION MCS meas.	ATTENUATION MCS / 100 ft.	V_p	Z_o	RETURN LOSS
224I2	1218	OK	OK	OK	—	OK	20150	16.5			6.7	.55	10.4	.85					81.8	75.2	33db
B023K6	1045	"	"	"	—	"					5.7	.545	8.8	.842							29db
224F3	1219	"	"	"		"					6.7	.55	10.4	.853							27db
024F4	1222	"	"	"		"					6.7	.55	10.5	.858							30db
025L11	1231	"	"	"		"					6.7	.543	10.4	.843							31db
024F10	1215	"	"	"		"	19900	16.4			6.5	.535	10.3	.848					82.3	76.3	32db
A023K6	1208	"	"	"		"					6.5	.538	10.2	.843							27db
025M2	1205	"	"	"		"					6.6	.548	10.4	.862							30db
025M5	1217	"	"	"		"					6.5	.535	10.3	.845							29db
A024J2	1205	"	"	"		"					6.5	.538	10.2	.845							29db
024F2	1195	"	"	"		"					6.6	.552	10.3	.862							29db
024F7	1205	"	"	"		"					6.5	.538	10.2	.845							29db
B024J2	1205	"	"	"		"					6.4	.532	10.3	.857							26db
024F9	1218	"	"	"		"					6.6	.572	10.4	.853							31db
024L8	1222	"	"	"		"					6.7	.55	10.4	.843							29db
022A9	1205	"	"	"		"	19400	16.1			6.4	.532	10.0	.83					83.9	76.3	30db
024D6	1205	"	"	"		"					6.5	.538	10.2	.842							33db
024I10	1208	"	"	"		"					6.5	.538	10.2	.842							29db
023B2	1208	"	"	"		"					6.4	.53	10.1	.837							30db
024I9	1200	"	"	"		"					6.5	.542	10.2	.85							29db

Remarks: Kile Franke R. Rollston Mayard QA.

Inspector

Examination of the inspection reports on Rome Unifoam* Cable reveals that they are even more monotonous to read than we have been claiming. In fact, they're so monotonous they're exciting.

We have talked so much about the quality and uniformity of Rome Unifoam CATV Cable, that it's about time we got down to specifics.



This is the Rome Unifoam CATV cable used in the majority of installations: unjacketed, unvarying, unbeatable.

We see literally hundreds of Inspection Reports in the factory, and they serve only to convince us that, if anything, we have been too conservative in what we've said.

For example: Look at this test sheet recording routine tests on 20 reels of ¾" 75 ohm cable. There is nothing special about this report, as far as we are concerned. Length after length, the test data has a monotonous sameness, day after day. Look, for example, at the 220 mc attenuation column on this sheet. The lowest value measured was 0.830 db/100 ft., and the highest 0.862. The average of the 20 reels is 0.847 db/100 ft. All of the individual measurements are within ± 2% of the average. Statistical analysis of data from several hundred lengths tested tells us that no more than 2 lengths out of 1000 will exceed the average by more than 5%.

Return Loss. Notice the last column on the test sheet. Here, Return Loss measurements are recorded. Values range from 26 to 33 db down. And each value recorded is the *poorest* return loss found in that length at *any* frequency between 20 and 220 mc. Each length is checked from both ends and no length is shipped with less than 25 db return loss. That's *25 db minimum at any frequency from 20 to 220 mc!*

Can you use cable like this? Can you afford not to?

Get the whole story. We offer you a fact-filled folder on Rome Unifoam CATV Cable. For a copy, just call your nearest Rome/Alcoa representative or write Rome Cable Division of Alcoa, Dept. 44-65, Rome, N. Y. 13440.

*Rome Unifoam—Trademark of Rome Cable Division of Alcoa

Rome Cable
DIVISION OF ALCOA

Circle 13 on Reader Service Card

grams are classified as network, whether furnished by a nationwide, regional, or special network, or by another station.

(4) A *recorded program* ("R") is any program using phonograph records, electrical transcriptions, films, or any other means of mechanical reproduction in whole or in part—except where the recording is wholly incidental to the program and is limited to background sounds, sound effects, and the like. A program part transcribed or recorded and part-live is classified as "recorded," unless the recordings are wholly incidental.

(5) A *wire program* ("W") is any program materieal distributed to a number of stations by telegraph, teletype, or similar means, and read in whole or in part by local announcers. Programs distributed by wire news services are "wire" programs. A news program which is part wire and partially of nonsyndicated origin is classified as "wire"—provided more than the program is devoted to reading verbatim, or virtually verbatim, the syndicated wire text. *Thus, if the licensee substantially rewrites or otherwise contributes to half or more of the program, it can be classified as "live."*

Announced as Sponsored

Many stations use an "Announced as Sponsored" column, but even an experienced announcer may well announce the program as sponsored and fail to check the appropriate box. Many licensees violate the rules by checking these boxes in advance—one was even caught in the act by an FCC Inspector!

To avoid such complications, the licensee can comply with the rule by deleting the column "Announced as Sponsored" and placing a statement at the bottom of each page of the program log as follows: "This certifies that each of the above indicated commercial programs and commercial spot announcements was announced as sponsored, paid for, or furnished by the sponsor." This statement should be signed by the announcer(s) on duty during the time covered. This approach clearly is an entry, meets the requirements of the rule, deletes one column on the log, eliminates a lot of unnecessary checking of boxes, and reduces the chances of error.

(6) A *local-live program* ("L") is any local program which uses live talent exclusively, whether originated in the studio or by remote control. A local-live program produced and recorded *by the station* for later broadcasting shall be considered a local-live program.

(7) A *noncommercial spot announcement* ("NCSA") is an announcement *not paid for* by a sponsor, and devoted to a *nonprofit* cause (savings bonds, red cross, public health, civic announcements, etc.) Promotional announcements should be classified "NCSA" if the program promoted is a sustaining program; other promotional announcements should be classified as "spot announcements." Red Cross, civic, and similar announcements, *for which the station receives remuneration,* should be classified as "spot announcements."

(*Continued on page* 47)

Telemike Exclusive: Built-in Monitor Facility*

Now, with *three* readily interchangeable sound tele-probes, similar in principle to changeable telephoto lenses, you can 'zoom' in from varying distances for the precise sound you're after. The 18-inch probe may be used for 'close-ups,' as far back as 75 feet from the sound source; the 34-inch probe from 150 feet. A 7-foot probe is optional for distances beyond 150 feet.

*The most unique feature, a Sony exclusive, is the built-in, battery powered, solid state monitoring amplifier in the pistol grip handle, which assures the operator that he is transmitting the source with pin-point accuracy.

OTHER FEATURES, OTHER USES: The new Sony F-75 Dynamic Tele-Microphone is highly directional at the point of probe, with exceptional rejection of side and back noises (35 to 40 db sensitivity differential). Recessed switching allows quick selection of impedances (150, 250 and 10K). The uniform frequency response, controlled polar pattern, and unprecedented rejection of background noise eliminates feedback interference in P. A. systems.

The complete Sony F-75 Tele-Microphone includes two sound probes, 18 and 34 inch lengths, monitoring pistol grip handle and the Sony dynamic headset, all in a velvet-lined compartmentalized carrying case, for *less than* **$395.** For specifications and a catalog of the complete line of Sony microphones, visit your nearest Sony/Superscope franchised dealer, or write: Superscope, Inc. Dept. 86, Sun Valley, Calif. *The best sound is Sony.*

Circle 15 on Reader Service Card

If you bought aluminum sheath co-ax before, you probably bought seamless; don't make the same mistake twice!

Of course you thought you were buying the best. At the time, maybe you were. Perhaps you bought before Plastoid abolished metal torture in cable-making. That was a couple of years ago when we introduced our exclusive UHF-weld.

We did away with the swedging—or drawing out process—that distorts the shape of seamless with thick spots and thin, that weakens metal structure, leaves seamless cable vulnerable to breakage and fissures that leak radiation, let moisture in to deteriorate your dielectric.

Plastoid introduced cable made from precision-rolled strip-aluminum. This is curved up and around the polyethylene foam core, then seam-welded by beams of ultra-high frequency radiation. The process is so fast that the plastic core never heats, yet the welded seam is stronger than the parent metal as proved by ASTM cone tests. Uniformity and concentricity are assured, yet the basic metal structure remains strong and flexible. Because our manufacturing process lets us test every step of the way, you are assured of the ultimate in strength and reliability.

You buy aluminum sheath cable to protect your long term CATV investment. With Plastoid welded aluminum co-ax, you get the last word in lasting strength and performance. And you get a wide choice of sizes, jacketed and unjacketed. Use our .75-inch cable (TA-8) for your headend. The .50-inch co-ax (TA-5) is ideal for trunks; specify .412-inch (TA-4) for feeders. Footage is certified. All reels are sweep-tested. The engineering "specs" are unsurpassed. For full details and pricing information, call, wire or write.

PLASTOID CORPORATION
42-61 24TH STREET / LONG ISLAND CITY 1, N. Y. / ST 6-6200

Circle 16 on Reader Service Card

RATES—and the Rate Card

by Joseph D. Coons

How WOHI increased revenue with simplified rate policies.

AT ONE TIME or another every commercial broadcaster is faced with a variety of decisions that affect the pricing of his time—his rates. He then moves mentally from the world of decisions based upon tangible data to the world of decisions based upon psychology, ethics, superstition, precedent, and experience. As a station manager, I have gone through such times, and have come to some conclusions that may add new life to some old debates. Reviewing our sales progress, we feel our rate and pricing policies have played a major role in our growth—adding more than 60% to our sales in less than five years. If you feel price is important in your sales, some of our philosophies may help you.

Questions about rates fall into several categories: (1) How many rate cards should there be? (2) What should the cards look like? (3) What discounts should be offered? (4) How many "classes" of time should there be? (5) How many different spot lengths should be offered? (6) What about "Special Rates?" (7) How should rate changes be handled?

Most managers faced with the problem of answering these questions seem to follow either of two paths: They play a hunch, depending on intuition to make the right decision; or, they look up data gathered by NAB, RAB, etc., or SRDS, and see what the other guy is doing. The first course presupposes the manager is right, and the second assumes the other guy is right. But any manager worth his salt knows he can reach the best decisions only after consulting all the other people involved.

We have never made decisions regarding rates without holding meetings with our salesmen, confiding in our most helpful and loyal customers, conferring with our reps, and discussing proposed changes with our community financial prophet, our banker. The resulting comments have often startled us.

How Many Cards?

The old local-vs-national rate controversy is ever present. As for our own experience, we have received may calls from agencies using the old dodge, "This is a local buy, we just set it up." And from our reps, perhaps two out of three memos in the past, emphasized quoting the right rate — the one the rep quoted. These situations were unsettling enough, coupled with the Commission's concern about double billing and other double-rate practices, but there were still other factors to be considered: What of the 15% agency commission? Could we cut our revenues for regional and national sales by 15%? How about the rep's commission?

Perhaps the final blow came in 1961 when an auto firm, well-known for "tough" buying practices, issued the ultimatum: no local rate, no national business. Although this encouraged our subsequent decision to abandon a national card, there were many other arguments in favor of this decision.

The first point in favor of a single rate is elimination of rate-confusion, rate jumping, and double billing. It's amazing how easy it is to say, "Yes, agency, that's our rate, the local rate, the only rate. No one pays less than that, so you must pay it, too." It's a lot easier than trying to explain to a local beer distributor why he must pay national rates through the agency.

Of course, we're getting 15% less for the time when the order comes through the agency. Does the agency earn it? We look at it this way: The agency prepares the copy (otherwise the station must); the agency offers assurance of prompt payment, or at least a record of payment to rely upon (which the station does not always have with non-agency customers); the agency sells the advertising (which is otherwise the station's job); and finally, the agency understands how to buy station time with a minimum of confusion and for maximum benefit (which the station must do for local customers).

Each of these jobs are no longer the station's. Are they worth 15% of the bill? We say *yes*. Agency orders are, we believe, 15% less expensive for us to handle. We see no reason not to subcontract the work for 15% of gross.

Of course, there's still the rep's commission — which cuts out another 15%. But on local sales, we give a 15% commission to our salesmen, so it's all the same. We

Author: Mr. Coons is president and general manager, WOHI AM-FM East Liverpool, Ohio.

Measured .5 MV/M Daytime Contour

Drawn From F.C.C. Performance Proof

WOHI

— 1949 —

P. O. Box 760
East Liverpool, Ohio
Code 216-385-1490

"where advertisers meet ideas"

Rate Card #10
Effective Jan. 1, 1965
A Single Rate Station

1—PERSONNEL

Joseph D. Coons, General Manager

2—REPRESENTATIVES

Penn State Representatives, Inc., & Ohio Stations Representatives, Inc., Regional Representatives

Grant Webb & Company, National Representatives

3—MAILING INSTRUCTIONS AND CLOSING TIMES

Mail to Box 760, East Liverpool, Ohio. Closing 12 hours prior to broadcast.

4—FACILITIES

a - Power - AM - 500 watts Day
250 watts Night

b - Frequency - AM - 1490 KC

c - Hours - 6:00 A.M. - Midnight Mon.-Sat.
7:45 A.M. - Midnight Sunday
Daylight Savings Time Used

d - Transmitter - WOHI View, Shadyside Avenue, East Liverpool, Ohio

5—COMMISSIONS AND DISCOUNTS

a - 15% agency commission on time charges to recognized agencies.

b - 2% discount for cash - ten days, Net 30, end of month billing.

6—RATE POLICIES

a - Rate must be earned within one year from date of first announcement.

b - Advertisers will receive rate protection for 60 days following ending date of schedule at time of increase.

7—RATES - ANNOUNCEMENTS

Class A

6:30 A.M. - 6:29 P.M., Mon.-Fri.

	Min.	30 Sec.	20 Sec.
1 time	5.00	2.75	2.00
20 times	4.70	xxx	xxx
40 "	4.55	2.60	xxx
60 "	4.45	2.55	1.90
80 "	4.35	2.50	1.85
100 "	4.20	2.40	1.80
200 "	3.70	2.35	1.75
300 "	3.20	2.10	1.70
400 "	2.75	1.80	1.50
500 "	2.60	1.55	1.30
1000 "	2.50	1.45	1.10

8—RATES - PACKAGE PLANS

A - B COMBINATION, One Spot

Each Class of Time, Same Day

One combination counts two times

	Min.	30 Sec.	20 Sec.
2 times	7.75	4.35	3.20
20 "	7.35	xxx	xxx
40 "	7.15	4.15	xxx
60 "	6.95	4.00	3.05
80 "	6.75	3.90	2.95
100 "	6.55	3.80	2.85
200 "	5.80	3.70	2.75
300 "	5.00	3.25	2.70
400 "	4.25	2.85	2.40
500 "	3.95	2.40	2.10
1000 "	3.85	2.30	1.75

Standard Form of Rate Card recommended by the American Association of Advertising Agencies, Incorporated

6—RATE POLICIES (Continued)

c - Advertisers who earn new discount rates will receive rebates.

7—RATES - ANNOUNCEMENTS (Continued)

Class B

6:00 - 6:29 A.M., 6:30 P.M. - Midnight Mon. - Fri.

S.O. - Midnight, Saturday & Sunday

	Min.	30 Sec.	20 Sec.
1 time	3.70	2.05	1.50
20 times	3.50	xxx	xxx
40 "	3.40	1.95	xxx
60 "	3.30	1.90	1.45
80 "	3.20	1.85	1.40
100 "	3.15	1.80	1.35
200 "	2.75	1.70	1.30
300 "	2.40	1.55	1.25
400 "	2.05	1.35	1.10
500 "	1.95	1.15	1.00
1000 "	1.85	1.05	.85

8—RATES - PACKAGE PLANS (Continued)

"Seven for Six" Plan

a - Seven run of schedule twenty-second spots per week, $6.00 per week.

b - One year, Non-cancellable contract.

c - Spots ordered under the "Seven-for-Six" plan cannot be combined for discount purposes.

d - Station-supplied copy limited to one change per month.

10—RATES - PROGRAMS & NEWS

News and Program Rates on request.

11—GENERAL

a - Sports - WOHI carries Cleveland Browns, High School Sports, Etc. Contact Sales Manager.

b - Contracts - One year from Date of First announcement. AAAA Form Accepted.

c - Copy and Length - WOHI conforms to the NAB Code.

d - Affidavits - On Request Only.

8 -- RATES -- PACKAGE PLAN -- (Continued)
Effective January 1, 1965

In order to better serve advertisers who are in the habit of purchasing several weeks a year of saturated advertising rather than continuing programs throughout a contract year, WOHI offers the following weekly package plan:

NUMBER OF SPOTS IN THE PACKAGE WEEK

Min.		30 Sec.	20 Sec.
10 times	-- 42.00	24.00	18.00
15 "	-- 55.50	35.25	26.25
20 "	-- 64.00	42.00	34.00
30 "	-- 82.50	54.00	45.00
40 "	-- 104.00	62.00	52.00
50 "	-- 125.00	72.50	55.00

PACKAGE RATES CAN NOT BE COMBINED WITH CONTRACT SPOTS TO EARN CONTRACT RATES .....

Rate cards, and rates, are a vital part of successful station management. Used constructively and prepared carefully, they will do much to make management easier, public relations better, and efficiency greater. WOHI is a single rate card station; the same rates apply to both national and local spots. Spot announcement and program rate cards are simple, easy-to-understand.

W O H I
East Liverpool, Ohio
RATE CARD #10 EFFECTIVE JANUARY 1, 1965

NEWS	20x	40x	60x	80x	100x	200x	300x	400x	500x	BASE
5 min.	6.50	6.65	8.10	8.20	7.95	7.00	6.10	5.15	4.90	9.35
10 min.	12.55	12.20	11.90	11.55	11.20	9.90	8.60	7.25	6.95	13.20
15 min.	16.70	16.30	15.85	15.40	14.30	13.20	11.45	9.70	9.25	17.60

Spots in newscasts are billed at the regular spot earned rate plus 25%. Above prices include commercial continuity of 1:30, 2:10, and 3:00 in 5, 10, and 15 minute programs.

PROGRAMS	20x	40x	60x	80x	100x	200x	300x	400x	500x	BASE
2 Min.	5.45	5.30	5.15	5.00	4.85	4.20	3.72	3.15	3.00	5.70
3 Min.	6.05	5.90	5.75	5.60	5.40	4.80	4.15	3.50	3.35	6.40
4 Min.	6.70	6.50	6.34	6.20	6.00	5.30	4.60	3.85	3.70	7.05
5 Min.	7.30	7.15	6.95	6.75	6.55	5.80	5.00	4.25	4.05	7.70
10 Min.	11.00	10.70	10.40	10.10	9.80	8.65	7.50	6.35	6.05	11.55
15 Min.	14.65	14.25	13.85	13.50	12.10	11.55	10.00	8.45	8.10	15.40
30 Min.	26.15	25.45	24.50	24.05	23.40	20.65	17.90	15.15	14.30	27.50
60 Min.	41.80	40.70	39.60	38.50	37.40	33.00				44.00

Commercial Limits: 2 mins. pgm. : 40" ; 3 mins. pgm. : 60" ; 4 mins. pgm. : 1:15 ; 5 mins. pgm: 1:30 ; 10 mins. pgm: 2:10 ; 15 mins. pgm: 3 mins ; 30 mins. pgm. : 4:15 ; 60 mins. pgm. : 7 mins.

Times shown all programs 5 minutes and up less 30 seconds for station identification.

SPORTS	1x	3x	5x	9x	10x	18x
Football						
Local ½	40.00		35.00		30.00	
Local 1	75.00		65.00		57.50	
Browns ½	20.00				15.00	
Browns 1	37.50				29.00	
Warmups) Wrapups)	17.50	17.00	16.50	16.00	15.00	(Both Basketball & Football)
Basketball						
Local ½	30.00	27.50		25.00		22.50
Local 1	55.00	50.00		45.00		40.00

Engineering Fees: Programs up one hour: $5.00 Other rates on request.

Notre Dame Football: 1: $15.00 ½: 27.50 No discounts.

WOHI IS A SINGLE RATE CARD STATION.

never think of our rep in any way except as a salesman who calls on out-of-the-area customers. He earns his money; in fact, if we were to replace him, we could not call on his customers for the 15% he gets. We think that 70% of national time, net, is fair. All we have to do is *run* the commercials —no writing, no selling, no talent, no production—just run them. I wish all accounts were like that!

Frequency Discounts

Setting up a discount pattern and the rates for frequency discounts becomes a matter each station must consider on its own. Factors which influence discount rates are:

1. The revenue goals of the station.
2. The current rates being charged.
3. Forestalling use of short spots for economy purposes only; i.e., making it attractive to use minutes rather than thirties or twenties.
4. Making prices and discounts fair to the buyer, without excessively steep or slight discounts.

Each of these factors should be kept in mind as each rate is fixed; in addition, rates should be mathematically simple, rounded off at easily-computed figures. This standardization of figures will save a lot of computation time while the card is in effect. Raising all rates by the same percentage factor makes an increase easier to define to clients. "It's a 10% increase" is much easier to explain than different time and spot increases.

Classes of Rates

The other day I was looking at a card prepared by a major-market high power station. It was complicated by time classifications and bonus plans, concocted, no doubt, with one of two goals—getting more money from the advertiser, or getting the advertiser to use less desirable time. Our "Combination Plan," is designed to give more time at a better rate, rather than get more revenue from our time. The result is better distribution of business around the clock, but little increase in revenue. Unless you are the clear channel station in a top market, you are competing for business, and the best way to compete is to *give the client what he wants at a price that is fair to all.* A bonus plan, for example, offers the client something he doesn't want, and alludes that your time isn't worth the rate-card price. You become a wheeler-and-dealer, instead of a solid seller, just like a car salesman who throws in a radio. (Let's keep the auto dealers throwing in radios, but not throw in our time!)

With our give-him-what-he-wants credo, we use two classes of time—*A* for all daytime, *B* for all nighttime. When we are asked for avails, we guarantee no more than one-half the schedule in traffic times. When we can, we give more; especially if the client can get something out of traffic times. Our salesmen, however, keep selling non-traffic hours because of the specialized audience.

The American Association of Advertising Agencies, 200 Park Ave., N.Y., publishes a standard rate card layout. They will send you a sample card and description of the layout. There are advantages to following a standard form. Once your printer has set up type for your card, he can produce subsequent issues at a lower cost than the original, and by using a different color with the same design, it will be more easily recognized. Your card will maintain a character of its own, and consistency of design will allow you to reissue a card which will be familiar to those who work with it.

Lengths of Spots

In most markets there are a few huge clients, more large clients, even more middle-sized clients, and a great number of small clients. The rate card, and station policy on announcement length, must be designed to give all potential accounts access to the airwaves at prices they can afford.

We do this by offering three spot lengths—60, 30, and 20 seconds. But, unlike many major-market stations, our price ratios of 100%, 55%, and 40% do not vary in direct proportion to spot length. Thus, the small advertiser can afford to buy a 20 from us at our rate. That's what we feel a 20 is for, basically—a small advertiser. Most big accounts would rather have a 60 and will pay the price when our representative emphasizes the extra time for jingles, etc. If he wants a dense schedule, we use 30's and 60's and give him frequency, always trying to balance spot length to desired frequency, budget limits, and copy demands.

Some stations don't sell anything less than a minute. But wouldn't any manager rather sell two 30's for 110% of the minute rate, or three 20's for 120% of the minute rate? If a client is sold on radio, he will buy not what is cheapest, but what will do the job best.

Of course, all this is a waste of time if spot length is not controlled—running a 30 that has been recorded 36" long amounts to a 20% rate cut. We say a 60 must be at least 58", not over 61"; a 30 must be 28", not over 31"; and a 20 must be 20" or less. NO EXCEPTIONS! On agency copy that is long we simply inform the agency of the error, and make agreed upon cuts in continuity.

We have found that availability of shorter spots has increased our potential customers. We keep a customer in what we think is his category, and rates and discount schedules to some extent discourage cheaper schedules for the sake of saving money alone.

Special Rates

Obviously, no station has a rate for everything. It is nevertheless important to prepare a rate card that anticipates as many differing lengths and breadths of programming as possible in order to have an orderly price policy. Preparation of these rates in advance will give the manager time to think about them in relation to his other rates—more so than he would if he were to pull them out of thin air when there is an inquiry.

We have prepared a "program" rate card. It shows rates for news programs, as well as the varying lengths of "prepared" programs. The use of the word "prepared" here is important, for it allows us to surcharge the customer, if necessary, for announcing and engineering talent, line charges, mileage, etc. "Prepared" rates

(*Continued on page* 46)

Community TV—14 Years of Service

By Charlie Buffington, Associate Editor

Potomac Valley TV Co. operates one of the nation's original CATV systems. By concentrating on community service, it has become one of the largest in the country.

NESTLED IN THE FOOTHILLS of the Allegheny Mountains in the Appalachia Region is the historic, bustling rail and industrial center of Cumberland, Md. This is no small community, with a trade population of 85,000 and many thriving industries, including a major tire plant and two major rail yards.

Yet prior to 1951, Cumberland's citizens knew very little about the television entertainment their friends in other cities were talking about, except for what they may have seen during an occasional visit. The city is completely surrounded by a mountainous terrain that almost entirely blocks off otherwise suitable TV signals. There were those who said that Cumberland never would have the advantage of television, but there was one who was unwilling to accept this defeatists' attitude—a man by the name of J. Holland Rannells. He proved that usable TV signals could be brought in with a method used in the Pennsylvania Mountains. Mr. Rannells, as a result, founded Potomac Valley Television Co., Inc., and still serves as its president.

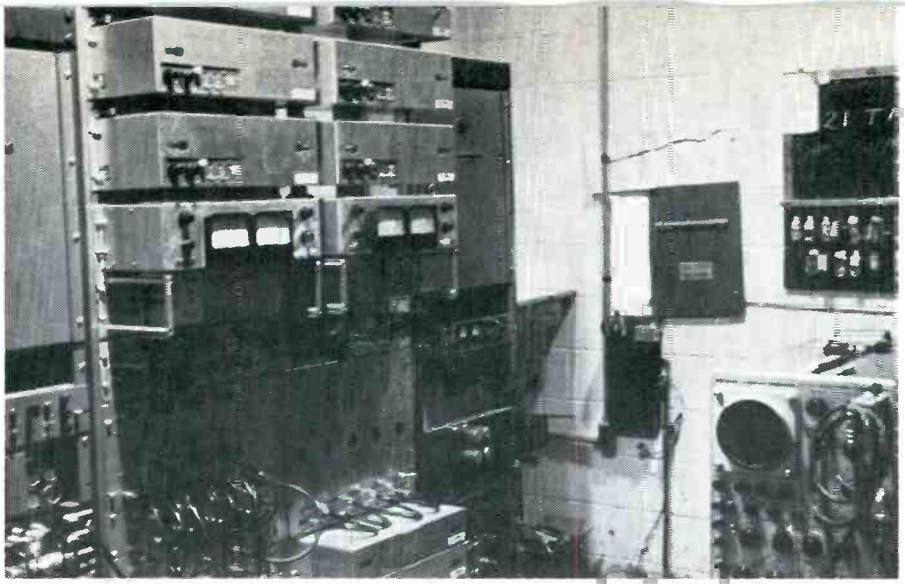
Two of PV's well-equipped service trucks and AMECO salesmobile parked outside the warehouse. This downtown site, separate from the office location, is used for garage and storage space. Equipment service is also handled in this building.

This two-story, masonry-block structure is located atop one of the highest ridges in the area, approximately 2,000' above sea level. It houses the head-end and microwave receiving equipment. PV's small but modern and efficient closed circuit studio is also located in a partitioned off section. This site also serves as a microwave relay station for Potomac Valley Telecasting Corp. The dark panels in the second story level protect the microwave dishes.

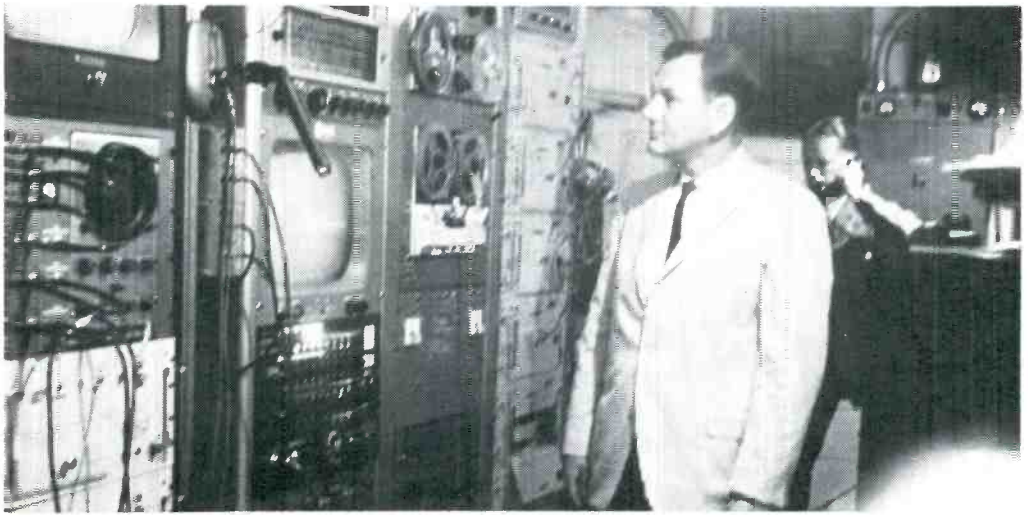
The company started on a small scale but grew rapidly as skeptics began to realize that Mr. Rannells and his associates were right. To convince the doubters, PV TV held demonstrations nearly every night in their downtown Cumberland offices. Also, direct mail, radio, and newspaper advertising were used extensively. Since then, the entire advertising budget, roughly 8% of gross income, has been spent on radio and newspaper, which offer a much lower cost per subscriber than direct mail.

Signals for the cable system were originally picked up at an antenna farm atop one of the highest ridges in the area. Fed with tender loving care into the then new low-band head-end equipment, TV signals were amplified and converted to the assigned PV channel. Naturally, the original equipment was all tube-type, and the cable was the only coax available, but as equipment technology became more sophisticated, PV began to use solid-state amplifiers and new aluminum cable in new areas. Many of the older amplifiers and many miles of the older cable are still in use, however, kept in proper working order by an alert technical crew.

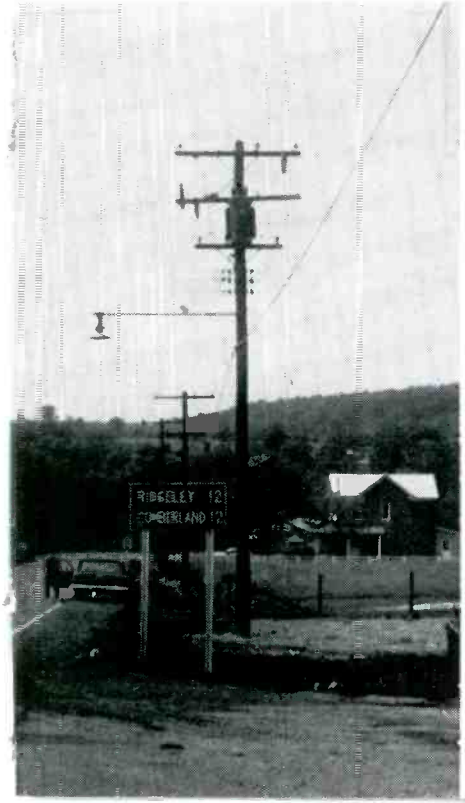
PV TV is, and always has been, very community minded, as any observer would readily learn during a visit to the firm. In 1961, they saw an opportunity to im-

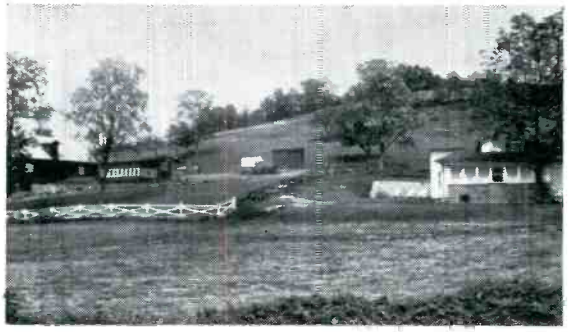


The microwave equipment room, showing the receiving and transmitting equipment. Waveguides transfer the incoming and outgoing signals to and from the antennas directly above on the second floor.



VP Buford Saville inspecting head-end equipment, while AMECO Tech Rep Bob Vandegriff makes phone call. Demodulated video signals are fed from the microwave equipment into the head-end units. Also rack-mounted at this location is the bank of FM tuners. A telephone dial switching unit places various units in service from a remote location, should a failure occur.





One example of the rural service provided on the cable. Trunklines extend about 12 miles out of the city in almost all directions.

As the road sign indicates, these photos were taken 12 miles south of Cumberland, in W. Va. (looking north on Rte. 28). House-drop cables are obscured, but PV's trunkline is visible on the utility poles.

prove the quality of their cable signals by using the service of a common-carrier microwave company. The microwave receiving system completely replaced the off-the-air TV antenna system, which is now used only for standby, and for FM signal reception. With the improved reception, the company was able to continue adding cable subscribers at a healthy pace. Since 1961, about 1,000 new hook-ups have been added each year.

The 17,000 subscribers (out of a possible 19,000) regularly watch programming of the three major networks, plus an independent commercial station and an educational station. All TV signals are from Washington, D. C., some 98 miles southeast. (Pittsburgh is only 75 miles northwest, but the rougher terrain would require a much more elaborate pickup system.) The educational station is not used extensively in Cumberland schools since it is programmed by the Washington educational system, and material is therefore not always applicable. For the benefit of home viewers, however, it is carried on the cable, generally from 5:00 to 10:30 P.M.

The Microwave Link

The microwave link which feeds the 5 TV signals to PV TV is owned by Potomac Valley Telecasting Corp., a common carrier company formed in 1961 and operated as a separate corporation by PV TV's officers. The same TV signals are also fed independent cable companies in Kyser and Piedmont, W. Va., and Frostburg, Md. Each pays a monthly fee of $17.50 for the relay service. The microwave transmitter site, where the Washington signals are picked up and relayed, is 28 miles S. E. of Cumberland on a 3,000′ mountain. The TV receiving antenna system is located about 12′ above the ground, below the crest on the eastward slope to shield against unwanted pickup from the west.

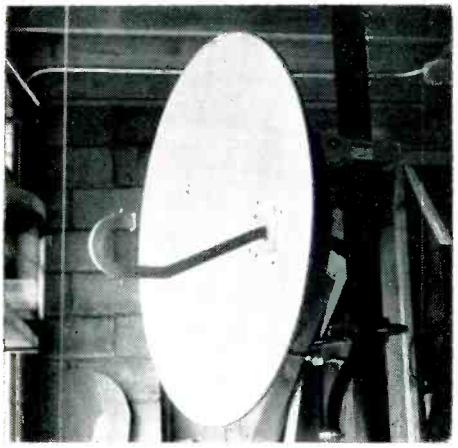
Signals Carried by PV TV

WRC-TV	(4)	Washington
WTTG-TV	(5)	Washington
WMAL-TV	(7)	Washington
WTOP-TV	(9)	Washington
WETA	(26)	Washington
WGMS-FM		Washington
WHAG-FM		Halfway, Md.
WJMD-FM		Bethesda, Md.
WKJF-FM		Pittsburgh, Pa.
WJAC-FM		Johnstown, Pa.

Five FM stations are also carried on the system, offering a varied program fare.

Interestingly, three UHF translators operate from Cresaptown, some 7 miles to the southwest. They offer the only other possible means of receiving TV signals in Cumberland, and carry Washington Channels 5, 7, and 9. Also noteworthy of mention are several pending applications for translators in Cumberland itself.

PV's initial hookup charge is $5.00, and the monthly service fee



One of the three identical microwave antennas housed in the second-story area. Each dish is protected from weather by a translucent fiberglass panel.

is $4.75. The company uses an inexpensive post card billing system which has worked quite well during the years.

Approximately 250 miles of cable is currently used in the Potomac Valley system, running about 12 miles out of the city in almost all directions, serving rural and suburban as well as city dwellers. Around 15% of the cable subscribers live in rural sections. While the company cannot run the cable into an area for an extremely small number of potential house drops, they have established no rigid policy on the minimum. PV tries in every case to offer cable service wherever feasible. Cumberland, like many communities, is becoming more and more urbanized, resulting in a demand for the TV cable almost equal that of electric and telephone services. Prospective home buyers generally insist that the cable be installed before they agree to buy property in a new development; thus, PV's cable almost always goes into a new housing area right along with the utilities. This constantly growing demand forestalls what most

The City of Cumberland as it looks from the head-end building. If the haze, rather prevalent when this photo was made, had not been so heavy, the ridge of hills west of Cumberland would be clearly visible. To the left and right (south and north, respectively) similar hills block TV reception.

cable service companies must face —the saturation point.

Seventeen radio-equipped service and maintenance vehicles keep good sharp pictures humming along the system, through cable strung on poles owned by the Chesapeake and Potomac Telephone Co. and Potomac Edison Electric. PV pays an annual per-pole rental of $3.50, and has always enjoyed a cordial business relationship with the utilities. A staff of 29 people are employed by the cable company. Four full-time technicians are assigned principally to maintain the 450 amplifiers and the head-end equipment.

The more than $2 million investment in PV TV has been good for the company, and for its customers. Mr. Buford Saville, vice president, says that very probably they would add the necessary equipment for high-band operation within the next five years. A weather channel, not presently included in the system, would be installed at the same time, should the need still exist. Presently, a weather channel cannot be added without eliminating one of the TV channels; the low-band head-end is operating at its maximum.

Meanwhile, as a means of increasing local service in the area, PV has applied for a UHF-TV facility. The realization of this project doesn't seem too near, at least probably not until the "powers that be" decide what controls or regulations will be imposed on CATV operators. On this point, Mr. Saville (a leading figure in CATV organizations and recently elected president of the Mid-Atlantic Community Television Association) said that he favors the Harris bill now before Congress. He feels it's equitable to both CATV systems and to broadcasters. As a member of NCTA, and a subscriber to its code of ethics, Mr. Saville makes a point of stating that PV TV has no intention of carrying commercials over its cable, although they could have done so in the past. He feels that advertising is strictly the broadcaster's field, and has no thought of infringing on this market.

Mr. Saville was quite enthusiastic when asked about PV's community relations. He and several others in the firm are deeply involved in all sorts of activities. Service clubs, charitable organizations, and Junior and Senior Chambers of Commerce are just a few who can count PV staffers among their members.

A closed circuit TV studio was added to the head-end facilities for the benefit of the community. Just recently, the Cumberland Junior Chamber of Commerce did a telethon on behalf of the Friends of Handicapped Children, raising $7,000. These closed circuit facilities are always available for such community-wide campaigns.

The Potomac Valley Television Co. has become as much a part of Cumberland as a bank, or utility, or any establishment upon which people come to rely heavily. And while television reception of a sort is available without the cable, there is no question of the superior quality and variety of signals offered by the cable. The percentage of cable subscribers to total TV homes (roughly 90%) seems to indicate strongly that the citizens are willing to pay the reasonable monthly fee for this quality and variety. Most importantly, however, it is indicative of the needed service performed by the cable company. ●

Preparing Engineering Data for FCC FORM 301

by Harry A. Etkin

Part 2—If you're planning a new FM station, or major changes in your present FM facilities, here are some guidelines for filing data with the FCC.

THE first part of this series dealt with the data required by FCC Form 301 for a standard broadcast station. This part concerns the specific information required by Section V-B and the costs involved in preparing engineering data for FM facilities.

Selecting a Frequency

Available frequencies for FM broadcasting are listed in Par. 73.201: Numerical Designation of FM Broadcast Channels, Subpart B—FM Broadcast Stations (Vol. III of the Rules). The channel you request must be one assigned to your community (Table of Assignments, Par. 73.202). If your community has no channel assigned, or is not within 25 miles of the assignment, or if there are stations already on the channels in your area, a petition must be filed with the FCC to change the Table of Assignments as required by Par. 73.203.

Antenna Site Considerations

Applicants who propose to operate an FM antenna in the immediate vicinity (200 ft. or less) of another FM antenna, or TV antenna with frequencies adjacent to the FM band, must describe the effect the two systems will have upon each other.[1]

If an FM antenna is to be mounted on a nondirectional standard broadcast antenna tower, new resistance measurements must be made after the FM antenna is installed and tested. During the installation, and until the new resistance measurements are approved, the AM license should apply for authority (informal application) to use the indirect method of measuring power. The FM application will not be considered until the new resistance measurements are filed for the AM station. If the FM antenna is to be mounted on an element of an AM directional array, or on a tower in the vicinity of a directional array, a full engineering study of the effect on the performance of the AM array must be filed with application. In some cases, the FCC may require readjustment and certain field intensity measurements of the AM system when the FM antenna is in operation.

Author: Mr. Etkin is a staff engineer with WQAL-FM, Philadelphia, Pa.

Facts About FM Antenna Structures

An antenna located at a height above the service area, such as a mountain top, may have a pattern null falling in the vicinity of a heavily populated section of the principal city.

If a populated section lies within the area, the broadcaster should have the antenna manufacturer apply electrical beam tilt or null fill or a combination of both.

Polarization patterns, standing wave ratio, and gain may be affected by side mounting an antenna. A performance check should be made before deciding on a final location.

Additional Methods of Determining Topographical Data

Topographical data may be obtained on roads which are along radials from the transmitter site by using a sensitive altimeter.

The average elevation of each radial from 2 to 10 miles may be determined by averaging the mean values of mile or half mile segments.

The height of the antenna radiation center above the average elevation of the radial is: Height of radiation center above sea level minus the 2 to 10 mile average radial elevation.

The free space field intensity in mv/m at 1 mile is measured 1 mile from the antenna with 1-kw input in the half-wave dipole. At this 1-mile point, the field intensity for the half-wave dipole is equal to 137.6 mv/m. This measurement is made under conditions of free space field intensity; i.e., the signal is free from reflections from earth or other objects.

Section V-B

If you plan to use a dual polarized antenna, Tables I and II list data for horizontal and vertical polarization. Fig. 1 shows how data for dual polarization is entered on the form.

The mathematical expressions for antenna field gain and power gain are:

Field gain = field intensity in mv/m for multielement antenna/137.6

Power gain = (Antenna field gain)^2

Authorized power and antenna requirements are illustrated in Table III. No minimum antenna height above average terrain is specified. Heights exceeding those listed in Table III may be used if ERP is reduced by the amount in-

dicated by the appropriate curve in Fig. 2.

The height of the radiation center is the physical center of the radiating elements if uniform power distribution is used. If a split-feed or power divider system and nonuniform power distribution are employed, the height of the radiation center is not the same as the physical center (the manufacturer will furnish this data).

A directional antenna may not

(b) Antenna data

Make	Type No. or Description	No. of sections
Vert, Electronica Horiz: Gates	300. FMA-6B	6 6

Effective free space field intensity at one mile in mv/m for one kilowatt antenna input power	Antenna field gain	Antenna power gain
Vert.359.3 Horiz:342.6	Vert. 2.611 Horiz. 2.49	Vert. 6.817 Horiz. 6.20

Is horizontal polarization proposed? Yes [X] No [ ]

If "No", attach as Exhibit No. Eng complete engineering data on the antenna and the effective radiated power proposed. Both horizontal & vertical proposed.

Is directional antenna proposed? Yes [ ] No [X]

If "Yes", attach as Exhibit No. complete engineering data thereon.

Fig. 1. Sample antenna data entries on Form 301.

11. Transmission line proposed to supply power to the antenna from the transmitter

Make	Type No.	Description
Andrew	452 562 A	Coaxial

Size (nominal transverse dimension) in inches	Length in feet	Rated efficiency in percent for this length
3-1/8	280	90.6 83.6
3-1/8	320	92.3

12. Proposed operation

Transmitter power output in kilowatts	Power dissipation within transmission line in kilowatts
7.36	1.20
Antenna input power in kilowatts: Vert. 2.93 Horiz. 3.23	Effective radiated power in kilowatts (Must be same as shown in Para. 2): Vert. 20 Horiz. 20

Fig. 3. Sample entries for transmission and proposed operation data.

be used solely for the purpose of reducing minimum mileage separation requirements; it is permissible if it will improve service, or permit the use of a particular site, and is designed for a noncircular radiation pattern. Directional antennas with a ratio of 15 db maximum to minimum radiation in the horizontal plane are not allowed.

Applications proposing the use of a directional antenna must be accompanied by:

1. A complete description of the proposed antenna system.
   (a). A description of how directivity will be obtained.

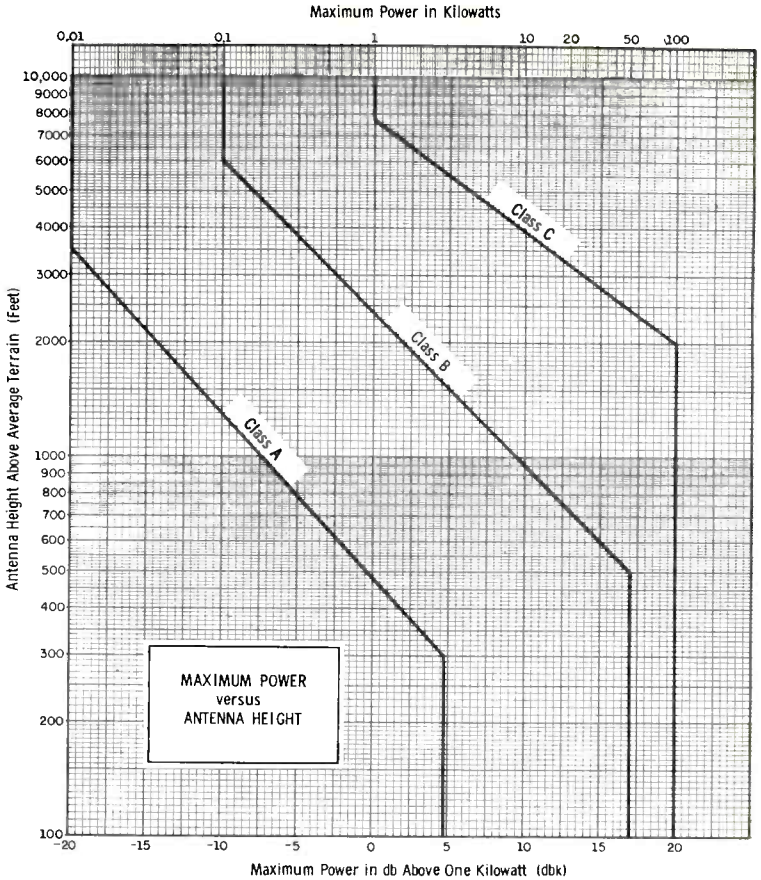


Fig. 2. Relationship between antenna height and power.

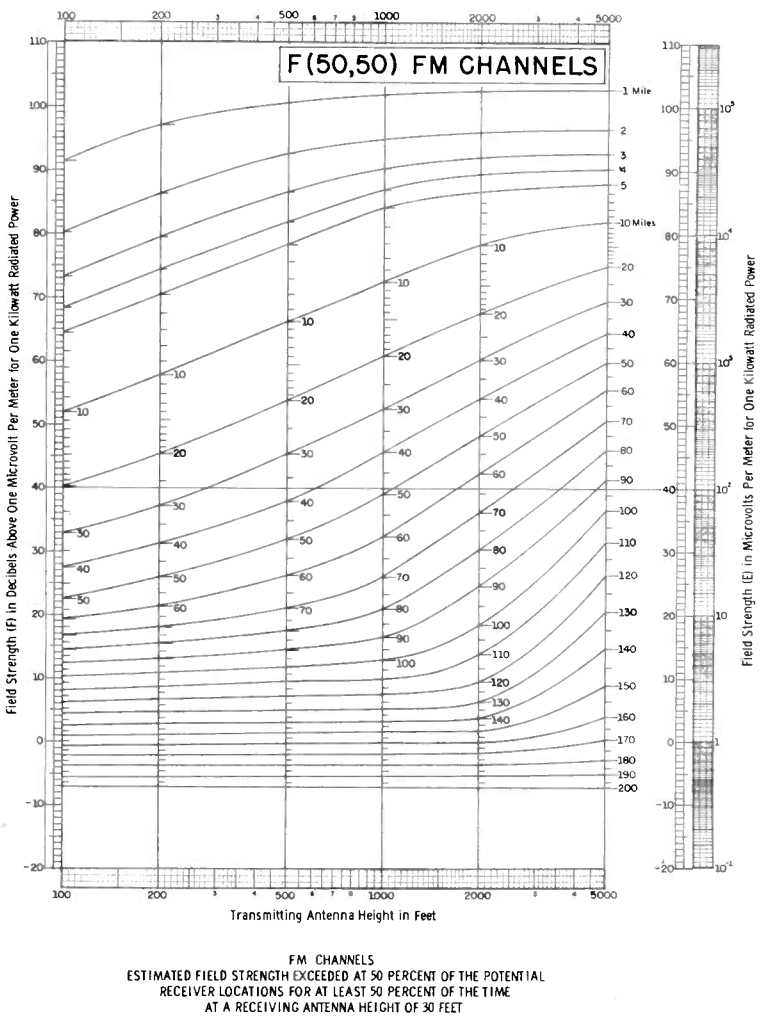


Fig. 4. Chart for predicting field strength.

Table I—Typical Horizontal FM Antenna Data

NO. OF SECTIONS	GAIN POWER KW	GAIN DB	GAIN FIELD
1	0.9	0.5	0.95
2	2.0	3.0	1.41
3	3.0	4.8	1.73
4	4.1	6.1	2.02
5	5.2	7.15	2.28
6	6.3	8.0	2.51
7	7.3	8.63	2.70
8	8.4	9.25	2.90
10	10.5	10.2	3.25
12	12.5	11.0	3.55
14	14.6	11.65	3.83
16	16.6	12.20	4.07
20	21.0	13.22	4.59

Table II—Typical Vertical FM Antenna Data

NO. OF SECTIONS	GAIN POWER KW	GAIN DB	GAIN FIELD
1	.95	-.22	.97
2	1.97	2.94	1.40
3	3.12	4.94	1.79
4	4.20	6.23	2.05
5	5.31	7.25	2.30
6	6.39	8.06	2.53
7	7.50	8.75	2.74
8	8.57	9.33	2.93
9	9.76	9.89	3.12
10	10.95	10.40	3.31
11	11.87	10.74	3.45
12	13.20	11.20	3.63
13	14.03	11.47	3.75
14	15.29	11.84	3.91
15	16.30	12.12	4.04
16	17.48	12.43	4.18

(b). A means of determining the operational pattern and maintaining allowable tolerances, such as a rotatable reference antenna.

2. Horizontal and vertical plane radiation patterns showing the free space field strength in mv/m at 1 mile and ERP in dbk for each direction; a complete description of how the measurements were made, including the type equipment used and a tabulation of the measured data. If you compute directivity, methods used, formulae, sample calculations[2] and tabulations of the data must accompany the application.

3. Radiation characteristics above and below the horizontal plane illustrated by vertical paterns. Complete information and patterns for angles of $\pm 10°$ from the horizontal plane, and the portion lying between $+10°$ and the zenith of $-10°$ and the nadir, to conclusively demonstrate the absence of undesirable lobes in these areas.

4. The horizontal plane pattern must be plotted on polar coordinate paper with reference to true north. The vertical plane must be plotted on rectangular coordinate paper with reference to the horizontal plane.

Transmission Lines

Fig. 3 shows entries for the required information on the transmission line. These characteristics vary with frequency: size in inches, coaxial or waveguide, efficiency to produce the desired ERP and, of course, cost considerations. The total length in feet includes the horizontal run from the harmonic filter to the base of the antenna tower and the length up the tower to the antenna terminal point where the gain is rated. Power loss for this length may be determined from the manufacturer's specifications. (See Table IV.)

Expected Coverage Information

Profile graphs of the terrain, from 2 to 10 miles for 8 or more radials from the transmitter location, must accompany the application. One or more radials must extend through the principal city. All radials should be plotted on a topographic map.[3]

The graph for each radial should be plotted by contour intervals of from 40 to 100 feet and, where the data permits, at least 50 points of elevation should be used for each radial. The graphs should indicate the topography accurately and should be plotted with the distances in miles as the abscissa, and the elevation in feet above the mean sea level as the ordinate. The elevation of the antenna radiation center and the source of the topographic data should be indicated on each graph.

The F(50,50) field strength chart, Fig. 4, is used to predict field strength of the contours (Fig. 1 of Par. 73.33 may also be used). The chart is based on an effective power of 1 kw radiated from a half-wave dipole in free space, which produces an attenuated field strength at 1 mile of 103-db above 1 μv/m (137.6 mv/m).

The chart may be used for other powers; the sliding scale associated with the chart serves as the ordinate. Par. 73.313: Prediction of Coverage, explains its use.

If the terrain departs widely from the average elevation of the 2 to 10 mile sector, in one or more directions from the antenna site, the prediction method may indicate distances that are different from what may be expected in practice. For example, a moun-

(*Continued on page* 46)

Table III—Authorized Power and Antenna Requirements

Minimum Effective Radiated Power	
CLASS A	100 watts (-10 dbk)
CLASS B	5 kw (7 dbk)
CLASS C	25 kw (14 dbk)

Maximum Erp And Antenna Height

CLASS	MAXIMUM POWER	MAXIMUM ANTENNA HEIGHT (feet above average terrain)
A	3 kw (4.8 dbk)	300
B	50 kw (17.0 dbk)	500
C	100 kw (20.0 dbk)	2000

Table IV—Operational Formulas

1. ERP in KW = Transmitter power in KW − Transmission line loss in KW + Antenna Power Gain in KW. The transmission line loss includes the loss in harmonic filter and power divider when dual polarization is used.
2. ERP in DBK = Transmitter Power in DBK − Transmission line loss in db + Antenna power gain in db.
3. Power in dbk = $10 \log_{10} \frac{\text{Power in KW}}{1.0}$
4. Power in KW = $\text{Antilog}_{10} \frac{\text{Power in dbk}}{10}$

COLOR TV on the Local Scene

There is little doubt that investment in color will start paying off this fall. Stations ready with local support will have a strong competitive edge. Here is the best information currently available, from industry leaders across the country.

THERE IS NO DOUBT that color TV, after 12 years, has finally come of age. Considering the trend of color-TV set sales, and the network plans for this fall, many station operators who may have been somewhat complacent about color are now faced with the dilemma of rapidly finalizing plans for local color programming. The best estimates available indicate that, as of the first of this year, less than 150 of the nation's VHF stations were equipped to transmit film in color. And, at this writing, it is estimated that less than 50 stations are equipped to handle local-live colorcasts. Of course, most TV stations can handle network originated color, but NBC affiliates generally have a distinct advantage in this respect, except in certain markets where competitors have made a strong stand by investing heavily in local color programming. With all the network color scheduled for this fall, it is no small wonder that color equipment suppliers are literally swamped with orders. Many will not be filled until early next year!

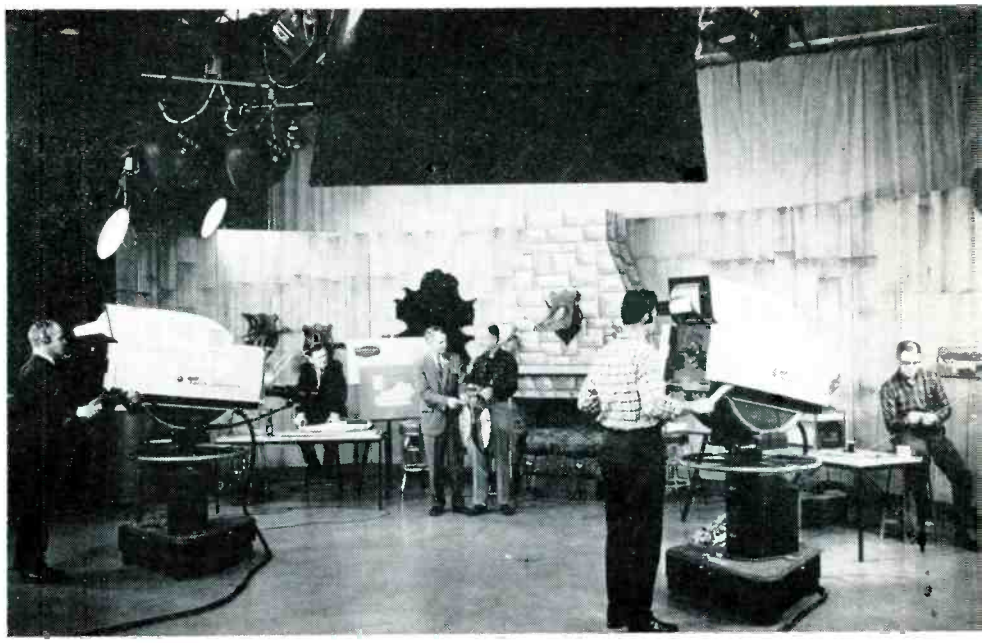
Just how important is it for a station to be equipped to originate local color programming? What plans should a station make in converting for color? Is timing important? What equipment will

Below: Completed Master Control at WMAR-TV. One of four VTR's is seen at left, behind program producer.

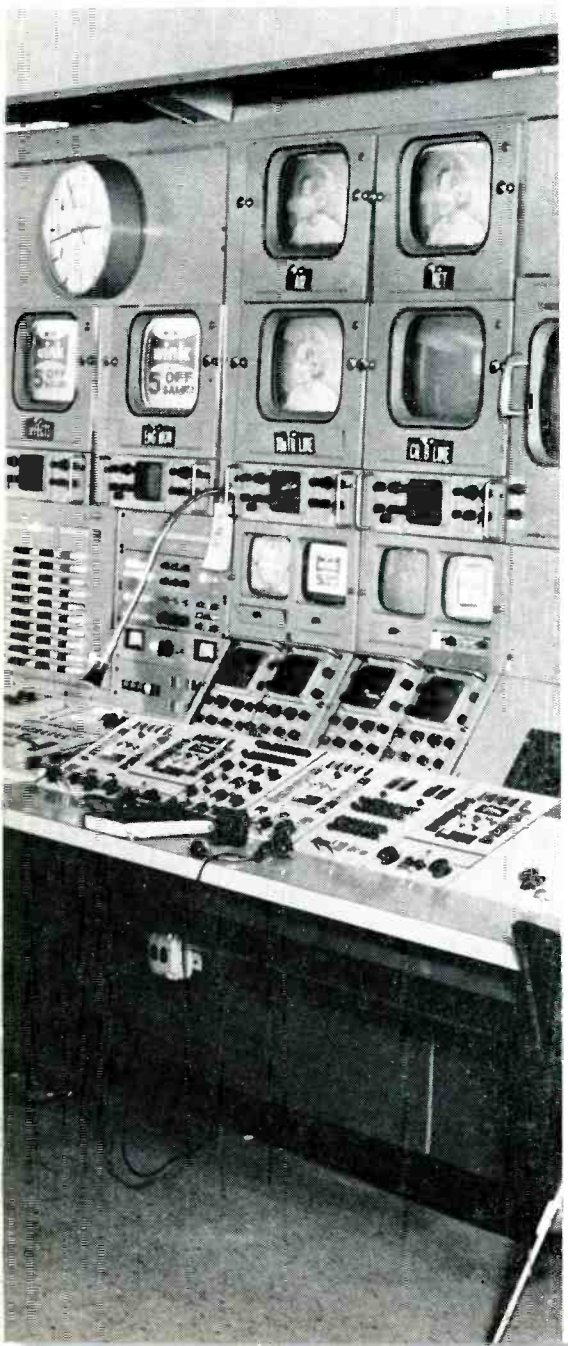
be needed? How much will it cost? What about delivery dates? These are the ponderous questions facing many TV station operators today. To develop some worthwhile answers, we investigated several markets, and made inquiries into specific station activities. Most of the information was obtained from stations who had made the move for color—people who are in the best position to provide, from actual experience, information of value to those who haven't.

The Importance of Color

Actually, the *importance* of being equipped for color is not as much the point as *when* should a station be equipped. On the national scene, the rating race among the three major networks



WAVE-TV live color program in progress, featuring local fishing experts. Station has all the color facilities possible for a station to provide, carries everything possible in color.



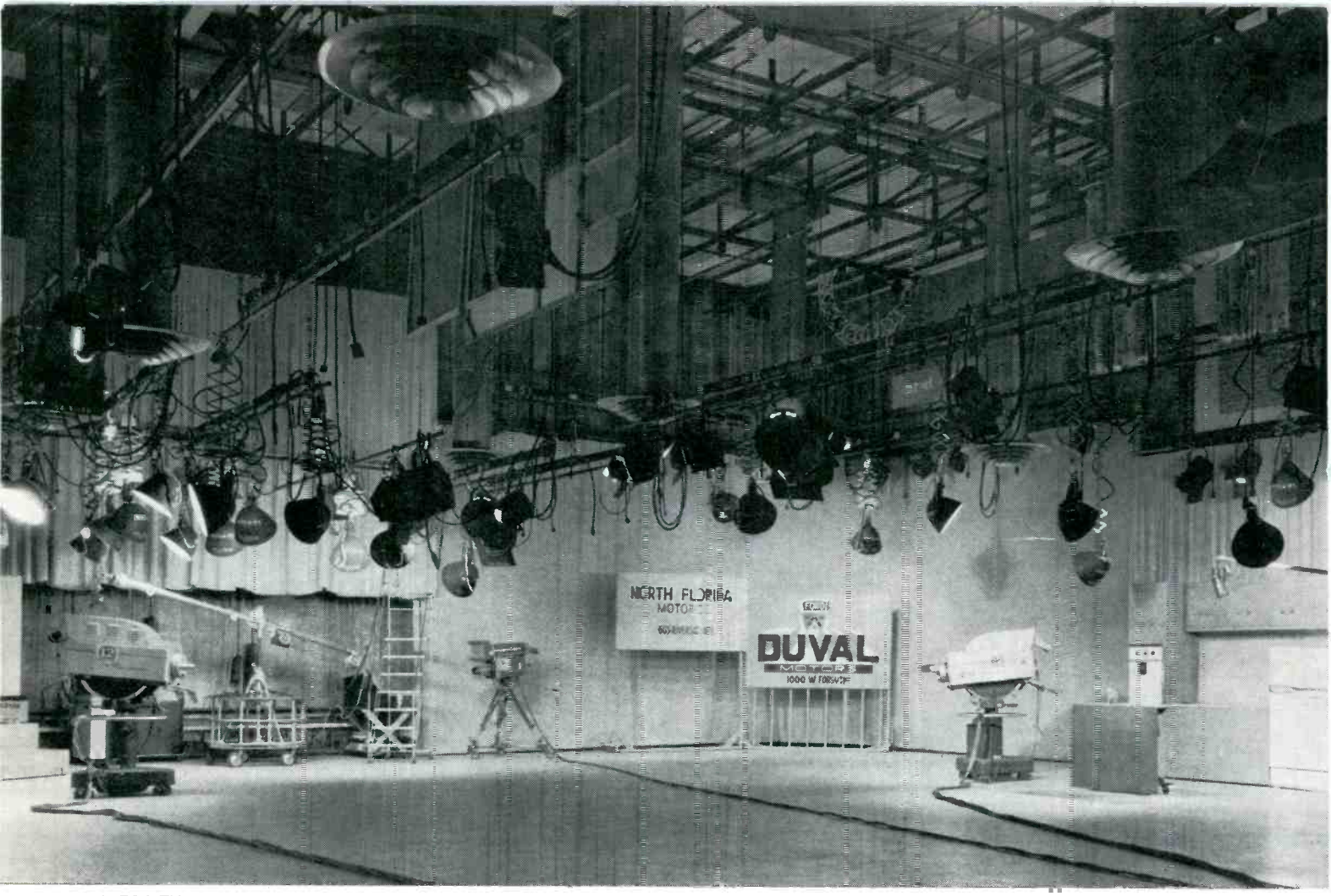
Are Local Stations Ready for Color?

Color set homes are increasing almost too fast to count, and networks are really ready to turn on the "colorworks" this fall. Are local stations ready to carry the ball—ready to originate color programming and commercial spots? And just what does it take to do the job?

To find out, BM/E made inquiries across the country. We learned that most stations are not yet equipped to originate live studio and remote programs. Many stations cannot, at present, tape color network shows for rebroadcast. Some stations still can't even transmit commercial spots and movies in color. This is not to say that plans to do so are not imminent—to the contrary, a good percentage of stations have ordered, or plan to order, color equipment. Because of the close competitive situation, many are unwilling to divulge specific plans; however, there is much evidence that many stations would like to be ready with color film-slide facilities this fall, and most who will not be ready this fall hope to be sometime next year.

Perhaps to try and dull the competitive edge of color, some hold-backs support the theory that Fall 1966 will see the major break-through in color. Based on what we learned, our prediction is that color will receive a major boost this fall, the nearest thing to a break-through in color-TV history. Those who are ready, even partially ready, will have a definite edge. The only possible advantage a station may have in biding time is to capitalize on the experience of others, finalizing more effective plans for next year.

Getting ready for color is a big job, and requires experience far beyond that needed for black-and-white telecasting. Several experienced and knowledgeable telecasters, who have been through the mill, strongly suggested that those planning to convert to color seek outside help. This feature, based on the knowledge and experience of those who should know, will serve as a starter.



WFGA-TV telecasts all programs and commercials in color. If sponsor prefers b & w, station quips "there is no extra charge."

is about as close and hard-fought as it has ever been. However, ARB studies indicate that color programming earns as much as 80% higher ratings in color set homes. NBC is on record with an interpretation which indicates that color programming is worth a full rating point (on the basis of the current 6% color set saturation). Projecting on the basis of predicted set sales through the end of the year, it is conceivable that color programming could make a difference of *two* rating points!

Many local stations have acted on the premise that their future depends on color—and not all of them are NBC affiliates. During one sample week last fall, local stations in top markets collectively originated anywhere from 25 to 90 hours of color programming (live and film, exclusive of network shows). Nearly 100 of the nation's largest advertisers, convinced that color adds measurably to the impact and effectiveness of their commercials, have shown keen interest in buying local spots in color. Studies of color set owners strongly indicate that they are the trend leaders and spenders. Also, they spend more time watching TV; thus, they represent a better than average market for almost any advertiser.

Color Set Penetration

Unquestionably, the first factor to be considered on the local level is the percentage of viewers capable of receiving color. Nielsen's recent survey, although not considered 100% accurate because it was conducted entirely by telephone, indicates that color set penetration in major markets is running from a low of 6% in New York, Chicago, Boston and Washington, on up to 9% in San Francisco and 11% in Los Angeles. (L.A. is given credit for having more color sets than any city in the country, over 340,000.)

In some small markets, where color set owners represent only 2 or 3% of the total audience, it seems likely the penetration may quickly double with the increases in color programming scheduled this fall. Enterprising stations in such markets could effect an even greater influence on color set buying through local promotional efforts, working with distributors, dealers, and department stores, and of course scheduling sufficient local color programming to stimulate interest. At the same time, of course, groundwork would be laid for getting a greater share of spot advertising business—in fact, even increasing total spot buying in the market.

As one station manager put it, "Since the economic life of a TV station depends on its ability to deliver audience, we can only conclude that color is a strong factor, and one which can no longer be ignored."

Advertising Potential

There are strong indications that both national and local advertisers are now favoring color-

equipped stations. In some cases, advertisers have been willing to accept lower rated availabilities to place color announcements. Even advertisers who are not switching to color seem to favor color-equipped stations because of their higher ratings. According to a Katz Agency survey, between 80 and 90 national advertisers will be using color commercials by this September. As to the question of rate policies, many representatives are recommending that no premiums be charged for running color commercials, feeling that, in the long run, stations will profit from advertisers' increased use of color. At the present time, most stations are not charging premium rates, although they do make nominal charges for producing material. The result is that color-equipped stations generally have a definite edge over competition, an edge which might be easily offset by premium charges.

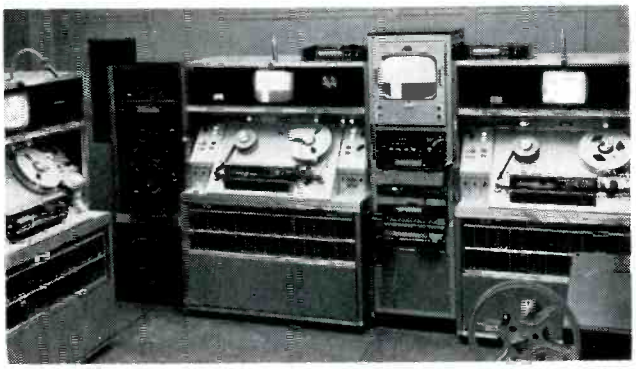
Several stations have reported marked increases in local spot business, especially where they were able to produce color slides and tapes for clients. In most cases, production costs were charged back to the advertisers, but no extra charge was made for spot time. KMTV Omaha, an NBC affiliate, reports that use of a recently installed VTR resulted in signing more than 20 local and national spots—business they feel they would not have written otherwise. In at least one instance, they produced a video tape spot for use by a station in another market. Thus, such use of color-equipped studios in itself may help offset the high equipment cost.

Local Programming

What about programming, other than the network offerings? Several stations indicated that live programming should be closely identified with the community. Typical of the local-live offerings are fashion shows, operas, boxing matches, and even surgical operations. With an hour of regular studio programming each week day, combined with network shows, many stations have achieved a definite competitive edge in their markets.

Planning for Color & Timetables

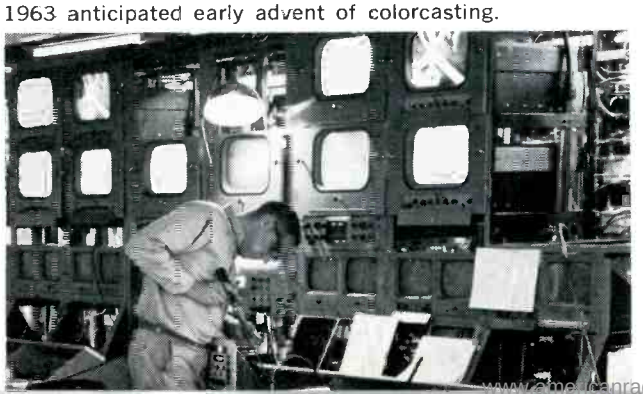
It is obvious that, to remain



TV tape and film room at WHDH-TV.

Asst. C.E. Art Vrooman and C.E. Ted Campbell in equipment room at WJAC-TV.

Installation of WMAR-TV Master Control equipment in 1963 anticipated early advent of colorcasting.



Master Control at WBRE-TV is on upper level, overlooking studio areas.

WHDH-TV Master Control. At upper left is video control for live color studio programs. Film camera video control at lower left. Far right is master control operation.

competitive, every station will ultimately be forced to adapt for full color. To satisfy public desire—indeed, perhaps public demand—both live and film facilities must be considered. Cost may be a deterrent, but there is no question that the expense is necessary.

The first step, then, is to consider what equipment is needed. To carry network color, modification is relatively simple and not too expensive, unless network programs are to be taped for delayed broadcast. In this case a color VTR will be required, involving fairly heavy expense. For color film and slide presentations, a film-chain camera is needed, and for live programming, obviously, color studio cameras are required.

If purchasing this equipment were the only requirement, converting to color would be much simpler than it really is. But studios also require "revitalizing," with special lighting, set designs, etc. Air-conditioning may be a problem, and of course there is the matter of training technical personnel to operate the more complex gear.

For many stations, the prob-

A Capsule of Color TV Station Activities

WMAR-TV Baltimore, Md. (2nd Affiliate to join CBS, one of the first to transmit color, assisted CBS in original tests of sequential color system) has been transmitting local color film and slide material with 3-V film chain for 7 years. In May 1963 moved to new building, providing for complete color facilities. Has been using TE-22 VTR since early last year, has second unit on order. Also ordered is TK-27 4-V color film unit. Live studio cameras will be in operation next year.

KVOO-TV Tulsa, Okla. (NBC) has been originating live color since last fall, color film-slide since 1956. During typical week, color is used in nearly 50% of programming (81% net, 12.5% live, 6.5% film-slide). Reports experience with color has been "quite rewarding."

WSAZ-TV Huntington, W. Va. (NBC) has been equipped to carry network color since 1954, film and live color since early 1956. John Clay, Chief Engineer, reports, "Live color origination requires all departments to change from routine to exceptional achievement. Starting with the set designer and ending with the transmitter, it is essential that everything be done better."

WFGA-TV Jacksonville, Fla. (NBC) went on the air Sept. 1957, operating from a plant designed for full-color operation. Current weekly schedule carries 20 hours of live color, 3 hours of film, 34½ hours network. Originates many network pickups from Cape Kennedy.

WMAL-TV Washington, D. C. (ABC) is currently getting ready to telecast all local programming in color this fall, spending some $850,000 on equipment and facilities. Equipment will consist of Norelco Plumbicon cameras, GE 4-V film chain, color conversion kits for three VTR's, Filmline color film processor, and two Vectorscopes.

WOR-TV New York (RKO General independent) has been equipped to originate color film-slide since Oct. 1960. Live color was originated opening day of Mets 1964 season; four cameras are used to cover field action, two more in ball park studio. Color programming constitutes some 45% of total time (35% film, 10% live), although no network programs are carried. Mr. John Koushouris advises color should be considered a two-stage effort—first film, then live.

KGW-TV Portland, Ore. (NBC) has been equipped to originate live color since going on the air Dec. 1956, has had color film-slide chain in daily operation, plans to purchase two new units. Live programming is 10½ hours per week color, 11½ b & w. Film inventory is 20% color. Manager Walter Wagstaff reports, "Our color schedule has been of great value to us, and prospects are that this value will increase. Fortunately, we have some very aggressive color set distributors and have enjoyed fine cooperation with them. The result is that our area now has a penetration of 11% and it seems safe to predict at least 15% saturation by year end."

WKY-TV Oklahoma City, Okla. (NBC) ordered its first color gear Sept. 1949, received delivery of three TK-40A camera chains early in 1954. (NBC took the first camera off the line, WKY received the 2nd, 3rd, and 6th production models.) Transmitted first NBC color April 4, 1954, and first live colorcast April 8, 1954. First regularly scheduled continuing program in live color (one hour daily, 5 days week) began April 26, 1954. First color feed to NBC was Aug. 17, 1954. Currently, of 126-hour weekly schedule, 50 are in color, 10 of these live.

WBRE-TV Wilkes-Barre, Pa. (NBC)—on UHF ch. 28—has had slide-film and live color since April 1957. Percentage of programming devoted to color is currently 41% net, 2% live, 7% film. V. P. David M. Baltimore reports, "Color is important to a station's image in the community, for advancement of the art, for use as a sales tool, and to establish leadership in the community. Obviously, some of these elements disappear when more than one station has equally competitive color facilities.

KRLD-TV Dallas, Tex. (CBS) has been equipped to carry network and film-slide color since 1955, has two VR-2000 VTR's in operation. Uses syndicated shows in color when available and produces some 30-min. news specials in color. Moving into new building next month, with two color studios and one b & w. Live color will be originated with new GE cameras, three to be in operation by this fall. V. P. & Gen. Mgr. Ves R. Box comments, "Color set saturation in this market has just about doubled each year for the past three years and is currently estimated at 6%, with a 10% figure projected for Jan. 1966. If this increase continues, and

THE WIDEST LINE OF GENERAL PURPOSE AND UTILITY MODELS ANYWHERE

Conrac's extensive line of tube-type professional monitors is the standard of the broadcast industry. If it's video...if it needs monitoring...there's a Conrac unit for the job.

CNB8/C

CNB8/2R

CNB8 utility monitors can be operated at full scan or reduced scan. They are available in a field case or as 2 monitors mounted side by side in a standard 19" relay rack. The paired-monitor assembly requires only 10½" of vertical rack space. Single units, mounted in 19" rack hangers, are also available with a variety of front panels to allow installation of other equipment.

SPECIFICATIONS	TECHNICAL DATA
Input Power:	130 watts at 117/234 volts 60 cycles (525/60 U.S.) or 50 cycles (625/50 CCIR). Fused. 3-wire AC cord 6' long.
Video Signal:	Composite 0.25 volt pp (minimum for 50 volts at kinescope). 2 volts maximum. Sync negative at monitor input.
Video Response:	Flat to 10 mc ±1 db. Standard kinescope resolution in excess of 700 lines. Differential gain below 5% at 50 volts kinescope drive.
Linearity:	Within 2% of picture height.

CKD14

CLD14

The CKD14 and CLD14 are 14" monitors featuring both high and low voltage regulation.

The units may be operated at "reduced scan," completely showing all four corners.

SPECIFICATIONS	TECHNICAL DATA
Input Power:	180 watts at 117/234 volts 60 cycles (525/60 U.S.) or 50 cycles (625/50 CCIR). Fused. All performance specifications will be met while line voltage varies from 105 to 130 volts AC at any rate. 3-wire AC cord 6' long.
Video Signal:	0.25 volt, pp (minimum for 50 volts at kinescope). Sync negative at monitor input.
Video Response:	10 mc ±1 db (800 line resolution). Differential gain below 5% with 50 volt kinescope drive.
Linearity:	Within 1% of picture height.

CFD17/C

Featuring both high and low voltage regulation, the CFD17 is a 17" monitor designed specifically for broadcast studio operation.

The unit may be operated at "reduced scan," completely showing all four corners.

SPECIFICATIONS	TECHNICAL DATA
Input Power:	180 watts at 117/234 volts 60 cycles (525/60 U.S.) or 50 cycles (625/50 CCIR). Fused. All performance specifications will be met while line voltage varies from 105 to 130 volts AC at any rate. 3-wire AC cord 6' long.
Video Signal:	0.25 volt, pp (minimum for 50 volts at kinescope). Sync negative at monitor input.
Video Response:	10 mc ±1 db (800 line resolution). Differential gain below 5% with 50 volt kinescope drive.
Linearity:	Within 1% of picture height.

CVA23/Y
(M9 mount,
ES23 speaker)

CEA26/C

Designed primarily for industrial use, CVA and CEA monitors feature both high and low voltage regulation. Both have separate sync channels with independent gain control for positive interlace and stability (regardless of the contrast control setting) and provide for differential input to minimize hum and other cable pick-up. Both are available with carrying handles or studs for ceiling or pedestal mount.

SPECIFICATIONS	TECHNICAL DATA
Input Power:	190 watts at 117/234 volts 60 cycles (525/60 U.S.) or 50 cycles (625/50 CCIR). All performance specifications will be met while line voltage varies from 105 to 130 volts AC at any rate.
Video Signal:	0.25 volt, pp (minimum for 50 volts at kinescope). 4.0 volts maximum. Sync negative at monitor input.
Video Response:	10 mc ±1 db (800 line resolution). Differential gain below 5% with 50 volt kinescope drive.
Linearity:	Within 2% of picture height.

ACCESSORIES

- Ceiling Mount M7 for 17" CZB17/Y and CFD17/Y monitors
- Pedestal Mount M8 for CVA23/Y, CEA25/Y, CYM and CYA21/Y monitors
- Ceiling Mount M9 for CVA23/Y, CEA25/Y, CYM and CYA21/Y monitors
- Dolly M3 used with M8 mount and pipe to make mobile pedestal.
- Enclosure and Speaker ES23 for CVA23
- Enclosure and Speaker ES25 for CEA25

CONRAC COLOR: THE BEST

CYA17/RS

CYA21/C

CYM17/RS

CHOICE OF OPERATION: CYA Series (Encoded), CYM Series (Red, Green, Blue)
CHOICE OF SIZE: Both 17" and 21" models available
ONE STANDARD PRICE: Regardless of monitor size, mounting method, or method of color operation chosen.
Designed to meet rigid performance requirements, Conrac CYA and CYM professional color monitors use both solid state and vacuum tube circuitry to obtain maximum stability and performance. Both feature complete control of individual guns which allows the operator to turn on the beams in any combination in any desired sequence. This feature coupled with an "operate-set-up" switch and a color "on-off" control switch makes set up easy and rapid. Both CYA and CYM monitors also offer a "picture size" switch which permits inspection of the picture edges.

INDIVIDUAL FEATURES—CYA Series

A PRECISION DECODER allows reduction in operating controls to "contrast" and "brightness" while a calibrated chroma control offers a "pre-set" position.

SOLID STATE SWITCHING replaces all mechanical relays normally found in color monitors. The sync drop relay, the automatic bandwidth change, and the color killer are all solid state.

A KEYED BACK PORCH CLAMP allows set up for true black level when operating on composite sync. A variable aperture corrector makes "crispening" of the picture possible. Positive interlace is assured through Conrac's patented sync gate circuitry.

CYA 17" & 21" SPECIFICATIONS TECHNICAL DATA

Input Power:	350 watts at 105/130 volts 60 cycles (525/60 U.S.) 3-wire line cord. 6' long with twist lock disconnect furnished.
Video Signal:	0.25 volt, pp minimum. Sync negative at monitor input.
External Sync:	High impedance, 3-8 volts pp, sync negative. Parallel coax input connectors.
Video Response:	Flat to 5 mc in black and white position. A 3.58 trap is automatically switched in during color operation while frequencies above 3.58 are rolled off. Variable aperture correction from front panel control.
Linearity:	Within 2% of picture height.

OPTIONS: The CYA17 is available in either cabinet or rack mount versions. The CYA21 is available in two cabinet versions; one with carrying handles, the other with studs for hanging or pedestal mounting. Both CYA units carry the same price, regardless of the size or mounting option you elect.

INDIVIDUAL FEATURES—CYM Series

TRACKING CONTRAST CONTROLS for the three channels are ganged and compensated to track across the entire range permitting simple but accurate simultaneous adjustment of the amplifiers.

BRIGHTNESS PULSES are generated within the monitor and synchronized to add to the video signals during horizontal retrace time. The amplitudes of the brightness pulses are adjusted from a single control on the front panel adding to the ease of operation. This advanced feature makes the CYM unique in the RGB monitor field.

INPUT LEVEL COMPENSATION permits balance of incoming signals should slight variations occur in the transmission path.

KEYED BACK PORCH CLAMPS in each channel maintain black level accurately.

FULL ELECTRONIC REGULATION of all power supplies including picture tube filaments assures independence from line voltage variations between 105 and 130 volts.

CYM 17" & 21" SPECIFICATIONS TECHNICAL DATA

Input Power:	105/130 volts, 60 cycles, 350 watts. Three wire line cord 6' long with twist lock disconnect furnished.
Video Signal:	0.25 volt, pp minimum composite, sync negative. 0.20 volts, pp minimum non-composite.
Sync:	Optional operation: internal sync, external sync, or separate H and V drive. Parallel connectors for external sync 3-8 volts pp negative or parallel connectors for H drive and parallel connectors for V drive, 3-8 volts pp negative.
Video Response:	Flat to 7 mc on each of 3 channels.
Linearity:	Within 2% of picture height.

OPTIONS: The CYM17 is available in two versions: cabinet or rack mount. The CYM21 can be ordered in a cabinet with carrying handles or studs for hanging or pedestal mounting. Both units carry the same price regardless of the size or mounting option you elect.

CONRAC GLENDORA, CALIF. / A DIVISION OF GIANNINI CONTROLS CORPORATION

CONRAC'S CZB SERIES
THE PRO'S PRO

CZB8/N CZB14/N CZB17/N

CZB 8", 14" and 17" monitors are the ultimate in dependability, fidelity and ease of operation...the consistent top choice of top professionals.

Combining the major advantages of both tubes and transistors, the CZB assures the same professional monitor features in every display size from eight to seventeen inches while introducing new standards in operation.

PICTURE COMPARISON CAPABILITY is possible since the CZB features dual, matched inputs and a local-remote input switcher. Standard test signals can be piped to one input while the picture being monitored is distributed to the other.

BLACK LEVEL DRIFT can be monitored since the CZB utilizes a keyed back porch clamp, directly coupled amplifiers, and brightness stabilizing circuits. At the same time, the monitor can detect hum, noise, and spurious signals on the incoming line.

SYNC SIGNAL ANALYSIS is accomplished through utilization of a front panel control which permits the operator to shift the picture one-half a line while simultaneously increasing the horizontal oscillator time constant to spot tape recorder hunting.

Another position of the same switch displays a pulse cross pattern while increasing the brightness automatically for better observation of the sync pulses.

OTHER OPERATIONAL FEATURES include remote adjustment of the brightness in addition to the remote switching of the input signals—coarse and fine contrast controls—picture size switch—117V/234V line operation, —scanning standards U.S. or CCIR.

The CZB offers differential gain distortion of less than 3% through its 10 cycle to 10 mc video amplifiers. The Conrac patented vertical sync timing circuits, which insure correct interlace, as well as horizontal sync pulse processing circuits, which eliminate "sync hook" or picture bending, are also features.

SPECIFICATIONS	TECHNICAL DATA
Input Power:	180 watts at 117/234 volts 60 cycles (525/60 U.S.) or 50 cycles (625/50 CCIR). All performance specifications will be met while line voltage varies from 105 to 130 volts AC at any rate.
Video Signal:	0.2 volt pp (minimum for 50 volts at kinescope). Sync negative at monitor input. Two input channels with built-in diode switcher.
Video Response:	10 cycles to 10 mc ±1 db. Differential gain below 3% with 100 volts kinescope drive.
Black Level Shift:	Less than 2 volts between 10% and 90% duty cycle.
DC Restoration:	Keyed back porch clamp.
External Sync:	1 to 8 volts. Parallel connectors. Monitor will operate from either composite video and sync signals or separate external composite sync.
Linearity:	Within 1% of picture height.

FULLY TRANSISTORIZED UTILITY MONITORS

9" and 14" TRANSISTORIZED MONITORS

RNB9/2R RNB9/C RLB14

Conrac's RNB-Series monitors are completely transistorized except for the picture tube and high-voltage rectifier.

Cooler operation, lower power drain, and increased reliability resulting from the use of transistorized circuitry are now available in the RNB series. Full broadcast quality video monitors designed for continuous operation in broadcast and industrial television applications, the RNB9 features a 9" Conrac-manufactured rectangular tube. The excellent geometry and small spot size of the tube assure crisp 800 line center resolution and 700 line corner resolution. The RLB14 with its larger 14", 70° tube offers the same performance.

SIZE of the raster can be adjusted from the front of the monitor to completely show all four corners and sides while linearity, both horizontal and vertical, is maintained within 2% of picture height on the RNB9 and 1% on the RLB14.

The RNB9 compact chassis size permits mounting two monitors side by side in a standard 19" relay rack. This assembly, model RNB9/2R, requires only 8¾" of vertical rack space for two independent picture presentations. Single units, mounted in 19" rack hangers, are also available with a variety of front panels to allow installation of other equipment. The RLB14 uses only 10½" of vertical rack height.

SPECIFICATIONS	TECHNICAL DATA
Input Power:	50 watts at 117/234 volts 60 cycles (525/60 U.S.) or 50 cycles (625/50 CCIR). All performance specifications will be met while the line voltage varies from 100 to 130 volts at any rate. 3-wire line cord, 6' long.
Video Signal:	0.3 volt pp (minimum for 50 volts at kinescope). Sync negative at monitor input.
Video Response:	10 mc ±1 db. Differential gain below 5% with 75 volts kinescope drive.
DC Restoration:	100% or zero, sync tip clamp.
External Sync:	1 to 8 volts. Parallel connectors. Monitor will operate from either composite video and sync signals or separate external composite sync.
Linearity:	Within 2% of picture height (RNB9). Within 1% of picture height (RLB14).

KTLA operates three huge mobile vans for colorcasting remotes. Note two color cameras in foreground, one atop van (often the position used during remote pickups.)

lems are compounded by lack of studio, control room, and equipment space. Indeed, in many cases, the decision to switch to color has been a major reason for relocating in new quarters.

Once the decision is made for color, the next point is whether to make the changeover in one fell swoop, or to add equipment over a preplanned period in calculated

we think it will, color will be an important element in ratings and revenue. Planning and construction of our new building over the past two years gave us an opportunity to move into extensive color origination at a very opportune time."

KCMO-TV Kansas City, Mo. (CBS) has been equipped to originate live and film-slide color since Fall 1956, provides 8 hours of color per week at present (3 hours live, 2½ feature film, 2½ cartoons). Although this represents only 5.9% of weekly programming, it is all local; few network shows have been available.

WBAL-TV Baltimore, Md. (NBC) is equipped to originate live colorcasts with TK-41 camera, also has TK-26 color film-slide chain, and two of four VTR's are modified for color playback. Transmitter had to be modified, adding sync gen and color-determining equipment. Color monitors were added throughout plant. Estimates current investment in color at $175,000, plans to add another color camera chain immediately, and two more plus second color film island in time for Fall 1966 season.

WHDH-TV Boston, Mass. (CBS) has been completely equipped for color since going on the air Nov. 1957. Currently averaging in excess of 5 hours local-live color daily. Colorcasts are all studio-orginated, all remotes are b & w.

KMTV Omaha, Nebr. (NBC) has been offering live and film-slide color for 10 years, schedules an hour daily to local colorcasts and does occasional specials (remote). A color VTR added 5 months ago has been instrumental in selling 20 regular color spots (local and national), and has been used to produce tape material for stations in other markets. Prom. Mgr. Amos Eastridge says that color has given station "a definite edge in Omaha."

WJAC-TV Johnstown, Pa. (NBC) has carried network color since Dec. 1953. Color film-slide chain was placed in operation Feb. 1955, and the station began originating live color June 1956. Colorcasts are 7% live, 3% film, 33% network.

WDSU-TV New Orleans, La. (NBC) was the fourth station in the country to provide local colorcasting (April 12, 1955). The station now owns one RCA color camera and leases a GE model. One of the three Ampex machines is adapted for color, and a second is scheduled for modification. Prom. Dir. Maury Midlo reports, "The disappointingly slow growth of color set ownership provided little stimulus for local colorcasting, and it was not until early '64 that color set sales, network color activity, and advertiser interest were favorable indicators of the great potential of color TV. Since March 1964 WDSU-TV has been telecasting all local-live programming in color."

WLW-C Columbus, O. (NBC) has been originating film-slide and video tape colorcasts since the end of 1963. Scheduled to originate live color this fall. New season schedule calls for 82 of 142 hours in color (12% live, 12% film, 33% network). Using TK-26C color-film camera, VR-1002 VTR's, TK-41 studio cameras. Crosley Broadcasting has been pioneer in color, with WLW-T Cincinnati one of the first stations to go into full color.

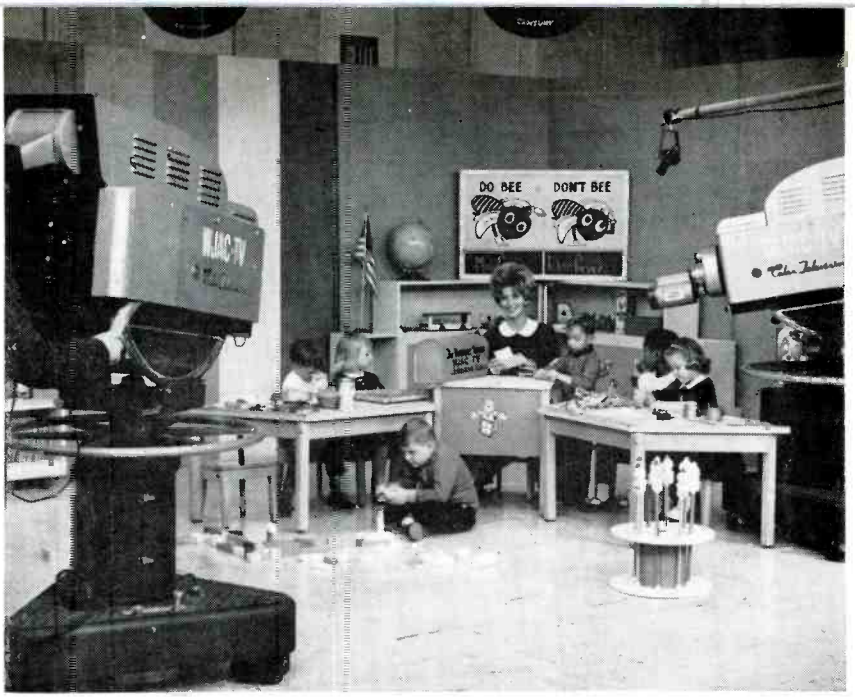
KTLA Los Angeles (Independent) was originally equipped for live and film colorcasts in Dec. 1954, but discontinued color operations in 1958 due to lack of interest in market. Resumed color programming in 1962, currently programs 13.5% of weekly schedule (10.5% film, 1% live, 2% tape), carries no network. V. P. & Gen. Mgr. Arthur Mortensen's advice: Newer and better equipment is becoming available, so wait if possible. If competition carries color, feel out local agencies to see if there would be any incentive in offering to run commercials in color.

WAVE-TV Louisville, Ky. (NBC) has been transmitting network color since 1954, was first in state to transmit live color (Aug. 1962). Presently schedules 40% of programming in color (7% live, 1% film, 32% network), to be greatly increased this fall.

WFBM-TV Indianapolis, Ind. (NBC) has been equipped to handle film-slide color since 1952, live since 1955. Fall schedule will be 98% color in prime time, 40-50% non-prime. Buys all movies available in color. Prom. Mgr. K. C. Strange says color is the most dominant factor in TV today. "In a few years, color will be as prevalent as in the movies, and woe betide the station who is left at the gate without the ability to carry color locally."

WGN-TV Chicago (Independent) has been equipped to originate live and film-slide color since 1957. Some 48% of present schedule is in color (73% live, 27% film). V. P. & Mgr. Ben Berentson says, "A study we recently conducted shows that families with color sets spend more time watching programs on color stations, including b & w programs." He concludes, "Stations not equipped to telecast in color can no longer afford to give competition this growing advantage."

WFGA-TV mobile unit films documentary on "Fort Clinch."



Romper Room being televised in color at WJAC-TV.

steps. If set sales, advertiser interest, future network programming, and competition mean anything, the best advice is "the sooner, the better." With sufficient capital and credit, any station in a competitive market would be well advised to go the full route immediately—even to the extent of moving to new quarters, if necessary. By the same token, any station planning to relocate would be foolish to do so without including color in future operational plans.

Lacking capital and/or sufficient space, the *least* a station should consider is a color film chain. This equipment not only makes it possible to show color movies, newsfilm, etc., but also offers the facilities most needed for color advertising spots. Also to be given serious consideration is a color VTR. Expensive as it may seem, it provides the only means of recording color network shows for later broadcast; a plus factor is that it can be instrumental in selling and producing spot material for local advertisers.

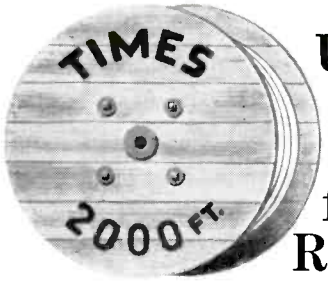
As for originating live telecasts, necessary equipment and facilities don't come cheap. It really isn't enough to simply add a color camera. Live color, to be worthwhile, requires special care in lighting and preparing set designs, costumes—in fact, every phase of the operation from studio to transmitter. Thus, unless and until station management is ready to cope with these problems, it would be best to work with film and tape. Summed up by John Koushouris, WOR New York, "One should not 'plunge' into live color broadcasting without soliciting guidance from those who have extensive experience in this field."

What About Costs?

Purchase and installation of the equipment necessary to make the complete conversion to color could amount to $300-500 thousand. The initial expenditure could be considerably less, by careful planning and modification of existing gear over a period of time, but ultimately more equipment and changes in facilities will be required. One station in the southwest indicated some $1.2 million was spent to completely convert two studios and a mobile unit for colorcasting. With studio cameras and VTR's priced in the neighborhood of $70 thousand, and film chains at $50 thousand, a bankroll can be diminished fairly quickly.

In the succinct words of Don Campbell, General Manager of WMAR-TV Baltimore (a CBS affiliate), "It is a fearsome responsibility for a station manager to accept the risk of expenditures of this size. The alternative is not to deny the obvious ultimate need for color, but to postpone it. Postponement at this time may have its own risks. We have already entered into a seller's market in color TV equipment, and I don't see the abatement of this situation for several years to come. So timing becomes one of the major factors in the decision. We cannot at the moment predict for the industry whether the addition of color will result in immediate added compensatory revenues. On the other hand, we feel that stations who do not stay abreast of the field are going to suffer a loss of prestige, audience, and impact." ●

WGN-TV originated "Great Music" series featuring world renowned artists, now syndicated throughout the world. Shown are Dorothy Kirsten and Conductor Walter Hendl with Chicago Symphony Orchestra.



Until April 16, 1965, you couldn't buy 2,000 ft. continuous seamless aluminum sheath CATV cable for love or money. Now Times is shipping it. Read why this revolutionary new cable makes every other CATV cable a compromise.

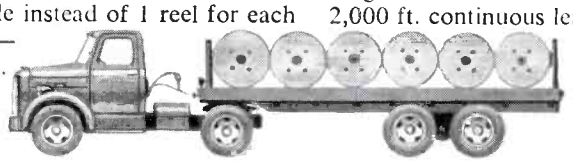
Everyone in the CATV business knew it: the longer the cable, the fewer the splices, the lower the maintenance, the better the performance ...the higher the profits.

But no one did anything about it until Times, the company the industry expects to be first*, took up the challenge of longer-length cable.

The result: Times made the breakthrough with its 2,000 ft. continuous lengths of seamless aluminum CATV cable. Even more exciting, Times is shipping this cable right now!

Here's what this new 2,000 ft. cable can do for you that no other cable can:

▪ **It easily saves you 10% on installation and shipping costs.** 2,000 ft. lengths mean fewer splices—8% saved. Only 1 reel needed for 2,000 ft. of cable instead of 1 reel for each 1,000 ft.—2% saved.



▪ **It increases profit.** The fewer the splices, the less maintenance needed. Less maintenance means less labor cost and more profit.

▪ **It improves electrical performance.** Times JT-1000 cable guarantees 26 db minimum return loss—a must for minimum ghosting. Moreover, it won't let in moisture vapor that stops your signal short of the target.

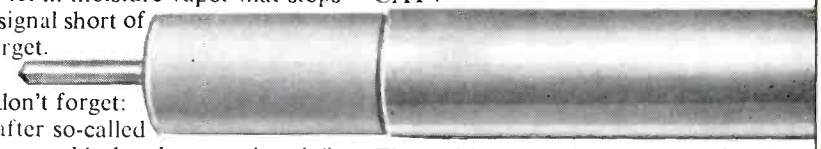
And don't forget: long after so-called economy cable has been replaced (it starts deteriorating the day you install it), Times 2,000 ft. JT-1000 cable will still be a top performer, keeping pace with your system's planned potential.

Why compromise when you no longer have to...now that Times 2,000 ft. continuous lengths of seamless aluminum CATV cable are on the shelf and ready to be shipped to you.

Times' Family of Firsts*—
The Standards of the Industry

First to design a long life cable specifically for CATV

First with foam dielectric cables for CATV



First with cable that made all-band systems economically feasible

First to make aluminum tube sheathed coaxial systems economically feasible

First to offer 26 db minimum return loss guarantee

First again with 2,000 ft. lengths of seamless aluminum sheath CATV cable

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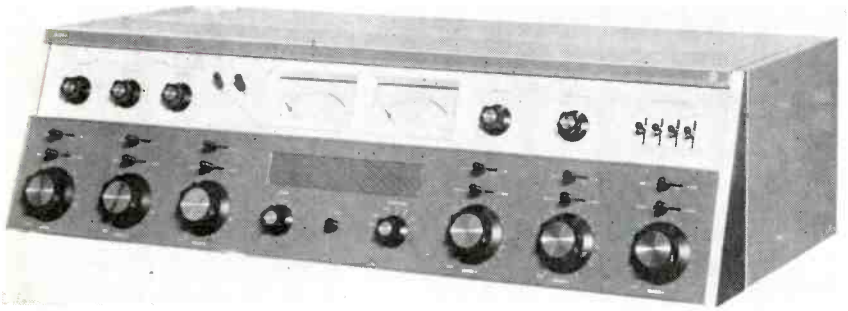
July 18-23

TIMES
WIRE & CABLE
DIVISION OF THE INTERNATIONAL SILVER CO.
Wallingford, Conn.

Transmission System Design and Engineering/Standard & Special Coaxial Cable/Multiconductor Cable/Complete Cable Assemblies/Teflon* Hook-Up Wire *A Du Pont Trademark

Circle 17 on Reader Service Card

BROADCAST EQUIPMENT



Photoconductive Control Console

A new solid state speech input console developed by Collins Radio, Dallas, Tex., offers new photoconductive control for both switching and level control. This eliminates maintenance time necessary with older switching and attenuation methods. Price of the 212S-L1 stereo console is $4200. A new, extensively transistorized AM transmitter in the 5-10 kw range features solid-state devices in the low-level audio and driver, the power supply circuits, and the RF exciter. All metering and control is accomplished from a separate extended control panel which requires no remote control authorization. Model 820E/F-1 5-kw transmitter is 69″ high x 67″ wide x 32″ deep and priced at $17,095. The 10-kw is $20,000.

Circle 161 on Reader Service Card

Stereo FM Transmitters

Rust Corp., Cambridge, Mass., has developed 1-kw and 5-kw stereo transmitters, compact in design and with solid-state power supplies. The 1-kw FMT-1C is 24″ wide and 28″ deep and has provisions for the automatic logging and remote control systems produced by Rust. The 5-kw FMT-5C, measuring 48″ wide and 28″ deep and using the lowest cost final tube, is also designed for remote control.

Circle 162 on Reader Service Card

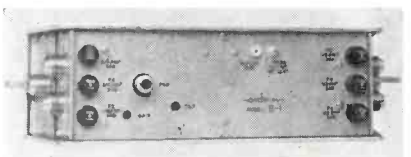
RPB Receivers

Marti Electronics has two new RPB receivers; Model MR-100/450-460, priced at $425, is designed for remote pickup, automatic relay, and civil defense use. Sensitivity is .6 μv or less for 20 db quieting, frequency range is 450-460 mc, and modulation acceptance is ±37.5 kc. Spurious and image response is attenuated at least 85 db; overall response is ±2 db from 60 to 12,500 cps. Audio output is +8 vu at 600 ohms. Model MR-200/942-952, priced at $795, covers a frequency range of 942.5 to 952.5 mc with a bandwidth of 200 kc to 3 db points. The unit incorporates two temperature-controlled oscilloscopes. Input is 50 ohms; output is 600 ohms at +10 db.

Circle 163 on Reader Service Card

New CATV Amplifiers

Entron, Inc., Silver Spring, Md., is offering a remotely powered, transistorized CATV extender amplifier. Designated Model B-1,

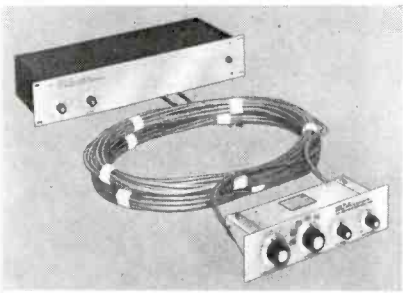


with its strand mounting feature and weatherproof design, it may be installed at any point where amplification is needed. Using silicon semiconductors, it is powered by an Entron remote power transformer through the coax cable. Entron has also introduced a remotely powered outdoor bridging amplifier, covering the low through high VHF band, offering 20 db gain to four distribution line outputs. A cast aluminum housing protects it from weather. A built-in directional coupler serves to tap signals off the trunkline with minimum interference to the line signal.

Circle 164 on Reader Service Card

Special-Effects Generator

A special-effects generator, with provision for remote control, is available from Ball Bros. Research Corp., Boulder, Colo. Similar to the manually operated Mark VI-A, the remote controlled



version, Mark VI-AR, produces horizontal, vertical and corner wipes and has an external key for keyed inserts. A unique matting or lettering circuit allows the operator to select any lettering shade between black and white, independent of the amplitude of the matting video signal. With this unit, local stations can give their advertisers network-type special effects.

Circle 165 on Reader Service Card

Wideband Microwave System

Lenkurt Electric Co., Inc., San Carlos, Calif., is offering a wideband microwave system, type 75A, for long haul message or video networks. All solid-state, except the traveling-wave amplifier, the heterodyne repeater system is said to accomodate 960 voice channels or color TV. The user can drop or insert order wire and small numbers of channels at intermediate repeater stations. Operating in the 5925-6425 mc band, the equipment has a frequency stability of 5 parts in 10^5. Transmitter power output is nominally 5w at the antenna flange.

Circle 166 on Reader Service Card

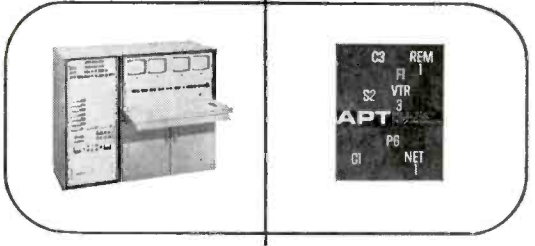
Just What Does a TV Computer Programmer Do?

First thing it does is go to work saving money—if it's Tarzian's new Automatic Programmer for Television (APT). APT starts paying its own way immediately by eliminating make goods caused by operator error. It can't get flustered—can't panic. Prime time, or any time.

With a Tarzian computer programmer, productions run smoother . . . faster. At APT's command, intricate combinations of switches, fades, dissolves, supers, prerolls, previews, etc. are executed precisely as required by your programming. With NO mistakes. And all automatically, freeing station personnel for more productive effort. APT speaks your language, too. All this solid state workhorse needs to go into action is the information right off your program log. No confusing translation into computer lingo. And anyone who can read the log can load it into the computer. It's really that simple.

APT is a true computer—not just an automation switcher. It was designed solely for television—not modified from some other use. It's all solid state. It interfaces readily with existing equipment. And, it costs less than a VTR.

First computer programmer designed specifically for television by a major television manufacturer.



A call or letter brings our brochure with all the details.

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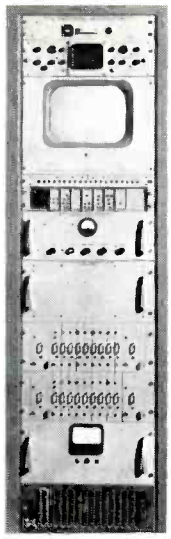
BROADCAST EQUIPMENT DIVISION
BLOOMINGTON, INDIANA

Circle 18 on Reader Service Card

TV Test Signal Generator



Philco Corp., Information Systems Dept., Willow Grove, Pa., has developed a flying-spot scanner which generates video signals from 2" x 2" slides. Available for operation in 525-line TV systems, or 945 line interlaced 2:1 with 20-mc bandwidth, it produces cross-hatch signals for adjusting scanning linearity, a lo-step staircase signal for testing differential gain and phase, and a multiburst signal for testing frequency response. Up to 32 composite or noncomposite video signals are provided. A patch panel permits rapid monitoring and flexibility of distribution.

Circle 167 on Reader Service Card

Transistorized CATV Line Extender

Viking, Hoboken, N. J., has introduced "The Bullet," #562, a 9 db transistorized broadband line extender with matched input and

output. A low noise figure, flat response, high input capability and flexible power feed make it ideally suited where line amplification is needed. The unit operates from 24v AC and is completely housed in a weatherproof case which can be opened for power feed. It is designed for indoor or outdoor use from −40° to +160° F.

Circle 168 on Reader Service Card

Improved UHF-TV Transmitters

General Electric, Syracuse, N. Y., is marketing an improved line of UHF-TV transmitters employing new type klystron tubes, which operate at improved efficiency in visual and aural amplifiers. Other features include silicon rectifiers in the high voltage plate supply and sealed, plug-in oscillator-modulator packages. The model TT-55-A 100w visual, 60w aural exciter can be used in conjunction with any of three power amplifiers—the TF-19-A, 15-kw visual, 8.5-kw aural; TF-20-A, 30-kw visual, 17-kw aural; or TF-21-A, 50-kw visual, 28-kw aural. The aural power of each unit may be reduced without additional equipment. A common power supply feeds both visual and aural amplifiers, which use identical klystrons.

Circle 169 on Reader Service Card

Tape Recorder/Reproducer

Midwestern Industries, Tulsa, Okla., has announced availability of the Magnecord Model 1022,

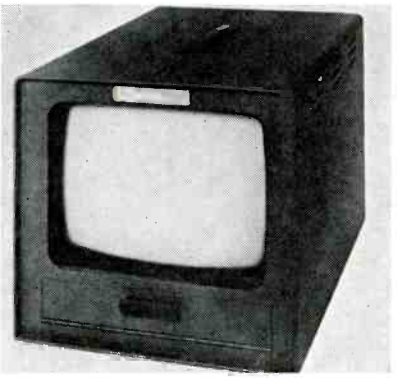
a dual-channel, completely solid-state recorder. The power supply is regulated to cope with line voltage and load variations. Features include push-button transport controls, which can be remoted; military-type differential band brakes, with solenoid operated tape gate, brakes, and pressure roller; broadcast standard input and output connectors; and built-in input and output transformers. Price is $739.

Circle 170 on Reader Service Card

Transistorized Video Monitor

A 9" transistorized video monitor that draws less than 50w power has been introduced by Conrac Div., Giannini Controls Corp.,

Glendora, Cal. Model RNB9, smaller and lighter than conventional small screen monitors, uses a new tube for improved

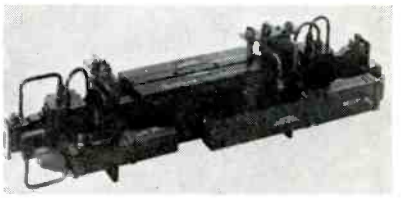


geometry and small spot size. The new tube also assures crisp 800-line center resolution and 700-line corner resolution. Picture height and width can be adjusted from the front of the monitor to show all four sides and corners. In this viewing mode, the picture is approximately 2" larger than on conventional 8" monitors. The RNB9 is available in either a portable carrying case or equipped for rack mounting.

Circle 171 on Reader Service Card

X-Band Circulator

Raytheon Co., Lexington, Mass., has added a new x-band circulator to its line of microwave devices. Operating at an average power of 100 kw cw, Model CXH26 has a maximum insertion loss of .25 db and isolation greater than 20 db, with an input VSWR of



1.10 or less in the 7.7-8.4 gc band. The unit is a 4-port differential phase-shift circulator designed for use as a duplexer or isolator and will withstand 20-psig waveguide pressurization.

Circle 172 on Reader Service Card

Mastering Recorder

A new mastering recorder from 3M Co., Minneapolis, is said to have the widest dynamic range attained for producing master tapes. Recording with the Professional Mastering System is improved by up to 15 db, eliminating hiss, distortion, and electrical noise. The transistorized unit includes a recording and playback system that records two different tracks for each channel with as

many as three separate channels recording simultaneously. An electronic switch transfers sound electronically from one track to another, and a tape transport mechanism pulls the tape past the recording heads to avoid distortion caused by inconsistent tape speed. Prices: 3-track system with ¾" tape, $8,500; 2-track system with ½" tape, $7,000; and a model with ¼" tape, $5,500.

Circle 173 on Reader Service Card

Improved Tone Arms

Three improvements in SME tone arms, announced by Shure Brothers, Inc., Evanston, Ill., include pre-wired cable and plug assembly for solder-free installa-

tion; 5-lead wiring system with separate hot and ground leads for each channel as well as for the arm; and completely assembled arms packaged in styrofoam. Model 3009 is $100.50 and Model 3012 is $110.50. Pre-cut mounting boards are available at $15.

Circle 174 on Reader Service Card

CATV All-Band Amplifiers

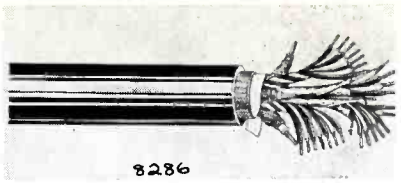
Kaiser CATV, Phoenix, Ariz., is showing two new all-band mainline amplifiers, models KAA-25

and KMA-25. These all-silicon transistor amplifiers are designed for high output with low cross modulation and signal-to-noise ratio, and are built in waterproof cases with dual matched outputs, AC voltage selectors, and end-mounted fittings. Model KAA-25 has automatic gain control.

Circle 175 on Reader Service Card

New Wire and Cable Items

Belden Mfg. Co., Chicago, is offering a #24 polyethylene insulated, Beldfoil shielded cable having an overall diameter of .160" and a nominal capacitance between shields of 22 mmf/ft.; a foam-core version of RG-58A/U, a 50-ohm coax which uses a stranded conductor and vinyl jacket for easy installation and vibration resistance in mobile installations; a ripcord type speaker cable using stranded #20 conductors; a flexible 28-



conductor TV camera cable incorporating three 75-ohm coax cables (shown), shielded center group of four #18 conductors and a shielded group of seven #22 conductors; and a miniature 75-ohm coax with an outer diameter of .150" for short service.

Circle 176 on Reader Service Card

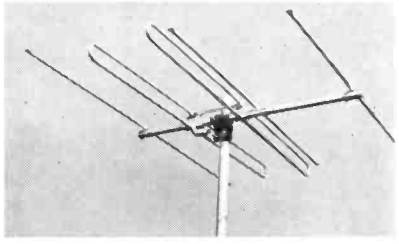
New Line of Remote Amplifiers

Four transistorized remote amplifier models from Gates Radio, Quincy, Ill., are reported to be the most compact ever made for broadcast use. The 5-lb. single-channel Unimote 70 can be desk or wall mounted, and is equipped with ear plug and power pack for AC operation. 10-lb. Attache 70 has 3 mic channels, two switchable, and includes VU meter and optional AC supply. Dynamote 70 weighs 12 lbs., including batteries that provide 200-300 hours of power, has 9 switchable inputs and can be paralleled to provide additional channels. Courier 70 is size of small camera case, has 2 mic channels, master gain control, and illuminated VU meter.

Circle 177 on Reader Service Card

Ruggedized Antenna

TACO (Sherburne, N.Y.) Model Y-51-6 is designed for TV remote



pickup and rebroadcast on Channel 6. Features include "ruggedized" construction with 1¼" square cross-arm, ⅝" dia. elements, and ¾" reinforcing sleeves. Longer elements are strengthened by vibration dampers to reduce fatigue. Connection is by direct coax to either 50 or 75-ohm, with matching accomplished through a re-entrant type internal balun. Power rating is 700w; nominal gain is 8db.

Circle 178 on Reader Service Card

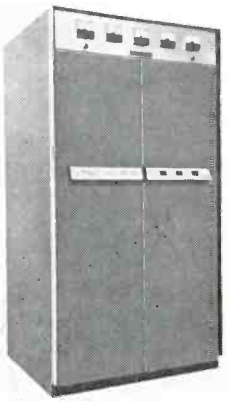
Color TV Vectorscope

Tektronix, Beaverton, Ore., has developed a color TV vectorscope which reduces time and effort in making accurate phase and amplitude measurements of chrominance information in the NTSC color signal. Electronically-switched dual-signal channels facilitate matching equipment such as encoders, cameras, etc. The type 526 presents either a vector or linear time base display. A subcarrier regenerator permits remote operation.

Circle 179 on Reader Service Card

7.5-kw FM Transmitter

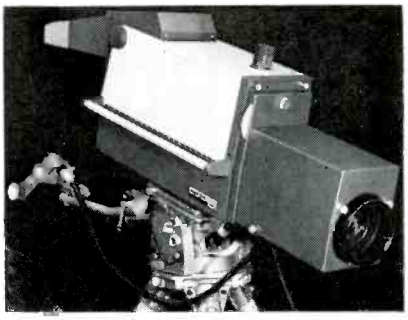
American Electronics Labs., Inc., Colmar, Pa., has developed a completely self-contained 7.5-kw FM transmitter, housed in a cabinet 76" high, 35" deep, and 40" wide. The entire assembly requires only 9.7 square feet of floor space. It uses 18 tubes with a total of 8 types, and block-type solid-state rectifiers. An air interlock switch prevents application of any voltages in the event of the loss of air pressure, and the status of the various circuits is indicated by lamps, a lighted lamp indicating an active circuit. All important voltages and currents are displayed on front panel meters, and provision is made for remote control.



Circle 180 on Reader Service Card

Studio I.O. Camera

The Marconi Mark V TV camera, marketed in the U.S. by Ampex Corp., Redwood City, Cal., is a 4½" transistorized I.O. studio model which weighs only 98 lbs.

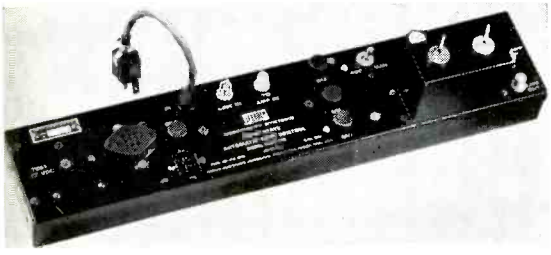


Camera-mounted controls include only basic on-off and lighting; all other controls are incorporated in separate equipment racks. The tilting viewfinder is reportedly 4 times brighter than standard designs, and can display the pickup image, and/or an image from another source. The Mark V also features a single integrated zoom lens with up to 4 pre-set positions.

Circle 181 on Reader Service Card

AGC Control for CATV Lines

Jerrold Electronics, Community Systems Div., Phila., Pa., is marketing their Model TAGC-213, which, according to the company,



will not adversely affect CATV trunkline amplifier operation. Acting as a continuously variable attenuator ahead of its amplifier, the unit automatically maintains optimum signal level (±.05%) with no deterioration in signal-to-noise ratio and no variation in amplifier gain. Said to eliminate cross-modulation and snowy picture problems. Price is $165.

Circle 182 on Reader Service Card

AM Frequency Monitor

Model AMF-1A frequency monitor from Wilkinson Electronics, Woodlyn, Pa., takes only 10½" vertical space in a 19" rack. Warmup time has been reduced to 5 minutes and required RF drive is low. Provisions have also been made for operation with a remote deviation meter. Unit sells for $795.

Circle 183 on Reader Service Card

Rate Card

(*Continued from page* 23)

mean the cost of *time* and control room facilities alone, not preparation of program content. If we expend any effort on preparation, or in providing more than our regular staff announcer and engineer, we charge more.

The biggest advantage of a complete rate structure is the elimination of wheeling and dealing. We can always "promo" a show, schedule exceptionally good talent at our expense, or help to merchandise—but brother if a client wants time, the price is set. It's amazing what such a firm rate policy can do to help your sales . . . and your image.

Announcing a Rate Change

We've noticed that many stations announce a rate change as late as possible, sometimes only a day or two before the effective date. What reaction does this cause?

To a businessman in a stable, well-organized business—say a bank—it creates budget problems. It also makes a client wonder about the station's planning. "Why didn't I know of this sooner?" he may think.

Then, a few weeks after the new rates are announced, some customers, usually the ones who yelled the day the increase was announced, get their first hiked bill. They have just cooled off, and they get hot all over again.

The last time we raised rates, we did it differently. We announced the increase *six months* before it was to become effective, with a letter explaining why it was necessary for us and why it was worth it to clients. We got all the usual gripes, but everyone had six months grace to buy at the old rates. Budgets could be planned in at least half the cases. Our friends at the newspaper tried to capitalize on the increase, but their last rate hike increase was already in effect—ours had just been announced.

Then came the date of increase. We rubber-stamped all invoices that month "This invoice reflects rate increase announced July 1, 1964." Everyone knew about it, had stewed about it, and was still on the schedule. If they weren't ready, it wasn't because they hadn't known. We have over 300 good accounts. We lost *one* because of the increase, just one—a 10% across-the-board hike. ●

Form 301

(*Continued from page* 29)

tain ridge may indicate the practical limit of service, while the prediction method indicates otherwise; the prediction method should be followed, accompanied by a supplemental exhibit concerning the contour distances as determined by a method based on actual conditions. The exhibit should describe the procedure employed and include sample calculations. Maps of predicted coverage should include both methods of prediction.

Costs for FM Engineering Data

The average cost for engineering, design work, test and measurements, calculations, computations, compiling of data, and filing of Form 301 would be $500 to $1,000 for a nondirectional antenna. There is usually an additional charge of $100 for personnel expenses and the cost of obtaining and entering the data for:

a. Geographic coordinates
b. Topographical maps
c. Sectional aeronautical maps
d. Profile graphs
e. Aerial photography
f. Predicted field strength patterns and contours
g. Instrument approach or landing charts
h. Other incidental materials

Charges for an existing FM station, such as addition of vertical polarization, transmitter power increase, and directional antenna, would cost about $500.

When measurements are required, these should include the area obtained by the regular method and area obtained by the supplemental method. In directions where the terrain is such that negative antenna heights or heights below 100 feet for the 2 to 10 mile sector are encountered, a supplemental showing of expected coverage must be included with a description of the method used in predicting the coverage. The Commission may require additional information about terrain and coverage in such cases. ●

1. FCC Rules, Par. 73.316: Antenna Systems—Part e.
2. Ground level elevations may be obtained from the U. S. Geological Survey. Dept. of the Int., Wash., D. C. 20240. West of the Mississippi: U.S.G.S., Denver 15, Colo. Sectional aeronautical charts are available from the U. S. Coast and Geodetic Survey, Dept. of Commerce, Wash., D. C. 20235.
3. Topographical maps for most areas are available at a nominal cost from U.S.G.S. If none is published for your area, use the information in Par. 73.312, subparagraph (a) FCC R&R.

INTERPRETING THE **FCC** RULES & REGULATIONS

(*Continued from page* 18)

(8) A *spot announcement* ("SA") is any announcement which is neither a noncommercial spot ("NCSA") nor a station I.D. ("ID"). An announcement should be classified as a "spot announcement" whether or not the station receives remuneration, unless it is devoted to a nonprofit cause. Sponsored time signals, sponsored weather announcements, etc., are program matter and not classified as announcements. Station I.D.'s should not be classified either "NCSA" or "SA" if limited to call letters, location and identification of the licensee and network.

Nonconformities of Licensees

The lengthy, unclear, and overlapping program log classifications used by many licensees unduly complicate the problems of log-keeping. A program can't be both wire and live, both sustaining and commercial, both music and talk, or both a spot announcement and noncommercial. A program or announcement must be one or the other. If it's 50% or more live, it's *live* ("L")— and not wire ("W"). If there is one commercial during a 14½-minute segment, the entire quarter hour must be classed *commercial* ("C"). Unless a program is *predominantly* "talk" ("T")—as distinguished from a disc jockey's chatter—it *must not be classified as* "talk." (Moreover, "Talk" is a program *type* classification, rather than program *source*.) There can be no such animal as "music-speech"—it's either one or the other. In fact, why use the classification "music" at all? If it's music, it is probably recorded ("R"); after establishing that, the licensee need only distinguish whether it is recorded sustaining ("RS") or recorded commercial ("RC").

A Word to the Wise

It is essential for the licensee to be assured that all personnel responsible for program log maintenance should be thoroughly familiar with (1) the pertinent rules, regulations, and policies of the Commission, and (2) the definitions employed in reporting programming as a part of renewal and other applications. Failure to take these steps may cost the licensee vital time in the processing of his application, or it may subject him to fines, administrative sanctions, or revocation proceedings. "Forewarned is Forearmed!" ●

Farms for 1,000′ Towers

Proposed rulemaking for establishing farm areas would place all new or modified towers over 1,000′ in a designated locality unless the applicant submitted a statement from the FAA stating that a proposed structure would not be a hazard to air navigation. Existing towers would not be affected, but could be moved to farm unless short spacing problem would result. Short separation conditions would not be authorized. Comments are invited by Sept. 30.

LITERATURE of INTEREST

For additional data, circle No. shown on Reader Service Card.

228-Page Catalog describing 6,000 items used in TV and motion pictures, available from S.O.S. Photo-Cine-Optics, Inc. A virtual encyclopedia of technical aids with 23 Sections and 557 illustrations. **60**

Sequential intermix Prolog system, comprised of reel-to-reel tape transports, multiple-cartridge playback units, and a single cartridge long-play unit, illustrated in fact sheet from LTV Continental. **138**

Rectifier units, high-voltage silicon cells which directly replace 866, 3B28, 872 and 8008 tubes, covered in fact sheets from RCA. **140**

Precision audio equipment catalog by Hi-Q Div., Aerovox Corp., includes variable equalizers, line equalizers, dip filters, transmission measuring sets. **144**

Tape cartridge handler, rack-mount reel-to-reel transport, and compact recorders, illustrated in folders from Viking of Minneapolis. **156**

CATV Article Reprints tell how to plan a CATV antenna system, describe CATV systems set-ups including 10 steps to a successful system. From Jerrold. **81**

Grey scale generator described in spec booklet features modular construction in portable or rack-mounted form. Manufactured by Marconi, distributed by Ampex. **105**

Studio tape recorder pitch and tempo regulator, designed for use on most models, described in flyer from Gotham Audio. **116**

UHF-TV antenna, of Zig-Zag directional design with more than 150 attainable patterns, described in a leaflet from G.E. **117**

Terminal gear, including color notch filter, harmonic filter, vestigial sideband filter, bridge-type diplexer, and mobile RF load and wattmeter in literature from Standard Electronics. **118**

18-Page Availabilities Brochure includes details on CATV transmission systems, typical installations, plus data on Entron's background, services, and capabilities. **65**

Portable Film Processing Machine, plus other processors including combination 16 mm reversal and negative/positive, are described in booklet from Filmline. **66**

Studio sync generator and pulse distribution system described in folder from Sylvania. **131**

Video tape reels and cases described in two fact sheets from 3M. Small plastic reels hold 10 min. supply, and plastic cases store 10½" or 12½" reels. **106**

Deflection Components are fully specced, described, and illustrated in technical literature packet from Cletron which includes data on how units upgrade TV camera performance. **68**

Portable I.O. TV Camera System, consisting of 30 lb. control unit and 23 lb. camera, described in literature sheet from Bendix Radio. **64**

List of Principal Tubes used in broadcasting and CATV is included in packet of materials from Sylvania Industrial Products. **67**

Case History foldout from Ameco cites 9 satisfied users of company's equipment line. **82**

Noise-Cancelling Mobile Mic is described in 8-page brochure from Roanwell Corp. that explains principles used to cancel random ambient noise. **83**

Special Effects Generator that produces horizontal, vertical, and corner wipes comes with external key for keyed inserts and is fully described in folder from Ball Bros. Research. **84**

Recording Equipment including equalizers, amplifiers, "Lumiten" beam of light attenuators, line amplifiers, turntables, compressors, and microphones, are illustrated and specced in a series of technical bulletins from Fairchild Recording. **85**

Flyers from McMartin illustrate, describe, and spec FM stereo monitor, SCA multiplex monitor, RF amplifier, FM/SCA signal generators, transistorized pre-amps and new facsimile through CCA multiplex. Price list is supplied. **86**

Solid State Video Clamper/Stabilizer Amplifier is said to provide highest performance on color and monochrome TV signals. Unit is described, specced and priced in flyer from Vital Industries. **87**

Automatic level control, Audimax III solid-state equipment, featuring gated-gain stabilization, designed for monophonic or mpx, described in technical bulletin from CBS Labs. **141**

CATV products, advanced technology, research engineering, manufacturing, quality control, sales and service: The Viking Story. **142**

Tower erection service presented in a leaflet available from Rohn. **124**

RF Wattmeters, directional design, discussed in a 6-p. release from Bird Electronics. Designed for 50-ohm coax at frequencies from .45 to 2200 mc, 1 to 250w. **111**

FM antennas, offering high gain with excellent VSWR characteristics, described in brochure from Jampro. **107**

Solid State Computer Programmer for TV automation in 6-p. bulletin from Sarkes Tarzian Broadcast Eqpt. Div. Full description of operation, applications, specs of APT-1000 unit. **100**

Assemblies, inserts and connector hardware include TV camera and Teflon coax cable info, are illustrated in booklet form from Boston Insulated Wire. **99**

Polarized Microwave Antennas for ITV use are illustrated by TACO in flyer that explains their electrical and mechanical characteristics. **98**

Audio/Video amplifier and terminal equipment, all solid-state and newly designed, illustrated in literature from Grass Valley Group. **112**

Tape recorder head and amplifier data published in Customer Engineering Bulletins from Nortronics. Discusses amplifier design and head wear, alignment and care. **113**

Video distribution equipment described in a package of info sheets from Dynair. Includes amplifiers systems, distribution amplifiers, video modulators, and switchers. **104**

Lenses for TV Cameras is title of 60-p. catalog which handsomely presents the Rank line of zoom lenses, controls, extenders, and other attachments. Illustrations, charts, graphs, specs, etc. are extra large for easy reading. From Albion Optical Co. **61**

Solid-State Microwave equipment is featured in 8-page bulletin from Lenkurt on its Microtel system which includes microwave radio terminal, printed circuit boards, modulating amp, etc. **62**

Microphone data sheets and price list detailing line offered by Norelco. **150**

Cable finder and audio cable selection chart, part of new wire and cable catalog from Belden. **151**

Standby TV microwave equipment; automation transmitter switching and duplicating receiver protection for STLs in fact sheet from Raytheon. **152**

Film processing splicer, processing tape, and editing tape described in folder from Telequip Corp. **153**

32-Page Tube Catalog from Amperex is quick reference guide to replacement power tubes. Numerical index, including new CR and vidicon tubes. **79**

AM & FM Transmitters from 50 to 100,000 w available from CCA Electronics Corp. are discussed and illustrated in a series of bulletins. **72**

Antennas, broadband and high frequency, described in a 26-p. bulletin from American Electronics Labs. **147**

Tape cartridge repair and rebuilding service price list from JOA Cartridge Service. **148**

Memory Business, a 26 p. booklet which delves into the history of magnetic tape use and production from Audio Devices. **108**

Jack Panels, phase monitors, FM rebroadcast receivers, and field intensity meters available from Vitro Electronics are discussed in illustrated catalog sheets. **97**

Tetrodes for broadcast use are described in a folder that illustrates five different units. From Machlett Labs. **71**

Dual peak limiter and solid-state beacon flasher described in product information sheets from Gates Radio **120**

Tower and Antenna structure engineering research and development booklet, Dresser-Ideco. **121**

Primary feeds for parabolic reflectors have been introduced in an info sheet from Dorne and Margolin. **134**

BM/E

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Jules Thompson 415-DO 2-8547
William Healey

ROUNDTABLE

(*Continued from page* 50)

plugging away and they have beat us out many times—in spite of the fact that we are full-time and they are a daytimer.

Chief Engineer: Well, they have a low frequency with a kilowatt and we are on 1230 with 250 watts. Their extra power and lower frequency gives them an edge over us.

Manager: You told me when we bought that 300-foot tower that we would improve our coverage!

Chief Engineer: We have! Our old quarter-wave, less than a quarter wave, really, gave us the legal minimum of 150 mv/m radiation. Now this new stick gives us well over 200 mv/m. We have improved our city signal considerably, especially down in the commercial area where those hilines give so much static, and where so many of our commercial accounts are located. Also, it helps our distant coverage a little—at least it makes it possible for auto radios to get us about 5 miles sooner.

Sales Manager: Yes, that brings up another point. The competition is selling on the basis that they can be heard sooner, and that the tourists can be sold long before they get to town. That's how we lost the Carter Hall Hotel account. Can't we do better?

Chief Engineer: We could go to a kilowatt, but I don't think the owner will agree to the cost.

Manager: Perhaps we could put up a good case, using the hotel account as an example. Would you like to work on it, Bill? Give me a good plan and cost sheets, including our engineering as well as legal costs. But, in the meantime, is there anything we can do to improve our distant image?

Chief Engineer: Well, there is one thing. It's something I have been crying for for a long time. It would cost around $500, depending on whose equipment we bought. What we want is the type of limiter that holds our *average* modulation at a very high level. There are plenty of these amplifiers on the market; some are static types which work on the principle of peak clipping—others actually bring up the gain and hold it on low passages to give the listener the effect of a stronger signal—*on the average.*

Program Director: Yes, I've heard of those things, but wouldn't they ruin our quality? You know we pride ourselves on our clean sound.

Chief Engineer: No, far from it. In making a recording, compression is commonly used. Some manufacturers claim that the *average* power output produced by these amplifiers makes a kilowatt sound like five! Of course, you must have a good transmitter, capable of the sustained higher average power output. Fortunately, our new transmitter *will* do this, and that was one of the reasons I fought so hard for it, even though you wouldn't give me a compressor at the time.

Manager: I've got to go to Rotary in a few minutes, so let's break it up for now. Meantime—before next week, Bill — please work up costs on a 1-kw application, and look into that amplifier situation. Maybe some of the manufacturers will let us try them out, with no obligation, to prove to ourselves that they meet their claims. If so, go ahead and get some on approval. We'll discuss it further when we meet next week. ●

MANAGEMENT

ROUNDTABLE

Coordinating Efforts to Improve Sales

The age-old management problem of coordinating inter-department activities is ever-present in broadcasting. Thus it ever shall be, for the varied interests and responsibilities of creative people must be considered and, hopefully, guided toward the achievement of common goals. This month's Roundtable exemplifies the inter-department relationships in a 250w station with a 1-kw competitor in a small southwestern market of 30,000.

Manager: One of the things I'd like to discuss this morning concerns better ways of integrating our selling effort, which is paramount, with our program and engineering operations. Now, I can see that a couple of you may be a little miffed because I said our selling effort is paramount, so I want you to understand that one of the things I hope to accomplish during this meeting is to promote the feeling that no single department is paramount.

Chief Engineer: Well, your last statement makes me feel a little better, because I was going to point out that without the engineering department to run the station there would be nothing to sell! However, in a more positive vein, I'd like to start the ball rolling with a comment about the cooperation we get from the program department. On the whole, we get plenty of notice about changes in regular programming, but every now and then our overtime charges go up—unnecessarily, in my opinion—because of a remote program sale that we don't know about until the night before. Often it's merely a case of checking the remote amplifier and the line. But sometimes, like that last one from the Silver Horseshoe, we ran into heavy overtime and extra Telco charges because we were notified so late.

Sales Manager: Yes, I know what you mean, and you can blame me if you like. But our new salesman got fired up and made the sale that everyone said couldn't be made. When the dam finally broke, time was of the essence, if you know what I mean. We had only two days to get it set up. I think your boys should be congratulated on setting up so quickly, and so well. The Horseshoe's manager commented on the quality of the broadcast. In fact, the fear of poor quality had been one of his major objections.

Chief Engineer: We were lucky on that score. Our relations with the Telco people are good, and it just happened that there was an extra unused line into the place. It had been left there from their old open line days, and luckily for us, it was still usable. They ran it into our Round-Robin patch at toll test, and now we have a good permanent installation.

Program Director: That brings up a point about our line costs for remotes. I was talking to Joe Baldwin, the other station's program director. He was saying how much more they seemed to pay for their lines than we do. How come?

Chief Engineer: Well, we use what I call the Round-Robin system. Many stations with a number of remotes bring separate lines into a patch board in master control. This is fine if money is no object—and if sponsors will pay for line rentals. However, if a sponsor cancels, the line is dropped. Next time it is used a new toll test patch and a connection charge is necessary. We have only a few private lines. One is from the well-to-do church and is used every week. Another is from the High School stadium; we keep that because there is so much going on at the school, and it's used for other events as well as sports. But we use one line as our round-robin, and it takes care of the bulk of our remotes. In fact, without it, Charlie couldn't sell half as many remotes as he does.

Sales Manager: That's true. Every day, except on week-ends, we have five remotes from five different sponsors. Each one is only 15 minutes, except for the afternoon show from White's window. It's the only one that uses a full private remote line; and that was put in only because of the goof we had a few months ago. In fact, if we didn't use your multiple lines, Bill, we couldn't sell all those remotes. Our sponsors resent paying a month's line charges all the way to the studio when they only use them a few minutes a day, and line charges *do* add up when you consider that we are eleven miles from the center of town.

Chief Engineer: Well, the idea is known to most engineers. But many times they can't use it, either because of poor relations with the phone company, or because the local Telco tariff prohibits it, or just because of lack of interest on someone's part. The purpose of our round-robin is to have all the remote lines from around town paralleled at the Telco toll test, and then bridged into one single line out to the master control. Thus, there is only one "long distance" charge from toll test to the station. Of course, if more than one remote amplifier were to be on at the same time, the desired program would be lost. But apart from the goof you referred to, we haven't had too much trouble. And the goof was really my fault because I had not briefed the new man on the fact that he couldn't use his line for talkback while setting up the new remote when another remote was on the air.

Program Director: How much do we save by not having separate lines?

Chief Engineer: Well, on the basis of the cost of our other lines, about $65 a month.

Sales Manager: Our sales have been going fairly well these last few months, despite the fact we've had January to cope with. However, our competition is still

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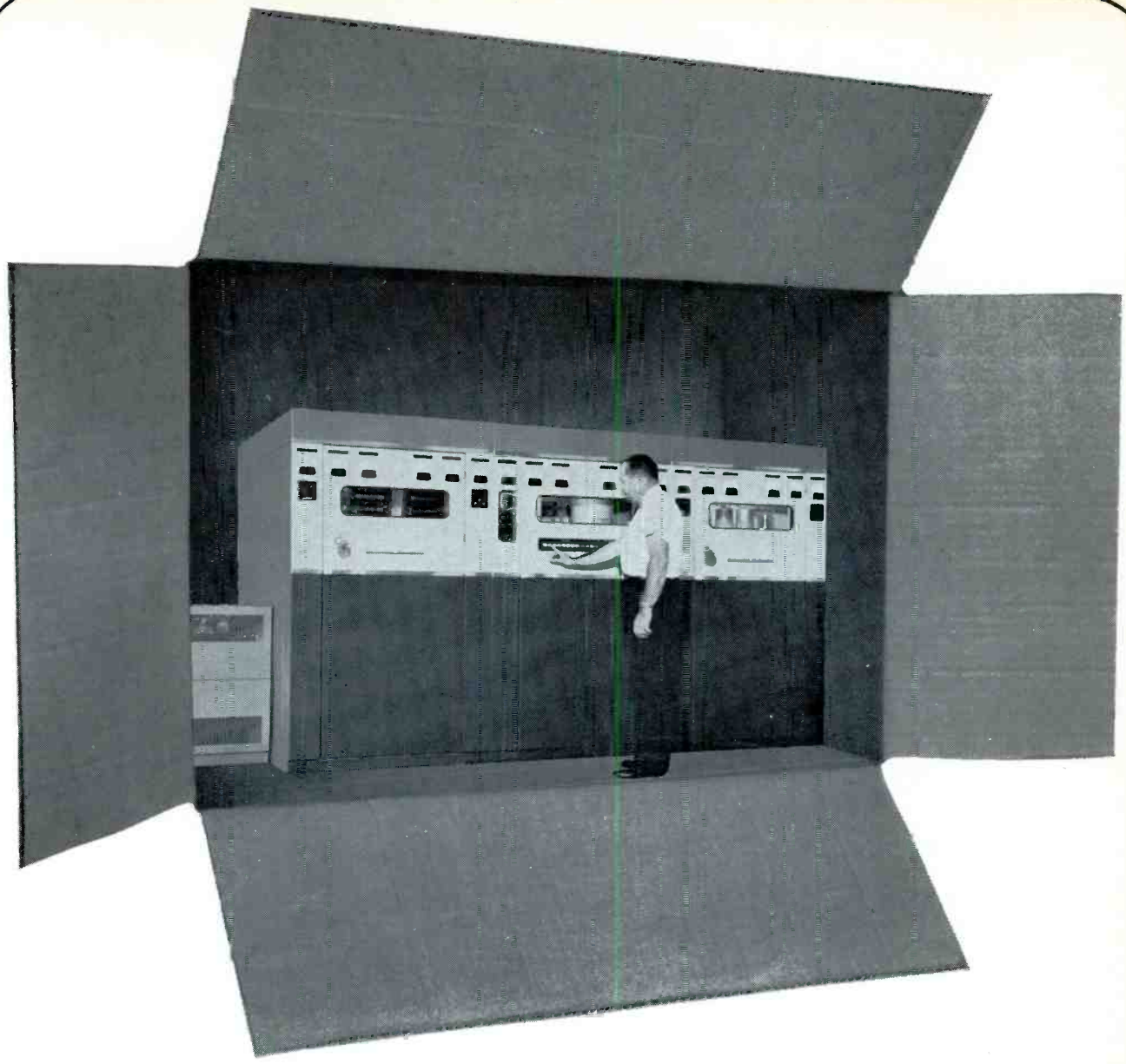

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Circle 2 on Reader Service Card

This was the E-V Model 635. It started a tradition of excellence in dynamic microphones.

This is the new E-V Model 635A. It's better in every way!

Model 635A Dynamic Microphone $82.00 List. (Normal trade discounts apply.)

How can a microphone as good as the E-V Model 635 be made obsolete? By making it better! It wasn't easy. After all, professional sound engineers have depended on the 635 since 1947.

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But now the time has come for an all new 635: the Electro-Voice Model 635A. It's slimmer, for easier hand-held use. Lighter, too. With a slip-in mount (or accessory snap-on Model 311 mount) for maximum versatility on desk or floor stands. The new, stronger steel case reduces hum pickup, and offers a matte, satin chromium finish perfect for films or TV.

The new 635A is totally new inside, too—and all for the best. A new four-stage filter keeps "pops" and wind noise out of the sound track, while guarding against dirt and moisture in the microphone, completely eliminating any need for external wind protection. Of course you still get high output (—55db) and smooth, crisp response. And you can still depend on the exclusive E-V Acoustalloy® diaphragm that is guaranteed against failure for life* (it's that tough)!

We expect to see plenty of the "old" 635's in daily use for years. But more and more, the new 635A will take over as the new standard. It's easy to find out why: just ask your E-V Professional Microphone distributor for a free demonstration in your studio. Or write us today for complete data. We'll be proud to tell you how much better the new Model 635A really is!

*The E-V Professional Microphone Guarantee: All E-V professional microphones are guaranteed UNCONDITIONALLY against malfunction for two years from date of purchase. Within this period, Electro-Voice will repair or replace, at no charge, any microphone exhibiting any malfunction, regardless of cause, including accidental abuse. In addition, all E-V microphones are GUARANTEED FOR LIFE against defects in the original workmanship and materials.

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