



JANUARY 1966

# TV & Communications



- CASH FLOW PROJECTION GUIDE
- RADIO ADVERTISING FOR CATV
- SUB-CHANNEL FOR LONG RUNS

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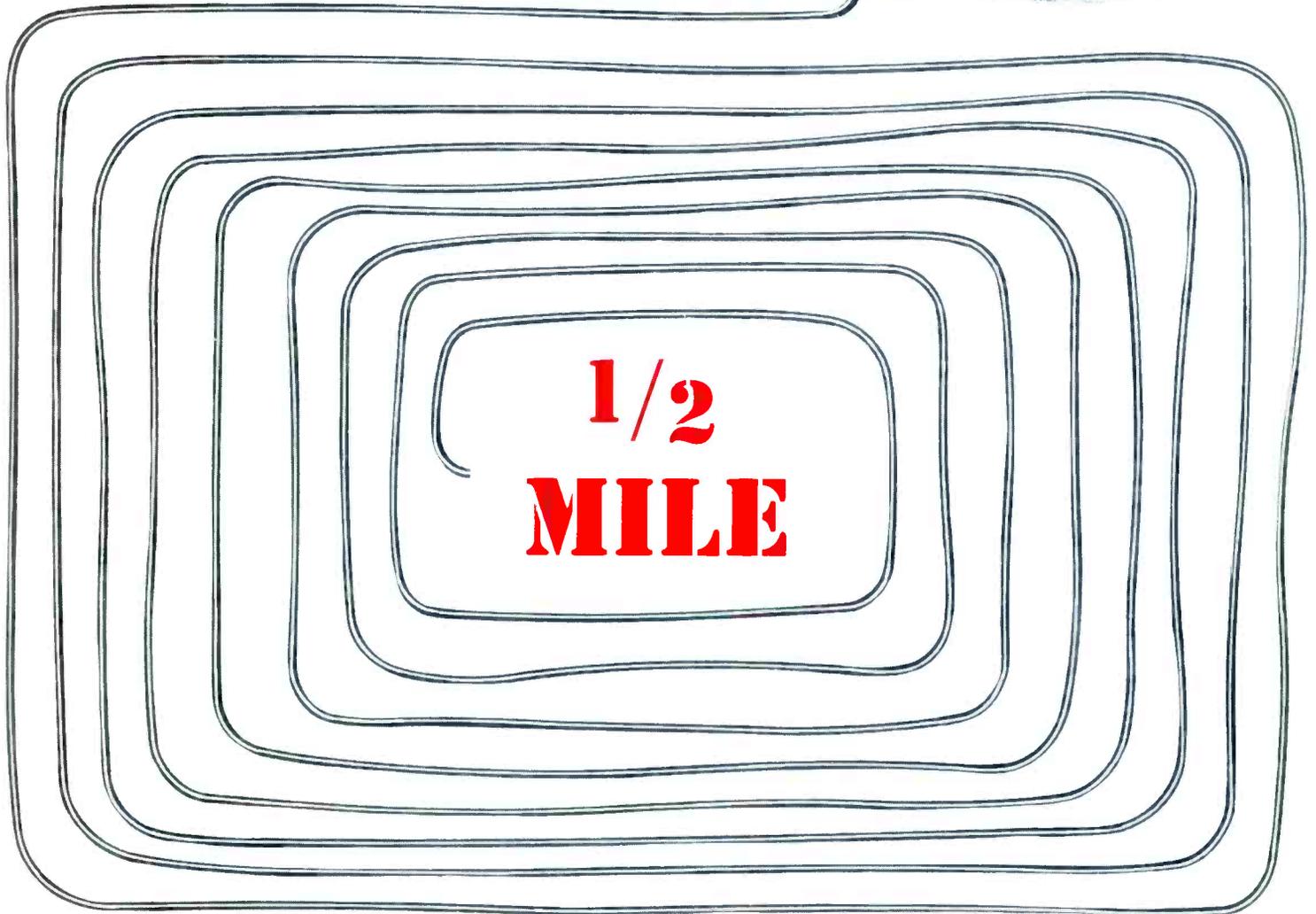
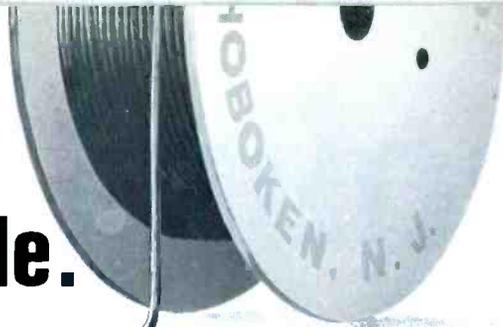
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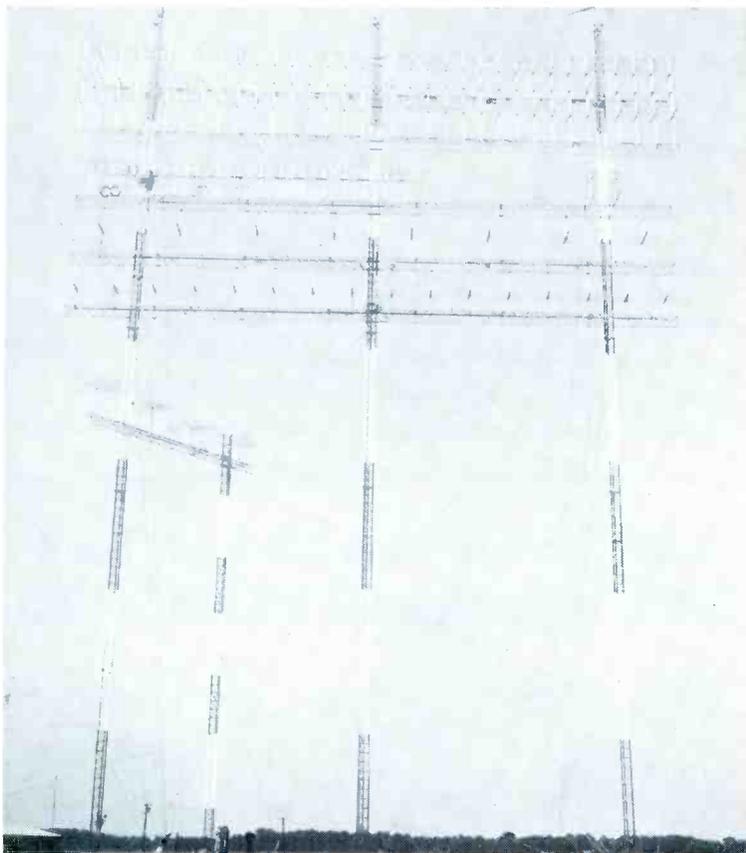
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### IN THIS ISSUE . . .

#### RADIO ADVERTISING



Some radio advertising basics for system operators are discussed by Virgil Evans in a concise, stimulating article. His simple, how-to-do-it ideas can be readily applied to your own cable system advertising program, either for a check-up comparison with your present techniques, or as a source of new methods.

#### WHAT IS CASH FLOW?



Here is a systematic, easy to follow explanation of the Cash Flow Concept of evaluating and planning a CATV operating company. Ameco's George Green calls upon his extensive financial experience in the cable industry to present instructions for using the Cash Flow Guide accompanying this issue.

#### SUB-CHANNEL OPERATION



Featured in our Technician's section is this evaluation of the subchannel technique for long trunk line runs. Contributing Editor Lon Cantor presents a comprehensive look at sub-channel operation, starting with the basics, and treating all aspects of this economical method of transmitting high-band signals over extended cable runs.

#### OUR COVER

The initiation of "News Channel" at Bill Daniels' Fort Madison, Ohio, system marked a first in the cable television industry. Incorporated as part of an active subscriber promotion, this auxiliary service is seen by Daniels as a valuable part of his expansion program in Fort Madison. Shown below the attractive marquee, with the window display of News Channel equipment, are Jerry Gill, AP; Joe Berry, Abel Cable; and John Russell, Tele-Mation.

Stanley M. Searle, Patrick T. Pogue PUBLISHERS

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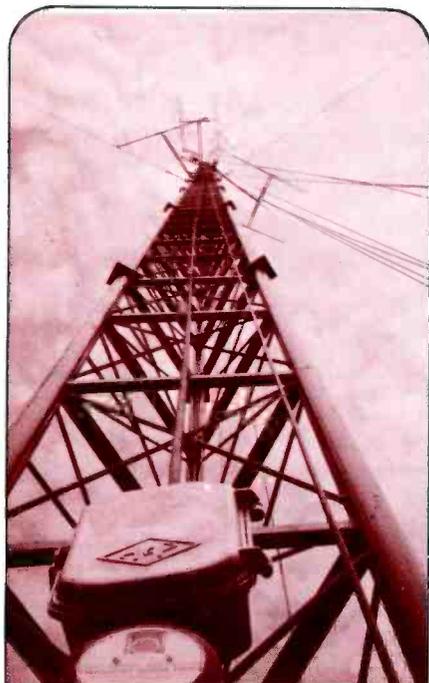
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# TV & COMMUNICATIONS

THE PROFESSIONAL JOURNAL OF THE CABLE TELEVISION INDUSTRY

Published by Communications Publishing Corporation, P. O. Box 63992, Oklahoma City, Okla. 73106



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## TABLE OF CONTENTS

<b>Service For Sale</b> Robert Cowley, Flagstaff Television Cable. Co. ....	22
<b>A New Era of Service</b> News Channel debuts in Fort Madison .....	24
<b>System Cash Flow Projection</b> George Green, Ameco, Inc. ....	28
<b>Radio Advertising</b> Virgil Evans, American Cable Television, Inc. ....	31
<b>CATV History, Nature and Scope</b> Robert D. L'Heureux, NCTA General Counsel .....	36
<b>180° Co-Channel Problem</b> A solution to tough interference .....	40

## CATV TECHNICIAN SECTION

<b>Sub-Channel Operation</b> Lon Cantor, Jerrold Electronics .....	43
<b>Urban System Problems</b> Ira Kamen, CATV Consultant .....	45

## DEPARTMENTS

In This Issue .....	5	Letters to the Editor .....	20
Editorial .....	8	New Product Review .....	46
News Spectrum .....	11	Index to Advertisers .....	49
Focus on Progress .....	16	Classified Advertising .....	49



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# THE FCC AND YOU

The FCC apparently intends to burden all of the nation's CATV operators with non-duplication restrictions . . . and to deprive hundreds of thousands of viewers of their right to choose from a multiplicity of television programs. If the Commission pursues this course, as foreshadowed in its Notice of Inquiry & Proposed Rule Making, it will be guilty of intervening directly in the business of Congress. Such FCC action to totally regulate CATV would constitute a usurpation of jurisdiction which clearly has not been granted to it by Congress and which the Commission itself has, in times past, admitted it did not have.

Like the Honorable Oren Harris, we are "greatly disappointed" in the Commission's assumption of total dominion over CATV. But if all of us who are interested in the future of television in America take the initiative immediately we can meet this threat. For example, we have written to our Congressmen, explaining the urgent need for legislative intervention in behalf of the cable subscribers and system owners. We have also supplied our local newspapers and broadcasters with information on the tremendous importance of CATV to many thousands among their respective audiences. And we included some facts on the economic impact which the threatened FCC regulation could have upon the dozens of community antenna television companies which contribute to the economy of our state.

It is important that *you* remain alert to the threats which our industry faces at this time . . . and that you use *your* energy and imagination to alert your cable subscribers, local news media and, importantly, your elected representatives in Washington, D.C. Free enterprise, truth and the public interest are clearly on the side of cable television. We believe that an *informed Congress*, prompted by an aroused public, will protect the cable subscribers and system operators from an unwarranted FCC power play which was designed primarily to insulate the broadcasters' pocketbooks from the effects of free competition in the public interest.

## Cable or Community

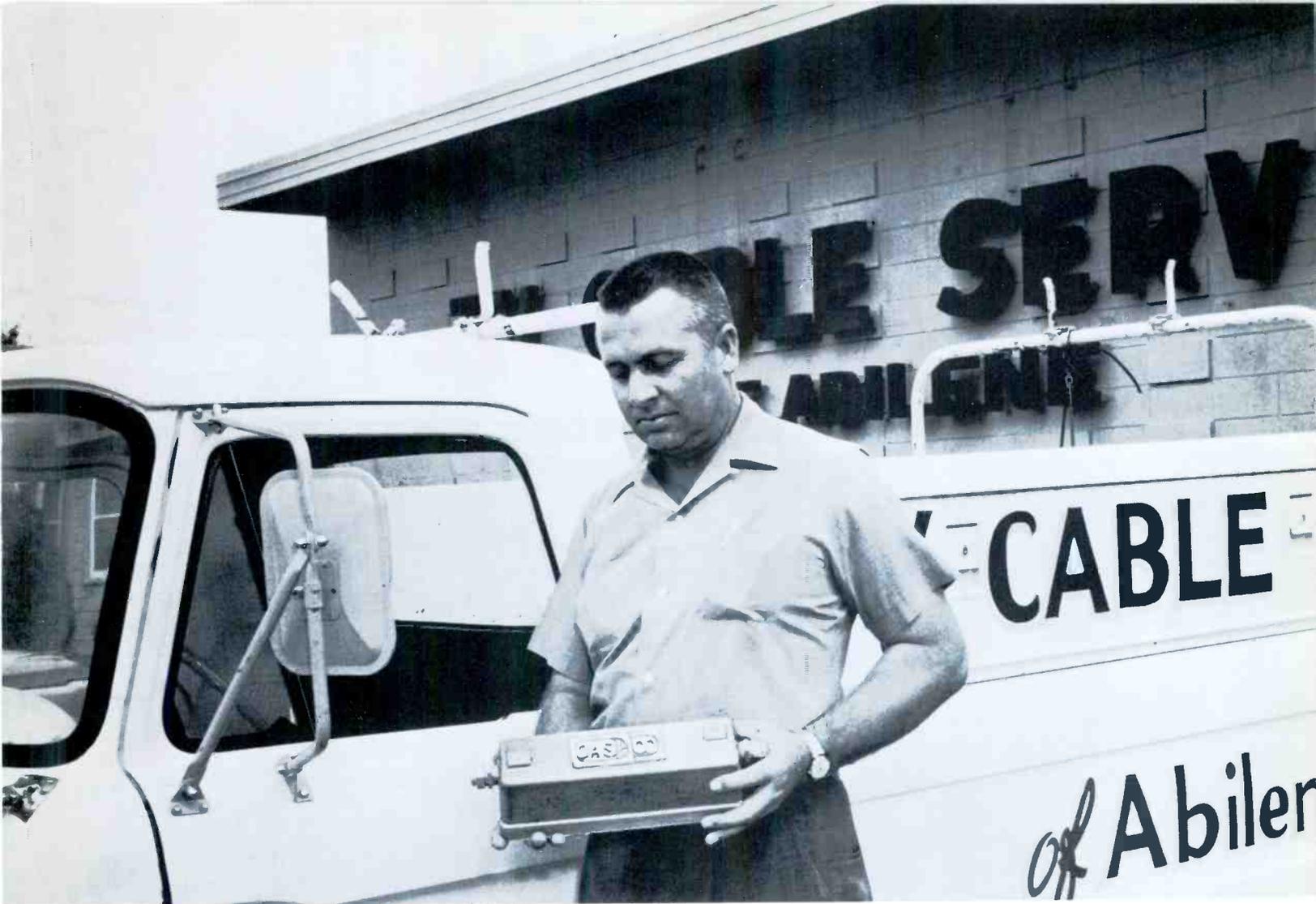
Many months ago Bill Daniels suggested to several of us, informally, that the official name of NCTA should be changed to the "National Cable Television Association." Upon reflection, it sounded like a reasonable idea to us. In a great number of markets the "community" concept is admittedly absent. This was Bill's reasoning in recommending a modification of the Association name to make it more descriptive.

At the Illinois-Indiana CATV Association meeting, Bill formally proposed the name change to the Association. It still sounds like a good idea. But does anyone care enough, one way or the other, to voice an opinion?

This magazine is intended to promulgate **your** opinions as well as ours. So, we hereby announce a public opinion poll and solicit **your** views on the proposal to substitute "Cable" for "Community" in National Community Television Association.

We'll tabulate the results in three categories: (1) For the change, (2) Against the change, and (3) Don't care. Send us a letter stating whether you're for or against. No response from you is a vote for No. 3, okay?

*Stan Searle*



Mr. M. D. McGuire and the reliable CAS TRA-217 amplifier.

## Let CAS stop your amplifier problems

More than 250 CAS amplifiers in Abilene, Texas, CATV system operate for 12 months without a single failure. That's over 1,500,000 amplifier hours of trouble-free operation.

**H**ow's that for reliability? CAS performance-proved TRA-217 solid state amplifiers are unaffected by lightning surges, transistor or other circuit failures . . . reduce subscriber downtime and keep component maintenance to a minimum.

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Listen to what Mr. M. D. McGuire, chief engineer of TV Cable of Abilene, Inc., says:

*"We now have more than 500 CAS TRA-217 amplifiers in our system. Most of them have been in use since*

*November 1964. After all that service we have had no failures. The CAS amplifiers continue to deliver signals with no deterioration and require a minimum of technical attention."*

The TRA-217 amplifier has trunk line capability, yet is priced low enough for use as an extender. It is especially well suited for use in limited cascade (10 or less) or as a high-level extender with practical output of +40 db with at least 6 db reserve.

CAS reliability is available in a wide range of CATV products and services

. . . from temperature compensated solid state equipment to experienced system design and construction.

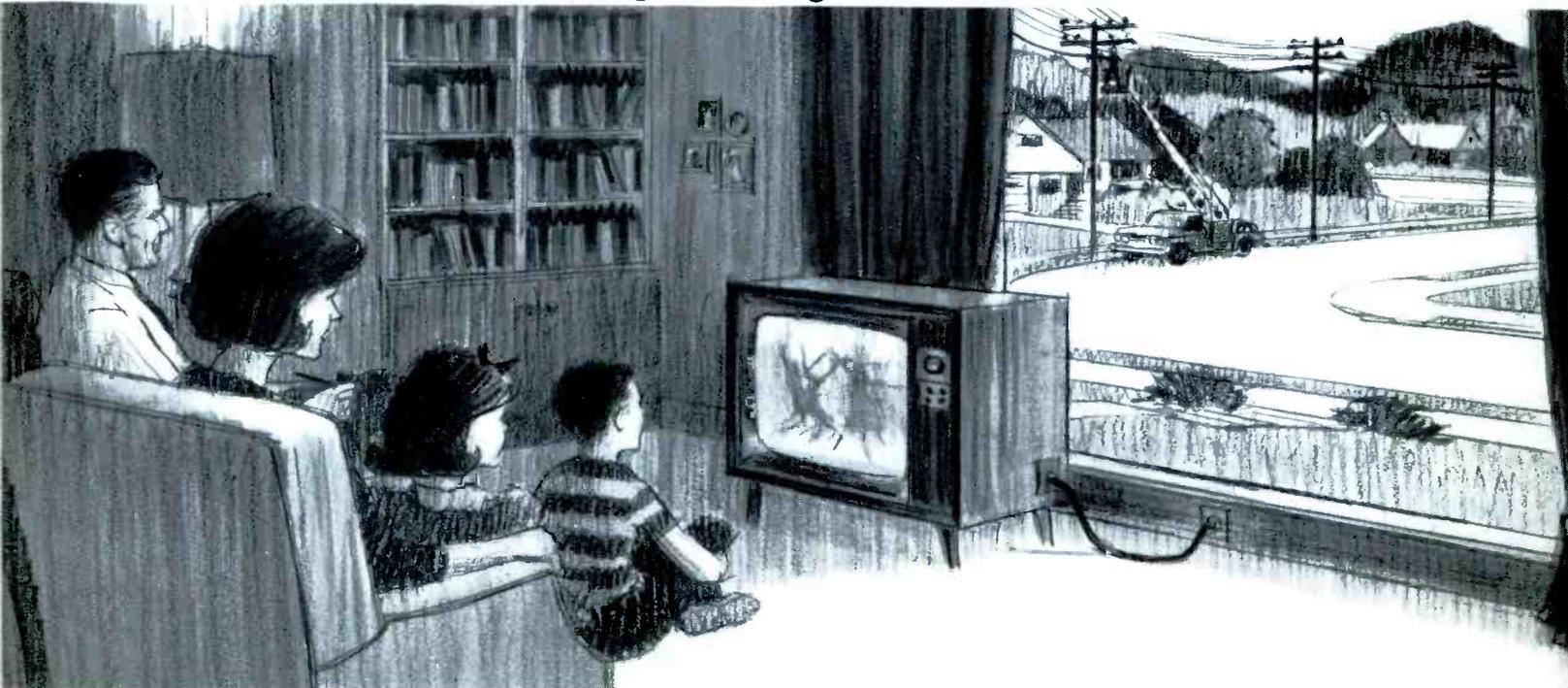
Write today for information how CAS capabilities can help you build, modernize or extend your CATV system.



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# This is CATV Show Biz

...or how to make your system a box-office hit



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Putting a good show on the home screens of your subscribers is one part of CATV show business. Having the equipment to back up your programming—with clear, dependable pictures that don't ghost, fade or give up altogether—is another.

Times 30db CATV cable—and instantly-installed matching connectors—delivers award-winning performance to your subscribers' homes year after year. It's the surest way to keep them happy and put profits in your system's picture. Times cable is trouble-free because of the way it's made:



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**TIMES**  
CATV CABLE & CONNECTORS

in continuous seamless lengths up to ½ mile. This means fewer splices, fewer trouble points, less maintenance . . . and less labor cost. And because it's seamless, it's water and vaporproof . . . won't stop the signal short of target. All in all, you get improved electrical performance from Times cable and matching Timatch connectors. Long after so-called economy cable has been replaced, Times cable will still be a top performer, even while you're upgrading your system.

To take advantage of this direct way to assure your system's pay-out, contact Times for information on its CATV cable.

# News SPECTRUM

## CONCERN VOICED OVER FCC INTENTIONS

Several informed sources close to the FCC have reported that the Commission is proposing complete jurisdiction over CATV in the immediate future. According to these reliable informants, such regulation would likely include such measures as adoption of "leapfrogging" regulation akin to that proposed by AMST. While entirely new areas of regulation must be introduced by a proposal of rulemaking, it is possible that regulation currently under consideration by the FCC could be stiffened and extended considerably, even to the point of affecting local authority in franchising through, preemption of franchises not in accord with Federal regulation of systems.

When interviewed by a *TV & Communications* staff member, an FCC spokesman indicated that no such "radical" shift in the Commission's proposed regulation appeared imminent. He did not, however, deny the possibility of adoption of stringent versions of currently pending rules, nor did he rule out further proposals of rulemaking in the near future. While the Commission spokesman noted that there remained "considerable" difference of opinion within the Commission as to what should be done about CATV regulation," he said he foresaw no action other than extension of present microwave fed system rules to non-microwave fed systems.

Informed and reliable outside sources persist, however, in their prediction of regulations so extreme as to require Congressional action on behalf of CATV operators. Most CATV legal observers and cable industry leaders agree that any such stringent rules would indeed result in Congressional action—likely favorable to CATV'ers in nature. (NCTA actions being planned as this item goes to press indicate concern on the part of that organization's leadership over the above reports.)

## FARM GROUPS URGE REGULATION

Two of the three largest farm organizations have filed requests with the Federal Communications Commission for strong regulation of CATV systems. The American Farm Bureau

and the National Grange agree that the action is necessary in order to protect local station television service to rural areas. Both stress that CATV systems do not serve farmers, ranchers, and other rural Americans. The American Farm Bureau told the FCC that "Any impairment of wireless broadcasting service is a matter of major concern" to farmers. To that, the Grange adds, "We have witnessed the recent transformation of CATV from a benign service for small communities lacking broadcast signals into an industry that intends to wire numerous communities for a pay television scheme . . . By threatening the television broadcast service, CATV forecasts nothing but harm to the rural family. It gives nothing to farmers; it takes away much and seriously threatens that which remains."

## DANIELS SUGGESTS NAME CHANGE

Denver broker Bill Daniels, in a letter to NCTA Chairman Benjamin J. Conroy, has suggested that the name of National Community Television Association be changed to National Cable Television Association. Said Daniels, "It is my opinion that the industry has grown up considerably in the past thirteen years, and since we are identified as 'Cable TV' throughout the country, I think it's time that this be done." Daniels noted that the initials of the trade association, NCTA, would remain the same. Recognizing that such a change would require some kind of action prior to the Miami National Convention, Daniels asked that the suggestion be placed on the agenda for discussion at the next Board Meeting. The change in question is the subject of an editorial in this month's *TV & Communications*.

## CATV'ers PLAN PROMOTION PROGRAM

Alabama CATV Association members, meeting in Birmingham last month, initiated a campaign for promotion of CATV's best interests in Congress. Suggested methods of contacting Congressmen included: letters from subscribers as well as system owners; lists of individuals engaged in CATV; appointment of a representative from each Congressional district to contact his representative and

provide him with information concerning CATV, and the importance of stressing information in districts where no CATV is now operating.

Other business on the agenda included a summary of the state situation as related to Southern Bell Telephone tariff and pole line agreements; the appointment of Bob Garner, Paul McInnish, and Charles Auer as a membership committee, and the announcement of an executive board meeting in January.

## McGEEHAN PREDICTS CATV GROWTH

Entron president Robert J. McGeehan, speaking before a meeting of the Washington Society of Investment Analysts, delivered a trenchant address concerning the future growth and role of CATV. Speculating that "CATV is now entering an unprecedented period of dollar volume over a protracted span of many years," McGeehan noted that "Conservatively, within five years our industry will experience a growth of five times its present volume: from \$35 million now to over \$175 million."

"CATV has grown from 581 systems, with less than half a million subscribers in 1957, to 1,700 systems with over two million subscribers in 1965. There are approximately 1900 additional franchises which are now outstanding. Therefore, to estimate four million subscribers by 1968 would not be unrealistic."

Reflecting the problems of growth, McGeehan stressed that "Competition is keener. Telephone systems, such as Bell and major independents, are on the move, pressing hard for lease-back arrangements. Municipalities are becoming more selective and are looking for increased revenue. The networks, more than interested, are actively engaged in spreading their influence into the area of CATV. Broadcasters, who in the past have cried in a loud and vigorous voice that CATV will soon swallow them whole, have been moving in ever increasing numbers into CATV."

Speaking of the demands being made on the manufacturer by the rapid growth of the industry, McGeehan stated, "There is hardly a CATV manufacturer who can meet the demands for his products, and these demands increase daily. CATV operators are moving away from the previous affinity for small, rural areas and are looking toward the cities. Large urban centers are being surveyed, analyzed and franchises fought for. The Midwest, the South, the Southwest, the West and Northwest are just beginning to open up. Even

Pennsylvania, where it all started, still has many fine opportunities.”

In conclusion, McGeehan predicted, “Most of us in this room one day will be offered the opportunity to become a subscriber to CATV. We will exercise this opportunity because we will want to be able to choose between twelve and possibly thirty channels of programming. The requirement for programming will create vigorous competition for the networks and independent stations presently existing in the best American tradition. Our industry will be regulated, but I have full confidence that those who legislate will do so in a manner which will most effectively protect the interests of our subscribers, and yet will preserve the economic viability of our industry.”

#### **AMST ASKS FCC FOR CARS LEGISLATION**

The Association of Maximum Service Telecasters has had an afterthought about the new Community Antenna Relay Service, frequencies set aside for microwave systems serving CATV's. Evidently it has suddenly realized that there is no ironclad assurance that any future FCC regulations as to CATV will be applicable to microwave grants in the CAR bands.

Accordingly, AMST has filed with the FCC a statement pointing out that in shifting CATV microwaves to the CAR frequencies, the FCC didn't consider possible adverse impact to local TV stations on the grounds that the problem is being considered in other proceedings. It was further pointed out that the first report and order in CARS merely incorporated in the rules for the new band substantive provisions of already existing rules concerning carriage and non-duplication of local stations on microwave-fed CATV systems.

“It should be noted that the proceeding in Docket Nos. 14895 and 15233 has not been terminated, and the Commission has before it various proposals to modify the rules adopted in the first report and order therein. Moreover, the Commission is considering further CATV matters in Docket 15971. Those proposed modifications and other matters are equally pertinent to the new CAR service, and close coordination among the three proceedings is therefore necessary,” the FCC was told.

AMST concluded that “the Commission should issue a separate and distinct rule providing that the CAR service rules are subject to such further action, interim and permanent, with respect to CATV regulation as the Commission concludes is necessary

or desirable in light of further developments in Docket Nos. 14895, 15233 and 15971.”

#### **COOKE PLANS DIVERSIFICATION**

Jack Kent Cooke's American Cablevision Company held its first annual meeting at the Beverly Hilton Hotel in Beverly Hills, California, last month. Discussion centered around plans for 1966, which include modernized system operations, accounting, engineering, advertising and sales promotion.

Highlighting the meeting was Cooke's announcement of the formation of two new subsidiaries: American Cable Electronics, which will develop and merchandise electronic products to the industry, and American Sales Promotion Company, which will merchandise advertising and sales promotions to the CATV industry. Vice President Bill Bresnan will be in charge of American Cable Electronics, while J. Fred Weber will head American Sales Promotion Company. System managers from nine states attended the three day gathering which was hosted by American Cablevision's executive staff.

#### **NEW JERSEY SANCTIONS LEASEBACKS**

New Jersey has granted Bell Telephone Company permission to operate leasebacks. The state's Public Utility Commission, ruling that cables are an extension of telephone service, maintained that it had no authority to regulate customer rates or grant franchises. It did, however, reserve jurisdiction over Bell's leaseback rates. The New Jersey Community Television Association and Federal Electric Corp., a subsidiary of International Telephone and Telegraph, had opposed the petition on the contention that Bell could gain monopoly of the industry. New Jersey is the 34th state to sanction Bell's leaseback tariffs.

#### **MILWAUKEE ADVOCATES CATV**

The public utilities committee of Milwaukee, Wisconsin, has recommended that franchises be granted to two petitioners. The two companies, Universal Telephone Company, Milwaukee, and Wisconsin Cablevision, Inc., won out over the objections of station WISN and NATESA, who spoke against the entry of CATV into Milwaukee. City attorney John J. Fleming, reporting to the committee, stated that, in his opinion, the city has the right to establish regulations and issue permits to firms wanting to provide cable service, even though it has no right to deny a company from going into business. Advocating the granting of permits, Fleming pointed out that the city can always reject a license on

“just or warranted cause.” Fleming's stand came in response to a letter from Phillip J. Fox, attorney for Wisconsin Cablevision Inc., who pointed out to the city that he could find no section of the Milwaukee code that appeared to be applicable to the situation.

#### **MASS. UTILITY BILL DIES**

A CATV utility bill, introduced by James R. Nolan in the Massachusetts legislature, has died in the Ways and Means Committee. The bill was passed to the committee after being reported out of the Joint Legislative Committee on power and light with recommendation against passage. When the Ways and Means Committee voted adversely on the measure, Nolan attempted in vain to have it discharged from that committee and, receiving less than one-half the house vote, the bill died. Robert D. L'Heureux, NCTA General Counsel, appeared in opposition to the measure, which advocated regulation of cable systems as utilities.

#### **WARNER BROTHERS ENTER CATV**

Warner Brothers, Inc., has announced the formation of a new subsidiary, Warner Brothers TV Services, Inc. Jack L. Warner, in an annual report to the company's stockholders, stated that the new firm will seek opportunities for “owning and operating” CATV systems. In a clear affirmation of the seemingly limitless opportunities in CATV, Warner notes that “We contemplate constructing community antennas to reach homes initially in many parts of California and later elsewhere. We believe the business of operating CATV stations (sic) to be rapidly developing with substantial profit potential.”

#### **CITY SAYS CATV NOT UTILITY**

The City Commission of Salt Lake City has given approval of two franchises for that local. City attorney Homer Holmgren has made clear the position of the commission regarding CATV franchises. Following public hearing by the commission, Holmgren was instructed to prepare an ordinance granting franchises to both Community Television of Salt Lake City and American Television Relay. Stressing that the two companies were not considered by the city as public utilities, Holmgren pointed out that the city is “not about to regulate the industry, except in so far as to protect city streets.” He further notes that firms operating in a competitive situation should result in superior service to subscribers. American Television Relay is a subsidiary of Ameco, Inc.; Community Television of Salt Lake City is affiliated with station KALL in Salt Lake City.



## So far, there's only one applicant

It's Lenkurt's 76 TV microwave transmission system.

This is the system that's bringing top-quality color and black & white TV into areas where they used to think something was wrong with their picture if it didn't have snow most of the time.

For instance, take the 76 TV Studio Transmitter installation at station KOLO-TV in Reno, Nevada. Since the 76 is transistorized, the new system operates with practically no maintenance, quite a bonus to KOLO-TV because one of their microwave terminals is located on Freel Peak, where 20 foot snows and 100-200 mile winds are not uncommon.

Another outstanding feature of the 76 system is its versatility. At the University of Kansas Medical Center, a 76 ETV system makes it possible for students to participate in classes being presented at a sister campus, 45 miles away. This is one of the few two-way ETV systems in existence. This system is significant because of the high resolution it provides for remote observation of medical techniques.

And the Columbia Basin Microwave Company is using our microwave to transmit two off-the-air pickups through an extensive 76 network to serve several CATV companies and school districts.

So, whether you're planning a community TV setup, an Educational TV program, or want to join a network, and you want rugged, reliable equipment to help with top-quality color and black & white TV transmission, you'd be doing a smart thing to write us for the resume on our money-saving, solid-state 76 TV microwave system.

Lenkurt Electric Co., Inc., San Carlos, Calif. Other offices in Atlanta, Chicago, Dallas, and New York City.

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GENERAL TELEPHONE & ELECTRONICS **GTE**

## NEWS CHANNEL INNOVATED

Bill Daniel's Iowa Video, Inc., introduced the first "News Channel" to its subscribers last month, enabling viewers to see the news instantly, as it is filed on the wire. Other CATV systems scheduled to begin "News Channel" operations include: Telecable, Inc., Longview, Washington; All Channels Cable TV, Westerly, Rhode Island; and Video Cable Systems, Inc., Huntsville, Alabama. Initiation of the service provides this month's cover picture, as well as a related story in this issue.

## HARVARD PUBLICATION BACKS CATV

The December, 1965, issue of the Harvard Law Review contains a concise and conclusive article entitled "The Wire Mire; The FCC and CATV." Background material on current CATV regulative problems, logical explanations, and favorable conclusions make this article well worth reading by CATV management. One passage of particular interest contains the idea that fifteen day non-duplication represents excessive protection for local telecasters at the expense of the cable operator and the viewer. Simultaneous non-duplication is seen as a more reasonable approach to regulation in this area. A reprint of the article has been prepared by *TV & Communications* as a separate unit for use in informing interested parties not familiar with CATV regulatory problems (such as city council members, financial executives, legislators, etc.) Limited quantities of reprints are available, on request.

## BELL WITHDRAWS LEASEBACK REQUEST

Bell Telephone Company of Pennsylvania's request for permission to provide CATV leaseback systems has been withdrawn. Pending before the Public Utilities Commission, the request was in the form of an application for approval of a rate schedule for leaseback facilities. Several groups, including the Pennsylvania CATV Association, had filed complaints against the proposed tariff.

## ITT AND ABC OK MERGER

A merger between International Telephone and Telegraph and American Broadcasting Companies has been approved by the boards of directors of the two companies. Harold S. Geneen, chairman and president of ITT, and Leonard H. Goldenson, president of ABC, have announced conditions of the merger include the continued autonomous operation of ABC by its present management, as a separate subsidiary of ITT. ITT will issue .5719

of a share of common stock and .5719 of a share of a new convertible preference stock (\$10 stated value) for each share of ABC common stock. The merger is subject to the approval of the shareholders of the individual companies, as well as that of the appropriate governmental agencies.

## WASILEWSKI STATES NAB STAND

Vincent T. Wasilewski, president of National Association of Broadcasters, told Pittsburgh Radio and Television Club members that NAB backing of CATV legislation is no more than an effort to "preserve the world's best system of free broadcasting." Emphasizing that broadcasters recognize CATV as a valuable supplemental service in areas unable to receive adequate television signals, Wasilewski stated that broadcasting and CATV "can work effectively together" once their differences are resolved.

"It is a 'false analogy'" said Wasilewski, to argue that free broadcasting and CATV systems which charge a fee to deliver TV signals by wire from their master antennas actually are "competitors."

"CATV is a derivative industry," he stated. "Its entire existence is dependent upon a product which was originally developed, paid for, and distributed by the television industry. . . . Community antenna television has grown rapidly because—and I think it is important to acknowledge this fact—television is so important to people that they are willing, if necessary, to pay a monthly charge to get it."

Wasilewski said regulations proposed by the FCC and endorsed by NAB would "establish some fair and sensible ground rules" for CATV operations as a supplement to free broadcasting without the risk of crippling or possibly destroying commercial radio and TV.

He said broadcasters agree fully with the definition of CATV in a booklet published by the NCTA which specifies that CATV is solely a master antenna service; that it is not a broadcast service like a television station; that it is not an essential public utility like a telephone, and that it is not a pay-TV system that provides an individualized program service.

## JERROLD REPORTS RECORD NET

Milton J. Shapp, President and Chairman of the Board of the Jerrold Corporation announced that, on an unaudited basis, net income for the third quarter, ending February 28, 1966, was \$1,027,596, equal to 56 center per share, approaching net income for the first half of the year of \$1,294,949. Consolidated sales for the third quarter were \$9,084,070.

Consolidated sales and net earnings for the nine months ended November 30, 1965, rose to \$24,525,496 and \$2,502,545 respectively.

Earnings per share for the nine months equalled \$1.17 per common share. No provision was required for Federal Income taxes due to a tax loss carryover of approximately \$3,000,000 from previous periods.

## CHICAGO SUBURBS PLAN CATV

Chicago North Shore suburban communities have announced the formation of a committee to initiate cable service. An unofficial franchise request by H. H. Hanlon of Kenilworth, Illinois, precipitated the action by managers of some dozen Chicago villages. Hanlon proposes to provide cable service in these communities through a leaseback agreement with Illinois Bell Telephone, which is prepared to offer service, but only through negotiations with a community-franchised operator. Robert Van Dusen, village manager of Glenview, reports that the general feeling among the village managers is to grant a single franchise for service to all twelve municipalities, and that "thus far, Hanlon is the only person to show an interest in providing cable service in this area."

## AMECO, REMCOR SIGN AGREEMENT

Ameco, Inc., added a fifth affiliate to its complex the first of the year, by signing a purchase agreement with Remcor. The printed circuit board manufacturer will continue supplying outside customers as well as Ameco, with no anticipated changes among the plant's 50 employees. On hand for the



Seated (from left) are Walters, Stewart and Page. Standing are Enrllich and Green.

transaction were Bruce Walters, Ameco vice president-production; Ron E. Stewart, former Remcor president; Carter Page, Ameco treasurer; Paul Enrllich, former Remcor secretary-treasurer; and George Green, Ameco vice president-marketing and sales.

## H & B REPORTS EARNINGS

*H & B American Corp.* has issued a statement of its earnings for the first fiscal quarter, ending Oct. 31. The net income was \$135,692, an increase of \$57,000 over the net income for the first fiscal quarter last year. Also announced was the promotion of *Harold Sugarman* to president. He previously was vice president and treasurer of the firm.

# The Great New Phoenician Series



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### THE OUTSIDE STORY

The new "Phoenician" series combines rugged construction, unusual serviceability, and dependable performance under all operating conditions. The 3 sealed access ports permit internal probe measurement in any weather without exposing the entire internal parts. Fittings of new design and moisture-proof seal are backed by Kaiser-Cox warranty. (Patent applied for) The new Kaiser-Cox developed aluminum alloy used in fittings is impervious to corrosion.

*The Kaiser-Cox Phoenician series is ready NOW. The SOLID products you can DEPEND on . . . !*



**THE INSIDE STORY** of the Phoenician Amplifier series. Modular construction of the "plug-in" type allows complete interchangeability from trunkline amplifier to 2 and 4-output bridging amplifier — or combinations of trunkline and bridging amplifier (with or without AGC and automatic tilt). Built-in knob type controls eliminate the need for screwdrivers, plug-in pads or accessories.

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*Your inquiries are invited . . . write, phone or visit . . .*

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# FOCUS

... On Progress

## ARLO WOOLERY TO ASSIST MERRILL

*Arlo D. Woolery*, long-time radio executive and CATV pioneer, has been named special assistant to the president and director of public relations by *Bruce Merrill*, president of Ameco, Inc. Woolery has been general manager of radio station KSUN and KSUN-TV C.X. CATV at Bisbee, Ariz., and of radio station KHFH at Sierra Vista, Ariz. His association with the cable TV company dates back to 1952, when Bisbee installed one of the first systems in the state.



*Arlo D. Woolery*

He has been in radio broadcasting since 1939. The former instructor at Luther College and University of Iowa is a graduate of National Radio & Television Schools at Los Angeles.

Woolery is past president of Arizona Community Television Assn. and Arizona Broadcasters Assn.

## HICKMAN NAMED V-P

Kaiser-Cox CATV, Phoenix, Arizona, has announced the appointment of *Earl Hickman* as vice president in charge of engineering and manufacturing. Hickman, a graduate of the University of Arizona, has had five years' experience in plant management, eight years in electronic design and development, and eleven years in radio and television. With Kaiser Aerospace & Electronics Corporation's Phoenix electronics plant for the past seven years, Hickman has worked as electronic engineer, chief engineer and plant manager successively.

As Kaiser Aerospace & Electronics will manufacture CATV equipment for Kaiser-Cox, Hickman will continue as plant manager for Kaiser Aerospace's



*Earl Hickman*

Phoenix plant as well as handle the responsibilities for his new position as vice president in charge of engineering and manufacturing for Kaiser-Cox Corporation.

## MONTE PROMOTED AT VIKING

The promotion of *John Monte* to sales manager of Viking's CATV division has been announced by vice president *Robert Baum*. Monte joined



*John Monte*

the firm in 1959 in the sales promotion department, and has served as a technical sales representative for the past

four years, specializing in turnkey and rebuild contract sales on a national basis.

## DANIELS ADDS TO STAFF

*Mark L. Glidden* has joined *Daniels & Associates, Inc.*, Denver, where his activities will include CATV management and consulting as well as brokerage. Glidden, a Certified Public Accountant, has financial and management experience in CATV, having functioned as Treasurer of Jack Kent Cooke's American Cablevision Company.

## LASKEY JOINS SKL

*Donald Spencer* has announced that *William Laskey* has been appointed area sales representative for California, Arizona and Nevada by Spencer-Kennedy Labs. Laskey has worked for Entron.

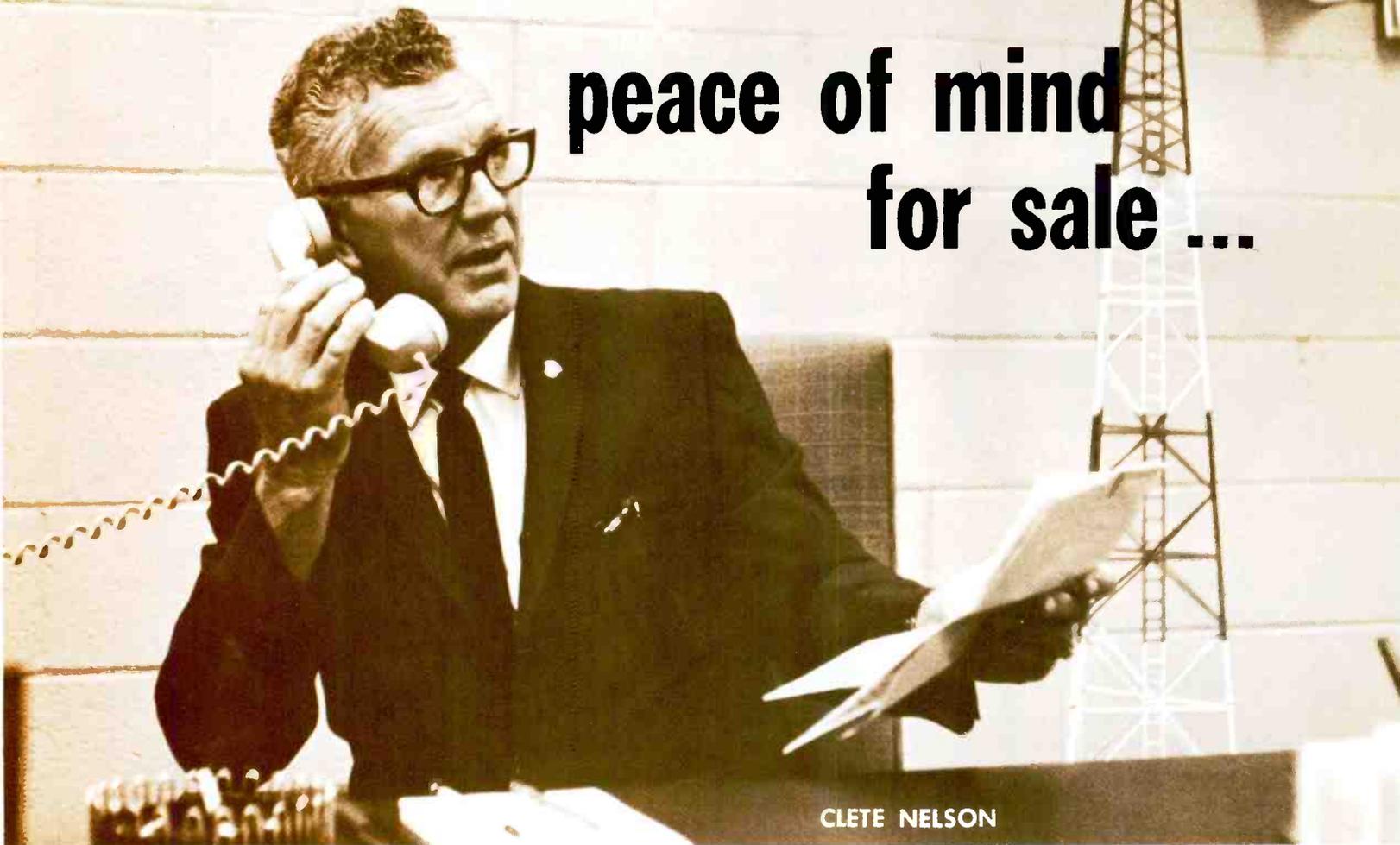
## PUBLISHERS ANNOUNCE EXPANSION

Communications Publishing Corporation has announced the appointment of *Forest H. Belt* as editorial director of *Communications* magazine, a monthly publication which serves the nation's two-way communications sales and service outlets and many of the large "fleet" users of two-way radio. Concomitant with this appointment, the company is establishing advertising and editorial offices in New York City under Belt's direction. As former editor of *PF Reporter* and *Broadcast Engineering*, published by *Howard W. Sams*, Forest Belt is well known throughout the electronics industry. Another recent personnel appointment is that of *James Belt*, who is moving from Indiana to New York City to assume the managing editorship of *Communications* magazine. He will be in the New York office: 30 Fifth Ave., New York, N.Y. 10011.

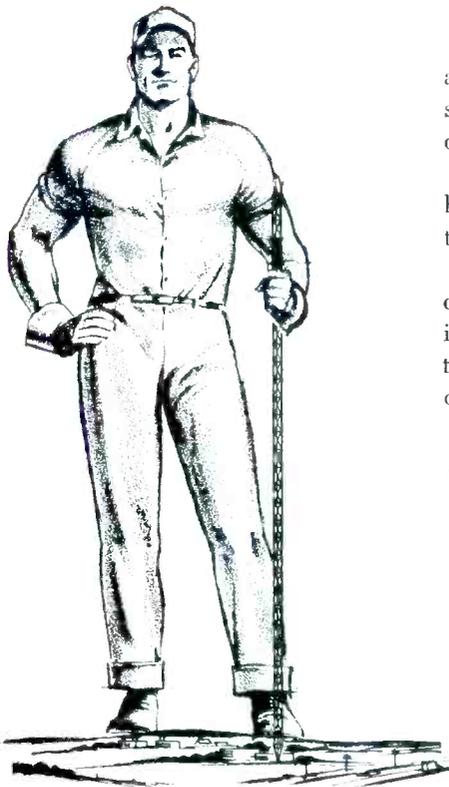
## SYSTEM PERSONNEL ON THE MOVE

*Merle Block*, manager of Storer Cable TV's Ojai, California system, has also been named as manager of the firm's Thousand Oaks operation. . . . *Michael Carlisle* of Campbellsville, Kentucky, has been appointed as manager of the Bardstown, Kentucky system operated by Kentucky Cable TV, Inc. (American Cable Television, Inc., Phoenix) . . . *Danny Pickett*, former director of development for the Montreal Alouettes, has resigned to devote his full time to Cablevision Montreal . . . *Derek White* has been named manager of two systems in Oregon owned by Television Communications Corp. White had been assistant manager of TelePrompTer's Elmira (N.Y.) Video. . . . *Neil C. Youngs* has joined Wonderland Ventures, Inc., a Michigan

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A major slice of your total investment in a cable system goes into the tower, antenna hardware and installation. This is understandable, since a community antenna system is only as good as its antennas and supporting structure. Consequently, you cannot afford to take any chances with the dependability of your receiving antennas.

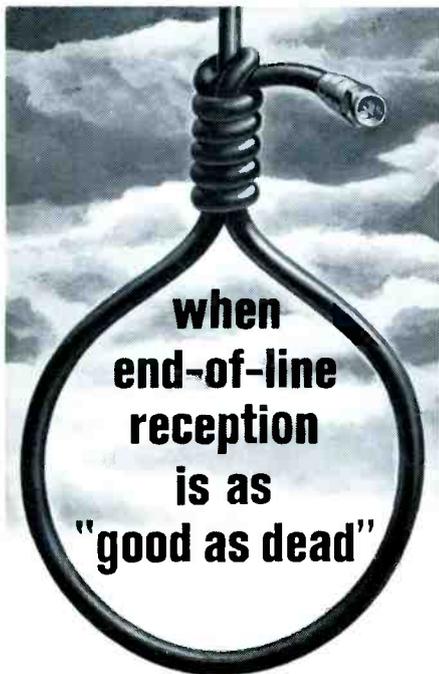
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**FIRST IN CATV** • The nation's largest and most experienced manufacturer-supplier of CATV equipment and services.

firm involved in developing cable operations. Youngs was previously sales manager for Michigan Bell . . . Bob Ford has accepted the position of sales and public relations director for Cablevision Inc., Gastonia, N. C. He was formerly with Rock Hill Telephone Co.

### STEWART JOINS CASCADE

Donn G. Nelson, vice president of Cascade Electronics Ltd., Port Moody, B. C., has announced the appointment of Floyd Stewart as chief engineer. Stewart developed equipment from August, 1960, until August of



Floyd Stewart

1963 for Ameco Inc., at which time he left to assume engineering responsibilities for Cas Mfg. Co. Cascade claims that "Stewart has pioneered and produced more solid-state all-band CATV equipment than any other single design engineer in the North American continent."

### BORELLI PROMOTED

The promotion of Vincent R. Borelli to director of marketing for Craftsman Electronic Products, Inc. was recently announced by Daniel Mezzelungua, firm president. Also announced was the appointment of Matthew J. Lysek as sales engineer for the firm.

### KAMEN RESIGNS CATV ENTERPRISES

Ira Kamen has resigned as executive vice president of CATV Enterprises, Inc., one of the three firms franchised for sections of New York City. Kamen stated that he will devote his full time to his regular consulting practice of Kamen Associates.

### NEW CONSULTING FIRM

Roland G. Yount has opened an office in Denver to serve the CATV industry as a consultant for design of systems to relay video programming. Yount has been employed for the past eight years by Collins Radio Company as senior systems engineer and had



Roland G. Yount

responsibility for design of major microwave systems. He will maintain an office at 216 Clayton Street, Denver, Colorado. Phone 388-9302 for Engineering Services Inc.

### GILBERT ENGINEERING MOVES

Gilbert Engineering Co., Inc., manufacturer of coaxial cable fittings and connectors for CATV, recently moved into its new offices and plant at 3700



Ralph O'Brien, Earl Gilbert

North 36th Avenue, Phoenix. An open house was held early in November for the company's suppliers and customers located in the Phoenix area. The move to the 20,000 square foot building was necessitated by Gilbert Engineering's expansion from six employees in 1957 to 125 in 1965. Sales this year are expected to climb to \$2½ million.

### KAISER ANNOUNCES PROMOTION

Richard MacMillan has been named chief engineer for Kaiser Aerospace and Electronics, in an announcement by Earl Hickman, vice president in charge of engineering and manufacturing. MacMillan is one of the engineers who developed Kaiser's CATV equipment line. Before joining Kaiser, MacMillan had nine years' experience in electronics engineering. He is author of a technical article which appeared in *TV & Communications*.

## JERROLD NAMES CADORI AND ZAWOJSKI

Rudolph L. Cadori and John A. Zawojski have joined the newly-formed Northeast Region of the CATV Systems Division of Jerrold Electronics as sales engineers. The announcement was made by Jerry Hastings, Manager of the CATV Systems Division. This new region includes New England, New York, New Jersey, Ohio, Pennsylvania, Delaware, Maryland, West Virginia, Virginia and eastern Kentucky, all formerly part of the Eastern Region. Mr. Cadori's territory includes all of Western Pennsylvania. Mr. Zawojski serves the state of West Virginia and the western part of Maryland.

## WESTERN MICROWAVE MOVES

Larry Romrell, general manager of Western Microwave, has announced that the general office has been moved from 233 East Main, Bozeman, Montana, to 245 Columbine, Suite 205, Denver, Colorado 80206.

## CLARKE TO HEAD FIRM

William A. Clarke, Jr., has been named president of Texas Community Television Service, Amarillo, which, in addition to franchises in Texarkana and Gladewater, has applications pending in 14 other Texas cities.

## NEW CABLE FIRMS FORMED

**UP-CAT, Inc.** (Upper Perkiomen Community Antenna Television) has filed articles of incorporation in Pennsylvania.

... **Albuquerque (New Mexico) Community Antenna Television, Inc.** has been incorporated by William A. Sloan, James C. Ritchie and William C. Schaab. ... Louis S. Goldman of Dayton, Ohio has announced that his new firm **Dayton the City Beautiful, Inc.** will be active in CATV. ...

**Lake Telerama Inc.** has been formed in Ohio by C. Robert Taylor, Carl R. Lee and T. H. Oppegard. ... **Portage Telerama Inc.** is the name of the Ravenna, Ohio firm formed by Roger F. DiPaola, Chester E. Dunlavy and Bertine Bradley.

**West End TV Cable, Inc.** has obtained a corporate charter in Ohio. ... Lanier Taylor is president of newly formed **Clearview Television, Inc.** of Baton Rouge, La. where the firm will reportedly seek a franchise. ... Incorporation papers have been filed by **Sheboygan All-Channel Cable-**

**vision, Inc.** Registered agent John Bolgert says the firm will seek a franchise in that city. ... **Carolina Telephone & Telegraph Co.** has incorporated a subsidiary, **Carolina Communications Corp.**, to offer cable service in eastern North Carolina. ... **Ohio Televue, Inc.** has been formed by three Youngstown UHF stations, WKBN, WYTV and WFJM, which will own 80% of the firm collectively. ... Keith Moyer, Glenn D. Burris and Gregory Moyer of Taylorville, Illinois have incorporated under the name, **Midland Cable Community Television Co.** ... **United Cablevision of Vermont** has been formed with Robert H. Gibson, Randolph Tucker and David A. Gibson as principals. ... **Lake-land Cablevision, Inc.**, Sandusky, Ohio has filed for incorporation, and will reportedly seek franchises in that area. Principals include Sandusky Newspapers, Inc., Ohio Radio, Inc. and Cox Cablevision Corp. □

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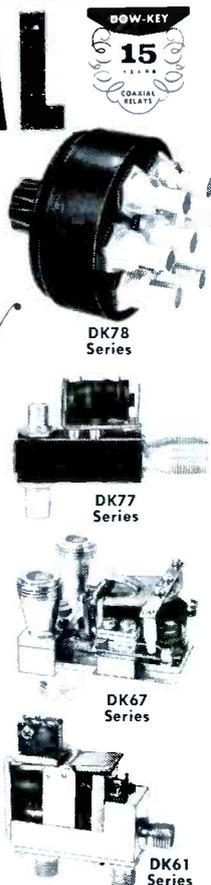
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# LETTERS

## HATS OFF

Dear Mr. Searle:

I read with interest your fine article in the December issue of *TV & C* entitled, "Who Needs Protection?" I am with you. Everyone's hat should be off to Bob L'Heureux and the staff at the NCTA.

An article appeared in the November 29, 1965 issue of *Broadcasting* (page 54) in which a UHF station contended that if a CATV system, outside its Grade B contour, dropped the signal of that particular UHF station that it would be a serious financial blow.

Looks like the shoes are beginning to fit the other feet.

Milton F. Underwood  
General Manager  
Muscle Shoals TV Cable Co.  
Florence, Ala.

Dear Stan:

May I congratulate you upon your very fine magazine. It is one of the most concise magazines that it has been my pleasure to have read. It fills a much needed requirement for both management and engineers in the field of CATV.

Bob Cowley  
Flagstaff Television & Cable Co.

## LAW REVIEW REPORT

Gentlemen:

Your January 10 issue of *Cable Television Review* included the Harvard Law Review report on CATV, and stated we could receive additional copies upon request. May we have 12 copies?

Donald D. Sullivan  
General Manager, KVTW  
Sioux City, Iowa

• *The copies of the special report have been mailed. Our policy is to provide two copies at no cost, to subscribers, and to provide additional copies at 25c each.*

## SAFETY CONSCIOUS

Dear Stan:

We have just received our December issue of your publication and, as always, everyone in our organization fights to see who will get to read the magazine first. As usual, you had at least one particularly outstanding article and I refer to "Safety For The CATV Technician" by Don Turley. We are continually preaching doctrines of safety and we are constantly pointing out . . . the importance of the observance of safety measures, not

only for the preservation of life and limb, but also for a very important factor that is often overlooked, and that is the prestige to be gained by the recognition of safety-minded utility people that we in CATV are equally conscious of the importance of safety.

Jack Pruzan President  
Jack Pruzan Company

## CATV DIRECTORY

Gentlemen:

Some time ago, we wrote to you stating that we had not received our copy of the *CATV Systems, Equipment and Manufacturers Directory*. Our original subscription to Cable Television Review was for less than one year so we were not entitled to receive the Directory. Subsequently, we increased our subscription to one year and were thus eligible to receive the Directory. To date we have not received this and request you forward it as soon as possible.

Jay Perna  
Amphenol Canada Limited

• *The 1966 CATV Directory has been mailed to you, and to all one-year subscribers to Cable Television Review. Persons who do not receive the weekly news service may purchase the CATV Directory for just \$4.95 per copy.*

## COVERING THE MARKET

Gentlemen:

Thanks for forwarding the breakdown of your magazine circulation in the United States and overseas. I have routed copies of this information to interested persons here and with our international company. Unquestionably, your magazine is considered to be a preeminent magazine covering the CATV market. . . Your strong circulation to broadcast and educational stations is definitely significant. Other than Canada, I would say your foreign circulation is limited and I would encourage you to increase your circulation overseas.

Erik Stromsted  
Microwave Associates, Inc.

• *Our foreign circulation is not growing as rapidly as our stateside coverage, due mainly to the fact that cable television has not developed significantly outside of Canada, the U. S., and Great Britain. However, as more cable television installers and operators in other countries tell us about their activities, for our news columns, our foreign distribution will undoubtedly grow at a faster rate.*

Letters may be addressed to:  
Editor, TV & Communications,  
P.O. Box 63992, Oklahoma City,  
Oklahoma 73106

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\*Results of a coast to coast survey of operational **WEATHER CHANNEL** Systems.

Every successful CATV operator knows  
that the heart of his business is . . .

# SERVICE FOR SALE!

By Robert E. Cowley  
Flagstaff Television & Cable Co.

The comments that reach us from our customers on the service that we are giving them have a real meaning for all of us in the cable business. Their reaction to that service is one of our most important business barometers—it tells us just how well we are doing the job we have agreed to do as a Company and as employees of the organization. And make no mistake about it, our customers are evaluating us, hour by hour and day by day, by the only measuring device they have—their own experience with their cable service and their contacts with cable people who provide that service for them.

We know pretty well just what the public is thinking about us. We know it from letters and telephone calls we receive. We know about it through editorial comment in the newspapers and through statements that customers make when they talk to us on and off the job. In our Flagstaff system we conduct a continuous survey of customers selected at random to find out what they think of certain aspects of our business. From this survey we learn a great deal about our customers' opinions and their attitudes.

From these and other sources we know that in most instances we are giving our customers the kind of service that they expect. In far too many cases, however, they have justifiably taken us to task for things we have done which annoyed them and for things which we should have done but failed to do. In statements from customers, taken verbatim from our Customer Comments Envelopes and from comments made to employees, we find that cable users toss us both bouquets and brickbats.

A study of these customer comments reveals one important fact to me: that is that our customers are, as a group, understanding, reasonable and appreciative people. When we do not live up to their expectations, they tell us about it, as they should do. But, as shown in these comments, they are just as quick to appreciate good service. They are always eager to let us know when we have been able to do something out of the ordinary to help them. In every one of the comments cited, pro or con, you will not find that the customer was not talking about the Company, they were talking about cable people. These comments emphasize the fact that we, as individuals, hold the reputation of the Company in our hands.

These comments then point up the tremendous obligation that we have—the extent to which the Company is dependent upon us to do the kind of a job that satisfies the public. Frequently, in looking over these statements from

*Bob Cowley, a well known and respected system management executive, serves as Vice President and General Manager of Flagstaff Television & Cable Co., a Division of HarriScope Cable Corp.*

cable users, I run across remarks such as "It doesn't matter. I can't go any place else for cable service anyway." It is very unfortunate that some of our customers feel that way. If any of our employees themselves have that attitude, we're in for real trouble, for that approach is going to show up in the way we handle our jobs and in our dealings with customers. In the long run it means that if we don't do the job right voluntarily, someone else will see to it that we do.

In order to really get the message of service, perhaps we should talk to the man who once read proof for the now defunct magazines . . . the man who formerly operated lighting for Republic Pictures which is no longer a going concern . . . the men who worked on the assembly lines of many of the makes of cars which are no longer in the picture. These men know something of the force called competition, but the knowledge came too late.

These were big business enterprises, but bigness alone wasn't enough. Somewhere something went wrong, and we have to assume that if these companies had been giving the public what it wanted when it wanted it, they would still be operating today. There is a lesson there for every one of us to think about.

We have been aware of the increasing number of negative comments on our service in the last few years. We cannot blame the mechanical phase of our operations for this; that aspect of our business has been constantly improving. We can now handle more customers more rapidly than we could before and our transmission facilities are better. The fault, therefore, must be with us, as individuals.

Is it that we are becoming less service conscious than we have been in the past? Possibly. Are we forgetting for a moment that our customers are our real bosses and that our futures and the future of our business depends entirely on how completely we satisfy them? That, too, is a possibility. But whatever the cause, we as managers and employees are the only ones who can reverse an unfavorable trend in public opinion which certainly must concern us all.

Perhaps part of the answer lies in a word that is appearing more often in our cable business vocabulary these days. That word is "adaptability"—the ability to adjust to unusual situations and changing conditions. I would like to give you my interpretation of the word as it applies to us.

In a business the size of ours, we naturally have to have some established procedures to guide its conduct. We also have training classes to teach good, recognized practices. We can begin, then, by doing the best job that we know how as we have been trained to do it. But we should also remember that the customer isn't the slightest bit interested in the page and paragraph of the rule book. When he contacts us about his service, he has a problem. He either wants a new service, or has a question, or wishes to request a change in his present service. We are the only people who can help him with his problem.

Before we give a customer a "no" answer or tell him that something can't be done, see if there isn't some way to help him. It may require a call back to the customer and a talk with the engineer, but be sure to explore the field first to see if there isn't a satisfactory answer for him. We may have rules and regulations which have been set down to handle most situations, but in unusual cases, they are open to common sense interpretation.

All of us are part of a great public service organization. If in any of our contacts, we do anything less than completely satisfy the customer, we are only doing part of the job.

I like to remember this—in our every contact with our customers, however slight it might seem, we impress the customer one way or another with our service. The customer who commented, "I like the direct look and smile of the local installers" proves that in our business, as in any other one, it is the little things that count. □

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*An on-site inspection report by Jim Davidson, president of DAVCO Electronics Corporation, the firm who is rebuilding the cable television system at Buras, Louisiana. The system was almost completely destroyed by Hurricane Betsy.*

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Bill Daniels Puts First News Channel On Cable

## A NEW ERA OF SERVICE

On the main street of Fort Madison, Iowa, a brightly lighted marquee proclaims, "Able Cable Brings AP and TeleMation's News Channel to Fort Madison." It could have boasted that this is a national first since this Daniels owned system is the proud possessor of the first production model News Channel to come out of TeleMation's Salt Lake City plant.

Since its inception, News Channel has been acclaimed as a most significant innovation in supplementary service to be offered to the burgeoning CATV industry. The equipment consists of an industrial television camera, a news printer, optical multiplexer equipment, and a storage and retrieval system all controlled by an electronic brain. The printer is connected to the AP's radio news wire part which operates only when turned on by a "sequential selector" which, in turn, responds to certain specially coded groups of characters. In this way the AP operator can "edit" the stories permitting only those having maximum interest for home consumption to be displayed.



L to R, Jerry Gill, AP; Joe Berry, Abel Cable; and the Mayor of Fort Madison, Robert Tibbets, are examining the AP-TeleMation news equipment and monitor.



Joe Berry, Jerry Gill and Bill Thomas, owner of Thomas Motors Ford Agency, view TeleMation equipment and monitor.

Inauguration of News Channel service at Fort Madison was attended by Mr. Jerry Gill, sales representative for The Associated Press Omaha Office, Mr. John Russell, CATV sales manager for TeleMation, Inc., and Mr. Joe Berry, manager of Iowa Viedo, Inc. Also attending was Fort Madison's Mayor, Robert Tibbets, who termed the new service as "A singular contribution to the community's awareness of current events."

Fort Madison residents will be notified of the new service by an intensive promotional campaign. Billboards, newspaper, an in-window TV projector, and on-the-air interviews and announcements via live telecasting.

The Fort Madison installation heralds a new era in the field of CATV public service. This sort of service has become increasingly more important as the industry moves into larger markets and is confronted by increasing pressures from competitive interests. The "twenty-channel systems" which we hear discussed as future possibilities will undoubtedly have several channels devoted to supplementary service and in markets where seven or eight off-air channels are available, they will undoubtedly be a large factor in the success of the system. □

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Remember Ameco is in business to help you with all your CATV needs. For engineering equipment, financing and promotion — **Ameco means business!**



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- Gain and tilt controls
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- Cable-powered AC
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- Equalize drop cable loss
- Flat through loss
- Messenger-mounted
- Cable power feed-through



# CASH FLOW PROJECTION

By George Green  
Ameco, Inc.

## WHAT IS CASH FLOW?

The concept of cash flow has become a standard term in the cable television industry. Cash flow is *not* net profit, although the two terms have been, in some cases, mistakenly equated to each other. In essence cash flow is an adjustment of net profit and is generally understood to mean reported net profit *plus* the adding back of depreciation and other non-cash items. Cable TV operators have refined this concept further to increase the adjustment of net profit to include, in addition to depreciation, interest and taxes.

If we examine the flow of cash funds to the owner of a CATV operating property, we find on the plus side or *inflow* of cash the major item of revenue—the payment of monthly subscriber fees for the excellent and varied TV reception. In addition, the owner may show inflow revenues from 2nd set charge and initial installation charges. On the minus side of our analysis of outflow of cash funds, are such payments as salaries, advertising, pole rental, gasoline, heat and light, and all the other varied and substantial cash expenses of operating a successful CATV venture. (Incidentally, some of our uninformed critics would have you believe that cash flow is a one-way street—all in, none out.) As any experienced CATV operator will tell you, in the early years it is mostly *out*.

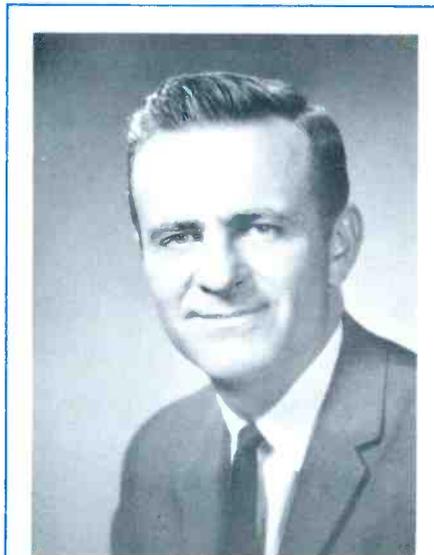
If we stop our examination at this point and request a profit and loss statement from our accountants, we will receive a statement describing the items listed above *plus* a new category of expense labeled depreciation. (For

purposes of simplification, I have eliminated interest and debt retirement cash payments.)

Totaling the net of our cash items and matching it against the accountant's report, the resulting cash analysis figure will be higher (or the loss lower) than the accountant's reported net income.

## Depreciation

This difference (in comparison above) is brought about by the fact that the accountant's depreciation expense is a non-cash item. It is his



Mr. Green, who is 34, holds a masters degree in finance from New York University, and an undergraduate degree in accounting from St. John's University. Now vice-president, marketing, of Ameco, Inc., he was formerly associated with Boothe Leasing Corp. a subsidiary of the Greyhound Corp. Mr. Green was responsible for Boothe's many sizeable investments in the Community Antenna Television field. He has also been associated in New York with Hayden Stone & Co., investment bankers, and Peat, Marwick, Mitchell & Co., certified public accountants.

After joining Ameco in 1964, Mr. Green served first as treasurer, later as vice president in charge of finance. During this period, he handled the firm's initial public stock offering and also directed the formation of Ameco Acceptance Corp., which offers financing to the cable industry.

method of allocating the original cost of fixed assets over the estimated useful life of these assets. If the assets cost \$8,000, and it is estimated that they will have a useful life of 8 years, then the depreciation charges on a "straight line" or equal period allocation will be \$1,000 for each of the next 8 years. If this method of depreciation accounting was not used, then a considerable distortion in the reports of the operations for the period would result. The expenditure for fixed assets in the first year would be charged in its entirety against the income of that year, thus vastly understating this year's net income. In the following years, the net income would be overstated since there would be no charges against income for depreciation. There would be no logic to this since, in all periods, the operations would have benefited from the use of the assets to produce the income.

The important point to remember is that *depreciation is a non-cash item* and the cash flow of a CATV system will be greater than the reported accounting net income (or the loss will be lower). Cash flow is an adjustment made to accounting net income by adding back the non-cash items—in this case, depreciation. In this example, we can take the \$1,000 net income shown in the accountant's report and add back the non-cash item of depreciation of \$1,000. The result is a cash flow of \$2,000 for the system.

## HISTORY AND USE OF CASH FLOW CONCEPT

The cash flow concept has received wide use in the CATV industry because the major portion of the original investment in a CATV system is placed in fixed assets, subject to depreciation accounting.

## Use With Lenders

In the early days of the industry, financing was a considerably more difficult problem than it is today. The industry was new and the future was cloudy. The early operators were faced with a problem; the standard account-

## Results of Comparative Statements

	Cash Accountants	
	Report	Report
Cash Revenue .....	\$10,000	\$10,000
Cash Expense .....	8,000	8,000
Operating Income .....	2,000	2,000
Depreciation .....		1,000
Net Income .....	\$ 2,000	\$ 1,000
Cash Report \$1,000 higher than Accountant's Report		

ing net income calculation did not present the best or most accurate picture on a time scale to prospective lenders due to the large non-cash depreciation charges caused by the high per cent of investment in fixed assets and the relatively short write-off period. Taking the lead from other industries with heavy capital investments, the CATV operators began to *rearrange* the standard profit and loss statement and show the cash flow concept of income before depreciation, interest, debt retirement and taxes. In the final analysis, the lender is mainly interested in two things: the source of repayment of his loan and the time required to repay it or, to put it another way, when and where the cash is coming from.

The cash flow projection accomplishes the lender's request for showing him the amount of coverage of his principal and interest repayments. (Of course, the real problem in the early days was getting the banks to listen to your story to start with.)

#### Other Uses of Cash Flow Projections

As time went on, other valuable uses for the cash flow projections have been found:

(1) Cash flow is a tool for management. Since the cash flow projections are also budgets, they can be used as a guide to overall performance and control, problem areas will automatically expose themselves if actual figures vary from budgeted projections. This allows management to follow the concept of "management by exception" and devote their attention to problem areas.

(2) Cash flow is useful as a means of calculating relative performance in numbers of cable systems. It establishes a common base to standardize expense and income under varying conditions.

(3) Should an operator wish to sell an operating system or plan to build a new system, cash flow projections become a meaningful estimate of the payment period or return on the investment required for the purchase or construction. It is a means of estimating the time required to recover the initial investment plus a reasonable profit.

Before discussing the construction of a cash flow projection, I would like to make an observation about cash flow. Some criticism has arisen against the CATV industry by uninformed persons about the rate of return on CATV systems as compared to other investments, such as television stations. In some cases, the *cash flow* of a CATV system has been measured against the accounting *net income* of

a television station with higher margins being shown by the CATV system.

I refer to Dr. Martin Seiden's report, *An Economic Analysis of CATV Systems*, Page 27:

"Financial information for 28 operating (but not necessarily representative) CATV systems listed in Table 9 shows that their 1963 profits *before interest, depreciation, and Federal Tax* was substantial. The weighted average rates of profits to revenue (profit margin) of the 28 reporting CATV systems was 57 per cent, or more than twice the 1963 profit margin of 27 per cent (*net of interest payments*) calculated for the TV broadcasting industry exclusive of the networks and their owned-and-operated stations." (emphasis supplied)

This is comparing apples and oranges. Cash flow has certain uses but, in the final analysis, it is net income which is the most meaningful figure after all charges—both cash and non-cash items.

Depreciation accounting may be a bookkeeping method and not a cash item for the current period; however, it is a very meaningful concept. Systems do wear out—and equipment can be obsolete. Remember, the cable TV industry used to use 3 channel and 5 channel tube type equipment. Then Ameco pioneered solid-state 12 channel equipment which has become the industry standard today. On the drawing boards is still further expansion of channel capability.

The point that is being made here is that the CATV business lives by the same ground rules that apply throughout the business world. I believe, if you look at CATV systems on a net income basis, you will find we have made a reasonable return for the risks and management involved.

#### CASH FLOW WORK SHEETS

The second part of this paper is devoted to an examination of forms and guidelines formulated by Ameco Acceptance Corporation, a wholly owned finance subsidiary of Ameco, Inc. In its short period of existence, this company has grown considerably. It is safe to say that Ameco Acceptance will prove to be one of the major sources of capital to the cable industry. Work sheets contained in the accompanying cash flow projection booklet have proved to be useful over the years in evaluating prospective finance situations by our company.

The booklet, published as a supplement to this issue of *TV & Communications*, is divided into 4 sections:

(1) Background information on the owners and corporation.

- (2) Background information on the town to be wired for cable TV.
- (3) A capital outlay work sheet.
- (4) 8 year revenue and expense forecast sheets.

#### Organization of Cash Flow Projections

Before commenting on each of the sections, I would like to offer an overall observation. The more information and the better organized the information is, the higher the percentage of success with prospective lenders. I cannot stress this too much. Many of the banks advertise today that their favorite word is "Yes." However, I think the safest word for a commercial loan officer is "No." He cannot be criticized if he doesn't make the loan.

Remember, too, that the loan officer will, over a period of time, become knowledgeable of your problems. He usually reports to a credit committee that is removed from you and your problems. Your loan will be competing among many other applicants. A well-organized presentation makes the job of those in the financial community who work with you a more satisfying one. They will think of you in a more professional manner if you do your share in providing the information required to make a judgment.

#### Sections 1 and 2 are:

- (1) Background of applicant.
- (2) Background of town to be wired.

In general, I think these sections are self-explanatory and merely require the answers to certain descriptive questions.

#### Estimating Potential Market

The one item that may present some problem is the estimate of future population counts and, more important to our business, future house counts. You would not want to open even the smallest business venture before finding out what you may expect in the number of anticipated customers. Chain stores clock the number of people passing by a site before setting up shop. The banker expects no less from a cable TV operator.

Today, almost any town of size has an active Chamber of Commerce which has usually done an excellent and detailed job of projecting growth figures. Other sources of these projections are the local power companies, telephone companies, large local employers and various governmental agencies.

#### Use of Consultants

I believe it will strengthen your projections if you will include outside supporting data for your projec-

tions. A good rule to remember in any part of your presentation is that the more outside sources you have to support your data, the more meaningful the data becomes to the lender.

On major or initial projects, I strongly urge all cable operators to secure the services of one of the many excellent consultants available to our industry. Their fees are modest and their many years of experience might save you from a costly mistake. At the minimum, their report should carry considerable weight with your lending institution. Some lending institutions make it mandatory to secure an outside recognized consultant before they will pass on a loan application. Perhaps Lowell was right when he said, "One thorn of experience is worth a whole wilderness of warning." However, that thorn can be pretty expensive if it's a major mistake.

### Section 3 — Capital Outlay Estimate

The total of this section is the cost to any operator to "turn the key" of a new cable system and begin operations. Today, the cost of entry into our industry is not cheap. It is not uncommon for a modern 12 channel solid-state system serving a potential of 10,000 homes with a 100 mile physical plant to cost \$500,000 in plant alone. To this initial cost must be added the operating losses of the early years of doing business. Operating losses in the early years will vary considerably depending on initial subscriber reaction, promotion costs, type of financing, etc. However, a rule of thumb might be operating losses will equal approximately 25% of total plant cost. The combined amount—cost of plant plus early operating losses—is the total amount needed to launch a CATV venture. The source of this money is some combination of equity funds and borrowed funds. Because of the stability of our industry (a loss ratio of less than .01 per cent), we have been able to borrow funds on a relatively small equity base.

This section of the work sheets is divided into 4 major subheadings:

#### (1) Distribution System

This represents the major item of physical plant cost. Depending on technical considerations, a rule of thumb for turnkey construction (that is, the manufacturer builds the entire system and supplies all the amplification equipment, engineering, labor and coaxial cable), is \$4,000 per mile.

#### (2) Head End and Tower

This section covers the receiving gear and site and the costs will vary depending on the tower height and equipment selected. Guidelines have

been presented showing various typical costs.

#### (3) Extra Charges

The most significant item in this section is the telephone and power company charges for clearing and rearranging pole space to accommodate the CATV system. These charges have been an item of contention between cable operators and utility companies with the cable companies considering the charges in some cases to be excessive. It is nearly impossible to give any guidelines since the costs vary considerably throughout the nation. However, they can be substantial.

#### (4) House Drop Costs

Some operators may expense this cost; others capitalize it. Either way, it is important to consider the cost in any estimate of investment required.

### Section 4 — 8 Year Forecast of Revenue and Expense

This section is divided into two parts:

- (1) Summary of revenue and expense work sheet.
- (2) Detailed expense work sheet.

#### Revenue

The most critical forecast in these projections is the estimate of subscriber acceptance of the service by years.

The *starting point* is the estimate of the number of homes in the cable area. We have already discussed the sources of this information. To be conservative, the homes in the cable area will usually be lower than the actual house count in the community since most systems do not wire 100% of the existing town. There may be some areas without enough homes close enough to each other to warrant wiring from an economic viewpoint.

Remember to add in future years the growth factor of new homes in the area as the town grows. The latest estimate (Advertising Research Foundation, November 1965) shows that an estimated 53.7 million U.S. households have at least one TV set, nearly 4 million have color and more than 12 million have UHF receivers. Homes with two or more TV sets were estimated last August at 11.3 million. I think what is interesting and significant to any projection of house counts is that in the last 10 years U.S. households have increased 22% (incidentally, homes with TV have grown 67% over this same period).

The *second* consideration, after determining the maximum market, will be your analysis of how many potential subscribers will buy your service and at what point in time they will subscribe. You will notice that our revenue projections only recognize one half of the year's additional sub-

scriber income. This is an attempt to compensate for the fact that some subscribers may join your system early in the year; others in December.

Every cable system in the nation is different and faces different competitive factors. Make no mistake about this point: cable TV has competition. Severe competition from off the air TV, and the general competition for the general public's attention. To consider CATV a public utility—that is, in a monopoly position—would be a fatal error.

One man's conservative guideline to possible growth rate of a cable system is as follows:

Year	Percent of Total Homes in Cable Area Subscribing	Cumulative Percent of Total
1	20	20
2	15	35
3	10	45
4	10	55
5	5	60
6	5	65
7	5	70
8	5	75

The emphasis by progressive cable operators today is on heavy promotion of the service when the system first opens and in the early days of operation. As we learn more about how to convince people to subscribe to CATV, I believe we will see an increase in the percentage of total subscribers in the early years.

#### Expense

I believe the guidelines are self-explanatory and your accuracy with these projections will increase with experience. The most common error is to underestimate promotion costs in the early years.

#### Financial Terms Desired

The key to your financing will be to structure your loan repayments to follow your cash flow projections with a margin for error. As the major banks learn about our industry, I believe we can expect loan to equity ratios of 70% bank debt to 30% equity with the repayment structured over 6 to 8 years. One of the most promising developments in our industry recently has been the interest shown by long-term lenders such as insurance companies. As our industry expands into larger markets, we will require considerable amounts of borrowed capital.

One final observation. In your presentation to lenders, stay on the conservative side. If you show spectacular income in the early years and unrealistic low expenses, you destroy the biggest asset you have going for you—the belief of the banker in your judgment. □

Effective

# Radio Advertising For Cable Systems

By Virgil Evans



Radio advertising is not basically different from any other type of advertising. It is a method for dissemination of information. If the information to be carried to the listener has interest or appeal, radio advertising can be a most effective tool in selling cable service.

Radio can be used to fit the two principal types of mass advertising. By selectively appealing to a particular type of audience, it can be used for the "rifle shot," much like direct mail. But, by using radio on a saturation basis, with announcements scheduled adjacent to programs appealing to all different types of the station audience, it can also become the "scatter load."

The specifics of all good advertising apply to radio . . . reach the the most people, at the lowest cost, and achieve repetition. Do it often . . . say it often. Remember, the public has a very short memory. And by all means, be truthful in all advertising. State your facts clearly. Give the listener no reason to misunderstand. Give the buyer exactly what you promised. If you establish truth in your advertising, and follow this practice faithfully, the radio listener will have a tendency to believe what you say.

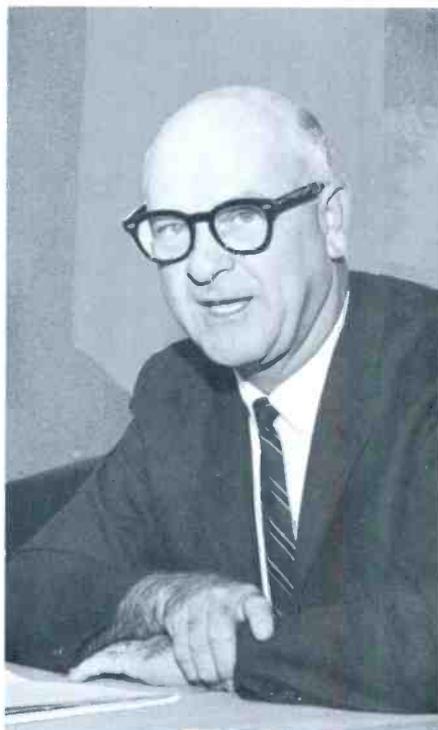
Personally, I like radio advertising because:

(a.) *It is low in cost.* A spot announcement that costs only \$1.50 to \$2.50 reaches thousands, at a fraction of a cent per listener.

(b.) *It reaches large audiences.* Recent agency figures reveal that radio listenership is high among all segments of the population. Children listen, women listen, men listen, sports fans listen, news interest is high, and set ownership is at an all time high. Don't forget to count that

very important set in your automobile.

(c.) *It achieves repetition with flexibility.* Radio can be the drop on the rock that wears a path bit by bit, or the bomb that blasts out a pathway in a massive burst. Because it costs less per ad, it can achieve repetition more readily than many types of mass advertising. It can be



*This article was edited from a paper given at the recent Ameco CATV Management Institute by Virgil Evans of American Cable Television, Inc., recipient of NCTA awards for outstanding promotional programs.*

used week after week, month after month, once a day, once a week or 25 announcements per day. Radio is flexible.

(d.) *It can back up other media.* \$20 worth of radio, in most markets, can effectively cause the listener to reflect back on the huge ad run in the local newspaper only once.

Used properly, radio advertising can be just as effective as any other medium of advertising alone. But, do not make the mistake of expecting \$10 worth of radio to produce as much revenue as \$10 in some other medium of exposure. Dollar for dollar, radio advertising can be compared favorably with any other medium.

You can ask your radio salesman to give you figures on listener expectancy at any given hour of the day. One of my pet peeves is that advertising agencies expect this specific information from a radio representative, but do not ask for a readership figure from a newspaper representative. In a newspaper, total newspaper circulation is most often the basis for advertising rates . . . but how many people actually read a certain ad on a certain page. ABC (Audit Bureau of Circulation, to which most newspapers subscribe) says a full page newspaper ad gets about 33 $\frac{1}{3}$  percent readership . . . a quarter page about 12-14 percent readership. If you use newspaper, radio, billboards, direct mail, and television to advertise a campaign, it will not reach a total of much more than 50% of the total population.

One of the two kinds of advertising, Institution and Promotional, radio can do a creditable job in each. Although the purchase of program time and spot announcements can each do a job of

# ATTENUATION

stabilized by new  
**Sealmetic<sup>®</sup>**  
**Sheathed Coaxial**  
**-the flexible**  
**moistureproof cable**

level year after year. TV pictures will still be sharp and clear long after other cables have failed.

New Sealmetic Coaxial is designed for CATV, tested for CATV, manufactured for CATV to Anaconda's high standards. For more information, call your Anaconda Wire and Cable Company, Department EFL, 605 Third Avenue, New York, N. Y. 10016. 65223



ASK THE  MAN FROM  
**ANACONDA<sup>®</sup>**  
ABOUT SEALMETIC COAXIAL

# CATV



®Registered trademark  
Design patents applied for.

Sealmetic Coaxial is the flexible CATV cable that stabilizes attenuation by eliminating moisture penetration. Anaconda's exclusive process of hermetically sealing the sheath creates a positive moisture barrier—and at the same time increases flexibility.

Easy handling during installation, and positive moisture protection in service, assure a stable attenuation

both institutional and promotional advertising, sponsoring programs seems best for institutional image building and spot announcements best for a concentrated promotional push.

In program sponsorship, there is a sponsor identity that does not often accrue with spot announcements. An image of the sponsor, is created, and it can bring good will, and create remembrance advertising advantages. You're reaching the listeners with your message, but at the same time you're receiving credit for helping make the broadcast possible. Program sponsorship reaches a select audience persuasively. The audience listening to your program is reached many times with different advertising. Well-selected program sponsorships can do much to create a good-citizen image for your cable company in your community. It also profits from repetition by reaching the same audience over and over. But choose the type of sponsorship that will best reach the special type of audience you most need to reach. No program reaches all types.

One cable company successfully used four 3-minute weathercasts daily. One short commercial was used to sell cable service. A tag-line was used to help overcome the problem of service calls. For example, when co-channel

interference occurred, the announcer concluded all weathercasts by saying, "And remember, only freak weather, and nothing else can affect the good, clear reception you get on the cable."

Spot announcements, on the other hand, give you flexibility. They can be combined in different time locations to reach a larger audience cumulatively. One spot near news, one near weather, one near music, one near hillbilly programs, one near a women's show, and one near a kid's show, will reach just about every type of audience a station can offer. And don't always look for the largest audience. Sometimes it's better to reach a few people who can buy your product than to reach a large group of people who are not interested.

For big events use saturation radio, the equivalent of the newspaper's full page. Ten, fifteen, even twenty spot announcements per day, will reach everyone who listens to the radio station. By this method, you will reach most of them over and over again. To achieve best results, your special offer must be as genuine as the frequency of your ads indicates it is.

And now, let's talk a little bit about your radio copy. Get to the point! In the first few seconds, let the listener know what your offer is. If it interests

him, you can hold his attention for the rest of the ad. If not, the whole ad is not effective. If the offer is good, make it sound good in the first few seconds.

If 10 seconds can get your full story across, don't use longer copy. This type of ad is extremely valuable, but only a few promotions can be described in 10 seconds. If 10 seconds can't do it, try 30 seconds. Remember, it takes a tremendously interesting ad to hold your listener's attention for a full minute. Good advertising agencies, with the finest production facilities available, can make an ad interesting for a full minute. Not all local station copywriters can.

To close, use such phrases as "buy it now," "call us today," "let us show you how much better cable TV can be," ask your neighbor, "we're as close as your phone, call 3-7274 today." Professional copy writers call this copy essential the "urge to action." To sum up:

1. Know what you want to say.
2. Say it often, and repetitively.
3. Say it quickly and convincingly.
4. Follow all ads with a suggestion for action.

A wise advertiser will tie all of his advertising together. No one medium of advertising can do a complete job. Tie in your radio, newspaper, direct mail and outdoor advertising.

Radio, as with all major mass media, can be used alone for a campaign. But, the campaign can be made even better by combining several advertising methods. If several radio stations are located in your town, remember that each commands a segment of the total audience. Some even program toward specific types of audience. Ask yourself whether it is better for this particular campaign to saturate the audience of one particular radio station, or whether it is better to utilize fewer ads per station.

Radio advertising can be as flexible and as effective as your own imagination can make it. Don't just buy "radio advertising." Think out your schedule, your methods of repetition and consider how much saturation you can afford. Then, let your own ideas take over. Think of the pleasures of the greater convenience and the wider selection of TV programs cable offers. With this in mind, let your thinking flow into a few short sentences. It is this personal imagination of yours that will make your radio advertising truly reflective of your own type of cable operation. By combining your own best mental efforts and imagination with the professional assistance available from your local radio station or advertising agency, you can sell cable service effectively over the air.

# GO FIRST CLASS IN CATV CONSTRUCTION

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- CALL THE COMPANY THAT OFFERS YOU AN ULTRA-MODERN TELEVISION CABLE SYSTEM ANYWHERE!

**Stan Socia CORPORATION**

Television Cable Installation

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 Guarantee the **CSR** in any CATV system!

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- ② Long-term transmission **S**tability
- ③ Outside plant **R**eliability

Quality-controlled from raw materials through every critical phase in the manufacturing process, SUPERIOR Coaxial Cables

with Coppergard offer you performance unmatched by any other cable! For aerial or direct burial use, buy SUPERIOR!



Guaranteed Maximum Attenuation db/100' at 68° F

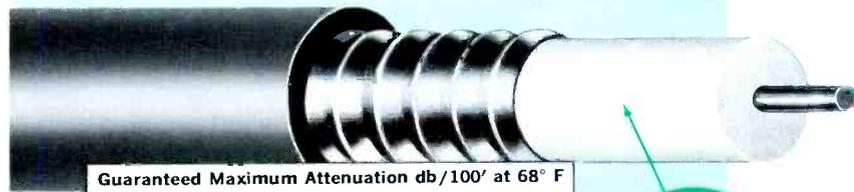
	Ch. 2	Ch. 6	108 mc.	Ch. 7	Ch. 13
4920	0.75	0.93	1.09	1.41	1.57
4930	0.58	0.68	0.80	1.07	1.20

"Cell-O-Air"  
expanded  
polyethylene  
dielectric

*For Aerial Plant*

**SUPERIOR  
 Cell-O-Air®  
 COAXIAL CABLE**

*Every Reel Sweep-tested  
 over its full length*



Guaranteed Maximum Attenuation db/100' at 68° F

	Ch. 2	Ch. 6	108 mc.	Ch. 7	Ch. 13
6020	0.74	0.91	1.05	1.38	1.55
6030	0.56	0.67	0.79	1.05	1.19

"Solid-D"  
solid  
polyethylene  
dielectric

*For Buried Plant*

**SUPERIOR  
 "Solid-D"  
 COAXIAL CABLE**

*Every Reel Sweep-tested  
 over its full length*

**5-YEAR GUARANTEE**  
 Superior 75 ohm coaxial cable with "Coppergard" shield is guaranteed to be 100% sweep-tested prior to shipment, with no attenuation discontinuity greater than 1% at all frequencies up to 220 megacycles, and with high frequency impedance guaranteed to be 75 ohms plus or minus 3 ohms; and can be expected to show no excessive attenuation increase, provided jacket and/or outer conductor are not damaged during installation and remain free from damage caused by external sources. The specific coaxial cable product manufactured in accordance with the requirements of the factory order number listed below, is guaranteed to be of first quality in material and workmanship. In the event of failure under normal service conditions, such failure is guaranteed to be caused by faulty material or manufacturing defects. Superior Cable Corporation will:  
 (1.) Replace material and pay for labor costs incurred for replacement, if such failure occurs within one year after date of installation.  
 (2.) Replace material only, if such failure occurs during the next four years after date of installation.  
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*For detailed information and prices, write*



**SUPERIOR  
 CABLE**

SUPERIOR CABLE CORPORATION  
 HICKORY, NORTH CAROLINA 28601

# THE CATV INDUSTRY

## ITS HISTORY, NATURE AND SCOPE

**PART VIII ADDENDUM**  
**SUMMARY OF RECENT ACTIONS IN CATV RULE MAKING PROCEEDINGS**  
TV & COMMUNICATIONS has recently carried a series of articles under the above title. Because several events have occurred since the original writing of these articles, a thumb-nail sketch of these developments is given in the following addendum which is continued from last month.

### Court Tests of Commission Jurisdiction

The CATV industry cannot challenge yet directly the Commission's assumption of jurisdiction over all CATV systems and the rule making in Docket No. 15971. The reason is that the Commission has not finalized this proceeding and theoretically, it could still change its mind with respect to regulating all CATV systems.

However, because the proposals in Docket No. 15971 are so similar to those contained in the proposed rules for microwave served CATV systems, a collateral attack can be and is being made, in effect, on FCC Docket No. 15971 through an all-out assault on the Commission's findings and rules and rationale in Docket Nos. 14895 and 15233.

*Black Hills Video Corporation*, a microwave company, and *Midwest Video Corporation*, a CATV system, have filed a petition in the United States Court of Appeals for the Eighth Circuit (St. Louis, Mo.) in which they challenge the imposition of the Commission's rules upon their operations.<sup>85</sup>

The National Community Television Association, Inc. has been granted a right to intervene in that case. NCTA contends in its Brief for Intervenor<sup>86</sup>:

- I. The Commission's action was not based on statutory authority.



By Robert D. L'Heureux  
NCTA General Counsel

- II. The Rules are not supported by evidence of record.
- III. The rules making proceedings before the Commission were not adequate nor reasonably designed to elicit all the pertinent facts.
- IV. The Commission's Rules with respect to CATV systems are unreasonable in their application.
- V. The Commission's Rules are a violation of the Process of Law clause of the Fifth Amendment of the Constitution of the United States and violates specific statutory provisions of the Communications Act and other Federal laws.

NCTA points to the fact that the Commission has repeatedly asked Congress for permission to regulate CATV systems and the Congress has refused to enact such legislation. The Brief gives a long list of amendments which have been made to the Communications Act since May 1960, when the Commission requested authority to regulate CATV systems, and argues that the Congress had ample oppor-

tunity to grant this authority if it had so chosen. Accordingly, in view of the Commission's repeated statements to the Congress that it lacked such authority, the Congress has acquiesced in the Commission's finding of no jurisdiction, and the Congress has intended for it to continue to lack such jurisdiction.

NCTA points out that the Commission cannot point to a single instance in which a CATV system has had an adverse detrimental effect upon a television station or has put it out of business or seriously threatened its existence. Chairman Henry's statement to the House Committee on Interstate and Foreign Commerce to that effect in May, 1965, is quoted.<sup>87</sup>

NCTA's Brief points out that this Association asked for evidentiary hearings as early as April 20, 1964, stating that economic injury is an extremely sensitive and important subject. It cannot be treated lightly nor presumptuously. The facts developed from NCTA's research support its contention that evidentiary hearings are necessary to determine the key question in an economic issue — the extent of the impact.<sup>88</sup>

The point is made that in every major policy problem which has confronted the Commission, evidentiary proceedings have been used. In this case, although the rules can result in putting out of business many CATV systems, no fact finding investigation has yet been held. No valid, meaningful data have been considered or tested by the Commission's staff and by cross-examination. The Commission has not even tested the claims of complaining television stations by checking their financial returns on file with the Commission, which could easily prove

<sup>85</sup> *Black Hills Video Corporation and Midwest Video Corporation Petitioners v. United States of America and Federal Communications Commission, Respondents*, United States Court of Appeals for the Eighth Circuit (Case No. 18,052) 1965. Brief for Petitioners filed on October 18, 1965.

<sup>86</sup> Brief filed on October 18, 1965.

<sup>87</sup> Regulation of Community Antenna Television Hearings before the Subcommittee on Communications and Power of the Committee on Interstate and Foreign Commerce, House of Representatives, 89th Cong. 1st sess. on H.R. 7715, May 28, June 2, 3 and 4, 1965, Serial No. 89-16, p. 79.

<sup>88</sup> NCTA's Further Comments in Opposition to Proposed Rule Making Docket Nos. 14895 and 15233, filed on April 20, 1964, p. 8.

# Only Plastoid makes a great aluminum sheath co-ax today—

## and there are 3 big reasons:

### 1. **Plastoid welds for strength.**

Our process is exclusive in cable-making. We share it with the makers of today's strongest hydraulic tubes and helicopter rotors. By going to UHF-welding, we can start with the strongest aluminum available: precision-rolled (wrought) strips. Then we add strength as we weld. Our seam is actually stronger than the parent metal. And by UHF-welding, we avoid the gaps and overlaps that make seamless cable vulnerable to fissures that can let in dampness and deteriorate your CATV signal. Further: we eliminate the metal fatigue that leaves seamless open to unpredictable breakage. Since we can also maintain better manufacturing control, we provide greater concentricity. This means more ease in matching splices—plus superior performance right down the line with Plastoid.

### 2. **Plastoid welds for length.**

Just tell us the cable lengths you need. Chances are that we can match your requirements to the inch. If you are ready to string a spliceless mile of aluminum sheath co-ax, Plastoid, and only Plastoid, provides a choice of two cables: TA-5 for .500-inch trunks, TA-4 for .412-inch feeders. These come in lengths up to 5,000 feet. Then, for head ends, there's TA-8 (.750-inch co-ax) in lengths up to 2,000 feet. All sizes come both jacketed and unjacketed. All footage is certified. You save on reels, transportation and installation. One truckload, one big reel goes farther. Because you need less splices, you save on connectors. Probably on boosters, too. Less splices mean less chance for vapor to get in and to break down your dielectric. So you save initially. You keep saving as Plastoid protects your signal quality.

### 3. **Plastoid pre-tests six ways.**

Of course Plastoid pre-sweeps. We test everything. Take return loss. No cable leaves our plant with less than 26.5 db return loss at any frequency between 40 and 230 mc. Even the aluminum that goes into your sheath is pre-tested for the uniformity that means strength and flexibility. Eddy-current tests verify sheath integrity. The smallest pinhole would be detected. And we make ATSM cone tests, flare tests—plus special hydrostatic tests. All prove Plastoid UHF-welded co-ax to be stronger than seamless. For more details and special pricing information about today's only great CATV cable, please call, wire or write:

## **PLASTOID**

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whether a television station is in need of protection.

The greatest flaw in the Commission's rules is the method by which they are applied. The rules become applicable by a mere request in writing by a broadcaster, without a showing or even a mere allegation that protection is needed and that the public interest will suffer unless such protection is accorded. In a large part, the protection is not needed by the stations. In fact, the study of the Commission's broadcast revenue statistics for television network and stations in 1963, shows an average return for a television broadcast station of about 96% on its depreciated investment before taxes.

In view of the fact that there are over 1,650 CATV systems, and considering the unusually high profit picture of TV stations by comparison with other industries, it is evident that the most television stations and the average television station cannot legitimately complain that CATV systems have injured them, threatened their existence, or that the public is about to be deprived of a continuation of television service. It appears not to matter to the Commission of the broadcast station is making a million or more dollars per year, or 125% return on its investments each year on its operations, or whether the CATV system involved in the demand is the only CATV system within the television station's Grade A and B contours, and that it has only 400 or less subscribers. Concededly, under those circumstances,

there is not the slightest danger that the television broadcaster will be significantly injured and still less that a detriment to the public interest will ensue. A rule which is so arbitrary and capricious cannot stand the test of reasonableness. NCTA points out, as it did to the Commission earlier, that a case by case approach is the only reasonable way to determine the existence or non-existence of adverse economic impact. The Commission is attempting to avoid the holding of such hearings but its own First Report and Order cites at least 10 types of circumstances under which it will have to hold hearings. This is caused by the complexity of the Commission's rules.

Finally, NCTA argues that the rules go far beyond what can be considered reasonably necessary to protect television stations against imagined and nebulous dangers from CATV systems in the future. The rules will seriously cripple and put out of business several CATV systems, as they will the Rapid City CATV system of the petitioner, Midwest Video Corporation. The Commission did not "grandfather" in existing CATV systems, which were misled into beginning operations by the Commission's own often repeated statement that it did not possess jurisdiction over such systems. Accordingly, this amounts to a deprivation of property without due process of law. The Black Hills Video Corporation and Midwest Video Corporation Brief is equally strong in its condemnation of the Commission's procedures, findings and Order in this case.

Mr. Max D. Paglin<sup>89</sup> and Mr. C. Hamilton Moses<sup>90</sup> will argue this case in St. Louis, Missouri, on November 18, 1965 in favor of Petitioners. The author of this article will argue the case in favor of the CATV industry and NCTA. It is expected that Mr. Henry Geller, General Counsel for FCC, and Mrs. Lenore Ehrig, Counsel for the FCC, will argue the case on behalf of the Federal Communications Commission. Mr. Lionel Kestenbaum, attorney for the Department of Justice, will present the case in favor of the United States of America.

Needless to say, this will be a landmark case for the CATV industry. Should the Court decide in favor of the Commission's Rules, the CATV industry would have to make an all-out effort before the Congress to curb this dangerous authority of the Commission. Conversely, if the Court should find that the Commission does not have authority to regulate CATV systems directly and that it can regulate only with respect to applications for microwave designed to serve CATV systems, after a full evidentiary hearing as in the *Carter Mountain* case<sup>91</sup>, the CATV industry will continue to grow and prosper and render an increasingly greater service to the subscribing members of the public. The same result would flow from a ruling of the Court that the FCC must start its hearings anew and hold a full-fledged evidentiary proceeding, as it has in the past in connection with all major cases affecting a whole industry.

Then, it would be up to the opponents of CATV to launch a drive for legislation by the Congress to lodge authority in the Commission to regulate CATV systems. In such case, if the Congress became involved in "must legislation" as it did in the last Session, and it could not proceed to enact legislation of lesser importance, it would not be the CATV industry which would be made to suffer from the fortuity of such events.

Another current case of interest to the CATV industry is the *Philadelphia Television Broadcasting Co.* case<sup>92</sup>. In that case, the Petitioners have attempted to block the construction of a CATV system in Wilmington, Delaware, by filing a Petition with the Commission, demanding that the Commission consider a proposed CATV system and all CATV systems incidentally as common carriers under the Communications

(Continued on page 48)

89 Of the Washington, D.C. law firm of Grove, Paglin, Jaskiewicz, Gilliam & Puttrese. Mr. Paglin was formerly General Counsel to the FCC.

90 Of the Little Rock, Arkansas law firm of Moses, McClellan, Arnold, Owen & McDermott.

91 *Carter Mountain Transmission Corp. v. F.C.C.* 321 F. 2d 359 (C.A.D.C.), cert. den. 375 U.S. 951 (1963).

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Craftsman's new back-matched epoxy filled hybrid splitter-mixer's battleship construction insures high AC/DC isolation and rugged dependability.



MODEL 1592 2-WAY



MODEL 4WDW-F 4-WAY

**No need to buy expensive outdoor splitters — Craftsman now has available the Astro-Cast type of Epoxy — guaranteed not to crack or melt in extreme temperatures.**

## CRAFTSMAN

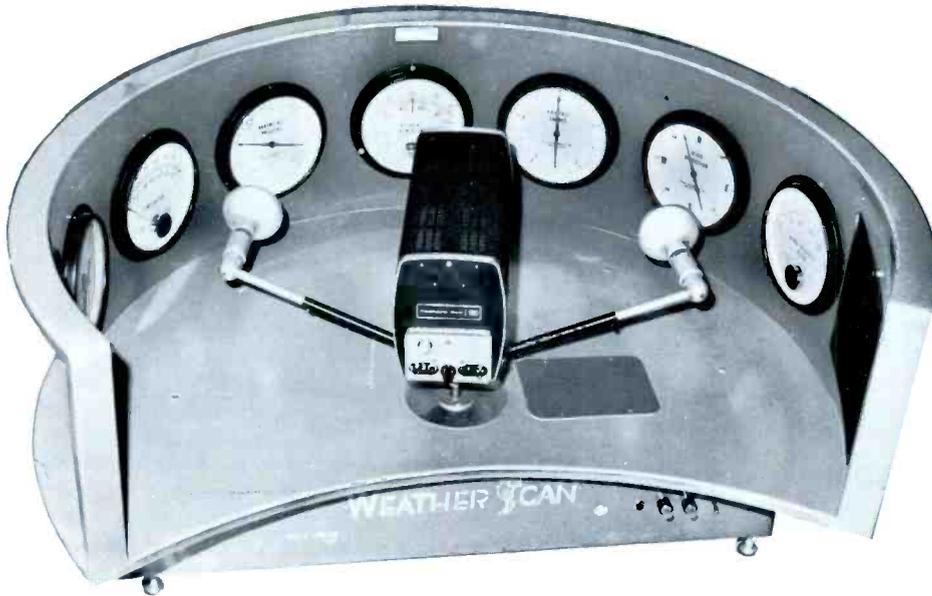
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The WEATHER-SCAN—always the most popular service a cable system can provide—has proven itself to be a positive “must” for all CATV systems.

Even low-band systems without open channel space have found WEATHER-SCAN to be of tremendous value. This complete Time/Weather Service package effectively fills the off-air void of limited time stations. Available control equipment activated by the station’s signal makes operation of the WEATHER--SCAN, before and after station broadcast hours, fully automatic.

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Weather-Scan Basic Unit (includes time, temperature, barometer, electric rain gauge, wind direction and wind velocity indicators) .....	\$3,095.00
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Wide Angle Lens .....	110.00
TE-22 GE Camera with 2:1 interlace sync generator. (Pack- ard-Bell, Motorola or Sylvania cameras also available) .....	1,595.00
<b>TOTAL DELUXE Time/Weather Package .....</b>	<b>\$5,195.00</b>

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# 180° Co-Channel Problem---Solved



Monroe, Louisiana, is located 105 miles east of Jackson, Mississippi, and 100 miles west of Shreveport, Louisiana. For the past ten months, Cablevision, the CATV system in Monroe, has been working to solve a problem which is perplexing engineers in systems across the country—co-channel interference.

WLBT-TV in Jackson and KTBS-TV in Shreveport both broadcast on channel 3, both are approximately 100 miles from Monroe, and a line drawn from one station to another would almost cross Cablevision's 500-foot tower. As a result, subscribers in Monroe have had to be content with a very poor picture from Jackson and absolutely no picture from Shreveport. The explanation for this difference in signal strength is a band of hills lying between Shreveport and Monroe (see diagram).

Cablevision manager Jerry Buford reported that all known engineering methods and the four different types of antennas tried in the past months had failed to pull in a clear Shreveport signal.



This photo indicates the condition of the Shreveport signal before use of the Quadrate Channeler antenna array.



Using the new array channel 3 from Shreveport is available in useable strength — without interference from channel 3, Jackson.

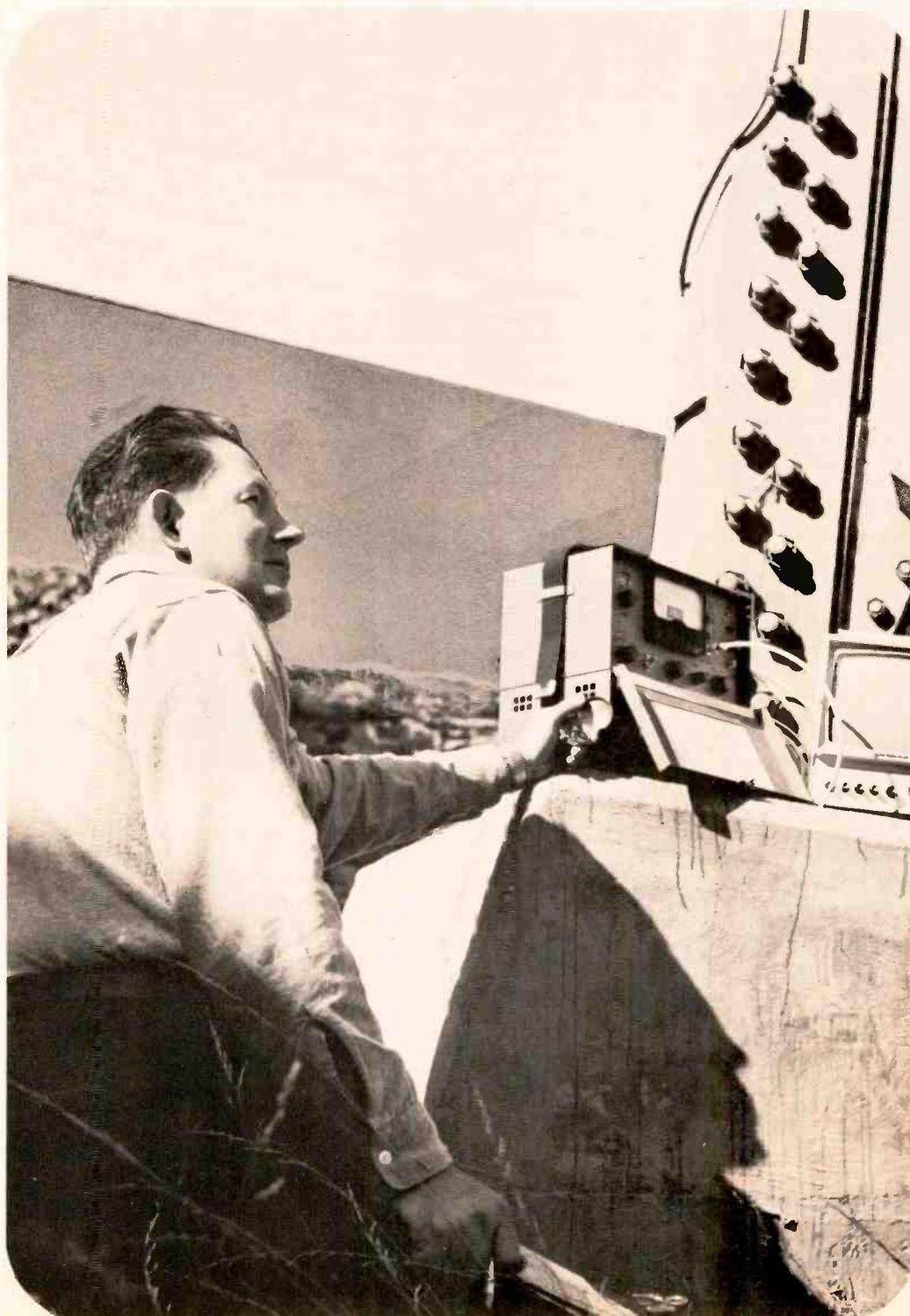
In October, however, Cablevision installed their fifth antenna—and it worked! The antenna was a "quadrate channeler" produced by Scientific Atlanta Inc. of Atlanta, Georgia. This master antenna system, according to Scientific Atlanta's chief engineer Tom Smith, is designed specifically to minimize co-channel interference. Working according to the principles outlined in his recent article in *TV & Communications* magazine (see page 69, August), this antenna eliminated the Shreveport signal's interference with the Jackson signal and vice versa.

Jerry Buford reports that Cablevision's subscribers are now quite happy with the service they are receiving and that he expects to add new subscribers at an ever-increasing rate. The system now provides 7 channels of video, time/weather channel and all-band FM.

Equally elated with the achievement is the staff at Scientific Atlanta. Tom Smith feels that this is a major breakthrough. "The situation at Monroe," he explained, "is almost a classic example of co-channel interference." □

January 1966

# CATV TECHNICIAN



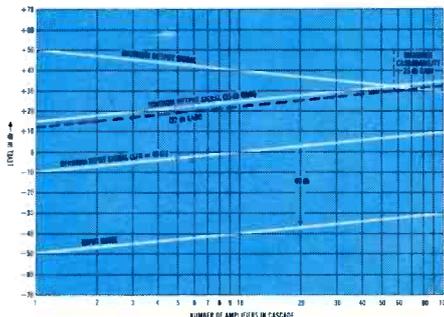
PHOTOGRAPH COMPLIMENTS OF TELESYSTEMS, INC.

- Sub-Channel Systems for Long Runs to Town
- Problems in Urban Systems
- Newest CATV Products



# Let's compare Cascadability...

NOISE FIGURE VS CASCADABILITY



To get more cascadability you can increase output capabilities or decrease the noise figure. Don't be misled by the "numbers" game in cascadability. The goal of any CATV system is excellent performance, maximum reliability and most important — **profits**.

AMECO designs CATV products with performance and reliability the primary consideration. AMECO products are "system" oriented to produce better pictures with lower operating costs.



ATM-70

The Ameco 70 series is exceptional because of lower noise figure and better output capability. The 70 series is designed for optimal system performance. Today there are over 6,000 performance-proven 70 amplifiers in use.

There's been a lot of talk about cascadability and whose amplifier has better CATV operating characteristics.

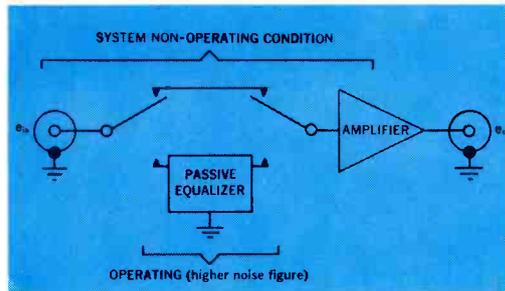
Well, let's look at the problems that occur in cascade.

Ameco recommends operating CATV systems at half tilt. In this manner CATV systems are designed to "field condition" parameters. Amplifier units are tested from input to output under simulated operating conditions.

## NOISE

The First problem is noise. The more amplifiers you cascade the higher the noise figure becomes. "Snow" is basically noise — so if you don't mind a lot of snowy pictures it is theoretically possible to cascade over 40 amplifiers with a high noise figure.

Some manufacturers lay out systems under ideal laboratory conditions, instead of true operating conditions.



## OVERLOAD

Overload is the second major problem of cascading. Overloading your amplifiers will result in distortion that will be readily discernable in a television receiver. The overload factor increases proportionately to cascade. However, the amplifier must be specified at actual field conditions — not under laboratory conditions.

Performance-Proven Products



OFFICES IN ALL PRINCIPAL CATV AREAS

FOR LONG TRUNK RUNS TO TOWN . . .

# Sub-Channel Systems

By Lon Cantor  
Jerrold Electronics Corp.

One of the sad facts of CATV life is that attenuation in coaxial cable increases with frequency. It is for this reason that early CATV systems were limited to the low VHF band, with a maximum frequency of 88 MC.

Eventually, of course, subscribers demanded more than the five channels possible on a low band only system. And CATV technology came up with the answer: trunkline amplifiers capable of handling the high VHF channels over long cable runs. The new Jerrold Starline system, for example, can cascade 50 or more amplifiers with -57 db cross modulation and a 40 db signal-to-noise ratio.

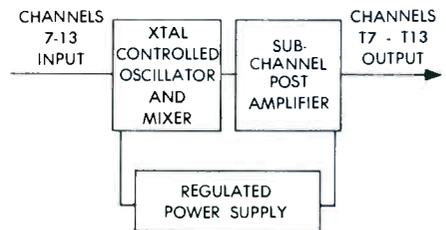
While the maximum permissible length of systems is steadily being increased by advances in the state of the art, there are still limits. Fortunately, there is an alternative solution. We can go back to the old concept of limiting the frequencies carried by the system to 88 MC. And, to meet subscriber demands for 12 channel systems, we can

be processed by Jerrold Channel Commanders. Three and five are isolated from their adjacent channels by a Model 1592 hybrid mixer.

Channels 7, 9, 11 and 13 are converted, simultaneously by a Model HDX-713A sub-channel converter. Notice that a 32 db pad is used to attenuate the output of the high band

Channel Commanders to 18 dbmv. The output of the HDX-713A is tilted, 39 dbmv at sub-channel T13 (41.75 mc to 47.74 mc) and 18.5 dbmv at sub-channel T 7 (5.75 mc to 11.75 mc).

Then, the sub-channels and the low band channels are combined in a Model FCO-47 low-sub mixer. We now



BLOCK DIAGRAM OF JERROLD HSC-713A SUB-CHANNEL CONVERTER/AMPLIFIER  
FIGURE 1

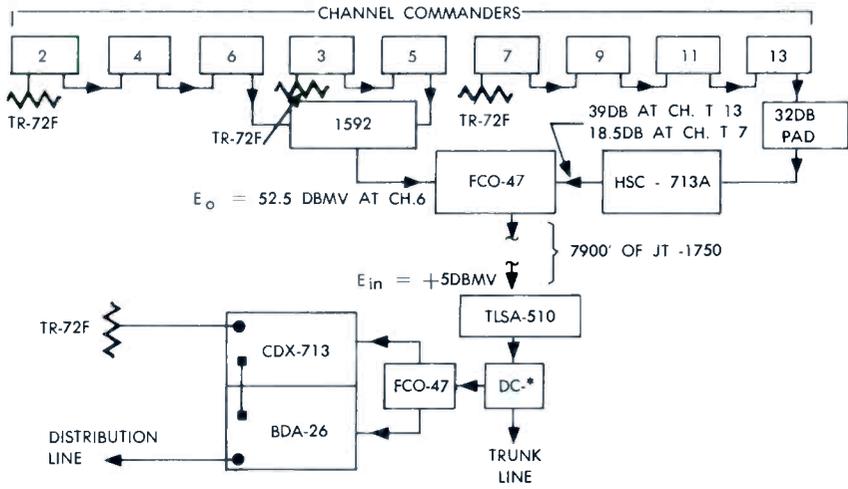
carry the high band channels at frequencies below channel 2 — at sub-channel frequencies.

## Sub-Channel Converters

Sub-channel systems are quite simple in concept. You convert the high band channels into sub-channels, carry the sub-channels, (along with the low VHF band channels) into town, and then convert the sub-channel, back up to the high VHF band for distribution.

Figure 1 shows a typical sub-channel converter. It actually comprises three modules: a regulated power supply operating from a 117 volt AC source; a crystal controlled oscillator and mixer; and a push-pull post amplifier with a gain reduction control continuously variable over a 10 db range. Figure 2 shows a typical sub-channel system Head End.

Channels 2, 3, 4, 5 and 6 are carried on channels. Their signals are pro-



TYPICAL SUB-CHANNEL SYSTEM HEAD END  
FIGURE 2

Nom. Cable Attenuation db/100' PIX at 70° F\*  
\*Coaxial cable attenuation varies about 0.1% per degree Fahrenheit.

CHANNEL	JT-1750, 1750J	JT-400S, 400D	JT-200S, 200D	JT-1500, 1500J	JT-1412, 1412J	JT-408S, 408D	JT-404S, 404D	JT-201, 204, 301, 304	JEL-101, 104	JT-205	JEL-102, 105	RG-59/U
T-7	.18	.22	.23	.25	.31	.30	.37	.38	.49	.70	.88	.90
T-8	.24	.30	.31	.33	.42	.40	.51	.52	.67	.96	1.20	1.43
T-9	.29	.36	.37	.40	.50	.49	.61	.63	.81	1.16	1.46	1.73
T-10	.33	.41	.43	.46	.58	.56	.70	.72	.93	1.33	1.67	1.88
T-11	.37	.46	.48	.51	.64	.62	.78	.80	1.03	1.48	1.86	2.28
T-12	.40	.50	.52	.56	.70	.68	.85	.88	1.13	1.61	2.03	2.41
T-13	.43	.54	.56	.60	.76	.74	.92	.95	1.21	1.74	2.19	2.59
2	.49	.61	.67	.68	.85	.86	1.04	1.11	1.43	2.04	2.59	2.95
3	.52	.64	.71	.72	.90	.91	1.11	1.18	1.50	2.14	2.70	3.12
4	.54	.67	.74	.75	.94	.95	1.16	1.23	1.56	2.22	2.82	3.37
5	.58	.73	.80	.81	1.01	1.02	1.24	1.32	1.67	2.38	3.00	3.52
6	.60	.76	.83	.84	1.05	1.06	1.30	1.37	1.73	2.45	3.11	3.66
7	.94	1.15	1.25	1.27	1.50	1.53	1.95	2.01	2.63	3.45	4.55	5.45
8	.95	1.18	1.28	1.30	1.53	1.56	2.00	2.06	2.69	3.50	4.63	5.58
9	.97	1.20	1.30	1.32	1.56	1.59	2.03	2.10	2.75	3.55	4.71	5.62
10	.99	1.21	1.32	1.34	1.58	1.62	2.07	2.13	2.80	3.60	4.80	5.73
11	1.00	1.25	1.34	1.36	1.61	1.65	2.12	2.17	2.85	3.65	4.90	5.84
12	1.02	1.28	1.36	1.38	1.63	1.68	2.16	2.20	2.91	3.70	4.99	5.95
13	1.03	1.29	1.38	1.40	1.65	1.70	2.19	2.23	2.97	3.76	5.07	6.03

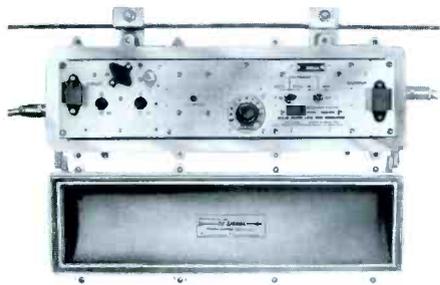
\*\*Add 10 to 30% to high channel attenuation figures for extremely humid climates.

Cable Attenuation vs. Frequency.

FIGURE 3

have five low channels and four sub-channels on a single coaxial cable.

At the output of the FCO-47, channel 6 is at 52.5 dbmv, while channels T13 and T7 are at 39 dbmv and 15.5 dbmv respectively. This "Tilt" is in-



JERROLD MODEL TLSA-510 SUB-CHANNEL AMPLIFIER  
FIGURE 4

roduced in order to compensate for coaxial cable losses, which increase with frequency (see Figure 3). Thus, when we take the output of the FCO-47 through 7900 feet of aluminum sheathed Times JT-1750, the input to the first amplifier is approximately 5

dbmv on all channels.

**Low/Sub-Channel Amplifiers**

Like ordinary trunkline amplifiers, Low/Sub-Channel amplifiers must be flat and highly cascadable. Figure 4

shows the latest type of solid-state unit. It is normally run at 30 db gain and 35 dbmv output for 9 to 12 channel operation. However, to compensate for cable tilt, an equalizer is required in front of each amplifier. Since this equalizer causes a 2 db loss, amplifiers are generally spaced at about 28 db of coaxial cable loss. Let's compare this with an on-channel system. In order to cascade 50 on-channel amplifiers, carrying 12 channels, spacing must be about 22 db. But this is 22 db at channel 13, equal to 2130 feet of JT-1750 cable. On the other hand, the TLSA-510A is spaced at 28 db at channel 6. This is equivalent to 4670 feet of cable between amplifiers. Thus, you can go as far with 23 TLSA-510A's as you can with 50 on-channel amplifiers, maintaining about the same picture quality.

**Cable Equalization**

Cable equalization, as shown in Figure 5, must be used in front of each trunkline amplifier. The equalizer

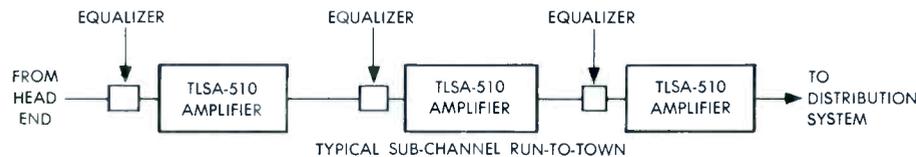


FIGURE 5

makes sure that all channels go into the amplifier at the same level, in spite of cable tilt.

The problem of cable tilt is complicated by the fact that cable attenuation varies with temperature. Figure 3

shows cable attenuation at a specific temperature (70°F). But as temperature rises, attenuation also rises. A one degree Fahrenheit increase in temperature causes a 1.0% increase in attenuation. Thus, cable equalizers must compensate not only for cable tilt with frequency, but for cable attenuation changes with temperature.

**AGC**

The output of the head end is held within rigid limits by the stiff automatic gain controls of the Channel Commanders. And the variation in cable attenuation are handled by equalizers. But, these precautions are not enough. In a long trunkline, signals must be fed with each amplifier at precisely the right level. A slight variation quickly multiplies to a long variation at the end of a long line of cascaded amplifiers. Too weak a signal means "snow" on subscriber TV sets; too strong a signal means overloading and cross modulation. Therefore, every third amplifier in a long sub-channel system should have an AGC control unit.

The trunkline AGC units work off a signal from a pilot control generator at the head end. The pilot control generator output is usually between 72 and 76 mc, falling in the guardband between TV channels four and five.

The AGC unit samples this carrier signal, maintaining the output of its associated amplifier at a uniform level in spite of changing signal conditions. No cable equalizer, which is a passive unit, can possibly do the job of an actual Automatic Gain Control unit.

**Signal Distribution**

At the end of the run-to-town, the signals must be distributed throughout the area to be served. The output of the TLSA-510 sub-channel amplifier is split by an asymmetrical directional coupler. It is then separated into two frequency ranges. The sub-channels are sent to a converter/amplifier, while the low VHF channels are sent directly to an amplifier. The converter/amplifier converts the sub-channels to their original high channel frequencies. (Since the cable from the hub station to the subscriber homes is relatively short, the high channels can easily be carried.) After amplification, the high and low channels are combined. They are then sent through conventional broadband VHF amplifiers to subscriber homes.

Sub-channel systems may seem more complex than on-channel systems, but they are really quite simple. Because they are economical and easy to maintain, these systems are recommended for extra long runs-to-town. □

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	5                      10
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F/B Ratio	23 db                27 db
Beamwidth at 1/2 Pwr. Pt.	48°                    38°
VSWR	1 to 1 at frequency, less than 2 to 1 at band edges.
Bandwidth	6 Mc.                6 Mc

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\*For complete price schedule see latest net price lists.

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# Problems in Urban Systems

By Ira Kamen

The advent of CATV for urban areas such as New York City, Philadelphia, Chicago and other major markets, will produce many new problems for CATV operations whether or not they employ the facilities of the telephone company.

The activation of many new UHF stations serving our leading cities creates reception problems in urban performance which may only be solvable by CATV systems. All-channel television is the law of the land, and all broadcast stations, whether they be VHF or UHF, must be reproduced without discrimination when carried by a CATV system authorized in an urban area.

## DIRECT PICK-UP PROBLEM

Figure 1 pictorially describes the direct pick-up problem which doesn't exist in the fringe or blind areas where CATV systems are normally installed. As noted by the figure and validated by test, signals of a strong level may be induced directly into television sets which are operating only a few miles from a television station and create a leading ghost which cannot be swamped by the 1 or 2 thousand microvolts delivered by the urban cable CATV system.

While it may appear that the obvious solution is to remove the 300 ohm line between the antenna terminals and the tuner, this modification would mean entering the set of the CATV subscriber. By entering the set and making this modification to preclude the direct pick-up problem, the CATV operator has done three things in violation of industry practice, i.e., (1) voided the set manufacturer's warranty which insists that no set modification be made by others, (2) modifications to approved designs violate the Fire Underwriter's listing, and (3) waive the manufacturers' product insurance.

Assuming that the CATV operator does enter the set to shield the input from direct pick-up, experience has shown in other fields that the subscriber may hold the operator liable for the next service call, especially if the television set failure occurred soon after the CATV operators' installer had modified the television set. In some instances this liability on the

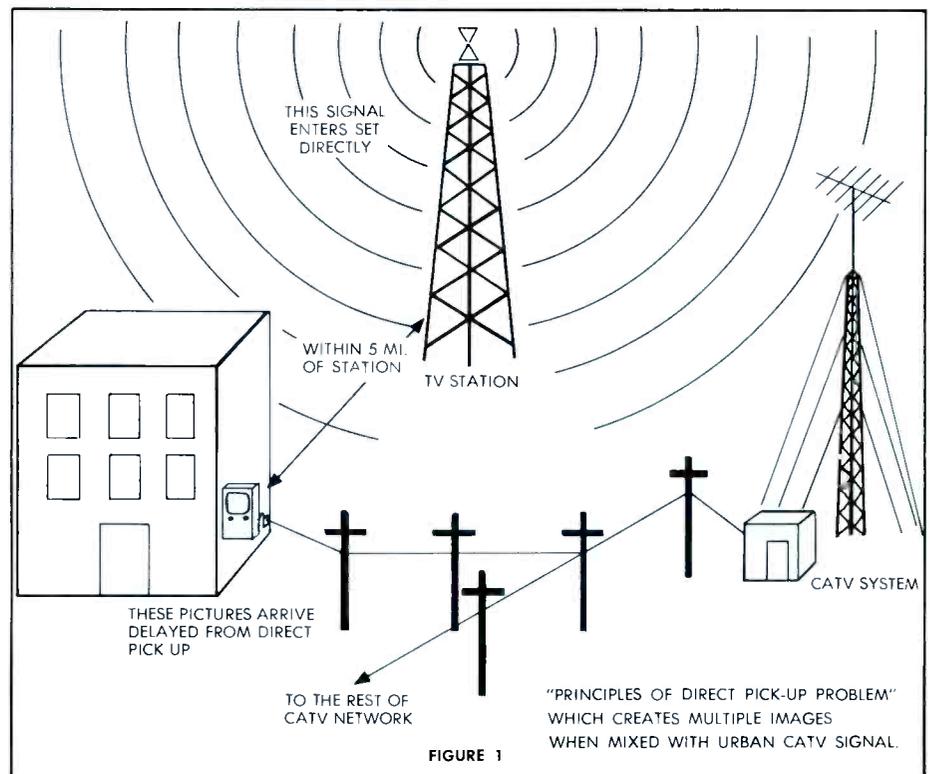
part of the CATV operator would be correct if he had heavy-handed field men.

Tests made by the writer with twenty television sets of various makes and vintage indicated that severe leading ghosts would be inherent and make certain close-in CATV urban installations impracticable unless a new approach is taken to this problem. Sterling Information Services, Ltd., in order to solve this direct pick-up problem in New York City, has installed three coaxial cables per subscriber. In addition to solving the direct pick-up problem, three cables provide greater flexibility in providing additional television services, should they become allowable within the city franchise. Sterling Information Services also plans to incorporate a video security system for multiple dwellings simultaneously with the installation of CATV. CATV Enterprises, the other organization which received approval from the New York City Bureau of Franchises, has its installation in a section of New York City ten miles away from the television

transmitters. Therefore, CATV Enterprises is not faced with the direct pick-up problem and offers its service on a single cable basis.

## LEASEBACK COMPLEXITIES

Through leaseback agreements, telephone companies offer cable operators a regulated service, with rental of quality equipment, which may lend itself to urban CATV operations. Although most established operators oppose this type of operation, both from a customer service and a business points of view, the possibility of extensive urban leaseback operation must be considered. Such operations may create some unusual complexities due to the fact that the CATV operator must warranty the performance of the system to the subscriber, yet the telephone company limits its guarantees to the performance to the subscriber's wall outlet or to the building line. In the event there are problems of interference via direct pickup or other sources of generated noise, there will be divided responsibility facing the technical personnel of the respective entities.



As many of the major CATV manufacturers are also seeking franchises, certain complexities will arise when these manufacturers' CATV marketing organizations select their service via telephone company facilities. Consider the embarrassing possibility such a company may encounter when wishing to use the telephone company facilities within an area where the local telephone company has only approved the use of another firm's equipment!

**PROBLEMS IN BUILDING ENTRY**

CATV operators planning to serve urban areas may find that they will require the benefits of the telephone company easements into multiple dwellings if they are to be able to offer this service without being harassed by the owners of the multiple dwellings. Preliminary negotiations, without the use of telephone company facilities and contractual relations, have indicated that apartment house owners wanted a share of the building's subscriber income potential. Under these conditions it becomes more realistic for the urban CATV operator to have the telephone company provide the feed into the multiple dwelling and arrange for distribution with his own personnel. The New York Telephone Company has indicated its willingness to provide a CATV outlet in the subscriber's home, leaving only the connection between the CATV outlet and the television set to the CATV operators' personnel.

**EARLY START ON SOLUTIONS**

It is not the purpose of this article to indicate th solutions to these problems, but rather to create an awareness that these problems do exist in light of the new departure in CATV operations. The author also sincerely believes that regardless of whether a CATV operator plans to use telephone company facilities or to develop his own, he will find that the hardware of all the sources of supply have been upgraded in order to meet high standards of quality, reliability, and performance. There is no question that with the advent of all channel television and the rapid growth of color television there is a need for perfect cable transmissions in urban areas. Surveys have shown that a discriminating public will pay for better television reception. The growth of television in urban markets would make CATV one of the biggest electronic businesses in the country. This growth will bring forth many challenging engineering assignments as well as adding to the health of our stable American economy. □



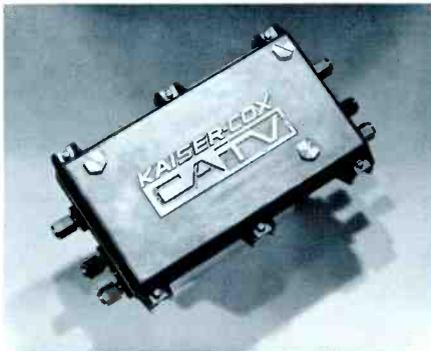
**PRODUCT REVIEW**

**NEW KAISER-COX SERIES**

Die-cast aluminum cases with universal-type fittings are featured in the new Phoenician CATV equipment series announced by Kaiser-Cox, Phoenix, Arizona. These will accommodate all popular sizes and types of cable.

These amplifiers are of "plug-in" modular construction and allow complete interchangeability from a trunkline amplifier to a 2 or 4-output bridging amplifier, or combinations of trunkline and bridging amplifiers (with or without AGC and automatic tilt).

The built-in knob type controls of the Phoenician amplifiers eliminate the need for screwdrivers, plug-in

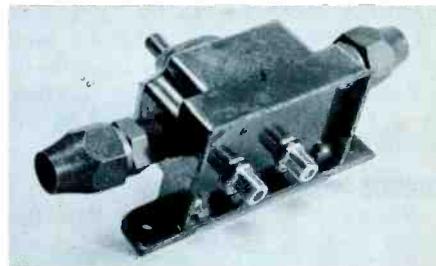


pads or accessories. Three sealed access ports in the die-cast case permit internal probe measurement in any weather without exposing the entire internal parts. Universal hinges at both the top and bottom of the cover allow it to be swung open in either direction.

**NEW VIKING TAPS**

Viking Industries Inc., 830 Monroe Street, Hoboken, New Jersey, has introduced the model 573 Directional Two-Output Line Tap for CATV applications. The unit combines the features of the single-output tap with those of the two-way hybrid splitter in the same weather-proof die-cast housing, thus saving installation time and eliminating the use of external jumpers. The dual taps provide matched, isolated outputs which can be used for distribution ampli-

fiers or individual taps. The model 573 has 1.15 maximum line VSWR and 20 db isolation between taps according to the manufacturer. It is available with all types of fittings for any type cable, and has provisions for pole or messenger mounting. Insertion loss for 12 db model is 1.0



db maximum; for 19 db model is 0.5 db maximum; and for 25 db model is 0.3 db maximum. All models permit AC or DC power bypass.

Also new in the Viking product line is the model 566 Four-Output Solid-State Inline Tap. The unit provides four back-matched taps with signals at the same level as the main line. A two-transistor in-line amplifier compensates for the tap attenuation with .5 db maximum line insertion loss, according to the manufacturer. The tap is housed in a weather-proof zinc die-casting, and has a built-in power supply. Fittings are available for all standard cables. For additional information on these products, contact Viking at the address above.

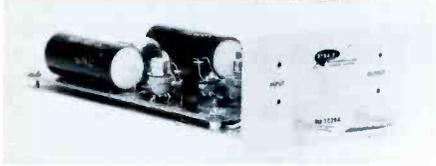
**BACKGROUND MUSIC SERVICE**

A new background music service for cable systems has been announced by Melody Tape Music Company. The firm offers 3¾ rpm tapes on 7 and 10½ inch reels on either sale or lease basis. The 10½ inch reels are said to provide eight hours of playing time. For further information contact Melody Tape Music Company, 1122 Thatcher Blvd., Safford, Ariz.

**BALANCED-LINE TRANSMISSION EQUIPMENT**

DYNAIR Electronics, Inc. has announced development of a solid-state

amplifier module designed for use in economical balanced-line video transmission systems. The new device,



called the BU-1029A Balanced Universal Amplifier, is another addition to the DYNAIR Series 1000 solid-state modular distribution equipment line. It incorporates hum-cancelling circuitry providing common-mode rejection and is available with any of four different input-output arrangements: differential input to unbalanced output; balanced-line input to unbalanced output; differential input to balanced-line output; or balanced-line input to balanced line output. By using various other Series 1000 modules in conjunction with the BU-1029A, video signals may be transmitted several miles without deterioration due to pickup of extraneous hum and noise, according to the manufacturer.

DA-1060C provides four isolated video outputs from one high-impedance looping input. One 1¾x19-inch FR-1000A Rack Mount Frame holds up to four of the amplifier modules in any combination and one power supply module. For additional details, contact **DYNAIR Electronics, Inc., 6360 Federal Blvd., San Diego, Calif.**

**NEW ELLIPTICAL REFLECTOR**

Microflect Co., Inc. is now manufacturing an elliptical, tower-mounted flat reflector for periscope use to 13Gc. The new "TM" Series reflectors are said to employ an entirely new panel and mounting concept.

The fully enclosed reflector panel is fabricated of solid aluminum, without perforations. The reflecting face



is protected by a back covering of solid aluminum. Reflecting face distortion and damage by ice and snow is said to be virtually eliminated.

The modified gimbal mounting structure (Omni-Mounts) is designed to support the reflector at a point near the center of gravity and the wind load. This mounting concept separates the loads on the support structure from the adjustment mechanism, as the Omni-Mount carries the reflector weight and environmental loads, leaving the azimuth and elevation rods free for easy adjustment. The adjustment of one rod does not effect the other or its setting.

Five models are available: TM-46 (4'x6'), TM-68 (6'x8'), TM-812 (8'x12') TM-1015 (10'x15'), and TM-1217 (12'x17'). All units mount to a 4½" O.D. pipe or directly to tower members. For further details, contact **Microflect Co., Inc., 3575 25th Street S.E., Salem, Oregon 97302.**

**INLINE VARIABLE ATTENUATOR**

Viking has announced the new #523 Inline Variable Attenuator that is a switchable pad to pass 8 AMPS., AC or DC. The unit contains 3db and 6db pads that can be used individually or combined for a total of 9db.

The unit is contained in a weather-

proof die cast zinc case that may be either strand or pole mounted. Fittings are available for all commonly



used CATV cables. For additional information write: **Viking Industries, 830 Monroe Street, Hoboken, New Jersey.**

**NEW TACO LITERATURE**

The Government and Industrial Division of Jerrold Electronics has just released a four page catalog detailing a complete line of antenna system mounting components. The TACO component line includes a variety of clamp assemblies, masts and booms, couplers, guy wire kits, mounting ring kits, and adjustment bearings; everything necessary for a custom engineered antenna installation. A copy of the new catalog is available on request from the **Government and Industrial Division, Jerrold Electronics Corporation, 15th and Lehigh, Philadelphia, Pa. 19132.**

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(CATV History continued)

Act. The Commission ruled, as it had in three cases prior thereto<sup>93</sup> that a CATV system is not of a common carrier nature and is not subject to Title II of the Communications Act of 1934. Petitioners have appealed this decision to the United States Court of Appeals for the District of Columbia Circuit (Washington, D.C.). *Rollins, Inc.* filed a Brief as an Intervenor. NCTA filed a brief as an Amicus Curiae. It has asked to file a brief as an *Intervenor*. In its brief, NCTA supports the Commission's holding. Because this will be the first time that a Federal Court passes upon the question whether a CATV system is a common carrier, this proceeding will be, also, a landmark case.<sup>94</sup>

### CATV Legislation

Subsequent to the Commission's decision that it had jurisdiction to regulate all community antenna systems whether they relied on microwave service or not, Representative Oren Harris, Chairman of the House Commerce Committee, introduced a bill (HR 7715) that would authorize the FCC to regulate community antenna systems. In summary, the Bill proposed to amend the Communications Act so as to accomplish the following:

1. Establish a national television policy "to give the people of the United States access to the greatest practicable diversity of local, network, educational and other television programs."
2. Authorize the Commission to regulate all community antenna systems.
3. Pre-empt for exclusive Federal regulation "those aspects of intra-state and local television communications which may affect the accomplishment of the national television policy."
4. Provide that the Commission is not to license community antenna systems.
5. Provide that no CATV rules would take effect for 90 days, thereby giving Congress an opportunity to review such rules.
6. Make null and void such interim procedures as those adopted by the Commission in Docket Nos. 14895 and 15233; and,
7. Authorize the Commission to secure

information on CATV operations.

With certain amendments which it has suggested to the Congress, the industry through the National Community Television Association has supported the Harris Bill as an interim measure to require the Commission to acquire sufficient facts upon which to base regulation.

Hearings have been held on this Bill, but sufficient time has not lapsed for the Committee to issue a report on it. Hopefully, the Bill will result in more realistic regulation of the community antenna industry, either through passage in its present form or as an incentive to the broadcast industry representatives to resume negotiations with the CATV industry looking toward agreement on the regulatory approach to be adopted. In the event that the NAB and NCTA are able to agree on such regulation, undoubtedly the Congress would adopt this approach rather than that proposed by the FCC.

Because of so-called "must legislation" which had been requested as urgent by the President of the United States, the Subcommittee on Power and Communications of the Committee on Interstate and Foreign Commerce of the House of Representatives of the United States did not find time to analyze the hearings which were held on the Harris Bill in May, 1965. It is expected that by February or March 1966, the Committee will have an opportunity to process this legislation and to report it to the House. NCTA in a statement by its President, Mr. Frederick W. Ford, has suggested that amendments be made to the Harris Bill.

The substance of the suggested amendments to H.R. 7715 would include:

1. Authority to require automatic reception and distribution by CATV systems of all Grade A signals.
2. Authority in the Commission to prohibit the reception and distribution by CATV systems of any television signals during the time they carry programs which simultaneously duplicate those on signals required to be carried on the system.
3. Authority in the Commission on a case-by-case basis to extend such non-duplication requirements to 15

days before the broadcast of the program by the protected station, or extend such non-duplication requirements to the Grade B contour of the protected station. Such additional requirements to be imposed only after a hearing and a finding based on substantial evidence of record that such requirements are reasonably necessary for the continuation of local broadcast services.

4. A prohibition against the Commission adopting any rules, regulations, policies or practices in licensing microwave facilities which would prevent the reception of any station or stations by a CATV system, subject only to the qualifications set forth above.
5. A provision to authorize and direct the Commission to conduct a fact-finding investigation into the various facets of television broadcasting and reception, for the purpose of formulating legislative recommendations for the orderly development of a national television service by wire and radio.

The CATV industry will continue to serve the public to make available a greater variety of television fare. The CATV industry will prevail in its current struggle with its opponents. It will do so because CATV operators are young, resourceful and determined to continue serving the public interest. This CATV youth will win its contests. As it has been stated before, youth is not a time of life. It is a state of mind. It is not a matter of ripe cheeks, red lips and supple knees; it is a temper of the will — a quality of the imagination — a vigor of the emotions. Nobody grows old by merely living a number of years — people grow old only by deserting their ideals. Years wrinkle the skin, but to give up enthusiasm wrinkles the soul. Worry, doubt, self-distrust, fear and despair—these are the long, long years that bow the heart and turn the greening spirit back to dust. Whether 60 or 16, there is in every human being's heart the lure of wonder, the undaunted challenge of events, the un-failing child-like appetite for what next, and the joy of the game of living. We are as young as our self-confidence, as old as our fear; as young as our desire, as old as our despair. □

<sup>92</sup> Philadelphia Television Broadcasting Co.; TAME, Inc.; Ralph Brinton, D/B/A Brinton TV & Appliance Sales; and J. F. D. Electronics Corp., Petitioners v. Federal Communications Commission and United States of America, Respondents. United States Court of Appeals for the District of Columbia Circuit. (Case No. 19,577), 1965.

<sup>93</sup> Frontier Broadcasting Co. v. Collier, 24 F.C.C. 251, 16 Pike & Fischer RR 1005 (1958); 26 F.C.C. 403, 426-428, 18 Pike & Fischer RR 1573, 1598-1600 (1958); WSTV, Inc. v. Fortnightly Corporation (FCC 63-302), 23 Pike & Fischer RR 184 (1962).

<sup>94</sup> The only other recent test case of importance to CATV systems, is the *Idaho Microwave* case in which a United States Court of Appeals decided that it was not a violation of the freedom of speech provision of the First Amendment to the Constitution of the United States for the FCC to grant, after an evidentiary hearing, a microwave license conditioned upon a CATV system protecting a local television station. The Court ruled that this did not constitute censorship, because the Commission's action was within its statutory authority and the fact that, incidentally, the CATV operator could not receive and make available to his subscribers the intelligence and information contained in the TV signal was immaterial. *Idaho Microwave, Inc. v. Federal Communications Commission* (Case No. 19,166); *Cable View of Burley, Inc. v. Federal Communications Commission and United States of America* (Case No. 19,184); *Cable View of Burley v. Federal Communications Commission* (Case No. 19,185). United States Court of Appeals For the District of Columbia Circuit. Decided on October 18, 1965.

# ADVERTISER INDEX

Ameco .....	7, 20, 25, 42, S-7-12	Jack Pruzan Co. ....	5
Anaconda .....	32, 33	Rohn Mfg. ....	4
Cas Mfg. Co. ....	9	Scientific Atlanta .....	S-18
Craftsman Electronics .....	38	Simplicity Tool Company .....	16
Davco Electronics .....	50	Stan Socia Corp. ....	34
Delta Electronics .....	40	Spencer Kennedy Labs .....	26, 27
Dow-Key .....	19	Superior Cable .....	35
Economy Finance .....	19	TeleMation, Inc. ....	21, 47
Entron, Inc. ....	C-3	Times Wire and Cable .....	10
Ft. Worth Tower Co. ....	24	R. H. Tyler Co. ....	39
Jerrold Electronics Corp .....	C-3, 18, 23	Utility Tower .....	17
Kaiser-Cox Corp. ....	15	Video Towers .....	6
Lenkurt Electric Co. ....	13	Viking Industries .....	3, C-4
Plastoid Corp. ....	37		

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Excellent opportunity for man with experience in the Community Antenna Television industry. Knowledge of CATV people, equipment, and system operation essential; sales and/or engineering background highly desirable. The man chosen for this position will be responsible for overall marketing programs for CATV products. He will participate in the establishment of sales objectives and will be expected to develop and coordinate product promotional plans. He will work with the staff team of the leading manufacturer of communications products in the Southeast. Salary commensurate with experience; all fringe benefits including outstanding insurance program and profit-sharing plan. All replies will be held in strict confidence. Send letter or detailed resumé to Dept. 18, "TV&C," Box 63992, Oklahoma City, Okla. 73106.

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Minimum Investment — \$500.00  
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8 hour play on 10 1/2" reel

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- Our Outright sale price is less.
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With experience in such areas of the communications industry as telephone, microwave, carrier, television system. For field assignment to sales districts throughout the United States, handling equipment and product sales and providing technical assistance. Must have engineering degree or equivalent work experience; should be sales-trained or sales-oriented.

Unlimited opportunity with country's fastest-growing manufacturer of communications cable and electronic equipment. Excellent salary, travel allowance, outstanding fringe benefits including insurance and profit-sharing retirement plans. Send detailed resume to J. H. Bowman, Vice-President, Marketing . . .

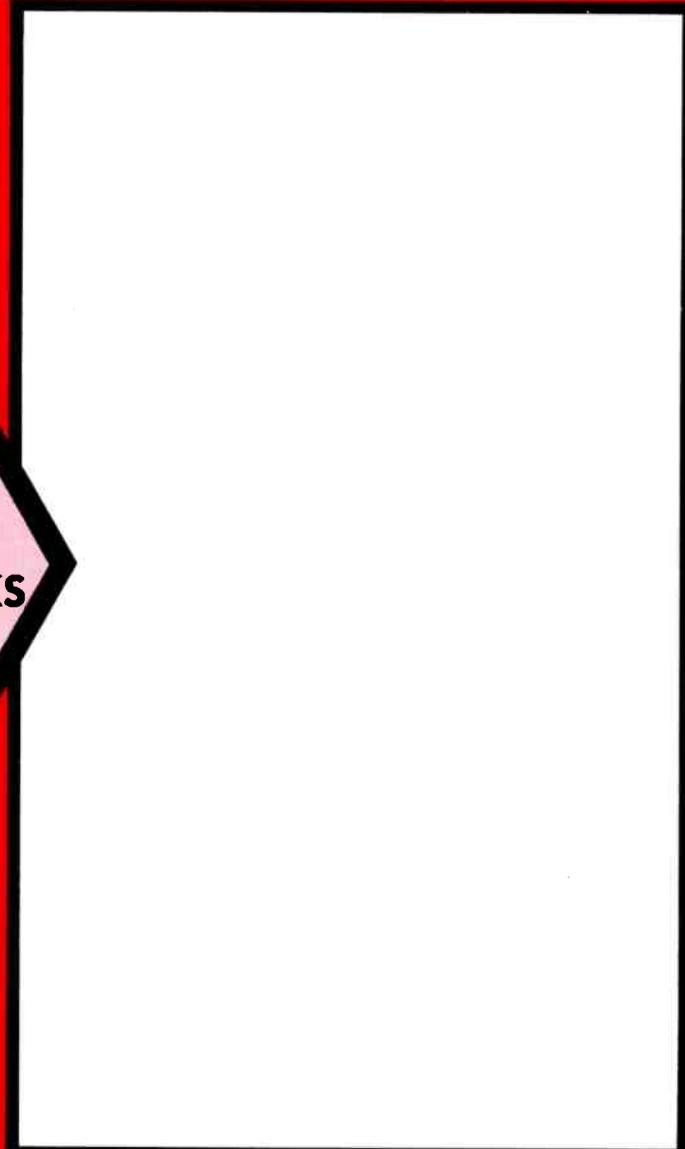
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ALL CATV SUPPLIERS  
WHO HAVE LARGER,  
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AT LOWER PRICES  
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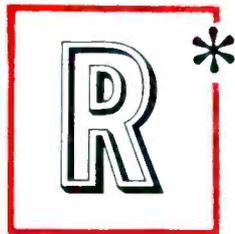
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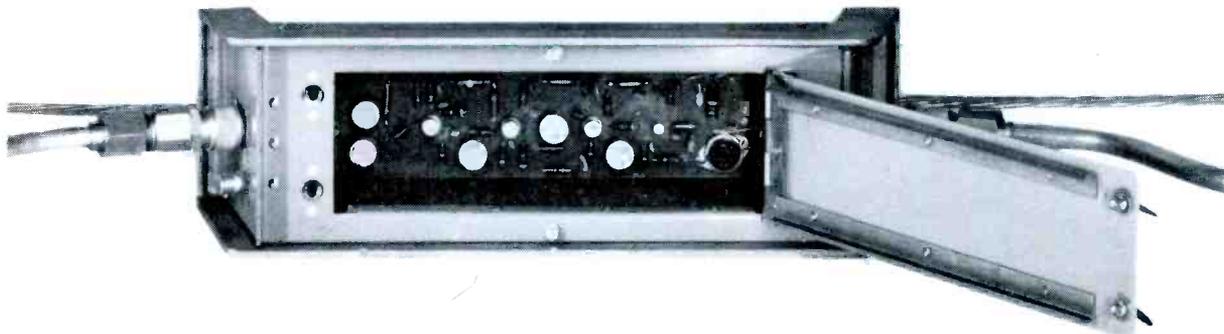
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## THE R\* SERIES TRUNKLINE AMPLIFIERS



. . . for **SOLID STATE** reliability



One of Entron's new  
**In-A-Line** family of  
CATV equipments.

- All Solid State
- Continuous Bandwidth
- Maximum Spacing
- All Types of Fittings Available

The wise CATV system owner can save MONEY and MAINTENANCE with the new R-series of trunkline amplifiers from Entron.

These units provide maximum spacing for economy and **Solid State** circuitry for reliability—two MUSTS in any profitable CATV system.

The R-1, R-2, R-3 and R-4 trunkline amplifiers give continuous bandwidth coverage for excellent transmission from 50 mc to 220 mc. All of the amplifiers are 28 volts. (60 volt models are available.)

The R-3 has automatic gain control and R-4 includes Equatrol® automatic tilt control in addition. Both are spaced 25 db in the trunkline.

For specifications and prices, write or call:

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Other important features of each member of the R-series are:

- Low Noise—More cascadable
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CATV and **ENTRON** have grown up together!

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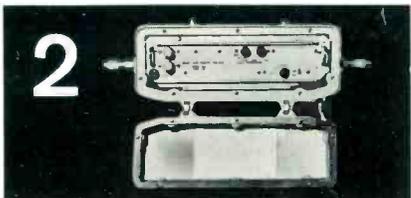
# 13 Reasons Why The **viking** SOLID STATE AMPLIFIERS Are Best!

Although the number "13" has always been considered a "bad omen", Viking is so confident that its new "GOLDLINE SERIES" of high level modular solid state CATV amplifiers represents the most advanced engineering concept of solid state design, that we challenge fate and present only 13 reasons (out of the innumerable reasons that can be stated) to show why you should THINK VIKING when you THINK SOLID STATE.

Here are the 13 reasons why you will now consider number "13" to be the luckiest number in CATV.



**1** "Push-Pull" construction allows one man to replace the internal amplifier unit within seconds without unsoldering wires nor disturbing cable fittings.



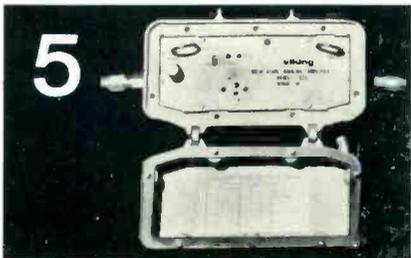
**2** Two piece hinged housing with seal-on gasket and captive screws permits easy accessibility to all controls and test points.



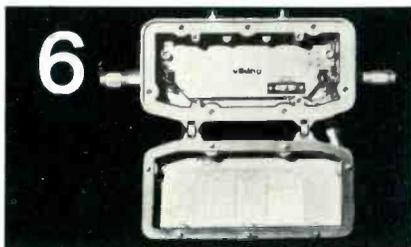
**3** Inline amplifier die-cast aluminum housing provides complete weather and moisture proof enclosure with "VIK-O-PROCESS" protection for salt air regions.



**4** Greater cascability allows a 12 channel system bigger than 60 mainline amplifiers in series or better than 1400db of cable can be built for a signal-to-noise ratio in excess of 40db.



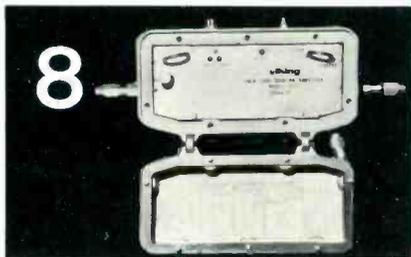
**5** Amplifiers designed with lowest noise figures, 10db maximum and highest output capability, 51dbmv.



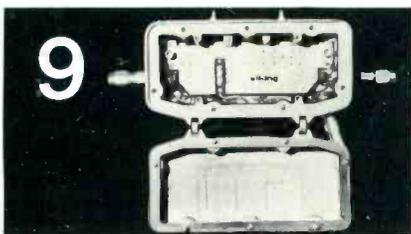
**6** Mainline amplifier AGC circuit compensates for thermal changes in the cable with no extra cost or insertion loss.



**7** Only AGC amplifiers available with separate high and low band plug-in pads and full-wave power supply.



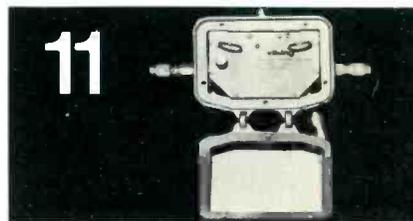
**8** Lightning and surge protection beyond 10,000 volts.



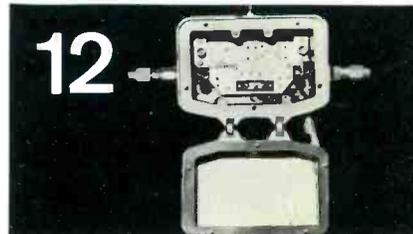
**9** Both RF and AC power feed through bridger amplifier locations where internal amplifier unit is removed from amplifier housing.



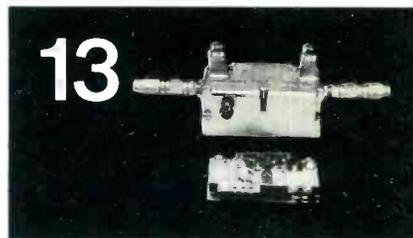
**10** All silicon RF transistors in sockets and heat-sunk.



**11** Built-in external -10db output directional tap for powering associated bridging or line extender amplifier and external easy to service fuses.



**12** All input and output connectors are of the revolutionary new Viking "Super Match" true 75 ohm series.



**13** "Super Match" connectors permit full one inch engagement of cable conductor into spring finger contact area of connector body allowing for maximum thermal contraction of the conductor during extreme temperature variances — No more conductor "pull-out" problems.

Phone or write for your free brochure on Viking's new "GOLDLINE SERIES" of solid state amplifiers



**viking**