



OCTOBER, 1966

TV & Communications

The Professional Journal of the Cable Television Industry

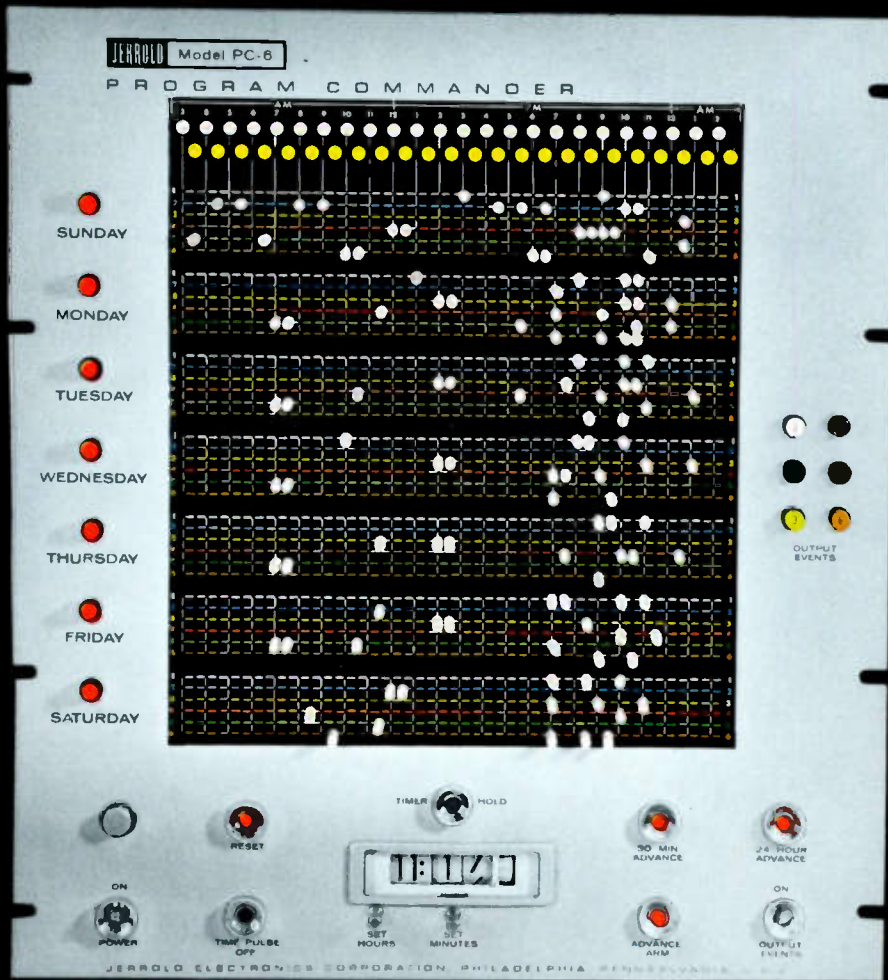


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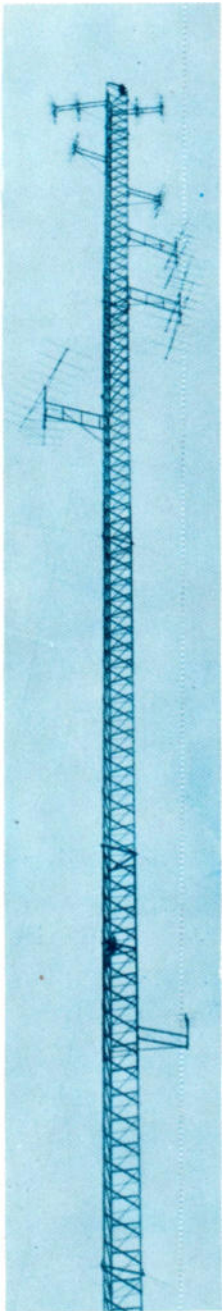
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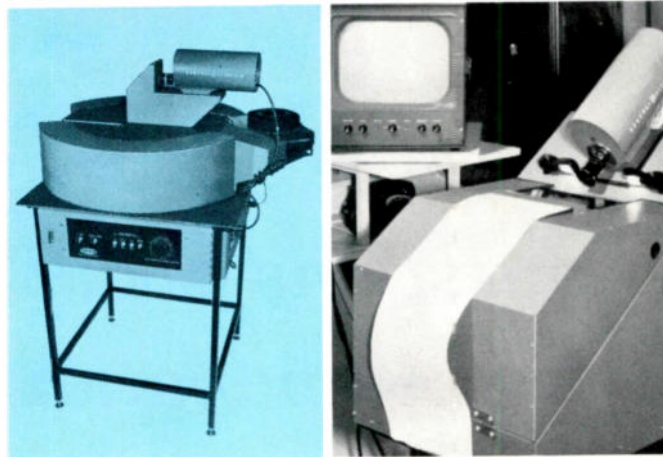


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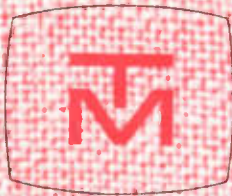
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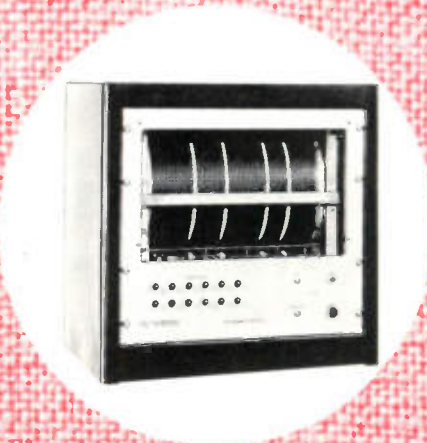


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IN THIS ISSUE

LOCAL ORIGINATION



It is generally agreed that cable systems offer an undeveloped potential in the area of local public service programming — an area which has been largely ignored by television broadcasters. The movement of cable system operators toward increased CATV origination promises new triumphs for the industry.

For example, Iowa Video, Inc. of Fort Madison, armed with plenty of imagination and a small budget, embarked on a public service program that has gained it a unique status in the community. Read how Iowa Video initiated "Program Origination for \$200" on page 38. (Joe Berry, Iowa Video manager, is pictured on this month's cover interviewing high school football coach Jim Youel.)

CATV veteran Charles Wigutow offers a review of local origination history on page 44.

Any operator about to embark on local programming wants to get the full value from his investment, and as much mileage as possible from the equipment on hand... don't miss Don Atwell's article on basic local origination needs on page 45.

An operator's approach to local origination must be based, of course, upon his own particular situation. Lyle O. Keys offers practical guidelines for developing your system's origination program on page 46.

Evaluation of a system's total service potential can aid an operator in determining what particular services he should offer. Theodore Baum analyzes the overall service potential of a CATV system's distribution network starting on page 54.

Most every operating system has unused channels which could be profitably utilized with a minimum of expense, says author D. Michael Ganley as he presents some novel ideas for utilizing spare channels, on page 80.

Stanley M. Searle, Patrick T. Pogue PUBLISHERS

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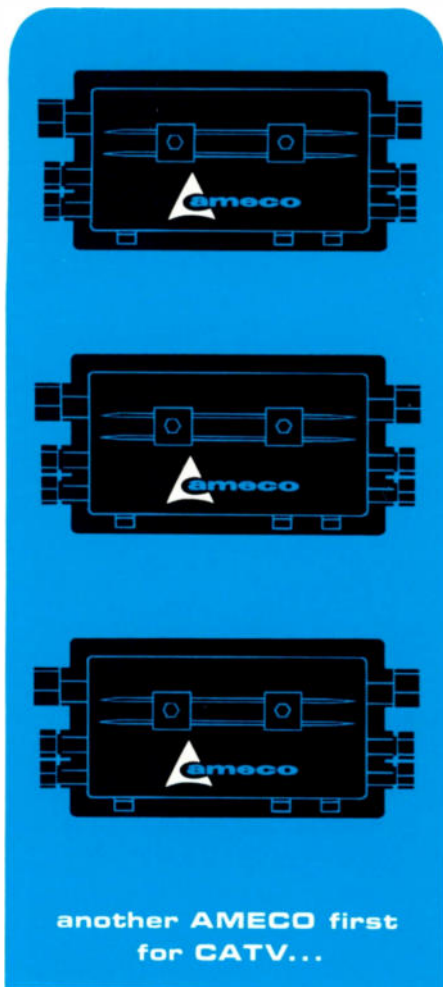
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OCTOBER 1966
Volume 3, Number 10

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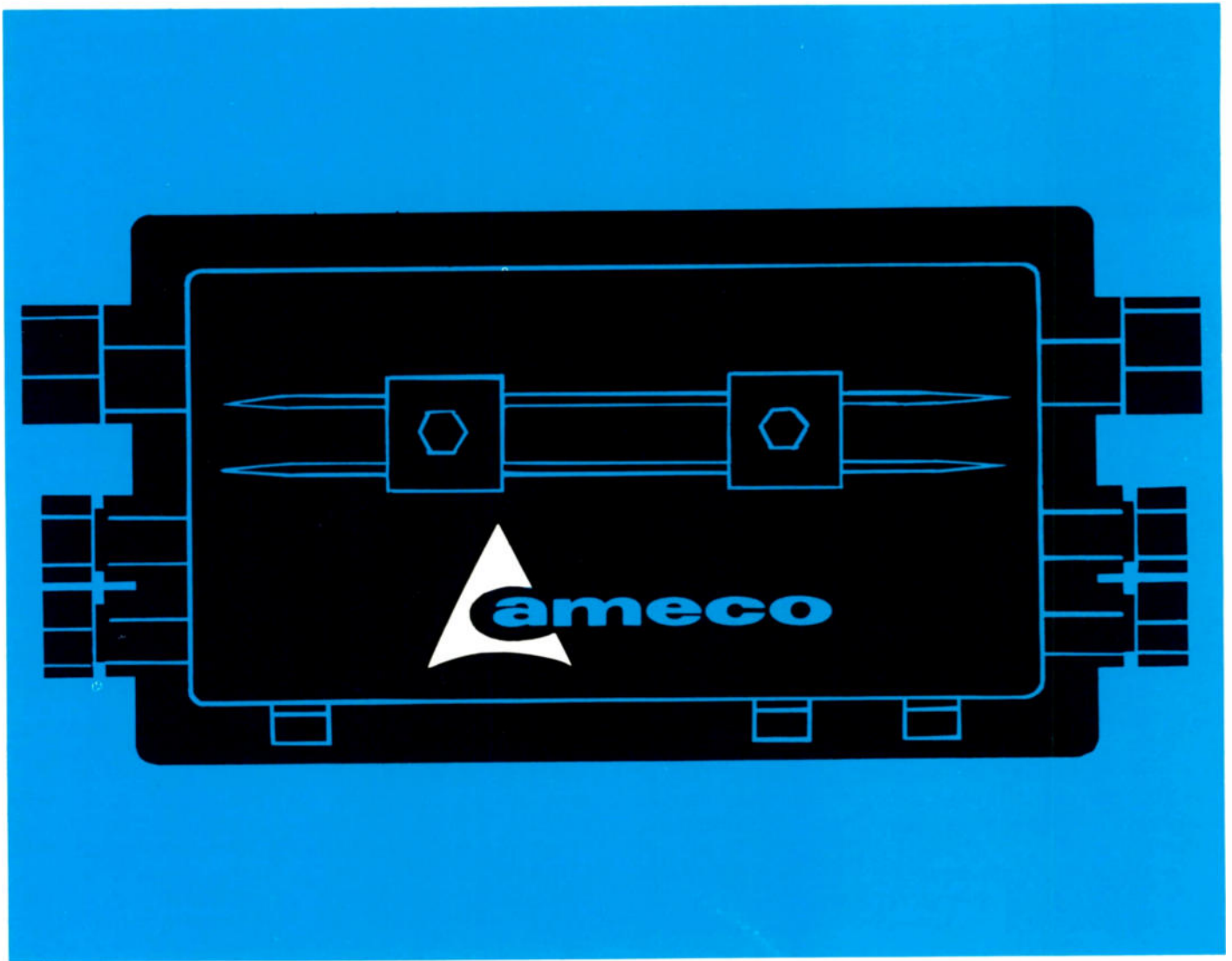


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EDITORIAL

By Stanley M. Searle

Uncertainties of Leaseback

It is normal for an editor—and I'm no exception—to eagerly paw through his daily mail, hoping to find a letter of encouragement or agreement from his readers. But he hears mostly from those who disagree with his viewpoints (although sometimes it's better to hear from a critic than nobody at all). The single response to last month's editorial came in a unique way from our local Bell System subsidiary.

The September editorial began . . . "California is the scene of a current attempt by a Bell System operating company to monopolistically control the cable television business." Harassment of our company by our local Bell System office seems to have resulted from our editorial observations. And the way the telco has been treating us raises some interesting questions regarding what it might be like to be a Bell CATV leaseback customer.

A few days after the September issue of TV & COMMUNICATIONS had reached our readers we received a strange ultimatum from the telephone company.

At mid-afternoon we were told "pay your telephone bill by 4:00 o'clock this afternoon—or we will discontinue your service at that time." Now, in spite of all the nice comments we have made about telephone company actions, I never would have expected that they would want to provide us with free telephone service! Consequently, it has been a normal procedure for us to pay our telephone bill. As a matter of fact we had mailed a check to the local office several days prior to this phone call—although they alleged that our bill had not been paid.

Faced with the threat of having our telephone service cut off, we offered to immediately issue a duplicate check. We also called the chairman of the state Corporation Commission to advise him of the apparent harassment, and he said he would call the phone company. Following our conversations with various telco officials and with the Corporation Commission, the phone company suddenly "found" our check! Actually the situation was, as it turned out, not particularly serious—just annoying. But it raises some highly pertinent hypothetical questions.

Suppose you had a leaseback CATV system provided by this same telephone company. And suppose your monthly payment was delayed or misplaced (purposely or otherwise)? Would Southwestern Bell cut off your service to subscribers after arbitrarily giving you two hours to pay your bill? And what would happen if you considered their charges irregular or exorbitant—and asked for an explanation? Would they summarily terminate your service?

Would the telephone company care whether their arbitrary actions put you out of business? Of course,

our editorials may have given them a special reason for harassing and threatening us. But then, maybe the telephone company would find some reason to harass a CATV leaseback customer. (It has even been suggested that the telephone company might want to see a leaseback operator go out of business, so that the telco could seek permission to take over total proprietorship of the CATV facility "in the public interest.")

When the telephone company threatened to unfairly and arbitrarily curtail our telephone service, at least we could fall back on the mails, Western Union, and carrier pigeons. But did you ever try to mail a television signal?

The Right of Dissent

Fair play, and a sensitivity to the rights of others, are often disregarded by those who dissent.

A good example of irresponsible dissent appeared in a recent "Tri-State TV Translator Association Bulletin." This publication was apparently published in Seattle on July 15, 1966, by an organization of which Mr. E. B. Craney of Butte, Montana is president. Addressing themselves persistently to the subject of cable television, the translator newsletter criticized a bill to make long-term financing available for CATV, criticized Senator Metcalf of Montana, complained about broadcaster interest in CATV, and issued this comment on local origination:

"Broadcasters have accepted the CATV news and weather reports as being something that is all right for CATVs to put over their cable systems. Any such origination dilutes the value of their news services and of their own weather broadcasts. How they could expect program origination to stop there we do not know. The big cry at the Cable convention in Miami the end of June was for all CABLES TO GET INTO THE PROGRAM business. Originate — sell advertising — get the bucks — dilute over-the-air broadcasting — wreck it — build CATV — destroy local broadcast stations — take programs from one coast to the other for CATV - sell - sell - sell - let the suckers, the public, pay!!!"

The fact that the translator group headed by Mr. Craney is misinformed about CATV is overshadowed by the fact that they are highly irresponsible in their statements about CATV. To allege that cable television people intend to "wreck" over-the-air broadcasting and "destroy local broadcast stations" is grossly unfair and irresponsible.

This kind of name calling and outright misrepresentation represents the gravest threat to the great American broadcasting business, including cable television and all other industries which are directly dependent upon television broadcasting.

Stan Searle

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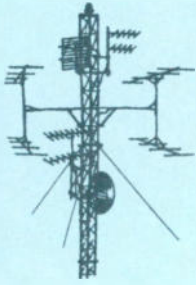
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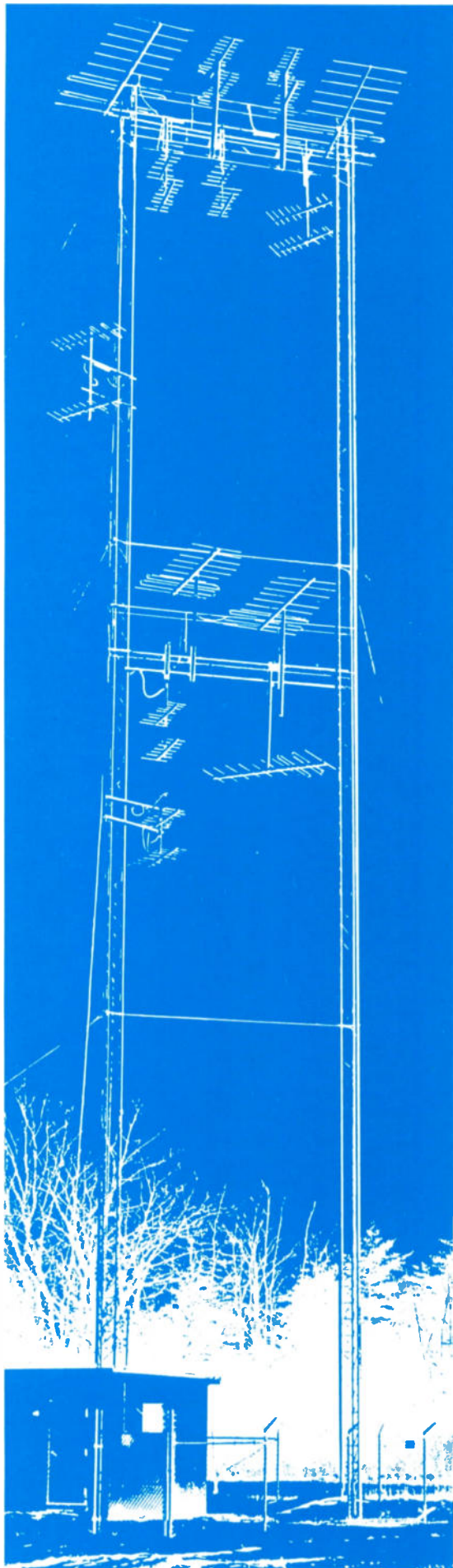


CATV Industry PERSPECTIVE

An unmistakable urgency is evident in the broadcast industry's attempts to stifle programming by CATV systems. KLTW, Tyler, Texas for example, contends that Dal-Worth, the proposed microwave system to feed programming to cable systems in the vicinity of Dallas, faces "a bright future in dollar returns from several potential sources." KLTW is concerned that the programming service for CATV systems (which proposes to provide three channels of programming for cable systems--sports, movies and educational) will realize income from four sources. These include, in their opinion, "connection charges...national and regional advertising...local advertising...income on a per program pay-TV basis..." They contend that the CATV microwave feed will be a major competitor to television stations and networks. In contrast to usual supplications in behalf of "public interest," the dollar signs are undisguised in the petition for denial of microwave channels to Dal-Worth. This Association of Maximum Telecasters envisions "a vast distribution network in the Southwest" in the proposed Dal-Worth system. In fact, AMST, in their objection to the Dal-Worth application, claims that the proposed microwave system could contain the possibility of "a link-up" with microwave systems as far away as Oregon. The Texas TV Broadcasters Association supports this view, claiming that "public interest as well as their private interests" required the filing of their objection to the Dal-Worth application.

Telephone company actions reflect desperate attitude regarding their role in the CATV field. Operators can look for increased pressure tactics by Bell affiliates and some independents as they try for greater involvement in cable television industry. Recent telco actions in California and New England show more aggressive approach to gaining stronger hold on wired communications facilities. Altadena, California, was the scene of frenzied leaseback construction, apparently in absence of any applicable tariff from either state or federal agency. Meanwhile, New England Tel and Tel has announced plans for unfranchised leasebacks in six Maine communities (for lease to Bartell Media Corp.) Latest activity is back in California, where Pacific Tel and Tel is negotiating with PUC for tariff filing relative to closed circuit facilities for "local distribution of signals...not taken off the air." Common CATV industry view has been that telcos saw CATV opportunities too late, have been fighting to make up for lost time. Recent activities add weight to this viewpoint, and may point to worry by telcos about success of their efforts to date.

NCTA study of industry indicates that over 90% of the nation's CATV systems receive at least one distant signal. The number receiving only local signals (Grade B or better) is quite small--under 8%. About 25% of the systems receive only distant signals, while 67% get a mixture of both local and distant service. The research, requested by Senator Quentin Burdick (D-N. D.), brought forth the following data. (1) .9% receive only the stations located in the same community as the system; (2) 1% receive only signals from stations within whose predicted Grade A contour the systems are located; (3) 2% receive only signals of predicted Grade B intensity; (4) 4% receive a combination of predicted Grade A and Grade B signals. (5) 25% receive no signals of Grade A or B intensity (although 81 of these are within the predicted A or B contour of one or more stations); (6) 67% receive an assortment of signals including at least one station of less than Grade B predicted intensity, and at least one station of predicted Grade B or greater intensity. The survey indicated that a total of 8,302,956 people and 2,509,987 homes are currently served by systems.



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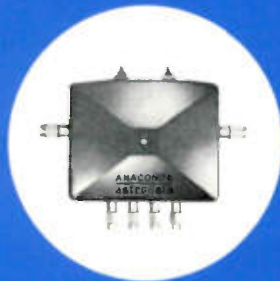
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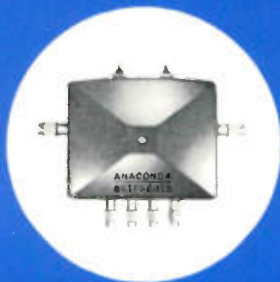
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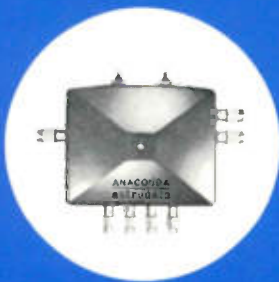
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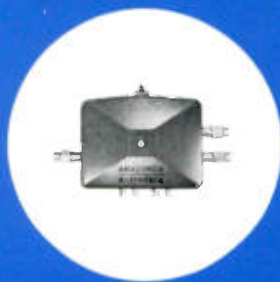
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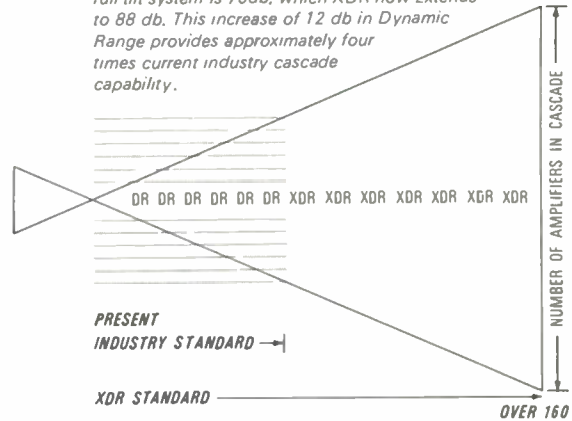
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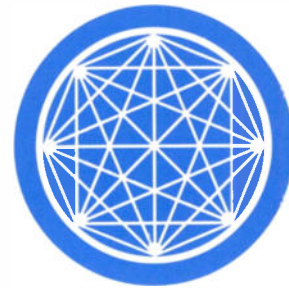
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THE MYTH OF ECONOMIC IMPACT

The FCC's regulation of the CATV industry is now in full swing. While the trend to comprehensive regulatory jurisdiction by the Commission actually began to take shape in the mid-1950's, it did not begin to develop in earnest until 1962 when the FCC issued its now famous *Carter Mountain* decision. In the *Carter Mountain* case, the full Commission, overruling the contrary determination of the presiding hearing examiner, determined that the advent of microwave-fed CATV constituted a direct threat to the continued life of the small TV station in Riverton, Wyoming. From this single case, involving perhaps the least typical commercial TV station operation in the United States, the Commission's regulatory philosophy governing TV station—CATV system relationships was evolved. Significantly, in no adjudicatory proceeding since *Carter Mountain*, or even prior to *Carter Mountain*, has there been a determination, based upon an evidentiary record, that CATV operation constitutes a threat to the continued operation of any television station.

Since 1962, repetitive use of the term "economic impact" has literally generated an entirely new regulatory concept in the FCC's administration of its broadcast jurisdiction. On the basis of asserted economic injury to the broadcasting industry resulting in injury to the public interest through alleged losses of service, the FCC has entered the competitive arena for the avowed purpose of "protecting" existing, as well as future, commercial broadcast operations from the "economic impact" of

CATV. Dealing principally in selective generalities, with studious avoidance of specific facts, the FCC has concluded that without restrictive regulation, CATV constitutes an economic threat to both existing and potential commercial broadcasting businesses to the extent of injuring the public interest. Consequently, the FCC has promulgated a regulatory policy designed specifically for the purpose of restraining CATV operations and affording certain artificial protections against competition to commercial television broadcasters—such protections being openly intended to curtail the amount of television services which the public might otherwise receive via CATV facilities.

The exceptional phenomenon in the evolution of this regulatory policy, in our opinion, is the determined avoidance by the FCC, and seemingly by the respective industry spokesmen, of the obvious economic realities of the situation.

On August 2 of this year, the FCC quietly released its informative annual report entitled "TV Broadcast Financial Data—1965" (see page 70, TV & COMMUNICATIONS, September). In light of charges and countercharges concerning "economic impact" and the FCC's determination to furnish artificial protections against competition by CATV to those engaged in the business of commercial television broadcasting, we think it appropriate to analyze the most recent financial data compiled by the FCC relative to the health and well-being of the television industry. Even more daring, we think it proper to give due recognition to some of the more glaring conclusions deriving from this assemblage of industry financial data. And finally, some comment appears to be in order regarding the implications and potential consequences alarmingly inherent in the full maturity of these new concepts in the government's reg-

ulation of commercial broadcasting.

The industry financial information gathered by the FCC in this regard is extracted from FCC Form 324, a station financial report which must be completed annually by all networks and operating stations and submitted to the agency on a confidential basis. While the FCC retains in confidence the financial data submitted by each individual station it does make publicly available an annual financial report based upon the industry as a whole and containing certain specific TV market data. The 1965 industry figures are based upon reports received from the three major TV networks, including their 15 owned and operated stations, and the 573 other TV stations in the U. S. Therefore, a total of 588 television stations reported to the FCC in 1965.

The preliminary observation to be made about the year 1965 is that it was, in every way, bigger and better than any preceding year—and by a considerable margin. 1965, however, is not an exceptional year since TV industry revenues have increased dramatically every year since 1955. Revenues and profits in 1965 were increased by ten and eight percent, respectively, over similar industry figures for the preceding year. As has generally been the case, more stations made more money than ever before.

In 1965 the television stations and networks in the United States produced revenues of 1 billion, 964.8 million dollars—the highest ever by more than 170 million dollars. This affluent industry showed a profit in 1965, before Federal income tax, but after deductions for salaries, depreciation and all other operating expenses, of 447.9 million dollars. As a matter of fact, the FCC financial analysis shows that in the year 1965, 112 television stations in the United States produced a pre-tax profit of more than 1 million dollars each. In fact, some 32 television stations reflected profits in excess of 3 million dollars each. Forty-six stations showed a profit for 1965 of between 1.5 million and 3 million dollars each.

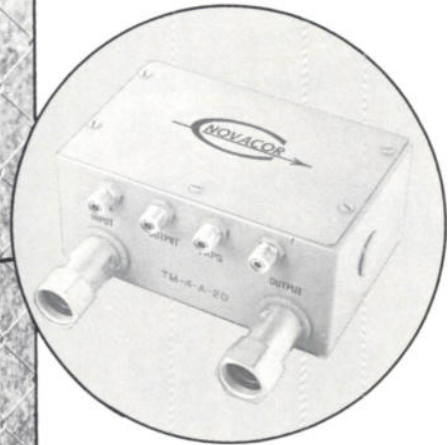
Significantly, the profits reported above do not include or reflect salaries or other forms of remuneration paid to proprietors, part-

(Continued on page 72)

John P. Cole, Jr. is a member of the Federal Communications Bar Association and a member of the Bar of the District of Columbia and the States of Maryland and Georgia.



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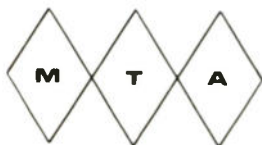
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NCTA REPORT

OPPORTUNITY TO SERVE

By Wally Briscoe, Administrative Assistant

Since the Miami Convention, many questions have been raised about local origination by CATV systems. In the Congress, legislation is being proposed that would in effect prohibit or at least sharply restrict origination capability by systems. At the FCC, there has been concern about the advisability of allowing CATV systems to originate programming. It is apparent that most of this opposition stems from the concern of broadcasters over the development of a new competitive force.

It is reasonable to assume that the owners of copyrights should have no reluctance to see our industry begin to develop its capability in this area. However, it must be remembered that at the present time the broadcasting industry represents the primary outlet for copyrighted works, and the opinions of the broadcasters must, therefore, have some influence on the present thinking of copyright owners. It remains, therefore, for us to demonstrate to the copyright owners our ability as well as our inclination to develop this valuable resource—and outlet for their products.

The recommendation that CATV systems begin developing their origination capability was not made lightly. There were many reasons for it. There are many reasons why we cannot fail to develop in this area.

The television broadcasters, whose signals you receive and distribute to your subscribers, are limited to a single outlet. The economics of broadcasting are such that the broadcaster is obliged to sell as much of his time as he possibly can in order to maintain his operation. Usually he serves a very large area, including many communities. Each of these communities has its own civic problems and needs for local public service outlets. Your CATV system provides the only present answer to localizing television and tailoring program content to the needs and interests of a single city.

Unlike the broadcaster, who has to conduct all of his programming operations with one eye on the Neilson and ARB rating periods. The viability of your operation does not depend on advertising revenue. Hence, you can program to the limited groups, the den mothers of Westside Junior High School, the PTA of Roosevelt Elementary School, the 310 people who have an interest in

the proceedings at tonight's City Council meeting. At the same time you need make no apology to the disinterested people in your community for having imposed a presentation of limited interest in the place of the programs they normally prefer to watch.

The opportunity to promote your system and its place in the community through local origination has not been completely explored. The possibilities it affords are virtually unlimited. By selecting the sort of programming your community needs and wants—even small segments of your community—you can do a very effective subscriber promotion job.

By affording an opportunity for the leaders in your community to have access to the living rooms of the entire community, you will be rendering a service no other medium is able to provide. The complete identity you will gain with your community through local public service programming will become an invaluable asset to your operation.

However, as in the operation of any medium of mass communications, there is a point at which each individual must stop and reflect the fact that he cannot be all things to all people. When we speak of local origination, we mean local in its truest sense. The local drama club is not going to compete with Playhouse 90 or Ed Sullivan. The local newscaster is not going to supplant Huntley-Brinkley. Your City Council meetings are not going to rival the Bobby Baker hearings. I would suggest the following areas of concern regarding local origination: (1) over-programming; (2) over-staffing; (3) over-equipping; (4) under-promoting; and, (5) failure to establish high program standards. These will be covered in a seminar proposed for presentation in the near future.

As a first step, I would suggest formation of an advisory committee of representative community leaders to guide you in your efforts. Their interest will be stimulated by active involvement and their contribution should assure an abundance of material as well as manpower to assist in production.

You owe it to yourself and your community to explore the potential of local programming. The best assurance that CATV will be a significant source of programming for your community is your decision to start originating now. □

BUCKEYE GRANTED PERMANENT WAIVER

The FCC last week honored the request by a Toledo, Ohio CATV system and granted a permanent waiver of part of the Commission's CATV rules so the system can supply subscribers with an educational television channel when the local educational outlet is off the air. Buckeye Cablevision, Inc. will be allowed to carry the signals of WTYS (TV) in Detroit, which is a distant signal, during those periods when WGTE-TV in Toledo is not operating.

Buckeye Cablevision's request for a permanent waiver has been pending while the Commission studies the situation. During that interim the FCC granted the firm a temporary waiver from July 1 through September 6. Buckeye Cablevision has been embroiled with the FCC since the Commission's CATV rules first became effective. It was the first system to be ordered by the FCC to quit carrying distant signals, and consequently was the first system to initiate a legal test of the Second Report and Order.

ANOTHER BROADCASTER-CATV HEARING

A petition at the FCC last week possibly could halt the initiation of new CATV service in Gainesville, Georgia. WIBC Inc., licensee of television station WAIH-TV in Atlanta, Georgia, asked the Commission to issue an order demanding that Gainesville Cablevision Corp. show cause why it should not be enjoined from starting operation.

The television firm in its petition said that Gainesville Cablevision plans to start service to subscribers this month, but claimed that the Grade A contour of WAIH-TV touches Gainesville. Since Atlanta is the country's 19th market and Commission CATV rules pending judicial or congressional reversal, forbid the importation of distant signals into the top 100 markets without special FCC approval, WIBC Inc. said Gainesville Cablevision should not be allowed to import the signals of stations whose Grade B contours do not touch Gainesville. But, the television company claimed, the Gainesville system plans to import three such signals.

WIBC Inc. said Gainesville Cablevision has announced that it will carry the signals of WAIH-TV, WSB-TV, WAGA-TV and WJRL-TV, all Atlanta; WRCE-TV and WTVC(TV), both Chatta-

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“Now put me to work. Check me occasionally to answer my stupid questions. I realize my seeming worthlessness, and I’m afraid you’ll find out too. Praise on some little point is necessary right now because my confidence is at an all time low.

“During this time older men are giving the beginners intensive lectures in company policies and system operation, training us in special skills, and briefing us on the things we’ll need to know to function most effectively in our new jobs. The benefits we derive from these instructions depend on the competency and sincerity of your instructors. Give us the best training you can, because well-trained, competent men are your biggest asset, the backbone and most of the appendages of your system. Give us the best you can, and we will give you the highest return on this, your business investment.

“Remember, however, that we learn best by doing. Claude Hopkins claimed 70 years experience after only 35 because he worked twice as hard as anyone else. Take this hint, Boss, and pile on the work. A hard-working man hasn’t time to be unhappy, and the beginner wants to start making a profit for you before you expect it.

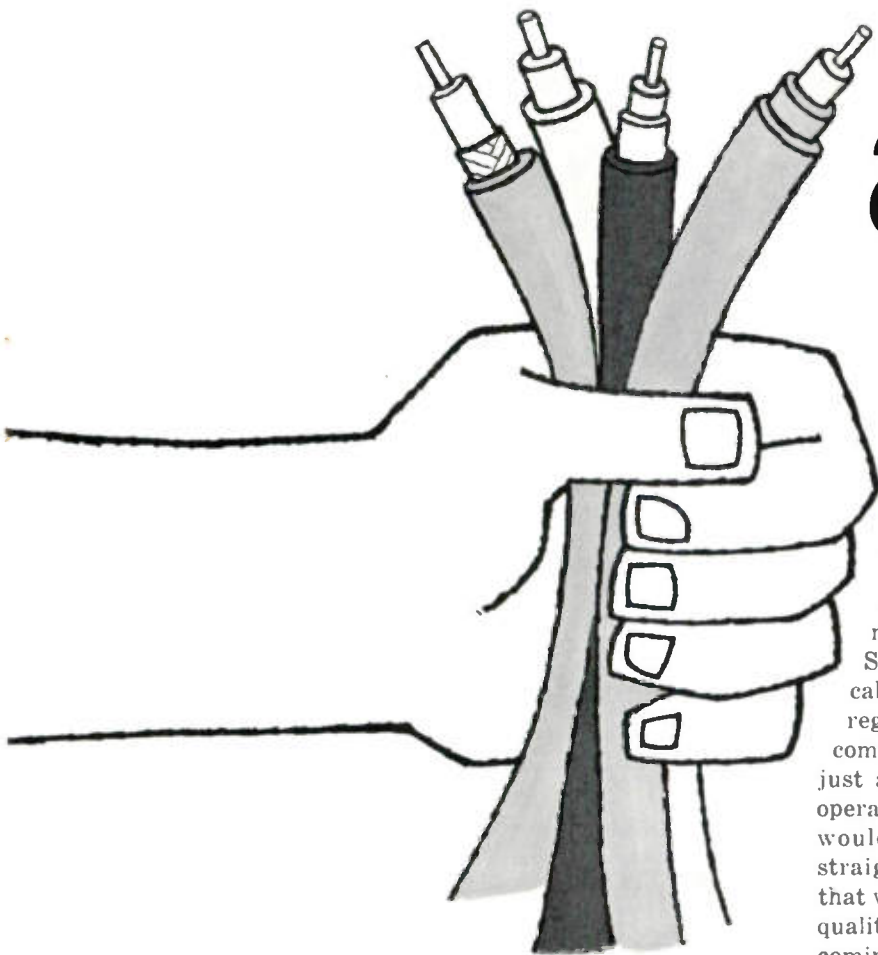
“After some work experience, I began considering your business as my business, too. Now put me on a different and more challenging job, maybe before I think I’m ready. Force responsibility on me and let me sink or swim. If I rise above the responsibility, you’ve developed a good man and can congratulate yourself on doing a world’s most difficult job.

“Boss, there’s more difference between your trainees than their finger-prints. Machines are only similar, it is mathematically and physically impossible to have even two identical ball bearings, and you’ll agree man is infinitely more complex. Treat us as individuals, make friends with us as individuals and treat our problems separately.

“I don’t have time for all that, you say. You better find time. Be smart, Boss, spend your time with and for your men. Respect them, fight for them, do everything in your power to make them rich in experience and money.

“Teach us everything you know, let’s learn more together, treat us as individuals, and we will be inexperienced in only one thing, finding new jobs.” □

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enough to realize that protection for system investment is just as important in the long run as top specs.

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FCC FORMS CATV TASK FORCE

The Federal Communications Commission has announced the formation of a special task force on CATV "to assist the Commission in implementing its recently promulgated rules and regulations in the Second Report and Order involving the community antenna television systems." The Commission noted that this special unit will be responsible for advising the FCC with regard to CATV matters generally and for processing the various applications, etc. now pending before the Commission and to be filed by CATV systems and television stations. The unit will also be responsible for the distribution of the information questionnaires referred to the Second Report and Order and the compilation of the information and data to be derived therefrom.

Serving on detail as the chief of the CATV task force will be Sol Schildhouse, who has been associated with the Commission in various legal capacities since 1918. He is a graduate of Harvard Law School where he was a member of the law review.

As far as the CATV industry is concerned, Schildhouse may become the most important member of the FCC staff. Considering the fact that the FCC has already adopted CATV rules that seem unlikely to be wholly rescinded, he will, more than anyone else at the Commission, be shaping the day-to-day

CATV decisions at the FCC for months and perhaps years to come.

Until tapped by FCC Chairman Rosel H. Hyde to head the CATV task force, Schildhouse was a Commission hearing examiner — a highly responsible position that crosses into many different areas of FCC policy. Although Schildhouse emphasizes that he approaches his new job with an open mind toward CATV and "no biases or prejudices," one of his decisions as a hearing examiner demonstrates that he will side with CATV if he believes the situation calls for it. In a 1961 initial decision on applications by Teleprompter Transmission of Kansas Inc. to renew microwave licenses for CATV service, he recommended renewal of the licenses over the objections of television station KTVC in Ensign, Kansas, which was licensed to Southwest Kansas Television Inc.

Schildhouse, who characterizes himself as "an urgent kind of guy," obviously will do what he thinks is right. What that happens to be will develop in the months ahead. Right now, he emphasizes, his main concern is getting office space and staff.

Schildhouse reports directly to the Commission and is under no other staff member. His group is still a task force, although it is expected that later after it has pulled itself into shape under the guidance of Schildhouse, it will formally be designated a Commission bureau.

VUMORE QUILTS NCTA

Effective September 1, the twenty-eight fully-owned Vumore systems were withdrawn from NCTA membership. Total subscriber count for the major group owner is around 38,000, indicating a loss to NCTA of about \$18,000 per year in dues.

Following a previous resignation which lasted twenty-one months, Vumore had been a member of the National Community Television Association since March 1965. Management of Vumore, an RKO General subsidiary, had been instrumental in the foundation of NCTA. The company held membership from the inception of the

association up until June, 1963 when its systems resigned from active membership.

Vumore is the fifth largest group operator in the country. Of the other top ten group operators, ranging from Jack Kent Cooke's American Cablevision with 79,000 subscribers to Gen-Coe with approximately 33,000, only H&B American is a non-member. No specific reason was known for the Vumore withdrawal, although the timing corresponded approximately with a special membership assessment to cover increased NCTA legal costs.

BROADCASTERS OBJECT TO DAL-WORTH PROPOSALS

The National Association of Broadcasters has joined several Texas television stations in filing objections at the FCC to the proposed plan of Dal-Worth Microwave, Inc. to build microwave stations that would distribute nonbroadcast programming to CATV systems in Texas. The NAB filing was made by NAB general counsel Douglas A. Anello and attorneys Gordon C. Coffman and Kenneth W. Gross.

The NAB statement said that the proposed system "is clearly a form of pay television based on CATV program originations." It asked the Commission to defer or dismiss the applications "without further proceedings." Commission approval is necessary because Dal-Worth wants to build two microwave stations.

NAB pointed out that the cost of the programs and their transmission would ultimately be paid by the individual subscriber to the CATV system. "The fact that the CATV system in retransmitting this material to its subscribers may make a monthly charge rather than a per program charge for the service does not alter the pay TV aspects in the lease," NAB said.

The Dallas-based firm wants, initially, to serve three Texas CATV systems — Brownwood Television Cable Service in Brownwood, KBC Corp. in Killeen, and Television Cable Service Co. in Tyler. The firm plans to originate three channels of programming, one for news and sports, one for motion pictures and one for educational programs.

A bundle of other filings objecting to the Dal-Worth proposals also came into the Commission. Complainers included Abilene Radio-Television Co., which owns KRBC-TV in Abilene and KACB-TV in San Angelo; the Houston Post, which owns KPRC-TV; the Dallas Times-Herald, which owns KRLD-TV in Dallas-Fort Worth; Wichita Radio Television, which owns KFDX-TV in Wichita Falls; and the broadcast group — the Association of Maximum Service Telecasters.

Virtually all of the objectors asked the Commission to deny the application or else put aside until pay TV issues have been resolved and the CATV bills in Congress have been acted on. AMST claimed in its filing that Dal-Worth has specified that it would use the tower of KTVT-TV in Fort Worth-Dallas. AMST said however, that the station has told Dal-Worth that the tower is not available, a fact which, according to AMST, Dal-Worth failed to mention to the Commission.

SENATE HEARINGS CLOSE

CATV and copyright law has caused more than one headache in Congress this year, and with the Congressional session now officially ended, it will greet the agenda again next year. The House Copyright Subcommittee held extensive hearings and came up with a mammoth copyright revision law that includes sections affecting CATV, but the Senate Subcommittee testimony barely ended before the record closed. Thus, with complete House and Senate approval not in sight this session of Congress, it seems unlikely that copyright legislation affecting CATV will come any time in the very near future.

Some in the CATV industry had hoped that a separate CATV-copyrighted bill could be spun off the overall bill, but that now is negligible.

Senate Subcommittee testimony ended with statements from parties that were squeezed out of the first sessions by the limitations of time. The testimony of Edwin M. Zimmerman, acting Assistant Attorney General of the Justice Department, came as no real surprise. The Justice Department, said Zimmerman, "believes that this explicit and blanket extension of copyright liability to CATV systems raises possibilities of harmful anticompetitive consequences, and that this extension is not justified by valid consideration of the right to copyright protection."

Richard W. Jencks, deputy general counsel of CBS Inc., supported limited and strictly defined exemption from copyright liability for CATV. He said that CBS wants CATV systems to be able to carry local stations without paying copyright fees as long as the systems carry all the signals without distortion or origination. Distant signals would have to be paid for.

Evelyn F. Burkey of the Writers Guild of America unequivocally said that CATV should pay.

The only surprise during the single morning of testimony came from an unscheduled rebuttal of Zimmerman's testimony by Herman Finkelstein, ASCAP general counsel. Finkelstein said that CATV may well take over the TV industry in the future with the advent of communications satellites for the networks, and that copyright should be applied to CATV now against the contingency. He also said the networks would never withhold permission from CATV systems.

A clarification of the NCTA's position and a rebuttal of conflicting arguments was offered to the Subcommittee before the session closed by Freder-

ick W. Ford, NCTA president. Ford originally testified before the subcommittee August 2, and at that time the Senate group invited additional comments.

Ford picked five principal points to discuss: One, should CATV copyright liability be full, exempted, or a compromise? He plugged for compromise, arguing that *only* the copyright holders told the subcommittee that full liability should exist. He said the consensus is that local signals should be exempt, distant signals should carry some liability if carried into an inadequately served area, but carry full liability if imported into an adequately served area, and full copyright liability should attach to any CATV program origination.

Two, should there be a legally set fee for copyright charges? Ford said CATV systems should have to bargain when they bring distant signals into well served areas, but despite copyright owners' objections a statutory fee should be in effect on distant signals brought into under-served areas.

Three, should CATV be allowed to originate programming? Ford said that at any rate, the question shouldn't be considered as part of copyright law, but should be left to communications law, as admittedly any originations would be subject to copyright.

Four, should other conditions be imposed? CBS suggested six more conditions, and Ford addressed them in turn. He agreed in principle that all local channels should be carried, but warned of the channel capacity problems of some systems; he noted that he already had discussed the CBS proposal that originations be banned; he agreed that normal coverage areas of stations should be defined more easily than the technical grade contours; he said that attempts to separate CATV from pay TV should not be included in copyright legislation; he said it was unnecessary to ban CATV systems from intercepting satellite signals, as this is already outlawed; and he agreed that copyright exemption should only apply to private homes and apartments and to private guest rooms in public establishments.

Five, should CATV's be forbidden to carry professional sports outside their black-out areas? Ford said it isn't a question for copyright law, although noting that the complaint has some merit.

It is understood that others of those who testified at the hearing submitted filings after the fact, all of them boosting their earlier arguments.

CALIFORNIA CATV CHARGES TELCO

A California Public Utilities Commission hearing examiner has continued the temporary restraining order issued to Pacific Telephone and Telegraph Co., an AT&T affiliate. The order came after International Cable TV, Inc., a firm which holds a franchise in Altadena, California, charged Pacific Telephone and Telegraph with building a plant in Altadena for the purpose of leasing the distribution facilities to another franchised firm, All-Metal Fabricators, Inc., of Santa Monica.

The hearing examiner submitted his recommendations as to the course of action to the Commission in mid-September; a decision was anticipated the first week in October. (Detailed weekly coverage of the case may be found in Cable Television Review, weekly news service of TV & Communications.)

In its complaint to the California PUC, International charged that the system should not have been built because the tariffs have never been approved by the PUC. The petition alleged that the telco had at least ten crews working in the area and also had hired a sub-contractor.

The hearing before the examiner dealt mainly with a touchy point—determination on where the ultimate tariff jurisdiction rests: with the FCC or the state PUC's. Pacific Telephone reportedly took a stand opposite to the position taken by AT&T in filings earlier this year before the FCC. At that time Bell argued that the states—not the Commission—have jurisdiction over leaseback tariffs. Pacific Bell is said to have argued that the FCC has jurisdiction.

MO. CATV FILES ANTI-TRUST SUIT

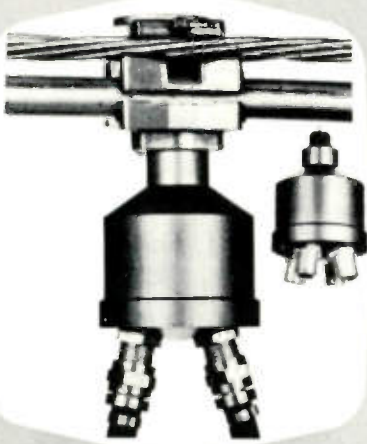
Recent NCTA reports indicate that Warrensburg Cable Inc., Warrensburg, Missouri, has filed a suit, in the Johnson County Circuit Court, against two subsidiaries of United Utilities: United Transmission, Inc., and United Telephone Company of Missouri. Warrensburg Cable's brief states that both it and United Transmission have non-exclusive CATV permits from the town of Warrensburg. The brief charges United Telephone Company of Missouri with attaching United Transmission's cable on its poles in such a way as to preempt space on the poles which is needed by Warrensburg Cable to attach its cables.

Warrensburg Cable also states that United has refused to grant it a pole attachment agreement for any of the telephone company-owned poles.

(News Continued on Next Page)

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The Federal Communications Commission, bent on enforcing its top 100 market ruling to the hilt, has served notice on still two more systems for alleged importation of distant signals. The systems, Jackson (Michigan) TV Cable Company and Back Mountain Telecable, Inc. of Pennsylvania, received cease and desist and show cause why orders, respectively, from the Commission, which has consistently backed up the jurisdiction it took upon itself last March. The bone of contention is a ruling which states that FCC permission is required before a system can import signals into an area lying within the Grade A contour of a top 100 television station as determined by the American Research Bureau.

The Commission ordered Jackson TV Cable Company to cease and desist within two days from bringing distant signals to subscribers of two of its Michigan systems. The systems, one in Blackman Township and the other in Jackson, are within the Grade A contours of three television stations in the 47th market.

Action was also directed against six systems in rural Pennsylvania owned by Back Mountain Telecable, Inc. The six systems are in Dallas Borough, Dallas Township, Kingston Township, Lehman Township, Lake Township and the "Harveys Lake" area.

The Commission told Back Mountain it has to show cause why a cease and desist order should not be issued forbidding practices contrary to the FCC's rules. (The most important issue in the Back Mountain case is the stipulation that no CATV system can, without Commission permission, carry a signal whose Grade B contour does not reach the CATV's area if the CATV is in the Grade A contour of any television station licensed to one of the top 100 markets. The Back Mountain systems, the Commission said, violate this rule.)

The Commission said Back Mountain brings in the signals of KYW-TV in Philadelphia and New York City stations WNEW-TV, WOR-TV and WPIX-TV.

San Diego Stay Extended

A trio of U.S. circuit judges in the U.S. Court of Appeals for the Ninth Circuit in California extended its life-giving stay of FCC restrictions on several CATV systems in the San Diego area. The case is considered a landmark for the CATV industry by many.

The Commission decided the case would involve its first hearing on a CATV system's plea to be allowed to

import distant signals into one of the top one hundred markets. Pending the outcome of the hearing, the Commission granted a request by KFMB-TV in San Diego that Mission Cable TV Inc. in El Cajon, Calif., and Southwestern Cable Co. in San Diego be allowed to carry Los Angeles TV signals only to CATV system subscribers who were hooked up before the FCC adopted its CATV rules Feb. 15.

The court changed that situation by issuing a temporary stay of the Commission order, pending an argument of the case before the court. That argument was held, and the three judges continued the stay of the Commission's order against the CATV systems until the broader issues are resolved.

Booth American Fights Back

Booth American Company, in an attempt to stay the cease and desist order it received in July, has charged that the FCC used misleading language in its February 15 notice of intention to assert jurisdiction over all CATV's.

The Commission told Booth American, operator of the Muskegon-North Muskegon, Michigan system, to stop carrying five signals — four from Milwaukee and one from Chicago — into the Muskegon area because it is within the Grand Rapids-Kalamazoo market, the ARB-ranked 38th.

Booth American said that both communities are within the Grade A contour of WZZM-TV, Grand Rapids, only. Therefore, upon reading the February 15 order, the firm assumed that it was not affected.

United Transmission Granted Waiver

The FCC granted the unopposed request by United Transmission Inc. for a waiver of the Commission's rules that says an evidentiary hearing must be held before a CATV system can bring distant signals into one of the top 100 markets.

In granting the waiver, the FCC authorized United Transmission to carry the signals of WTTG and WMAL-TV in Washington, D.C.; WGAL-TV in Lancaster, Pa.; WJIC-TV, KDKA-TV and WTAE in Pittsburgh; and WSTV in Steubenville-Wheeling, W. Va. Since the CATV systems involved are not within the Grade B contours of these stations, they are classified as distant signals. United Transmission will bring them into Roaring Spring, Martinsburg, Greenfield Township and Freedom Township in Pennsylvania, and that service area is within the Grade A contours of WFBG-TV in Altoona and WJAC-TV in Johnstown. The Johnstown-Altoona market is ranked 41st.



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Weight, including carrying case 5- $\frac{1}{8}$ lbs.	Db Range -30 to +60 dbmv
Size without case 4 $\frac{1}{4}$ " x 5" x 5 $\frac{3}{4}$ "	Frequency Coverage Ch 2 to Ch 13 One Range
Size with carrying case 3 $\frac{3}{4}$ " x 6 $\frac{1}{2}$ " x 7"	Batteries (2) 9 volt to 2mn6 (meter) (2) "C" cells (pilot lamps)
Carrying case Genuine leather		

Complete with carrying case and batteries

\$295⁰⁰

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TV CABLE SUPPLY CO.



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LOS ANGELES FRANCHISES GO TO HIGH BIDDERS

Theta Communications of California, a joint venture of Hughes Aircraft and TelePrompTer Corp., walked away with three out of four lucrative franchises put up for auction by the Los Angeles, California, city council. Theta-Com won the bidding for the three most promising areas: Santa Monica Mountains area, Pacific Palisades and the Highland Park-Eagle Rock area. King Video Cable Corp., a subsidiary of King Broadcasting, Seattle, won the bidding for the other area.

The bidding began on the Santa Monica Mountains area, and competition was soon narrowed down to only NBC, H&B American and Theta Communications. Theta Communications finally quelled all challenges with a winning bid of \$600,000. It then proceeded to submit winning bids of \$235,000 for the Pacific Palisades franchise and \$10,000 for the Highland Park-Eagle Rock franchise. King Video gave \$10,000 for its franchise.

FLORIDA PSC DENIES CONTROL OVER CATV

The Public Service Commission of Florida has declared that it does not have jurisdiction over CATV distribution facilities. Citing the fact that the state legislature has not designated such authority for the Commission, the PSC made the following determinations: (1) It does not have jurisdiction over the rates charged or the service provided by CATV systems. (2) It does not have authority to require a regulated telephone company to permit CATV operators to attach their own facilities to the phone company's poles. (3) It does not have jurisdiction over pole rental agreements between CATV operators and regulated telephone companies. (1) It does not have jurisdiction to approve or enforce tariffs filed by regulated telephone companies covering wire facilities offered for use of CATV operators (leasebacks). The Florida Commission had previously given temporary approval to tariffs filed by Southern Bell, and independents.

ORIGINATION STUDY PLANNED

A detailed study of the amount and nature of programs originated by CATV systems has been planned by the National Community Television Association. There has long been a dearth of data in this important and growing field, and the NCTA wants to discover all it can about originations so that it can evaluate and disseminate the information, especially as many consider programming to hold the key to future CATV development.

WEATHER-DATA™

MODEL 106C WITH SOLID STATE CAMERA

Cable television's latest technical development. This automatic device provides a continuous display of time, wind speed, wind direction, temperature, barometric pressure, and humidity. Housed in an attractive case mounted on a mahogany pedestal, the brightly illuminated display is easily read and understood. It is protected by a nonglaring screen that provides a neat flush front not marred by openings. No controls or adjustments are required as the unit operates automatically.

Space is provided below the displays for inserting a written message. These are easily changed, and provide a strong focal point for announcing special events, cable promotions, and for public service announcements.

...direct Digital
Readout



SPECIFICATIONS

Temperature Range:	-65 +130°F
Barometric Range:	26.90 -31.90 in. Hg
Wind Speed:	0-99 MPH
Wind Direction:	360°
Humidity:	Relative 0-100%
Clock:	Solid State
Readout Lamp Life:	Excess of 5000 hrs

CAMERA

Video Bandwidth	5 MHz
Video Output	1.4 v p-p

POWER REQUIREMENT

115 vac, 60 Hz, approx. 500 watts

ENCLOSURE DIMENSIONS

24 in. wide x 16 in. long x 22 in. high

The readout numerals are a full one inch tall and appear with a high degree of legibility on the television screen. This system may be easily tied into existing cable television facilities, as the camera furnishes video and a 20 db RF signal on TV Channels 5 or 6.

Each unit is fully prealigned at the factory and requires no calibration in the field. All "Weather Data" systems are shipped ready for installation. Technical personnel are not required to install either the display or the sensors. After installation, operation is completely automatic.

AMERICAN CAB

A DIVISION OF JACK KENT COOK, INC.

EMERG-ALERT

MODEL 600 EMERGENCY WARNING SYSTEM

The Model 600 Emerg-Alert System is an emergency alert warning system for the cable television industry. This equipment, which is the first of its type, inserts both video and audio messages into CATV systems. It is designed to permit operation from remote locations such as police or fire stations, governmental offices, civil defense headquarters, or other posts of authority during emergency situations.

The Model 600 has a self-contained video-origination system with a high-quality vidicon camera that is constantly ready to display an alert message on any or all television channels. The alert message is copy that is placed on a card and inserted in a front panel slot—a method that permits messages to be quickly and easily changed.

- CRYSTAL CONTROLLED
- MODULAR PLUG-IN CONSTRUCTION
- SELF-CONTAINED

The Model 600 Emerg-Alert System is compatible with CATV equipment, and is easily installed. Plug-in crystal-controlled video modulator units are easily exchanged, requiring the operator to purchase only required channels.



SPECIFICATIONS

CRYSTAL-CONTROLLED VIDEO MODULATOR

Video Bandwidth 10 MHz
 RF Carrier Frequency Channels 2-13
 Output Impedance 75 Ohms
 Output Voltage RF over 30 db

CAMERA

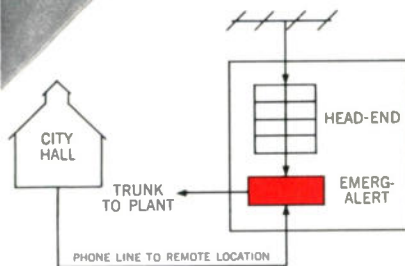
Video Bandwidth 5 MHz
 Video Output 1.4 v p-p

POWER REQUIREMENT

115 vac. 60 Hz, approx. 500 watts

ENCLOSURE DIMENSIONS

11½ in. high x 15 in. deep x 24 in. wide



The Emerg-Alert unit may be energized from either local or remote position. Whenever the unit is keyed, it will automatically disconnect the trunk that has been inserted through the unit and connect the trunk to its own modulators. Upon keying the unit, an automatic 10 second audio tone will be produced. Audio and video messages will then be inserted on all desired channels.

PNCTA OFFICERS ELECTED

The Pacific Northwest Community TV Association held its fall election meeting in Portland, Oregon. Officers elected for the 1966 - 67 year are: president, Clay D. White, Kennewick, Wash.; management vice president, Glenn Tarbox, Missoula, Mont.; technical vice president, Jerry Laufer, Seattle, Wash.; secretary-treasurer Wayne A. Aylward, Box 493, Walla Walla, Wash. 99362. Directors elected at the meeting are: E. A. Faber, Medford, Ore.; William A. Baker, Colville, Wash.; and outgoing president, Sam C. Haddock, Moscow, Idaho.

Consistent with the recent industry-wide emphasis on local origination public service programming, the PNCTA meeting focused on origination both in the management and technical sessions.

NCTA ADVERTISING CAMPAIGN UNDERWAY

The NCTA public relations campaign was scheduled to get underway October 7 with a full-page industry advertisement in *Time*, followed by a full-page ad on the 9th in the *New York Times* Sunday Magazine and a page in the October 14 issue of *Life*. Six newspapers have been chosen for ad scheduling in October and early November: *The Dallas Morning News* (October 14); *Spokane Chronicle-Spokesman and Review* (October 21); *Las Vegas Sun* (October 21); *Minneapolis Star-Tribune* (October 26); *Cincinnati Enquirer* (October 31); *Atlanta Journal and Constitution* (November 2); and the Oklahoma City *Oklahoman* and *Times* (November 4).

The Public Relations Committee has also announced that all NCTA member systems are scheduled to receive a "do-it-yourself Fall Promotion folder" containing ad layouts and radio spots.

L'HEUREUX SPEAKS TO BELL COORDINATORS

NCTA general counsel Robert D. L'Heureux, addressing a dinner meeting of all Bell system CATV coordinators at the O'Hare Inn in Chicago, outlined the opposition of CATV owners and operators to excessive pole line attachment charges and undue delays in granting pole attachments. In a significant attempt to bridge the gap of understanding between the telephone and CATV industries, L'Heureux scored these and other undesirable CATV practices by the telephone companies as inimicable, in the end, to both industries. The Bell system CATV coordinators reportedly received the NCTA General Counsel well and expressed keen interest in Bell-CATV activities.

(News Continued on Next Page)

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GEORGIA BROADCASTERS PROTEST

A broadcaster's petition at the FCC possibly could halt the initiation of new CATV service in Gainesville, Georgia. WIBC Inc., licensee of television station WAII-TV in Atlanta, Georgia, asked the Commission to issue an order demanding that Gainesville Cablevision Corp. show cause why it should not be enjoined from starting operation.

The television firm in its petition said that Gainesville Cablevision planned to start service to subscribers in October, but claimed that the Grade A contour of WAII touches Gainesville. Atlanta is the country's 19th market.

CATV PANEL SPARKS BAR CONVENTION

A panel discussion on CATV's copyright, regulatory and antitrust aspects turned out to be one of the highlights of the Federal Bar Association Convention in Washington last month. Meeting before a crowd of some 300, the panel was sparked by lively defenses of CATV by NCTA General Counsel Robert D. L'Heureux and Washington, D.C. attorney Harry M. Plotkin, as well as the vigorous attacks of Louis Nizer, General Counsel of Motion Picture Association of America and Ernest W. Jennes, advisor to the Association of Maximum Service Telecasters.

DANVILLE IMPORTATION HEARING

The Federal Communications Commission has set aside its May 16 action granting applications by Video Service Co. for microwave relay stations to boost the signals of WGN-TV in Chicago to Danville (Ill.) Community Antenna System Inc. The Commission, in setting aside the earlier decision, designated applications for hearing on a variety of issues.

Reportedly, the Commission originally granted the applications by mistake. The staff overlooked the fact that Danville is in the Champaign-Danville-Decatur-Springfield market, which is ranked number 73 in the country. Since it is said to be among the top 100 markets (although this is currently being disputed in the courts), FCC approval is needed before distant signals can be imported — and since there was an objecting petition from an area TV station, the FCC decided to set the applications for hearing.

The issues at the hearing, the Commission said, will include "determination as to whether the CATV system began supplying — via an off-the-air pickup — the signals of WGN-TV to subscribers on or prior to February 15 and, if so, whether the signal has been generally viewable on the Danville CATV system."

ADLER SPEAKS TO NEA

M. William Adler, speaking before the second annual convention of the National Electronic Association, stressed his belief that the CATV industry and the television service industry are "natural allies." Adler assured the gathering that cooperation between the two industries will lead to mutual benefits.

Adler, a member of the board of the National Community Television Association, sounded one note of warning, however. He cautioned that the television serviceman has a good deal to fear from the encroachment of the telephone companies into the CATV industry, because the telephone firms have a pronounced inclination toward owning, installing and repairing all their equipment. "The CATV indus-

MONTANA ASSOC. PRESIDENT SPEAKS TO PUC

Sam C. Haddock, president of the Pacific Northwest Community TV Association told commissioners that "a CATV system is not of a public utility nature" when he spoke before the Western Conference of Public Service Commissioners in Glacier Park, Montana.

Noting that public utilities are as a rule protected from competition, Haddock said that "because the FCC allows television stations to operate, to increase their tower heights or power, and utilize boosters and translators to compete with CATV systems, no state legislature could possibly give to CATV systems the additional and reasonable protection to which they would be entitled as a public utility because the states are completely without authority to control the competing methods of extending television reception service to areas where CATV systems operate."

SATELLITE ETV: FORD'S SOLUTION

McGeorge Bundy, president of the Ford Foundation, went before a Senate Communications Subcommittee last month with the suggestion that satellite profits from network broadcasting go to educational television. The subcommittee, headed by Senator John O. Pastore (D-R. I.) listened receptively to the Ford plan to have a non-profit corporation run a satellite TV system, charge the networks for the service, and funnel the excess revenues into educational television.

The Federal Communications Commission, because comments on domestic space plans "have raised novel concepts and proposals" — notably the Ford suggestion — has delayed reply comments on the proposals for domestic satellite service to Nov. 30.

(Continued on Next News Page)



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Complete all-metal pick-up bodies to fit your ½ to 1 ton trucks. The Standard Douglass Bodies include custom interiors to fit your specialized needs. Increased efficiency in your construction, installation and repair work will repay the original cost many times over! Look at the features which make this the best possible utility body for CATV operation:



- Excellent rear visibility means safer driving.
- Low c.g. gives stability on road and when using special equipment.
- Increases hauling capacity and improves appearance.
- Flexible: Interchangeable from one truck to another.
- Fully locked storage cuts costs, saves tools.
- Full lower cross-supporting; no body modification required to add hoists, ladders, etc.
- Low profile permits easy access to inner bed from all sides. (Saves time.)

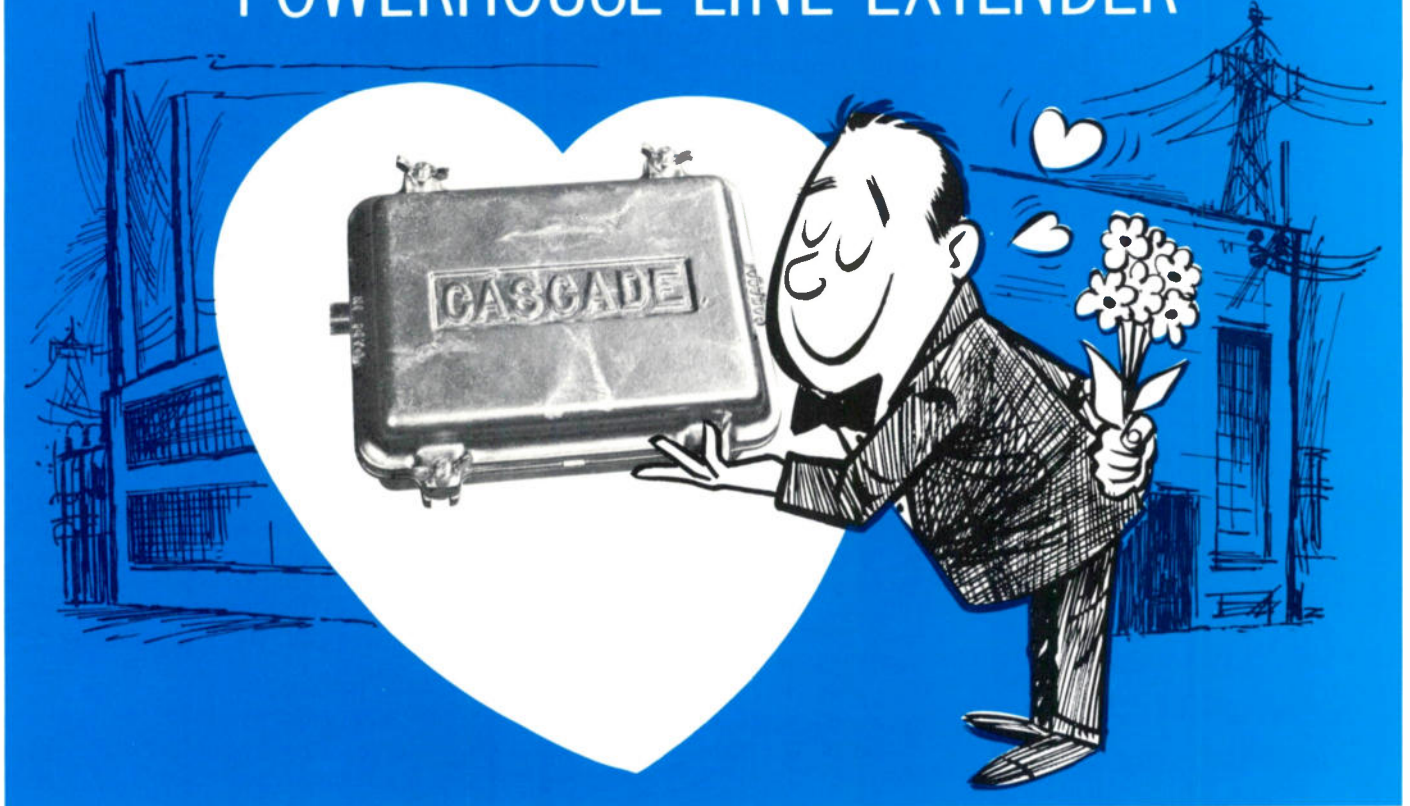
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- 22 db Maximum Gain
- 20 db Recommended Operating Gain, including 10 db flat loss
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Put the Cascade Electronics CELE-I Line Extender Amplifier to work in your system at the new low price . . .

\$119.50

U.S. orders shipped F.O.B., Seattle, Washington, duty paid.
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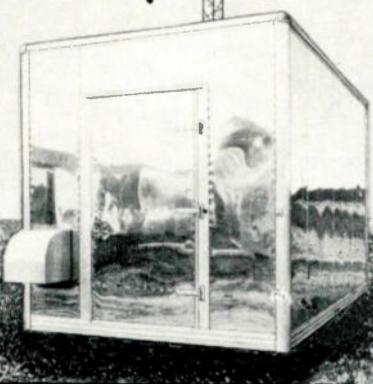
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AFTRA PROPOSES CATV CONTRACTS

The American Federation of Television and Radio Artists (AFTRA) has proposed comprehensive contracts with cable television operations, along with many pay hikes for members in various broadcast professions. The proposal was made at AFTRA's annual convention, but no specific action in this direction has been indicated to date. The current state of flux in the CATV copyright picture would appear to make any permanent move by such groups as AFTRA unlikely for some time.

BROADCASTERS DIVIDE ON COPYRIGHT ISSUE

Some television stations, in response to the recent copyright decision handed down in federal court by Judge Herlands, have begun to copyright the programs they produce. One group broadcaster, Midwest Television, of Champaign, Ill., now copyrights 95% of its programs in an effort to "take advantage of copyrights."

August C. Meyer, Jr., president of Midwest Television, states that "as a practical matter, I don't see how CATV operators could screen out programs that are copyrighted and show only those that aren't." He also states that "most CATV people are sort of gambling on the fact that everything will be settled in their favor." Reportedly a number of the news films produced by the Midwest station, WCIA, now carry a copyright number.

While some group broadcasters, such as Midwest Television, have been quick to copyright programs, others take a more guarded position. For example, Milton Firedland, vice president and general manager of Plains Television in Springfield, Ill., stated that his firm has not decided upon a course of action so far as the copyright issue is concerned. While he sees some economic dangers — from the CATV operator's point of view—"By and large," he concludes, "other than local news shows I have yet to hear that any station does not want to be carried on CATV."

TRANSLATORS OPPOSE PAY TV

The Tri-State TV Translator Association, which is comprised of almost 400 translator clubs in Idaho, Montana and Wyoming, has told the Federal Communications Commission that pay TV is not in the public interest and should not be authorized by the Commission. The current FCC investigation of possible nationwide pay TV should be set aside in any event, the association said, as communications satellites soon will greatly change the communications industry.

TELEMATION BUYS 300 TV CAMERAS

TeleMation, Inc., Salt Lake City manufacturer, recently ordered 300 General Electric vidicon television cameras to help meet the growing demand for CATV public service programming and educational television systems. The cameras are a part of program origination systems which typically include electronic viewfinders, Ampex portable video tape recorders, and accessory items. The order was fifty percent greater than a similar contract one year ago, when TeleMation purchased 200 cameras.

SUPERIOR PLANS NEW PLANT

Superior Cable Corp. held formal ground-breaking ceremonies at Mount Pleasant, Iowa, to mark the start of construction of the firm's new Mount Pleasant division wire and cable plant—the firm's sixth manufacturing facility. Company officials and local civic and business leaders participated in a brief program held at the plant site, as dirt was turned in the first step toward completion of an 88,000 square foot production facility to serve the telephone and communications industry in the midwest and north central regions of the country.

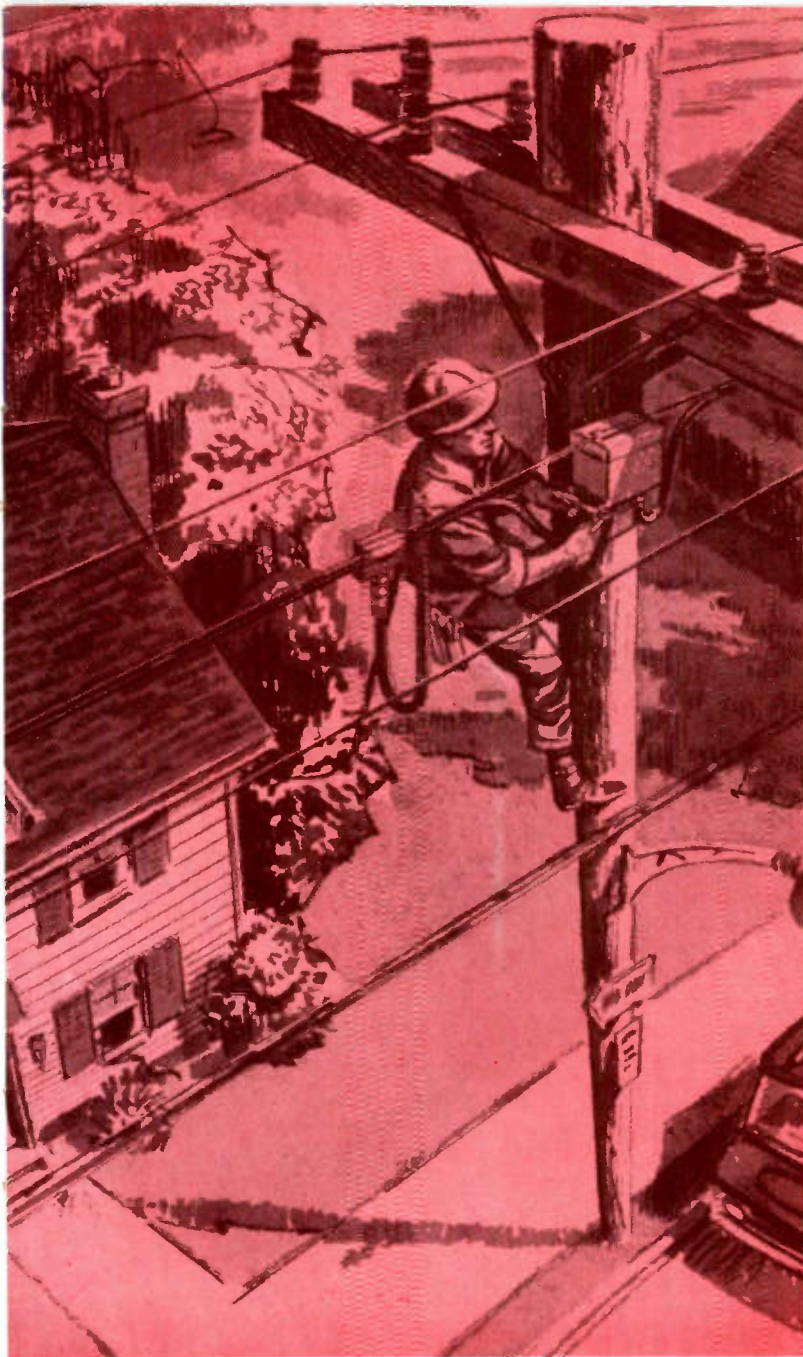
AMECO SIGNS ARGENTINE CONTRACT

Bruce Merrill, president of Ameco Inc., has announced the signing of a contract with TeleSistema Argentino for cable television equipment manufacture and distribution in Argentina and Uruguay. TeleSistema Argentino is an Argentine corporation owned by Time-Life, CBS and a Latin American partner. Luis Maria Perfilio is president and chief executive officer.

The contract calls for Ameco to supply CATV equipment until TeleSistema embarks on its own manufacturing program. Currently Ameco is filling an order to complete a CATV system at Baradero, Argentina. Several other TeleSistema construction projects are being mapped for population centers near Buenos Aires.

BRAND-REX BREAKS GROUND FOR NEW PLANT

Brand-Rex sales personnel, customers and townspeople were on hand recently for the ground breaking ceremonies of a new communications and telephone cable plant in Siloam Springs, Arkansas. The new facility is being built on a 47-acre site and will contain more than 90,000 square feet of manufacturing space. Limited production is scheduled to begin this fall. The entire plant will be in full operation by the end of the year. □



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send him up once ...**

then forget it.

Timatch[®] perfect match connectors

This trip won't be necessary again for at least five years when the cable you install is Times JT1000 seamless aluminum tube sheath coaxial cable.


You can forget about the cable later if you remember this now: Times JT1000 lasts longer up on the poles — without costly repairs or continuing maintenance. Instead of degrading from the day you install it, your cable will have the same high-

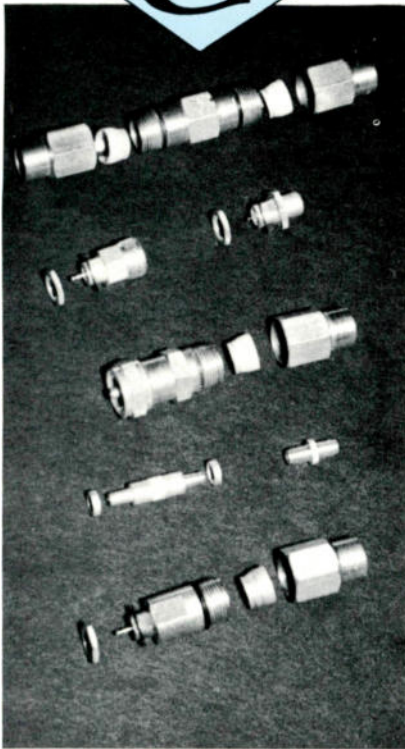


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performance quality five years or more from now. Because it's seamless, it's water and vapor proof. Self-sealing when tapped. Gives a 30db return loss guarantee, and radiation protection when high power level amplifiers are used.

So before you install a so-called "economy" cable that will send your men back up the poles for costly replacement, look into Times JT1000 cable. The payout makes the big difference.


TIMES
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HIGH QUALITY LOW COST

- Gilbert Engineering has developed the famous Diamond "G" Connectors to meet the CATV industry's increasing needs for high quality and low cost.
- Diamond "G" connectors and fittings are CATV's standard for quality and performance under all operating conditions.
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FINANCIAL REPORTS

Ameco, Inc. sales for the fiscal year ended June 30 were a record \$11,904,394, up from \$9,945,697 a year earlier, according to Bruce Merrill, president. Earnings in fiscal 1966 were \$276,970 or 23 cents a share, compared with \$1,036,478 or \$1.04 a share in the previous year. The company's backlog of orders and contracts at the end of fiscal 1966 was a record high. The backlog of regular business was more than \$8 million, plus the additional \$5 million of work delayed by the FCC's action during the fiscal year.

The Jerrold Corp. anticipated net earnings for the six months ending August 31, 1966, to be at record levels, according to Robert H. Beisswenger, president and chief executive officer. Beisswenger told the Philadelphia Securities Association that net profits would be approximately 93 cents per share, more than 50 per cent over the 61 cents per share for the same six-month period last year. Sales for the first six months were expected to reach the \$22 million level, compared with \$15.4 million for the same period a year ago. He indicated that pretax earnings would exceed \$4,000,000, compared to \$1,400,000 for the same period last year.

Superior Cable Corp. president J. L. Robb reported that the firm's net sales were up 37%, while net income rose 33% in comparison with the previous year. In releasing the figures, Robb pointed out that for the first time in the company's history, Superior Cable Corp.'s earnings, after taxes, exceeded two million dollars. Sales of \$25,656,000 for fiscal 1966 were reported. This compares with sales of \$18,697,000 for fiscal 1965. Net income for 1966 was \$2,214,000 or \$2.26 per share, as compared with net earnings of \$1,661,000 or \$1.61 a share in fiscal 1965.

Collins Radio Company announced record sales, earnings and backlog for its fiscal year ended July 29, 1966. Earnings for the 1966 fiscal year were \$6,677,000, or \$3.36 per share based on 2,286,192 shares, the average number outstanding during the year. Sales totaled \$388 million. For the previous fiscal year, sales were \$282 million and earnings were \$4,550,000 or \$2.04 per share based on 2,230,080 shares.

Bell Telephone and Telegraph Company of Canada reported a net income for the quarter ended June 30 of \$20,786,229, as compared with \$21,673,370

for the same period last year. Earnings per share for the quarter were 69 cents, down from the 73 cents a share for the same period last year.

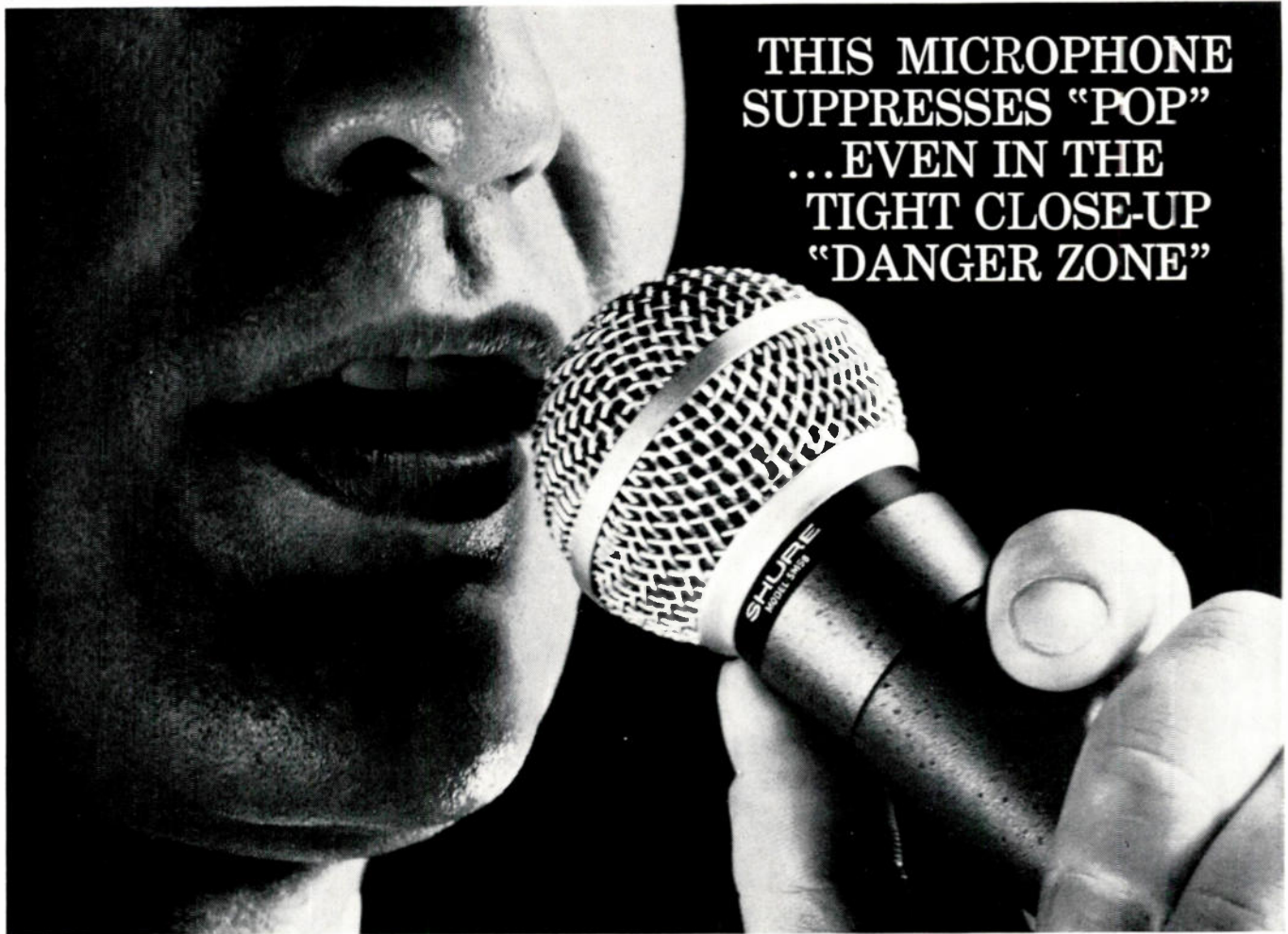
Astrodata, Inc., Anaheim, California-based entrant into CATV manufacturing, has issued its annual report for the year ended June 30. The firm reported net income of \$1,368,000 on sales of \$29,082,000, as compared with a net income for the previous year of \$1,047,000 on sales of \$22,452,000. Earnings per share were \$1.95 as compared with \$1.55 for the previous year.

Scientific-Atlanta, Inc. reported record sales and profit results for the fiscal year ended June 30, 1966, with a sales increase of 59% and a net profit increase of 46%. Consolidated net sales for the year were \$11,516,759 and net profit was \$549,580, compared with sales of \$7,220,423 and net profit of \$376,318 for the previous year. Earnings per share for fiscal 1966 were \$1.15. Glen P. Robinson, Jr., president of the Atlanta-based technical firm, reported a consolidated backlog of orders at June 30, 1966, of \$3,300,000, compared with \$2,000,000 at the same date last year.

Storer Broadcasting Company reported record operating earnings for the first six months of 1966. For the period ending June 30, 1966, the Miami-based owner and operator of twelve radio and television stations and several CATV systems earned an operating profit of \$4,819,115, an increase of 20.5% over the \$3,998,885 earned in the similar period for 1965, the previous six months' record.

Cox Broadcasting Corporation directors declared a regular quarterly cash dividend of 10 cents a share on the common stock, payable October 15, 1966 to stockholders of record of September 26, 1966.

United Utilities, Inc. reported earnings of 54 cents a share on an average of 14,943,800 shares outstanding for the first six months of 1966, as compared to 49 cents on 14,284,659 average shares for the same period in 1965. For the twelve months ended June 30, earnings were \$1.09 a share on 14,657,186 average shares outstanding or 12% higher than the restated 97 cents a share earned on 14,255,992 average shares in the preceding twelve months. □



**THIS MICROPHONE
SUPPRESSES "POP"
...EVEN IN THE
TIGHT CLOSE-UP
"DANGER ZONE"**

The Shure SM58 *self-windscreened* unidirectional microphone is ideal for broadcast uses such as remote news, sports, interview and vocal recordings because it eliminates or minimizes the irritating "pop" caused by explosive breath sounds. With the SM58 you will have the peace-of-mind assurance that you're delivering the quality audio that goes with pop-free pickup. It's great for studio announcing, too—or wherever the announcer or vocalist has the audio-degrading habit of "mouthing" the microphone. Of course, the same filters that eliminate pop also do away with the necessity for an add-on windscreen in outdoor uses.

On the other hand, the unusually effective unidirectional cardioid pickup pattern (uniform at *all* frequencies, in *all* planes) means that it is a real problem-solver where background noise is high or where the microphone must be operated at some distance from the performer. Incidentally,

but very important, the SM58 tends to control the low frequency "boominess" that is usually accented by close-up microphones.

All in all, close up or at a distance, the Shure SM58 solves the kind of ever-present perplexing problems the audio engineer may have felt were necessary evils. The SM58 might well be the finest all-purpose hand-held microphone in manufacture today. And, all things considered, it is moderate in cost.

Other features: the complete pop-proof filter assembly is instantly replaceable in the field, without tools. Filters can be easily cleaned, too. Stand or hand operation. Detachable cable. Rubber-mounted cartridge minimizes handling noise. Special TV-tested non-glare finish.

For additional information, write directly to Mr. Robert Carr, Manager of Professional Products Division, Shure Brothers, Inc., 222 Hartrey Ave., Evanston, Illinois 60204.

SHURE SM58

SELF-WINDSCREENED UNIDIRECTIONAL DYNAMIC MICROPHONE

OTHER SHURE PROFESSIONAL MICROPHONES... FOR SUPERIOR AUDIO



MODEL SM5 CARDIOID BOOM DYNAMIC

Because its cardioid directional pattern is uniquely uniform with frequency and symmetrical about its axis, the SM5 is singularly independent of the effects of environment. Even in extreme shooting situations (such as with tight sets, low ceilings, hard walls, low microphone angles, traffic or air-conditioner noise and rumble and changing distance) the SM5 minimizes sound coloration and ambient noise pickup.



MODEL SM76 3/4" OMNIDIRECTIONAL DYNAMIC

Ideal for interviews and audience participation, yet unusually smooth wide range response (40-20 KC) for critical music reproduction. Instantly detachable from stand. Steel case with Cannon connector.



MODEL SM50 OMNIDIRECTIONAL DYNAMIC

Self-windscreened and pop-free for news, sports, remotes, and interviews. Also ideal for many studio and control room applications. Comfortably balanced for hand or stand use. Natural response.

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Systems

Jerry Laufer has been appointed engineering vice president of Total Telecable, Inc. James A. Hirshfield has joined the firm as financial and marketing analyst. James T. Hunter will manage the firm's Bellingham, Washington system, and R. Calvin Sutliff will serve as manager of the Bellevue, Washington, system now under construction. Richard L. Rokes has been transferred from Bellingham to Bremerton, where he is overseeing the beginning phases of construction in that city.

Malcolm M. (Max) Ferguson has been appointed vice president and chief engineer of Philadelphia Community Antenna Television Company, a subsidiary of Bulletin Co. Ferguson formerly held engineering and management positions with Philco Corp., Jerrold Electronics and Television Communications, Inc.

William M. Bauce has joined Time-Life Broadcast as promotion assistant for CATV. Bauce's duties will include promotion, advertising and publicity in connection with the systems in which Time-Life Broadcast has an interest.

Arthur D. Heiny, former manager of systems in Binghampton and Vestal, New York, has been named general manager of Hightower of Poughkeepsie (N.Y.), Inc.

Phillip B. Callahan has been named general manager of Entron, Inc., Wilmington, North Carolina, system. Callahan formerly managed the Carlsbad, New Mexico system and was also president of the New Mexico CATV Association.

Victor S. Salladin, Hopewell Junction, New York, has been appointed general manager of WEOK Cablevision, Inc.

Joseph R. Dawson, Florence, South Carolina, has been named sales and merchandising manager for the recently formed Jefferson - Carolina Corp. Dawson, who has been with Jefferson Standard Broadcasting since 1959, will be headquartered in Greensboro.

Doug Junkin has been appointed manager and F. Verkaik chief engineer of Metro Cable TV Ltd., Toronto, Canada.

Frederick P. Selby has been elected a director of Reeves Broadcasting Corp. Selby, a management consultant, formerly represented Barrington Associates.

Paul H. Henson has been elected chairman of the board of United Utilities, Inc. Henson, who succeeds C. A. Scupin, continues as president and chief executive officer of the company. United Transmission, is the CATV division of the firm.

Jack R. Puckett has been appointed manager of Cable TV of Yakima Valley, Inc.

Suppliers

Robert H. Behringer has been appointed executive vice president and general manager of Kaiser-Cox Corp., Phoenix, Arizona. He succeeds Duane W. Crist, who recently resigned. Formerly vice president in charge of administration and marketing, Behringer came to Kaiser-Cox from General Time Corp., Stamford, Connecticut.

L. L. (Larry) Cunningham has been appointed manager of Brand-Rex Division, American Enka Corp.'s northwest branch in Seattle, Washington. Bruce W. Gardner, former northwest branch manager, has been transferred to the Brand-Rex executive offices in Willimantic, Connecticut, where he will serve as assistant manager, communications market.

R. Bruce Walters has been named director of contracting at Ameco, Inc. Walters will add his new responsibilities to those dictated by his position as president of Remcor, printed circuit board subsidiary of the firm. Ray M. Wood has been named director of manufacturing. Wood, formerly director of quality assurance, is replaced by Douglas B. Campbell, formerly manager of the department's engineering section.

Arthur D. Hall has been appointed to the newly-created position of vice president and chief engineer of Jerrold Electronics Corp. Hall was formerly with Bell Telephone Labs.

Milton "Chris" Walker has been named territorial manager, central area (north and south) for the Lindsay communications sales division of Anaconda Wire and Cable Company. Walker was previously with Automatic Electric Co. John A. Geddes has been named sales representative, north central area. Geddes joined Lindsay in 1961 from Sherron Metallic Corp. Edward N. Spence has been assigned as a salesman in Kansas and Missouri.

Allen Lipp has been appointed vice president, sales, for Viking Industries, Inc. Lipp has been with Viking since 1948.

Joseph L. Derocher has been promoted to the position of manager of contract sales at Cascade Electronics Limited. Alan Shiel, formerly with Vancouver Cablevision Limited, has been named manager of the firm's system engineering department.

Harold Musler has been named director of field engineering for the Systems Construction Corp. Musler was formerly chief engineer for the Broadcasting Company of the South.



Jerry Laufer



Larry Cunningham



Bruce Walters



Ray Wood



Arthur Hall



Ian Elliott

Richard M. Heil will represent the wire and cable division of Copperweld Steel Company in Minnesota, Nebraska, North and South Dakota, and western Wisconsin. Heil will make his headquarters in Minneapolis.

Viking Industries, Inc., of Hoboken, New Jersey, has announced the opening of new regional warehouses in Kansas City, Missouri; Seattle, Washington; Los Angeles, California; Greenville, Mississippi; Chicago, Illinois, and Miami, Florida.

Space Systems Sales and Engineering, Inc. will be the western representative for American Electronic Labs, Colmar, Pennsylvania. Space System Sales and Engineering is located in Albuquerque, New Mexico; Denver, Colo. and Bountiful, Utah.

Columbia Wire and Supply Company has changed its name to Columbia Wire Products Company. The name change was instituted in order to better describe the company's diversification in marketing and manufacturing.

Superior Cable Corp. recently broke ground at the Mount Pleasant, Iowa, site of the firm's new wire and cable plant. The Mount Pleasant division brings the total number of Superior's manufacturing facilities to six.

Cascade Communications, Inc., Wenatchee, Washington, has changed its name to Cascade Line Constructors, Inc.

DeLome Cumbaa, Jr. has been named Southeastern regional sales manager for products of the International Telephone and Telegraph Corp. wire and cable division.

Mary Lou Campbell has been named administrative assistant of operations at American Cable Television, Inc.

Professional

Ian A. Elliott has been elected president of the Montana Cable Television Association. Other officers elected by the association are: vice president, Robert E. Morrison and secretary-treasurer, Stanley G. Stephens. Steve Schoen, Robert Scherpenseel and McLean A. Clark were elected to the board of directors.

David W. Evans & Associates will serve as advertising and public relations counsel for TeleMation, Inc.

Compton Jones Associates of Bethesda, Maryland, has been named advertising and public relations counsel for Entron, Inc.

Frank J. Keenan has been retained as a management consultant for General CATV Corp.

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CALENDAR

OCTOBER 14 The North Carolina CATV Association will meet at the Maggie Valley Country Club Motor Lodges, Maggie Valley, North Carolina. For more information contact Video Cable Company, Waynesville, North Carolina, telephone (704) 452-4642.

OCTOBER 27-30 The West Virginia and Mid-Atlantic Community TV Associations will hold their fall meeting at the Greenbrier Hotel, White Sulphur Springs, West Virginia. Contact Bert Cousins, Box 907, Fairmont, West Virginia, for more information.

Listed below are the dates scheduled for the fall NCTA Regional meetings. Featured topics for these meetings will include legislative activities; legal problems; future development and prospects; introduction of the new program of member services; and special emphasis on the informational program now being prepared to promote the industry around the country. For more information concerning these meetings, contact your area NCTA officers directors.

OCTOBER 10 Region 1 will meet at the Plaza Hotel in New York City, New York.

OCTOBER 15 Region 4 will meet at the Marriott Motor Hotel in Dallas, Texas.

OCTOBER 21 Region 7 will meet at the Davenport Hotel in Spokane, Washington.

OCTOBER 24 Region 8 will meet at the Tropicana Hotel in Las Vegas, Nevada.

OCTOBER 26 Region 6 will meet at the Radisson Hotel in Minneapolis, Minnesota.

OCTOBER 31 Region 2 will meet at the Sheraton-Gibson Hotel in Cincinnati, Ohio.

NOVEMBER 2 Region 3 will meet at the Dinkler Plaza Hotel in Atlanta, Georgia.

NOVEMBER 4 Region 4 will meet at the Skirvin Hotel in Oklahoma City, Oklahoma, in conjunction with the Mid-America CATV Association. Contact G. H. Dodson, Box 24, Sayre, Oklahoma for more information.



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49 East Fourth Street, Cincinnati, Ohio (513) 241-7843
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50 Public Square, Cleveland, Ohio (216) 771 2666
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- PHELPS ODGE COPPER PRODUCTS CORP.**
222 Milwaukee Street, Suite 405
Denver, Colorado (303) 388-4157
- PHELPS ODGE COPPER PRODUCTS CORP.**
202 Plaza Office Building, Merle May Plaza
Des Moines, Iowa (515) 276-4565
- PHELPS ODGE COPPER PRODUCTS CORP.**
Mutual Building, Room 1200
28 West Adams Avenue, Detroit, Michigan (313) 961-4090
- PHELPS ODGE COPPER PRODUCTS CORP.**
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- * **PHELPS ODGE COPPER PRODUCTS CORP.**
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Memphis, Tennessee (901) 525-7726
- PHELPS ODGE COPPER PRODUCTS CORP.**
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Philadelphia, Pennsylvania (215) 225 6600
- PHELPS ODGE COPPER PRODUCTS CORP.**
Del Webb Office Building, Suite 1411
3800 North Central Avenue, Phoenix, Arizona
(602) 264-4853
- PHELPS ODGE COPPER PRODUCTS CORP**
Oliver Building, Mellon Square
Pittsburgh, Pennsylvania (412) 391-1550
- * **PHELPS ODGE COPPER PRODUCTS CORP.**
2950 N. W. Yeon Avenue, Portland, Oregon (503) 226-6116
- PHELPS ODGE COPPER PRODUCTS CORP.**
P. O. Box 188, Carolina, Puerto Rico, 769-0145
- PHELPS ODGE COPPER PRODUCTS CORP.**
1518 Willow Lawn Drive, P. O. Box 8685, Richmond, Virginia
(703) 288 3147
- PHELPS ODGE COPPER PRODUCTS CORP.**
312 Anderson Hall Building
75 College Avenue, Rochester, New York (716) 473-9230
- PHELPS ODGE COPPER PRODUCTS CORP.**
230 South Bemistan - Suite 1006, Clayton, Missouri
(314) 863-0424
- PHELPS ODGE COPPER PRODUCTS CORP.**
Surety Life Building, Room 406
1935 South Main Street, Salt Lake City, Utah (801) 487-0334
- * **PHELPS ODGE COPPER PRODUCTS CORP.**
30 Ingald Road, Burlingame, California (415) 697-7333
- PHELPS ODGE COPPER PRODUCTS CORP.**
Carlson Building, Suite 108
808 - 106th Avenue, N. E., Bellevue, Washington
(206) 454-5026
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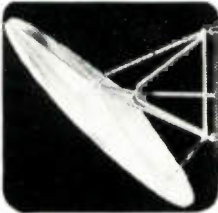
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SYSTEM SALES

General Television, Inc. has announced the acquisition of four systems from Diamond State CATV, Inc. The systems, located in Laurel-Seaford, Milford, Georgetown and Rehoboth Beach-Lewes, Delaware, currently serve 1,600 customers with a potential of 12,000 subscribers.

Golden West Broadcasting has sold its controlling stock in Cable TV of Santa Barbara (California) Inc. to Philadelphia Community Antenna Television Co., a subsidiary of the Bulletin Company of Philadelphia.

Sports Network, Inc. has purchased the system of R. D. Kirby in Hughsville, Pennsylvania. The system has approximately 700 subscribers. Williams and Associates negotiated the transaction.

Dale Greenhouse and Calvin Fraser, owners of the Pampa (Texas) Cable TV, Inc. system, have announced that they have merged with American Cable Television, Inc. ACTI is currently operating 5 systems in Texas.

Wellsville (New York) TV Cable Co., Inc. has been sold to Allegany Video Inc., which is headed by W. B. Harrison. Gus and John Rigas were the former owners of the system.

Charles Shuster, Kittanning, Pa. has announced that negotiations have been completed on the sale of Valley Master Cable Inc., which serves Springboro, Conneautville, Blooming Valley and Guys Mills, Pennsylvania, to George Kerr of Butler, Pennsylvania.

GT&E Communications, Inc. has announced the acquisition of George TV Cable Co., Inc. and three affiliated Georgia companies, Toombs County TV Cable, Inc., Athens TV Cable, Inc. and Toccoa TV Cable, Inc. GT&E Communications is a subsidiary of General Telephone and Electronics Corp.

Entron Inc., Silver Spring, Maryland, has purchased the Houma (Louisiana) TV Cable Co., Inc. from Spencer Kennedy Laboratories, Inc. The broker was Daniels & Associates.

Rex A. Bradley, vice president and general manager of the Norfolk-based TeleCable Corp. has announced the

acquisition of systems serving Selma and Auburn, Alabama. The former owner was New England Industries, of New York City.

Derwood Godwin, president of Fayetteville Cablevision, Inc., and Frank Fogarty, president of Meridith-Avco, Inc., have jointly announced the transfer of the cable television system serving Fayetteville, North Carolina to Meredith-Avco, Inc.

Oregon CATV, Inc. has purchased the Woodward, Oklahoma, system, Community TV, Inc., from Roy L. Butcher and the Catfish, Inc., system serving Emporia, Kansas from William L. White. Oregon CATV, Inc. owns and operates systems at Baker, Union and LaGrande, Oregon. Broker in the transactions was Daniels & Associates.

Glen R. Jones, president of Cowpoke Cable Co., Littleton, Colorado, reports that he has purchased the Georgetown, Colorado, franchise from Mel Reichwein.

Charles W. Fribley Jr. has announced the sale of Corning (New York) Community Television Inc. to Newhouse Broadcasting Corp. (WSYR Syracuse), a subsidiary of Newhouse Newspapers, Inc. WSYR recently acquired a 50% interest in the New York-Penn Microwave Corp., which was established by Fribley.

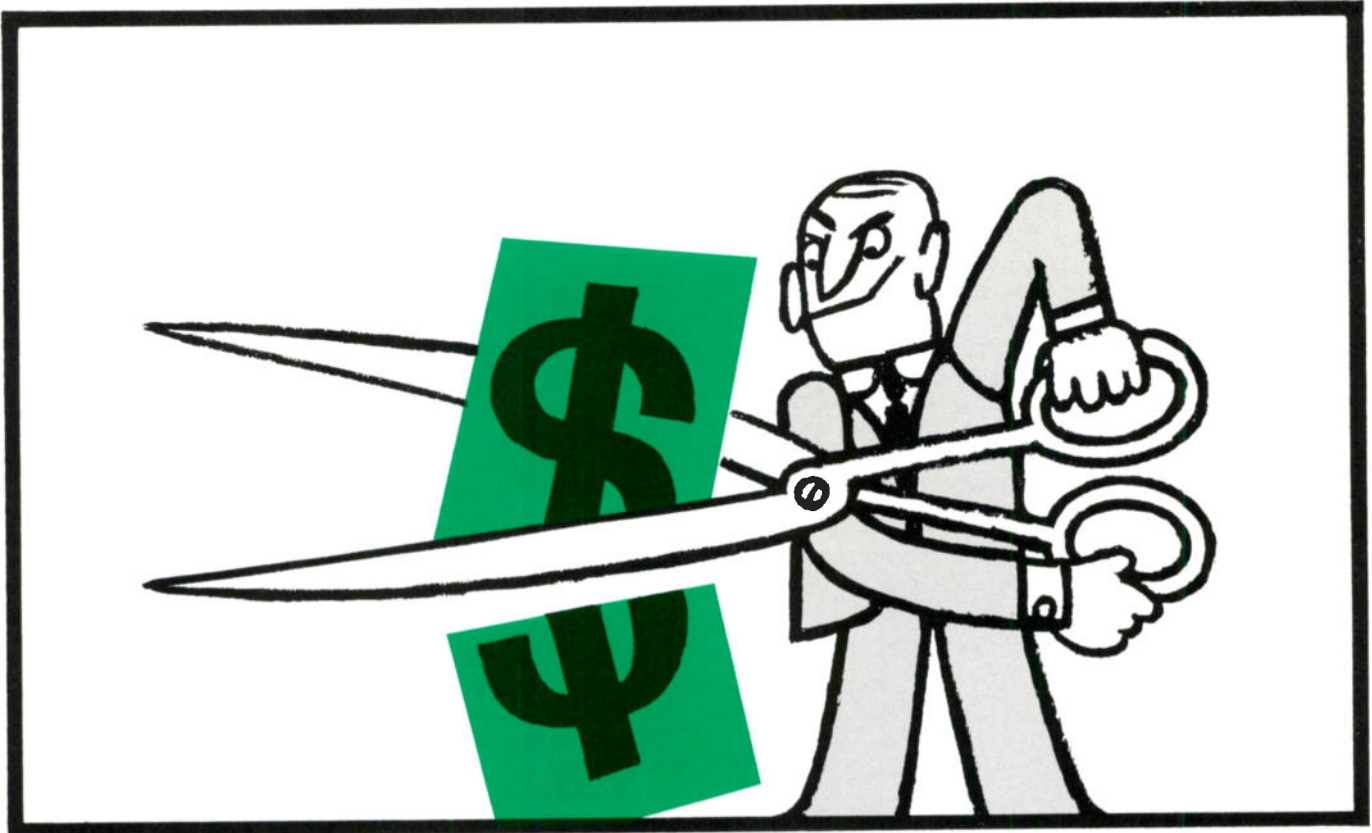
Okanogan (Washington) Valley Cable Co., a firm which serves Okanogan, Omak and Tonasket, has been purchased by Columbia Television, Inc., of Kennewick, Washington.

W. Clarke Swanson, Jr., of Omaha, Nebraska, has purchased the Highlands Cable Television system (Sebring, Florida) from Howard Warsaw.

TV Antenna System, Inc., New Philadelphia, Ohio, has been sold to Tower Antennas, Inc., Coshocton, Ohio. Disclosed sale price was listed as "in excess of \$1.5 millions."

Multiple-Pix Inc., Alliance Nebraska, has decided to exercise its option to buy Western TV System, Inc., which serves Deadwood and Lead, South Dakota. □

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How a CATV System Began Scheduled

Program Origination for \$200

System manager and technician produced Public Service program schedule with the help of footballers, goblins, teachers, churches, Jaycees, merchants, coin collectors, Boy Scouts and inmates. Starting with time/weather and background music service, the only other prerequisite was a big imagination!

By Stanley M. Searle

Eighteen months ago the Daniels Management Company's cable system at Fort Madison, Iowa was a typical CATV operation. It served 1,100 subscribers in the community of 16,000 persons, providing 7 channels of television programming and a TeleMation "Weather Channel." The company achieved national notoriety when early this year it was the first system to install the new Associated Press news-wire service, using TeleMation "News Channel" equipment.



Coach Jim Youel (left) and Joe Berry are shown during the weekly Channel 5 High School Football Program.

But the most exciting aspect of the Fort Madison operation has been the imaginative production of local programs emanating from the CATV company's own studios.

Iowa Video, Inc. is officed at 617 Avenue G in downtown Fort Madison. Its expansive front windows, displaying monitors tuned to the channels offered by the system, are dominated by a huge theater-type marquee which, prior to September, 1965, proclaimed the merits of cable television.

Today it informs passersby and the citizenry at large of local happenings and events that are near and dear to their hearts. This in itself, however, is only a

minor aspect of the in-depth community service now provided by what Fort Madison calls its "own Channel 5."

Bill Daniels, president of the sprawling Daniels' operation—which operates 30 cable television systems nationwide, with more than 50,000 subscribers—was in Fort Madison last fall for a routine visit with Iowa Video's young general manager, Joe Berry. Surveying the ample studio space accommodating the "Weather Channel," Daniels remarked that there was, indeed, enough room to permit program origination.

As Berry digested the thought, Daniels followed up with, "Why not?"

Armed with the idea, the implementation was rather easy for the intrepid pair. The time/weather camera was easily mounted on a tripod. A counter-type desk set was constructed with a background showcard reading, "Fort Madison's Own Channel 5."

Joe Berry, by acclamation, became master of ceremonies, moderator, host, interviewer and, as it later developed, actor, comedian and impersonator.



Marquee on cable system office proclaims local programming features to be seen on the cable that evening.

The 31-year old Berry, fortunately, had majored in Radio-TV, Speech and Production at College of Idaho, and had managed at radio station in Aztec, N. M. He accepted the extra-curricular assignments with genuine enthusiasm.

Iowa Video's chief technician, Casey Lopez, somehow became the chief cameraman, as well. Since there was no view-finder on the camera, Lopez tuned a monitor to Channel 5 and used it to frame his shots.

Along with weather information, Channel 5 previously had provided FM music. A microphone plugged into the FM modulator solved the in-studio audio

first programming effort was completely favorable.

Once Channel 5 was launched as a community service, it was not difficult to find other areas of interest to explore in a continuation of that service.

Fort Madison High School fielded a light but fighting football team in 1965, one that gave every indication of giving neighboring teams some real battles. Berry decided to bring coach Jim Youel and a few key players into the studio for an interview. He used the marquee and show cards on the time weather channel to announce the date and the time of the interview.

Granny Cable (Joe Berry) talks with spooks and goblins during pre-Halloween shows. Program on Halloween night attracted large crowds to the studio.



problem. Both the "Weather Channel" and the FM modulator, located in the cable office, were already hooked into the system's first amplifier stage at the city limits. The antenna site itself is 5 miles outside Fort Madison.

Daniels says the same set-up could have been arranged at the head-end building if it had been necessary.

The stage was set—but what about programming? The traditional CATV operator's almost instinctive concern for public service produced the first live, studio-originated program.

Concurrent with Iowa Video's studio innovation came news that the W. A. Sheaffer Pen Co., Fort Madison's largest industry, was to be sold to Textron, Inc. of Providence, R. I. Realizing the importance of such a transaction to townspeople, more than half of whom would be directly affected by such a sale, Bill Daniels contacted his friend, Royal Little, founder and head of Textron, and asked for precise information.

The first public service broadcast on Channel 5 saw Joe Berry acting as host interviewer to Daniels and Mayor Robert Tibbets. Viewers were assured by Daniels that Textron would retain management and employees of the Sheaffer Co. The mayor and Daniels discussed information provided by Mr. Little, which included the probability that Textron—producers of Bell helicopters, Speidel watch bands, Homelite chain saws and a number of other major items—doubtless would bring expanded industry into Fort Madison. Fort Madison's spontaneous response to Channel 5's

Berry recalls he gave little thought at the time to the fact that he was up against some pretty strong opposition on the other channels offered by Iowa Video. "I doubt that anyone ever before had planned a television program while making 7 other channels available to his potential audience," he says.

The first half-hour broadcast with the team, with Berry asking the coach and the players about their plans, hopes and fears, nevertheless drew a good response from cable subscribers.

The football team went to the end of the season without a loss, and each week Berry brought the coach and a few players into the Channel 5 studio to recap plays and analyze possible difficulties in upcoming games. A telephone was placed on set, and viewers called in to speak with Coach Youel, Berry, a favorite player, or just to armchair a play or two.

"These weekly programs helped build interest in the team, gave viewers a chance to see the players and ask questions of them and the coach," Berry says. "And since the programs were only received by subscribers to the system, our new hook-up business got a shot in the arm."

Shortly after beginning the broadcasts, Berry decided to initiate some fun for the youngsters in connection with Halloween. Wearing a wig and appropriate trappings, calling himself "Granny Cable," Berry invited Fort Madison children to come down to the studio for treats and to show off their costumes.

Ably assisted by his pretty wife, Diane, Berry still was not prepared for the tremendous response by

the children and their parents. On Halloween, after two nights of in-studio broadcasts, he moved lighting and camera out to the street in order to accommodate the crowd.

Slated for one hour on the air, Berry soon had miniature ghosts and goblins lined up for more than a block, with mothers still phoning to see if they had time to bring their little spooks down to appear on television. The program continued for a full three hours.

"This was not only a unique experience for the children, but gained for us a very favorable reaction from the townspeople for our efforts toward a safe and interesting Halloween," Berry says.

Meanwhile, workmen excavating an area of the Sheaffer Pen Co. parking lot, for constructing a water reservoir, found evidence of the old fort for which Fort Madison is named.

A group formed by the Jaycees, known as "Old Fort Madison, Inc.," dedicated to the pursuit of the fort's history and the collection of artifacts of the period, descended on the parking lot in a body. The company generously delayed its construction while the workmen continued to dig and expose the long-hidden remains of the fort.

Berry scheduled a full week of hour-long programs in cooperation with the Old Fort Madison group. Monday night was given over to the history of the fort. Tuesday night saw the group's experts outlining for the Channel 5 audience the discovery of the ruins and displaying some of the artifacts thus far unearthed, which included bits of crockery, glass and building hardware. A mock-up of the fort was ex-

amined in detail by the camera, and each section's function was explained to the viewer.

Subsequent nights were devoted to fund raising for the construction of a proper museum for the remains of the fort. Viewers were invited to call in during each program and question the experts.

The drive for funds was highly successful. A letter from the president of the Old Fort Madison group, B. B. Hesse, credits Joe Berry and Channel 5 with "carrying the project to the people," and contributing greatly to its achievement.

Channel 5 moved into high gear in its efforts to provide service to the community. It scheduled programs on church events, scouting, bake sales, football, basketball, wrestling, coin collecting, Jaycee activities, city conventions, high school plays, retail merchant committee plans and local bond issues. Mayor Tibbets has used Channel 5 on a number of occasions for the purpose of making proclamations.



George Alton, Joe Berry and Louis Koch during an origination on the excavation of Old Fort Madison.

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- Pictures a typical Cable CATV home installation.
- Illustrates how a Cable TV Community becomes a Better Community.
- Gives disadvantages and dangers of rooftop antennas.
- Answers frequently asked questions about Cable TV.



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Among the series of programs with wide local interest were plays produced by Robert Fahey, director of Speech and Drama at Fort Madison High School. Four of Fahey's top students also assist Berry from time to time in interviewer-moderator roles.

"These youngsters work in a strictly professional manner," Berry says. "They have never once given the impression of high school kids playing at television." And instructor Fahey is delighted with the educational value Channel 5 affords his students, expounding at length on the benefits of "on-the-job training" provided the youngsters.

An interesting sidelight on Iowa Video's subscriber service is the fact that it recently wired 30 outlets in the Iowa State Penitentiary. Now Berry, with the cooperation of Warden Bennett, plans to inaugurate a series of programs this fall which will permit minimum-security inmates to appear on Channel 5; to perform, entertain and candidly discuss the events that led to their imprisonment.

"With the inmates pointing out the mistakes they made, advising the viewing audience on the pitfalls to beware of, I feel these programs can be extremely helpful to the youngster who perhaps is about to make his first big mistake," Berry says.

Other plans for the future, Berry says, include the purchase of a zoom lens for the camera—perhaps even the purchase of another camera. Costs involved

thus far are minimal: the desk-set cost \$75, the identification showcard was \$5, the microphone \$65 and the tripod \$27.

No additional lighting was necessary for the studio: the normal room lighting provided by two fluorescent fixtures is more than adequate for the GE T14 camera.

"Any CATV operator can provide community service broadcasts with a maximum outlay of \$200 if he has a time/weather unit and an FM music system



Joe Berry talks to viewing children during Christmas program. Others came to the studio to see Santa during the show.

already in operation," Berry says. "The manager doesn't even have to participate in the programming if he doesn't want to. The clergy, the Jaycees and other business organizations have a host of good, interesting speakers to conduct programs. Your high school speech and drama teacher and his class will be delighted to work with you, even during summer months."

He adds, "If there's a college or university nearby, your talent reservoir is limitless."

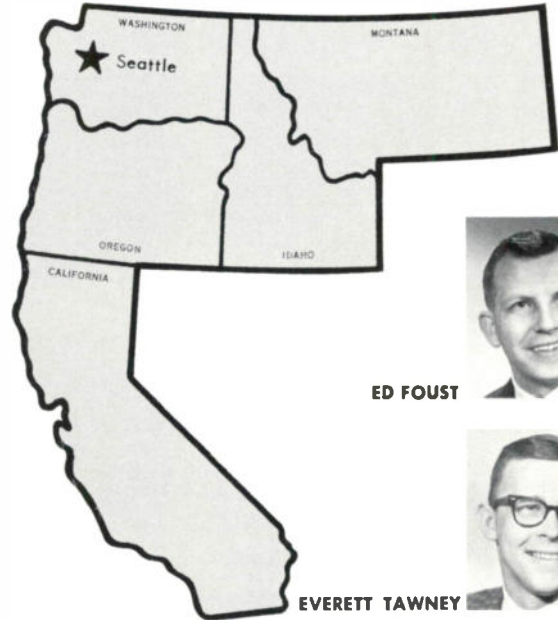
Berry says Channel 5 programming has made Iowa Video an "integral, more useful part of the community. Even the newspaper and radio stations advertise our programming, at no cost to us."

"We are considered as something more than a highly-efficient cable service. We belong to Fort Madison."

Berry is no wild-eyed crusader. He is proud, and justifiably so, of Iowa Video's stature in the community. He knows that the cable system is providing services no other facility can offer. Fort Madison cannot support a commercial television, but if it could, the chances for allocating the abundance of public service time which Iowa Video makes available would be slim.

"In my opinion," Berry says, "any CATV operator who ignores this opportunity to render a tremendous service to his community is unaware of the real value and good will his operation is missing."

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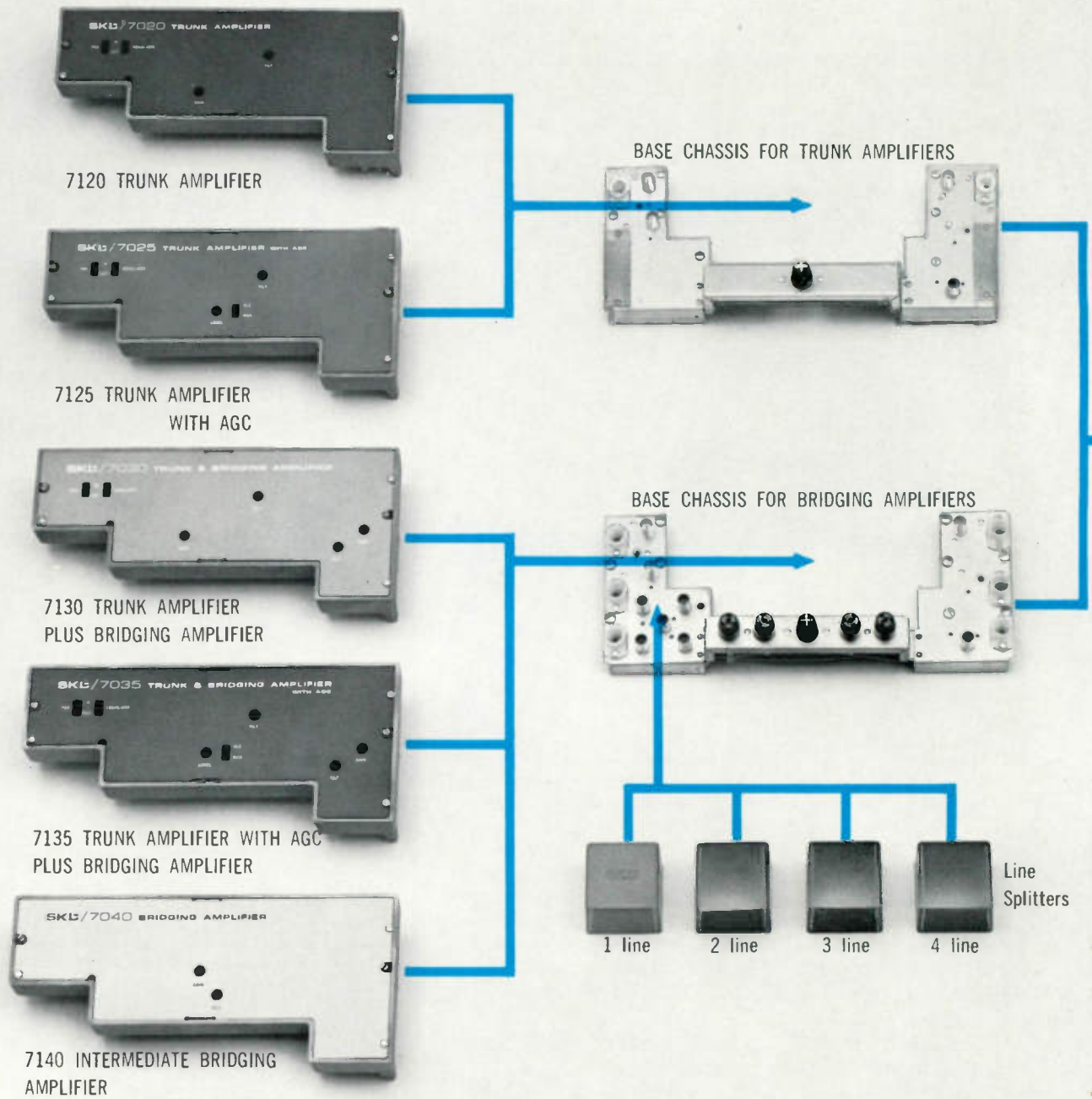
CATV Equipment Co. has jobbing arrangements with virtually every manufacturer. What we choose to sell, and what is carried in inventory, are those items which we sincerely believe are the finest available for specific applications at any given time. As new products are tested and approved, they are added to the line.

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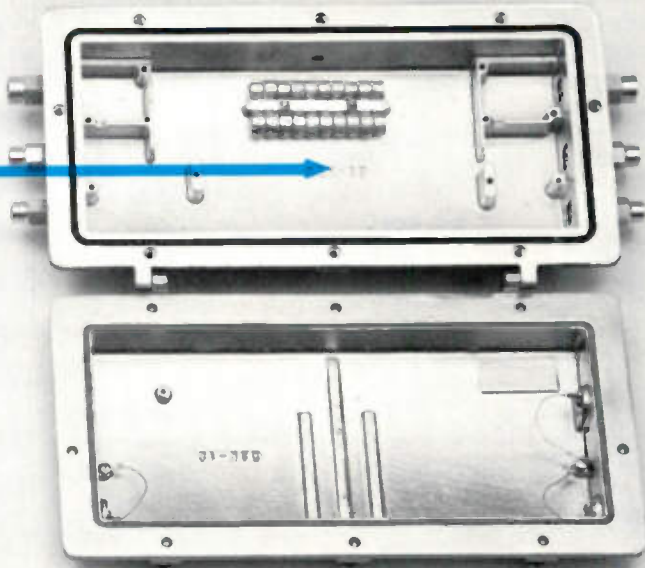
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Response Flatness	$\pm .25$ dB	$\pm .5$ dB	$\pm .5$ dB
Min. Full Gain —Ch. 13	26 dB ⁽¹⁾	18 dB ⁽²⁾	33 dB ⁽³⁾
Min. Return Loss, I&O	16 dB	16 dB	16 dB
Max. Noise Figure Ch. 2 (Full gain) Ch. 13	8 11	— —	26 22
Min. Output Level	48 dBmv. ⁽⁴⁾	48 dBmv. ⁽⁴⁾	48 dBmv. ⁽⁴⁾

(1) 25 dB for trunk/bridging units. (2) Above trunk amplifier output level. (3) Before splitting. Splitter loss is 0 to 6.5 dB. (4) Output at high channels for 12 carrier cross-modulation of -57 dB. Bridging amplifier output before splitting.

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As Community Programming Comes Of Age

CATV Origination Up To Now

By Charles Wigutow

If cable television is forced by opposing forces to empty a number of channels even though the capability of filling them exists and subscribers want additional services, then the industry must look to other sources of programming to occupy those vacant spaces. This is nothing new. On the contrary, it is part of a process that has been going on for some time. A combination of sensitivity to public demand plus business ingenuity in seeking ways of making systems more attractive to its viewers has brought about a variety of services unique to this medium.

The simplest extension into non-television services was the pick up of nearby FM radio stations and distributing these signals over unused cable channels. There was immediate appreciation from an audience with the special tastes for this type of programming. The FM broadcasters loved this, too, because it gave them listeners who did not own FM sets. A variation of this practice where no empty channels were available on the system was to bring in FM stations on frequencies that could be picked up by an FM tuner in the home. A new market was opened to radio and TV dealers for the sale of these tuners. So was constructed another bridge in the beneficial association of cable system and dealer.

Where no FM signals were available, some systems made use of a continuous tape with background music. The music was generally determined by the cable operator's assessment of his audience's desires. With the use of tape, many possibilities were opened up. The scores of interesting educational tapes, or recordings of exciting audio broadcasts that could be given the public without commercial intrusion promised some solid cultural achievements for CATV.

Video was not neglected. The B & K Dynascan became an elementary television station through the simple expedient of inserting an inscribed card into the proper receptacle in the equipment. These public announcements varied from seeking the return of a lost dog to the notice of a coming election. As simple a means of transmitting picture information as it was, cable companies gratifyingly found themselves besieged by requests to carry a wide variety of public notices.

Another step that called for mechanical and electronic sophistication was the introduction of time and weather information. The telephone company had really shown the pattern in the larger cities. Time or weather were available by a telephone call, and these were popular services. There was nothing more natural than having a continuous display of a clock and a set of weather dials. This was particularly important in areas of violent weather changes.

The original weather reporting apparatus consisted of a camera moving back and forth on a track and hesitating in front of each dial as it passed this information into the system. At either end was a place for a sign board and also a place for a 35mm. slide projector. Background music by tape or from an FM station usually accompanied these displays.

This system was varied later to a camera held in one spot while it swung from side to side to read instruments arranged in an arc. One new weather unit is called Weather-Matic, a solid-state programming device that prints out a display of time and weather information. With this can be produced changing colored backgrounds on the home color TV receiver without the use of a color pick up camera. To this can be coupled the Weather-All on which

messages, emergencies, news bulletins, or announcements of community events can be programmed for instantaneous or delayed showing.

In the last year the Associated Press and United Press International (AP and UPI) have come into the cable television home. These news services bring a camera to bear on a ticker tape as it unrolls, and through all 24 hours of the day the full panorama of news unfolds to the individual subscriber in the same way it appears in the broadcast station or newspaper office. Having an individual news ticker in the home up to this point was absolutely unheard of. In a way, this fulfilled the predictions of imaginative writers to the effect that some day a newspaper would be published in the home by the family television set. Here it was in fact, even though the printed page did not roll out of the machine.

It has been in the area of education that cable television has made its major contribution to community life. First by bringing distant educational stations into towns that would ordinarily be deprived of these programs. And, again, by opening channels to local educational institutions.

Where there is an inventive mind and where there is a need, the mind will find expression and the need will be served. Cable television has been an enterprising business. In Farmington, New Mexico when a number of translators were introduced, cable TV began to show its subscribers full length feature films. The publisher of the Emporia, Kansas Gazette and owner of the cable system there used his talents for both his enterprises by telecasting regular news programs over the cable lines. Other systems brought to their subscribers the excitement of bingo. Some systems, notably,

Decatur, Alabama began showing free films turned out by industry and educational institutions.

Hurricane warnings and police alarms have alerted threatened populations by cable. Another dimension has been added to cable in a few instances, that is communication from the subscriber to a central point. Thus a fire alarm can be triggered in the local fire house, or a police signal to the local law men.

A cable system is a unique joining of dwellings to each other and to all the operations within a city. It is a physical web that draws the community together. A single voice or picture can be seen and heard at the same moment. It is possible by introducing switching systems to tie together all or any parts of the community. And further, this web can reasonably be related to any other similar web of coaxial cables. With this kind of potential for community communications and service, it is very unlikely that those who are afraid to let it grow, will keep cable television from assuming its right functions for too long a time. □

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Bob Searle, Managing Editor, TV & Communications, P. O. Box 63992, Oklahoma City, Oklahoma

Basic Equipment For Program Origination

By Donald Atwell

Cable television operators are no longer asking whether they should get into origination. Rather, they want to know how. Moving from the simplest format to full studio use, these steps are:

(1) Open a channel to an FM radio station. You can also do this for a friendly AM station. If you add a flying spot scanner, or a Dynascan you can show a picture of the radio personality who is broadcasting, or even arrange to have slides drop into place in time to the broadcast. You will need a 4½ mc modulator and a flying spot scanner. The cost for both should be about \$600. Or you can buy a tape deck and rent long playing tape. You should buy several microphones. Together with an audio preamp, you have the equivalent of a small radio studio.

(2) Add a camera, and now you have the makings of a studio. A

good quality. The best known among the distributors are: Association Films, Modern Talking Picture Service, and Sterling Movies U.S.A. The reason you get these films without cost is that the distributors collect from the industries sponsoring the picture. If you are not aware of these pictures, you will be pleasantly surprised at how free they are from commercialism. There are many good educational films available too. You can look into standard commercial films, too. The cost is not high. All you need add to the projector (with sound) for a cost of about \$700 is a shadow or black box consisting of a mirror set at 45 degrees angle and a translucent screen. This is no major expense item. What will cost is the Vidicon camera which scans the translucent screen to copy the picture that goes out on the system.



Control console for Globe-Miami, Arizona system built by Clyde Fette built out of materials at hand.

good camera with a zoom lens can cost in the neighborhood of \$3,000. However, cameras focusing on fixed objects should cost less—a lot less. The camera is mounted on a tripod. Adequate banks of flood lamps can be built into your studio. A suggestion is the use of four 150 watt frosted flood lamps. If you conduct interviews or sponsor talks, the backgrounds should be dark so as not to distract the viewer from the speaker.

(3) Video tape recorders are down to as little as \$1,500. Their uses are many. For example, you can tape local high school games and play them back to the community several times over.

(4) A film projector will probably be the heart of your origination program. There are free films of

Does this sound expensive? Or frightfully complicated? Here is what one system operator told the NCTA members at the last convention.

"The total capital and expense costs of these activities has not exceeded \$4,000 to date." And this is what has been done: "College football films with commentary by coaches, boy scout programs, preschool shows using the children of subscribers, meetings with the mayor, city officials, and councilmen, local news programs, charity drives in cooperation with local service groups, local sports shows, women talk shows on community affairs, pageant queen contests, and movies oriented to the geographical areas supplied free of charge by several institutions and companies." □

A Step By Step Guide To

CATV Originations

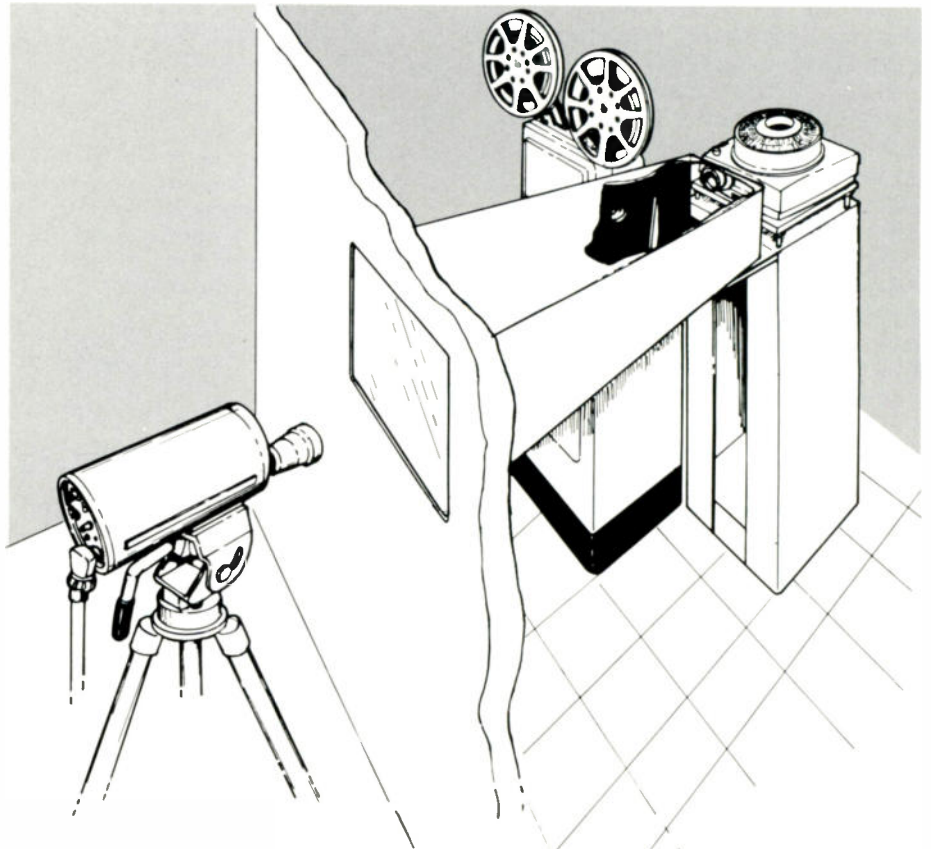
By Lyle O. Keys

Local origination has become one of the most important challenges facing the CATV operator today. This has come about as a result of several factors—the copyright decision, which has for the most part laid to rest the “pure antenna” concept; the need for systems to identify more closely with their communities; the need for more program material to fill the gaps left by non-duplication; and, finally, the proven ability of local origination, properly used, to attract and hold subscribers. Many industry experts believe that at such time as the impact of the copyright decision is fully felt, locally originated programs will be the mainstay of many CATV systems’ operation. Whether or not this belief is borne out by future developments the modern CATV operator has adequate provocation to enter into local origination for the reasons mentioned above.

As President Ford admonished operators at the Miami convention, “Our industry was born in public service. This industry will be reborn because of an even greater need for its public service programs. Originations of local, live, public service programming is our responsibility. It is a responsibility that we must discharge. I urge each of you, if it is at all technically and economically feasible, to immediately institute on one channel of your systems, programs designed to serve the needs, desires and interests of the community of which you are a part.”

AUTOMATIC VS. LIVE

All of us are familiar with the automatic time/weather equipment. This is local origination in simplest form. It has proven to be an essential element in CATV systems and is generally the first form



Shadow box arrangement for using studio camera for film and slide pickup.

of local origination introduced in a system.

With the advent of automatic news equipment many systems have adopted this as another means of attracting viewers through automatic, twenty-four hour presentation of local, regional, and national news. This service, while more expensive than time/weather, has proven even more potent in attracting subscribers.

Local, live originations properly done can be much more effective than either news or weather in pulling new subscribers. Unfortunately, live programming costs are considerably higher on a per hour

basis than for the automatic services. It therefore behooves an operator to choose his live offerings judiciously, selecting programs with maximum local interest and minimum production expense, also, he should be careful to select programs where the lack of professional talent will be least apparent.

QUALITY CONSIDERATIONS

The CATV “broadcaster” can hardly hope to match the networks in the area of talent and production, nor can he justify the expense of color origination equipment. These disadvantages can be offset by offering the most of what the networks and regional stations

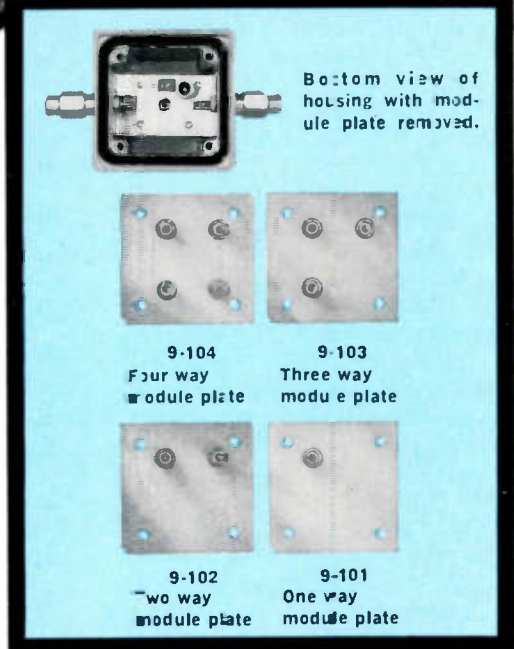
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offer the least. This can best be done by concentrating on areas of maximum community interest and by taking advantage of modern portable equipment by going to the scene of activity and recording topics of interest as they occur.

There are now perhaps forty brands of video recorders available to the buyer, most of them of foreign manufacture, with each of them using a different recording format. This can present a perplexing situation to the CATV equip-

new offerings of Ampex Corporation have the quality capabilities that we believe to be necessary for CATV use.

Much is being said about low-cost color tape recorders. To our knowledge all of these recorders, including Ampex, are usable in color only by being connected to a specially modified color receiver. We see no immediate prospect for a color recorder having potential for viewing in color by CATV subscribers.

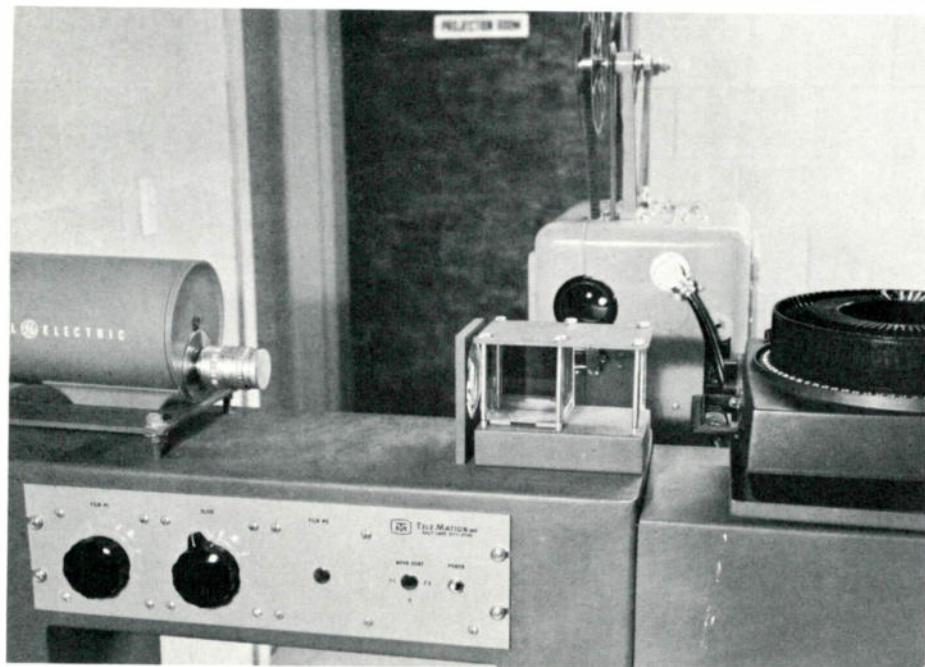
CAMERA EQUIPMENT

Until recently it was unthinkable for live television to be attempted with less than two cameras. One camera was ordinarily used with a wide-angle lens for cover shots, while the other one handled close-ups. When a different local length lens was required the director would switch to one camera while the cameraman at the second camera rotated his turret to a new lens position. The introduction of zoom lenses having 10:1 range of focal length, along with good resolution and speed characteristics, has brought about a revolution in the manufacture of television cameras. They no longer come equipped with turrets but are provided with a single built-in 10:1 zoom lens.

Using a small viewfinder camera equipped with 10:1 lens and a portable video tape recorder the modern CATV operator can send out a one-man remote crew to record a local high school athletic event, with assurance that the quality of production will be adequate for his purposes. After the one-man crew completes the recording session, the coach can be invited to the studio to dub in the play-by-play commentary and color. Finally, this "home town production" can be televised during prime-time evening hours. This is local origination in its finest and most potent form.

MULTIPLE CAMERA OPERATION

CATV operators entering into live, local origination can expect that its popularity (and profitability) will soon warrant use of additional facilities. A second camera can often avoid scheduling conflicts; can be used to pick up flip cards or promotional information during shows; can be used as a



TeleMation TMM-303 optical multiplexer switches two projectors plus slide unit into one vidicon camera.

His equipment need not be expensive although it should be capable of quality such that it compares favorably with monochrome network service. It should be highly portable, reliable, and flexible. Equipment described below meets these criteria.

RECORDING EQUIPMENT

At the heart of any local origination facility is the video recorder. The advent of video recording has brought about a revolution in televising techniques, where very few programs are carried on a direct live basis. The advantages are such that television stations are able to justify the purchase of recorders costing in the \$80,000-\$100,000 bracket, based on the improvement in quality and savings in operating expenses derived. CATV operators until recently were denied the advantages of this valuable tool, as a matter of economics. However, there now is available high quality equipment at very low cost. This equipment does not presently meet broadcast standards for transmission, but the shortcomings have to do with technicalities that have little effect on basic picture quality.

ment purchaser. We suggest the following criteria in selecting among the offerings:

(1) What is the reputation of the manufacturer?

(2) What are the prospects for continued availability of spare parts and service?

(3) Is the system capable of recording and playing back without material degradation as regards picture resolution, signal-to-noise ratio, and time-base stability?

(4) What are the prospects of the equipment's being compatible with whatever recording standards may be ultimately adopted by the industry?

(5) What are the prospects for the equipment being compatible with the format of whatever program material might ultimately be offered in the industry?

(6) Is the recorder compatible with equipment used by local educators and with the formats that are offered by educational program producers and libraries?

Obviously, no one has all the answers to these questions at present. However, we at TeleMation, faced with the same questions in selecting equipment for resale in the industry, feel that the



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standby for the first camera in the event of failure, and is useful in providing more flexibility and smoother production in televising such events as football games and parades.

Two-camera pickups can best be accomplished if the two cameras are operated from a common synchronizing source to prevent picture rolls when switching between camera sources. This can best be accomplished by using an EIA synchronizing generator and a broadcast-type switcher. This adds to the equipment expense while greatly reducing its portability. We therefore have under development a system which we hope will permit modifying our cameras so that they can be used in multiple camera operations with their self-contained industrial sync generators.

FILM AND SLIDE EQUIPMENT

Although the video recording equipment will for the most part obviate the need for film equipment in local production, the CATV "broadcaster" may still find the need for televising films obtained from other sources. The simplest film pickup is accom-

plished by pointing an ordinary film projector and television camera at the same projection screen. The resulting picture quality would only be tolerable for occasional use, since ordinary projectors are not properly synchronized for operation with television cameras. Projectors made for television operation are equipped with a "3-2" pull-down and shutter arrangement, so that the "shutter bar" which floats through the picture when using an ordinary projector is effectively eliminated. These projectors cost \$1,500-\$3,000 but are a necessary and worthwhile investment if regular use of film is contemplated.

An improved film pickup system using a live camera can be made by building a shadow box. This permits confining the film projector with its noise in a separate room. The shadow box has tapered sides with a "front-surfaced" mirror mounted at its small end and a lenticular rear projection screen approximately 18 by 24 inches at its large end. By mounting the box in an opening cut in the studio wall, the live pickup camera can double for film. This

system can be further improved by mounting a slide projector so that it projects onto the same rear screen, either directly or through a mirror.

As film and slide requirements increase, the operator will find it necessary to use a separate camera for this purpose. This film camera is normally mounted on an optical multiplexer. Most multiplexers have three optical inputs, two for film projectors and one for slides.

AUDIO REQUIREMENTS

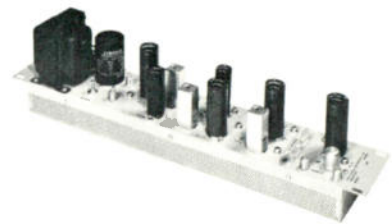
The simplest live pickup facility requires only a lavalier type microphone and preamplifier. If the pre-amp has provisions for two microphone inputs, more than one person can be picked up with the voices mixed at the proper level. As requirements increase, it will be necessary to add mixing facilities to accommodate the video tape recorders, film projectors, audio tape recorders, and turntables. These requirements can be met by a small mixer such as the Sparta Model A10B. This unit has four mixer channels selecting from eight inputs and includes provision for monitoring and cueing, as well as program channel amplification.

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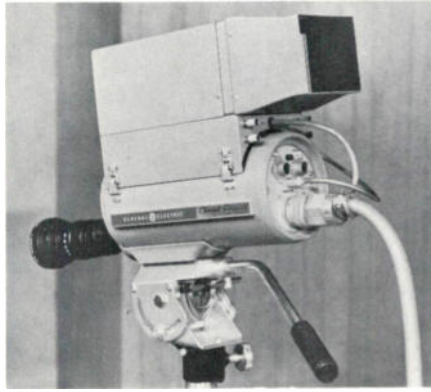
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WHO PAYS FOR IT?

Live origination facilities such as we have described here cost anywhere from \$5,000 to \$30,000. Some operators will be able to justify this expenditure on the basis of the good will created through public service alone. Most, however, will have to look elsewhere for this justification. One obvious source of revenue is through new drops. The amortization (or lease payments) on a \$10,000 package can easily be paid for by 50 subscribers added.

Commercial sponsorship is another source of revenue available to operators. News shows, public events, and local athletics are all highly salable. However, the amount of revenue must be sufficient to warrant the sales effort and the providing of adequate staff and facilities for production of the sponsors' commercials.

The route taken by many CATV operators in assuring the success of their closed-circuit operation is to lease the production facilities and the system channel to a local radio station or newspaper. Along with avoiding the staffing requirements, the CATV operator may



Typical local origination camera with 10:1 zoom lens.

also benefit through avoiding a competitive situation in the sale of advertising. The radio station or newspaper, by taking advantage of the many obvious economies can afford to lease the channel facilities at greater profit to the CATV operator than he could derive through operating the facility himself.

Still another method of financing local origination facilities is through a tie-up with local educators. By providing the local school system with necessary origination and distribution facilities during the classroom day, the operator

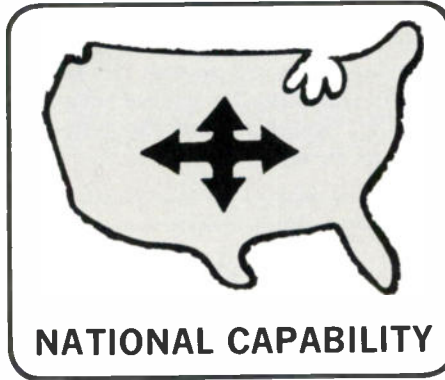
still has use of the facility during prime-time hours. The educator also benefits in that he is able to enter into local origination without commitment of capital funds. This is by far the best arrangement for the CATV operator in that its public interest aspect is unassailable, it relieves the operator of the onus of commercialization and it provides steady income sufficient to warrant the necessary capital expenditure.

IS IT LEGAL?

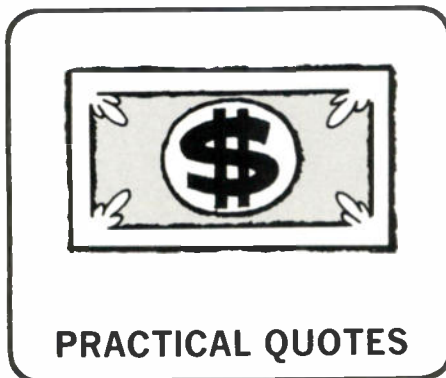
We are all familiar with the FCC's recent Second Report and Order and their request for Congress to give them certain regulatory guidelines. The Second Report and Order made no mention of local origination but their request to Congress asked that they be given permission to restrict local origination except in those areas where they might specifically choose to provide exemption. Congress has not acted upon their request nor is it likely that they will during this session. Industry leaders see this as an opportunity for CATV operators to demonstrate by action that local public



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service originations are in the public interest. If enough systems are providing public service on available channels at such time as Congress once more deliberates on the subject it is almost inconceivable that they would, through arbitrary legislation deny the American public this valuable service.

It is likely that the FCC, having asserted jurisdiction over CATV, will ultimately prescribe rules covering CATV originations. We notice that the NCTA is now considering the adoption of a code of ethics covering local origination. Past experience shows us that such a code, if adequate to protect the public interest may become the basis for the FCC's regulations in the same way that the NAB code is presently used by the FCC as a guide for proper operation of broadcast facilities. Until such a code is adopted operators entering into local origination would do well to study the FCC's regulations pertaining to television broadcast operation, as well as the NAB code.

The FCC may also impose engineering standards covering CATV originations. These standards would deal with synchronizing waveform requirements, time-base stability, color transmission standards and audio frequency response and signal-to-noise specs. Here again if the industry demonstrates, by maintaining certain minimum technical standards that the pub-

lic interest is being protected, the FCC will be less inclined to impose its own standards. If FCC standards are imposed they will likely be the present broadcast standards. Operators wishing to protect their investment can either purchase equipment conforming to FCC and EIA specifications at the onset, or purchase non conforming equipment and have the equipment supplier furnish assurance of convertibility along with cost figures.

LOCAL ORIGATION VS. PAY TV

Those who would prohibit all CATV local originations use as their rationale the assumption that any local origination will evolve to become pay TV. This assumption ignores the fact that pay TV, as generally conceived would require no local origination. It also ignores the fact that pay TV systems are characterized by per program charges. CATV systems have no means of making such charges. We could probably find some humor in the absurdity of this pay TV/local origination association were it not held by many people in responsible positions such as FCC Commissioner Bartley. The fact that people of normal intelligence can hold such ludicrous views points out the need for this industry to better inform the FCC, Congress and the general public as to what CATV is.

ABOUT THE AUTHOR

Lyle O. Keys is President of TeleMation, Inc., Salt Lake City manufacturer of CATV local origination equipment. Mr. Keys has had many years experience in the television broadcasting field, having been Director of Engineering for KUTV, the NBC outlet in Salt Lake City. Prior to that he was broadcast sales engineer for Visual Electronics Corporation and Allen B. Dumont Laboratories. Mr. Keys received electronics training during World War II Navy service and attended Montana State University and Valpraiso Technical Institute graduating with a B.S. in Engineering in 1950.

The next twelve months will probably see the CATV industry taken from its present state of limbo into new and better defined channels. The direction and speed in which the industry moves will be determined by how effectively the industry can demonstrate its worth and capabilities. It therefore behooves each operator to demonstrate that he operates in the best interest of the public and that his continued operation should be encouraged with a minimum of regulatory interference. One way to help achieve this public acceptance is through responsible origination of programming designed to fulfill the needs of the communities served. □



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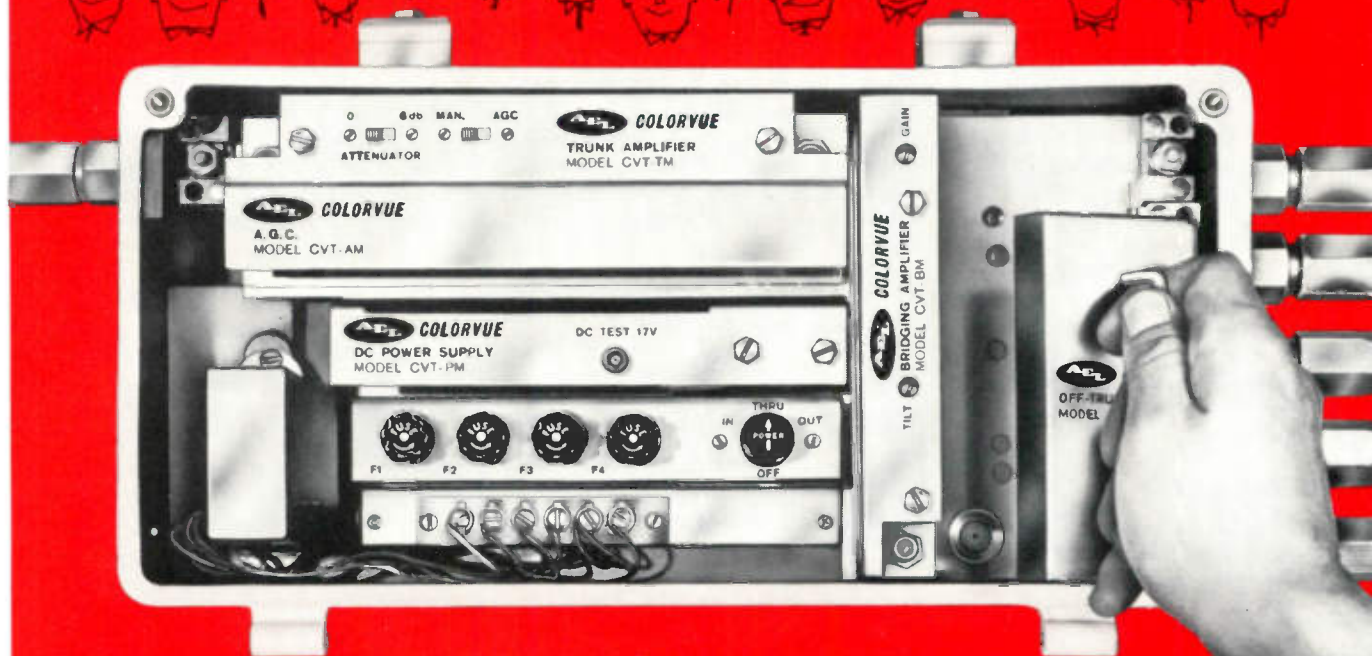
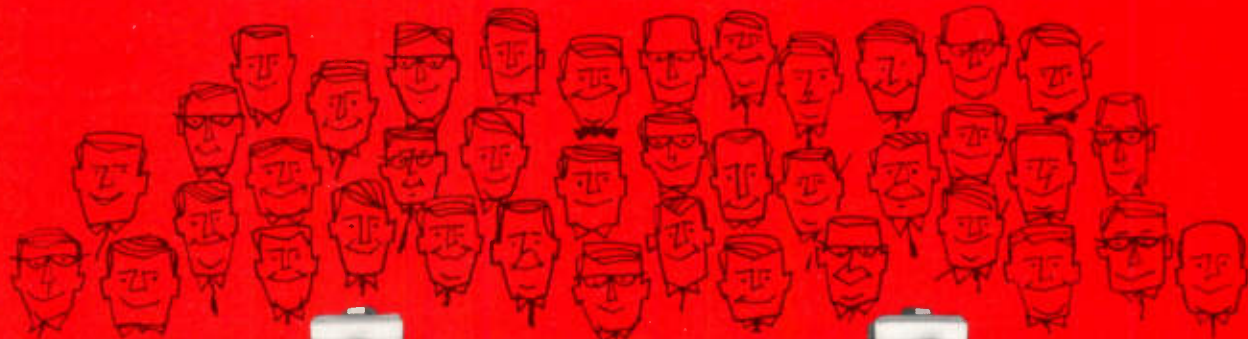
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Potential Applications For Cable System Plants

By Theodore Baum
Executive Vice President
Viking Industries, Inc.

CATV systems have not exploited their full potential. They have a vast resource in a coaxial cable network, in which only a portion is being utilized, and this portion is for transmission of TV and FM programs to just one market — the TV viewer.

A coaxial cable can be looked upon as a very wide expressway capable of handling thousands of lanes of traffic in either or both directions simultaneously. It is similar to radio except that the signals are confined within the cable.

The cable plant itself, when equipped with suitable amplifiers and filters, can be used for simultaneous transmission of data for facsimile, teletype, remote control, telemetering, telephone and numerous other audio, video and radio frequency signals; all this in addition to the TV and FM programs now used.

DISTRIBUTION SYSTEM

The present market — the TV viewer—can be, and in many cases is furnished additional services such as local

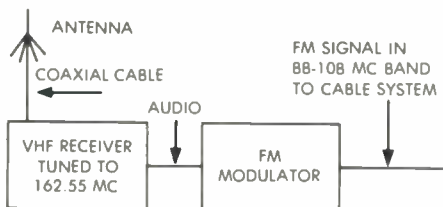


FIGURE 1. Weather Bureau Broadcast Pick-Up System for Head-End

weather and news programs by provisions of intra-system program origination equipment such as Weatherama and Newsarama. Some CATV systems also provide background music on various channels.

An example of services that can also be furnished to the existing market, i.e. the general public—is the reception of U. S. Weather Bureau broadcasts now being transmitted on 162.55 mc in New York, Chicago, St. Louis, Kansas City, and Los Angeles. All that is required at the head-end is an antenna aimed at the nearest Weather Bureau station, a receiver tuned to 162.55 mc and an FM modulator for retrans-

mission over the CATV system on an unused FM broadcast band channel, as shown in Figure 1. These weather broadcasts are comprehensive and up-to-the-minute and are of specific interest to motorists, sportsmen, aviators, mariners, schools, farmers, and operators of outdoor industrial and sporting activities. Ordinarily, each interested listener would have to buy and install a VHF-FM communications monitor receiver and antenna system, which might be unsatisfactory in many locations. And, much better signal can often be picked up at the head-end location.

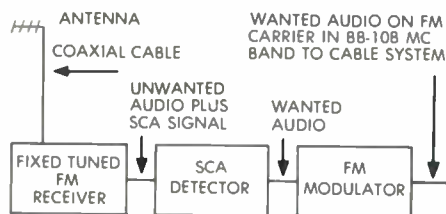


FIGURE 2. Head-End Equipment for Extracting SCA Background Music Programs

While some CATV system operators install their own facilities for closed circuit transmission and production of background music, head-end facilities can be installed for the pick-up and detection of background music transmitted by a distant FM station over its SCA (subsidiary communications authorization) channel. The background music is transmitted over a subcarrier (usually at 67 kc which is fed to the FM transmitter simultaneously with the station's regular program. The SCA channel program cannot be heard over a conventional FM receiver unless equipped with an SCA subcarrier detector. At the head-end, an FM receiver, subcarrier detector and FM modulator can be installed, as shown in Figure 2. The SCA channel program is then transmitted as a regular FM signal to CATV subscribers. Since the SCA program is the property of its originator (Muzak, etc.), appropriate financial arrangements would have to be made for its use. Background music firms should be receptive to earning additional revenues

from markets beyond their normal area of coverage.

Using this technique, only one SCA subcarrier detector is required. The CATV plant could, however, be used for transmission of the composite FM station signal to subscribers to the background music service. Each subscriber would then have to rent his own SCA subcarrier detector for extracting the private background music from the FM signal. The CATV operator could go directly into the paid private background music service business, producing his own programs or buying the rights to use SCA music transmitted from a distant FM station. The music could be transmitted over the cable system on a frequency outside of the FM broadcast band, requiring special fixed-tuned receivers at each music subscriber location, or the music could be transmitted over a subcarrier fed to an FM band modulator and requiring the use of an FM receiver and a subcarrier detector at each subscriber location.

As mentioned earlier, CCTV techniques are being used in some CATV systems for transmission of news and weather information to subscribers, but greater use of the cable plant for CCTV transmission is possible and can be another source of revenue. For example:

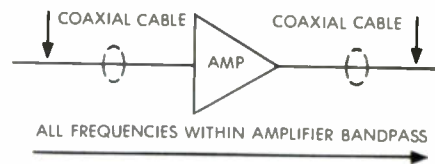


FIGURE 3. One-Way Transmission Through Coaxial Cable

ETV programs can be transmitted to local schools and homes of confined students over an unused TV channel through the existing cable system. Whether this is workable depends upon the point of program origination and the required direction of transmission—which can be adjusted by converting the cable plant for simultaneous two-way transmission. As shown in Figure 3, FM and TV signals are or-

dinarily transmitted in one direction through uni-directional amplifiers which pass frequencies within a finite band (usually 54 to 216 mc). By installing filters and amplifiers, as shown in Figure 4, simultaneous transmission in both directions is made

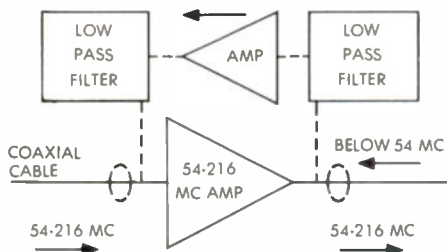


FIGURE 4. Two-Way Transmission Through a Single Coaxial Cable (Two-Way, Frequency Division Amplifier)

possible. The filters prevent signals within the 54-216 mc range from getting into the reverse-direction amplifiers, and pass signals below 54 mc. Thus, signals above 54 mc flow in the forward direction and those below 54 mc flow in the opposite direction.

Using these techniques it is possible to inject CCTV signals into the cable system through appropriate modulators for transmission in the reverse direction. The signals can be intercepted with a suitable demodulator or frequency translator and a conventional TV receiver or CCTV monitor at any point in the reverse direction. To transmit the signals in the forward direction, the below 54 mc carrier can be demodulated and fed to a modulator operating at above 54 mc, as shown in Figure 5, or, passed through a frequency translator.

Such a two-way CCTV transmission facility can be used to serve industries and community agencies. For example:

- (1) A TV camera can be used to observe traffic and its output sig-

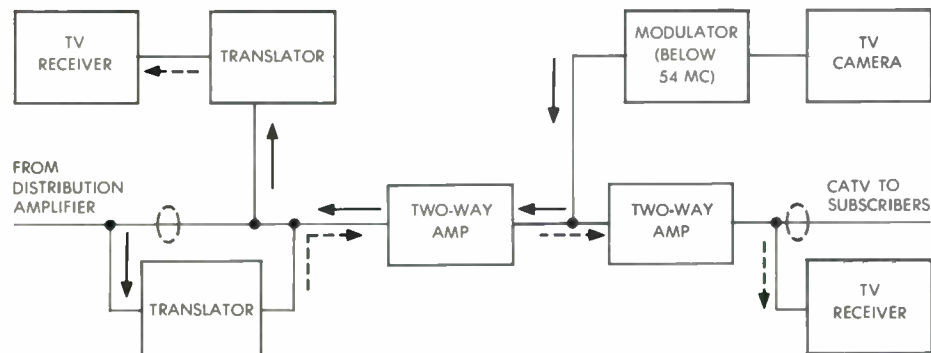


FIGURE 5. CCTV Transmission in Forward and Reverse Directions — = Below 54 mc - - - = Above 54 mc

- (2) Personnel at a city's administration building can view the instruments at the local water works via remote TV.

The local telephone company can be the customer of a CATV system. When the telephone company is requested to furnish a video circuit, it must install its own coaxial cable. However, it could rent a video channel from a CATV company.

The capabilities of a CATV system, converted to provide two-way transmission, are not limited to CCTV. The same cable plant can be used for point-to-point facsimile, data and teletypewriter transmission as well as for telemetering and remote control of water and sewage plants, traffic signals, etc. Circuits can be provided to central station alarm (fire and burglar) system companies which are finding it more difficult in some areas to get additional leased circuit facilities from telephone companies. In fact, a CATV system

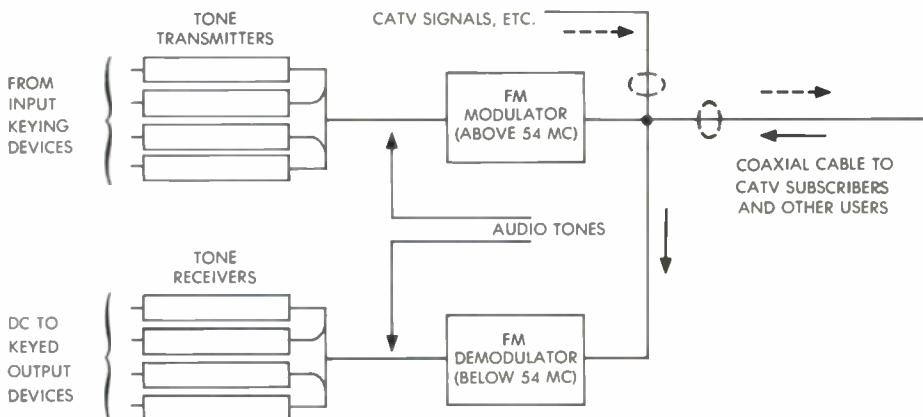


FIGURE 6. Tone Transmission Over Coaxial Cable in Both Directions - - - = Above 54 mc — = Below 54 mc

company could easily expand into the central station alarm system business since it already has the required transmission medium, and could even provide CCTV remote surveillance facilities. Only one video channel would be required for TV observation of several locations since means could be provided for sequential activation of cameras.

adelphia background music system operator who wanted to install TV monitors in bars and restaurants. He intended to transmit news bulletins, race results, ballgame scores, film clips and other program material to his subscribers. To do so, he would have had to lease suitable circuits from the telephone company. Since the circuits did not exist, the cost would have been prohibitive. But, in a community with a CATV system, the project would have been feasible. By transmitting his programs on other than a regular TV channel frequency, reception would have been limited to those with the required type of demodulator.

TRUNK CABLE

So far, we have discussed the capabilities of the CATV plant within a community. The *trunk cable* too, can be used for other than FM and TV program transmission. Depending upon the trunk cable route, the cable can be used for one or two-way transmission of CCTV and tone signals to industrial plants, water works, electric powerplants, distant highway traffic signals, vehicle detectors, etc.

ABOUT THE AUTHOR

Theodore Baum is Executive Vice President of Viking Industries, Inc., major manufacturer of CATV distribution equipment and cable. In his capacity at Viking, Mr. Baum is responsible for all manufacturing and administrative operations of the firm. He is a graduate of Lehigh University, and has attended graduate courses at New York University.

able at modest cost from several manufacturers.

The cable facilities within the community can also be used for a semi-public TV program service. The idea was proposed four years ago by a Phil-

HEAD-END

Let's not overlook the possible increased earning power of the head-end facility. ETV broadcasts from distant communities transmitted in the 2500-mc or 12,000-mc band can be picked up with a parabolic antenna and translated to a frequency within the 54-216 mc range for transmission over the cable plant to homes and schools.

By installing an omnidirectional antenna and a 150-174 mc band head end amplifier, as shown in Figure 7, communications from mobile units and base stations in the land mobile and marine services can be picked up from considerable distances and transmitted over the cable plant to law enforcement agencies and other users to private mobile radio systems. Each subscriber to such a service can pick up the signals from the cable with a VHF monitor receiver.

Another market for such a service is the CB (citizens band) radio user whose receiving range may be quite limited because of location. All that is required at the head-end is an omnidirectional antenna and a 27-mc band head-end amplifier. The cable system amplifiers would have to be able to pass signals at these frequencies. If not, a frequency translator can be used, requiring use of a back-to-normal frequency converter at each subscriber location where this service is utilized.

While the above two signal receiving services won't enable the subscribers to transmit further, it will enable them to receive signals originated at considerable distances. This can be of considerable value to police depart-

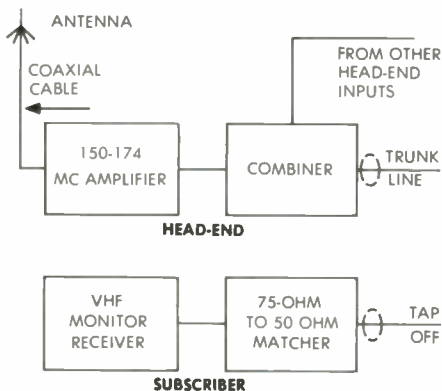


FIGURE 7. CA-VHF Receiving System

ments and others who would benefit by receiving communications in areas beyond the range of their own facilities.

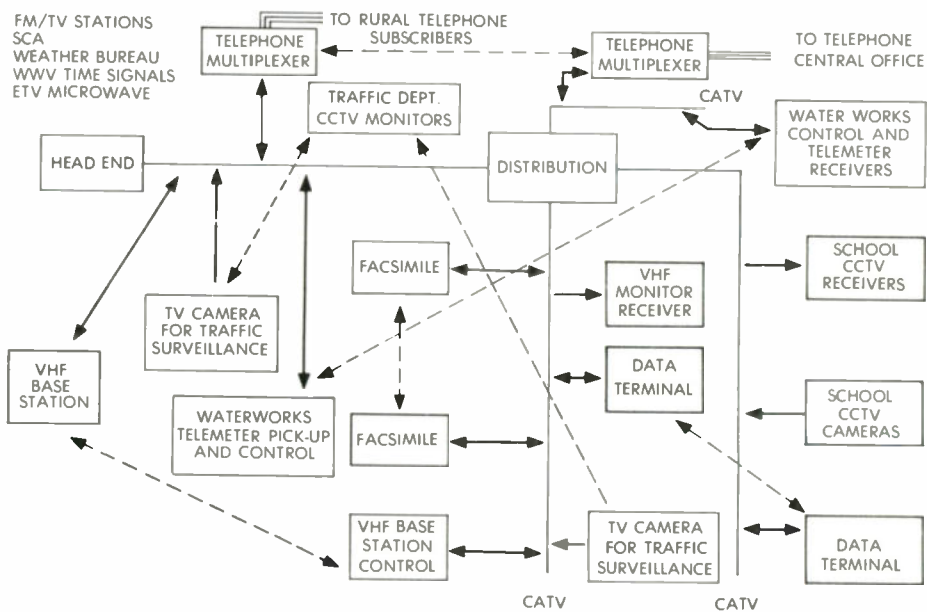
Since the head-end is usually at an advantageous receiving location, it can also be a superior transmitting location, particularly for land mobile radio system base stations.

An Alpine, New Jersey tower, originally erected for FM broadcasting, is

now used as a base radio station antenna farm. Numerous base stations and antennas are located there, all remotely controlled from distant points. The users of the tower pay rent of around \$100 per month. One user pointed out that he is able to communicate as far north as Boston and as far south as Baltimore with a 30-watt transmitter, using a 12db gain antenna 900 feet above the Hudson River. Many CATV

transmission through the cable to the central office. The alternative for the telephone company is to acquire its own receiving station site and to construct a line to it from its nearest available wire line or cable facility.

Another possible user of a head-end site is the operator of a private microwave system seeking a good repeater location. Often there is the need for feeding in and extracting intelligence



Examples of Cable System Applications

system operators can offer comparable facilities to mobile radio system owners. Space must be provided for the transmitter-receiver units. Each may have its own antenna or, when frequency separation is adequate, all may use the same antenna by utilizing an antenna multiplexer. Possible interference to head-end TV reception can be avoided by proper system design. Two-way audio transmission to and from the remote control point and one-way transmission of a control signal to the head-end are required for each base station. These signals can be transmitted over the CATV cable plant by modifying the system for two-way transmission and employing subcarrier modulators and demodulators.

Let's not overlook another possible source of revenue from the telephone companies which are installing a nationwide IMTS, (improved mobile telephone service) system. In many cases, satellite receivers are required for picking up signals from mobile telephones beyond the satisfactory range of the central office station. A satellite receiver (150-174 mc band) at a CATV head-end site can be a most valuable asset. The audio output of the VHF receiver can be fed to a modulator for

from the repeater, usually requiring the installation of a wire line or microwave spur to the adjacent town, particularly in the case of railroads. The CATV system operator can provide both the repeater site and the use of the cable as the local transmission medium.

All of the hardware to implement the capabilities of a CATV system as reviewed here is not yet available commercially. But much of it is available for use as-is or after modification, and those items not available can be readily designed and produced.

In summary, the CATV system operator possesses a cable plant capable of handling much more than off-the-air FM and TV programs. Its earning capacity is considerable. Of course, the furnishing of a TV antenna to a community is the system's basic and largest source of immediate revenue. But, typically, the operator is using up to 96 mc of his cable plant's capability. The remaining 120 mc of channel space can accommodate 20 more TV or CCTV 6-mc wide channels. Make use of that 120 mc of unused cable space. It can provide the CATV system operator with profits that would otherwise go to someone else. □

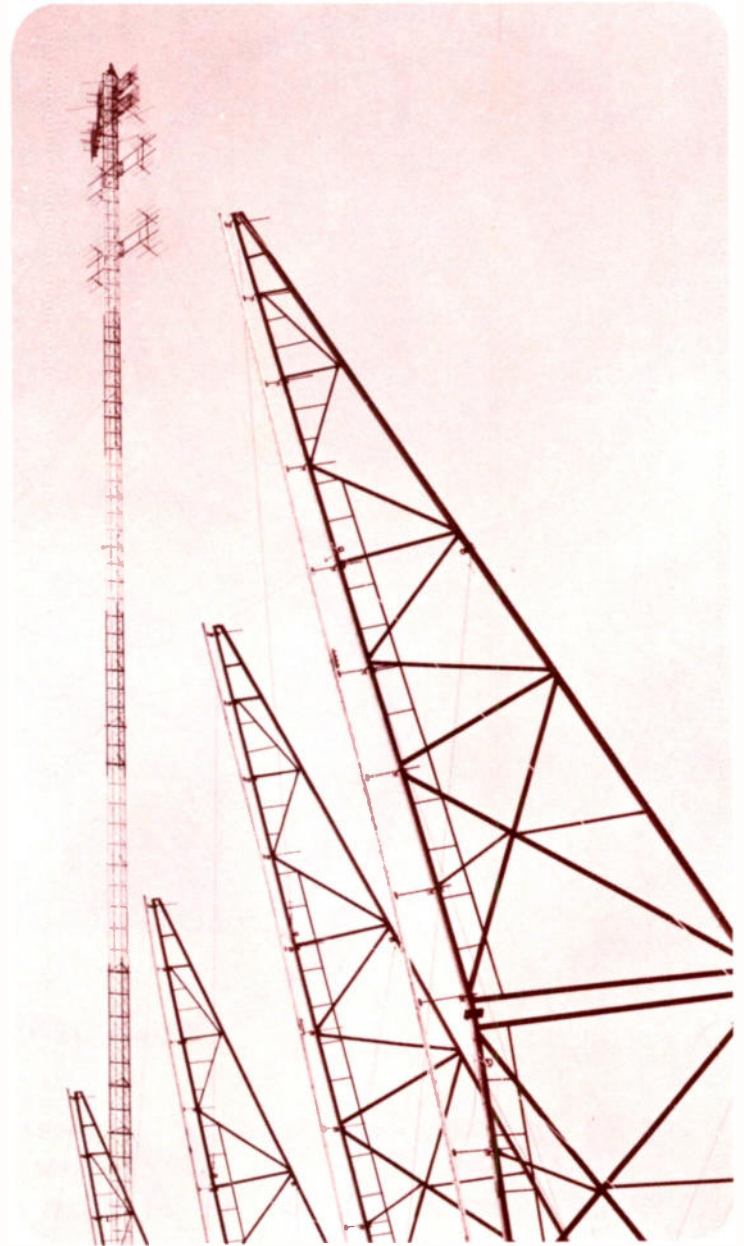
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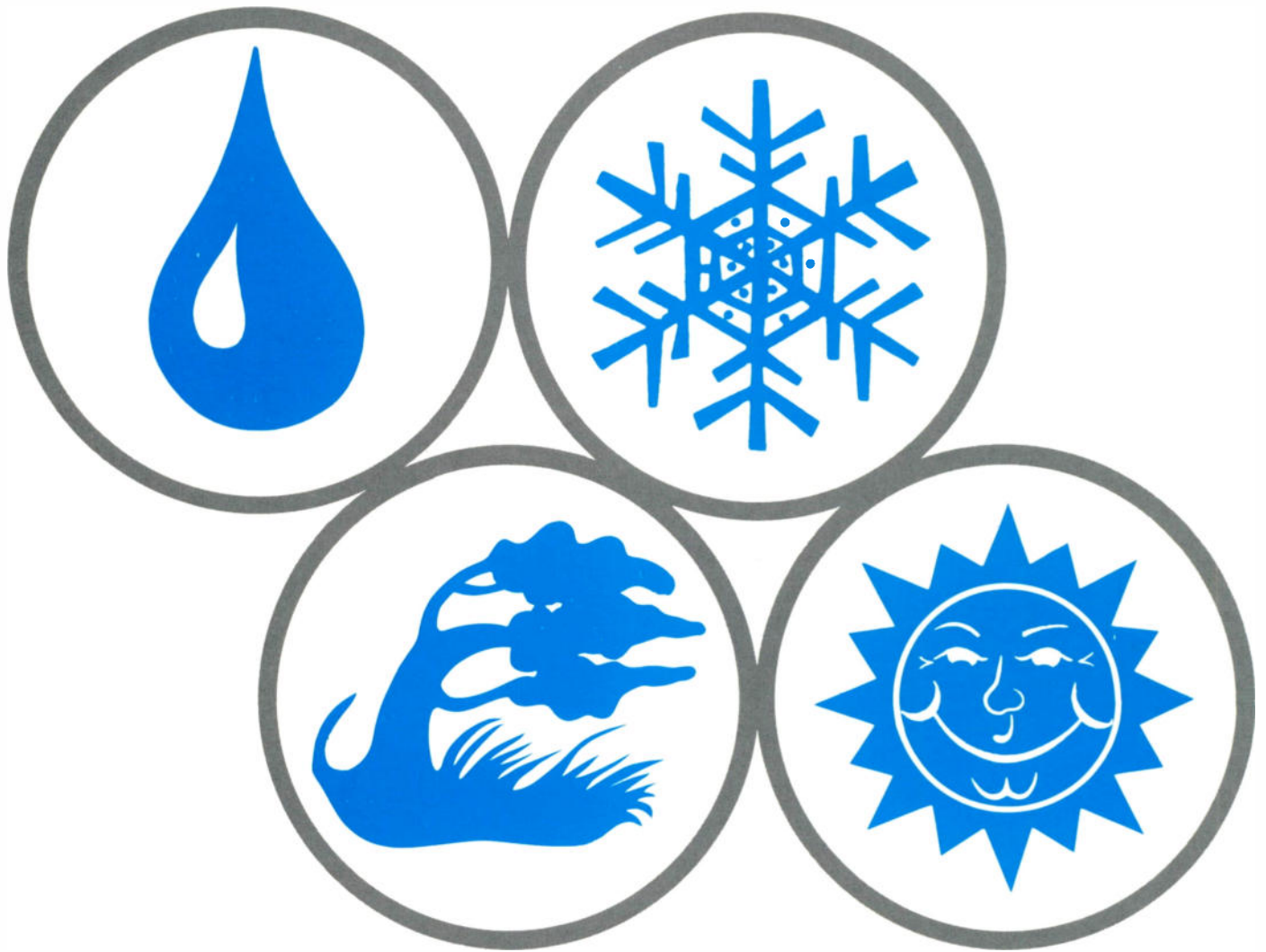


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Local Programming *in action*

By Robert A. Searle

Texico-Farwell Cable TV is located in two towns, in two states (Texico, New Mexico and Farwell, Texas). The system is currently originating newscasts and a morning devotional (given by local ministers). The system is co-operated with a local AM radio station, and programming functions are carried out by sta-



Local news is televised via "Weather Channel" equipment, Dynair modulator and Holt strip amplifier in Texico-Farwell system.

tion personnel. Mike Cullen, Chief Engineer, reports plans to add a women's news program to the system's origination schedule.

Total Telecable's Olympia, Washington system has just opened studio facilities there, and is originating a daily children's show, daily news, and



Olympia, Washington system carries local news program daily.

other public service programming. Other Telecable systems have successfully carried replays of basketball games (with coach narrating); local government meetings; and political activities in their respective communities. Frank Cohee, Telecable Executive Vice President, reports that



March of Dimes drive is televised on Telecable's Olympia system.

their Bremerton, Washington system has achieved over 50% saturation prior to system opening... due partially to promotion of the local service planned by the system. The system is in an area served by 6 Seattle and Tacoma stations off-the-air.



Basic studio apparatus used in Olympia system's new studio.

In Panama City, Florida, local educators have been able to take advantage of Florida Antennavision's facilities to conduct high school journalism classes in which the students handle the programming equipment, as well as produce the programs.

Public service programming on the Decatur, Alabama system has included school sports, discussion groups, church activities and teen dances. Success of this type programming has reportedly prompted the local board of education to ask for exclusive use of one channel on the system, and to allocate funds for equipping its own professional quality studio. □

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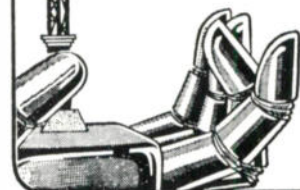
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LOOK AT
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PROGRAMMING SPACE CHANNELS

*By D. Michael Ganley
American Cable Television, Inc.*

A concept coming into vogue only recently is that CATV offers the first practical method of tying a large percentage of the dwelling units of a community into a communications network. When one realizes the ramifications of this, the possibilities for increased utilization of this pipeline into an individual's home, become almost limitless.

Most CATV systems have not yet fully exploited the uses to which their cable can be put. Almost every system now operating has unused channels which could be utilized with a minimum of expense to increase the service of the system and the attractiveness of subscription to the cable.

The two most popular present methods are a time/weather presentation, and/or a news-reporting installation. Often music is used on the audio spectrum of these channels, either FM or tape.

Most of us are familiar with the various weather reporting devices. They usually run around \$4,000 to \$6,000, and are available from manufacturers such as American Cable Electronics, Inc., Electronic Systems Development, Inc., TeleMation, Inc., and R. H. Tyler Co. Components for such systems are available separately, from firms such as Texas Electronics.

The news reporting services are much newer services. TeleMation and Viking Industries are currently marketing the scanning equipment, with the Associated Press and United Press International providing 24-hour news data through agreements with the respective manufacturers and with the individual systems.

According to the "Economic Analysis of CATV Growth and Impact," submitted by CBS to the FCC July 22, 1965, the average system in the United

States has about seven unused channels, and let us suppose also, a weather presentation. Working with this type of system, the following added services come to mind:

(1) The simplest and perhaps most widely used installation is a placard or slide project listing special local events, which is inserted in the time/weather installation and is scanned by the camera. This is probably one of the most misused applications in our whole bag of tricks. All of us, at one time or another, have seen such placards, covered with dust, which have been left in the weather device for months on end. Churches, clubs, etc., go begging for ways to let people know their meeting times, activities, etc., and the local CATV operator sometimes lets a drawing of "Able Cable" stay in front of the live audience day after day. The possibility of building community good will here is enormous.

The addition of a mirror box and slide projector, with revolving carousel should cost around \$250 and any number of things can be run on this—so why not take advantage of the opportunity. Let us suppose the operator spent \$5,000 for his weather presentation. It has seven dials and one placard window, thus he has spent \$625.00 for each piece of information he is going to put on this channel. If he neglects the placard window, he loses \$625.00, ipso facto.

(2) Some models of weather-reporting equipment allow an individual to be seen by the locked camera. This could be used for news, political, and other presentations. As an example, during the next election of local officials, free time could be given on an equal basis to any candidate who desired it. The system manager might arrange a debate.

The one factor which must be kept in mind is the "Equal Time" ruling. If there are 25 candidates for a position, it could conceivably put quite a load on a system to put each one on, for and at, an equal time.

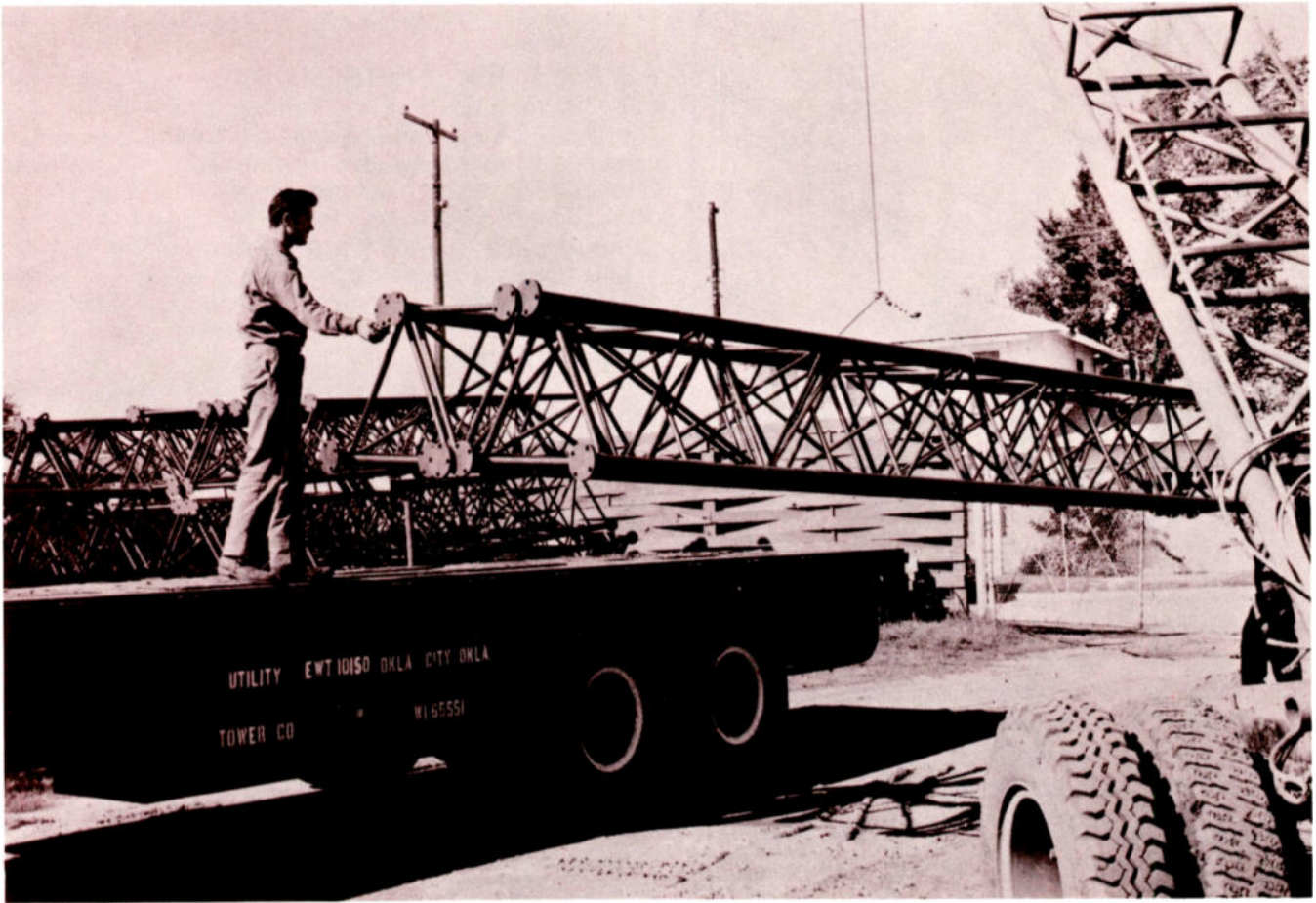
(3) Discussion groups dealing with events of local importance might be a valuable addition to your system's entertainment offering.

(4) Some systems have made a modification of weather-reporting equipment so that dials, reporting the vital facts of the head-end installation, are scanned along with the weather gauges, and monitored in the system office or even the manager's home. This set-up is especially useful when the head-end is in a remote geographical location. Things such as the head-end power draw, the level of a particular modulator, and microwave discriminator and limiter volt-

ABOUT THE AUTHOR



D. Michael Ganley, a native Arizonan, is a recent addition to American Cable Television, Inc. Previously, he was associated with Ameco, Inc. as construction analyst and later as contract coordinator. Mr. Ganley attended Northern Arizona University specializing in the field of management. His article "Getting Your System Designed" was published in *TV & Communications* earlier this year.



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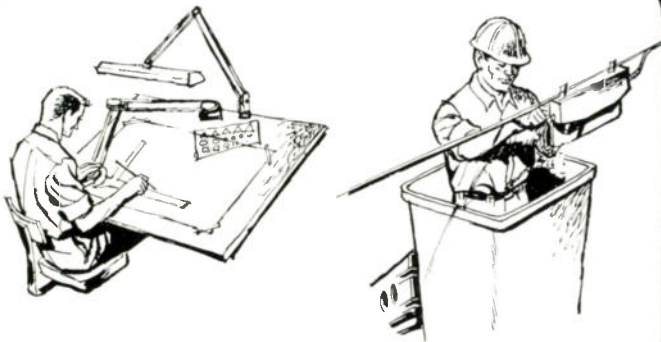
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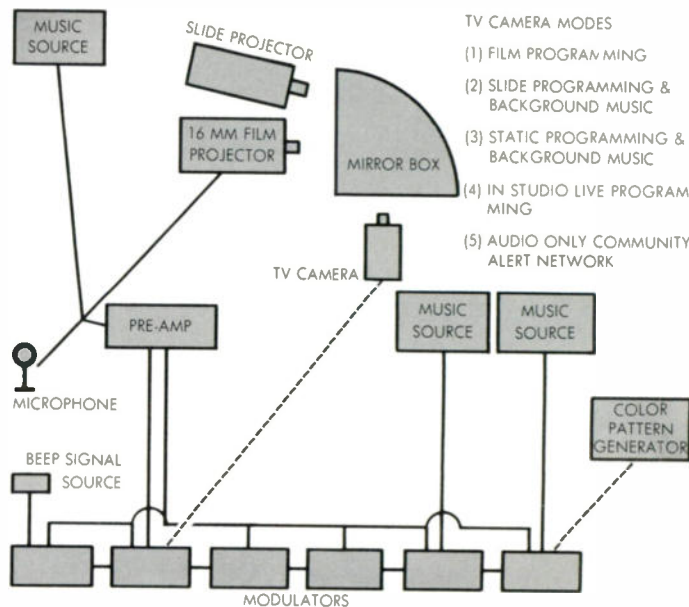
**COMMUNICATION
SYSTEMS
CORPORATION**

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ages can be monitored. The cost in this case is almost insignificant.

(5) The application of a remote camera to televise community events is coming into vogue in many systems. This is usually done by having a feeder line run to the remote location and utilizing it to bring the signal back to the head-end for insertion into the system. The regular time/weather service camera is capable of doing this job if the lighting is sufficient. The cable operator himself may wish to set up certain features; such as, bingo night and shop-and-swap; a local football game or town council meetings—the list could be almost endless.

The limiting factor in this case is the length of the feeder run; expense becomes prohibitive over a certain distance.



A Typical Head-End Arrangement For Certain Cable Services

Another possibility emerges to offset long feeder lines. A VTR or Video tape replay device can be purchased presently for \$1500-up. VTR's have an added advantage in that a local program can be shown whenever, or as often as is desired. In the case of ball-games, the gate receipts don't necessarily suffer and yet the system can replay the game later for those unable to attend.

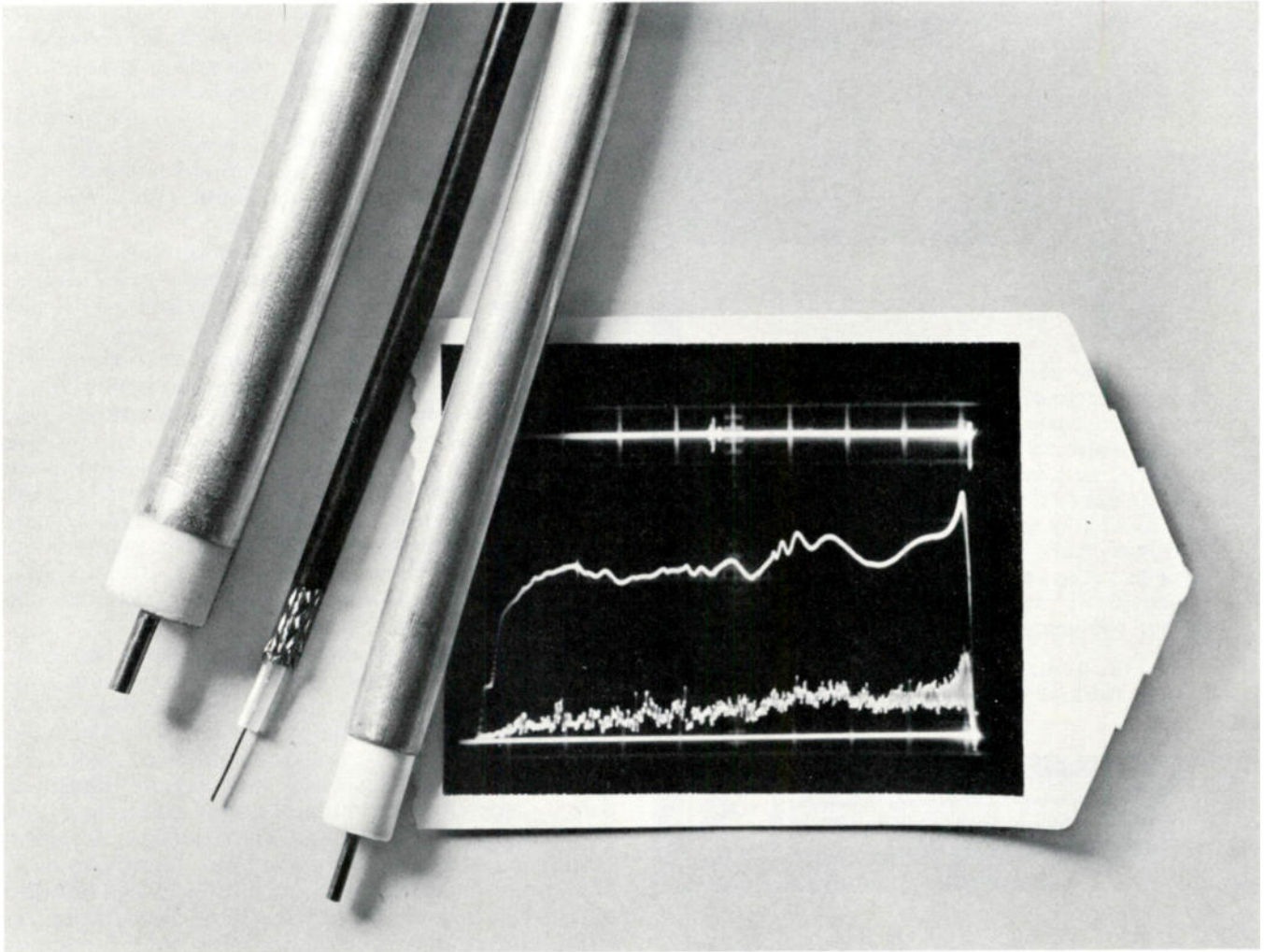
Due to the FCC Second Report and Order, and the increasing need for such special services, there can be little doubt that a trend is present and will continue to develop in CATV systems across the U. S. of adding services not received from ordinary TV broadcasts.

Some of the more esoteric methods which take advantage of unused spectrum are:

(1) The addition of either AM or FM music on more than one channel. A further refinement is different types of music (i.e. teenage, country, classical, easy listening) on different channels. The minimum needs are a receiver per station and a modulator. Using tube type, the cost could be as low as \$500 per channel.

In the cases where only one or two AM stations operate in a community; then a ready-made channel filler is available.

(2) The University City Cable TV Company in Gainesville, Florida has made use of one channel of



**Three proven Amphenol CATV cables offer you
low loss, low attenuation, uniform VSWR**

The proof is in the picture! Every inch of Amphenol CATV cable is tested for structural return loss. It must pass these quality standards: 26 db structural return loss for minimum ghosting (30 db available on all TV channels), consistently low attenuation and uniform 75 ohm impedance. Based on this performance, CATV contractors have installed over 7.5 million feet of Amphenol cable.

1. HEAD-END CABLE. Seamless, lightweight aluminum cable, .750" in diameter, gives you moisture and radiation protection. Attenu-

ation variance is minimal from the smooth curve: 0.25 db/100' at channel 2, 1.03 db at channel 13. Easy to install in 1000' minimum lengths. Available with all-weather black poly jacket.

2. FEEDER CABLE. Amphenol .500" aluminum cable is a star performer from deep South to Seattle. Attenuation is low for its size: 0.65 db/100' at channel 2, 1.40 db at channel 13. This CATV cable also comes in .412" diameter with attenuation figures of 0.85 db/100' at channel 2, 1.65 db at channel 13. Both available with black poly jacket.

3. HOUSE-DROP CABLE. Performance proved, Century 59/U drop-line cable features Amphenol quality polyethelene dielectric and copper braid shielding for best signal transmission. Attenuation is uniformly low: 2.4 db/100' at channel 2, 4.9 db at channel 13. Polyfoam® version available to satisfy lower attenuation needs.

FOR MORE INFORMATION, see your Amphenol Sales Engineer. Or write to Amphenol Cable Division, 6235 S. Harlem Ave., Chicago, Illinois 60638.



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others say about
the 'SS' men . . .

This is the second time our company has made use of your firm for our construction needs. In both cases we have found the workmanship to be of the very highest quality. As a non-engineering-type manager, I know it is a real pleasure to deal with a totally responsible firm where you can just "turn them loose" and know the work is going to be done properly (and at a fair price) without constant follow-up by our own engineering staff.

E. M. ALLEN, General Manager,
Cable-Vision, Lafayette, Calif.

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INDEPENDENT SPECIALISTS IN CATV CONSTRUCTION AND ENGINEERING

their system by hooking a VHF radio into the head-end; thus, cable listeners can monitor conversation between the community airport and planes in flight. It can be connected to the time/weather unit and report the FAA weather broadcast at 15 and 45 minutes after the hour. To the flying population of a town, this could be quite an inducement to hook up to a system. The cost would be about the same as (1) above.

(3) One idea which has been advanced is the use of audio on all channels to broadcast Civil Defense or other emergency information. Community leaders thus have almost instant access to a large portion of the town. A question arises here as to the public's reaction to having their programs interrupted. The possibility of using a beep signal on all audio to alert people to turn to the time weather or community channel would solve this situation. The system manager would have to use discretion to make sure that this service would not be misused. Recently American Cable Electronics has come out with a unit for this job—called the Emerg-Alert System. It can insert in as many channels as desired both audio and visual information.

(4) In towns of moderate size, another innovation could be utilized. Classified ads in newspapers have the shortcoming that when an item is sold, bought, or whatever, the paper has no way of reporting this fact; thus, inquiries continue, and can be quite harassing. A weather unit can be modified to display this information, and a man could be employed to change these listings when needed. A nominal charge could be made by the hour, simply to defray the expenses. As long as only individuals would be allowed to use this service, there could be no valid complaint that it is anything more than a customer convenience.

(5) A service which is being applied more widely is that of programming commercial films on unused spectrum. Films of this nature are put out by private companies and some national associations. Usually there is no charge for their use. Utilizing these, one could conceivably program as many hours of unadvertised entertainment as desired. All that is needed is a 16 mm projector and a mirror shadow box, if one used his weather service camera, for a total of about \$1,000.

(6) Some systems have gone to the expense of programming regular movies. With some of the older films this can be done at fairly low expense. However, the securing of feature-length films has presented a problem for some time. Now Girard Projection Service of Houston is reportedly preparing to make films and equipment available to CATV operators in the very near future.

(7) Mr. Leonard Gregory of the Panama City, Florida system tells of a local program that found wide acceptance. Students of the radio and television journalism class of the high school put on a production twice a week. All work from camera to scripts is done by the students themselves and the programs have been well received.

(8) A concept currently being advertised is that of picking up the signals of weather satellites as they pass overhead, thus showing subscribers an actual picture of storms, etc., as they develop in their general area. However, except for the largest systems, this

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project would not be feasible for two main reasons: (1) The high initial expense (approximately \$5,000) for equipment; and (2) the fact that while looking down on the weather from some several hundred miles above the earth has a great novelty value, the individual subscriber is not going to be able to make any sense whatsoever out of what he sees, unless some way of interpreting these pictures is made available. This presentation probably, and unfortunately, always will remain a novelty item.

(9) Mr. Clyde Fette, Chief Engineer of American Cable Television, Inc. has utilized a color pattern generator, coupled with background music, in some California systems. He reports that this has found enthusiastic reception among the TV servicemen, because of the ease of differentiating color trouble on the networks as against the set or system. It also has a very definite use in duplication problems. A generator can be purchased for approximately \$200 and does not need a modulator for insertion into the system.

(10) Something which may seem "far out" at first glance is what we may call, for lack of a better term, static programming (for example, the training of a camera on a flickering candle flame with restful background music). The next day, the camera could be put on a highlighted fish bowl; the next a signal generator wave and so on, ad infinitum. A whole new form of art may evolve from such simple productions as this!

This is by no means a complete listing of all special uses of available space; there are undoubtedly a myriad of others. *TV & Communications* would welcome the opportunity to publish suggestions coming from other individuals on this topic.

In discussing any sort of local presentation, it should be kept in mind that people are inherently more interested in their own neighbors and friends and occurrences in their own communities than events and personalities on a national scale. This can be put to use by cable companies; and, as we all know, history has recorded no lack of people who like to stand in front of cameras. Regarding some of the more unique attractions, one must always keep in mind that the tastes of any large group of people vary considerably; and while one person would not dream of looking at a static program (i.e., flickering candle flame), another individual might consider it beautiful.

If one visualizes CATV as having twelve chances to entertain the public, it is not difficult to see that using any number less than the maximum can only be construed as inefficient.

Because of the attacks and pressures on the industry, CATV may have to drastically alter its form, and increased special services may be one of the main directions this alteration will take. There has been much talk of the building of a 24 channel system (actually two 12 channel systems, side by side).

The broadcasters and others have tried for so long to tie us to pay-TV that there may be some shock on their part to find CATV taking these many and varied other roads to maturity.

Thus, it is in the realm of possibility; and hopefully, we may soon see a full 12 channel system of which the minority are actual TV stations. If this is truly to the benefit of the individual subscriber and feasible to the cable operator, then it shall be so. □



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Youthful Company typifies dynamic expansion of CATV industry

Craftsman Profile

Energy and enthusiasm, seasoned with electronic experience, have characterized the rapid growth of Craftsman Electronics as a supplier of cable television accessory products. The firm's sales have more than doubled in the three years since control was assumed by its present management, John and Daniel M. Mezzalingua. Another substantial increase is projected for this year by the Manlius, N.Y. operation.

Craftsman Electronics began in a basement as a manufacturing operation to provide products for CATV systems operated by two Oneonta, N.Y. men—William Calsam, a technician, and Albert Farone, a lawyer.

The two men teamed up to install and operate several CATV systems near the Catskill Mountain city. They began making equipment in Calsam's basement—producing small quantities of many items.

Late in 1962, Daniel Mezzalingua was working as a sales representative for the family owned machine shop in Manlius, near Syracuse, New York.



John and Dan Mezzalingua break ground for an addition to the manufacturing plant. Looking on (l to r) are Joe Gibbs and Keith Morgan.

One of his accounts was the Oneonta company, to which he sold fittings and other machined parts produced by John Mezzalingua's firm.

Merger talks began between the two companies, and finally resulted in pur-



Shown at meeting of department heads are (l to r) Matt Lysek, Vince Borelli, Roy Bouse, Dan Mezzalingua, John Mezzalingua, S. W. Pai and Ron Lockwood.

chase of Craftsman Electronics by the Mezzalinguas in March of 1963. The Oneonta firm was relocated in Manlius shortly afterward.

The Mezzalinguas reorganized the company into a corporation with Daniel as president-treasurer and John Mezzalingua as board chairman. At first, Craftsman Electronics set up its headquarters in a section of the machine shop facilities. Some of the first products were obtained from local electronic suppliers and sold to CATV firms.

Mezzalingua recalls that in those first days he "traveled all over the country, attending regional meetings, trying to build business."

Due to the company's rapidly rising sales, Mezzalingua felt that the time required to get products from other companies was slowing the corporation's ability to fill orders. "Also, we wanted more control over the quality of the products," he says.

"We finally decided the only way to speed production and to control qual-

ity was to manufacture the items ourselves. So we built an addition to the machine shop and moved in production and engineering, plus our sales headquarters," he explains.

During the first few months, the Mezzalinguas evaluated the items produced by Craftsman Electronics. "We cut out a lot of things that were obsolete, we updated others and we added some new ones." Sales continued to grow, "beyond anything we had expected," Daniel Mezzalingua says.

National accounts came with the increase in sales. Included in the company's present customers, for example, are Western Electric, Bell Telephone, International Telephone & Telegraph and General Electric.

In line with general industry trends, Craftsman was straining to keep production up with sales. More production, engineering, designing and office space was needed. The young corporation moved again, this time into an industrial park across the road from its older facilities. The new headquarters

more than tripled the available space.

But this plant has already proven inadequate for the rapid production-sales expansion. A planned new addition will double present space and give room to expand further.



Quality control checks are routinely conducted at QC test bench.

With space expansion has come an expansion in products. "We now have a wide range of products, including an entire line of passive devices," explains Mezzalingua. "I think we have one of the most complete lines of accessories in the CATV business. And we're bringing out a series of solid-state amplifiers for TV/FM signal distribution.

CATV sales under Dan is handled by Matt Lysek, Bob Greiner and Bob Munroe. A new distributor sales division has also been established under General Manager, Joe Gibbs.

As for the future of CATV, Mezzalingua feels "It's tremendous. But I think it will take a new shape. "What I think it will be is a fourth network—a national cable television network—with all the cable TV systems throughout the country tied together,"

And Dan believes "There's no doubt that CATV is the best method of distribution for color. As a result of the demand for color, CATV is going to be a 500 million dollar business within the next two or three years.

"I think the metropolitan areas definitely are going to have cable TV. New York City is being wired now. Toledo and parts of Philadelphia are being wired, as are other areas."

Color on cable has brought a demand for products Craftsman makes, Dan notes. Federal regulations have held up new construction "a little," he says, "but we'll live with it. Instead of a wild, uncontrollable rise, it will be a gradual one."

Quality, Mezzalingua says, has been the key to the company's success, and its reputation. "We have always gone

to great pains to make sure the quality was there for every product. We check and double check to make sure each item is right.

The youth of the business is also in his company's favor, according to Dan



Modular directional tap assembly station.

Mezzalingua. "We'll grow with the CATV business because we're well-suited to serve in this youthful industry. Craftsman is a young, flexible company—dominated by young, imaginative and energetic men." □

TWO-WAY RADIO?

Who uses it?

If you do, in connection with cable system construction or operation, and you want to share your experience, now's your chance. **TV & Communications** is looking for articles on the use of two-way radios by CATV'ers, to be published in an up-coming issue. Articles need not be long—standard editorial rates will be paid.

Send articles (with photos if possible) or write for more information to:

Bob Searle, Managing Editor, TV & Communications, P. O. Box 63992, Oklahoma City, Oklahoma

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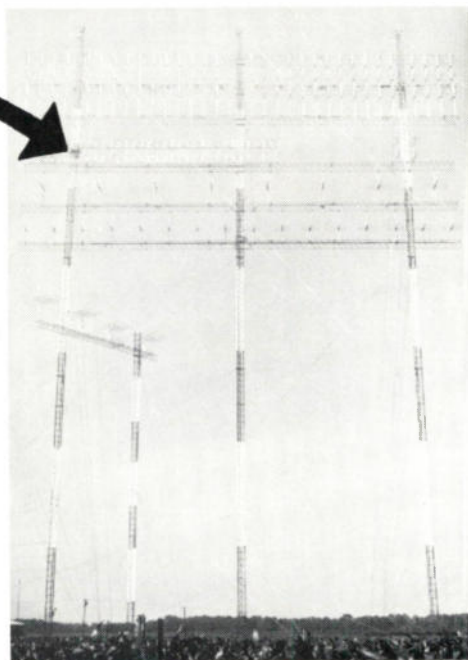
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Shown above is a series of 4 special ROHN towers for a Jerrold-Taco CATV antenna installation. Towers engineered, manufactured and installed under complete ROHN supervision.

Local Origination

Equipment Showcase



The following listings are presented as an aid to system operators in choosing basic local programming equipment. Much of the equipment necessary for such originations can best be obtained from local retail electronics outlets, or fabricated by system personnel. As the amount of programming on cable systems increases, more and more firms will design or modify equipment to fill operators' needs. Reports on all such equipment will appear in the New Products section of TV & COMMUNICATIONS as it becomes available.

ALTO FONIC TAPE SERVICE, INC.

Tape program services—mono and stereo for background music service. For hire basis with regular material and tapers. Prices start at \$10 per hour.

AMERICAN CABLE ELECTRONICS, Division of Jack Kent Cooke, Inc., 9888 Wilshire Blvd., Beverly Hills, Calif.



Weather Data solid state weather unit provides time and weather data and space for show card. Unit includes camera and mount. Direct digital readout is featured.

Emerg-Alert system model 600 emergency alert warning system for use with CATV distribution system. Both audio and video signals are inserted into system. Remote operation is featured. See our catalog.

AMPEX CORPORATION, 2201 Lunt Ave., Elk Grove Village, Illinois.



VR-6000 series video tape recorder for use with model CC-6400 in closed circuit applications.

147 Series tape for use with VR-6000 recorder. One inch wide tape is priced at \$59.95 for 60 minutes playing time \$44.95 for 30 minutes.

Videotape duplicating service for copying tapes. Single or multiple copies made for use in Ampex recorder units.

Monitors for studio use—complete line from 8 to 21 inch screen. Contact manufacturer for details.

BLONDER-TONGUE LABORATORIES, INC., 9 Ailing Street, Newark 2, N.J.

Vidicon camera, Model TC-1. Self-contained camera. Camera adjustable to meet all lighting conditions. \$350.

Model TTVC-1SN. Same as TTVC-1 but accepts studio net pulses. Allows common synchronization for multicamera operation. Net \$2450.

Model TTVC-1R. Same as TTVC-1 but equipped for remote control of electrical focus, beam target, video gain and power. Net \$2520.

Model TTVC-1(2-6). RF version of the TTVC-1. Output 50 millivolts channels 2 through 6 available. Net \$2010.

Viewfinder camera, Model EV-1-1. Camera viewfinder combination. Can be mounted on tripod and friction head. Camera is built together with an 8 element viewfinder. HT-10 turret for up to 4.5x mount lens. 1.8x lens supplied. Provision for optional intercom and remote control. Net \$3440.

Model EV-1(2-6). Same as EV-1 except has RF output. Channels 2 through 6 available. Net \$3440.

Model EV-1-SNR. Same as EV-1 but accepts studio net pulses and is remote controlled. Net \$3150.

COHU ELECTRONICS, INC., Box 623, San Diego, Calif.

2000 Series cameras. Designed for electronic zoom or moving camera positions. 3 1/2 inch diameter with 4:1 zoom. Solid state circuits. 10 mc bandwidth. Vidicon protective circuit.

3100 Series. Self-contained, high resolution with bandwidths of 10 to 20 mc. 525/945 line scanning. Solid state plug-in circuitry. Automatic high level compensation. Adjustable white peak clipper. Permits manual or automatic remote control. Price \$2380.

3000 series cameras. Solid state circuitry. Meets EIA and FCC specifications.

Lenses for closed circuit television cameras are standard with 16mm C-mountings. Model AL 1A—12.5mm 25mm f 1.4. Model AL 4A—50mm f 1.4. Model AL 5A—75mm f 1.4. Model AL 7—101.6mm f 1.4.5. Model AL 7A—101.6mm f 2.7. Model AL 8A—152.4mm f 2.8. Model AL 15—254mm f 0.95.

COHU also has complete line of zoom lenses available.

2470 series miniaturized rackmounting sync generators and accessories. Prices start at \$945 for single generator.

Monitors feature precision deflection systems and video response up to 10 mc. Accepts composite video sync signals, operates from video line with a separate sync line furnishing either industrial or EIA pulses. Locked interlace circuit. Available in picture tube sizes from 14 to 27 inches. Model GRM 14 14R 17 17R 21.

CONRAC Division of Giannini Controls, 19217 E. Foothill, Glendora, Calif.

Monitors, rack-mounting units in 8, 14 and 17 inch sizes. Contact manufacturer for specifics.

DAGE-BELL CORP., 455 Sheridan Avenue, Michigan City, Indiana.

520 Broadcast Camera Chain. 800 line resolution camera and control console with related audio and switching modules and cross pulse master monitor for program control. Camera and control priced under \$5000.00.

DV-300 VTR includes facilities for slow motion, stop frame, convenient editing. Two inputs, solid state, separate audio video record. Built-in monitor is optional. Price \$7950.00.

Type 1518 broadcast camera control. Unit for series 520 vidicon camera. Transistorized with self-contained regulated power supply. Slide rack mount.

Type FC-11 vidicon film chain. Unit features 4 input prism multiplexer. Has film camera and provisions for 35mm or 16mm projectors. Film camera is transistorized model.

Zoom lens kit, focal range 60-300mm—101393. Zoom lens kit, focal range 30 to 150mm—101392.

DAVCO ELECTRONICS CORP., P.O. Box 861, Batesville, Arkansas.

Cameras, tripods and dollies in stock. For detailed information and prices contact DAVCO.

Distributor of "Programmer 1" tape player. Continuous 3 hour tape cartridge for background music systems.

FMRT-2 FM System. Pre-wired package delivers two FM channels. Includes two variable FM Tuners which can be crystal controlled on any FM channel. Plus two crystal controlled Entron FM Transmitters on specified frequency from 88 to 108 megacycles. Contains rack mounted remote power supplies for antenna preamps (DRPB FM) along with a multiple outlet. Price is \$897.00 FOB Batesville, Arkansas.

MC-1100 Music Channel. Rack mounted head end unit. Includes tape desk with 10 reel capacity preamplifier and Entron FMT TV transmitter. Open rack model is 21" x 32"



Price \$848.00. Deluxe cabinet model is 28" x 21 1/4" x 15 1/4". Price \$868.00. Eight hour pre-recorded tapes available.

DYNAIR ELECTRONICS, INC., 6360 Federal Blvd., San Diego, Calif.

Self-contained video amplifiers. Complete units with self-contained power supplies, all solid state.

Model DA-30C. One looping input, four outputs, 8 db gain, price \$340.00.

Model DA-60C. Two channel with one looping input, four outputs per channel, 8 db gain, price \$450.00.

Series 1000 modular video amplifiers. Modules include:

FR-1000A Frame \$150.00

PS-1006A Power supply \$150.00

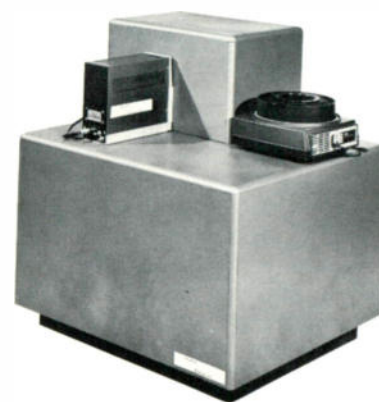
DA-1060C Video distribution amplifier \$175.00

CL-1050B Video clamper \$350.00

CL-1056A Video clamper 28 db gain \$350.00

AGC-3A AGC amplifier, delivers constant 1VPP output with input of 0.25 to 4.0 VPP. Completely self-contained with own power supply. Operates with broadcast or industrial composite or non composite video signals. Price \$850.00.

ELECTRONIC SYSTEMS DEVELOPMENT, 1818 Westlake Avenue North, Seattle, Washington.



TeleWeather time weather unit. 6 weather functions, accurate time piece, slide presentation. Completely sealed system uses fluorescent lighting.

ENTRON, INC., 2141 Industrial Parkway, Silver Spring, Md.

FM transmitter, Model FMT 1100. Accommodates multiplex or monaural audio input. F, R, output. Standard 75 usec pre-emphasis. Factory aligned to any one of 28 FM channels. Maximum output level 0.2 volts. Level control range 25 db. Stereo channel separation 35 db. Hum and noise down 55 db at 75 kc deviation.

FAIRCHILD-DUMONT LABS, 750 Bloomfield Ave., Clifton, N.J.

Complete line of television camera equipment designed for professional studio applications and closed circuit use
TC5950. Ultra high resolution, transistorized small camera head and control unit with EIA sync

TC550. High resolution transistorized self contained with available remote control functions EIA or industrial sync available

Complete line of industrial and professional monitors in all sizes

Complete complement of lenses for CCTV and studio equipment Standard wide angle telephoto and 300m types available

GIRARD PROJECTION SERVICE, Houston, Texas.

Film packages for CATV applications available on short term basis Distributor for major U.S. film producers

MINNESOTA MINING & MFG. CO., 2501 Hudson Road, St. Paul, Minn.

Manufactures complement of video tapes for broadcast general and special purposes

Video tape, 377. Designed for use on video recorders for closed circuit industrial and educational applications Longitudinally orientated This provides optimum output for the long sweep of record and playback heads on this equipment Price dependent upon needs

MIRATEL ELECTRONICS

LV series. General purpose monitors 8" and 14" Features regulated power supply and solid state rectifiers 10 mc bandwidth

LVBC. Custom chassis \$280.00 (LV14C is \$290)

LVBR. 19" rack mount \$310 (LV14R is \$320 17R is \$325)

LVBM. Metal cabinet \$289.00 (LV14M is \$325 17M is \$330)

LVBRT. Twin monitors for 19" rack \$592.00

TU series monitors. modular printed circuit construction plug in transistors Available 8" thru 23" sizes

TU23M 23" cabinet model \$483.00

MULTI MEDIA ENGINEERING INC., 2385 Lewis Ave., Rockville, Md.

FL-1C. CCTV camera is fully transistorized Housed in aluminum case—modular construction—fan cooled Horizontal resolution in 800 lines 2:1 interlace \$2,450.00

Synchronizing generator, Model S-501. Provides EIA timing impulses for broadcast and CCTV applications Features computer type logic modular design Can be locked to line external driven pulse allowed to free run or operate with internal crystal control Price \$2,095.00

TAPE-ATHON CORP., 523 S. Hindry, Inglewood, Calif.

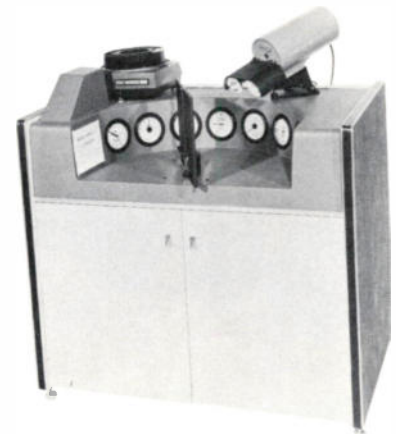
Type player, console type Librarian. Has two tape decks with 8 hour 10 1/2" reels Feeds background music to head end equipment Self contained 15 watt amplifier monitor speaker and 7 day timing clock Uses exclusive intersperser for complete CATV programming control Complete library of tapes available Available in both lease and out right sale plans

"Programmer" model type player offers 2, 3 or 4 tape decks and comprehensive intersperser system for music and message programming on weekly or monthly basis

TELEMATION, INC., 2275 South West Temple, Salt Lake City, Utah.



News Channel. Twenty four hours, minute by minute television presentation of Associated Press news wire service Camera views copy as it is being typed out by news printer, then alternates to scan mode to review preceding news at a comfortable reading speed Write or call for price information



"Weather Channel 97" time weather unit featuring walnut paneled cabinet, and dimensions of 27" deep by 43" wide by 36" high Horizontal scan camera is used 81 slide projector and card slot are standard equipment Special lighting is said to eliminate shadows on instrument panel

"Weather Channel 75" time weather unit is designed for smaller systems and provides wind velocity, wind direction, temperature, barometric pressure and time Instruments and camera are identical to those on other Telemation units

TMV-501 Video Processing Amplifier solves problem of sync degradation encountered in tape playback and dubbing To insure quality playback the Proc Amp reshapes sync pulses and clips both modulation products and switching transients Readily accessible inputs and outputs enable operator to connect the Proc Amp for both video tape recording and playback

TSG-1 Sync Generator fits all G.E. TE 20 and TE 22 cameras to provide positive 2:1 interlace sync drive signals eliminating more patterns and increasing picture stability TSG-1 also delivers a sync signal more compatible with home television receivers

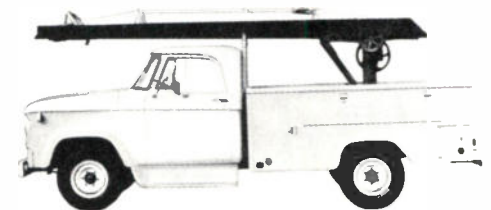
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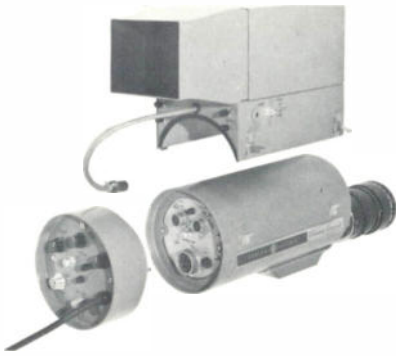
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TeleMation/G.E. Model TE-22 remote control vidicon camera conforms to EIA and FCC standards when used with a TeleMation TM-101 EIA camera control unit. The solid state camera is also compatible with standard camera accessories. Can be converted to local control by attaching a TCA-1 Local Control Adapter. An accessory TSG-1 sync generator fits inside the camera to provide positive 2 1/2 inch frame



RE-575 Viewfinder is a five inch completely solid state unit easily mounted on any G.E. TE-20 or TE-22 camera. The modern streamlined hood is specially designed for use under even the most adverse light level conditions. An important consideration for CATV operators who may find their local origination programming often taking them out of the ideal station setting.

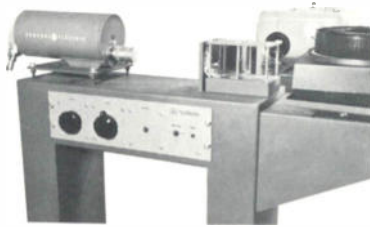
Model TCA-1 Local Control Adapter makes possible a one camera local origination system. The TCA-1 fits onto the back of the TE-22 EIA studio camera to eliminate transporting a separate EIA camera control unit for pickups in the field such as sporting events, council meetings, etc. In effect, similar to camera economy, maintenance applications.

Ampex VR-6000 series videotape recorder utilizes helical scan recording principle with slow moving tape and fast moving head delivering a bandwidth of 2.5 mc a signal to noise ratio of 39 db and a horizontal resolution of 250 lines. Stopmotion feature permits examination of a single frame. Six, minute playback recording time and guaranteed tape interchangeability between VR-6000 and VR-7000 recorders for reliability and flexible programming.

EV-647A Microphone offers long lasting performance and convenience. In less than four inches long, 1 1/2 inch in diameter and weighing only 1.4 ounces! But rugged, this

high quality microphone features a non-reflecting gray finish, a frequency response of 60 to 12,000 cps and an extra long 16 foot cable.

Model TMV-101 Camera Control Unit meets all EIA and FCC specs for monochrome transmission when used with the TE-22 remote camera affording ruggedness and reliability of a solid state device while maintaining present or future programming that requires EIA conformity. An optional self contained video level meter for single or multiple camera installations where switching and/or recording of video sources is required.



TMM-303 Optical Multiplexer switches up to two 16mm film projectors and one slide projector into a single vidicon camera through the use of motor operated front surface mirrors. Local control panel allows operator to select any of the three optical inputs. Unit may be remotely controlled.

TELE-SIGNAL ELECTRONICS, LTD., 1915 Stainsbury Ave., Vancouver, B.C.

Telson FM channel governor, crystal controlled dual converter leveler maintains constant output level through AGC circuitry. Available for any FM frequency.

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ity, Humidity, indicator optional. Supplied with or without camera. Offered with Packard Bell, G.E., Motorola or Sylvania camera. Three blank panels for local announcements. Automatic slide projector optional.

TUTORTAPE LABS, 777 Lexington Ave., New York, N.Y.

Educational system for use on CATV F1 band. Courses programmed by International Correspondence Schools may be received by Sylvania 4 sub carrier single channel FM radio connected to the CATV outlet with a T fitting. Enables subscriber to select multiple choice answers and automatically receive affirmative or corrective response immediately.

VIKING INDUSTRIES, INC., 830 Monroe Street, Hoboken, N.J.

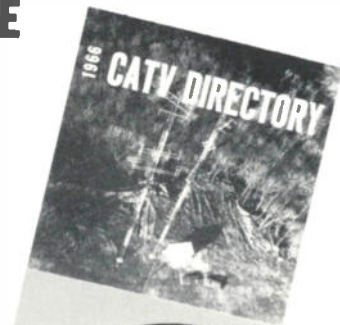
Weatherama time weather unit features 10 stations and uses GE camera in fixed position with 6 second refocusing time. Positions include calendar, time, rainfall, humidity, wind velocity, wind direction, barometric pressure, temperature, card or live action, and slide projector.

News-a-rama news wire service unit provides 24 hour news print out in conjunction with United Press International. Special printer is used for CATV application. Available on lease or purchase basis.

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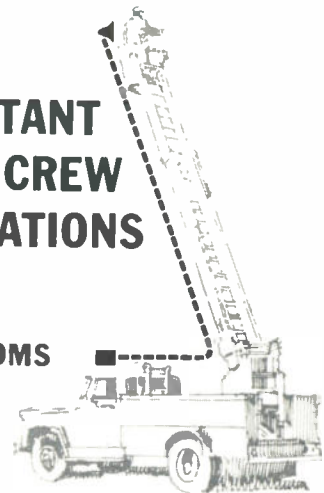
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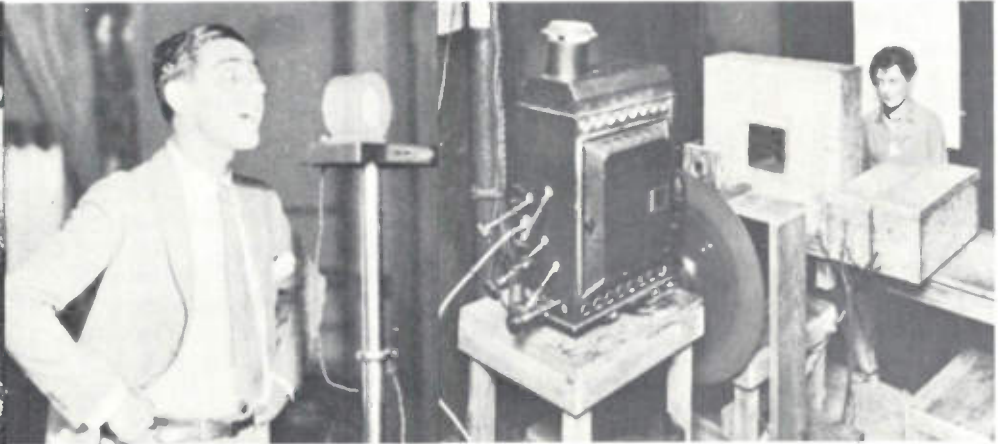
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Local Origination Primer

You, too, can become a "Local Originator." All you need is a basic CATV system and the addition of a few minor pieces of equipment and personnel, as indicated below.



Your present tower and head-end building will be completely adequate for local originations.



We interrupt this barometric pressure reading to bring you the girl scout meeting.

With slide projector removed, local announcer can be positioned behind weatherboard for "live" newscasts, etc.



Frankly, I never hear of —uh—"local origination" . . . or Bill Daniels either.



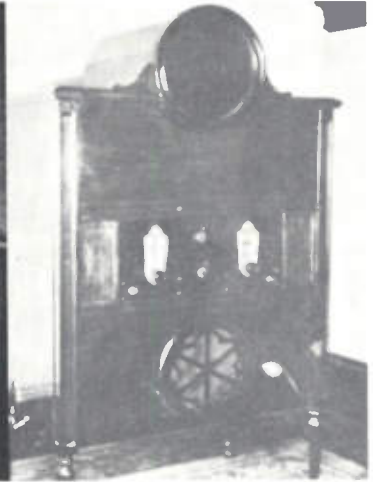
George Milner, center, adjusts level of FM music channel as John Monroe checks early model rack-mounted modulator at left. Don Turley, meanwhile, monitors output with headset.



Good evening, friends out there in Cable-land. Tonight our special guest is the director of AMST.



According to Charlie Clements, selecting a good boom mike is important in setting up your cable system studio.



A low-cost monitor is essential equipment in your cable-system studio.

CATV LEGAL VIEW

(Continued from page 14)

ners or stockholders in the station. Nor do the profit figures reflect in any manner the healthy capital gains produced by the exchanges of equity interests in television stations through sales and other transfers.

In terms of amount of total capital actually invested in tangible broadcast property, the three networks and the 588 reporting stations show a sum of 859.8 million dollars representing the *original* cost of investment in television broadcast properties and equipment; the total depreciated cost (current book value) of TV broadcast properties is presently 448.7 million dollars.

Therefore, on the basis of original cost, and discounting any allowance for depreciation, salaries, etc. to owners, investment in television returns, on the average, better than 50 percent per annum. And on the basis of a more standard accounting yardstick—current book value—a television investment produces an average return of approximately 100 percent per annum. Here, again, these figures do not take into account the substantial profits made on the sale or exchange of broadcast interests; nor do they include those amounts paid to owners of TV stations in the form of salaries, expenses and the like.

To say the least, therefore, the commercial television industry in the United States enjoys a prosperity second to none. While a regulated industry, its financial affluence and productivity, by any standard or measure, are great. It belies reality to assert that the TV industry requires special governmental protections from competition.

From this corner, and from, we believe, a vast majority of CATV businessmen throughout the nation, come nothing but sincere, genuine wishes for continuing, ever-increasing prosperity and success to those in all phases of the broadcasting industry. Traditionally, the broadcasting industry has always been in the fore of those seeking to preserve the free-enterprise environment. Historically, broadcasting has always opposed government intervention into the economic and other business activities

of its commercial intercourse.

It perplexes this observer, however, to reconcile on the one hand a determined opposition to governmental intervention in the competitive or economic activities of broadcasters while, on the other hand, extending an enthusiastic invitation to the government to step in to protect broadcasters from any potential competition offered by others. Selecting a basic regulatory philosophy which depends solely upon whose ox is being gored at the moment can be a most dangerous preoccupation. As any practical broadcaster well realizes, and regardless of the amount of capital invested in "tangible broadcast equipment," his most valued, productive and essential asset is the television channel allocated by the government for his temporary use. Without these few precious megacycles of spectrum, the broadcaster's business is nothing. Recognition of the fact that it is the public who owns the spectrum should instill in any God-fearing broadcaster the distinct possibility that one day the public might also demand to share in those large profits derived principally through the use of its precious spectrum. For example, can the day be far away when some unknowledgeable but well-meaning samaritan will suggest that "educational" TV is rightfully entitled to be subsidized out of the profits of commercial TV? And shouldn't the small, struggling UHF commercial station be entitled to at least a reasonable share of his more fortunate brethren VHF operator's large profit? After all, isn't it simply the use of the superior VHF channel—which really belongs to all of us—which confers the preferred competitive advantage on the V station? Let's "share the wealth."

Broadcasters, and their major industry spokesmen, must always be conscious of the fact that the preservation of the free-enterprise competitive environment is always endangered by governmental intrusion—probably more so now than at any previous stage of our history. It is the case of the camel with its head in the tent. If the leaders of the commercial broadcasting industry do not soon return to a philosophy which demands that the government stay

out of its business affairs to the extent possible, we are fearful that their short-sighted attempts to stifle any potential competition will result ultimately in the demise of the obviously healthy commercial environment which prevails today. For no thinking broadcaster can reasonably expect the government to protect him against competition without also anticipating that this same government will very soon demand—and with some amount of justification—to have a large say in both the content of the broadcaster's program fare and the extent of the monetary profits derived from the use of spectrum which belongs to all of the public.

This observer sincerely hopes that broadcasters will wake up and stop inviting their own self-destruction. The inevitable consequences of governmental intervention can be only the development and application of more and more regulation and other business controls. If this comes to pass, all of us—broadcasters, CATV operators, and, perhaps most of all, the viewing public—will certainly suffer the consequences.

The United States Supreme Court has already stated this warning when long ago in the landmark communications case of *Sanders Bros.*, it said that if Congress had contemplated the grant of a business monopoly to a broadcaster, it would also have granted "the Commission powers to control over the rates, programs and other activities of the business of broadcasting."

If the present trend towards inviting governmental protection from competition persists, it cannot be long before the government does act to assume the powers of control over the "rates, programs and other activities of the business of broadcasting." Broadcasters must constantly be on their guard; they cannot, in our view, continue to pick and choose the particular areas in which they desire government intervention and, at the same time, expect to preserve the integrity of their own free-enterprise position. For clearly an industry which depends so heavily upon exclusive use of a scarce natural resource—spectrum—to produce vast profits is vulnerable. □

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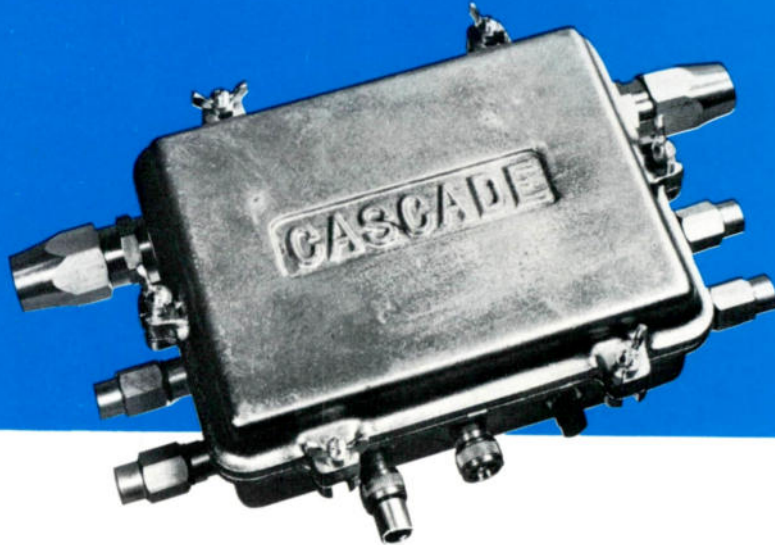


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OCTOBER 1966

CATV TECHNICIAN



- Time Domain Reflectometry
- VHF-UHF Sweep Converters
- Latest CATV Products

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OCTOBER'S CATV PROBLEM SOLVERS from PRUZAN

In October, as in every month of the year, Pruzan will continue to provide the answers to supply problems for more and more CATV systems. The reasons are plain. Large inventories of the widest range of materials, knowledgeable people, and an almost fanatical intent to ship every order the day it is received, enable these systems to keep costs down, and construction on schedule while providing uninterrupted service. Like to do all these? You can. Call Pruzan today.

Any connection sealing problem can be solved with this wide range of materials.

TAPES



Bishop Bi-Seal is a polyethylene-based tape designed for use with all polyethylene insulated wires and cables. It is a self-bonding tape which fuses in a molecular bond to form a waterproof seal. Bi-Seal splices should be covered with a plastic electrical tape to protect against abrasion. Bi-Seal is available in 1/2", 3/4", 1" and 2" widths.

#88 Scotch Electrical Tape is the all-weather vinyl plastic electrical tape preferred by linemen, splicers and engineers everywhere. For use in every climatic condition. It is available in job-size rolls of 3/4" x 20' or 3/4" x 44', in standard 3/4" x 66' rolls, or in 3/8", 1/2", 1", 1 1/2" and 2" widths.



ENCLOSURES

Channell Splice Enclosures

Channell ABS Plastic enclosures are available in a range of sizes to suit any application either aerial or direct buried. They utilize neoprene grommets to make a completely waterproof and air tight splice.



"Scotchcast" Splices

If a completely sealed splice is desired, the MMM, "Scotchcast" kits contain the molds, resin and accessories to make an economical, permanent splice.



SIGMAFORM HEAT-SHRINKABLE PRODUCTS

Splice Covers

The Sigmaform thick wall, self-sealing, heat-shrinkable splice cover was developed specifically to provide an easily-applied, economical and positive seal for CATV coaxial cable splices. It contains its own sealant which melts to form a moisture-proof barrier as the tubing itself constricts around the connector. Available in a variety of sizes to fit every coaxial splice.



Aperture Seal

The Sigma Aperseal will provide a waterproof seal for cable entrances such as into conduit boxes, amplifier housings or firewalls.



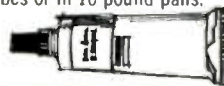
Tap Enclosures

Sigmaform re-entry butt splice enclosures were originally designed for secondary power distribution connections, but have proved to be an excellent waterproof housing for CATV taps. These may be either direct buried inside this enclosure, or waterproofed for placement in a bell-type pedestal flush with the ground.



SILICONE COMPOUND

Dow Corning #5 Silicone Compound (or its equivalent General Electric #635) is easily applied to taps and fittings, does a good job of waterproofing and corrosion prevention and is easily wiped off if the fitting must be re-entered. It is available in easy-to-use 2 oz. or 8 oz. tubes or in 10 pound pails.



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"Scotchkote" Electrical Coating

A fast-drying sealing and bonding agent recommended for use on cable splices wrapped with plastic electrical tape. Excellent adhesion, resists oil, corrosive conditions, moisture. Available in 8 oz. can with brush top.



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Liquid rubber brushes on, dries quickly, prevents corrosion and moisture damage. Successfully used on CATV splices for fifteen years. Available in 4 oz. brush-top cans or quarts.

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TIME DOMAIN REFLECTOMETRY

By I. Switzer

Sweep frequency techniques are firmly established in the CATV technician's repertory of standard test methods. Sweep techniques are applied to tests of transmission characteristics and, in recent years, have been employed for sensitive tests of cable quality (structural return loss). Frequency domain testing plots the characteristics of the system under test against frequency. The technician can easily recognize the frequency bands at which the system is faulty in transmission, impedance or return loss. Frequency domain tests (sweep frequency tests) do not give any information on the nature or location of the fault causing unsatisfactory results in performance.

Time domain methods can be used to supply the desired information on location and nature of a system fault. Time domain methods are usually applied to studies of reflections in cable but could be applied to studying transmission characteristics of a system. When applied to testing cables the method makes use of the basic characteristics of coaxial transmission lines.

The characteristic impedance of a coaxial line is

$$Z_0 = \frac{138}{\sqrt{E}} \log_{10} \frac{D}{d}$$

E = dielectric constant

D = diameter of outer conductor

d = diameter of inner conductor

Any abrupt change in the characteristic impedance of a transmission line gives rise to a reflection. For lines having a characteristic impedance of 75 ohms, the reflection coefficient at the impedance change is

$$P = \frac{Z - 75}{Z + 75}$$

where Z = impedance of changed section, P = reflection coefficient. Thus a transition to an open circuit ($Z = \infty$) gives a reflection coefficient of +1. A short circuit ($Z = 0$) gives a reflection coefficient

of -1). Gradual impedance changes (transition smooth and long compared to longest wavelength being transmitted) will not give rise to reflections.

Time Domain Reflectometry has long been used to find shorts and opens in telephone and power lines. The long rise times of available pulse generators and the limited frequency response of the oscilloscopes used, limited resolution and accuracy, and limited usefulness on CATV cables. The advent of short rise time pulse generators and sampling mode oscilloscopes has made TDR (Time Domain Reflectometer) systems available with rise times of 150 picoseconds (a picosecond is one millionth of a millionth of a second). Such a system is capable of resolving two reflections less than one inch apart and is capable of showing the reflections from different parts of a CATV connector assembly or splice. The sampling oscilloscopes used in modern TDR systems have very large dynamic range and are capable of displaying and accurately measuring a reflection coefficient of only .005. In a 75 ohm system this is the magnitude of reflection which is caused by a transition from a 75.0 ohm impedance to an impedance of 75.75 ohms. Such a 0.75 ohm increase in impedance could be caused by change in conductor diameter ratios of about 2½%—quite a small change!

The TDR system generates a pulse, feeds it into the line under test and then displays the reflections from discontinuities in the line. Pulse generator, oscilloscope and line are connected with a suitable coaxial Tee. The pulse form is usually a unit step pulse with very short rise time. The oscilloscope is usually a sampling mode oscilloscope. Any general purpose pulse generator and sampling oscilloscope can be connected to form a useful TDR system. Pulse generator and oscilloscope have been packaged into a single unit by Tektronix and by Hewlett-

Packard. The Hewlett-Packard unit is packaged as a special purpose unit for cable and connector testing, and the remainder of this article is a discussion of applications and experience with the Hewlett-Packard TDR system (HO-5 1415A in 140A oscilloscope).

The TDR generates a short rise time, 1 volt unit step pulse and feeds this through the sampling Tee to an output connector to which the system being tested is connected. The instrument is basically a 50 ohm instrument, and when used with 75 ohm lines some allowance must be made for mismatch problems. The principle problem is the re-reflection which occurs when reflections from the system being tested meet the 50 ohm impedance of the instrument. Coming from a 75 ohm system they are partially reflected instead of being completely transmitted into the TDR. This re-reflection goes back into the cable and then back from the fault to the instrument. This causes a chain of equally spaced re-reflections diminishing in amplitude. These are not serious in systems which do not have major faults. They can, however, confuse the display in systems with large flaws. The transition can be completely matched by using a resistive minimum loss pad. This pad matches the system forward and backward but causes a substantial loss in sensitivity, since a 50/75 MLP has a loss of 5.7 db and causes a total loss of sensitivity of almost 12 db. Hewlett-Packard makes available an adapter in the form of a 25 ohm series resistor. The TDR is now looking at a 100 ohm load, but the return pulses see the 25 ohm resistor and 50 ohm instrument source in series, comprising a 75 ohm load for the reflected pulses. There is still a loss of sensitivity, but not as severe as with the minimum loss pad. Calibration can be restored by using the vertical gain vernier provided on the instrument. The adapter also makes the transition from the GR-874 type connectors on the instrument to

the more conventional F or N type connectors for the 75 ohm system being tested.

The TDR instrument is provided with sweep rates and sweep magnification to cover cable lengths between 1 foot and 4,000 feet. At short distances resolution is good enough to resolve components of a typical cable splice. At greater lengths resolution suffers because of increasing attenuation of high frequencies with cable length. Keep in mind that the TDR system uses pulses with frequency components up to 2,300 Mc!

The display on the TDR screen is an impedance profile of the cable being examined. It is very sensitive to the impedance changes caused by moisture in cables or connectors. Moisture in cables causes the dielectric constant (ϵ) to increase, which in turn causes the characteristic impedance of the cable to decrease. The affected part of the cable shows as a dip in the TDR display. I have examined cables in which moisture has gathered in the low spots between poles. The dry areas near the poles show up as stretches of normal impedance while the "wet" stretches of cable show as dips in impedance.

Most cable manufacturers specify a plus or minus 2 ohm tolerance from nominal 75 ohms in aluminum sheathed cables. Impedance changes from reel to reel show up as small abrupt changes in impedance on the TDR display. The splice joining the two cables may show up, depending on its match and on the distance from the TDR. The change in impedance may be accurately measured with the TDR, but it is not usually possible to determine which

cable, if either, is actually 75 ohms. Terminations do not usually match the cable terminating impedance, and the reflection from this mismatch is readily observed and the reflection can be accurately measured. Again it is not possible to tell which is at fault—the cable or the termination.

This uncertainty is due to the lack of a 75 ohm impedance standard. We may accurately measure the resistance of a termination at DC using a Wheatstone bridge. The RF impedance of this resistor may be radically different from the DC characteristics. A 75 ohm-termination is that termination which perfectly terminates a 75 ohm transmission line without any reflection. A 75 ohm line may be defined as that line whose dimensions and dielectric properties satisfy the theoretical equation working out to 75 ohms. The National Bureau of Standards has constructed several standard 50 ohm lines and will compare submitted samples to their standards using TDR and slotted line methods. No comparable impedance standard exists for 75 ohm lines. The jump from the NBS 50 ohm standard to 75 ohms is too great for real precision in measurement. The Alford Company does construct 75 ohm air line sections and these may be used as 75 ohm standards in TDR work, but users should keep in mind that this standard is not backed by NBS.

The TDR now provides us with a practical sensitive method of comparing cable impedances. The potential usefulness of the TDR in this application may become apparent from the following example. The usual method for measuring nominal cable impedance is MIL Spec JAN-C-17, first issued in 1944. The method requires measuring the capacitance of a reel of cable. This capacitance can be accurately measured with a capacitance bridge. Propagation velocity is measured on a short piece of cable. These two measurements can be used to calculate the average characteristic impedance for the reel of cable.

The propagation velocity gives information on the dielectric constant, and the capacitance gives information on the ratio of conductor diameters. Structural return loss testing with a bridge has become the most sensitive method of testing cable quality. The best bridges for this purpose provide an adjustable balance arm to provide for some variation in the aver-

age characteristic cable impedance from the nominal 75 ohms. The result is a comparison of average cable impedance to the reference impedance. The TDR actually draws an impedance profile along the whole cable and even includes the effective change in impedance due to the series resistance of the conductors. This impedance profile permits identification of the location and nature of individual flaws in the cable.

I do not want to suggest that the TDR is the absolute "be all-end all" test for CATV cable. We can examine a cable with the TDR and find that there are no individual flaws having a return loss reflection worse than 40 db, and still find with SRL bridge test that the cable has a serious defect at a particular frequency due to individually small flaws being repeated in a regular pattern which reinforces reflections at a particular frequency. The TDR operator may not notice the periodic nature of these small flaws.

TDR methods and frequency domain methods such as transmission loss and SRL methods complement each other. I have found that the TDR should be considered a check on the mechanical condition of the cable, and can be used as a reliable detector of gross manufacturing flaws, damage due to careless handling during shipment and erection and to find damage that has happened after erection. The TDR has been used as a practical check on all these applications. Any cable defect which gives rise to a reflection as small as 52 db down can be detected with the TDR system. The TDR will show the hole in a cable sheath caused by a pressure tap which has been installed and subsequently removed. The TDR has detected the small cable flat spots caused by the tines of a fork lift truck which handled the cable reels. These flat spots were not detected visually but were only evident when they were found by accurately measuring out the distance indicated by the TDR. The TDR further demonstrated that the reflections caused by these flat spots were too small to cause concern for the electrical performance of the cable. This cable had been rejected because of mishandling in shipment but was returned to service after careful TDR inspection.

As cable systems get larger and performance specifications become tighter I foresee cable specifica-

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tion in terms of variations in impedance profile as demonstrated by TDR. Cables will be specified to have a minimum SRL, as they presently are and in addition will be specified to have a TDR impedance profile which does not deviate from some designated 75 ohm impedance standard by more than a specified amount.

The TDR has been in regular everyday use in a number of CATV systems for more than year. More and more systems are finding that this is a very useful piece of equipment despite its seemingly high purchase price. These systems have found that practical application of TDR technique is not without some problems.

The main problem experienced has been pickup of AC interference. This AC pickup is often so bad as to make it impossible to get useful TDR displays. This AC pickup usually comes from ground loop currents in the cable sheath. A CATV cable installed on poles, or underground, becomes part of a complex earth current network, sharing part of the earth currents carried by the messenger, power neutral and other system grounds. This current in the sheath is appreciable and is often present even though the cable is not used for powering amplifiers. In such a case the center conductor serves as a

long voltmeter lead, connecting the TDR across the voltage drop in the cable sheath. This AC voltage developed in the sheath resistance by ground loop currents is sufficient to completely mask normal TDR displays. At the present time, the only remedy is to remove all shunts from the cable being examined. Terminations and all devices such as splitters and taps must be removed in order to free the center conductor of all connections to the sheath. The Hewlett-Packard Company is developing a special filter to overcome this problem, and it is hoped to have the device generally available early in 1967. Back matched taps have a very disturbing effect on TDR displays. The reason for this has not yet been determined and no doubt something can be done about it once the cause for the distorted display is found.

There is a problem in relating TDR displays to frequency domain problems. Mathematically, the two "domains" are related through the Fourier transform, but it is not practical to make quick calculations relating the TDR display to the frequency characteristic desired. The TDR display is composed of all frequency components from DC up to more than 2,000 Mc. The upper limit is restricted by cable attenuation.

Blocking capacitors are frequently encountered. These remove DC and low frequencies and compel the operator to make a special interpretation of the display. A power inserter in a cable, which may appear transparent to usual TV frequencies, may appear as a miserable-looking reflection to the TDR. In general the TDR should only be used on truly broad band systems and devices having response from DC upwards. At short ranges we frequently get reflections which are strictly high frequency reflections, i.e. they are reflections of only the high frequency part of the TDR pulse. If the TDR had been restricted to TV frequencies we would have had no reflection. Filters are available to restrict TDR bandpass for this purpose. Resolution is reduced with these filters but accurate distance measurements can be made by removing the filters and restoring maximum system bandpass.

The TDR is proving a very valuable instrument for examination of cables and connectors, and when used intelligently and with regard to its limitations will be a very valuable test tool for the practicing CATV technician. The unanimous comment of every technician who gets to use one is "I don't know how we ever got along without it!" □

VHF-UHF SWEEP CONVERTERS

Many CATV systems have an occasional requirement for a UHF sweep generator for testing UHF preamplifiers and converters, but may not have enough applications to warrant investment in a new UHF sweep generator or combination UHF/VHF sweep generator. Simple, low cost frequency multipliers are available to multiply the frequency ranges of ordinary VHF sweep generators.

A typical multiplier, intended for use as a doubler will accept inputs from 10 Mc to 600 Mc and generate doubled output at from 20 Mc to 1200 Mc, and will accept up to 1 watt input power. Figure 1 shows the spectrum analyzer display of the output of such a doubler. Input was at 200 Mc, and the 2nd, 3rd, and 4th harmonic outputs are displayed along with the "feed through" of the fundamental input. The horizontal frequency scale is 0-1,000 Mc (100 Mc/division). The vertical scale is in

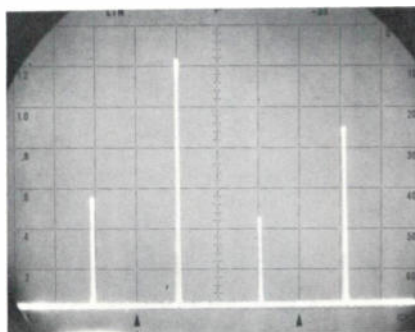


FIGURE 1.

db at 10 db/cm. Reference for the vertical scale at the top is 0 db for input signal. The doubled output (2nd harmonic) at 400 Mc is seen to be 8 db down from input. The 3rd harmonic at 600 Mc is seen to be 17 db down. The 4th harmonic at 800 Mc is seen to be 25 db down. Even numbered harmonics are generated more efficiently than the odd numbered ones.

For use as VHF to UHF sweep converters the multipliers should be used as quadruplers to take advantage of the comparatively high efficiency as a quadrupler compared to efficiency as a tripler.

Markers (VHF) mixed with the VHF sweep before quadrupling will also be quadrupled and may be used to mark frequencies in the UHF range. If a UHF amplifier is being tested, be sure to use a detector suitable for the UHF frequencies. If a converter is being tested the output will be VHF and the commonly used VHF detectors may be used. VHF markers may be used with the converter output as frequency markers or to check the accuracy of the UHF to VHF conversion by comparison with the quadrupled markers which have gone through the converter.

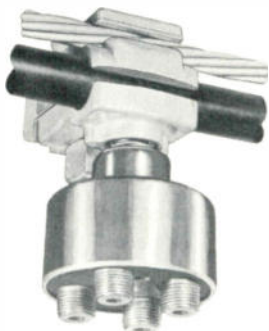
These frequency multipliers are useful devices for UHF testing and modestly priced. The two units illustrated, Anzac D-1 (Anzac Electronics, Inc., Norwalk, Conn.) and the Hewlett-Packard 10515A (Hewlett-Packard, Palo Alto, Calif.) are priced at around \$100. □

PRODUCT REVIEW

NEW COMPONENTS FOR CABLE TELEVISION SYSTEMS

MULTIPLE OUTLET TAP-OFF

New Benco 'Stinger' multi-tap transformers are now available, supplied with one, two or four tap spigots. All three models are back matched to minimize television signal reflections and tap attenuation. Values range from 13 db to 40 db. The 'Stinger' is said to



mate with all conventional pressure tap cable blocks and can be used with aluminum or RG type cable without cutting the distribution cable. For more information contact Benco Television Corporation, Post Office Box 10068, Jacksonville, Florida 32207.

ROHN MICROWAVE REFLECTOR

Rohn Manufacturing has been issued a patent on a microwave reflector. The unit includes a reflector face that is of knock-down construction comprised of several aluminum channels secured together in a side-by-side relationship. The reflector face is said to be uniformly flat and free of welds and bolt heads, providing a smooth, unbroken reflector area. These reflectors are available in four standard sizes—6x8 feet, 8x12 feet, 10x15 feet, and 12x17 feet. The reflector is constructed to withstand 50 pounds per square foot wind loading and 1/2 inch of ice. Additional details may be obtained from Rohn Manufacturing Co., P.O. Box 2000, Peoria, Illinois, 61601.

NEW ANTENNAS SERIES

Scientific-Atlanta, Inc. has introduced two new antenna series, the Super-Channeler series for VHF reception, and the Ultra-Channeler series for UHF applications. The VHF models are available with 16 and 32 elements. The UHF antennas cover the entire UHF band, and feature full paraboloidal reflectors for maximum aperture efficiency. The manufacturer also provides full antenna installation services for all models. For further details, contact Scientific-Atlanta, Inc., P.O. Box 13654, Atlanta, Georgia 30324.

VIKING TAP COMBINATION

Viking Industries has introduced new pressure taps No. 402, No. 403, consisting of a two-piece standard nut and bolt messenger clamp with a mushroom head and a two-piece pressure tap. The combination set is designed to reduce cable wear and moisture by having the housedrop connected to the separate messenger clamp. This concept is said to allow a tighter fitting pressure tap that requires less service. Taps are isolated by over 19db from one another. All blocks are Vik-o-Processed for corrosion protection. Fits all common cable sizes and is packaged 25 sets to a carton. Contact Viking Industries, Inc., 830 Monroe Street, Hoboken, New Jersey 07030.

NEW SCAN CONVERTER

General Electrodynamics Corporation's new ED 6052 Scan Converter is capable of converting radar PPI information to a standard television format without the use of a television camera. The application for this scan converter in the television industry is the conversion of weather radar information to standard EIA composite video signals for television transmission. To accept the range change available in a standard radar display, these adjustable range scales are provided, and automatic erasure is performed when changing from one range to another. Range change and independent erase may be performed from the control console. For additional information, contact General Electrodynamics Corporation, 4430 Forest Lane, Garland, Texas.



BACKMATCHED TRANSFORMER

CAS Manufacturing has available a new multi-outlet, backmatched transformer which makes possible as many as four outlets from an existing block. The unit is a direct screw-in replacement for 3/8-inch isolation units on all standard pressure tap blocks. It is available with either two or four outlets. Minimum isolation between taps is listed at 20 db, with attenuation values of 12, 16, 20,

24, 30, 36, and 40db available. Overall dimensions of the unit are 2 inches long by 1 1/2 inches in diameter. For further details, contact CAS Manufacturing Co., 3301 Royalty Row, Irving, Texas.

NEW HEAVY PLOW

A 20,000 pound mainline plow is now being tested for large diameter cable burial by Midwest Lawn-Saver Equipment Company. The unit is a custom designed mainline plow, the largest Midwest unit available with a 3,300 pound, 6-inch plow tooth engineered to place cable up to 52 inches deep. The tooth is followed by a large, extremely



wide radius cable shoe to allow high production cable laying. Included in the design is a method of feeding sand in around the cable for sand cushioning when rocky areas require it. The custom Mainline is about 40 percent heavier than the production model. For more details, contact Midwest Lawn-Saver Equipment Company, Box 588, Appleton, Wis. 54911.

BURIED CABLE MAINTENANCE

Two recently published brochures describing portable electronic equipment for the maintenance of buried cable plant are available free of charge from the Delcon Division of Hewlett-Packard Company. Bulletin 66-2 illustrates the use of the Delcon 4900A Fault Locator for pinpointing electrical faults, such as shorts, crosses, and grounds. Bulletin 66-3 pictures the techniques for the accurate location of pressure leaks in underground ducted communications cables with the new Delcon 18000A Ultrasonic Duct-Probe. Contact Delcon Division, Hewlett-Packard Company, 943 Industrial Avenue, Palo Alto, California 94303.

AMECO ADDS TO HANDBOOK

"Buried Cable Construction" is the title of Section 3, Ameco Cable Installation Handbook, now being mailed to early purchasers of that manual. The chapter on underground installation of CATV transmission lines can be inserted in the soft cover binder containing guidelines for CATV construction. The handbook was prepared by engineering, field service and system construction personnel of Ameco, Ameco Engineering Corp. and Co-Ax Construction Co. Price of the handbook is \$5, including future additions and revisions. Contact Ameco, Inc., 2949 West Osborn Road, Phoenix, Arizona 85002.

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CABLE TELEVISION REVIEW
The Weekly News Service of TV & Communications Magazine

COMMISSIONER HENRY STEPS DOWN
FCC Chairman E. William Henry formally announced that he plans to resign from the position of Chairman of the Federal Communications Commission on April 4. His resignation is effective immediately.

Henry's resignation follows a series of events that have led to his departure from the FCC. In a recent hearing, Henry was criticized for his handling of the FCC's new CATV rules. He stated that he would continue to carry out his duties until the end of the month.

Henry's resignation is expected to lead to a search for a new Chairman of the FCC. The FCC is currently reviewing the rules and regulations for CATV.

COMMERCE COMMITTEE HEARINGS CONCLUDED
After six days of public hearings and testimony, the House Commerce Committee has concluded its hearings on the proposed CATV rules. The committee will report its findings to the House in the coming weeks.

The hearings were held in Washington, D.C., and were attended by representatives from the cable industry, FCC, and other interested parties. The committee heard testimony from several witnesses, including FCC Chairman Henry and industry leaders.

The committee's report will address the issues raised during the hearings and will provide recommendations for the FCC's new rules. The committee is expected to release its report in the next few weeks.



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