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CATV; Our Changing Society
The role of electronic communications in our society is changing dramatically, as well as growing by bounds. Beginning on page 34 of this issue, veteran cable television executive John P. Campbell analyzes the future of CATV as a community communications artery.

Cablecasting Survey
Starting on page 37, read the results and analysis of TVC's National Cablecasting Survey. Information supplied by hundreds of system operators forms the backbone of this most informative article. How much local programming is presently being done by how many systems? What kind and how much equipment are cablecasters using or planning to use? The TVC staff has prepared conclusive data on these and other major questions concerning CATV programming operations.

Utilizing Free Films
In this concise discussion, Robert Finehout of Association Films, Inc. presents ideas for utilizing free "sponsored" films on your community service channel. Beginning on page 45, the author briefly describes not only the type and variety of free films available to cable systems, but also the basic requirements for initiating such a programming service.

Studio Equipment Guide
For a comprehensive reference guide to cablecasting studio equipment, see the special section starting on page 46. Complete manufacturer's data is included on cameras, VTR's, film chains, mobile studios...you name it.

Head-End Processing Techniques
Gay Rogness treats the subject of heterodyne versus demodulator-modulator head-end processing, starting on page 75 in the CATV Technician's Section. This is a most timely look at the characteristics of the alternative methods of signal processing.
Cable Television and Our Changing Society
A discussion of CATV's future role, by John P. Campbell

National Cablecasting Survey Results
Exclusive report: the nature and extent of program origination

Free Films for CATV Programming
The use of "sponsored" films, by Robert Finehout

Cablecasting Equipment Guide
A digest of manufacturers' data on local origination equipment

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Patrick T. Pogue

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The Secret Weapon

Listen to the conversation when a group of cable operators get together and you’ll get the impression that they have problems. Invariably, talk shifts to one or more of a long list of worries: copyright liability, top 100 market rules, Second Report and Order restrictions, public utility regulation, telephone company relations — and so forth.

The issues are numerous and complex. Easy answers are non-existent. But CATV people are optimistic by tradition and doggedly determined to find liveable answers to their common problems.

Conventional, obvious remedies are being applied. Meetings between copyright interests, broadcasters and a National Cable Television Association committee are being held. Lawyers are appealing to the Supreme Court in the United Artists case. The NCTA staff and numerous individuals are doing their best to win the sympathy of key legislators. And, of course, the slow battle for fair treatment is being painfully waged along the “Maginot Line” of the Federal Communications Commission.

Will these efforts suffice? Perhaps. But perhaps is hardly good enough where the fate of a vital enterprise is at stake!

It seems to us that cable television operators had better be prepared to use their secret weapon, the sleeping giant called Public Opinion.

Although seemingly alone in their defense against the enemies of cable television, the system owners are actually backed by a vast militia of TV viewers. These ten million citizens are, in fact, the only real allies that CATV can count on “when the chips are down.” And no one should doubt their potential. They can do what the lobbyist cannot do...what the court may fail to do...what the FCC will not do.

These television viewers can bring telling pressure on the Congress to protect their freedom of choice in the television field — and to preserve the free enterprise business which has given them that choice.

Fred Ford and Wally Briscoe caution against a repeat of the grass roots write-in campaign which dumped roughly a million pieces of mail on the Congressional doorstep early in 1966. Okay — we’ll buy that reasoning. Handling and answering a deluge of mail from constituents could be an irksome burden for lawmakers and might evoke more resentment.

However, if other courses should fail, grass roots support should be involved without hesitation — whether or not the secretaries on Capitol Hill are overworked! After all, if it were not for various forms of influence being brought to bear by other private interest groups, CATV wouldn’t be fighting mortal battles on all fronts.

How and when should support from individual citizens be utilized? Only prudent industry leadership can make that decision when the crucial time arrives.

The critical need right now is for every cable owner and every system manager to see that he actually has the good will and respect of his subscribers. Why should customers of an old run down CATV system “go to bat” for the system operator?

Are elected officials in your town fully aware of the indirect contribution which you make to the community by making it a more enjoyable place to live? Or have disagreements with officials or community leaders created a sizeable group who would be glad to see your demise? (Such instances are not unheard of.) In short, do you fully deserve the support which you may be forced to seek from your customers?

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Cable operators can anticipate indefinite delays and generally harsh treatment from FCC, if present trend continues. Recent reversal of itself by FCC on previous waiver decisions may be harbinger of new, tough line toward CATV. Five months after granting permission to Telerama, Inc. to distribute Youngstown signals in 14 communities (Cleveland suburbs) the Commission changed its mind and ordered a hearing in the matter. The FCC also backed out of its previous commitment to let Lorain (Ohio) Cable TV, Inc. bring in Toledo signals. A hearing was set in that case, also.

Cancellation of the waivers previously granted to the systems followed a request made by United Artists Broadcasting. The request was made one day after the delegation from the Association of Maximum Service Telecasters met with four FCC Commissioners on May 9. The vote to reverse the previous decision and cancel the waivers was 4-2. The Commissioners who voted for the cancellation of waivers were Hyde, Cox, Lee and Johnson, the same four who had visited with the AMST officials. Unless this is a coincidence, it would appear that cable operators can expect less than impartial treatment of waiver requests by the FCC majority.

The FCC & AMST Railroad could be headed for derailment over recent charges of unlawful ex parte presentations by AMST in the Multivision Northwest, Inc. case. Attorney Robert D. L'Heureux has filed a petition with the U.S. Court of Appeals for the Fifth Circuit, asking reversal of the FCC's self-exoneration on the ex parte charges. The Multivision appeal makes a strong case and would appear to have a very good chance of success.

If the court responds with requested relief, the FCC will be instructed to enforce the rules against ex parte presentations and to order a full evidenciary hearing into the FCC visit by Association of Maximum Service Telecasters’ delegates Jack Harris, Lester Lindsay, Wrede Petersmeyer, Laurence Richardson and Ernest Jennes. AMST and the companies and individuals involved could be disqualified from further participation in the restricted proceedings on Multivision's waiver request.

Unpleasant news for system operators using direct mail techniques for subscriber promotion programs. Increase in postal rates is now close to a certainty. Increase will be greatest in Third Class mail tariff, passing an increasing share of the Post Office Department’s financial burden on to commercial concerns utilizing bulk mailings. Other classifications of postage will also rise substantially.

Pace of copyright negotiations seems to suggest that compromise solution may still be a year away. Some "progress" has been reported by NCTA president Fred Ford--but talks are only establishing the ground rules at this point. Caution is the watchword for all parties. So don't look for early results. Congress won't act as long as talks continue and hopes for a negotiated fee schedule remain alive. Of course, the lawmakers will eventually draft a law of their own wording, but not until the industries involved--copyright owners, cable television operators and broadcasters--have had their say.
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Mixing Health and Success

Once, as a well-to-do businessman was being laid to rest, one of the mourners remarked to another how sad it was that good old George had to go to such an early grave. "Yes, it is too bad," said the other, "but how many of us can be as successful as George was?" Obviously, the price of success needn't be so high. Yet three out of every four businessmen today are living twenty-five to fifty percent below their maximum efficiency. Here are a few pointers on how to be healthy though successful:

Enjoy your work. The bigger percentage of your life is devoted to business — forty years for the average man — so why not enjoy your work and the people with whom you work? Your attitude toward each sets the atmosphere for subordinates and affects your image in the community.

Analyze your job. Look at yourself objectively. Is your present pace too fast or your work load too heavy? Are work tensions making you nervous, irritable and quick to blow your top? Start now to slow down. Budget your time as you do your finances.

Keep your home problems and office problems separate, for others' sake as well as your own. Home problems have little place at work. Your employees have their troubles too, and shouldn't be burdened, even indirectly, with yours.

Look on the positive side. Like the medical student who "suffers" the diseases he studies, you may be prone to anticipate everything that can possibly go wrong in your business. Stop fretting over minor crises. Learn to accept the things you can't change; do something about the things you can change; and learn the difference between the two.

Stop worrying about your health: do something about it. Upon examination, seventy-five percent of executives usually have some symptoms or ailment about which they are concerned. After examination, only one-third of this group are found to have any significant trouble. Yet it is important to note that the concern which fifty percent of these executives expressed affected their productivity as much as though they had actually been sick.

Live intelligently. It is difficult to maintain a healthy mental attitude toward your job, your subordinates and your superiors if your physical machinery is not in good operating condition. Intelligent living habits do much to assure the smooth functioning of your system.

Watch your weight. Over-nutrition in this country is a far more menacing problem than malnutrition. You needn't entirely forego the joys of eating. All you must do is control the quantity, and, if you are overweight, change your eating habits for good.

Get more rest. Everything mechanical requires rest to extend its productive life, and your body is no exception. It requires adequate sleep for real rest and relaxation. Learn to relax for at least an hour before bedtime. Put aside your worries and let your body unwind. Don't underestimate the value of a yearly vacation either.

Get more exercise. If you are an average businessman, you undoubtedly are not getting nearly enough exercise. Try to take a fifteen minute walk three times a day. Walking done on the job doesn't count; even though your muscles are getting a workout, your mind is intent on the business at hand.

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FINANCIAL REPORTS

H & B American Corporation, claimed to be the world’s largest owner and operator of community antenna television systems, declared its fifth consecutive semi-annual dividend it was jointly announced last week by William M. Jennings, chairman of the board, and Harold R. Sugerman, president. The semi-annual dividend of 12-1/2% per common share will be payable September 15, 1967 to stockholders of record of September 5, 1967. The company is listed on the American Stock Exchange.

Anaconda Company reported per share earnings of $1.22 for the quarter ending June 30. Net income for the period was $26,778,000 with sales and revenues at $290,413,000. Per share earnings for the same period last year (adjusted to reflect a two-for-one stock split in May, 1967) were $1.66. Net income for this period was $36,271,000 with sales and revenues at $319,539,000. Per share earnings for the six-month period ending June 30, were $2.87, with net income at $62,785,000 and sales and revenues of $599,471,000. This compares with per share earnings of $2.84 (adjusted to reflect the two-for-one stock split in May of 1967) for the same period last year. Net income for that period was $62,294,000 and net sales were $600,435,000.

TelePrompter Corp. reported per share earnings (based on net income from operations) of $.14 per share for the six-month period ending June 30, 1967. This compared with per share earnings of $.28 for the same period last year. Revenues were $3,445,555 as compared with $3,349,677 last year. Net from operations was given as $120,428 as compared with $231,714 last year. Other income (representing gain on the sale of part of the stock of a subsidiary, net of applicable taxes) was given as $556,633 as compared with $441,253 for the same period last year. TelePrompter reported a net income of $677,061 for the 1967 period as compared with $672,967 last year. This is equal to $.80 a share in 1967 and $.82 a share in 1966.

Scientific-Atlanta, Inc. reported that consolidated sales were $12,717,702 for the fiscal year ended June 30, 1967, up 10% from $11,516,759 reported for the previous year. Net profit for the period was $591,695, up 8% from the previous year’s $549,580. Both sales and net profits for the year were the highest in the company’s history. Earnings per share were $.90, compared with the previous year’s $.86. Prior year’s figure has been adjusted for a 33-1/3% stock dividend distributed in September, 1966. It was also announced that the Board of Directors has authorized a split-up of its common stock to be effected by a one-for-five distribution (20% stock dividend) to stockholders of record September 11, 1967. Distribution will be made on September 26, 1967 by the company’s transfer agent, the C & S National Bank.

Ampex Corp. reported share earnings of $.22 per share based on a net income of $2,072,000 and sales of $52,749,000 for the quarter ending July 29, 1967. Per share earnings for the same period last year were $.20; net income was $1,880,000; sales were $46,212,000.

General Telephone of California reported a net income of $12,285,000 for the six-month period ending June 30, 1967. Operating revenues for the period were $123,694,000. These figures compare with a net income of $13,738,000 and operating revenues of $117,293,000 for the same period in 1966. General Telephone’s 12-month report showed a net income of $28,391,000 with operating revenues at $246,928,000.
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CABLECASTERS AND BROADCASTERS MEET  
Cablecasters and broadcasters, as expected, did not solve any problems when they met informally in Washington September 14 on copyright and other problems. They did achieve some "understanding" however and began to formulate an approach to the many problems they face.

After the 35-man meeting, co-chaired by Alfred Stern, immediate past chairman of the NCTA and George Hatch, President of KUTV, Salt Lake City, Mr. Hatch indicated that a three-part copyright strategy was visualized. The proposed strategy would break the issue down into three basic areas including legislation, regulation, and direct contract negotiations, thus substituting a three-pronged approach for the single concern with legislations now before congress.

At the meeting six subcommittees worked on specific related problems including exclusivity and distant signals, origination, carriage, economic impact study, license fee collection procedures and rate schedules and AM-FM radio implications. The group met together in the morning, then went into the subcommittee meetings and returned later to trade ideas as a body. They agreed to exchange reports by mail and to schedule further meetings in three weeks.

Although trade associations had nothing to do with the meeting officially, the NCTA and National Association of Broadcasters did send non-participating observers to the subcommittees. "We are all here as individuals," Mr. Hatch explained, adding that the exchange on problems was facilitating by not being sponsored by either official body.

Working tools at the sessions were Section III of copyright legislation in Congress and questions developed at a recent meeting with the Register of Copyright of the Library of Congress.

In a wire to Mr. Hatch, Vincent Wasilewski, president of the NAB was careful to point out that the ad hoc meeting "was not NAB-sponsored . . . and that the broadcasters present did not represent an NAB position." He further noted that "NAB will have staff observers at the forthcoming meetings of the subcommittees," and that the original understanding between Mr. Hatch and Mr. Wasilewski was "that the subcommittees appointed by you, which would be composed of broadcasters some with CATV interests — were to meet independently of those appointed by Mr. Stern; and that following these meetings, depending on the results achieved, joint meetings might be scheduled between groups."

Despite the lack of official NAB support, broadcasters and cablecasters alike felt the meeting resulted in a step in the right direction for CATV-broadcaster relations.

FCC DENIES EX PARTE CHARGES  
Although the FCC has denied charges by American Television Relay, Inc. of ex parte, or off-the-record, discussion of its microwave applications by the Association of Maximum Service Telecasters, it gave a little ground on the company's petition for special relief. The petition was denied, but the Commission found merit in American's request that disclosure be made by AMST of its television station members who had advance knowledge of May 9th meeting with the FCC and of the extent to which they helped plan it. AMST is being asked to furnish this information in ten days.

On the ex parte question, the FCC said that the May 9th meeting "involved no discussion of the American Television Relay application proceedings as such but were limited throughout to the discussion of overall policy." Under FCC rules, interested persons are prohibited from making ex parte presentations to decision-making personnel concerning an application proceeding at any time after a petition to deny the application has been filed. The FCC said that dis-
cussions of general questions of policy may appropriately be held with industry representatives such as AMST which is not a party to the American TV Relay application proceedings.

American has pending applications to microwave Chicago and St. Louis TV signals to CATV systems in Kentucky and Alabama and Los Angeles signals to Texas.

OPERATOR WINS ROUND WITH UHF CONCERN

Courier Cable Co., Buffalo, N.Y., CATV operator, has won a round in the FCC fight that a local UHF applicant, Ultravision Broadcasting Co., has been waging to prevent extension of the Courier CATV system. The FCC Review Board refused to upset a hearing examiner's ruling June 1, 1967, denying Ultravision a subpoena to get the names, addresses and telephone numbers of Courier's subscribers. Ultravision wanted to survey frequency of viewing stations in and out of Buffalo and the quality of CATV reception.

Affirming the examiner's denial, the review board said Ultravision waited too long to seek the subpoena. It added that the UHF applicant could have found Courier subscribers on maps in the proceeding record or by looking for cable drop lines. Pending the outcome of the hearing, Courier may continue with present cables but may not extend them.

TRIANGLE DISTANT-SIGNAL DENIED BY FCC

Triangle Publications, Philadelphia, lost by a close vote on its bid to bypass the embargo on bringing distant signals to big markets when the FCC denied Triangle's petition 4-3. Now Triangle lawyers will seek reconsideration of the petition for an experimental operation in Philadelphia suburbs "so the proponents of CATV can have a proper forum on this."

Triangle, through its subsidiary, Suburban Cable TV Co., proposed to provide service from local stations and from New York independent and educational VHF's. Suburban's thesis was that the impact of CATV on UHF can only be accurately evaluated in a market containing well established operations such as Chester, Montgomery, Bucks and Berks counties in Pennsylvania covered by Philadelphia's three UHF's. Two of four systems would carry local signals only and two would have both local and the distant signals from New York. It would be a three-to-five year experiment.

As a result of the action a strong champion for CATV on the Commission was revealed and at the same time added weight was given to the copyright issue facing CATV. Cable forces picked up a significant vote, the one putting Commissioner Nicholas Johnson in the cable camp. Commissioners Loevinger and Bartley completed the dissenting votes. Chairman Rosel Hyde led the concurring votes.

ROHN SUES UNIVERSAL TOWER

Rohn Manufacturing Co., manufacturer of towers for CATV and other applications, has instituted a suit for unfair competition and trademark infringement against Universal Tower Company. Universal is a co-partnership consisting of Franklin D. Crews, Arcel D. Smith and E. J. Walsh, also doing business as Midwest Cable Company and Kentucky Tower Service. Rohn is seeking an injunction and damages and alleges that Universal Tower has appropriated and copied trademarks and advertising literature. The suit has been filed in the United States District Court for the Southern District of Indiana, Evansville Division.
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California Association Blasts FCC

The Federal Communication Commission's "Inquiry Into Developing Patterns of Ownership in the CATV Industry" got a resounding reaction from the California Community Television Association, last month, and the western CATVers did not mince words. Headed by Bill Hargan, the California Association is one of the strongest and most active of state CATV organizations. The reply was authored by Walter Kaitz, general counsel and executive secretary for the association.

In the filing, Kaitz suggested that the "guidelines being established" by the FCC could better be resolved "within the creative interplay of the free enterprise system." These guide lines, he pointed out, "are not matters which should be, or can be, ordained in advance by a Federal agency."

The filing added that, "The right to construct a wired communication system, whose wires cross public streets and thoroughfares, is currently a matter within the exclusive province of the county or municipal government having jurisdiction over such streets and thoroughfares. We believe that such local franchising by government bodies is the most effective means of insuring CATV service which is responsive to local needs and requirements."

"Indeed, we contend that subjects such as ownership of CATV, origination of programs, and determination of program content are constitutionally beyond the jurisdiction of the Commission, with or without action by Congress."

"The Commission's power to determine who may use a particular broadcast frequency stems from the physical fact that there are not enough frequencies available in the spectrum to go around. From this scarcity factor sprang the Commission's licensing power."

"To the extent that such licensing power involves an inherent abridgement of freedom of speech, the courts have accepted it as being necessary to avoid chaos in the broadcast spectrum. In CATV, however, there is no occupancy of the radio spectrum (except for microwave situations, which are not treated here), and the need for the allocation and licensing of frequencies does not exist. Absent the scarcity factor and absent the licensing power, the Commission has no power whatever to determine who shall own a CATV system or to determine what information he may or may not originate or disseminate over it. Since it does not occupy the radio spectrum, CATV is as fully protected by the First Amendment as a newspaper, a magazine, or a soap box."

"In light of the foregoing, the Association respectfully contends that the Commission has no jurisdiction or power whereby it could deny anyone the right to engage in the CATV business, regardless of that person's ownership of a concentration of other mass media."

"As we understand it, the Commission does not contend that it could prohibit anyone from owning a newspaper, or a magazine, or a theater chain."

"The basic intent of the multiple ownership rules has always been to insure that the public will receive the maximum number of views and opinions from the widest possible sources. CATV, which is basically a multiple reception service, brings to a community a wide variety of entertainment, news and opinions. Such diversification strengthens rather than weakens the policies underlying the multiple ownership rules."

"The Association fully appreciates the Commission's concern with any trend or development which could ultimately result in concentration of control of mass media in one or more broadcast licensees to a degree that would be contrary to public interest. For the present, however, we respectfully point out that the contribution of broadcast licensees to the development of CATV has been healthy and constructive. There is nothing in the Communications Act, nor any other law which prohibits a broadcast licensee from engaging in any legitimate business endeavor. Certainly there is no evidence to date that such joint ownership has any negative implications with respect to the public interest."

Colorado Springs Grants Franchise

Vumore-Video Corp., a cable firm headed by CATV pioneer Bill Daniels, is the recipient of the much-sought-after, franchise for Colorado Springs, Colorado. The company, owned 50% by Vumore Company of Oklahoma City, 33% by Daniels & Associates of Denver, and 16% by a group of Colorado Springs businessmen, outbid two other applicants, winning the grant by a 9-0 vote of the Colorado Springs city council.

The winning bid was based on annual gross and offered the city 5% of the first $250,000; 10% of the next $250,000; 15% of the next $200,000; 20% of the next $200,000; 25% of the next $200,000; 30% of the next $200,000; and 35% of everything over $1,300,000. Average payments to the city, according to Daniels, will average about 13 1/2% of gross receipts.

In projecting growth figures for the system, Daniels said that Colorado Springs is growing at a rate of 10% per year. With a present population of 70,000, he anticipates the plant will double in size in seven years. He stated that, "Under our present projections, and what we think the property will do, we are to pay the city an average of 13 1/2% based on 60% saturation in seven years."

Monthly rates are set at $4.45 for 12 channels and $4.95 if and
when the system goes to 20 channels. The city ordinance will not allow consideration of a rate increase until two years after the system is completed. There are no minimum taxes involved in the arrangement, but the Daniels group gave the city $50,000 in prepaid taxes as a part of their bid.

Construction of the 300-mile system was scheduled to begin immediately and will be 100% underground — indicating an estimated total cost of around $2 million for the entire plant. Vumore-Video will also build a separate loop and donate three channels for closed circuit use by the Colorado Springs school system.

Ken Erickson, a resident of Colorado Springs and chairman of the board of Kaman Nuclear, is chairman of the board of Vumore-Video. Bill Daniels is president, and Bob Clark of Vumore in Oklahoma City is vice-president.

San Diego Hearing Nears Conclusion

Proposed conclusions have been filed in San Diego, California, on the importation of Los Angeles television systems operating in that area — a subject long pending before the FCC, and now the cause for considerable concern on the part of the Commission. The case has for the last few months been under the scrutiny of critical observers across the nation, for it is the same case that earlier this year saw a landmark legal decision, in which the Court of Appeals in San Diego ruled that the FCC has, in essence, no authority to regulate CATV. The decision is currently under appeal in the U.S. Supreme Court.

The San Diego court acted on an appeal by the systems following an FCC order to stay their expansion; however, the Commission hearing phase of the complex case has continued.

Petitioner in the case is Midwest Television, Inc., licensee of KFMB-TV in San Diego. The CATV systems involved are: Mission Cable TV Inc. in El Cajon, Southwestern Cable Co. in San Diego, Pacific Video Cable Co. in El Cajon, Trans-Video Corp. in El Cajon, Rancho Bernardo Antenna Systems Inc. in La Jolla, Escondido Community Cable Inc. in Escondido, and Vista Cablevision Inc.

Among the proposed conclusions was a filing by the Commission's Broadcast Bureau. The bureau, in reviewing the situation of television station KAAR, an independent UHF on channel 39, noted that, "We have concluded that unlimited CATV expansion would result in serious impact on the San Diego UHF station. There is a likelihood that it would result in no independent stations at all in San Diego. This would mean that most of the homes not willing or able to subscribe to CATV would be able to receive only three network affiliates and a Tijuana Spanish speaking station."

The FCC bureau said "the only solution which appears equitable to all parties under the circumstances, would be to remove all restrictions upon the further expansion of the CATV systems in the San Diego area, upon the two conditions as follows: (1) That no San Diego CATV system shall carry the distant signal of any Los Angeles independent television station; and (2) That no CATV system originate any programs for carriage on its system. The term originate shall include local programs originated by the CATV system as well as all feature film, sports events, syndicated programs purchased or acquired by the CATV systems."

The CATV argument was summed up by Fletcher, Heald, Rowell, Kenehan & Hildreth, the Washington law firm that filed on behalf of five of the systems. The filing concluded: "(1) The present operations of CATV systems in the San Diego area have not been shown to have any effect on the local television stations; (2) That CATV, even if uncontrolled by the government, will be limited by practical economic factors to approximately one-third of the households in the San Diego area; and (3) That there is no valid and persuasive evidence that CATV operations of this nature, operating in accordance with the general CATV rules, would threaten the economic viability of any present or potential television station in San Diego." The filing argued for no conditions or limitations on CATV operation there.

The proposed conclusions were filed for the consideration of an FCC hearing examiner, who will issue an initial decision on the case, which in turn can be appealed to the Commission and later, if necessary, taken to court.

Jerrold, General Instrument Announce Merger Plans

An agreement in principle to the merger of The Jerrold Corp. and General Instrument Corp. has been announced jointly by Robert H. Beisswenger, Jerrold president and Martin H. Benedek, chairman of General Instrument. Emphasizing the company's "confidence that CATV represents a market with outstanding growth potential," the joint statement noted that, although the respective boards had agreed in principle to the corporate marriage, the merger is still subject to approval by stockholders.

The merger would see the union of Jerrold's considerable CATV manufacturing capabilities and system holdings with General Instrument's "substantial" background in integrated circuitry, the technology that most CATV engineers feel will eventually replace solid state. Based in Wilmington, Delaware, General Instrument manufactures electronic components and equipment, and is noted as the largest producer of television tuners.

The anticipated merger, according to Beisswenger, "Obviously shows the prophetic confidence General Instrument has in the future of CATV. As for the cable television industry, I believe it will benefit immeasurably as a result of this merger."

(News continued on next page)
CATV By-Passes Southern Bell

The city of Lake Charles, Louisiana, emerged as one of the major CATV/AT&T battlegrounds last month, when a pole dispute erupted between city civic leaders, utility pole owners, and two CATV firms. The skirmish got underway when Southern Bell Telephone Company refused to allow KAOK-CATV to attach its lines to the utility's poles.

Both cable firms — Louisiana Cable TV, Inc. and KAOK-CATV, owned by Time-Life Broadcast, Inc. and Ed J. Pendergast of Lake Charles (Pendergast owns and operates local radio station KOAK) — were granted CATV franchises by the Lake Charles city council. Louisiana Cable TV promptly signed a pole attachment agreement with the local Bell affiliate and a Gulf States Utilities, while KAOK-CATV was, in effect, left "pole-less," due to Bell's policy against signing pole agreements with more than one CATV company in the same city. (90% of the utility poles in Lake Charles are shared by the telco and Gulf States Utilities: at the present time, GSU owns 70% of the poles in the city, while Bell owns 30%.)

Louisiana Cable was granted the pole attachment by the two utilities over the protests of KAOK-CATV; however, the Lake Charles city fathers felt that both CATV firms should have the right to place their cables on utility poles within the city. On the other hand, Mayor James E. Sudduth and the city council took a firm stand with Gulf States Utilities and Southern Bell. And at the same time, city attorney Robert McHale came forth with the statement that the GSU franchise with the city did not permit the company to enter into the exclusive contract with Southern Bell, relative to use of the poles on a joint basis. He added that, in that the franchise had been violated, the city could demand that all cables, including Southern Bell's be removed from the Gulf States Utility poles.

KOAK-CATV then reminded the city council that Bell was operating in the city of Lake Charles without a franchise — it is not necessary according to state law, although GSU must, and does, have a franchise to operate — and that the KOAK firm was licensed by the city to operate a community antenna television system. At that point, the city council decided to take the situation in hand and resolve the problem.

An ordinance and a resolution were passed, with the GSU-Southern Bell joint service agreement as the basis for both. According to the resolution, GSU's franchise with the city "may have been violated," because it has allowed Southern Bell to attach its lines without obtaining permission from the city. The resolution stipulates that the city attorney may take appropriate legal action to revoke GSU's franchise and to cause "those who have illegally attached (Southern Bell) to remove their lines."

The resolution also indicates that GSU has allowed lines to be placed on its poles "without compensation to the City of Lake Charles." The ordinance, if passed, would also force all future lines in the city to be placed underground. Within five years all lines "shall be underground," the ordinance says. Ed Hodges, representing GSU, said the cost of such placement is 13 to 14 times greater than placing the lines on poles.

At the end of the meeting, Mayor Sudduth informed GSU, Southern Bell, Louisiana Cable TV and KAOK-CATV that the city administration would avidly enforce ordinances 1020 and 1341, already on the books, which regulate the installation of utility poles. "We intend to enforce these ordinances from now on," Sudduth said.

Bell Sticks To Policy

The council meeting began with Council President Charles Ware asking GSU and Southern Bell representatives if they had reached any decision on allowing KAOK-CATV to attach its lines on their poles.

Hodges of GSU said, "We will concede to the council's wishes and permit two cables." He indicated, however, that KAOK-CATV would have to pay the cost of arrangements for the lines on the poles. Hodges said it cost Louisiana Cable TV about $10 a pole for the 5,000 attachments it has made to the GSU and Southern Bell poles. Costs could be higher for KAOK-CATV since more lines would have to be moved. Hodges said.

Southern Bell's H. B. Cupp then spoke. He said the council was asking his company to "modify a long-standing policy" against allowing more than one line of a type to be placed on its pole. He said, "We intend to adhere to our present policy. We have been called 'hard-nosed.' We will not change our policy," he said. Cupp also said that GSU could not grant rights to KAOK-CATV without Southern Bell's premission.

However, Mayor Sudduth then told KAOK-CATV that the city would permit the placement of poles alongside Southern Bell poles, meaning that KAOK-CATV will have cable on Gulf States poles and its own poles throughout the city. Gulf States Utilities attorney Oliver Stockwell later informed the city council the GSU was "ready to work out an agreement with KAOK-CATV to allow attachment of its television cable lines to the company's poles immediately." He said his client would proceed independently of Southern Bell Telephone and Telegraph Company. The pole attachment agreement was signed the next day, and first placement of KAOK-CATV cables on GSU poles took place less than two weeks later.

Communications Task Force Established

President Johnson, in a recent message to Congress, called for a comprehensive review of the United States' international and domestic communications policy and appointed a high-level government "Task Force on Communications Policy." The President apparently meant to use the medium of his message to Congress only to call attention to the action, for he did not propose legislation.

The Task Force is chaired by (Continued on next news page)
an independent contractor

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COMPLETE SYSTEM CAPABILITY
Eugene V. Rostow, Under Secretary of State for Political Affairs, and Vice Chairman is James D. O'Connell, Director of Telecommunications Management. No member of the Federal Communications Commission is on the Task Force, although Commission Chairman Rosel H. Hyde is an ex officio member.

The Task Force was given open-end authorization to investigate all areas of communications policy, but the President made it clear that the real field of interest is communications satellites. The Task Force has one year to complete its review, a timetable that would seem to preclude extensive reevaluation of all areas of international and domestic communications. The Task Force also may be asked for interim reports, and is supposed to receive the cooperation of the FCC. The President also directed the Bureau of the Budget to restudy the government's approach to communications management with a view toward cutting down duplication and waste. The end result could affect the FCC's structure. As far as CATV is concerned, the most specific possibility raised in the Presidential message came with the question, "Are we making the best use of the electro-magnetic frequency spectrum?"

The President is also concerned that any domestic satellite system fit into the international plans, and he directed the Task Force to try to answer the questions: "How soon will a domestic satellite system be economically feasible? Should a domestic satellite system be general purpose or specialized, and should there be more than one system?"

Pay TV Gains Support

As the road to nationwide Pay TV grows considerably wider, carefully formulated viewpoints be they pro or con are being proclaimed by interested parties who may in any way be affected by the proposal. Declarations in support of the FCC's plan, which would establish a nationwide over-the-air pay television system, have already been made by the American Federation Labor Hollywood Film Council and the Screen Actors Guild. But the National Association of Theatre Owners has announced plans to solicit a contribution of ten dollars from every theater in the country, in order to raise a $50,000 fund to fight Pay TV. FCC's hearing on the proposal was scheduled to begin October 2.

Filing in support of the Commission's plans, the Screen Actors Guild stated that the FCC's Pay TV committee "has dealt exhaustively with the possible adverse consequences of subscription television on free television through programming, syphoning and pre-emption of time, and in its proposed rules has adopted elaborate safeguards against such consequences. We have studied these proposals and believe that they will prove adequate to substantially accomplish their purpose. "We wish particularly to support the proposed rule against the showing on subscription television of feature-length films which have had general release in theatres in the United States more than two years prior to their subscription television broadcast. Television showings of the older theatrical motion pictures constitute the backbone of free television programming, and members of Screen Actors Guild earn substantial fees from such exhibitions. It is, therefore, important to them that their source of income be preserved in this area. We believe the above rule will be helpful in accomplishing this end. The prohibition against the showing on subscription television of series type programs with interconnected plot or the same cast, which have become so identified with free television, and the rule against commercial advertising should also aid in preventing audience diversion and maintaining the high quality and potential values of which subscription television is capable."

The filing, signed by national executive secretary John L. Dales, made another point that CATV operators should read with interest: "It is our belief that the existence, side by side, of two competitive systems of television programming will result in a vastly larger television audience with a broader range of tastes and interests. The natural fluidity and curiosity of such audience should more than offset any possible loss to free television of a portion of its present audience. Thus, free television, instead of being adversely affected by subscription television, will undoubtedly gain from its existence."

Pa. System Defies City

Bradford (Pennsylvania) TV Cable Company's dispute with the city council finally reached the stage of crisis: cancellation of the cable firm's 10-year franchise. But the action, which culminated after Bradford TV Cable attempted to raise its charges from a low $3.75 a month to $5.50, has fallen on deaf ears as far as the cable firm is concerned. Company officials rejected the city's order directing the removal of CATV lines and equipment from city streets on the basis that "the city does not possess the legal power to issue a directive . . ." In a communication to City Solicitor Francis M. Nash, cable manager William M. Taylor declared that Bradford Cable "does not feel itself obliged to terminate its service or remove its installations in the city." The communication also warned that the cable firm would look to the city for reimbursement of "all damages suffered" due to the interception of service or interference with the equipment in the city.

The entire problem erupted when Bradford city officials first learned of the proposed rate increases to a segment of the Cable TV company's customers in order to standardize all payments by the end of a five year period. The cable company at that time...
threatened the cancellation of service to original subscribers if the rate increases were not accepted by this segment of the company’s customers.

According to city officials, the company was notified the proposed rate increases and threats of individual contract cancellations was in direct violation of the 10-year franchise between the municipality and the cable facility.

City officials said the cable company had been notified by letter of the action the city would take if the threats and proposals of the TV Cable company persisted. The letter requested that the company cease and desist from the rate increase proposal and attempts to cancel customer agreements.

**CBS Develops Playback Device**

The Columbia Broadcasting System has announced the development of a revolutionary electronic device which not only allows the playback of color motion pictures or other visual material through a conventional television set, but can also be stopped so that a viewer can leisurely read a page from a book on his home screen.

The device, known as "electronic video recording," involves use of a seven-inch cartridge that can be inserted or removed from the playback machine with the ease and economy of the cost now associated with long-playing records of music. The playback machine could be put on top of a TV set and simply connected to the antenna terminals of one or a dozen receivers. It is roughly the size of a kitchen bread box and can now be manufactured for about $285.

The cartridge, which can be mass-produced readily because a duplicate copy can be made in a matter of seconds, would initially cost from $7 to $14, a fraction of the cost of today's magnetic tape recording widely employed in commercial TV.

The CBS device, which is scheduled for world marketing in late 1969 or early 1970, differs from earlier home recording methods in that it can only play back the film cartridge made by a professional concern.

*News continued on next page*
Network to Try Again

Plans to resume broadcasting have been announced in New York City by James W. Nichols, managing director of United Network. The network, which began operation only this year, folded after less than 60 days on the air. A bankruptcy petition was filed June 22 by Nichols, after broadcasting a short-lived late evening show from Las Vegas to 106 affiliated stations since the first of May.

In his recent announcement, Nichols indicated that the network would resume with news and public affairs shows. He pointed out, however, that the network could not resume operations without approval of the Federal bankruptcy referee handling the present proceedings of the previous network. It is expected that the same Texas investors who sponsored the first attempt would back the new start.

Nichols noted that the comeback, if allowed, would be under the direction of Robert Pauley, who recently resigned as president of the American Broadcasting Company Radio Network. Nichols said failure of the first attempt was due because of insufficient advertiser support and the high cost of transmission facilities leased from the American Telephone and Telegraph Co.

Under its new operation, Nichols said, United plans to provide affiliates with 14 half-hour weekly news and public affairs programs.

According to United, this programming will be resumed in three phases: The first phase will be the news and public affairs. The second phase will place the emphasis on sports. The third phase will be to provide entertainment material.

Company officials say that details and target dates for phases two and three are not yet set, but stress the fact that news and public affairs will always receive prime attention.

AT&T Rate Filing Period Extended

The Federal Communications Commission has granted American Telephone and Telegraph Company more time to file new tariffs called for in a recent FCC decision which ordered the company to cut interstate rates by some $120 million annually.

The new rates were to be filed by September 1, but the delay was granted, according to the FCC, in order to allow time for a Commission study of recent AT&T petitions that the rate-cut order be reconsidered and modified. However, in making the concession, the FCC noted that the delay "will be of short duration as the Commission is expected to act promptly" on the request for modification of its order.

FCC Reverses Waiver Decision

Cleveland, Ohio area CATV systems came face-to-face with a reversal of FCC policy last month, when the Commission changed its mind about an April decision and stripped the systems of their distant signals. The systems affected include Lorain (Ohio) Cable TV and the Telerama, Inc. systems in Cleveland Heights, Richmond Heights, South Euclid, Beechwood, Oakwood, East Cleveland, Garfield Heights, Euclid, Highland Heights, Lyndhurst, Bedford and North Randall.

In dealing with the complex Cleveland situation last April, the Commission decided to set the entire package for a market hearing, but in the meantime agreed to allow the systems to import signals. (Lorain Cable TV planned to carry Toledo and Akron signals, and on the Commission's grant initiated construction — and the Telerama systems have been carrying Youngstown, Ohio UHF stations WFMM-TV and WYTV.) At this point, the Lorain system has permission to carry WAKR-TV on Channel 49 in Akron, and only Telerama's Oakwood system can still carry the Youngstown signals.

In reversing the earlier decision, the Commission also denied a Telerama petition for reconsideration, which asked that the FCC allow it to carry UHF stations WJET-TV and WSEE in Erie, Pennsylvania, on its systems in Shaker Heights, Warrensville Heights and Warrensville township.

Copyright Moratorium Sought

The ad hoc copyright committee — still officially described as "informal" — has held a series of meetings in Washington on the CATV question in copyright law, as yet, no definite result. The meetings revolve around, essentially the hope of the CATV industry for interim legislation to suspend the potential applicability of copyright law to CATV until comprehensive copyright revision legislation is passed by Congress. The meetings naturally also concern the long-range future of CATV as far as copyright is concerned.

A moratorium is being sought in order to ease the legal situation, and there have been indications that Senator John L. McClellan (D-Ark.), chairman of the Senate Judiciary Committee, is willing to back the legislation. But broadcasters and, even more strongly, copyright holders, have indicated an unwillingness to settle for a such a moratorium when they think they now have full copyright leverage. (In the event that the Herlands Decision is upheld by the Supreme Court, the CATV industry would be liable for a rash of law suits and injunctions, all awaiting the passage of the copyright law.)

(Continued on next news page)
Great new formula for Low-cost Local Origination:

The R. H. Tyler Company has an economical solution to local origination programming. And the formula allows maximum reliability of programming at a minimum of cost and equipment. Here's how it works:

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\[ \text{CONCORD TCM - 20} \quad + \quad \text{CONCORD VTR - 600} \quad + \quad \text{WEATHER - SCAN II} \]

\[ \text{\$4140} \]

ORIGINATOR OF TIME/WEATHER EQUIPMENT FOR CATV
Broadcasters reportedly are opposed to the moratorium, but indicate a willingness to negotiate further. The copyright forces, however, argue that such a moratorium would constitute an unconstitutional imposition of the rights of the copyright holders to court protection.

**Restraining Order Denied**

Federal Judge W. Arthur Garrity has denied a petition by Springfield TV Broadcasting Corp. for a temporary restraining order against Pioneer Valley Cablevision, Inc., operator of systems in Greenfield, Monson, Palmer and Ware, Massachusetts. Springfield TV Broadcasting Corp. operates Massachusetts television Channel 32 in Greenfield (WRLP), and Channel 22 in Springfield (WWLP).

The broadcasting concern’s suit alleged that the defendant had been engaged in the practice of carrying TV signals over its systems which duplicate the programs carried by WRLP and WWLP. The complaint contended that a loss of revenue had been suffered by the plaintiff because of Pioneer Valley’s alleged practices. However, Judge Garrity ruled that the plaintiff failed to make a showing as to immediate and irreparable injury.

**Telcos Announce Merger Plans**

United Utilities, Inc. and Citizens Communications, Inc. of Decatur, Indiana, have announced plans to merge. Disclosure of the pending merger came in an announcement issued jointly by Paul H. Henson, president of United, and Charles D. Ehinger, president of Citizens.

Both confirmed that a definitive agreement of merger is being developed by attorneys for the companies and will be submitted to their respective boards of directors in the near future. Such agreements would be subject to approval of the stockholders of both companies at meetings to be held this fall. Owners of common stock of Citizens will receive common stock of United. Citizens preferred stock will be called and redeemed.

United Utilities, Incorporated, which will be the surviving corporation, is a holding company which owns and operates the nation’s third largest telephone system, serving nearly 1,300,000 telephones in 18 states. Other pending mergers expected to be consummated by United this summer will increase those totals to more than a million and a half telephones in 21 states.

**Waiver Petition Filed**

A petition for waiver of rules that would allow immediate construction of a cable system in Jefferson County, Colorado, has been filed with the Federal Communications Commission by Mountain States Video, Inc. (Bill Daniels-Vumore group). The petition asks for approval of carriage of eight Los Angeles and two San Francisco independent television stations.

The Jefferson County area is part of the Denver metropolitan area and thus falls into the 41st ARB market ranking. It therefore comes under the Top 100 market ruling of the Commission’s Second Report and Order.

In the petition, Mountain States Video referred the FCC to specific determinations made by Jefferson County Commissioners that found “after full and complete consideration, including public hearing, the construction, operation and maintenance of a cable system — is consistent with the public interest.”

According to the petition, “the significant public need for all of these proposed services is manifest, unfulfilled, and awaits, indeed, demands, satisfaction.”

Mountain States stated that supplements to the petition would be filed with the Commission to expand the proposal to include other communities as additional franchises were secured in the Denver metropolitan area.

**York, Pa. Suit Filed**

A taxpayer’s suit which charges that a Pennsylvania CATV company’s franchise is “unconstitutional” has caused considerable unrest in the city of York, Pa. The suit, filed by Mr. and Mrs. Arnold Freedman, also names Jerrold Electronics, Inc. as co-defendants and seeks an injunction against the cable stringing operations of Cable TV Company of York, a subsidiary of Susquehanna Broadcasting Company.

The Freedmans’ suit states that Jerrold erected a pole on the Freedmans’ private property at 260 East Philadelphia Street “contrary to their wishes and over their protests.”
Maintenance of CATV Systems Costs Less with Jerrold Test Equipment.

Tune in Jerrold Test Equipment and tune out excessive maintenance test costs. Efficient, accurate and dependable, Jerrold set-ups cut check time to the bone. System performance is optimized and so is your profit picture.

As cable TV systems grow... more channels are added... greater distances are covered... your need for swept frequency test equipment becomes more critical. Rely on Jerrold. The most experienced manufacturer of CATV systems, and the test equipment to back them up.

SS-300-7F Sweep System... sweep generator (500 kHz to 300 MHz) plus a variable marker generator plus crystal generated harmonic chain plus a detector system, all in one compact housing. This lightweight (just 20.5 pounds), battery or standard power unit, operates sub-channel through VHF. Calibrate, test, troubleshoot... anywhere in the field from head-end to extremity.

TC-2-7F RF Coaxial Switcher... permits simultaneous viewing of two traces (signal and calibrated reference) on a standard scope for ultra-reliable, fast, Measurement By Comparison testing. Since both traces derive from the same basic source, high accuracy is achieved. This method compensates for non-linearity of detectors, oscilloscope drift, and line voltage variations. Alignment and maintenance testing is greatly simplified.

RLB-H-7F RF Bridges... a single RF bridge that covers sub-channel to VHF-TV. For use in test set-ups of return loss (VSWR) measurements of amplifiers, taps, filters—in fact, any RF distribution equipment in the system. Frequency range is 4 MHz to 220 MHz at 60 dB balance.

ATV-Series Precision Attenuators—combining the accuracy of the best "pull-and-turn" drum attenuators with the mechanical convenience of rotary or progressive-addition type instruments to provide extremely accurate values from dc to 1200 MHz. Available in single and multiple models.

If you're in cable television, consider Jerrold RF Test and Measurement Equipment... designed by CATV experts for CATV experts. Contact your Jerrold salesman or write Jerrold Electronics Corporation, 401 Walnut Street, Philadelphia, Pa. 19105.
Systems

Ralph E. Hembree, controller of United Transmission, Inc., has been named general manager of the company's CATV Division. It was announced recently by C. W. Stanley, vice-president.

William Sinkunas has been appointed northern division manager for Telecable, Inc. He will be responsible for systems in Anacortes, Bellingham, Burlington, Mt. Vernon and Sedro Woolley, Washington. Prior to this appointment, he managed systems in Bellingham, Washington, Barstow and Laguna Beach, California.

Ralph Hillard of Galena, Ill., has been named manager of TelePromPTer Corp.'s Farmington Cable TV in Farmington N. Mex. Hillard organized Galena Cable Inc., a CATV company which built the first cable TV system in Illinois in 1952 at Galena. In 1961, he organized Cable TV Construction, a company specializing in construction of cable systems and sold the business in 1965 to Rock Island Broadcasting Co.

Sanford N. Levine, president of Nation wide Cablevision, Inc., has been elected a corporate vice-president of Kaufman and Broad Building Company, parent company of the CATV firm. Since joining the firm, Levine has rapidly expanded their operations and is presently directing nine cable TV systems in California. Prior to joining the company, he had broad experience in the electronics industry.

James O'Farrell, Stevens Point who has operated the Teltron Cable television firm there for the past two years, has been named manager of Marshfield Valtronics. A native of Fremont, Ohio, O'Farrell has been in the radio and cable business for five years.

Doug Cairns, manager of Cowlitz Cableview, Longview, Washington, has been named comptroller of the Longview Daily News. Cairns will continue as manager of the local cable system.

Raymond D. Poorman, it was recently announced, has been named transmission and construction engineer for GT&E Communications Inc., a subsidiary of General Telephone & Electronics Corporation. Poorman will be responsible for the engineering and construction programs for the company's northwest division headquartered in Edmonds, Wash.

Don Guthrie has joined Time-Life Broadcast, Inc. in the newly-created position of CATV marketing director. Guthrie previously served as marketing manager of TelePromPTer Corporation.

William H. Tucker has resigned his position with Bettervision Systems and Mountain National Corp. and has announced the formation of a company, Best Associates, Inc., which will seek franchises and acquisitions in the CATV field.

Myrl F. Johanning, staff accountant, has been promoted to accounting manager of United Transmission, which is a subsidiary of United Utilities, Incorporated.

William G. Russell III has been named manager-finance and treasurer of General Electric Broadcasting Co. and General Electric Cablevision Corp. His headquarters will be in Schenectady, N. Y. He joined General Electric as a trainee in its business course. A series of promotions led to his being named a member of the corporate auditing staff in 1959.

Suppliers

Robert A. Brooks has been appointed vice-president of sales for Spencer-Kennedy Laboratories, Inc. Brooks first joined Spencer-Kennedy in 1954 and remained there until 1965 when he joined the Anaconda Wire and Cable Co. as chief engineer of Communications Systems Group. He was appointed marketing manager, CATV for Anaconda's newly-formed affiliate, Anaconda Astropower Co. in 1966.

Frederick W. DeTurk, has been appointed market manager for communications of Phelps Dodge Copper Products Corporation. DeTurk joined PDCP's advertising department in 1953 and became manager of that department in 1957. He became sales manager at the North Haven, Connecticut office in 1964 and was again transferred in 1965 to the New York office as sales manager of coaxial cable for the firm.

Heinz Blum, of Entron, Inc., has been promoted to the position of senior vice-president in charge of advanced engineering. Mr. Blum will be responsible for the implementation of new research and development programs for the firm. He has been vice-president in charge of engineering and has headed Entron's engineering and research/development departments since 1953.

Eugene Scheer now has the position of assistant manager, special projects with the Superior Cable Corporation.

John D. Couturie, vice-president and treasurer of Hughes Aircraft has been elected a member of the board of directors of the TelePromPTer Corporation. TelePromPTer and Hughes are partners in Theta Communications.

Robert E. McIlvane has been elected a director of the Anaconda Wire and Cable Company, R. B. Steinmetz, chairman of the board, announced. McIlvane, vice-president, division operations, has been with the company since 1956.

Robert D. Hayward has joined Ameco Engineering Corp. as mechanical designer. Hayward was a development technician with Douglas Astropower Lab at Newport...
Beach, Calif., where silver zinc cells were developed.

Midwest Lawn-Saver Equipment Company president Don Killoren has announced that the company’s name has been changed to Midwest Utility Plow & Equipment Corp. (MUPECO). The manufacturing and installation company is based in Appleton, Wisconsin.

Orville D. Page has been appointed vice president of product engineering, it was announced by Edward P. Whitney, president of Entron, Inc. Before joining Entron, Page was director of engineering and marketing for the Vitro Electronics Division of Vitro Corporation in Silver Spring, Md. He also has held sales, managerial and technical positions in several other engineering organizations.

Donald Imbody has been named sales engineer for the southern Illinois and southern Indiana area by the CATV systems Division of Jerrold Electronics. He will operate out of Jerrold’s newly established regional office at West Lafayette, Ind.

Joseph A. Licata has been appointed controller of Blond Tongue Laboratories, Inc. He originally joined the firm in 1966 and has served as manager of general accounting since that time. Prior to that, he had extensive experience with a large New York public accounting firm.

Ted Atwood, Jr. has been appointed regional sales engineer for the commercial marketing department of American Electronic Laboratories, Inc. Atwood will service all AEL customers for the company’s standard product lines, and will be available for consultation and assistance regarding custom engineered products and special services.

Michael A. Carlisle has joined Ameco, Inc. as sales representative in Nebraska, Kansas, Iowa, Missouri and Colorado. Most recently Carlisle was director of promotion for the United Video systems and manager of the CATV system at Columbus, Nebr., now headquarters for his Ameco sales territory.

Commissioner Robert E. Lee was sworn in for his third term as a member of the Federal Communications Commission in a brief ceremony in his office recently. Chief Hearing Examiner James D. Cunningham administered the oath. The Senate had previously confirmed the nomination.

W. Wallace Warren has joined Malarkey, Taylor & Associates as engineering assistant to Arthur S. Taylor, vice-president of engineering. Warren has spent many years in the broadcasting and engineering fields and was formerly associated with Howard S. Frazier, Inc.

Continental Cablevision of Upper Sandusky, Ohio, has selected Barash Advertising of State College, Pa., to handle advertising, public relations, and promotional services for the new CATV system. The system was energized last month.

The Harry P. Bridge Company, Philadelphia, Pa., has been named the Philadelphia advertising agency for TeleSystems Corporation, Glenside, Pa. Bridge will handle advertising, public relations, and promotion services for the firm’s Philadelphia CATV franchise.

John F. Dille, Jr. has been appointed chairman of the National Association of Broadcasters Future of Broadcasting Committee. Dille is immediate past chairman of NAB’s board of directors.

Roland Yount, president of Trans-Com, Inc., micro-wave consulting engineer of Denver, Colorado, has announced that his firm has opened a branch office at 5622 Dyer in Dallas, Texas. John Israel, vice-president of T. C. I. will head up the new office.

An error appeared in our September issue on page 34. The captions for the photos of Misses. Triller and Yager are reversed.
The Role of Cable Television
In our Changing American Society

By John P. Campbell
Atlanta, Georgia

Anyone who's been in the swim of CATV for a number of years will be quick to admit that this industry has endured its share — and more than its share — of problems. We've learned to expect and accept trouble from many directions every time CATV interests make a progressive move.

Earliest of the antagonists in my memory were the radio and TV servicemen, who individually and collectively organized to protect their interests in the sale and service of antennas. Then came the translator proponents to occupy our attention for some time. In recent times we've seen the emergence of the Bell System and the independent telephone companies as parties interested in participation, control or suppression of CATV.

The attitude of certain television and radio broadcast interests seeking to keep CATV in a secondary position is the simplest of all to explain, since the motive is so transparent — protection of an entrenched establishment against any potential threat from without. There's been ample proof of their power.

When we observe the educational and UHF broadcasters and the majority of the Federal Communications Commission people participating in action to slow the development of cable television, it's time for those of us who like to consider ourselves "career" CATV people to ask "Why?" Surely those organizations in government and industry charged with responsibility to serve the public interest would not expose themselves openly to criticism of their motives in this area. ETV stations almost universally reap bonus coverage from CATV. UHF stations gain a big advantage when carried on CATV — they get "dial position equality" with the dominant VHF stations, frequently a position between network channel positions on the TV dial. What a seldom recognized advantage for hard-pressed UHF stations!

Let's be honest with ourselves about government regulation, however. We know that no government can leave unregulated any communications facility, CATV included, in order to prevent the possibility of its misuse by subversive elements. We have no quarrel with the concept of Federal regulation that's reasonable and conducive to freedom in communications. This writer, for one, welcomes the announcement by President Johnson of the formation of the Task Force headed by Chairman Eugene V. Rostow to re-study the allocation and use of national and international frequency resources in a changing world. The President's Task Force, which is staffed by distinguished and able thinkers, will give the merits of coaxial cable long overdue analysis and evaluation as a means of transporting information in congested areas. And we can look for little or no material change in Federal regulatory policy until Congress updates existing legislation in this field.

The communications industry that emerges from the Task Force study and subsequent Congressional action must be structured and financially powered to serve the society of America's future. This must be done if we are to save traditional freedom under new conditions. Will the pressures generated within the "super cities" of tomorrow bring about the supression of our personal liberty? Will the economics and the efficiency of space transmitters further channel the distribution of news, entertainment, and perhaps propaganda to the people from fewer and fewer sources? Would liberty in America survive under conditions in which individual citizens become, in effect, isolated from participation in the exchange of ideas?

I draw here a distinction between the passive absorption of communications intelligence, such as watching and enjoying television, and the actual participation of free citizens in the exchange of ideas through television and radio. It's the difference between sitting in the audience to watch a play and, being in the cast. No matter how much change is in store for us, we must have a radio and television industry structured to serve a democratic society of thinking, free men. Cable television can earn for itself a place of dignity and purpose in future communications by bringing the people back into active participation in local television.

ABOUT THE AUTHOR

A 13-year veteran in the CATV management field, John P. Campbell built the first metropolitan-market system in the country at Dubuque, Iowa. His career includes positions with Jerrold Electronics, H & B Communications, Cox Cablevision, and Telerama, Inc. He has served as president of the North Central Community Television Association and State president of the Southeastern Community Television Association. Now a sales, advertising and management consultant to the industry, Campbell brought into CATV several years of experience as a newspaper advertising executive.
In the mid 1950's I remember reading a speech delivered to a Congressional committee calling for the suppression of the infant CATV industry as a parasite on the back of "free television". The speaker established a "Totem Pole" concept of respectability, with the largest stations at the top, smaller stations and translators in the middle, and poor little parasite CATV at the bottom. Those of us active in CATV at the time held our tongues. For years we were advised not to alter any station's signal or add any new service for fear of offending the powers-that-be. The Second Report & Order put an end to that concept forever.

Today, a decade later, we find ourselves in a world of rapid change, face to face with new opportunities to serve society. We've harnessed the transistor, the orbiting and fixed space transmitter, the laser. We've witnessed the development of small cameras and videotape recorders. We have tools and equipment at our disposal that give us a power we never had. There isn't a single provision in the Second Report that comes right out and prohibits our use of these new tools for the betterment of our communities.

Whether you undertake local program origination in the grand style of a corporate research project, or start with a simple economy package, you will be building a solid foundation for the future of your business. Your cable television service will be different from regular reception because the public will sense your interest in their personal needs. Audience ratings should never concern you; you'll never approach broadcasters' coverage of the masses. Your audience will be the specialty audience interested in intensely local happenings. It would be a mistake, in my opinion, to overlook the specialty approach and overconcentrate on programming that duplicates broadcasting fare. You will develop the skill of knowing your market, the art of reaching it with your sales promotion, and the talent of serving it with program content appropriate to your role. Sales will come family-by-family and group-by-group until your saturation of the community becomes an important force.

The concept of providing a television advertising service to retail businesses in your service area is a fine way to bring in the extra income needed to cover a part of your closed circuit expenses. The local merchants need such a service and may very well be entitled to it, as suggested last year by a Justice Department representative. Your cable is capable of delivering ad impressions seven days a week, not the weekly or bi-weekly service typical of most small towns and suburbs. The added news value of local retail ads will attract more viewers, too.

Since the organization and development of a worthwhile closed circuit operation takes time, money and hard work, the moment to begin is now. Even if you start in a small way and make mistakes along the way, keep at it with persistence and courage because you're building support under your business — support based on your own ability — not someone else's.

As long as CATV depends wholly on the ability and talent of others, it will remain vulnerable. But when we develop to the point where our own ability and talent become a part of community life, we'll get the government support we lack today.

TV Communications

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So if you’re thinking seriously about buying a CATV tower . . . think of Utility . . . the company that is serious about building and erecting for you the finest CATV tower you can buy. Investigate the durability of QUALITY CERTIFIED TOWERS. Call Utility today.
For a long time, cable TV operators avoided program origination like the plague. The industry position being that CATV was nothing more than an antenna service, a long cable into people’s homes.

Copyright suits, the FCC and groups like AMST have combined to change this attitude. The CATV industry has learned that refraining from origination is no shield against attacks by special interest groups. We have also learned that local origination is very much appreciated by CATV subscribers. Therefore, it generally adds to system profits.

Since discussions with CATV operators all over the country had indicated a growing trend toward local origination, TV Communications decided to undertake a comprehensive survey to determine the extent of this practice.

The results were surprising. More than half (51%) of our respondents said that they are originating some sort of local programming. Predictably, the most common form of local service was a time/weather channel. Even in the days when CATV operators were trying carefully not to offend anyone, weather boards were quite common. The opponents of CATV seldom voice any criticism of this kind of service, and many CATV operators do not even think of it as local origination. However, fully 25% of our respondents were cablecasting other types of programs.

Table I summarizes the types of programs originated by our respondents.

**Advertising Revenue**

Charging for advertising time on local cablecasts is an entirely different matter. It is obvious that CATV operators are still reluctant to go after advertising revenue — at least until the copyright issue is settled. Only 7% of our respondents indicated that they charge for advertising. Of those who do charge for ads, incomes vary tremendously, ranging from $40 per month to...
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FIELD STRENGTH METER

Benefit from complete reliability and accuracy with the improved FM-1 Field Strength Meter. This rugged new model has been designed specifically for CATV systems...gives you unsurpassed quality, accuracy and ease of operation. Special features include a new fiber glass printed circuit board, and a completely transistorized system using all-silicon semi-conductors and silicon transistors to assure long term circuit stability. Shielding is throughout and complete. Tuning is now easier...Log scale is easy-to-read. Dial lamps may be switched on or off as needed; uses separate C-cells for power. Rugged construction...completely portable...padded all-leather carrying case. The new FM-1 Field Strength Meter is your answer to highly accurate field measurements...yet the economical price remains the same. Write us today for complete information.

SPECIFICATIONS

- INPUT — 75 ohms; F-type connectors
- POWER — two 9-volt 2u6 batteries plus two C-cells
- WEIGHT — 5-1/8 lb.
- SIZE — with carrying case: 4-3/4" x 6-1/2" x 7". Complete with carryng case & batteries.
- FREQUENCIES — all TV and FM channels
- ACCURACY — within 1.5 db: measures quasi-peak reading of video signals
- RANGE — 10 microvolts to one volt; db ranges: -30 to plus 60 dbmz

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Film chain and slide unit are part of many local origination operations. Shown here is the equipment used in the showcase cablecasting studios of Cleveland Area Television's Lakewood, Ohio system.

a time/weather channel originator. Since 65 of our respondents indicated that they plan to buy this type of equipment, it seems reasonable to forecast sales of about 250 such units over the next two years.

Not too many of our respondents indicated that they are presently in the market for a film chain — only 27 out of 414. From the interest in showing movies and public service films however, it seems likely that many systems will eventually invest in the film chains.

Cablecasting Fills The Gap

Looking at cablecasting as a whole, it seems obvious that the CATV industry is finally determined to fill the gap between national and local TV programming.

As FCC Commissioner Lee Loevinger pointed out at the NCTA Convention this is not only an opportunity,

Simple, live originations using weatherboard camera are feasible for small systems, and still provide substantial community service image. Newcast on Texico, New Mexico-Farwell, Texas system is shown in progress.
but a responsibility for CATV operators. And indications are that cablecasters relish the responsibility. We could cite many examples, but two will suffice.
Al Ricci, of Pioneer Valley Cablevision, recently cablecast a 16MM film of Rep. Silvio O. Conte (R-
Mass) interviewing Sen. Charles Percy (R-Ill). Thus, these two congressmen got TV exposure that would have been impossible without CATV.

Perhaps more dramatic is the case of Don Hancock, owner of Ruidoso Cable Television, New Mexico. Setting a high standard for CATV journalism, Mr. Hancock actually went to jail in an attempt to cablecast Ruidoso Hospital Board meeting on Medicare!

As cablecasting grows in scope and sophistication, CATV systems will become a more and more important part of the nation's communications industry.

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**TABLE III**

**ORIGINATION EQUIPMENT TO BE PURCHASED WITHIN NEXT TWO YEARS**

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>TAPE RECORDERS</td>
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<td>CAMERAS</td>
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<tr>
<td>MONITORS</td>
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<td>NEWS WIRE CHANNELS</td>
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<tr>
<td>FILM CHAINS</td>
<td>27</td>
</tr>
<tr>
<td>OTHER</td>
<td>49</td>
</tr>
</tbody>
</table>

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**COMING SOON!**

The 1968 CATV DIRECTORY of EQUIPMENT, SERVICES & MANUFACTURES will be published in December. More comprehensive...more detailed...more types of information...more complete than ever before! It's the only publication of its kind...your complete reference source of CATV products and services. Advance orders are now being taken. Pre-publication price — $6.95; price if payment included with order — $3.95 (regular publication price — $6.95). Save money by placing your advance order now.

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Watch for the special Head-End TV Communications issue coming your way in November. Special editorial coverage will include a review of the latest developments in Head-End equipment and concepts. It's vital reading for informed managers and technicians.

November 1

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Want to really saturate an area at the lowest cost per subscriber? — then SKL/262 is for you. Field-proven in hundreds of installations, a single 262 can drive 600 — or more — TV sets, depending on the specific distribution layout. A natural for hotels and apartment complexes, too. Distortion is so low, you can cascade the 262 with the SKL/7300 Line Extension Amplifier for even greater coverage. Make the most of these amplifiers with SKL's Series 7500 Multitaps, the efficient directional taps for satisfied subscribers.

FIGURES
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SKL/7500 Directional Taps offer high return loss, isolation and directivity to positively reduce reflections, ghosts and interference. And, the low insertion loss permits longer distribution lines with heavier subscriber saturation. The SKL Multitap is available in strand or pedestal mounted single-drop models with tap losses of 10 and 22 dB, built-in compensation for the attenuation slope of your drop cable, and a 5A AC bypass rating.

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For up to 4 multiple outputs, just insert an SKL/7500 Series Tap Adder into the Multitap. And for system flexibility — there’s a choice of 12 different tap loss values, from 3.5 to 40 dB with nothing to adjust or get out of adjustment. In addition, by using the exclusive SKL/7500 0 dB Multitap with an SKL/7504 Tap Adder at the end of a distribution line, you get 4 EXTRA drops — instead of dissipating signal power in a termination.

Write or call for quantity discount prices.

---

**BEHIND THE PRODUCT**

**Science**

As cable television standards become more stringent, we have intensified our research in the underlying science. Network analysis, semi-conductor physics, amplifier design, information theory, noise and distortion studies are among the subjects of our current computer-aided investigations. SKL’s advances in CATV engineering in no small measure reflect the company’s location within the largest electronics complex in the world, close to the university center of the Northeast.

**Knowledge**

Twenty years have given SKL a wealth of experience and expertise in every aspect of cable television. In applied research, in product design and manufacture, in system engineering, in CATV financing and administration, in franchise assistance, in turnkey contracts. You name it, we’ve done it — and we’d be happy to put them all at your service.

**Leadership**

SKL’s many contributions to cable television technology have put it in the forefront of the industry. The first wideband amplifiers, the first wideband automatic level control, the first pilot-operated equalizer, the first thermal equalizer, the first directional tap, the first hybrid splitter, and now the first fully automatic solid-state system control amplifiers are all products of SKL’s innovative engineering skill. Look to SKL for the significant future trends in cable television.
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Impressive and profitable things will happen when you supply your key technical men with their own personal copies of TV Communications. By having his own copy, an engineer or technician will be able to spend his off-duty hours exploring exclusive TV Communications articles on system design, servicing techniques, basic electronic theory, safety procedures, plus information on new components and test gear.

Show your employees that you care enough about their future to help them prepare for it. Your small investment (2¢ per day or less) in individual subscriptions — at a special discount — will pay you excellent dividends in added loyalty and improved performance. Just send us a list of names and mailing addresses and specify one-, two- or three-year subscriptions. We'll take it from there.

<table>
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<th>Three Yrs.</th>
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<td>5.50</td>
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Group Subscription Dept.

TV Communications
207 N.E. 38, Oklahoma City, Oklahoma
Local origination programming can give a CATV system its "identity", "image", "personality" and presumably "id". All qualities that have been bandied about by psychiatrists and Madison Avenue mendicants as well. Conventional TV outlets, limited to single-channel programming, find the lone band restrictive and, as Marshall McLuhan might say "linear". In other words, they cannot offer viewers concurrent viewing opportunities. Program must follow program as the words on a page.

But what opportunities exist for CATV? The time is not far off when many systems will be able to offer subscribers as many as 20 separate channels. The opportunities for entertainment, education, information, inspiration and community programming are virtually limitless. Again, to paraphrase McLuhan, the "Uniqueness of CATV is the Medium".

As CATV operators well know, the easiest and most economical way to program "locally" is through a weatherboard or similar mechanical system.

But to serve the needs of ever-growing numbers of subscribers, local programming must provide live and film shows as well as automatic services. System operators can profit from the experience of successful telecasters by installing camera-filmchains and take advantage of the vast storehouse of films available — free. A quick perusal of such directories as "The Free Film Source Book" published by the Broadcast Information Bureau, reveals the world of the sponsored film. These are films provided on a free-loan basis to TV stations, schools, and colleges, service organizations and other local community groups. They are made available in the public (and sponsor) interest by companies, foundations, government agencies, international organizations, charities, and religious bodies.

Their subject-matter range is vast and varied, giving broadcasters a unique opportunity to provide informative programs devoid of stereotype, sterility and sameness. Many of the country's most imaginative and talented filmmakers create sponsored films, using techniques that are fresh and free of the so-called "industrial" look.

CATV operators who use these films for local programming find it is convenient to order them in series developed by professional distributors, with audience-catchy titles: "Discovering America" (a See-the-USA anthology, introduced by Vice President Humphrey), "Thrills and Skills" (the world of sports from racing at Monza to mountain climbing in the Himalayas), "Kyle Rote's World" (an all-purpose series hosted by the personable sports star), and "World in Focus" (peoples and places near and far). Impressive opening titles establish these series and showcase them as a continuing weekly feature.

Other CATV programers order the films singly for incorporation into their own series and local concepts. They find at their disposal — and for just a few pennies return postage — such exciting film fare as: "Monument to the Dream", the unbelievable story of the construction of the St. Louis Arch, "A Story of Arthur", a musical comedy with a bouncy score on the importance of weight-watching, "Baths and Babies": a delightful slice-of-life glimpse of mothers learning about baby care, "The Islands of Greece", a Ulysses-like tour with music by the composer of "Never on Sunday", "Thirty Days in May", an exciting recounting of the '67 "Indy" race, "High in the Himalayas", climbing Mount Tawee with Sir Edmund Hillary, and "Child of Darkness — Child of Light", an award-winning documentary about children of the slums.

Some top talent appears in or narrates sponsored films: Mia Farrow, Robert Hooks (star of "Hurry Sundown"), Burgess Meredith, Douglas Fairbanks, Jr., Chet Huntley, Alexander Scourby, and Richard Burton (who narrates and appears on camera in a film on Florence, Italy).

Association Films, a distributor of free films (through its TV division, Association Telefilms) foresees a rosy future for the sponsored film on CATV. In the early days of television (back as far as 1947) stations, hungry for programming, relied heavily on sponsored films. Discrimination in film fare often gave way to desperation and, as a result, many films were aired that were hardly suitable for TV audiences. Today's sponsored films are carefully produced for TV exposure — a most important consideration from the standpoint of content, technique, and freedom from overt commercialism.

Sponsored films give CATV cablecasters the means to develop a schedule that will serve the needs of the community and provide program services not always attainable from off-the-air pick ups or relay. Most important, films can help the CATV operator build his own identity and image.

And after all, the more diversity a system can offer, the larger the ultimate audience will be!
CATV Buyer’s Guide For Local Origination Equipment

A Compilation of manufacturers’ data on all types of cablecasting studio equipment, including: Cameras, Viewfinder Cameras, Video Tape Recorders, Film Chains, Multiplexers, Projectors, Consoles, Mobile Studios, Program Originators, Tripods, Dollies, Switchers, and Sync Generators.

CAMERAS

Ampex, 2201 Lunt Avenue, Elkgrove Village, Illinois 60007.
CC-6450 Comes complete with Vidicon Camera, tripod, microphone, hand, and resolution chart. Resolution: 500 lines minimum. Video Output: 1 volt p-p video, 0.4 volt sync. Lens: F/1.4 25mm. Automatic Light Compensation: Video level constant plus or minus 6 db with luminance changes equal to 10 f stops. Price: $589.95.
CC-6007 Resolution: 550 lines minimum. Output: Composite video one volt p-p, 0.4 volt sync. Lens: F 1. 9 25mm. Automatic Light Compensation: Video constant plus or minus 6 db over 6 f stops. Price: $399.95.
CC-324 Camera with 3 position C-mount lens turret. Resolution: 550 lines minimum. Internal or external sync. Output: 1 volt p-p video, 0.4 volt sync. RF tunable, channels 2-5. Lens: F 1. 4 25mm. Price: $995.00.
Blonder-Tongue, 9 Alling Street, Newark, New Jersey 07102.
Concord Electronics Corp., 1935 Aramcost Avenue, Los Angeles, California 90025.
MTC-15 Vidicon Camera Output: 1.4 volt p-p video, 30mv RF (Channel 5 or 6). Price: Not Available.
Cohu Electronics, Box 623, San Diego, California 92112.

Fairchild, 30 Park Place, Paramus, New Jersey 07652.

TC-177 RL Similar to TC-177, but includes provision for remote control or video processor.

GBC America Corp., 89 Franklin Street, New York, New York 10013.

General Electric Consumer Electronics Division, Building 2, Electronics Park, Syracuse, New York 13201.
TE-23 Resolution: 500 Lines. Output: 1.4 volt p-p video, 0.4 volt sync. 20 mv RF, tunable Ch. 2-6. Lens: F 1. 4 25 mm. Automatic Light Compensation: 4000-1. Price: $495.00 (Does not include Vidicon).

GPL, Pleasantville, New York 10570.
Norelco, 100 E. 42nd Street, New York, New York 10017.
EL-8011 Plumbicon Camera. (Used with EL-8016 Camera Control Unit). Resolution: 35% modulation depth at 5 NCPS. Output: 1 volt p-p video. Lens: Not supplied. Price: (Less sync generator, plumbicon and lens) $2500.

Packard Bell, 1920 South Figueroa Street, Los Angeles, California 90007.
RCA Broadcast & Communications Products Division, Camden, New Jersey 08102.
PK-302 Similar to PK-301 but 2 unit camera with processor separated from camera head.
Shibaden Corp. of America, 5825 Brooklyn-Queens Expressway, Woodside, N. Y. 11377.
HV-50 Resolution: 400 Lines. Output: 1.4 volts p-p video, 30 mv RF Channel 5 or 6. Lens: F 1. 9 25mm. Separate Cam-
era Control Unit. Price: Not Available.

**Sylvania Electric Products Inc., Commercial Electronics Division, P. O. Box 268, Burlington Road, Bedford, Mass.**


**TeleMation, 2275 S.W. Temple, Salt Lake City, Utah 84115.**


**Television Utilities Corp., 10-11 50th Avenue, Long Island City, N.Y.**


**Unimetrics Inc., 1037 Providence Road, Suite 4, Box 6024, Charlotte, N.C. 28207.**


**Vikoa Inc., 400 Ninth Street, Hoboken, N.J. 07030.**


**VIEWFINDER CAMERAS**

**Ampex**


**Blonder-Tongue**


**Concord**


**Fairchild**


**GBC**

VF-301 5" Viewfinder. Resolution: 450 Lines. Output: 1 volt video, 0.4 volt sync, 30 mv RF (Ch. 2-6). Price: Not Available.


**GPL**


**Norelco**


**Packard Bell**


**RCA**


**Sylvania**


**Television Utilities Corp.**


**VIDEO TAPE RECORDERS**

**Ampex**

6000 Helical Scan. Video Response: 30hz to 2.5 Mhz plus or minus 3 db. Video Signal to Noise: 39db. Output: 1 volt p-p composite video. Resolution:
GE
6 3 minutes on 8" reel. Price: $3495.


Concord


Norelco

RCA

Shibaden


Westinghouse

Wallensak

FILM CHAINS, MULTIPLEXERS & PROJECTORS

AET Engineering Specialties, 4202 36th Avenue West, Seattle, Wash. 98199.

Bell & Howell Projector Conversion. Projector is prepared for television use by replacing split phase motor with hysteresis type, replacing present drive system with special gear type pulleys and heavy duty belt, and providing special shutter blade to insure synchronous operation with 30 frames-per-second sweep rate of television system. Price: $495 plus projector.


RCA

Spindler & Sappe, 1329 Grand Central Ave. Glendale, Calif. 91201.

322 Television Projector. Turrets accommodate 16 slides. Options include pre-viewing lights for visual observation of slides when loading the turret, full line of lenses, lens supporting stand and turbine blower. Price: $378.


Sylvania
SC-A10022 Movieplexer System. Completely integrated movie projector-vidicon camera system. TV projector has phototransistor optical sound pick-up, transistor amplifier and built-in microphone/photo jack. Uses synchronous motor drive that gives 24 frames per second and shutter speed of 120 applications per second. Camera provides 800 line resolution. Price: Not Available.

TeleMation

TMM-203A Optical Multiplexer. Designed for selective projection of two 16mm film projectors and one 2" x 2" slide projector in to single television camera with selection accomplished by movable first surface mirrors. Price: $1295.

October, 1967
CONSOLES & MOBILE STUDIOS

Ampex
7100 Video Trainer System. Complete closed circuit video recording system including monitor, camera, lenses, connecting cables. Enclosed in mobile console. Camera includes 3 lens turret with 12.5mm, 25mm and 50mm F 1.4 lenses, plus 75mm F 1.9 lens; tripod with tilt head and all necessary switching facilities. Tape recorder includes television tuner, picture monitor audio amplifier, speaker and microphone with floor stand. Price: $6,160.

Blonder-Tongue

GPL

Norelco
101 Includes: Camera complete with viewfinder, heavy duty tripod, pan & tilt head and dolly; receiver and video tape recorder. Console equipped with casters for mobility. Tape recorder is helical scan type 1". Viewfinder is 6-1/2". Resolution, better than 310 lines. Price: Not Available.

RCA

"Teletite" Video Insert System. Convenient means for inserting captions into monochrome or color video signal. At receiver, captions appear as white letters superimposed on picture. Can produce captions in horizontal or vertical format, either stationary or in motion. Includes IBM Executive typewriter modified to produce large white letters on black page, dispatcher unit which holds the tape, unit to control page speed through the dispatcher, mounting base with adjustable pan and elevation, built-in lighting, camera lens and RCA PK-301 camera. Price: $7250.

Sylvania
SC-A 10004 Mobile TV Production Unit. Completely self-contained studio control room on wheels for on-the-spot broadcasting and video tape recording. Comprises standard 211 cubic ft air conditioned van divided into two compartments. Front section is operating compartment and rear section is storage and generator plant compartment. Includes two Sylvania model SC-9A viewfinder cameras using external drive from Sylvania model SC-A12002 EIA sync generator. Two tripods and dollies.


TMV-401 Chroma-Channel. Consists of color sub-carrier generator, burst flag generator, burst adder, amatrixing and encoding circuitry mounted on 3-1/2" x 19" rack panel. 3 bands of color are generated, with each band being controlled by a three position switch. Upper band used to program general weather information produces red signal when rain or snow is forecast, green for fair weather and blue for cloudy weather. Center band used for temperature forecasts. Set for red, green or blue transmission for increasing, no change or decreasing temperature. Lower band designates wind conditions with red, green and blue denoting increasing, no change, or decreasing wind conditions respectively. Severe storm warnings forecast by 2 additional switches associated with upper and lower band. Used

PROGRAM ORIGINATORS

TeleMation
TMS-97 Weatherchannel "97". Includes console, GE TE-20 reverse scan camera with lens. TSG-1 2:1 sync generator, 6 weather dials with remote sensors and 100' of cable, sweep second clock, Eastman Industrial slide projector, slide programmer, control panel, dual controls, and pan and tilt capability. Price: $5495.
with weather channel or news channel. Price: $1495.

TMW-75 Weatherchannel "75". Includes consolette GE TE-20 reverse scan camera with lens. Four weather dials with remote sensors and 100' of cable, sweep second clock, control panel, semi-adjustable dwell control, and pan and tilt feature. Price: $3995.

Trans-Lux, 625 Madison Avenue, New York, New York 10022.


Vikoa

Minicaster. 16 Position Advertising Originator. Provides automatic, locally origi

ated news, public service, advertising channel. Comprises ST-1000 camera and 16 sided rotating card holder. Accepts 3" x 5" cards which can be prepared on ordinary typewriter. Price: (With Camera) $1100.

Climatecaster. Time-Weather Channel Originator. Compact table top console plus outdoor weather sensors. Includes clock, thermometer, humidity indicator, barometer, date indicator and six-sided rotating card holder for news, announcements or advertising. Price: (With ST-1000 Camera) $2195.

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TRIPODS, DOLLIES & PAN & TILT MECHANISMS

Davis & Sandord, 24 Pleasant Street, New Rochelle, N. Y.

CTV Tripod without Dolly. Price: $64.95.

CTVW-1 Tripod with Dolly. Price: $79.90.


ATVW-3 Tripod with head & dolly. Price: $165.


PS-34 Pedestal stand without head. Price $260.


Quick-Set, 8121 Central Park Ave., Skokie, Illinois 60078

7301 Samson tripod with elevator. Price: $84.00.

7010 Samson tripod without elevator. Price: $66.00.

7601 Samson dolly. Price: $45.00.


5302 tripod; 5602 dolly; 5261 head

6302 Gibraltar tripod with elevator. Price: $400.


9000 Series switcher control

Concord

VS-3 Contains three interlocking push-button switches and one spring loaded push-button switch. 3 camera locations can be individually observed by one monitor or 3 receivers can monitor one camera. Two or more VS-3 switches may be gained either in series or parallel to serve other switching arrangements. Price: Not Available.

Cohu Electronics, Inc., Box 623, San Diego, Calif.


GBC

VS1-3 3 Position Video Switcher. Price: Not Available.


VS1-5 5 Position Video Switcher. Price: Not Available.

RCA


TeleMation

TM-600 Cablecaster. Video control center combines two-buss, six-input video switcher, pulse distribution amplifiers, video level meter, video processing and control for up to four cameras, video output amplifiers, power supply, and intercom circuits, all in compact desk top unit. All inputs are synchronized from common source. For use
with cameras, tape recorders, news channels, weather channels, etc. Price: $1595.

**TMV-600**

TMV-600 Same as the TMV-600 but includes self-contained EIA synchronizing generator. Price: $2195.

Television Utilities Corp.

Switcher-Fader-Special Effects Generator, 8 special effects including horizontal and vertical wipes, corner inserts and wipes. Fades and dissolves. Price: $1000.

SYNCH PULSE GENERATORS

**GPL**


Norelco

EL-8250 Transistor Master oscillator locked to line or to external reference frequency or crystal control, EIA standard scanning system. Price: Not Available.

Telemation

TSG-2000 All digital circuitry. No monostables - no delay lines - no width or delay adjustments required. Dual source terminated outputs. Dual generators, one each for production and operation, equipped with cross connected sync changeovers, relays to provide 100% standby while performing pulse assignment functions. All waveform transitions, both leading and trailing, are derived from clock pulses. Rack mounted. Price: $1000.

Television Utilities Corp.

ED-6064 Conforms to EIA standard RS-170. 525 lines 30 frames and the FCC standards. Four synchronization modes: crystal, internal, power line and external. Price: $975.

**CAS variable tap gives you guaranteed lowest tap insertion loss**

On a 1000 foot feeder line you can have four outlets at every tap location and still MAINTAIN LESS INSERTION LOSS and BETTER MATCH with a CAS variable tap than with any other in-line tap you can buy at any price!

**CAS guarantees** a minimum insertion loss in proportion to tap value. There's no wasted signal because CAS ILT-830 Series taps use only the signal taken off the line. You completely eliminate "hit or miss" installation. You can install exactly the right value every time.

**NO INSERTS NEEDED**

CAS taps really are variable. A simple screw adjustment (see illustration above) gives you a range of isolation values from 8-30 dB. NO INSERTS TO BUY! Simply set the isolation value you want on an easy-to-read scale.

**SAVE ON INVENTORY**

Now, you can take the guesswork out of inventory control. CAS units adjust simply to all your in-line tap requirements . . . nothing else to buy . . . no more guessing about which value inserts to stock for "so-called" variable taps. You save money on inventory and get guaranteed performance.

Check these features:

1. Single, two or four customer drops
2. Weatherproof strand mounting enclosure
3. Choice of feeder terminal fittings
4. Unique "floating" feature of the CAS center conductor allows for temperature expansion or contraction with no stress on the positive internal connection
5. High reliability fiberglass printed circuit boards

Compare these **guaranteed** operating specifications:

<table>
<thead>
<tr>
<th>Tap loss (variable)</th>
<th>8 db</th>
<th>30 db</th>
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<tbody>
<tr>
<td>Insertion loss (variable)</td>
<td>1.3 db</td>
<td>25 db</td>
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<tr>
<td>VSWR (input &amp; output)</td>
<td>1.35</td>
<td>1.2</td>
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<td>VSWR at tap</td>
<td>1.25</td>
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<tr>
<td>Directional isolation</td>
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<td>35 db</td>
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<td>Min. isolation between</td>
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<td>4 taps using CS-4</td>
<td>20 db</td>
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<td>Cover splitter</td>
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Order today! Complete specifications on request.

CAS MFG CO

P. O. BOX 47066 • DALLAS, TEXAS 75207
214/BL 3-3661

51
New entertainment format provides taped "foreground" music service on cable

Programmed Music for CATV

By Don W. Clark
Manufacturer's Representative

An entertainment program service is now available to CATV operators in monaural or stereo taped library services which are currently being programmed for some very successful AM & FM radio stations. It is possible for a CATV operator to select a musical format from an almost unlimited variety of categories of music from practically every recording company.

System operators have generally been limited to instrumental background music, programmed for an unobtrusive atmosphere in commercial establishments — not for entertainment. The alternative was to pick up an FM channel that extended the radio station's audience without compensation to the CATV operator. The announcements on such FM produce an annoyance to the subscribers, without local interest.

Some highly skilled, professional program service companies have stepped into this gap and a remarkable listener acceptance has been achieved. The secret of high fidelity entertainment programming at an economical cost, is a good taped program library. Regular monthly exchange replacements provide constant updating.

Not only the smaller radio stations, but many of the largest, highly competitive markets are now successfully using these services. To provide an insight into the recent acceptance, here are a few current examples:

KSL-FM Salt Lake City is automated and uses a full time stereo taped program service "Beautiful Music". During certain hours they have been rated with 64% of the total radio audience in a 20-station market. KPOL, AM & FM, Los Angeles are automated, use a 'Good Music' program service and are consistently rated number 4 or 5 in that 80-station market. KMET-FM also Los Angeles is automated in stereo and is rated in the top eight stations, combining all AM & FM's. These stations use a program service provided by Alto Fonic Programming of Hollywood, California.

To see how this service can be adapted to CATV, let us analyze the equipment required. Music mixing tape equipment should include two or three tape transports of the two direction, automatic reversing type, either 10½” or 14” reel diameter. Each of these is loaded with a different category of programming, in either mono 2-track or stereo 4-track tapes. With automatic reversing, each reel runs from three to eight hours before repeating, depending on speed and reel size. Each selection is followed by a subaudible 25-cycle tone for switching, and one second of silence. A mixer unit then switches automatically and smoothly back and forth between reels, to control the programmed sound without repetition of sequence.

And people do become annoyed by a repetition of sequence. They notice a particular selection familiar to them and then are aware of the following selections. Mixing from different categories on different tape transports eliminates this problem.

Another service for your subscribers can be added with the automatic insertion of local public service announcements on the hour or half hour. This can be accomplished by adding a multiple cartridge playback unit to the music mixing system with a control timer. A unit with 24-cartridge capacity can handle a wide choice of different announcements. Changes are then accommodated by the recording or re-recording of a cartridge and inserting it, even on short notice. The timer can be set to bring these announcements in as desired. In every case there is no switching until the selection is completed; the unit then recognizes the tone, delays the start of the next music selection, and inserts the announcements.

Recording the announcements is easily accomplished with a separate record and playback cartridge unit. A "cue" tone is automatically recorded on a separate track with the "start" (record) button. At the end of the announcement, a second button inserts a different tone for transferring back to music. A series of announcements or special features such as local interviews, club meetings, etc., can be recorded on cartridges as desired. An emergency warning can also be recorded on a cartridge and played into the system from the combination record unit.

A less expensive announcement unit can be achieved by using a large single cartridge with a series of announcements in the record and playback unit, in place of the additional multiple cartridge unit.

In some of the larger communities served by CATV, there is another source of income available through the sale of background music to commercial establishments. In this case ASCAP & BMI performance licenses are required. These can be covered on a blanket basis for the users, at an average combined cost per location of about $2.00 to $3.00 per month. The music programing company can be of assistance in this area.

The cost to the CATV system for a taped music programing service can vary from $40 to $165 per month. The equipment on a lease basis will add somewhere between $65 and $125 monthly for the automatic operations described above. The equipment can also be purchased outright.

October, 1967
TALC

by Victor Tarbutton

Trunk Automatic Level Control (TALC), employed in CASCADE Trunkline Amplifiers, works just as smoothly as its name suggests. It is the slickest idea yet generated through the combined meditations and investigations of some of the CATV industry's most astute designers.

TALC will soothe the most vexing AGC problem because it is operated directly by the basic cause of system level variation...temperature change. Conventional AGC waits for the temperature to cause a change in cable attenuation and upset levels so it can sense the change and apply compensation. In CASCADE gear, the temperature change directly controls the gain compensation of the trunk amplifier.

Uncontrollable level variation at any point in the trunk line is a system operator's sorest spot. Regular AGC methods provide no means of adjusting the degree of control. If the amount of control is not correct, there is but one way to alleviate the discomfort encountered in the operator's innards: make the AGC inoperative.

Regular AGC methods require two separate devices to control gain and channel relationship (tilt). CASCADE TALC controls both the gain and tilt simultaneously. It is possible only when amplifiers are designed with tilt-compensated gain controls.

When attempts were made to employ this method in the past, the main failing was that the control units were placed at every third trunk location. The reason for this is obvious: the AGC units were too expensive to be used at every trunk location where they would provide the most consistent operation.

This wide spacing placed extraordinary demands on the accuracy of the tilt-compensated gain control action, since it had to compensate for attenuation changes on three spans of cable (total: 66 to 75 db). The variations in this length of cable within the design limits of -40° to +140° F. would be as much as ±6.75 db, or 13.5 db of gain control. Admittedly, these extremes are encountered in only a few cases, but let us compare the requirements for Trunk Automatic Level Control (TALC) placed in each and every trunk location (we shall call it the Ultimate Method, or TALCUM).

Here, the maximum spacing is 25 db, requiring a range of control of only ±2.25 db, or a total swing of 4.5 db (compared to 13.5 db with conventional wide-spaced AGC). TALCUM scores again because the 4.5 db range is well within the safe gain range of an amplifier. Larger ranges necessitate the acceptance of amplifier degradation...an undesirable by-product which leads to operator irritation.

Follow the advice of the old CATV'er, R. G. Housedrop* who wrote of the CASCADE Trunk Amplifier:

Learn'd it was in electronical lore
Replete with strange TALCUM powder
For by its side a probe it wore
To keep output levels to (±) one quarter

"R. G. Housedrop rose to fame among the all-time great CATV technicians one hot day in August, 1963. It was the first day of a scorching heat wave, and Housedrop had hung in a sweaty safety belt from morning to night, resetting AGC levels. Chafed and sore, he thought that a sprinkle of talcum might ease his bind. Stood over, and grimacing with pain, R. G. shuffled to his friendly neighborhood drug store.

Meeting the friendly druggist at the door, Housedrop croaked: "Have you got some talc?"

"Certainly, sir," the druggist replied, starting for the rear of the store. "Just walk this way..."

Housedrop didn't hesitate for a moment. "If I could walk that way, I wouldn't need the talcum powder."

Cascade TALC (now TLC) was conceived to keep R. G. Housedrop and the countless other CATV technicians on the ground during August heat waves. It works!

CASCADE

CASCADE ELECTRONICS LTD., PORT MOODY, B.C.

2395 State Street
Phone (717) 232-4111
HARRISBURG, Pa

2128 Third Avenue
Phone (206) MA 3-1230
SEATTLE, Wash.

* R. G. Housedrop pro set of ame...
Here is the cable power supply with the built-in features and extras that belong in today's sophisticated CATV systems. The CEPS is designed for installation in existing weatherproof housings, while the CEPH-1 and CEPH-2 are supplied with weatherproof welded and cast aluminum housings, respectively. Each power supply has built-in four-way surge, transient and overload protection, including a self-healing Thyrite lightning arrester which will handle as many as twelve surges before needing replacement. The built-in ammeter will prove valuable as a maintenance and troubleshooting aid.

**FEATURES:**
- Silent, heavy-duty transformer.
- Cool-running, conservatively-rated components.
- 5-amp or 10-amp models available.
- Power duplexer adds AC to through-cable.
- All standard fittings available.
- Separate switches power either or both output connections.
- Rugged self-resetting thermal circuit breaker.
- Standard 3AG fuse for positive primary protection.
- Low-voltage neon transient suppressor.
- Self-healing Thyrite lightning arrester.
- RF-filtered 117-volt primary.
- Built-in expanded-scale ammeter, with defeat switch.
- Double-pole primary switch, for complete powerline isolation.
- Convenient lifting/hoisting bracket.

**DIMENSIONS:**
- CEPS-3/5: 6½ x 9½ x 5½″, 15 lbs.
- CEPS-3/10: 6½ x 9½ x 6½″, 16 lbs.
- CEPH-1 Housing: 14½ x 13½ x 11¾″, 11 lbs.
- CEPH-2 Housing: 12 x 12 x 7¾″, 17.5 lbs.

**SPECIFICATIONS:**
- **INPUT:** 117 volts nominal, 60 CPS.
- **OUTPUT:** 27 VAC, 5 or 10 amps.
- **RETURN LOSS:** 25 db, 50-220 MHz.
- **INSERTION LOSS:** ¼ db maximum 50-220 MHz.
- **CONNECTORS:** 75 ohm.
- **METER:** 0-10 amp, expanded scale, push-to-read.
- **PRICES:**
  - CEPS-3/5 5-amp supply $109.50
  - CEPS-3/10 10-amp supply $119.50
  - CEPH-1 Welded Housing only $65.00
  - CEPH-1/5 5-amp supply in welded housing $165.00
  - CEPH-1/10 10-amp supply in welded housing $165.00
  - CEPH-2 Cast Housing only $65.00
  - CEPH-2/5 5-amp supply in cast housing $165.00
  - CEPH-2/10 10-amp supply in cast housing $165.00

All specifications subject to change without notice.
VTR Primer for Cablecasters

Maintenance and Operation of Videotape Recording Equipment

By Jim Cook
Ampex Corporation

Just as in broadcasting, where videotape recording solved the major problem of time delay of programs, the newest generation of closed circuit videotape recorders is helping CATV operators tackle one of their greatest challenges — local program origination.

Local programming is fast becoming a valuable community service of CATV operators across the country. This is just as true in the metropolitan areas as in sparsely populated regions where network television and major radio stations and newspapers cannot possibly give full attention to local activities.

The variety of programs being presented on cable television is endless. City Council meetings, service club meetings, high school football and basketball games, political talks and spot news coverage are all being brought into the homes of subscribers by CATV systems. In all types of program origination, videotape recorders are used to record the action for later or repeated playback.

Availability of new low cost closed circuit videotape recorders is an important stimulant to local CATV programming. Videotape recording enables special interest local programs to be piped into homes at convenient viewer times, and, in the case of particularly significant programs, to be played back several times to assure all viewers of a chance to see the program. Politicians, celebrities and other newsmakers can be recorded at their convenience for later showing. And production costs to the operator are modest.

For a CATV system operator to get maximum mileage from his videotape recorder, some understanding of the principles of videotape recording is necessary.

A VTR records moving pictures and sound on reels of magnetic tape much as a conventional audio tape recorder records sound. Audio tape recorders record sound either from microphones, from a radio receiver, or by duplication from another recording. Similarly, videotape recorders record television pictures from a television camera, from a television receiver, or by duplication from another recording. In addition, sound tracks on the video tape itself permit audio recording from a microphone or television audio recorder on the same tape with the television pictures.

In both audio tape recording and videotape recording, the basic method is the same. Sound or visual images are converted to electrical signals by a microphone or camera. The electrical current varies in direct relation to the sound or picture and produces a comparable varying flux in the recording head. A plastic tape coated with iron oxide is passed through this changing magnetic field. The iron oxide particles on the tape are thus magnetized in specific patterns which correspond to the original sound or picture. When the process is reversed, and the electrical signal detected from the tape is amplified through a speaker or television tube, the original sound or picture is reproduced.

Just as with the audio recorder, video tapes may be played back immediately without processing. Tapes may be erased on the recorder, in part or entirely, and re-used hundreds of times without loss of quality.

Audio tape recorders provide high fidelity stereo music at frequency responses up to 18,000 cycles per second. Much higher frequencies are required to record television pictures. Ampex studio videotape recorders for the broadcast industry record at more than 5,000,000 cycles per second. An Ampex VR-7000 closed circuit videotape recorder, as used by CATV systems, records at approximately 3,500,000 cycles per second.

Frequency response is directly related to the speed at which tape moves past recording and playback heads. In audio recorders, tape moves past the heads at 7-1/2 inches per second, the accepted standard speed for high quality performance. Slower speeds of 3-3/4 and 1-7/8 ips also are used, but provide relatively lower quality. In making the transition upward from audio recording frequencies to video recording frequencies, engineers have used three basic techniques to increase the relative tape to head speed.

Most broadcast stations today use videotape recorders employing the transverse recording technique, the method used in the first practical videotape recorder invented by Ampex in 1956. Transverse recorders have four record/playback heads mounted on a rotating disk which produce the necessary tape to head speed. These recorders are large studio models and cost between $30,000 and $110,000, well beyond the reach and need of most CATV systems.

The simplest form of recording is longitudinal recording, in which the tape is moved past stationary heads at very high speed. Because of the large amounts of tape needed, and because picture quality is generally inadequate, this type of video recording is not used much today.

Most closed circuit videotape recorders on the market today
employ the helical-scan technique. In this case, one or two record/playback heads are mounted on a moving drum and record across the moving tape in a diagonal curve known as a helix. Actual tape speeds vary, usually in a range between 3.75 to 9.6 inches per second. Tape widths vary from one-half to two inches. In this manner, relative tape to head speeds of from 650 to 1,000 inches per second are produced, creating frequencies of up to 4,200,000 cycles per second. In some instances broadcast quality and color recordings are possible at this frequency.

The CATV operator can produce video tapes for an investment of less than $3,000. The basic equipment is a videotape recorder, a closed circuit television camera, a television receiver for monitoring the recording, a microphone for adding the audio, and at least one reel of video tape. Thus prepared, it is a simple matter to record and play back television programs.

Key piece of equipment in this system is the VTR, which if properly set up and given normal maintenance, should provide trouble-free recording for many years. It must be remembered that a videotape recorder is a precision mechanism and requires occasional maintenance. Periodic preventive maintenance can vastly reduce the chance of any major failure. Maintenance such as cleaning the heads, slip rings, belts and checking reel tension will lessen the need of major maintenance. Belts should be replaced when they are worn or have stretched. The video head should be checked after 100 hours of operation for proper tip projection. The tape guides normally will not require adjustment unless abused.

The most frequent cause of trouble, and one which can easily be avoided, can be traced to the heads. The heads, including the video head located in the rotating drum, must be cleaned at regular intervals. Manufacturers recommend that the heads and tape guides be cleaned after approximately eight hours of recorder use. Regular head cleaner should be used on heads and tape guides, with cotton swabs, which can be obtained at any drugstore, used to apply the cleaner.

The rubber capstan located at the front of the head drum should not be overlooked. Isopropyl (rubbing) alcohol should be used to clean the capstan, as other cleaning agents may cause the rubber to harden and make capstan replacement necessary.

Next to a systematic program for cleaning the heads, probably the most important preventive measure to assure a good working recorder is demagnetizing the heads. Let's use the Ampex VR-7000 recorder as an example. Of the five heads in the VR-7000, only three must be demagnetized. They are the video head in the rotating drum, the audio record head, and the control track head. First, connect the demagnetizer to 115 volt, 60 cycle power. Then hold the demagnetizer

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**HANDLING AND CARE OF VIDEO TAPE**

(1) Store video tape under moderate temperature and humidity conditions. A controlled environment is ideal, but video tape does well under "people" conditions.

(2) Rewind video tape with the proper tension to get a good tape pack and to avoid uneven winding and slipping.

(3) Allow video tape reels to coast to a stop after playing or rewinding. Do not stop the tape by pressing on the reel, as this can cause tape slippage, windows or cinching.

(4) Thread video tape carefully around the guides and head drum to prevent damage from scratches, tears and stretched edges.

(5) Lift video tape from the box by the hub or by the lower flange. A reel should never be handled by squeezing the flanges for this can damage the tape edge if the windings are uneven.

(6) Store video tape in a video box with a hub support. Do not stand reels upright on the flange edges. Tape should always be in one of two places - either on the transport or in the proper box.

(7) Store video tape boxes standing upright. Do not lay video tape flat except when it is on the recorder.

(8) Handle video tape carefully, do not drop a reel.

(9) Do not remove video tape from the guides, capstan, or head drum in the middle of a reel. Wind all the tape onto either the supply or take-up reel first to avoid damaging the tape.

(10) Remove video tape from the recorder by reaching under the reel from two sides and lifting. Do not lift by the top flange or by squeezing the flanges together.

(11) Use masking tape to hold the end of the tape. Do not use end tabs which leave a residual adhesive on the tape.

(12) Do not write on the end tab while it is on the reel of tape. The writing pressure dents many layers of tape, causing poor recording and playback in these areas.

(13) Use the proper video recording head top projection. Too much projection can damage the tape, too little can cause poor performance.

(14) Keep the video recorder clean. Wipe the guides capstan, and heads with an approved solvent and a cotton swab. Dirt and oxide buildup can cause poor recording and tape damage.

(15) Keep video tape clean. Store tape in the original box when not in use.

(16) Cut off the wrinkled and damaged end of a reel of video tape. Do not thread wrinkled tape around the head.

(17) Do not stop the tape in the middle of the reel without releasing the tape tension, except to still-frame.

(18) Get the best tape pack by rewinding the video tape from end to end. This insures more uniform tension throughout the reel.

(19) Normalize the temperature of a reel of video tape that has been exposed to high temperature during shipment or storage by placing it near the recorder for at least 4 hours.

(20) Avoid splicing video tape whenever possible, but in those instances where splices are necessary, they should be made very carefully to avoid damaging the tape during operation.
Peaks and valleys in the terrain usually indicate a need for a CATV system. In the uniformity of a CATV cable, they indicate the need for better cable. Times Alumifoam® (the trade name for our seamless aluminum tube sheathed coaxial cable) flattens out the topography in your return-loss sweep generator with a calm uniformity that's making believers out of everyone in the CATV business. We can guarantee a 30 db worst point for this cable and back it to the hilt. That means first-quality cable every time, and smooth functioning transmission right from the start. No costly ship-backs. No costly re-installation. There are fewer splices, fewer trouble points, less maintenance and less labor costs with Alumifoam because it's made in continuous seamless lengths up to ½ mile. Because it's seamless, it's waterproof and vapor-proof. And Alumifoam's long life is a real bonus—continuous high-performance quality for years and years. Be sure of the cable in your Cable TV. Get in touch with Times. Times Wire and Cable/a division of The International Silver Company/Wallingford/Conn.
# Troubleshooting Your Ampex VR-6000 or VR-7000 Series Videotape Recorder

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>All controls inoperative, pilot lamp does not light.</td>
<td>Recorder is not connected to primary AC power; a fuse on the rear panel is defective.</td>
</tr>
<tr>
<td>Push buttons do not operate, pilot lamp is lighted.</td>
<td>18 pin dummy plug is not inserted into rear panel; Thread/Ready control is in Thread position.</td>
</tr>
<tr>
<td>Recorder cannot be put into either Fast Wind position.</td>
<td>Thread/Ready control is in Thread position.</td>
</tr>
<tr>
<td>Play push button inoperative.</td>
<td>Play/Record levers set to Record position. 18 pin dummy plug is not inserted into rear panel.</td>
</tr>
<tr>
<td>Record push button inoperative.</td>
<td>Play/Record levers set to Play position. 18 pin dummy plug is not inserted into rear panel.</td>
</tr>
<tr>
<td>Head drum will not rotate. Pilot lamp not lighted.</td>
<td>5 ampere fuse at rear panel defective; 1 ampere fuse at rear panel defective.</td>
</tr>
<tr>
<td>Head drum will not rotate, pilot lamp lighted.</td>
<td>Tape stretched too tight around drum.</td>
</tr>
<tr>
<td>Video playback very noisy; playback level low. Sound normal.</td>
<td>Video Head clogged - clean with head cleaner. Gap smeared on Video Head - Contour head with green tape. If problem persists, replace Video Head.</td>
</tr>
<tr>
<td>Video playback has bend at top of picture.</td>
<td>Improper adjustment of Tension control. Check horizontal hold control on monitor.</td>
</tr>
<tr>
<td>Video playback has many dropouts of at least several lines.</td>
<td>Improper adjustment of Tracking control. Defective tape.</td>
</tr>
<tr>
<td>No “E to E” during record mode. Record level meter is at zero.</td>
<td>Video Record Level control set counterclockwise; no video input to rear panel.</td>
</tr>
<tr>
<td>No “E to E” during record mode. Record level meter indicates at 100%.</td>
<td>Troubleshoot video circuitry from head driver backwards to demodulator.</td>
</tr>
<tr>
<td>“E to E” signal during record mode. However, during playback mode no video is displayed on monitor.</td>
<td>Defective or clogged video record head; defective relay in head driver circuitry.</td>
</tr>
<tr>
<td>Head drum “hunts” excessively during playback only.</td>
<td>Control track is not being erased from previous recording; dirty erase head. No control track signal, dirty control track head.</td>
</tr>
<tr>
<td>Recorder will not play a tape made on another recorder.</td>
<td>Dirty tape guides, capstan or drum; check interchange quality using interchange tape.</td>
</tr>
<tr>
<td>Speaker dead.</td>
<td>Playback Level set counterclockwise; switch at rear panel set to line position.</td>
</tr>
<tr>
<td>Audio Line Output dead.</td>
<td>Switch at rear panel set to Speaker position.</td>
</tr>
<tr>
<td>Dropouts of several lines or more, locked to the field frequency, appear on the monitor. Picture generally unstable.</td>
<td>Defective or dirty brushes and commutator. Clogged video head.</td>
</tr>
</tbody>
</table>

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Close, but not touching, the head being demagnetized. Slowly move the demagnetizer up and down along the face of the head, then, still slowly, withdraw the demagnetizer until it is about three feet away from the head before removing power from demagnetizer. This should be done after each eight hours of recorder use.

A regular program for cleaning and maintaining a videotape recorder will contribute to the long life of the recorder and provide the CATV operator with hundreds of hours of trouble-free use. An accompanying chart will help the VTR owner spot and diagnose the most frequent troubles which can be fixed without calling in a manufacturer's technician.

One of the most critical elements in producing good video tapes is the tape itself. Video tape should be handled, stored and used in such a way to get maximum mileage from both the recorder and the tape. Some hints on the care and handling of video tape are listed elsewhere.

In producing professional video tapes, the video camera is all-important. There are many video cameras available on the market today. One basic difference is the type of synchronizing pulses or “sync” produced in each. The three major types of sync are: EIA sync, 2 to 1 interlace and random interlace. The Federal Communication Commission requires the EIA type sync for commercial broadcast use.

In the camera, each picture is formed by two “fields” or 262 1/2 scanned lines to result into a “frame” having a total of 525 scanned lines. In the EIA type sync, each of the 525 lines are always spaced evenly apart. The lines will occur at the same place each time and appear stationary to the eye. In the 2 to 1 interlace type sync, the lines are kept an equal distance apart. Whereas, in the random interlace camera, as it sounds, the lines may join or pair resulting in poor resolution.

Two preventive steps should be taken to protect the sensitive vidicon tube inside the camera. The camera should not be pointed directly at the sun or other extremely bright light, which will burn the vidicon. And it should...
not be jarred or dropped. Any strong vibrations will shake minute particles onto the target. The piece of photo-conducting material inside the tube, and contaminate it. One sure way to extend the life of the camera is to always cap the lens when the camera is not in use. Vidicon replacements should be shipped and stored with the target always pointing upward. Never downward.

Finally, in producing a quality video tape, whether a simple interview or a football game, certain elements of production should be considered. Of prime importance is lighting. In videotaping outdoor activities, such as a football game, set the camera lens between f/11 and f/22 when conditions are bright. Cloudy days or twilight lighting will require a smaller f/stop.

Indoors, there are four basic types of lighting to illuminate a setting.

1. *Basic light.* about 200 foot candles, is used for general scene illumination. Lights are set on a horizontal plane and directed into a set from above.

2. *Fill-in light* separates the main person or action from the background and adds depth to the video picture. Lamps are set as high as the top of the background set and aimed behind the central theme toward the camera. About 200-300 foot candles of light are required.

3. *Eye light* is directed at the person being televised, generally from a baby spotlight. It shouldn’t be used on a person wearing glasses. About 100-200 foot candles of light are required.

4. *Key light* eliminates the shadows underneath a person’s chin and nose created by back light. It comes from a predominate light source, generally about 200-300 foot candles of light, located usually high and to one side of the main action.

There are a good many other tips to staging a professional video tape. For instance, television technicians have accepted a 7 value tonal system as the basis for black and white tones in a TV image. Whatever is selected to be part of the TV image is governed by this gray scale. Any contrast greater than 5 to 1 between adjacent parts of the TV image is to be avoided. If a broader contrast is allowed, the image on the screen tends to streak. To eliminate this, the background should be reduced in tonal quality to a middle gray.

If you use flip cards, they should be medium gray and measure about 16 inches by 12 inches to maintain the 4 to 3 proportion of the TV screen. When preparing to televise a series of flip cards, get the last one in focus first and the others will fall into place.

Backgrounds should be darker than flesh tones. To achieve

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The following report is excerpted from a public notice release last month by the Federal Communications Commission. Pre-tax profits for 1966 are up from 8 percent in 1965 to 10 percent, with gross revenues showing a similar increase; this despite the alleged "economic impact" of cable television on broadcast operations.

In the words of the FCC:

"The television broadcasting industry (including the 3 networks, their 15 owned and operated stations, and 593 other stations) reported revenues of $2.2 billion, and pre-tax profits of $492.9 million for the calendar year 1966 — increases of 12 percent and 10 percent, respectively over the figures for 1965. Total time sales of $1,835 million were up $161 million over last year. Network, national spot, and local time sales all increased — but the proportionate share of network time sales continued to decline.

"The UHF stations as a group increased their revenues by 20.3 percent compared with 9.6 percent for the VHF stations. However, the UHF stations as a group reported losses of $7.4 million compared with only $0.2 million of losses last year and profits of $2.7 million in 1964, largely reflecting the experience of new independent UHF stations in the major markets with substantial expenses. Between 1965 and 1966 there was an increase of 14 percent in the number of UHF stations but the total expenses for all UHF stations increased by 35 percent.

"Profitable operations were reported by 87 percent of the VHF stations (the same as last year) and by 59 percent of the UHF stations (compared to 66 percent in 1965). There were 116 stations reporting profits of $1 million or higher — 4 more stations than 1965; 61 percent of the VHF stations and 21 percent of the UHF stations reported revenues of $1 million or more.

"The median revenue of profitable VHF stations was $1,553,043. The median revenue for profitable UHF stations was $771,431. Median revenues for stations reporting losses were $431,971 for VHF stations and $264,949 for UHF stations. The median revenue for profitable VHF stations in one-station markets was $529,338, compared with $4,527,588 for profitable VHF stations in markets with four or more stations.

"The five largest TV markets — New York, Los Angeles, Chicago, Philadelphia and San Francisco — had about 5 percent of the total number of stations, but accounted for 29 percent of total station revenues, 37 percent of the total national spot business, and 49 percent of total station profits."

### Individual TV Market Data - 1966

Shown in the following table are statistics released by the FCC along with the comments above. "Total Broadcast Revenues" consist of total time sales less commissions plus talent and program sales. "Total Broadcast Income" represents income before Federal income tax. Asterisk (*) indicates data withheld to maintain confidentiality of individual station figures.

<table>
<thead>
<tr>
<th>TV Markets</th>
<th>Total Stations Reporting</th>
<th>Total Broadcast Revenues</th>
<th>Total Broadcast Expenses</th>
<th>Total Broadcast Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albany-Schenectady-Troy</td>
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<td>9,597,029</td>
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<td>Davenport-Rock Island-Moline</td>
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<td>Denver</td>
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<td>Des Moines-Ames</td>
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<td>Detroit</td>
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<td>Duluth-Superior</td>
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<td>3</td>
<td>3,338,116</td>
<td>2,526,346</td>
<td>811,770</td>
</tr>
</tbody>
</table>

October, 1967
GenCoe could have used a large diameter foam cable in Abilene.

But, three quarter inch Spirafil® II carried the signal farther, eliminated a pair of head ends and cut down on amplifiers.

GenCoe, recognized as one of the leading CATV system operators in the country, was using 3 separate head ends in Abilene, Texas. When rebuild was called for they could very well have used a large diameter foam dielectric cable. But, they didn’t. By installing 36,000 feet of Spirafil II, which allowed them to carry the signal over far longer distances, GenCoe was able to eliminate two head ends and a microwave feed and serve the entire community with a loop from the remaining central head end. GenCoe had been running 1,500 foot lengths through 23 amplifiers. Now, they are running lengths of Spirafil II up to 2,600 feet and have reduced the number of amplifiers to 14.

What is it that makes Spirafil II so different? Basically, the important design innovation is a solid polyethylene helix which completely covers the solid copper center conductor without interruption. In addition to great mechanical stability and an absolutely non-collapsible helix, Spirafil II offers lower attenuation, 32 db return loss and a good deal less maintenance. And, Spirafil II offers a system cost very competitive with conventional foam cables.

Why not do what GenCoe did? Check into Spirafil II, available plain or jacketed in .412 inch, .500 inch and .750 inch diameters, 75 ohm impedance, in 1,000 foot reels.

For complete details on new Spirafil II and listings of our Sales-Service-Stocking Centers across the country, write, wire, TWX or telephone, Phelps Dodge Copper Products Corporation, 300 Park Avenue, New York, New York 10022. Telephone (212) 751-3200. TWX (212) 867-7455.
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<thead>
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**Introducing CATEL TV MODULATOR**

It Can’t Talk...
But It Sure Gets The Picture Across

ALL SILICON TRANSISTOR TELEVISION MODULATOR
PRICE $625.00

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October, 1967
When you double the size of a publication (from 12 to 28 pages) and change from newsletter to magazine format (formerly Cable Television Review) you expect better, more complete news coverage. In the CATV Weekly you get it. More news ... more transaction reports ... crackling editorial commentary ... "how to" promotion tips. All these and every other feature have been beefed up to give you more useful reading material for better system management.

CATV Weekly is especially edited to help you stay informed about CATV news that can effect your profit picture. And it's a valuable tool to keep local, regional and national government and other groups informed about the status and progress of the CATV industry. 100% factual reporting ... 100% pro-CATV editorial support.

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52 Growing Issues
$33 per year.

BONUS: Every subscriber receives a complimentary copy of the CATV Directory of Equipment, Services and Manufacturers and the CATV Systems Directory and Map Service, when published.

If you are already a Cable Television Review subscriber, take this opportunity to extend your subscription for a full year at this new low rate.
Because Manhattan Cable Television will soon be installing Focus 12 in New York CATV homes.

International Telemeter Corporation's Focus 12 is a patented 12-channel V to V converter.

Because of its heavy shielding, Focus 12 completely eliminates ghosts caused by direct feed-through of strong local channels in subscriber television sets. That's why Focus 12 got the call in Manhattan's ghost-infested concrete jungle.

So, to New Yorkers using Manhattan Cable's service this fall, Run For Your Life won't look like a stampede and Ed Sullivan will be doing a single.

Focus 12 will provide 12 crystal clear channels, perfect color reception, and as a bonus, a handsome remote tuner.

Are 12 channels enough?
If not, check the Gamut 25.
This ITC gem not only clears the ghosts from your existing 12 channels, but adds up...
and vice versa.

to 13 extra interference-free channels when you're ready to expand. Or, if your present channels are not bothered by ghosts, consider the Plus 13.

The Plus 13 is an economical channel expander that adds up to 13 interference-free channels to your system.

Focus 12, Gamut 25 and Plus 13 are beautifully designed units. And all three offer the bonus selling feature of acting as fully transistorized remote tuners. They're easy to buy, easy to install, and they increase your sales. Write for full specifications on each unit, or call us at (213) 478-7751.

Whether you're a veteran, or new to the CATV business, you've got a perfect right to be afraid of ghosts.

THE GHOST BREAKING CHANNEL EXPANDERS FROM

ITC International Telemeter Corp.
2000 Stoner Ave., Los Angeles, Calif. 90025
A Subsidiary of Gulf + Western Industries, Inc.
Anaconda Astrodada Company

One of the major electronics manufacturers serving today's fast-growing cable television industry began operations 18 months ago, early in 1966. While its corporate length of life contrasts somewhat with that of some other CATV equipment manufacturers, the quality of the gear it produces and the healthy growth it has had make it one of the main CATV equipment suppliers in the industry today. Its name is the Anaconda Astrodata Company. Its inception was the result of initial market research and planning by Anaconda Wire Cable Company.

During late 1964 and 1965, Anaconda Wire and Cable studied the CATV market regarding product needs and growth possibilities. Sealmetic co-axial cable, an Anaconda product, had already found good acceptance in the market. The current objective was to determine if an expanded product line was feasible.

A new concept evolved — one of providing a total range of equipment for CATV systems — beginning with electronic components and following through with distribution cable, integrating the design of all equipment for total quality control in operation. The concept included not only all the electronic gear, cable and hardware that goes into an operating system, but ultimately the test equipment needed to keep it balanced and operating properly.

The Anaconda management team made two basic decisions in turning the concept into action. The first was to locate an electronics firm with research, development and manufacturing capability geared to suitably high standards. The second basic decision was to draw the marketing/sales personnel from the experienced communication products sales staff at Anaconda. Forehand knowledge of the CATV market was a critical prerequisite.

The search for an electronics manufacturing facility finally narrowed to one firm, Astrodada, Inc. of Anaheim, California. An eight-year-old company, Astrodada had gained a solid reputation in the development and manufacture of military and space-age electronics equipment. In January, 1966, Anaconda Wire and Cable Company and Astrodada, Inc. formed a joint venture in Anaconda Astrodada Company for the manufacture of CATV gear. Astrodada provided the physical plant for the new company near its own complex of design and manufacturing facilities. After a management core was completed, drawing key men from both parent firms and the CATV industry, Anaconda Astrodada was ready to make the new concept become reality. After several months of research and development, the first Anaconda Astrodada CATV amplifiers and associated equipment were introduced in mid-June, at the NCTA convention in Miami.

The equipment was designed around two unique operational concepts intended to increase the efficiency and effectiveness of system operation. The first of these was the development of components enabling an "Automatic Maintrunk System." Intended to minimize the cumulative factors that make field analysis and adjustment
NOW! FIRST WITH THIN-FILM RELIABILITY in Advanced Design CATV Distribution Equipment

Putting up with low-grade color reception on your CATV system? Too bad . . . when you can guarantee stable, reliable, studio-quality color distribution with COLORVUE.

COLORVUE has state-of-the-art answers to your problem—solid-state trunk-line, bridging and trunk extender amplifiers with COLORVUE produced switchable hybrid micro-circuit equalizers and attenuators that provide higher conductivity, higher reliability than conventional circuits. With ultra-flat frequency response, high output, high gain and 50 to 270MHz bandwidth*, you’ll deliver true color fidelity across all twelve channels . . . with COLORVUE.

NEW! Model CVT-1RB INTERMEDIATE BRIDGING AMPLIFIER
Providing a high-level output where trunk amplification is not required, the CVT-1RB is utilized as a bridging (39db gain) or line terminating (47db gain) amplifier. Up to four feeder lines may be plugged in.

NEW! Model CT-E TRUNK EXTENDER AMPLIFIER
A high-output repeater type amplifier, the CT-E features the same hybrid micro-circuity as trunk-line and bridging amplifiers. Variable gain attenuation and tilt equalization. 7.5 db noise, 1.38:1 VSWR and ±0.5 response flatness assure clean color signals.

FIRST TRULY MODULAR TRUNK AMPLIFIER
One basic housing and individual plug-in modules make maintenance, replacement and expansion quick, easy and economical. Only two bolts open/close the housing cover, and modules plug-in in seconds—in the field—without shutting down the system or turning off the power. Cast aluminum housing and closure are radiation and moisture-proof.

DON'T PUT UP WITH LOW-GRADE COLOR RECEPTION ANY LONGER! DELIVER STABLE, RELIABLE, STUDIO-QUALITY COLOR WITH COLORVUE
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American Electronic Laboratories, Inc.
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Correspondence: Post Office Box 552, Lansdale, Pennsylvania 19446
A staff engineer uses a VHF oscillator and precision RF volt meter to check pre-equalization of distribution amplifier outputs.

of CATV systems impractical, the equipment was designed to avoid jumper cables and excessive connector links, and to include closed-loop circuitry. In addition, some of the electronic equipment was pre-aligned at the factory. The key features of Anaconda Astrodada amplifier design, following this concept, were (1) factory-aligned AGC amplifiers, (2) built-in correction for deviations in spacing in the field, (3) temperature compensation controls for cable variation with temperature, (4) automatic system level control.

The second major concept forming the basis for Anaconda Astrodada design was a "High Level Distribution System." With the advent of amplifiers having an output capability of as much as 56 dBm, a new technique in CATV system design was made possible. It had been standard practice to run the main trunk at levels in the vicinity of 35 dBm, with a bridger output as high as 40 dBm, and the distribution system at roughly 30 dBm. This practice was viewed as opposite from what is desirable for optimum system performance. Anaconda Astrodada engineers felt that, with the distribution amplifier or line extender usually treated as the stepchild of the whole amplifier line as a low-cost circuit, the resulting low-level distribution system was economically unsound. The Anaconda Astrodada concept is that high-level distribution permits more than twice the number of subscribers per amplifier, and that even including directional couplers throughout, it keeps total cost lower than the old low-level distribution system based on low-cost line extenders. The new high level distribution system is based on a distribution level of +43 dBm; that is, the level of Channel 13 at the output of each distribution amplifier. This new high-level distribution system reduces the required output of main trunk amplifiers, and it features increased distribution cascadability.

Anaconda Astrodada's successes in both engineering concepts and sales volume have been pronounced during the first year of operation. Some $2 million in turnkey construction and component sales were achieved during fiscal 1966-67, and the firm is well on the way to its 1967-68 sales goal of $6,500,000. The modern, well-equipped plant in Anaheim now employs some 250 people, working 'round the clock. The variety of CATV products manufactured now numbers over 100 items, including various amplifier models and a growing line of test equipment.

The company has made two recent moves to consolidate operations and increase effectiveness. The first of these was to complete the development of an experienced, top-level management team. In April, 1967, Edward J. F. Regan joined the firm as its new president. Drawing on an extensive electronics and management background as publisher of the Electronic Engineer magazine, and Contractor News magazine, Regan foresees an unlimited future for the CATV industry, and his goal is to insure that Anaconda Astrodada plays an increasing role in CATV and the integrated communications of the future.

Rounding out the management team are A. L. Ginty, vice president of marketing, one of the men who originally helped organize Anaconda Astrodada, and veteran CATV sales and manufacturing executives Duane Crist, Dean Roberts, Arie Zimmerman, Dick Old, and Bruce Walters.

The second major move to increase company effectiveness was the recent purchase of Astrodada's share of the company by Anaconda Wire and Cable Company. Management anticipates that operational efficiency will be strengthened markedly with corporate control under one roof. While Astrodada has now relinquished its share of control, the aero-space firm will continue to provide further technical assistance in the development of advanced concepts.

Backed by the resources of one of the nation's largest, most respected corporations, Anaconda Astrodada
The SM60 cannot be stereotyped—is equally at home in the studio or in the field—stand-mounted or hand-held—in uses as diverse as outdoor sporting events and elaborate variety shows. Small wonder that audio engineers have called it one of the most versatile omnidirectional dynamics they've ever encountered, for the SM60 is a unique combination of good-looks, strength, performance and economy. The smooth, wide-range response provides cleanest, natural reproduction of both speech and music. A very effective built-in wind and "pop" filter protects against undesirable effects of close-talking. Lustrous, non-glare metallic finish and tailored-to-the-hand dimensions provide striking on-camera appearance and superior handability. Specially reinforced machined-steel case front is designed to take abuse that would ruin other microphones—you can drop it on its nose without damage to the internal structure! Efficient windscreen and front end are quickly and easily removable for cleaning. Best of all, it is priced competitively with conventional "workhorse" microphones. Why not check out an SM60 now? See your Shure Professional Products Distributor, or contact Mr. Robert Carr, Manager of Professional Products Division, Shure Brothers, Inc., 222 Hartrey Ave., Evanston, Ill. 60204—Phone 312-328-9000.

THE LAST WORD IN WEARABLE LAVALIER MICROPHONES... BY SHURE

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Tall in the tower field

ROHN towers have distinct advantages . . . not inherent in other towers manufactured for the same purpose . . . CATV, microwave, communications, broadcast, home TV or amateur use.

• Unusual Strength • Remarkable Durability • Complete Versatility • Outstanding Service • Functional Design • Attractive Appearance

These advantages are the result of computer — assisted engineering and design, modern manufacturing techniques and a continual search for methods to raise ROHN standards.

In addition, ROHN warehouses complete lines of towers, lighting, microwave reflectors and accessories and provides complete turnkey tower erection service throughout the world.

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Ph. 309/637-8416
TWX 309/697-1488

70

October, 1967

The last mile — test and alignment. All amplifiers are tested both before and after they are installed in housings.

and effective CATV-oriented management has paid good dividends. The future looks good. As president Regan states:

"The explosive growth expected for CATV, is already taking place. Franchises are now being issued at an increasing pace and the number of turnkey systems we've been asked to bid has increased by 50% in the last month alone.

"We are most excited about the prospects for additional uses of the CATV plant and equipment. Thirty-one of our people work in R & D to develop communication products for the future.

"The CATV industry has had its baptism. It is now mature, and indicates a need for another major corporation, working toward a total communications concept, to provide reliable products, within a dependable time framework, and with a meaningful warranty for product performance. Anaconda Astrodada backed by the resources of Anaconda Wire and Cable intends to fill this need."

Malarky, Taylor and Associates
CATV Brokers/Consultants/Engineers
1101 - 17th Street, N.W. • Washington, D.C. • Phone (202) 223-2345

Malarky, Taylor and Associates
CATV Brokers/Consultants/Engineers
1101 - 17th Street, N.W. • Washington, D.C. • Phone (202) 223-2345

is unique. Its formation marked the first move by a communications industry giant to diversify and specialize in the manufacture of CATV gear.

The company has made an impressive start in its first 18 months of operation. New items are continually being added to the product line, and the concept of complete integration of system equipment is gradually being realized. The newness for Anaconda Astrodada has worn off. A combination of planned development
Protect your head-end equipment the way manufacturers recommend... with Fort Worth FACTORY-FABRICATED BUILDINGS

Designed expressly to house CATV and microwave electronic equipment, Fort Worth FACTORY-FABS withstand any climate or location problem... house electronic equipment according to the most rigid standards. FACTORY-FABS are available in popular sizes or custom-built to your design... yet they are surprisingly inexpensive.

INSTALLED IN MINUTES
Your FACTORY-FAB can be ready to work for you in minutes. You have no rig-up delays on arrival because your building comes with supporting I-beams. Simply drop on your site, connect the service inlet, and you’re in business.

REDUCED COST AND WAITING TIME
FACTORY-FABS save you time and money because complete wiring is installed at the factory. Unlike conventional buildings, equipment can be delivered with it rather than installed on location.

QUALITY CONSTRUCTION
FACTORY-FABS are designed expressly to house electronic equipment. Result? Problems like inadequate tightness, poor ventilation and improper sealing of doors are non-existent. And... an absolute minimum of maintenance is required.

FAST DELIVERY
No matter what the weather conditions, site or local labor situations, FACTORY-FABS offer fast delivery and uniformity. We promise delivery on time.

Many options are available in size, outside finish, wiring and ventilation. You owe it to yourself to write for full specifications on these rugged, versatile head-end buildings. You’ll find one exactly suited to your needs... at an economical price.

Write or call today...
The EVR . . .

...and CATV

By Charles Wigutow

With the development of Columbia Broadcast System’s electronic video recorder at a price within reach of the average owner of a TV set, visual recordings can be seen as coming into the same category as long play records in the home.

How will this affect cable television? To those who ask the question, one can direct their attention to the effect of the long play records on radio broadcasting. The radio industry is booming, and so are the record and record player industries. One instrument in the home does not eliminate the use of the other. On the contrary, more time is made in the life of the music appreciator to use both sources of audio entertainment.

The greater appeal of cable TV to most subscribers is in its ability to present a choice from many programs at any one time. The most comprehensive library of video tape recordings cannot supplant a continuous choice of eight, ten or twelve channels. We must not forget that such a comprehensive library will be costly; far more costly than the general monthly charge of CATV service. And nothing but broadcasting, whether, off the air or by cable, can come through with the feeling that what is taking place is happening this very instant.

I cannot foresee that CBS’s EVR can ever impair the economic prospects of CATV, any more than the proliferation of records has harmed audio broadcasting. It might even become another source of programming for cable’s closed circuit channels; and so will be adding one more service that CATV will be providing to its subscribers.

CATV System Construction

Attala, Ala. — Construction of the 200-foot tower is finished in Attala and several sections of the city are already receiving cable service, according to AI Williams, chief engineer for Video Cables, Inc. of Huntsville.

Helena, Ark. — Hook-ups have already been made for 80 subscribers and 20 more are to be made in the near future, according to Gregg Cablevision Company.

Perris and Booneville, Ark. — The contract has been let for the construction of the two-systems to the Comm/Scope Division of Superior Cable Corp. The systems are owned by the Western Arkansas Telephone Company and will involve more than 40 miles of plant.

Port McNeill, British Columbia — The contract has been let for system construction to B.C. Cable contractors. The system is owned by Cominco Ltd of Port McNeill.

Desert Hot Springs and Perris Valley, Calif. — Plans have been made by Video Communications to begin construction soon. $1,500,000 has been earmarked for the two southern California systems.

Riverside, Calif. and Boone, N.C. — Construction starts have begun recently by Ameco, Inc. The Riverside contract calls for immediate construction of the first 40 miles of the 100 mile plant.

Clewiston, Fla. — Clewiston Community Television Cable Company, Inc. has begun subscriber drops on the 7-channel system. The system has a 600-foot tower.

Rome, Ga. — The first phase of construction has been completed and service is scheduled to begin October 15th, according to Hugh Smith, general manager of Rome Cable TV Co.

Fulton County, Ill. — The 350-foot tower and the head-in building are to be erected north of Canton, Illinois. Construction of the system’s 35 miles of cable has begun.

Seneca, Kan. — Cable service has begun in Seneca, according to Phil White, general manager of the system.

Farmington, Maine — Construction of the 100-foot twin towers has been completed and service is to begin in the near future. The system is owned by the Franklin Cable Television Corp.

Joplin, Mo. — Construction is well under way on the new system. 400 cold-taps were made early in construction to provide faster service in connecting subscribers. The system is owned by Midwest Cablevision.

Webb City, Mo. — Seven-channel service has begun according to John Hilpert, manager of Midwest Cablevision Inc. The Jerrod-installed system also has a weather/music channel and is scheduled for 9 channels in the future.

Tecumseh, Neb. — Service has now been initiated according to TV Transmission, Inc., a subsidiary of Lincoln Telephone & Telegraph Co. The system offers subscribers free installation for a trial period of 2 to 4 weeks.

Zanesville, Ohio — Tower construction and pole rearrangements for the 125-mile plant have already begun. When completed, the system will be the largest in southeastern Ohio and the third largest in the state. It will also be one of the first systems to provide channels for traffic and emergency use. The system is owned by Better TV, a subsidiary of Vikoa, Inc.

Aliquippa, Pa. and Ambridge, Pa. — Construction is to have begun recently by Centre Video. The company also expects to begin construction in November on systems in the Midland-Industry-Ohioville areas.

Rochester, Pa. — Construction began recently on the Vikoa-owned system. 88 miles of plant will pass 10,000 homes.

Parsons and Decaturville, Tenn. — Construction was scheduled to start recently. The contract, let by Tennessee Telephone Co., to the Comm/Scope Division of Superior Cable, calls for a 400-foot tower and construction of approximately 30 miles of plant.

North Braddock and Swissvale, Va. — Eight-channel service has begun, according to Louis Eboli, manager of Suffolk Cable Corp. Offerings also include a weather/music channel.

Nitro, W. Va. — Construction has already begun according to Kanawha Cable Television which also has franchises in Dunbar and South Charleston.

October, 1967
General CATV Inc. crewman is shown making house drop on that firm's Milford, Delaware system. Photo courtesy Dryden's Camera Center.
NEW FROM vikoa...

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Two techniques which have been used to receive and process television signals before they are applied to the cable system are the Demodulator-Modulator combination and the Heterodyne converter. The intent of this paper is to compare the two techniques.

With present day microwave relay equipment, at least one demodulation-modulation is required before the television signal can be applied to the cable system. Hence it is imperative that the demodulator and modulator have characteristics which will minimize distortion of the television signal. However, when the choice between use of a heterodyne converter or a demodulator-modulator pair exists, the heterodyne converter is currently the best choice. Reasons for this choice will be given in this article.

The VHF converter with IF Amplifier, which will be referred to as heterodyne in the remainder of this article, must convert any incoming VHF channel to any desired output VHF channel. The signal received from the antenna must not be degraded during the conversion process. Ideally, one requirement of the system is a flat passband from 750 kzh below the picture carrier to 4.18 mhz above the picture carrier.

Figure 1 shows a block diagram of the heterodyne. The VHF signal input is amplified by an RF amplifier before it is converted to IF frequencies by the local oscillator in the input mixer. Adjacent channel trapping is accomplished in the IF amplifier. The IF sound carrier is normally separated from the video IF carrier, amplified and limited, then summed with the output of the IF amplifier. This operation allows independent adjustment of the picture carrier to sound carrier level.

The output of the IF amplifier is held at a constant level by AGC action which controls both the RF amplifier and IF amplifier gain. The RF amplifier is normally allowed to operate at maximum gain until the input signal level reaches a point at which the signal-to-noise ratio will not suffer by a reduction in gain. This is known as delayed AGC. The combined IF output is converted to the desired VHF channel by the output local oscillator in the output mixer. If “on channel” conversion is required, the input local oscillator drives the output mixer and the output local oscillator is disabled. Differential gain and differential phase will be almost non-existent, since mixer conversion is not related to modulation percentage.

Two major advantages of the heterodyne over the demodulator-modulator are excellent low frequency phase linearity and no quadrature distortion. Referring to Figure 2a note that the heterodyne IF amplitude response is flat over the entire video modulation bandwidth. Hence, a linear phase characteristic over this bandwidth is relatively easy to realize. The demodulator IF amplitude response however, is down 6 db at the carrier frequency. A linear phase response is difficult to obtain with this type of amplitude response.

Quadrature distortion, which is discussed in more detail in the next section, is generated when the video signal is detected or demodulated to baseband. Since the heter-
A block diagram of a demodulator is shown in Figure 3. The demodulator receives the incoming VHF television signal, amplifies it, and converts it to an IF frequency for further amplification and filtering. Up to this point, the demodulator and heterodyne are identical. The IF amplifier provides gain before the video modulation of the IF carrier is detected, and finally amplified at baseband video in the video amplifier. The demodulator also provides the audio output either at audio frequency or a 4.5 mhz subcarrier (or both).

The demodulator circuits which have the greatest effects on the video signal, in terms of distortion, are the IF amplifier and the detector. A typical IF amplifier response is shown in Figure 2b. The sound carrier must be trapped out to minimize cross modulation distortion in the detector. This filter operation is difficult to accomplish without introducing amplitude and phase distortion to the color subcarrier and sidebands. Note that the edge of the color subcarrier sidebands extends to 41.57 mhz, only 0.320 mhz from the sound carrier.

Filtering of the sound carrier at IF frequencies is also required in the heterodyne IF amplifier. Hence, both the demodulator and heterodyne are challenged to minimize high frequency phase distortion.

The VHF television signal is transmitted as a vestigial sideband signal. As previously mentioned, the IF response required to produce a constant amplitude detected video signal must attenuate the frequencies near the video carrier which are double sideband. The phase response in this region must therefore be linear so that low frequency phase distortion is minimized. Low frequency phase linearity with the required IF amplitude response poses a difficult design problem.

The video detector produces baseband video from the IF amplifier output. An envelope detector is a standard means of demodulating the IF signal. Differential gain and phase, which are a function of modulation percentage, will be introduced in the detector and can only be minimized. The use of an envelope detector is significant, since the signal being detected has a vestigial sideband characteristic. Vestigial sideband meaning one full sideband and a "vestige" or "part" of the other sideband is transmitted. When a vestigial sideband signal is applied to an envelope detector, an effect similar to low frequency phase distortion occurs at low modulation percentages, and quadrature distortion occurs at high modulation percentages (Ref. 1). Quadrature distortion manifests itself as differential gain and differential phase on color signals. Quadrature distortion also affects the transient response, producing overshoots and streaking (Ref. 1,2,3).

In summary, the demodulator IF amplifier must be carefully designed to minimize both high and low frequency phase and amplitude distortion. Differential gain and phase can be minimized by
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linearizing the detector. However, quadrature distortion is inherent in a vestigial sideband system utilizing an envelope detector and can only be minimized by utilizing non-standard complicated video processing equipment.

Two applications of the demodulator are shown in Figure 4. In Figure 4a, the demodulator output, baseband video, is used to frequency modulate the microwave carrier of a microwave relay transmitter. The microwave receiver of the relay link then provides baseband video for the cable system. In Figure 4b, baseband video from the demodulator is applied directly to a VHF modulator which drives the cable system. A VHF modulator is therefore required in conjunction with a microwave receiver and also for direct use with a demodulator. The next section discusses VHF modulators.

A VHF modulator block diagram is shown in Figure 5.

Major sources of video signal distortion occur in the heavy outlined blocks in the figure. The modulator transfer characteristic depends upon the modulation percentage utilized. To maintain the highest signal to noise ratio, a high modulation percentage is desirable. However, at high modulation percentages, differential gain and differential phase occur on the color subcarrier.

For adjacent channel operation, a vestigial sideband (VSB) filter is necessary (reference Figure 6). The VSB filter must be optimized to minimize phase distortion at frequencies near the picture carrier. This is a difficult filter design problem. The phase distortion generated in the VBS filter is usually compensated for in a video phase equalizer.

In Table I, the demodulator-modulator system versus heterodyne system is compared on the basis of video distortion which is difficult to avoid. Item 1, phase nonlinearity near the color subcarrier and sidebands, can be minimized in both systems so as to produce a negligible effect on the picture. However, items 2 thru 4 require complicated video processing equipment with the demodulator-modulator systems if pictures comparable to the heterodyne system are to be consistently provided.

Since the modulator utilizes down modulation, if the broadcast
program goes off the air. A CW carrier signal to the cable system automatically results. The heterodyne system must provide a separate carrier substitution oscillator for this condition.

The heterodyne system offers the advantage of higher reliability because of the greater number of circuits and components required in the demodulator-modulator system. The probability of component failure is reduced since fewer components are required in the heterodyne.

Because of past and present day performance of these two systems, a subtle advantage for the demodulator-modulator system may be overlooked. A properly designed demodulator-modulator pair, used in conjunction with the necessary video processing equipment could conceivably produce an output with characteristics better than the signal received from the antenna. The heterodyne system does not allow complete video processing, since the signal is never below IF frequencies.

When the choice between the two systems is available, the heterodyne presently offers more advantages than the demodulator-modulator system for VHF channel conversion. However, microwave relay links require the use of a demodulator-modulator system. Hence, the problems associated with this system must be minimized to service this application.

References
1. "Quadrature Distortion Correction for Vestigial Sideband Transmission" by Siegfried Dinsel, presented at SMPTE Technical Conference, November 1-5, 1965

### Table 1: Sources Of Video Distortion

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BENCO HAS NEW LINE GEAR

"Clip-in" multi-tap and line extender plates have been introduced by Benco Television Corporation. Called the Clipper Line, the interchangeable units snap into a weatherproof housing that incorporates Benco's multiple mount. The new clip-in units are said to reduce both investment and operating cost, and simplify system load forecasting. The multi-taps and line extender plates have full bandwidth, including midband, and will pass 10 amperes A.C., according to the manufacturer. Plates are color-coded for fast identification.

For further information on this new product contact Benco Television Corporation, 724 Bugbee Street, Jacksonville, Florida 32207; In Canada, Benco Television Associates, 27 Taber Road, Rexdale, Ontario, Canada.

JERROLD YAGI ANTENNAS

Jerrold Electronics Corporation has developed a new line of single-channel yagi antennas. The Imperial line comprises two basic models covering the low and high VHF bands and FM. The Super Imperial high-band yagi is said to provide higher performance and gain levels. All models have a direct 75-ohm input connector and new type of re-entry balun which is said to confine unequal currents caused by balanced-to-unbalanced transformation to the inside of the elements. This has been designed to result in more symmetrical patterns and a greater degree of frequency independence. The antennas feature heavy-duty elements, dual crossarm construction, and vibration dampers designed to reduce wind resonance and the consequent danger of element breakage due to crystallization and fatigue. The crossarm construction is said to eliminate the need for diagonal support braces and to provide extra strength in both vertical and horizontal planes.

The Imperial antennas' shielded phasing line design for coupling multi-driven elements eliminates degradation of performance caused by ice loading, according to the manufacturer. The new Imperial yagis can be stacked by using Jerrold Model 1593A or SHS-2 splitters. Models IRL are for us in the low band, models in the IRH and SIH series for the high band.

For further information on these new products contact CATV Systems Division, Jerrold Electronics Corporation, 401 Walnut Street, Philadelphia, Pa. 19105.

PREFORMED REDUCING TELETAP CONNECTOR

Called "Reducing Teletap Connector," this new product is an L-shaped, helically formed length of double strand wire. The new connector grips only the messenger strands, a feature said to be useful in preventing snow and picture distortion in foam dielectric cable. Reducing Teletap Connectors are applicable to integrated messenger strands with diameters of .063 to .072 inches and .083 inches. They will accommodate feeder messenger strand diameters of 1/4 and 5/16 inches.

For further information contact Prefomed Line Products Company, 5349 St. Clair Avenue, Cleveland, Ohio 44103.

NEW CABLE LAYER

The Kelley cable layer is now available for use with Allis-Chalmers tractors and loaders. The teaming of the Kelley to the AC line provides four new cable layer models for the HD21, HD16, HD11, and HD6. Depths of lay range from the minimum 12 inches with the HD6 to the maximum 72 inches with the HD21. Rates of laying range to four miles an hour in ideal soil conditions, with average production at about one mile per hour, according to the manufacturer. Vertical positioning of the shank is accomplished with two hydraulic cylinders raising and lowering the tool beam. Lateral movement, also hydraulically-controlled, permits the shank to be offset as much as 24 inches to place cable close to buildings, bridges, roadways and other structures. A variety of steel shanks are offered to match specific cable sizes, types and specifications.

For more information on this product contact Kelley Products, P.O. Box 3227, Houston, Texas 77001.

NON-DUPLICATING SWITCHER

A new non-duplicating CATV switcher has been introduced by Vikoa, Inc. The manufacturer states that the 12-channel unit, named Diplomat, makes it easy for CATV operators to comply with FCC non-duplication requirements. It requires setting only once a week, storing information for seven days and providing switching at 1.5 minute intervals. Accuracy of timing is
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For further information on this new product contact Vikoa Inc., 400 Ninth Street, Hoboken, New Jersey.

"F" CONNECTORS FROM AVA

AVA Electronics & Machine Corp. of Upper Darby, Pa. has added F-59, F-59A, F-56, F-61 and F-81 CATV connectors to their line. AVA will warehouse quantities for immediate delivery. New catalog sheet on "F" connector available.

For further information on this new product contact AVA Electronics and Machine Corp., 416 Long Lane, Upper Darby, Pa. 19082.

MATCHING TRANSFORMER

A broadband 50-75 ohm matching transformer, which uses ferrite transmission line techniques to permit its use over the range from 10 to 1500 Mc, is available from A/R-Anzac Electronics Co. The TPX-75 Transpad coaxial matching transformer has a 50 ohm unbalanced input and 75 ohm unbalanced output, according to the manufacturer. It is designed to allow conversion and matching of 50 ohm equipment to 75 ohm systems with elimination of most of the 6 dB loss said to be typical. Maximum loss is given as 0.3 dB from 50 to 500 Mc and 0.6 dB maximum loss over the specified 10 to 1500 Mc range. VSWR of the TPX-75 matching transformer is given as 1.2 to 1 (maximum). Power input is 2 watts.

For further information on this new product contact A/R-Anzac Electronics Co., 121 Water Street, Norwalk, Connecticut 06854.

RF SIGNAL CONVERTER

A new battery-powered, solid-state RF signal converter for signal measurements in the 5 to 54 MHz band has been announced by Blonder-Tongue Laboratories, Inc. The new model, designated Model 4132, mounts on top of the Blonder-Tongue FSM-2 and when used in conjunction with it, it is said to make accurate signal strength measurements of television sub-channels and other frequencies in the 5 to 54 MHz band. The output frequency of the converter is always 100 MHz above the incoming frequency therefore, output signals will fall between 105 and 154 MHz with input signals between 5 to 54 MHz, according to the manufacturer. The unit measures 12" x 2 1/2" x 5 1/4"; weighs 3.75 lbs. and is powered by a nine-volt battery.

For further information on this product contact Blonder-Tongue Labs., Inc., 9 Alling Street, Newark, New Jersey, 07102.

NEW TOWERS FROM ASTRO STRUCTURES

A series of 12 lightweight aluminum scaffold towers which consist of easily erected sections six-feet square and six-feet high is available from Astro Structures, Inc., subsidiary of RF Systems, Inc. The X-2 aluminum scaffold towers provideheights from 48 to 300 feet with an internal stairway and rest platforms every 6 feet for convenience of users who do not appreciate "outside climbing."

The company also recently announced production of their new EH aluminum cramp-up tower. This tower is said to be light and adaptable for field use. One section nests inside the other to make a compact unit which cranks up from the outside-in. Available heights range from 12 to 82 feet.

For further information on these new products contact Astro Structures, Inc., 220 Demeter St., P.O. Box 999, Palo Alto, California 94302.
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