



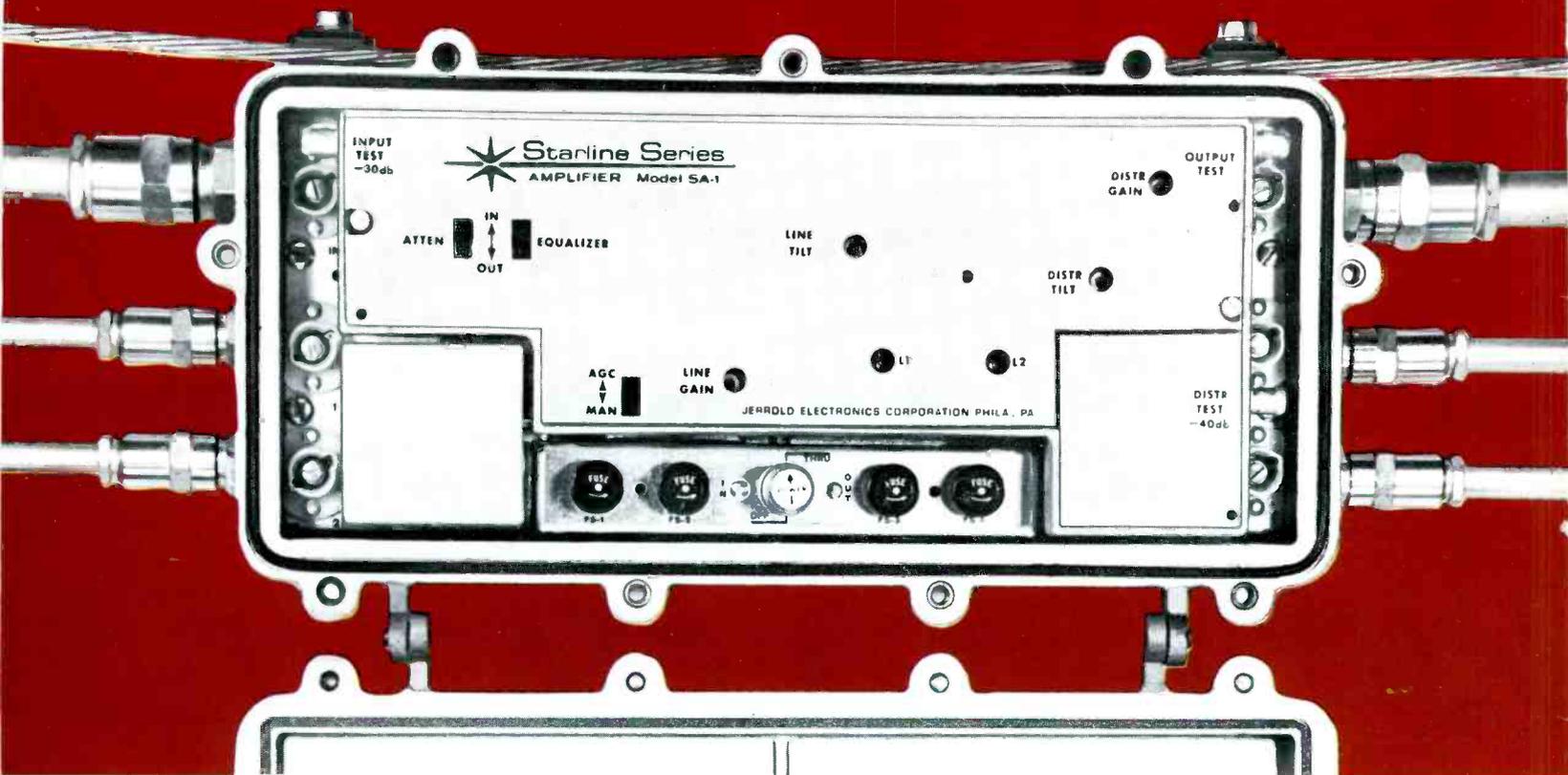
SEPTEMBER 1965

# TV & Communications

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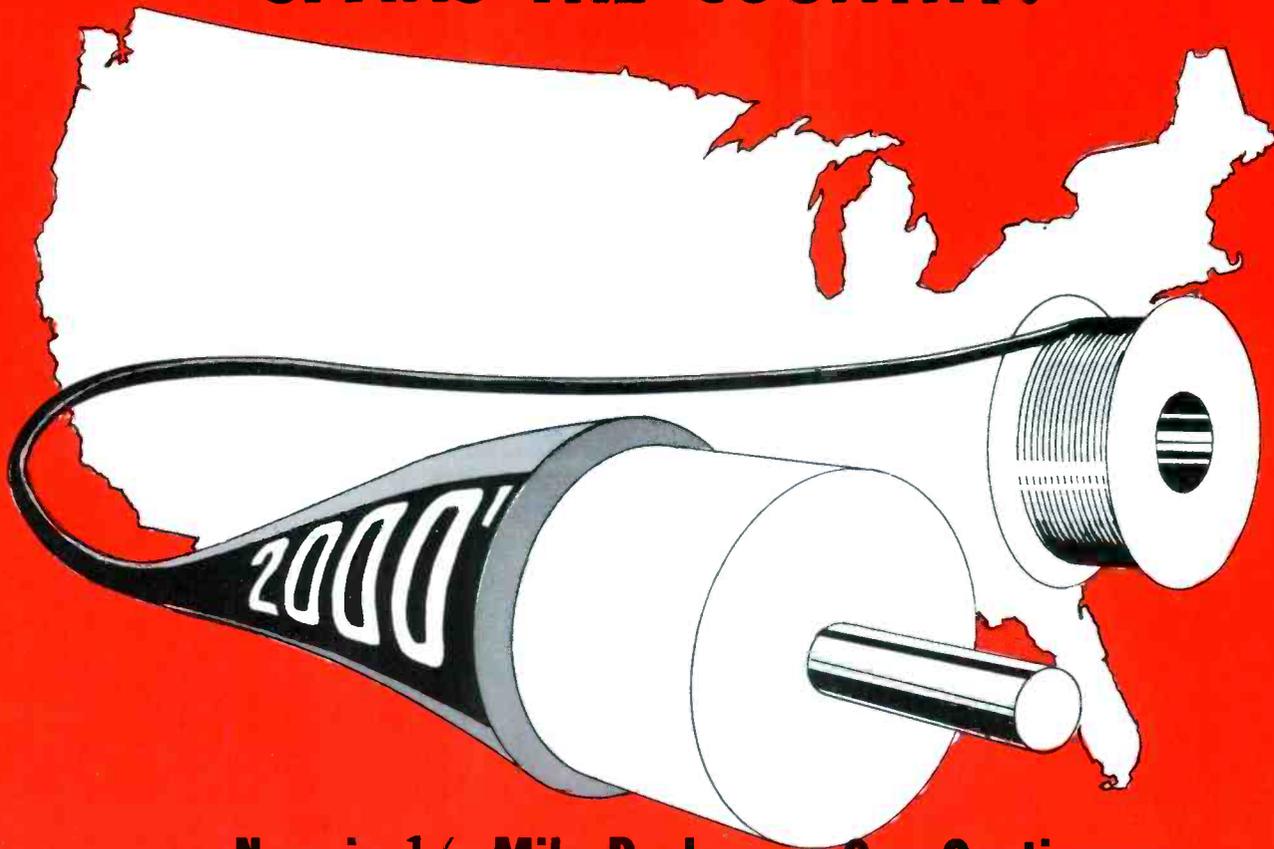
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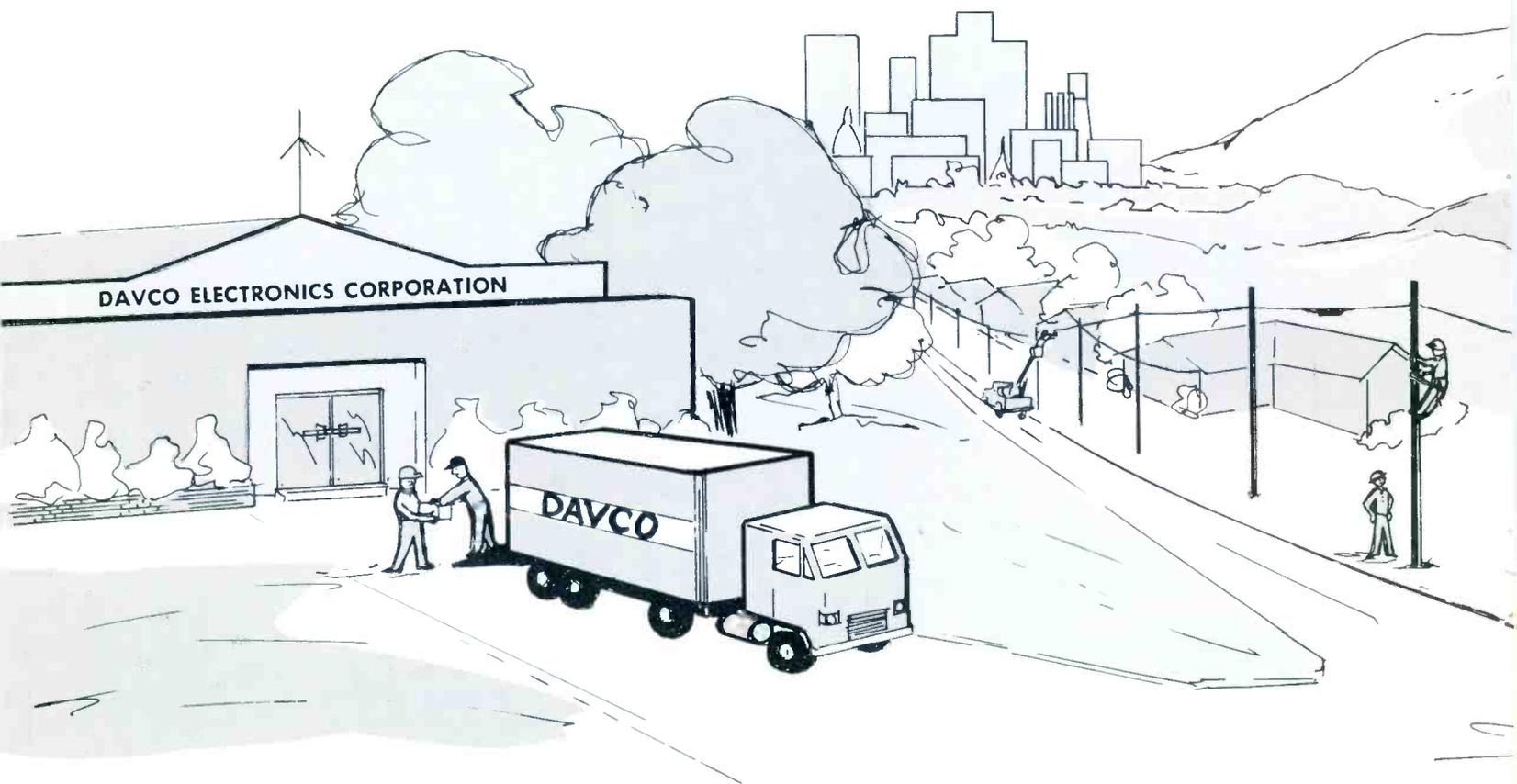
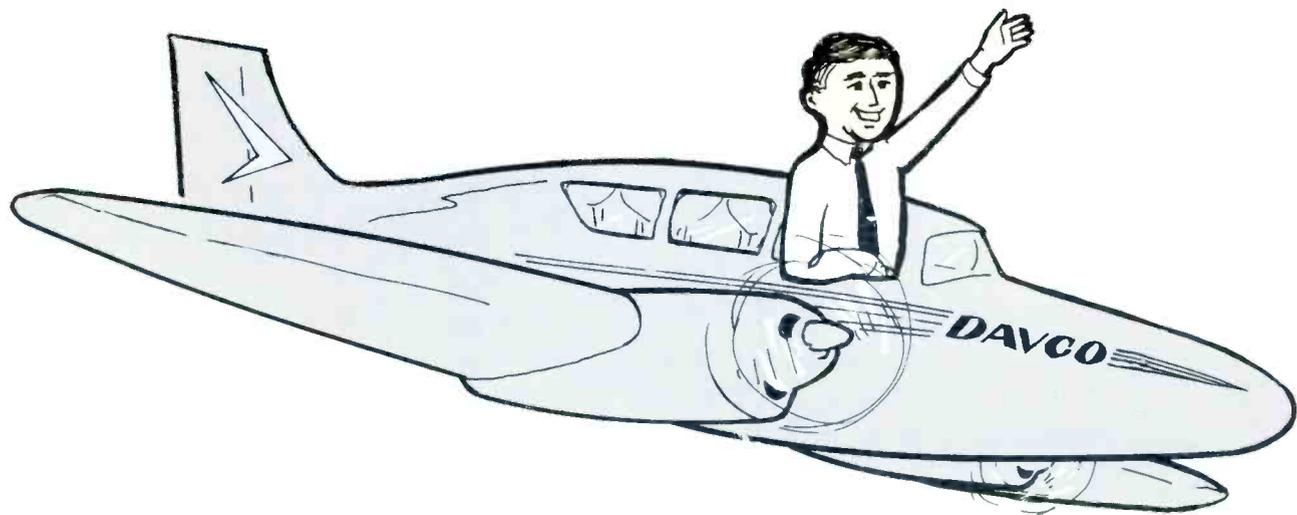


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TV & COMMUNICATIONS

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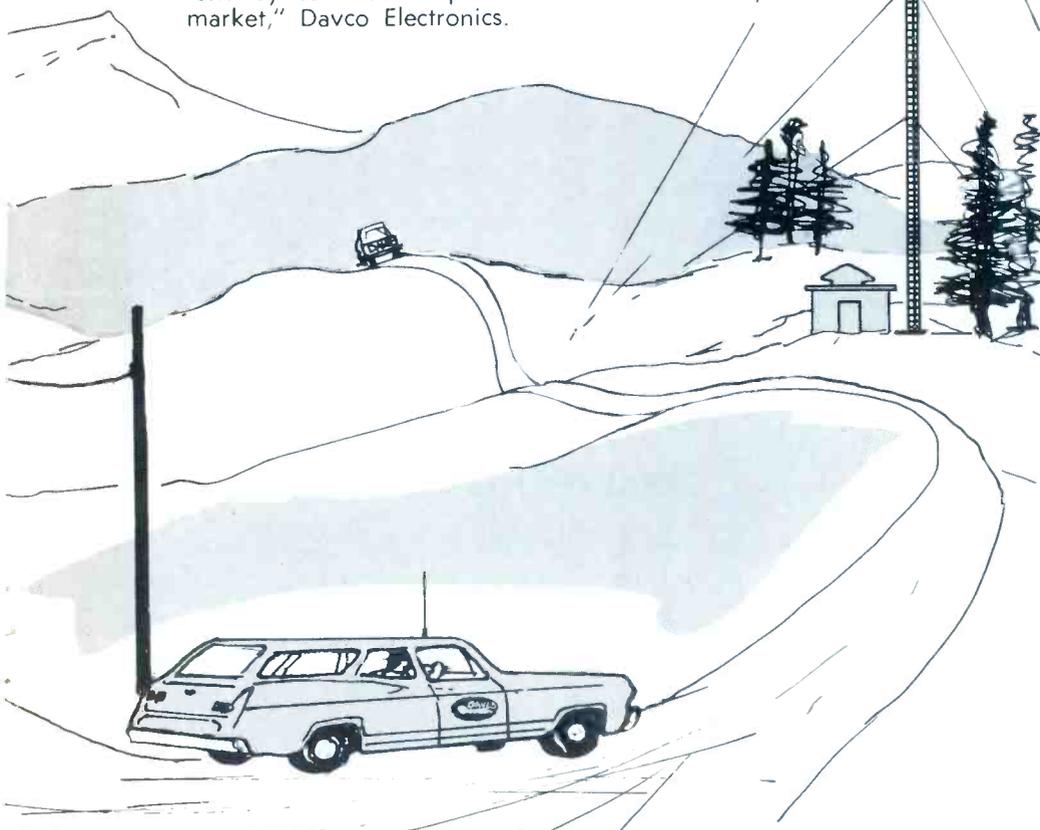
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### IN THIS ISSUE . . .

#### NEW SYSTEM OPENHOUSE



Checklist for opening a new CATV system is detailed by Charles Wigutow, veteran CATV'er who has managed systems for H & B American, TeleSystems Corp. and now for American Cable Television. Centering around the new system in Rome, New York, the article provides valuable guidelines for opening other new systems. It begins on page 26.

#### APPROACH TO NEW ANTENNA SYSTEMS



Author Ira Kamen presents an intriguing look at the concept of polarization diversity and proposes that phased UHF arrays are the solution to CATV reception of UHF in deep fringe areas. The circularly-polarized Appollo space antenna, a disc-rod type, is the model around which this concept is based. Mr. Kamen's article appears on page 50 in the "CATV Technician" section.

#### OUR COVER



Donald R. Atwell, President, American Cable Television, is shown greeting James L. Stoltzfus, general manager of National Consumer Services Division of Reuben H. Donnelley Company. Occasion of the meeting in Phoenix was to negotiate a market evaluation of Valley Telecasting Company's Yuma, Arizona CATV system.

For the full story on the success of NCS and its "Door-to-Door by Jet" sales techniques turn to page 47.

Stanley M. Searle, Patrick T. Pogue PUBLISHERS

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SEPTEMBER 1965  
Volume 2, Number 9

# 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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## FIRST AID FOR FALSE IMAGE

The dissension between TV servicemen and CATV operators which has been openly promoted by a handful of individuals and manufacturers is one of the saddest facets of our industry. Sad because the thousands of television servicemen and cable operators who are hurt economically by this managed misunderstanding have very little opportunity to set the record straight.

The television dealer in Montana, whose color set sales are up 300% because of cable TV, realizes full well that CATV is a friend—not a foe. And, needless to say, the dealers and servicemen in places like Sheridan and Cody, Wyoming realize that without the cable service they probably would not even be in the television business! But how many of these TV dealers and servicemen are consulted by TAME? This organization claims to represent the TV dealers' interests — yet it is apparently not interested in color sets sales or the extra service business resulting from the increased number of sets in CATV towns.

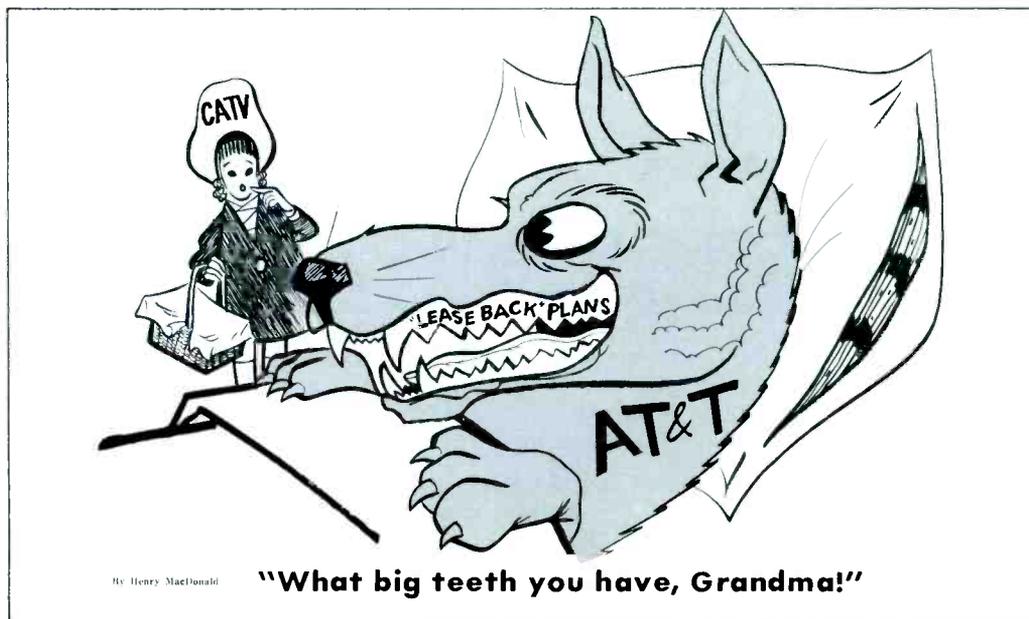
And how many TV repairmen are consulted in Meadville, Abilene, Carson City, Astoria, Morro Bay, Waycross, or Waterville — before NATESA blasts away with its vehement anti - CATV propoganda? Among the unjustifiable charges of the National Alliance of Television and Electronic Service Associations is the malicious allegation that CATV owners manipulate program distribution on personal whim for political purposes. NATESA tells servicemen, through its official newsletter, that "the cable tv company is alien to the community and it will remove from the community money now being spent in the community it needs to make it prosper. Even considering that the cost of maintenance of the system, a very small part of the total, would be spent locally, the 47% profit would leave the community . . . further loss to the community would occur should the CATV outfit expand its range of activity. There are enough cases on record of existing cable set-ups, branching out into tv set sales and/or rentals, and maintenance thereof when the going gets tough . . ." (Note the strange paradox implied, of a business reaping a 47% profit while the going gets tough!").

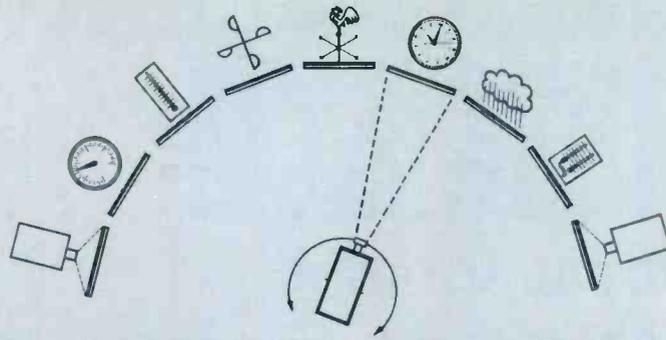
What can responsible community antenna operators do to dispell the negative propoganda of such ill-intended or ill-informed private interest groups?

We advocate two important steps: First, make sure you are well acquainted with the TV servicemen in your area. The more they know about CATV the more interested they will be in promoting it in their community. Secondly, exert your full influence through state, regional and national CATV associations to inform the general public, and especially the TV dealers, of the broad benefits of community cable systems.

The television sales and service business is not accurately represented by NATESA or TAME. And as individual dealers and repairmen learn how cable television actually helps them, they will undoubtedly seek to silence the groundless charges being leveled at CATV by these self-appointed guardians.

*Stan Seale*





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# News SPECTRUM

## COPYRIGHT STILL HOT TOPIC

Following a brief recess, copyright hearings in both Congressional houses resumed with opposition to CATV's "free use" of copyrighted material coming from all directions. Representatives of the film industry continued their demand; the U.S. Register of Copyrights repeated his original argument to the Senate's committee; a "neutral" testified, and NAB finally took the stand.

Anticipating an extended hearing on the topic, Congress completed action on a bill which would extend expiring copyrights two additional years. The bill would give Congress more time to pass revised copyright laws.

### **NAB Claims CATV Liable Under Copyright Laws**

Douglas A. Anello, NAB General Counsel, told the House Judiciary Copyright Subcommittee that CATV's no longer supplement TV stations, but now compete with them. He commented, "Hence, we fail to see the logic of any principle that would require broadcasters to pay performance rights but would exempt those persons who not only perform a similar function but are actually in competition with those who do pay."

He said he couldn't understand the argument that because the broadcaster broadcasts, it is a performance where the fact that CATV merely transmits electrical impulses means there is no performance. "The whole intent of the Communications Act section forbidding rebroadcast of programs without permission of the originating station was to preserve property rights in programs. We submit that the same property rights are entitled to protection whether they are retransmitted by means of a broadcast station or by means of a wired system."

The NAB attorney asked a change in a section he said encompasses CATV, under which the word "indirect" would be added to make the line in question read "a direct or indirect charge is made to see or hear the transmission." This, he said, would dispose in advance of any CATV argument that they are not making a direct charge for programs,

but only service charges. Anello expressed confidence the courts will uphold CATV responsibility for clearance of copyrights under present law, but said an express statement in a new law would be welcomed. He added that there should be a clarifying change so that a party who has gained rights from a copyright owner can sue a CATV system without participation by the copyright owner, himself. Anello said lack of such an express provision in present law was the only reason the Court of Appeals in *Cable Vision vs. KLIX Corp.* tossed out the copyright suit.

### **Walt Disney Productions; Law Association Testify**

In earlier House hearings, Spencer C. Olin, a vice president and general attorney for Walt Disney Productions appeared for that company. He endorsed the position taken by Motion Picture Association of America and by motion picture producers for TV lawyers Arthur Krim and Louis Nizer. Both had asked that CATV systems be forced to clear with copyright owners.

Walt Disney Productions is, he said, "in opposition to the uncompensated use of copyrighted motion picture films on commercial CATV. We are both a creator and user . . . and do not object to the necessity of compensating others. Several of the witnesses," he continued, "have argued for a stretching of these exemptions . . . it is our view that in the long run the public interest is best served by a copyright law which insures reward for creative effort."

Speaking for the American Patent Law Association, Joseph S. Dublin flatly opposed exemptions from copyright protection for "any commercial uses."

### **Law Professor Appears as "Neutral"**

UCLA law professor Melville B. Nimmer, a self-styled "neutral" copyright authority, told the subcommittee that CATV and the jukebox exemptions are comparable. He charged, "here we are faced with commercial interests that reap handsomely from the exploitation of copyrighted materials, but who would nevertheless seek

a statutory haven from the thrust of the copyright law. . . . I find both such exemptions to be indefensible, and am therefore in complete agreement with the applicable provisions of the proposed new law."

He added "this is not to depreciate the importance of both community antenna systems and jukeboxes in our contemporary cultural life. It is simply to assert what seems to me to be the self-evident proposition that these industries no less than other commercial purveyors of copyrighted materials must pay a fair share of their considerable revenues to those who create that for which the public pays."

### **Senate Holds Copyright Hearings**

The Senate Judiciary Subcommittee on copyrights scheduled a two-day hearing on that topic for mid-August. Abraham L. Kaminstein, U. S. Register of Copyrights, appeared before that Committee and repeated virtually the same arguments presented in his testimony before the House Committee.

*Kaminstein* conceded that there are valid arguments on both sides of the question. However, "on balance, the copyright owner should be compensated for the use of his works by CATV systems." He warned that "the problem of whether community antenna systems, which transmit commercial broadcasts over wires into subscribers' homes, should be liable for the use of copyrighted material included in the broadcasts is one of the most difficult this committee will have to face. It is complicated by uncertainty as to what the present law on this question is. This issue is now before the courts, but it may not be finally resolved for some time." He said he is taking no position on what the courts will finally rule about CATV liability.

As he did before the House subcommittee many weeks ago, *Kaminstein* said that the problem of how CATV systems can possibly get advance clearances on all copyrighted programs broadcast is a real one which cannot be ignored. He told the Senate group that the recent FCC assertion of authority over CATV in some aspects "has raised speculation as to whether the copyright problem might be solved by requiring the CATV operator to obtain permission from broadcasters to transmit their signals, thus automatically clearing any copyrighted material included in the broadcast. While this policy has not been debated publicly as far as I know, I am inclined to doubt whether it would meet with much favor from either copyright owners or CATV operators."

## BOSTON HERALD-TRAVELER BUYS ENTRON STOCK

Robert J. McGeehan, president of Entron, Inc., announced the purchase of 294,315 shares of that firm by the Boston Herald-Traveler Corporation. The purchase price was reported as \$1,300,284. The transaction follows a credit line agreement between the concerns reached last April. McGeehan stated in his announcement of the sale, that in the opinion of the directors of both Entron and Herald-Traveler, current investment opportunities in the cable TV field are so great that the previous financing agreement was not adequate to accommodate the immediate requirements. The stock purchase, said McGeehan, has enabled Entron to double its net worth, thereby substantially enhancing the firm's ability to employ borrowed funds for the purchase of additional CATV properties. He also noted that Entron's sales and earnings for the five-month period ending July 31, 1965 are well ahead of results achieved during the same period of 1964.

## VIKING REPORTS SALES: TO BUILD NEW PLANT

Robert Baum, Vice President, Viking, Hoboken, N.J. based CATV cable and equipment manufacturer has reported on Viking sales for 1965. At the August national sales meeting Baum said that sales are at an all-time high — averaging approximately 40% over the corresponding period for the first half of 1964.



Mr. Baum

Mr. Baum also announced: "the projected company program includes the immediate construction of a new and modern multi-million dollar plant to further expand production capability. The new plant will provide larger research and development departments from which Viking will present many

new and improved CATV products during the next year."

He contributed the increased sales to "the growing demand for seamless solid aluminum sheath coaxial cables, solid state amplifiers and associated hook-up materials required for the hundreds of new CATV systems that are being constructed and the established low-band systems that are converting to all-band."

Baum concluded, "the future of the CATV Industry appears to be without limitation and it is Viking's intention to meet its company obligation and to play an important role in the making of the CATV history. With this thought in mind, we shall continue to invest in improved manufacturing and laboratory facilities as the growth of CATV makes its demand."

## NORTH CAROLINA CATV ASSOCIATION FORMED

Cable operators in North Carolina have organized the North Carolina CATV association, with the following elected as officers: Donald W. Curtis, Gastonia, President; L. H. Taylor, Roanoke Rapids, Vice President; and Kenneth B. Beam, Cherryville, Secretary-Treasurer. Directors are Bill Turner, Waynesville; Norman Suttles, Fayetteville; Harry Dobbins, Wilmington; and Grady Gardner, Laurinburg.

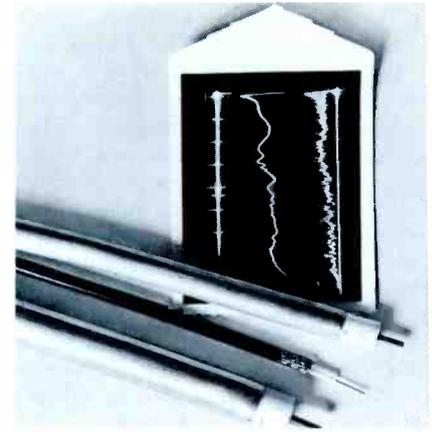
Association President Curtis said of the organizational meeting, "Twenty-three system operators and representatives of equipment companies were present. Over a dozen others sent messages pledging full support. I note with pride that our membership includes every CATV operator in the state." The group will hold its next meeting in mid-October.

## REPLY DEADLINE EXTENDED ON MICROWAVE PROPOSALS

Several days after original deadline date, the FCC extended the reply deadline for arguments on Parts II and IV of the rule-making proposals concerning frequency allocations for common carriers serving CATV systems, and technical standards for the proposed Community Relay Service. Acting on a joint motion filed by the NCTA and the National Association of Microwave Carriers, the Commission re-scheduled the reply deadline to October 5 of this year. Although the extension was not granted until after the previous deadline, no reply filings had been made.

## AT&T FAVORS PROPOSED CATV MICROWAVE SHIFT

American Telephone and Telegraph Company has filed a plea with the FCC asking that the Commission proceed with its proposed shift in CATV-



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feeding microwave operations to the 10.7-11.7 gc/s bands. The filings said the proposed changes were, a significant step in alleviating interference problems and would provide satisfactory frequencies for service to CATV's. The AT&T statement denied cable industry assertions that this would amount to reserving the common carrier bands for large common carriers only, and said it would merely mean relieving a "congestion problem." The filing also attempted to refute the CATV industry claim that the shift would mean 30 to 60 per cent more stations required to overcome propagation effects — mainly rain — stating that more stations might not even help, but that emergency power would "more than compensate for any additional outage due to rain attenuation . . . the relatively small increase in outage . . . does not constitute a deterrent to the use of 11 gc/s frequencies," the statement claimed.

#### **TAME CALLS CATV COMMON CARRIER, TAKES ISSUE TO COURT**

The Television Antenna Manufacturers' Institute (TAME), with the help of Philadelphia UHF licensee Philadelphia Television Broadcasting Company, has gone to court to have cable television declared a common carrier service. The same parties filed a complaint with the FCC last March, stating the same basic contention. Object of the complaint is to prevent CATV operation in Wilmington by Rollins Company.

TAME has now taken the matter to the Appeals Court in Washington D.C., stating that FCC denial of complaint was a foregone conclusion, but that filing was prerequisite to instigating court action.

#### **PHOENIX FIRM OFFERS NEW SERVICE TO SYSTEMS**

Samuel Henry & Associates of Phoenix, Arizona, has announced a new advertising and marketing service for cable system operators. Specifically designed to increase number of subscribers for systems, the service is based on the interests of both present TV viewer (non-cable), and the non-viewer in areas where cable distribution is the only signal source available.

Samuel Henry, agency president, pointed out in announcing the new promotional service, that it is founded on the long experience of his firm's staff in all media, including direct mail, radio, TV and CATV. This experience includes work for leading equipment suppliers in the cable television field, in addition to work for major CATV systems in the Southwest. Henry added that the service

will also offer system owners and managers special research, consultant and planning services geared to build subscriber sales.

Henry has had over 25 years experience in advertising and public relations in New York and Phoenix, with such firms as American Broadcasting Company, Peters, Griffin & Woodward, and Trans World Airlines. Prior to the Second World War, he directed the Bureau of Advertising of the National Association of Broadcasters. Samuel Henry & Associates was established in 1961.

#### **UNFRANCHISED INSTALLATIONS GET ATTENTION**

State Attorney General Thomas B. Lynch has ruled that California municipalities have the right to require that cable television systems be franchised or licensed for operation within their boundaries. The ruling was aimed directly at telephone company contention that they need no additional franchise to install CATV facilities in areas where they were franchised for telephone service. Action in California, where Bell affiliates have not yet filed CATV tariffs, comes close on heels of city ordinance in Jackson, Michigan which prohibits installation of an unfranchised cable distribution system in that city. Time-Life Broadcasting had announced plans to lease facilities from Bell affiliate in Jackson after that city had issued a franchise to cable firm owned by Knorr broadcast interests. Prior to California State ruling, major precedent in question was court case in Brunswick, Georgia earlier this year, in which city was ordered to issue business license to firm planning unfranchised CATV operation via telephone company lease-back facilities.

Lynch rendered his opinion (No. 64/323) that "the statewide franchise of Public Utilities Code section 7901 is not applicable to a telephone corporation when it is not constructing a telephone or telegraph line, and if a telephone company constructs a coaxial cable for use in a community antenna television system, a city may require a franchise or license pursuant to Government Code section 53066."

The California Attorney General explained his decision:

"The question we deal with involves the inter-relationship of Public Utilities Code section 7901 which authorizes a statewide franchise for construction of telephone lines and Government Code section 53066 which authorizes local governments to require a franchise for the construction of community antenna television systems

('CATV'). The question arises in the context of a telephone company which proposes to operate a 'CATV' system through coaxial cables placed in city streets. Although these cables may be capable of transmitting telephone messages, the telephone company does not intend to use them except for television transmission purposes.

"Section 7901 provides as follows:

"Telegraph or telephone corporations may construct lines of telegraph or telephone lines along and upon any public road or highway, along or across any of the waters or lands within this State, and may erect poles, posts, piers, or abutments for supporting the insulators, wires, and other necessary fixtures of their lines, in such manner and at such points as not to incommode the public use of the road or highway or interrupt the navigation of the waters."

This state franchise, once in effect, requires no grant by a subordinate legislative body. *Pac. Tel. & Tel. Co. v. City and County of San Francisco*, 51 Cal. 2d 766, 771 (1959); and it is settled that the State has the exclusive power, with one exception not relevant to this discussion, to grant franchises for the use of all streets, highways and public places for the construction, maintenance and operation of telephone lines. *City of Petaluma v. Pac. Tel. & Tel. Co.*, 44 Cal. 2d 284, 287 (1955).

"The issue to be determined is whether or not a 'CATV' cable is a telephone line. If it were, section 7901, as interpreted by *Pac. Tel. & Tel. Co. v. City of Los Angeles*, 44 Cal. 2d 272 (1955), probably would require that the cable be considered part of the statewide franchise and thus exempt from local franchising. This case held that the use of telephone lines under the statewide franchise is not limited to articulate speech but such lines may be used for varied purposes, including television transmission, in order to give subscribers the benefit of the many varied uses of telephone wires.

"However, we have concluded that a 'CATV' cable placed in city streets is not a telephone line and therefore is subject to local franchising under Government Code section 53066. We so hold because the *Pac. Tel. & Tel. Co. v. City of Los Angeles* decision is not applicable to the situation presently before us. There the court dealt with the use of telephone lines for additional communications purposes, holding all such uses to be within the statewide franchise. Here we deal with the question of what constitutes a telephone line.

“Our conclusion is based upon *Television Transmission v. Pub. Util. Com.*, 47 Cal. 2d 82 (1956). In this case the Public Utilities Commission attempted to regulate a community antenna television system on the theory that it used telephone lines and hence was a telephone corporation subject to Public Utilities Commission regulation. The court, however, disagreed and in so holding it commented upon the *Pac. Tel. & Tel. Co. v. City of Los Angeles* decision, saying:

‘Pacific Telephone and Telegraph Company was unquestionably a telephone corporation, and it remained a telephone corporation and its lines remained telephone lines, even though they were *incidentally* used to transmit other forms of communication.’ *Id.* at 87. (Emphasis added.)

In the situation before us the telephone company plans to use the cables for completely non-telephone purposes. This, of course, is not incidental use of a telephone line for additional forms of communication. Thus, ‘CATV’ cables set up solely for use in television transmitting do not qualify as telephone lines.

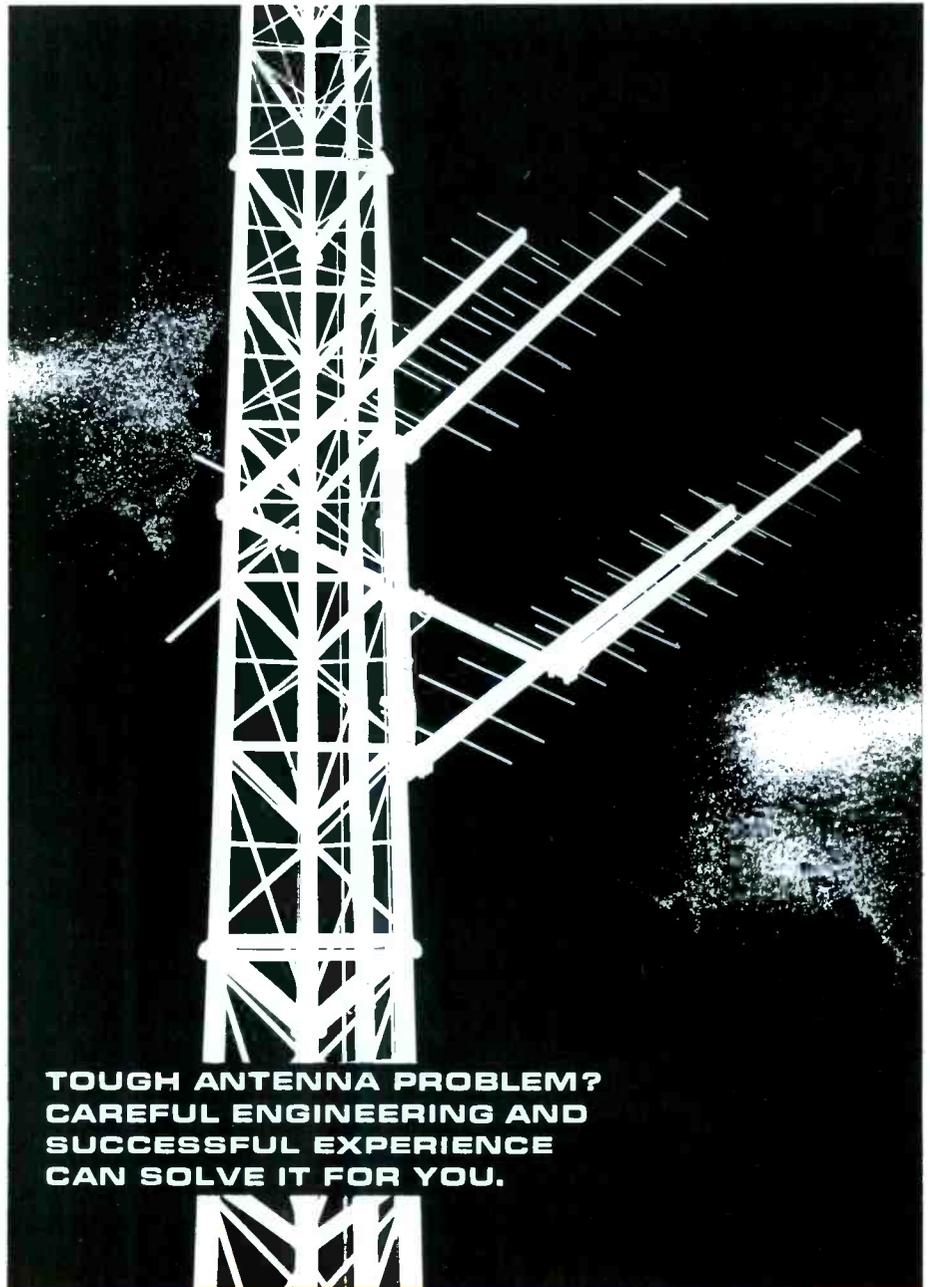
“Other reasoning in the *Television Transmission* compels our conclusion. Section 233 provides:

‘Telephone line includes all conduits, ducts, poles, wires, cables, instruments, and appliances, and all other real estate, fixtures, and personal property owned, controlled, operated, or managed in connection with or to facilitate communication by telephone, whether such communication is had with or without the use of transmission wires.’

Although we recognize that this definition applies to the “Public Utilities Act” (sections 201-2113) and not expressly to section 7901, we feel that no reason exists for a telephone line to have any different definition as used in section 7901. Concerning section 233 the court in the *Television Transmission* case said:

‘It is not enough that there be a transmission by the use of poles, wires, et cetera; the transmission must be *in connection with or to facilitate communications by telephone*. (Pub. Util. Code § 233.) Petitioner’s community television antenna is not operated *in connection with or to facilitate communication by telephone . . .*’

This holding applies equally to a telephone company when it operates a ‘CATV’ system which is separate from its telephone system. The cables placed in city streets in no way ‘facilitate communication by telephone.’ Since in reality this is the case, we hold that



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these cables are not telephone lines within the meaning of section 7901.

"On the other hand Government Code section 53066 is a legislative determination that local government may franchise community antenna television. Insofar as relevant to this discussion the section provides:

'Any city or county or city and county in the State of California may, pursuant to such provisions as may be prescribed by its governing body, authorize by franchise or license the construction of a community antenna television system.'

There is no conflict between this Government Code section and section 7901 where, as here, the 'CATV' cable is not a telephone line. Thus, a telephone company is subject to the local franchising authorization of Government Code section 53066 when it enters the 'CATV' business by building its own cables which are not intended for telephone use. In this posture a telephone company is no different than any other 'CATV' operator subject to local franchising."

#### **NORTH DAKOTA CABLE OPERATORS FORM ASSOCIATION**

The North Dakota Community Antenna Television Association was formed by representatives of five cable firms at a meeting in Bismark recently. Officers for the new group were elected as follows: Robert Keating, Devil's Lake, President; and Myron Atkinson, Bismark, Secretary. Keating is president of K&K Cable TV Corporation; Atkinson is vice president of Meyer Broadcasting Company, joint owner with Wisconsin Theater Video Corporation of Bismark Able Cable Inc. Also represented at the founding meeting were CATV'ers from Williston, Dickinson, Jamestown and Valley City, North Dakota.

#### **SYSTEMS INC. NOW WHOLLY-OWNED BY NATIONAL TELINE**

National Teline Corporation has announced purchase of all outstanding stock of Systems, Inc., Shawnee, Kansas, a CATV engineering, construction and management firm. Vernon W. Wible, who headed Systems, Inc., will continue to direct its activities as a wholly-owned subsidiary of National Teline. The parent firm indicated that all systems operation functions of its holdings will be assigned to the Systems, Inc. subsidiary.

William K. Headley, president of National Teline, also announced that Gerald E. Marnell, formerly vice president of the firm, has been named chief systems engineer, and that Ray Phares who has also served as a vice president, will become superintendent

of construction. National Teline was formed in April of this year as a CATV holding company by Headley and R. Surprenant. It currently holds eight franchises in the South and Midwest.

#### **KEYT — CABLE TV EMERGENCY ALERT SYSTEM**

A new, built-in emergency alert system for Santa Barbara and vicinity has been successfully tested by KEYT-Channel 3 and Cable TV of Santa Barbara, (Calif.) Inc.

The subject of the test was simply a matter of public convenience, a major water cut-off in the San Roque area. The test proved to all observers that, should there be an emergency of major proportions, the Mayor, Civil Defense Authorities, the Military, and Fire and Law Enforcing Agencies had available to them a new and important means of communication with the television-viewing audience in the community via this KEYT-CABLE TV alert system.

### **BEN CONROY VIEWS THE "STATE OF THE INDUSTRY"**

In an exclusive statement to CABLE TELEVISION REVIEW (weekly news service of TV & COMMUNICATIONS magazine) NCTA National Chairman Benjamin J. Conroy, Jr. spoke out on the variety of pertinent issues currently confronting the NCTA and the cable industry as a whole. Regulation/legislation proposals, copyright question, telephone company lease-back activities, and state actions defining CATV as a public utility were the areas Mr. Conroy gave primary treatment.

On the subject of Federal legislative and regulative action, he noted that prospect for agreement between NCTA and NAB on basic ground rules has been stalemated for many months. "Whereas cable operators are united on the issues, particularly on the issue . . . (of) simultaneous non-duplication . . . broadcasters find

the House Judiciary Committee. Withholding comment on current copyright court cases, he concluded ". . . this whole issue is one which is of vital interest to members of our industry, all of whom intend protecting their cable customers from a double burden of payment."

Mr. Conroy told the REVIEW that, "the most serious problem facing us now is the entry of the telephone industry *en masse* into the CATV industry, full fifteen years after its inception." Close liaison with telephone industry interests has been developed and will continue, he indicated, noting also that "NCTA will take all appropriate steps to prevent the development of a telephone monopoly in the manufacture, installation, and operation of new CATV systems, and to protect the integrity of existing CATV systems as independent businesses."

Related to the problem of telephone company entry into CATV, said Mr. Conroy, is the activity in various states to attempt transformation of CATV into a public utility. Federal guide lines, not state, he said, are the means of fitting CATV into the national television policy proposed by Congressman Oren Harris.

Important matters internal to the Association, Conroy said, are inauguration of a year-round NCTA membership campaign; execution of educational public relations programs; strengthening of ties between NCTA and state and regional CATV groups; and success of the NCTA industry planning committee, recently formed. He also noted widespread public association of CATV with Pay-TV, and stated in conclusion, "I feel the next few years will show a continuation of the remarkable growth of CATV, despite the profusion of problems we seem to have today and hostile interests opposing us now. The public we serve has shown it is interested in, and willing to pay for, the service we are rendering them now, and will continue to render them in that public's interest." □



**Mr. Conroy**

themselves completely divided on the subject of CATV," he stated. "I suggest," he continued, "that both industries owe it to the public we both serve to cooperate with each other and with the Government in reaching solutions to the problems which separate us.

Of the copyright issue, Chairman Conroy said "NCTA's position has been well documented in President Ford's statesmanlike testimony before

# CALENDAR

Essentially, the Cable TV-KEYT Alert, permits the simultaneous televising of an emergency message direct on local station KEYT Channel 3 and on all eleven channels provided on Cable TV. Regardless of whether a viewer was watching a program direct on KEYT or any other program on any of the eleven channels on the Cable TV system, he would be certain to receive the emergency message.

KEYT and Cable TV engineers have built the system so that, upon a signal from the Mayor or any other designated Military, City or County official, KEYT will begin telecasting the emergency message direct and, simultaneously, a master switch will be thrown which preempts all eleven channels on the Cable TV network for the duration of the emergency message.

## WYOMING CATV ASSOCIATION MEETING HELD

The Wyoming State CATV Association met in Rock Springs on August 20 and 21. The 50-plus CATV'ers in attendance discussed means of meeting the "threat of telephone company tariff rates," and voted to contribute \$1,000 to the Wyoming Governor's ETV Committee which has been established for the purpose of surveying that state's need for an ETV network. Election of officers was held, and the following were chosen to serve: Fred Kelly of Rawlins, president; and Al Carollo, Rock Springs, vice president. R. C. Schneider, Casper, will continue to serve as secretary-treasurer. Ameco, Inc., Blonder-Tongue Laboratories, Collins Radio, Jerrold Electronics, and TeleMation were among the manufacturers represented at the meeting.

## STV RULING APPEAL TO GET STATE SUPREME COURT ACTION

Superior court decision that California Pay-TV referendum was unconstitutional was appealed immediately, but battle in intermediate courts promised to be a drawn-out affair. State Supreme Court decision to accept the appeal directly was, therefore, a welcome development to those involved. Chief Justice Roger J. Traynor announced that the high court would accept jurisdiction in the appeal, as result of joint requests to that body by all parties involved in the litigation.

## TELEPROMPTER OF KANSAS CASE ACTIVE AGAIN

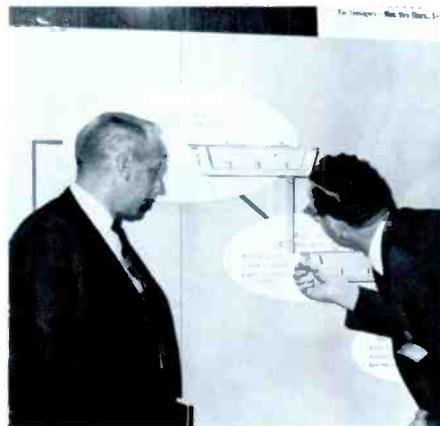
The case involving TelePrompTer Transmission of Kansas became active again last month, with questions of import to the industry in general still to be answered. The firm is seeking

to renew microwave licenses to serve its system in Liberal, Kansas, plus authorization for a third channel of service. FCC examiner favored granting those requests, over opposition of KTVC, Ensign, Kansas (Liberal is in station's grade B contour) and the Review Board upheld the pro-CATV decision. In new action, however, Joseph Chachkin, representing FCC's broadcast bureau, filed a statement with the Commission arguing that the CATV First Report and Order, regulating microwaves serving CATV, was applicable to all pending applications such as the case in point.

TelePrompTer argued that to change the law applied two years after this case began would "be a sorry mockery of administrative due process," and further, that "if the Commission determines that its review function here must be to reject the record at bar to rely instead upon certain esoteric principles of economic competition, there is little we can do but weep . . . we do not believe, however, that any judiciary body could be so calloused either to its own obligations and responsibilities or to the rights of those who litigate before it." The microwave firm also stated that the Commission should consider this case in the light of precedential importance, as well as in its own impact.

## CORRECTION

In our photo report of the 14th Annual NCTA Convention in Denver during July (TV & Communications, August 1965) we inadvertently identified Entron's exhibit photo as Blonder-Tongue. The persons shown in



ENTRON: Irving Kuzminsky (r) shows Entron's newest CATV amplifier to Gordon T. Granert of Westrex Communications.

the photograph are Westrex Communications Sales Manager Gordon T. Granert (l) and Entron's Irving Kuzminsky. Westrex is located in New Rochelle, New York and Entron is a manufacturer of solid state CATV amplifiers in Silver Spring, Maryland.

## September 20-21:

The Pacific Northwest CATV Association will hold its tenth anniversary meeting at the Olympic Hotel in Seattle. Program will feature NCTA Chairman Ben Conroy, Ameco Comptroller George Green and Gene Ross of National Consumer Services. Clyde Ellis of NATESA will make a presentation entitled "TV Serviceman Looks at CATV". Meeting will be "non-display", with technical sessions emphasized. Information and registrations are available from PNCTA Secretary-Treasurer H. W. McClure, P. O. Box "M", Toledo, Oregon, telephone 503-336-2057.

## September 23-25:

The IEEE Group on Broadcasting symposium will be held in Washington D. C., and will feature a presentation on CATV technical standards by Rodney D. Chipp. His presentation will be followed by a panel discussion on cable television with the following as panel members: Harold Philips, Fidelity Cables, Inc.; George Bartlett, NAB; James Sheridan, FCC; Richard Blackburn, WHEC-TV (Rochester, N. Y.); and James Butts, KBTU (Denver). The symposium will be held at the Willard Hotel, and further details are available from Howard Head, A. D. Ring & Associates, 1710 "H" Street Northwest, Washington D. C. 20006, telephone 202-298-6850.

## October 4-5:

Society of Broadcast Engineers regional convention will be held at the Yogo Inn, Lewistown, Montana. CATV system personnel and equipment suppliers are invited, whether SBE members or not, as meeting will feature sessions on cable TV distribution. Ian Elliot (KATL-Radio, Miles City, Montana) is chairman of CATV phase of convention, and registration details are available from Fred Battlett, Midland Consultants, 1426 Avenue "E", Billings, Montana.

## October 7-9:

The Pennsylvania CATV Association will hold its annual fall meeting at the Holiday Inn in State College. Registration is open to all state cable firms, as well as CATV equipment suppliers. NCTA President Fred Ford is to be featured speaker. For additional information and registrations, contact James Palmer, C-COR Electronics, Inc. 60 Decibel Road, State College, Pennsylvania, telephone 814-238-2461.

## October 28-30:

The California CATV Association will meet in Dan Diego at the Vacation Village Hotel. Exhibitor participation is being emphasized at the convention, with ample time allowed for meeting with equipment suppliers scheduled on all days of the meet. All interested parties in California and surrounding states are invited, and top NCTA and other industry officials are expected to be on the program. For details, contact Walter Kaitz, Suite 1506, Latham Square Building, Oakland, California 94612, telephone 415-824-5300.

## October:

Newly formed North Carolina CATV Association has announced intention to meet in mid-October. Dates and location of meeting will be available later this month from Association President Donald W. Curtis, Cablevision, Incorporated, P. O. Box 1805, Gastonia, North Carolina.



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# FOCUS

... On Progress

## PUTNAM JOINS JACK KENT COOKE, INC.

*William R. Putnam* has been named Executive Vice President of Jack Kent Cooke, Inc., Beverly Hills California group system owner. A graduate of the University of Texas Putnam had been serving as Vice President of the Morgan Guaranty and Trust Company of N.Y. He had been with that firm since 1956, and specialized in the financing of CATV and professional sports.

## TELEMATION DIAMOND WON BY MRS. STERLING HIGLEY

A 2½ carat diamond dinner ring was awarded to *Mrs. Sterling Higley* by TeleMation, Inc. at a champagne breakfast following the NCTA convention in Denver. The \$3,085 emerald cut stone had been on display at the Telemation booth during the convention, where company officials said



Alan Harmon, Vice President of Daniels & Associates, Denver, and Ben Preece, Sales Manager, of TeleMation, Inc., Salt Lake City, are shown presenting a 2½ carat diamond dinner ring to Mrs. F. Sterling Higley as Mr. Higley looks on.

record sales of twenty-two TMW-2B Weather Channel systems were sold in addition to orders for twenty-three of the firm's new "News Channel" units. Mrs. Higley is the wife of *F. Sterling Higley*, President of Valley Video, Inc., Norwich, New York. Her reaction upon winning the ring: "I just can't believe it! It's gorgeous!"

## BLONDER-TONGUE APPOINTS NEW YORK REPS

LSM Associates, based in Phelps New York, has been named as Northern New York representative for Blonder-Tongue Laboratories, Inc. In making the announcement, B-T

Vice President and General Manager *Harry A. Gilbert* said the new representative's area starts with the counties above Winchester County, and extends through the northern portion of the state. LSM will handle the complete Blonder-Tongue lines of home TV accessories, industrial TV systems, and UHF converters, in addition to MATV & CATV equipment. *Gordon Leroy* will represent LSM in Central New York, while *Dave Coon* will cover the eastern portion, and *Jim Schnitter* will serve the western area of the state. L-C-A Sales Inc. will continue to represent B-T in the balance of the state.

## CHIEF ENGINEER NAMED FOR JERROLD COMMUNITY OPERATIONS

*Nathan Levine* has been appointed as Chief Engineer of the Community Operations Division of Jerrold Electronics, according to an announcement by *Joel Smith*, division manager. Levine has been serving as a field engineer in that division of Jerrold for the past two years, and had previously engaged in engineering activities for Liberty Video Corp., M&K Television Co. and KLM Video Corp. of which he was Vice President.

## PULASKI SYSTEM HEAD NAMED

*James M. Neblett* has been named as manager of Pulaski Television System, a Virginia firm operated by Booth Broadcasting Company of Detroit, Michigan. The new system which was scheduled to start service the first of this month, is the first to be installed and maintained in Virginia by the C&P Telephone Company.

## PARSONS SYSTEM MANAGER NAMED

*Robert Gault*, regional manager of Kansas CATV has announced the appointment of *Robert Pace* as resident manager for that firm's system in Parsons, Kansas. Pace comes to the Parsons position from Great Falls, Montana.

## MADISONVILLE OPERATION GETS NEW MANAGER

*Gerald M. "Jerry" Buchanan* has been named to succeed *Al McKay* as manager of the Madisonville (Ken-

utcky) Cablevision Company, Inc. The Madisonville operation is owned by Meredith-Avco, and began service in July of last year. Buchanan was previously manager of TelePrompTer's system in Cut Bank, Montana.

## FINER LIVING NAMES SYSTEM MANAGER

*Lee Stoner* has been named to manage the Redding, California CATV system operated by Finer Living, Inc. Over the past eleven years Stoner has managed systems in La Grande, Union, and Baker, Oregon.

## TIMES WIRE & CABLE TO EXPAND PLANT

The Times Wire & Cable division of International Silver Company has announced plans for a \$150,000 plant expansion of its Wallingford manufacturing facility. Firm spokesman said that the expanded production capability was aimed at increased manufacture of coaxial cable for CATV applications.

## AMERICAN CABLE TELEVISION SALES MANAGER NAMED

*Vincent E. Uricchio*, Phoenix, Arizona, has been named sales manager for American Cable Television, Inc. according to *Donald Atwell*, president. Uricchio, who came to Phoenix from Westbrook, Connecticut, has been in sales and promotion for the past twenty years, making this his speci-



*Mr. Uricchio*

ality and covering a wide variety of businesses. In the cable industry he was sales manager for H & B Communications and for Vumore. In Hartford, Connecticut Uricchio handled a direct sales program for Pay TV. Uricchio attended the University of Connecticut and Trinity College, and has a masters degree in psychology.

was reversed by that Court.<sup>74</sup> The Court pointed out to the KLIX Corp. that it must seek recourse under the copyright laws, if they are applicable to them, rather than to a claim based on tortious interference with exclusive contract rights or unfair competition.

Some broadcast interests have hoped to control CATV systems or limit their activities through resort to the copyright laws. Thus a large part of the National Broadcasting Company's (NBC) comments in Dockets Nos. 14895 and 15233 were devoted to obtaining from the Commission a statement that NBC has property rights or copyright in the signals of its stations or the contents thereof when received by subscribing members of the public through the facilities of CATV systems (pages 2 through 9 of NBC's 11-page Comments). The National Association of Broadcasters has made similar suggestions.<sup>75</sup> The Columbia Broadcasting System (CBS) in December of 1964 has lodged an action in the District Court of the United States for the Southern District of New York alleging similar property rights under the copyright laws. It is obvious, of course, that most broadcasters do not have property rights under the copyright laws in the programs carried on their television stations. There is very little original programming by most television stations and these are seldom copyrighted. Even the networks copyright only a comparatively small number of the programs which they make available to their affiliates. Generally, they are not the producers of these programs.

The question whether CATV systems are required by the copyright laws to pay for the programs received by their subscribers via the CATV system has been pending before the United States District Court for the Southern District of New York since 1960 in a case entitled *United States v. the Fortnightly Corp.* No attempt will be made here to discuss in depth whether *United Artists* or *Fortnightly Corp.* are right in their respective contentions. This is a novel question of law. Actually, a CATV system is a reception service. Technically and functionally it is no different from a built-in antenna, a rabbit-ear antenna, a roof-top antenna, or a high antenna placed on a mountain top.<sup>76</sup> It is literally true in many cities throughout the country that one home owner can receive a television signal via a roof-top antenna while his

neighbor across the street can receive the same signal only via a CATV system reception service. The public pays in fact whatever copyright fees are payable by an advertiser through the cost thereof which is included in the sale of the goods advertised through the medium of television broadcasting. The advertiser pays in order that the largest number of people possible can view and hear his advertising message. Although the CATV subscriber, when he buys soap or a car advertised on television, has paid his proportionate cost of advertising in the same amount as his neighbor across the street who receives his television reception via a roof-top antenna, he would now be required to pay an additional amount for the same copyright product. The courts will have to weigh whether this dual payment was intended by Congress either through the copyright laws or the policy contained in the Communications Act of 1934, as amended. No attempt will be made in this article to explore all the various facets of this problem, such as whether CATV reception can be regarded from a proper construction of the copyright statute to be encompassed within its provision. The reader is referred to the excellent briefs filed in the case of *United Artists v. Fortnightly Corp.*, referred to above, for a study in depth of the conflicting claims.

One conclusion is inevitable from the CBS suit against Teleprompter discussed above. CBS intends to make use of its alleged claim to copyright fees in order to supplant the function of the Congress and of the Commission by determining which CATV systems should be allowed to operate. In a press release issued on December 11, 1964, from its Washington, D.C. office, Columbia Broadcasting System, Inc. states:

"Once copyright is established, CBS will grant CATV systems permission to use its network television programs when those systems are the only means by which satisfactory television service will be available. In such circumstances, CBS does not desire to cause an increase in the cost of television service to the CATV subscribers and contemplates charging only a nominal fee to cover administrative costs."

Obviously, from that statement one can deduce that CBS is not interested in obtaining profits from whatever copyrights it might have, but in controlling the growth, development and continuation of CATV systems.

In the last analysis the television broadcaster is primarily interested in protecting his present investment against the mere possibility that his

profits may be in some way diminished. Likewise the CATV operator is primarily interested in furnishing a service that the public will purchase in order to enhance his profits. Both the broadcaster and the CATV operator have important services to furnish to the public and the public interest will win out through an accommodation of the perpetuation of local service provided by broadcasting on the one hand and of the multiple choice of channels by subscribing members of the public, on the other hand. No one can dispute the fact that in the fourteen years since the Sixth Report and Order, broadcasting has succeeded in developing 7-channel capabilities in only two cities in the United States, comprising only about 1/6 of the total TV households. Of course, this is not the fault of broadcasters. It is because of the inherent limitations of spectrum space, and the laws of physics governing coverage and interference. Even in the very heart of our major metropolitan markets there are vast unserved, or underserved areas — behind the hills in Seattle, San Francisco, and Phoenix, and behind the skyscrapers and steel walls in New York. In vast areas of the country people living in cities and towns with only one TV station—or none—are still struggling along with no choice, or with a selection only of weak and distorted signals.

This is the job CATV was invented to do. It is a job at which CATV is outstandingly effective. Thus, broadcasters need CATV if television service is ever to be universally available with quality and quantity comparable to the best in Los Angeles and New York. Anything short of a combination of broadcaster-CATV service means failure to fulfill the great promise of the television medium for communication, education, and entertainment.

But, there are some gaping holes in the picture. One that the broadcaster and the FCC have been quite diligent in calling to our attention is the public interest in television as a medium of local expression. For reasons of its own self-interest—enlightened I hope — the CATV industry is generally, if somewhat warily, agreeable to some form of restriction where it can be shown that a compromise of public convenience may be necessary to preserve the ability of a local broadcasting station to continue serving the public as a medium of local expression.

(Continued next month)

<sup>74</sup> 142 U.S.P.Q. 249 (1964). KUTV petitioned the Supreme Court of the United States for a writ of certiorari and Cable Vision filed a pleading in opposition. The Supreme Court of the United States denied certiorari on January 25, 1965.

<sup>75</sup> Comments of the National Association of Broadcasters in Dockets Nos. 14895 and 15233.

<sup>76</sup> For expert testimony on these matters see Affidavit of Mr. A. Earl Cullum, Jr. attached as an Exhibit to the Briefs of Cable Vision, Inc. in the case of *Cable Vision, Inc. v. KUTV, Inc., etc.*, discussed above. See also Affidavit of Ira Kamen attached to Memorandum Submitted on behalf of the National Community Television Association on ALLEGED COPYRIGHT PROBLEMS IN ISSUANCE OF CITY FRANCHISES TO COMMUNITY ANTENNA SYSTEMS filed by NCTA before the Board of Estimate of the City of New York, City Hall, New York, New York, on January 11, 1965.

has not materially affected their financial position. Most of the television broadcasters who are not in an enviable financial position, can look to other television stations which were similarly situated and which had no CATV systems within their contours and nevertheless did not survive. There have to be other reasons why all those broadcasters who had predicted their own demise years ago, and who are now prospering, fear the presence of CATV systems. Some of them have been quite frank and state that CATV is the opening wedge to Pay-TV. This has been so widely circulated, even at times by people closely connected with the CATV industry, that it is time to give the lic to these claims.

If Pay-TV is successful, it will first make its gains in the large metropolitan areas in "Big City, USA", where CATV is non-existent or quite scarce. Almost universally CATV systems are small as compared to the saturation of homes apparently required by Pay-TV economics. Of almost 1300 CATV systems, only 17 or 18 have 5,000 or more subscribers—a trifling amount in Pay-TV terms. There is no more reason to believe that a successful Pay-TV system franchise dispenser will turn first to the CATV operator and grant him a franchise in his particular area. CATV systems now in existence would have to be completely rebuilt to adapt themselves to the only promising form of Pay-TV, which requires two-way communications.

Community antenna television systems by their very nature serve the entire community, or at least every television set in the community that is connected into the system. Each set receives the same signals, on the same channels, in the same quality as every other set. It is rather like a party line telephone system, and as the present day CATV systems are constructed, it is not possible to deliver signals to any selected groups of sets without the same signals being receivable on every other set connected into the cable system. Thus, community antenna systems as they exist today, cannot serve as pay television systems, which by their definition must be able to provide programming on a selective basis, i.e., the set owner who pays for the program receives it, the set owner who does not pay does not receive.

If CATV systems were to become pay television systems, they would have to be re-constructed in such a manner that it would be possible to deliver signals to connected sets on a selective basis. Such signals might be carried through the cable on some frequency not compatible with any of the 12 channels generally to be found on most

sets, and a "converter" would have to be attached to the set to change the incoming Pay-TV signals to some one of the 12 VHF channels the television set could reproduce. But most CATV systems in the country can at best distribute the spectrum between 54 and 88 or 95 megacycles. The newer broad band systems are generally confined to distributing the frequencies between 54 and 216 megacycles (Channels 2 through 13), although a very few systems are reported to be able to distribute frequencies as low as four megacycles, or well below the television band.

Some broadcasters have attempted to curb the activities of CATV systems through resort to the courts, seeking an injunction against CATV operators from receiving the signals of a television station. In *Intermountain Broadcasting & Television Corp. v. Idaho Microwave, Inc.*<sup>65</sup>, three originating stations in Salt Lake City sought to enjoin reception of their signals and transmission of them by microwave to a CATV system. The signals had been intended for a local Twin Falls, Idaho, station under contracts for non-exclusive rebroadcast rights. Plaintiffs argued that they had expended considerable time, money and effort in producing these signals and that unauthorized reception and transmission of them for profit would constitute a misappropriation of a quasi-property right.<sup>66</sup> The Court held that there was no quasi-property right involved because the rebroadcast contracts with the Twin Falls station granted no exclusive rights.<sup>67</sup> The Court further held that the parties were

not in competition under the rules of the *International News Service* case<sup>68</sup> since they received their incomes in different ways.<sup>69</sup> The Court also emphasized that defendants planned to give plaintiffs full credit for all programs received and made available to their subscribers.<sup>70</sup> The Court concluded that the CATV activities were not unfair.

In another case, *Cable Vision, Inc., v. KUTV, Inc., the KLIX Corp.*,<sup>71</sup> a District Court of the United States proceeded to decree non-duplication protection by the CATV system under a theory of alleged unfair competition and tortious interference with contractual relations. In this case, the local television station in Twin Falls, Idaho, was a party to the action. The Court held that the contracts for a "first call" on network programs in the Twin Falls area were exclusive and that they gave a defensible quasi-property right. An injunction was issued on the grounds of tortious interference with exclusive contractual relations,<sup>72</sup> and unfair competition against a station depending on local advertising.<sup>73</sup> The decision was appealed to the United States Court of Appeals for the Ninth Circuit and it

65 196 F. Supp. 315 (D. Idaho 1961).

66 *Ibid.*, at p. 321.

67 *Ibid.*, at p. 323.

68 248 U.S. at p. 240.

69 196 F. Supp. 315, at pp. 325-326.

70 *Ibid.*, at p. 326.

71 211 F. Supp. 47 (D. Idaho 1962).

72 *Ibid.* at p. 58.

73 211 F. Supp. at pp. 60-61.

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## The Broadcaster and CATV

Allusion has already been made herein to the fact that a small number of local television broadcasters, seeking to perpetuate their monopoly or quasi-monopoly in small television markets, have attempted to obtain from the Congress and the Commission regulation of CATV systems, including those not served by microwave. The myth of an alleged existence of a substantial adverse economic impact has been dispelled by the research conducted by the National Community Television Association referred to above. Therefore other grounds for control of the CATV industry had to be found. One old hoax, the charge that CATV systems "deteriorate" the signals of television systems, has been exploded. Any objective person recognizes that it is in the interest of the CATV operator to make available to his subscribers the clearest signals that the state of the technology in the CATV industry can produce. It is for these reasons that the CATV industry has not opposed allowing the Commission to set standards in this field, in the event that legislation pertaining to CATV is enacted. The National Community Television Association has never had called to its attention one single instance of the willful attenuation of a television signal by a CATV system. It might be added that there is no evidence in any proceeding of such willful "deterioration."

The National Community Television Association has proven that CATV systems have not hindered the development of UHF TV stations. 15.2 percent of all existing UHF's (roughly one out of every 6) were constructed in communities in which CATV service existed when the UHF went on the air. There are 92 commercial UHF stations now on the air. Twenty-two of these have CATV service in the same community. In 5 of these 22 instances, the UHF station went on the air before the CATV system came into existence, and in 14 instances the CATV service existed before the station went on the air.<sup>62</sup> Those are facts, not assumptions. UHF stations do go on the air in communities that have CATV service. In fact, many UHF television broadcasters have recognized how much CATV operations have helped them and they put this in letter form and in statements to newspapers.<sup>63</sup> In addition there is a current trend among CATV operators to make applications for UHF television stations or translators or to purchase them, such as in Salina, Kansas, and the CATV operator may well be

the salvation of UHF in small markets where it is uneconomical to build a UHF station except in conjunction with a CATV system. The CATV operator, launching a UHF station, can make use of his existing tower and realty and other equipment with a resultant economy which may make the difference between success and failure on the part of a UHF broadcaster.

Because the existence of a serious threat of adverse economic impact can no longer be asserted with respect to CATV based upon past experience, another crutch which opponents of CATV service have leaned on of late is that there should be no more or not much more television reception allowed in an area than the amount contemplated by the Commission's Sixth Report and Order on Television Allocations.<sup>64</sup>

It is obvious that the allocation rules were adopted without CATV service in mind. CATV service was not known to the Commission at the time of the adoption of the Sixth Report and Order. If CATV systems when served by microwave were to be curtailed in a way to prevent the public from receiving more TV stations' signals than the number allocated to an area by the Commission under the Allocations Table, the Commission should submit this drastic proposal to the Congress to determine whether it was the intent of Congress to make second class citizens of the less populous areas. Under the situation faced by the Commission when the Sixth Report and Order was adopted, the Allocations Table was the only reasonable approach which the Commission could take. It was important to encourage the growth of local TV stations and there were only a relatively small number of channels available. The larger population centers were naturally expected to be able to support a larger number of TV stations. However, with the advent of CATV systems, the smaller cities and towns were able to receive as many television signals as the more populous cities. There can be no excuse for depriving the members of the public from receiving signals of their choice if they are willing to pay for the service. It is only in the case where such reception can be shown to prevent adequate local TV service that the Commission should be concerned about the matter. NCTA's Comments prove that the fear that CATV systems will destroy local television service or prevent new TV stations from being built is groundless or that it has been greatly exaggerated (NCTA's Comments, par-

ticularly pp. 10-13 and 35 and 36). A few local broadcasters who wished to protect from encroachment their local monopoly of television were the ones who complained of alleged adverse economic impact. Now that the facts disprove the existence of such adverse economic impact, they would have the Commission adopt an artificial rule based upon the number of stations allocated to an area under the Sixth Report and Order and the Allocations Table and then curtail CATV service at least to that extent. The only excuse for this or any other rule should be proof of the existence of an adverse economic impact to the extent that it injures the public. A rose by any other name is still a rose and broadcasters cannot hide the economic impact issue under the thin veil of an arbitrary recourse to the Table of Allocations.

The Allocation Table was primarily an engineering device, based on spacings necessary to minimize interference and optimize coverage. Within the straight jacket imposed by the laws of physics and spectrum limitations, some effort was then made to "distort" the ideal and optimum allocation lattice to provide some semblance of correlation between number of stations and population density. With VHF only, any knowledgeable man can point to severe inequities in the resulting allocation. But even adding UHF results in many underserved markets, and some in the wide open spaces that have not a prayer of finding economic justification. The Allocation Table was not a market assignment. It was not a decision by FCC that citizens of New York were entitled to 7 or more channels because of their greater importance in the affairs of the world, while the citizens of Cut Bank, Montana were entitled to only one, because obviously they must be a stupid lot even to live in such a place. I don't believe that the public or the Congress will buy any legislation which is so discriminatory when it can be shown that the technical means are at hand and the economic support are available for much broader service.

Finally, some broadcasters and other opponents of CATV service to the public conjure up the nightmare that CATV is nothing but the prelude to Pay-TV.

It is inconceivable that the great number of local broadcasters whose television stations are co-located with CATV systems, have not realized to date, by an inspection of their books, that the presence of a CATV system

<sup>62</sup> Further Comments in Opposition to Proposed Rule Making in Dockets No. 14895 and 15233 filed by the National Community Television Association, pp. 35 & 36.

<sup>63</sup> Ibid., Exhibits No. 6 and 9 and Reply Comments of NCTA Exhibit No. 7.

<sup>64</sup> 1 P. & F. Radio Reg. 91:620 (1952).

# THE CATV INDUSTRY

## Its History, Nature and Scope

By Robert D. L'Heureux  
NCTA Legal Counsel



### Part V

These statistics lead to only one logical conclusion, namely that a case by case approach is the only reasonable answer to the Commission's proposed rule making to regulate community antenna television systems served by microwave stations. Any general rule proposed by the Commission to date ignores the plain logic that the public should not be deprived of the opportunity to pay for the television reception service offered by CATV systems and thus be enabled to select the television signals of their choice unless there is clear proof that the public will be deprived thereby of the services of a local television station which presents a substantial fare of original programs of local interest. These facts can be ascertained only after a full hearing on a case by case basis.

The National Association of Broadcasters was convinced that these statistics had to be refuted in one way or another. It obtained from the Commission several months' extension of time to give an answer to the Reply Comments of the National Community Television Association. Many thousands of dollars were devoted to a counter-study. The mountain went into labor and gave birth to a mouse. This research took the form of a study by Dr. Franklin M. Fisher, Associate Professor of Economics at the Massachusetts Institute of Technology.<sup>60</sup>

The "Fisher Report" which was attached as an appendix to the Comments of the National Association of Broadcasters resorted to the use of a dual regression analysis, attaching an alleged dollar value to the non-local viewing audience to determine how much more revenue would accrue to the local television station if these viewers had viewed the local programs

rather than the programs of a distant station viewed via the CATV system. In order to obtain an unbiased evaluation of the "Fisher Report" the National Community Television Association retained Dr. Herbert Arkin, a Professor and the Head of the Business Statistics Division of the Baruch School of Business of the City College of New York. The "Arkin Report" completely demolished the conclusions of the "Fisher Report" by stating its lacunae. A few brief extracts will illustrate the uselessness of the "Fisher Report." In his report Dr. Arkin states:

"An analysis of the report discloses that a considerable amount of time, energy and money has been expended demonstrating an obvious truism which, nevertheless, does not of necessity provide support for the final conclusions.

"To fully appreciate the nature of the effort, it must be noted, as the report itself emphasizes, that the investigation constitutes an analysis of a situation as of a point in time. Page 12 of Fisher Report observes, 'We have, therefore, analyzed a cross section of television stations at one moment of time.'

"The report demonstrates that if an area has a community antenna system which brings in signals from non-local television stations as well as the local station and if at a given time some of the viewers, with the community antenna system service, are watching some of these non-local transmissions, then not everybody in the area who is watching is watching the local programs. It is not necessary to use multiple regression analysis to demonstrate this point, it is an obvious fact.

"Thus, for example, if there are 5,000 viewers in a specific community antenna served area and 1,000 of those with this service are watching out of town stations, even though the local station is available on CATV, the report, in effect, notes only 4,000 are viewing local programs." (Arkin Report, pp. 1 and 2)

The "Arkin Report" then points out that "there is no reason to assume that all of these viewers of non-local programs would watch local station programs if the non-local programs were not available." (Arkin Report, p. 2) He then explains why that is true.

Dr. Arkin further points out:

"Further, in some of these instances, conversion to a CATV subscription does not automatically rule out local viewing even when the CATV system does not carry the local station. Some CATV systems supply an antenna switch which makes possible the alternate use of the subscriber's own antenna. In other cases, the subscriber himself installs such a switch.

"A check on the CATV systems for which information was available and which were included in

the Grade A zone areas of the 172 stations (the 'study stations') included in Appendix I, indicates that only 18 do not carry the local station and of these 18, a total of 5 provided such switches for their subscribers.

"Thus, at least some of the CATV subscriber viewers, all of whom were counted as a total loss to the local station actually are part of the local station potential off-the-air audience even though the CATV system does not carry the local station, while others could or would not be viewers of the local station before or after their CATV subscription or would not change the extent of their local station viewing.

"Secondly, it may well be that the inception of a Community Antenna System in a given locality causes an increased interest in television viewing and results in an increase in the number of sets or amount of viewing in the area. This increase in the audience may be more than enough to offset the numbers who reduce local station viewing to view non-local stations, and, indeed, may have resulted in a total increase in the local station audience. Since the study was conducted on a point in time basis, this factor would not be reflected by the analysis." (Arkin Report, pp. 4 and 5).

Dr. Arkin aptly observes:

"In the Fisher Report, while the discussion of the techniques used is very extensive, it does not disclose in detail the actual data used in the analysis nor does it provide sufficient detail to permit exact reconstruction of the analysis nor is there sufficient time allowed for such a reconstruction." (Arkin Report, p. 6)

After pointing out other flaws in the "Fisher Report," Dr. Arkin concludes "the results of this study are of dubious value as evidence." (Arkin Report, p. 7) Finally, after raising many technical questions with respect to the statistical techniques used (Arkin Report, pp. 8-15) in the "Fisher Report," Dr. Arkin concludes:

"Thus, the statements about statistical significance or sample reliability (standard errors) contained in this report ['Fisher Report'] have absolutely no meaning.

"In consideration of the above objections to the logic on which the Fisher Report conclusions are based and the defects in the statistical techniques and the data on which they are based, it is my opinion that the conclusions in the report, about the effect of CATV subscriptions on the financial position of local television stations, are at best of dubious validity and at worst a possible complete misstatement." (Brackets supplied; Arkin Report, p. 15)

In addition the National Community Television Association conducted a further study and questioned further the accuracy of the "Fisher Report," proving that some of the prime conclusions of the "Fisher Report" were not applicable to any existing or likely circumstances.<sup>61</sup>

<sup>60</sup> See Reply Comments of the National Association of Broadcasters, In the Matters of Dockets No. 14895 and 15233 before the Federal Communications Commission, October 26, 1964.

<sup>61</sup> See Additional Reply Comments in Opposition to Proposed Rule Making in Dockets Nos. 14895 and 15233 filed by the National Community Television Association on December 14, 1964, for an analysis of the "Fisher Report" and for reference to the "Arkin Report" attached to these Additional Reply Comments as Exhibit B.



Camera test bench is another quality control point in the assembly of "Weather Channel."



Engineer at left is setting Slave Reader for non-duplication switcher while engineer at right tests EIA camera chain.

asked Ben how his sales were going, and he advised, "We took orders for 22 'Weather Channels' and 30 'News Channels' at the Denver show to help make July a record month . . . we think we'll pull out of the slump in August," he said with a wink. Seriously he added, "We are most pleased with the continued industry preference for our 'Weather Channel' equipment. We attribute this acceptance to our use of familiar horizontal scanning of analog type instruments. Add to this the fact that we have never compromised quality for the sake of price and you have the reasons why the TeleMation 'Weather Channel' is the standard of the industry."

In our journey through the Tele-

Mation plant, we were impressed with the apparent concentration on engineering. Drafting tables and chalk boards were spotted throughout the plant. Test equipment was everywhere. Perhaps that is what you should expect from a company where nearly half the employees are engineers.

Before leaving we visited again with Lyle and asked for his prognosis on TeleMation's future. He expressed great optimism, both for the CATV Industry in general and for TeleMation in particular. He pointed out that "Weather Channel" and "News Channel" equipment were finding increased acceptance for use by television broadcast stations and that TeleMation was expanding its educa-

tional television product line. Lyle forecasts considerable future activity in ETV, particularly where joint ventures between CATV operators and educators are involved. He also felt TeleMation's new, low interest financing program would be a stimulus to small system equipment sales. Concerning overall sales of "News Channel" and "Weather Channel" equipment in the CATV industry Lyle, predicts a continually expanding market for quality equipment. In his own words, "As the industry moves to-



National Sales Manager, Ben Preece (left) gives sales report to President, Lyle O. Keys.

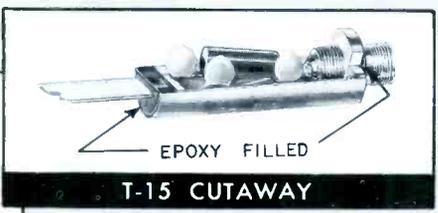
wards large city systems and systems with substantial off-air reception, operators must have many additional services to offer their public. We can foresee the time when 20 channel systems will offer 6 or 8 supplementary service channels." When asked what, besides weather and news service, these channels would consist of, he just smiled and said, "We're working on it!" No doubt they are, and if their future offerings approach the acceptance enjoyed with the "Weather Channel" and "News Channel" services, the future for the company will be bright indeed. At any rate, we will be waiting with keen interest for new product releases from TeleMation, Inc. of Salt Lake City, Utah. □

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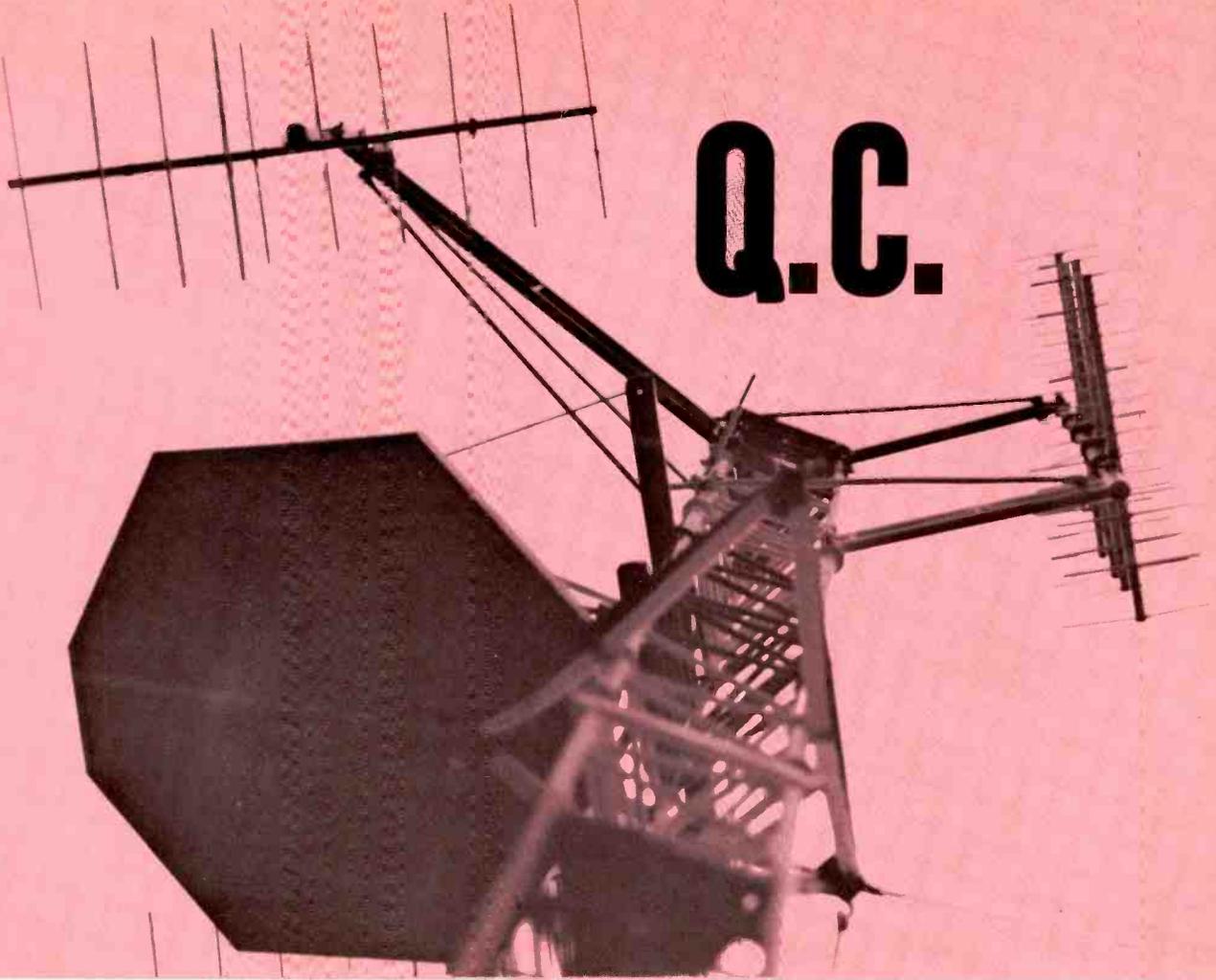
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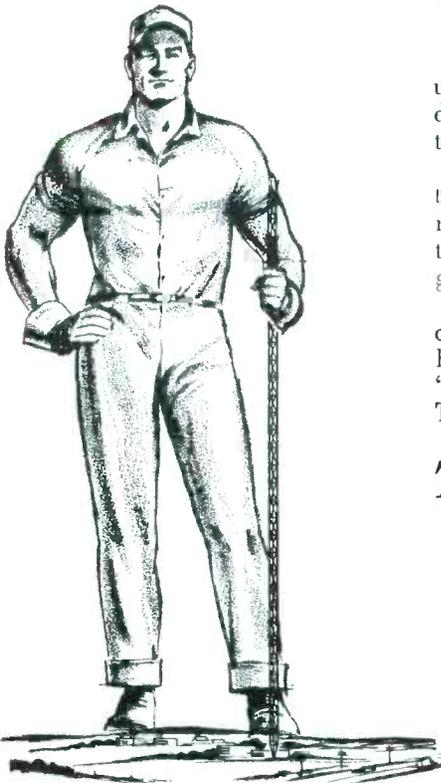
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Production Manager, Benny Morinaga (r), checks blueprints of new product prototype with TM engineer in Model Shop.

explained as he led us into a shop with walls that presented a solid array of complex test gear. "This is the final test area. We wanted you to see the last phase first so that you could fully appreciate the emphasis we place on reliability." As Bill spoke he was thumbing through a camera test report. Nearby, a Non-Duplication Switcher was going about its business on a test bench. It periodically uttered a series of clicks as it eliminated an imaginary program that duplicated another non-existent show on an equally mythical local station. A test engineer nodded his approval and made an entry in the test log.

"The second work area is our R & D Lab and Model Shop." Bill was indicating a doorway that led into the Model Shop. When we asked about the high level of activity in this area we were told that the engineers were setting up for full scale production of "News Channel" equipment. The big job we were informed is to meet the November schedule for installation of "News Channel" equipment in CATV systems throughout the country. At that time the AP wire service will be fed directly into the homes of CATV subscribers for the first time on a

nationwide basis. At this point in our journey we were treated to a peek at the hitherto "secret inner workings" of the CATV news equipment. We were surprised at the complexity of the electro mechanical devices required to solve what we had thought to be a simple problem — picking up a TV image from a teletype machine.

Bill next led us to an enclosed corner of the Model Shop that was specifically equipped as a fiberglass shop. There he introduced us to Benny Morinaga, Production Manager. Under Benny's supervision the familiar rolls of fluffy white "cloth" were being converted to extremely rugged and aesthetically pleasing forms. "These are frames for the 'Weather Channel J.G.'" Benny stated, adding, "We are in a little bit of a rush since the 'J.G.' is scheduled for delivery beginning in November." Bill pointed out that Benny is devoting a large share of his time these days to preparation of production on an ever expanding product line. When Benny joined TeleMation 18 months ago there was only one product being manufactured. Now the line consists of 6 widely divergent products. Everthing from intricate circuit boards used in their Broadcast



Executive Secretary, Geri Lillian, demonstrates "Telectern," an overhead camera lectern for ETV.

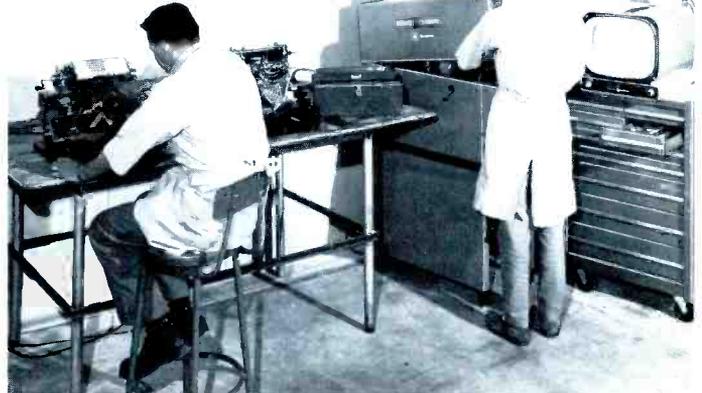
Camera Chain, to large wooden furniture housings for the "Telectern" overhead camera device, to molded fiberglass frames for the "Weather Channel J.G." This seemed to us like a production man's nightmare, but Benny seemed to take it all in stride.

Next we entered a large room full of familiar shapes. This was the main production area, the third work area Bill had referred to. On stands in the foreground TMW-2B "Weather Channels" were being assembled. On a rear workbench, assembly proceeded on several "Weather Channel J.G.s" in anticipation of the November deadline. One end of the production area opened into the loading dock and shipping area where "Weather Channels" in large wooden crates were waiting to be picked up by motor carriers.

The next leg took us past a large map of the U.S. Ben Preece, National Sales Manager, was looking wistfully at North and South Dakota . . . the only section of the map without a cluster of pins in it. "Weather Channels," he explained. "We've got more than 250 of them from coast to coast," he added as he straightened the pins in Maine and Southern California, trying to ignore the Bad Lands. We



Lyle O. Keys, President of TeleMation, Bill Laird, Chief Engineer, and TM Engineer (l to r) check design specifications.



Engineers working at "News Channel" assemble and test point.

## TV & C VISITS



TeleMation building located at 2275 South West Temple, Salt Lake City, Utah.

# TELEMATION

We broke out of the cloud cover that hung over the Wasatch Mountains and began our descent into the valley of the Great Salt Lake. The approach to Salt Lake City Municipal Airport, provided an impressive panoramic view of the evident prosperity of the area. It also showed something else that was to typify the people we were going to see . . . expansion and rapid growth.

The drive in from the airport took us past beautiful Temple Square and out West Temple Street about three miles to TeleMation's plant located in a new industrial complex.

Lyle Keys, President of TeleMation opened our relaxed and very informative tour by providing us with background information about the company and its people. We questioned Lyle regarding the origin of the company and were surprised to learn that TeleMation has been in business less than three years. We discovered that TeleMation traces its beginning to a phone call from Gene Schneider, President of Wentronics, Inc. in Casper, Wyoming. Mr. Schneider had described his concept of a device that ultimately became the popular "Weather Channel." He then ordered five units on the spot. This equipment order resulted in the transformation of a small

television equipment sales and engineering firm into a company that is now the largest supplier of supplementary service equipment to the CATV industry.

We wondered aloud how a company could accomplish this remarkable growth in such a short period. Lyle smiled and gave us the answer in two words, "personnel and backing." There was an open pride expressed for his staff's dedication and ability. He also praised his principal stockholders,

Kearns Tribune Corporation and Standard Examiner Publishing Company for their advice and enthusiastic support. "These principals have many interests in CATV, TV broadcasting and publishing, so their involvement in TeleMation is not at all surprising," Lyle explained as he led us through a door marked "Restricted Area." There he introduced us to Bill Laird, Chief Engineer, who conducted us on a tour of the plant.

"We have three working areas," Bill

"Weather Channel" assembly area in foreground. Engineer installs switches on "Weather Channel, J.G."



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  5. Field strength meter
  6. Simpson Meter
  7. Solder gun and solder
  8. Spare tubes for P.A. system
- F. Decorating crew — Maintenance
1. Banners — Interior & Exterior
  2. Decorations — Interior
    - (a) False ceiling
  3. Posters
    - (a) TV Dealer Booth Identification
    - (b) TV Channel identification cards for TV sets (3"x5")
    - (c) Registration posters
    - (d) Refreshment posters
    - (e) Channel cards — 30 x 40 (2 sets — each side)
    - (f) TV Personality photos
    - (g) Magic key posters
    - (h) Magic key prizes identification numbers (prizes correspond to numbers in Treasure Chest)
    - (i) Wire Treasure Chest with bell
  4. Scaffolding and/or ladders
  5. Wire
  6. Toggle Bolts
  7. Nails
  8. Tacks
  9. Plastic tape
  10. Masking tape
  11. Stapler — Staples (Desk)
  12. Staple gun — Staples
  13. Hammer
  14. Glue
  15. Pins
  16. Balloon
  17. String
  18. CO2 Tank
  19. Twine
  20. Test TV monitors and camera
  21. CABLETRON application pads
  22. CABLETRON Question & Answer Booklets
  23. Door prize registration pads
  24. Treasure Chest and prizes
  25. Folding chairs
  26. Recheck Security Police

**Friday, June 4, 1965**

New York State Armory, 9:00 a.m.

1. Recheck TV Cable signal
2. Final check all decorations
3. Final check TV camera and monitor
4. Final check refreshments
5. Final check Dealer TV sets
6. Final check Cable Booths
  - (a) Registration
  - (b) Sign up
  - (c) Decoration
  - (d) Chairs
  - (e) Supplies
    1. Applications

2. Question and Answer Booklet
3. Registration pads
4. Pens, pencils, etc.
5. Cash Box

7. Treasure Chest and Prizes

**PERSONNEL—GRAND OPENING**

**NOTE**—All personnel will arrive one hour before doors open each day.  
 Friday, June 4th—4:00 P.M.  
 Saturday, June 5th—9:00 A.M.  
 Sunday, June 6th—1:00 P.M.

1. Registration Booth — Application Booth, One attendant each — Female
2. Balloons — Female, Two attendants — one for inflation of balloons, one tying string
3. Refreshments — Male, Two attendants
4. Treasure Chests — Female, Three attendants — One each chest
5. M.C. — Two M.C.'s to split work load. Note: M.C. will also distribute Treasure Chest Prizes
6. One Auxiliary attendant—Male—Errand Boy, clean-up, etc.
7. Technician — Male
8. Clowns — Two — Male
9. Security — Three — Male
10. Set Up Men — Four

Closing times: Complete check of all equipment and material. Notify Armory attendant of departure for lock-up.

**GRAND OPENING PROGRAM  
 NEW YORK STATE ARMORY**

**Friday, June 3, 1965 —  
 5:00 P.M. - 10:00 P.M.**

5:00 P.M.—Doors open; Organ interlude . . . 15 minutes on . . . 15 minutes off

6:00 P.M.—First money Give-Away, \$5.00 every hour on the hour

7:00 P.M.—Exhibition of V.F.W. Band Treasure Chest Format; Bell rings each time there is a winner

**Saturday, June 5, 1965 —  
 10:00 A.M. - 10:00 P.M.**

10:00 A.M.—Doors open

10:30 A.M.—Organ interlude — 15 minute performances

11:00 A.M.—Beginning of \$5.00 hourly Give-Away

Treasure Chest Format  
 Same as above

**Sunday, June 6, 1965 —  
 2:00 P.M. - 10:00 P.M.**

2:00 P.M.—Doors open; Organ interlude — 15 minutes — Throughout afternoon and evening; Entertainment throughout afternoon and evening

3:00 P.M.—Beginning of \$5.00 hourly Give-Away

8:30 P.M.—Drawing Grand Prize — Color TV set  
 Treasure Chest; Same Format as above

10:00 P.M.—Secure Hall

\* Entertainment Program to be rescheduled to accommodate appearance of Personalities and Stage Shows.

**Sunday, June 6, 1965**

Dismantle booths

1. Dealers dismantle booths and remove equipment
2. ALL CABLETRON equipment to be transferred to office
3. All banners, posters, photos, displays, etc. will be moved to office.
4. Decorations removed
5. Hall must be completely cleaned by 12:00 P.M.

**SUPPLEMENT**

**Newspaper** — 300 copies of Special Supplement are needed for VIP Banquet

**Advertising** — News story and ads should run each day commencing Monday, May 24th.

**Security Police** —

1. Two in parking lot at all times during Grand Opening
2. One in hall at all times

**Clowns** —

1. Two clowns to be on hand for Grand Opening
2. One inside and one outside

**Printing** —

1. Question & Answer Brochures WSYR
2. Channel Identification Cards

**VIP Banquet** —

Deacon Doubleday, M.C.

1. Name tags for Company Officials and VIP's to be delivered Tuesday, June 1st.
2. Tape Recorder for VIP Banquet—appropriate music

**Grand Opening**

1. Color TV set for Grand Prize — 21"
2. P.A. System for Armory to be installed 6/3
3. Camera and Monitors to be set up 6/3 (See yourself on TV)
4. Tables and Chairs to be delivered 6/3 at Armory
5. Prop Room Equipment
6. Stage 20' x 40' delivered 6/3
7. Record Albums . . . 150 for Treasure Chest Prizes
8. Bingo Supply house for TC Prizes . . . we need approximately 400
9. WSYR GANG for Grand Opening
10. Salty Sam for Grand Opening
11. Hill Billy Band for Grand Opening
12. Spotlight for Armory delivered 6/3
13. 3,000 Question & Answer Brochures
14. Kay Russell Show — Thursday



## SKL MODEL 263 WIDE-BAND TRANSISTOR LINE EXTENSION AMPLIFIER

The SKL Model 263 Line Extension Amplifier is a new high output, transistorized amplifier with full 12-channel bandwidth. It is designed for use as a line extension amplifier in any wide-band distribution system. The nominal gain is 22 db at 216 mc, with a 7 db slope across the 54 to 216 mc band. Manual gain and tilt controls complete the compensation for the average cable losses encountered in feeder lines. Low noise and cross-modulation allow the Model 263 to be used even at the most remote ends of a distribution system. AC cable powering provides flexibility in designing new and in extending or updating existing distribution systems. The unit is housed in a rugged, waterproof, cast aluminum box with a captive cover, and may be mounted on the messenger or on a pole.

### FEATURES

- All Channel, Plus FM
- High Output Capability
- Stable Circuitry
- Flat Gain Control
- Wide-Range Tilt Control
- Low Cross-Modulation
- Low Noise Output
- Internal Voltage Regulator
- Cable-Powered AC
- Waterproof Housing

Call or write for Product Data Sheets containing complete specifications and the SKL Short Form Catalog describing all SKL Cable Television System Equipment and Services.

# viking UNITIZED CATV HIGH LEVEL INLINE MODULAR SOLID STATE AMPLIFIERS



THE  
*Goldline*  
SERIES

**CASCADABILITY** – The Viking Solid State amplifiers have been designed with one goal in mind – cascading. A 12 channel system bigger than 60 main line amplifiers in series or better than 1400 db of cable can be built for a system signal-to-noise ratio in excess of 40db. This achievement has been accomplished by a combination of the best possible electrical and mechanical specifications unified in a single design, in the following ways:

**OUTPUT CAPABILITY AND NOISE FIGURE** – The Viking amplifiers are designed with the lowest noise figures, 10db maximum, and the highest output capability, 51 dbmv.\*

**AGC** – The built-in AGC system of the Viking 574 amplifier operates so that the system can be set for the best signal-to-noise ratio under average conditions. Picture quality will improve with increased signal and not significantly deteriorate with moderately less signal. This is because the Viking AGC circuits are an integral part of the amplifier and operate by changing gain *after* the second stage of the amplifier so that there is an insignificant change in noise figure with AGC action.

The Viking AGC is also designed to tilt the amplifier's response curve to compensate for the tilt change in cable attenuation due to temperature. The Viking AGC thus does double duty: it holds the output constant for a change in *any* TV channel signal and automatically compensates for cable attenuation and tilt change due to temperature.

**MODULE CONSTRUCTION** – Every Viking Solid State amplifier is constructed in module form. The entire amplifier can be quickly replaced without disturbing cable or fittings, without unsoldering any connections and without the use of jumper cables. When a bridger amplifier is disconnected, the trunk signal and AC power is undisturbed.



\* (5db Block-tilt)

**VIKING'S GOLDLINE SERIES IS THE ONLY SOLID STATE LINE WITH ALL THESE IMPORTANT FEATURES:**

- A** Directional outputs built in.
- B** 51 dbmv output capability for a 12 channel system (5db block-tilt).
- C** External fuses for easy replacement.
- D** Push-pull modular construction.
- E** Inline housing.
- F** Reversible mounting.
- G** Lowest noise figures.
- H** Unparalleled cascading (60 maintrunk amplifiers).
- I** All silicon RF transistors in sockets and heat-sunk.
- J** Lightning protection beyond 10,000 volts.
- K** AGC amplifiers with separate low and high band plug-in pads and full-wave power supply.
- L** Cable equalization: A 4 position switch plus an overlapping continuous control for 30db of continuous control.
- M** Both RF and AC power feed through the bridger amplifier locations whether or not the amplifier is in place.
- N** Can be strand mounted on side or back; or pole mounted.

PUSH-PULL      CLICK-CLICK  
CHANGE AMPLIFIERS THAT QUICK

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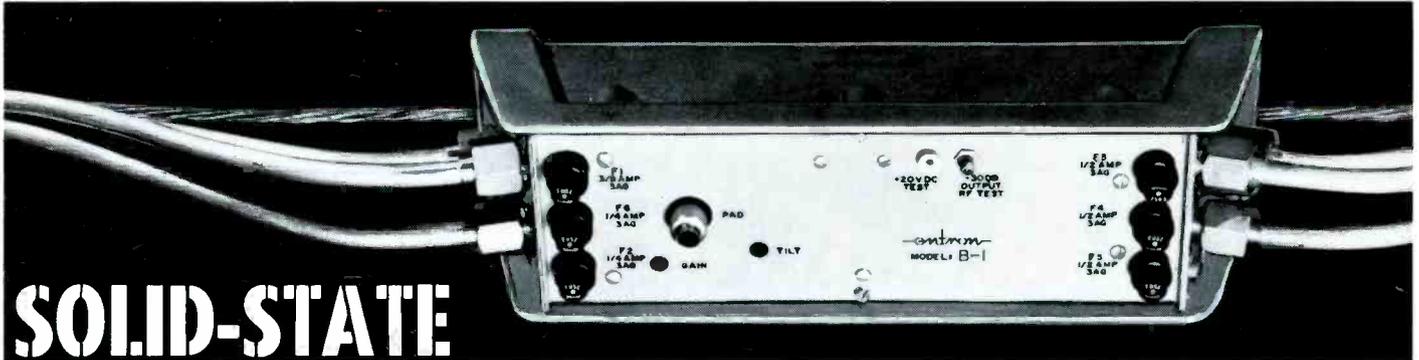
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**SOLID-STATE**

**BRIDGING AMPLIFIER—28 VOLT**



**SOLID-STATE**

**EXTENDER AMPLIFIER—28 VOLT**

**A TRIO OF CATV COMPATIBLES:** The **B** Series Bridging Amplifiers—the **R** Series Repeater Amplifiers—and the **E** Series Extender Amplifiers. All manufactured by the firm which set the industry standard for competence and reliability. All three remotely powered by **28 VAC**.\* All three **STRAND-MOUNTED**, with shallow, no-fuss drip-loops. And all ready to go to work in **ANY SYSTEM**—vacuum tube or **SOLID-STATE**—regardless of equipment manufacturer.

*\*(also available for 60 vac.)*

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Excellent career opportunity with growing firm. Send resumé to Dept. 93, TV & Communications, P. O. Box 63992, Okla. City.

#### Wanted

##### 4 CHIEF TECHNICIANS

To work in large, Solid-State only system with a choice of working areas and locations. Interested in men with good backgrounds. Send resume to H. Harmon, Dist. Mgr., Valley Telecasting Co., 914 Fourth Avenue, Yuma, Arizona.

I am experienced in all phases of CATV & have three permits — one in town of 21,000 population, 71 miles from wanted signals; one in town of 8,000, 80 miles; one town of 3,000, 100 miles away. Will build and operate. Need capital. Write: 1104 Oaklawn Drive, Phone 43-136, Corsicana, Texas, or 729-8237, Palestine, Texas.

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Attention-getting promotions, effective direct mail to sell new CATV subscribers. Planned and produced at lowest cost. 25 years experience, print, radio, TV, CATV.  
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For operation and maintenance of turnkey system starting construction in eastern city. Additional systems in planning stage. Send resume of CATV experience, qualifications and salary desired. Write Dept. No. 91, TV & Communications Magazine, P. O. Box 63992, Okla. City, Okla.

#### NEW CALIFORNIA CATV NEEDS MANAGER TECHNICAL SUPERVISOR

Salaries commensurate with experience.  
 Send resumé to:  
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#### EXPERIENCED MANAGER FOR COMMERCIAL SOUND BUSINESS

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**NOPE, WE'RE NOT  
LOST. SEE THE  
DAVCO  
ADVERTISEMENT  
ON PAGES 4 & 5**

# LINE POWERED CATV SYSTEMS

By Preston Spradlin

Line powering, the natural and economical way to power transistor amplifiers in cable systems, is in reality, a relatively simple matter and consequently, not too much thought has been devoted to this "life-line" of CATV. Yet, through experience, the majority of transistor failures and associated maintenance problems may be traced directly to problems in line powering.

The necessary power requirements of a conventional CATV system utilizing transistors is between 15 and 20 volts DC. In earlier systems, and as recently as 1960, many manufacturers used pure DC for line powering. This approach, being quite easily attainable, simplified standby systems and required little or no filtering networks in individual amplifiers.

The power supply was conventional and a wet cell could be used as a standby reserve.

Using pure DC, no problems were foreseen in the planning stage. However, in actual operation, continuous trouble caused by electrolysis and AC hum made it obvious to switch to AC line powering. A simple experiment demonstrating electrolysis is to fill a fitting with water and apply first AC and then DC and observe the action of each current. The application of DC builds up a carbon path and shorts the fitting or causes a high resistance leakage path. Even a small amount of moisture is sufficient to cause electrolysis when DC voltage is applied.

## Regulated vs. Non-Regulated

In tube systems, constant voltage transformers became a necessity to prolong tube life and to furnish some degree of protection from lightning surges. In transistor systems, a constant voltage supply is normally built into each amplifier by using constant current transistor power supplies. Since this feature is inherent in transistor systems, the importance of having constant transformer voltage, although desirable, is not as important as in tube systems. Also, fast transients that may be destructive to transistors can pass readily through a regulated transformer diminishing afforded protection enjoyed so in tube amplifiers.

Basically, there are two types of

constant current transformers — a sinusoidal and a normal harmonic. The sinusoidal type normally produces only a 3 percent harmonic content and is particularly well suited for applications involving rectifiers and other equipment affected by harmonics in the supply voltage. Special electronic types which are sinusoidal are used for filament and plate regulation circuits. The normal harmonic type provides the same regulation,  $\pm 1$  percent, and is a reliable voltage source for electrical loads such as filaments, relays, solenoids and other loads not affected by harmonics in the supply voltage. All types of transformers provide filaments with stabilized voltages which contribute greatly to reliable operation and longer life, thus reducing service costs. Another advantage of using a constant current transformer is the elimination of extra capacitors and chokes.

In a conventional transistor regulated supply, normally the base voltage of the transistor is held constant by a zener diode and since the voltage existing from the base to the emitter is inherently constant, a regulated supply is easily obtained. The physical size is such that an individual regulator may be conveniently placed in each amplifier.

Negative output voltages are obtained through the use of germanium power regulators and positive outputs by the use of silicon transistors. Silicon, although more expensive, offers greater protection against lightning surges. Obviously, line powered systems with transistor regulators offer many advantages over non-regulated systems. Consequently, the widespread use of transistor regulators is common.

## Half-Wave Line Powering

In using a single center conductor

Preston Spradlin, Plant Manager, CAS Manufacturing Company, Irving, Texas presents that company's views on procedures to provide maximum transistor performance in CATV systems. A veteran of electronics manufacturing, Preston presented this paper at the August NCTA Convention in Denver.

CAS is a pioneer in the manufacture of transistorized amplifiers and other CATV equipment.

for line powering, it is impossible to use other than a half-wave power supply without the use of bulky, inefficient isolation transformers. Therefore, all manufacturers, to our knowledge, use a half-wave rectifier to develop the necessary positive or negative supply voltage for the transistors.

Until recently, available power transistors have dictated the use of a negative supply. The half-wave rectifier, since it utilizes only one-half of the AC cycle, is necessarily only 50 percent efficient. Thus, a circuit requiring .5 amperes DC will require a source capability of approximately 1 ampere AC.

A positively powered trunk system lends itself nicely to biasing the transistors, although a more expensive silicon transistor was required for power. An inherent bonus feature of the silicon power transistor is its ability to better withstand surges etc. in the rectifying circuit. A positive trunk system, with 4 trunk amplifiers is shown in Figure 1.

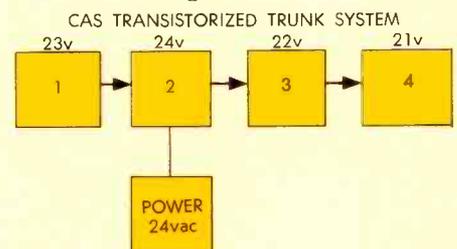


Figure 1.

For purposes of explanation, 24 vac is depicted as the supply input. In actual practice, this voltage would be 28V nominal. 24 vac input would be a minimum input due to general low primary voltage. Let's assume that the voltage is traveling from amplifier number 1 through amplifiers 2, 3, and 4, etc. The 24 vac is fed into the system at amplifier 1 and forward to amplifiers 3 and 4. Let's further assume that each amplifier requires 1 amp, the initial starting voltage 25 vac and one ohm resistance per length of cable between the amplifiers. With this assumption, amplifier 2 will be supplied 24 volts. The combined current of amplifiers number 3 and number 4 is 2 amps and by Ohm's Law  $E = IR$  or  $E \text{ drop} = 2 \text{ amps} \times 1 \text{ ohm}$

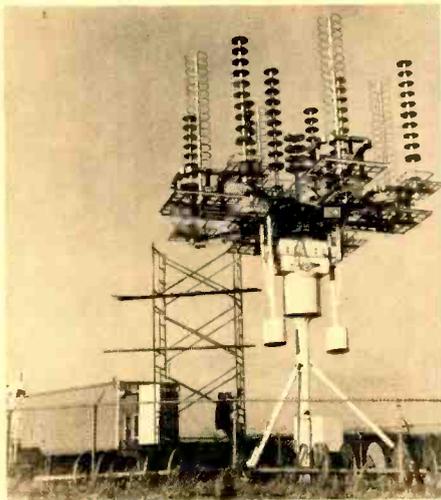


FIGURE 4

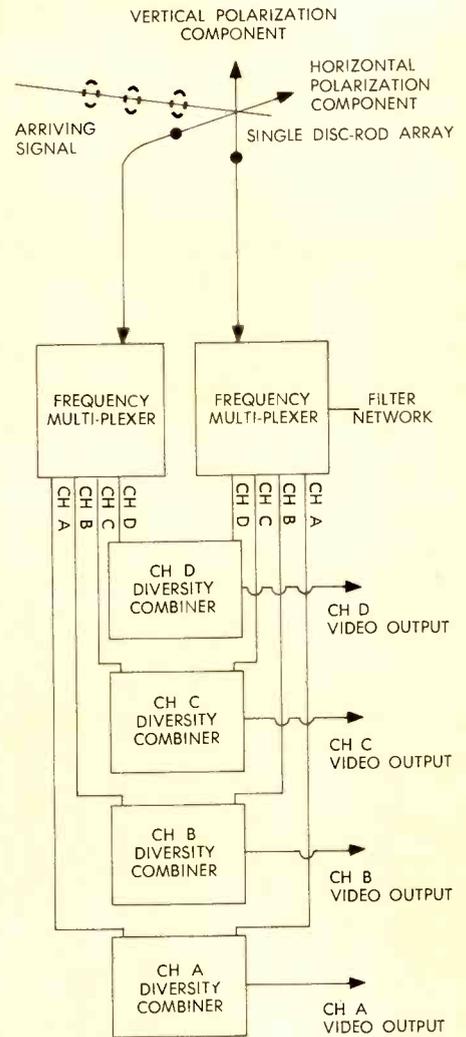
cations systems to combat the same phenomenon. The military accomplishes this by techniques like those shown in the block diagram on figure 5.

In the techniques under 5a, two linear orthogonal polarizations (e.g. vertical and horizontal) are received simultaneously, amplified, detected and then added. In the method shown in 5b a simple open loop servo system allows adjustment of the amplitude by

a variable adding network to combine the two polarization outputs, maintaining maximum signal to a single amplifier.

This UHF antenna is also sufficiently broadband in gain and impedance to efficiently cover the entire band, so that in CATV situations where several UHF transmitters are broadcasting from a single direction it is possible to add only one high gain rugged assembly and still maintain separate polarization control on each channel. Figure 6 shows the techniques by which the antenna signal is multiplexed into separate UHF channels. The antennas' 300 ohm balanced or 75 ohm balanced or 75 ohm unbalanced impedance is relatively flat over the entire UHF band making this development highly practical for CATV applications.

As shown by figure 2, the design may be a rugged, collapsible assembly. This is important for remote installations where the antennas have to be carried to a rigorous environment such as mountainous terrain. In these areas the antennas are usually covered with ice and snow during the winter months. This antenna has no significant losses, even when fully covered



4 CHANNEL VERSION OF POLARIZATION DIVERSITY MULTIPLEX SYSTEM.

FIGURE 6

with ice. This feature is inherent in the design because the antenna structure is broadband, low Q and allows loose tolerances. In general, the simplicity of the disc-rod structure for UHF employs a relatively small cross-sectional area for the high gain of 20-24 db (see figure 3.) This is a lightweight design and therefore presents a minimum physical load in windy areas, allowing the CATV installer to use simple support structures.

The advent of UHF will add terms such as antenna phasing, polarization diversity and concepts of single high gain all band antennas to the parlance of CATV operations. Mr. Bogner's concept of circularly polarized television antennas will have a considerable impact upon the techniques employed by systems adding new UHF stations to their local cable service. In fact, the advantages of the polarization diversity antenna for deep-fringe CATV operations will probably be the decisive factor in obtaining UHF signals consistently enough to justify adding them to the cable

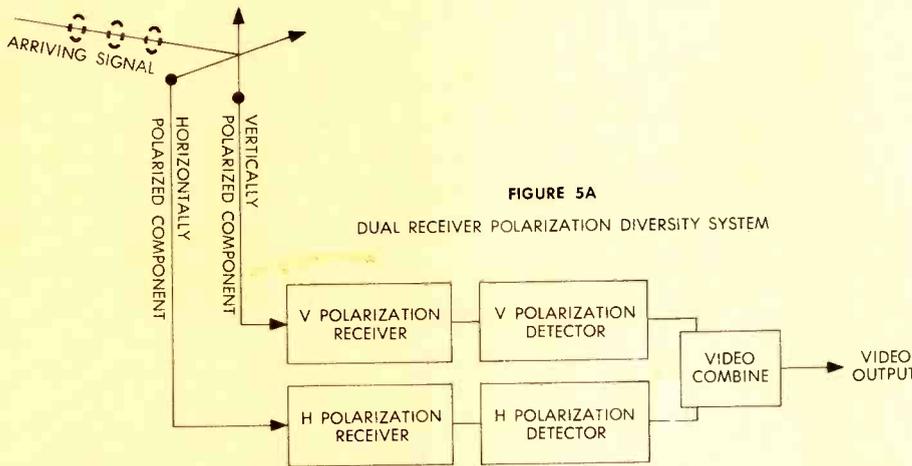


FIGURE 5A

DUAL RECEIVER POLARIZATION DIVERSITY SYSTEM

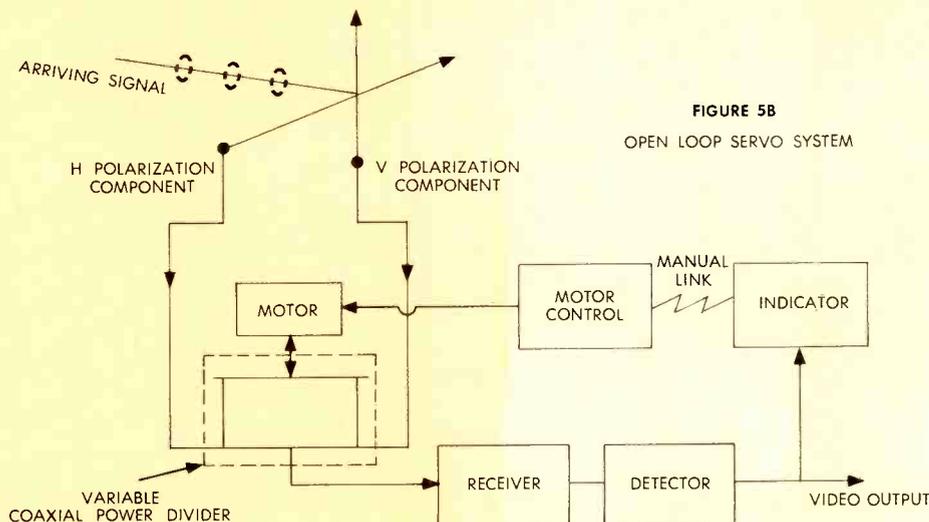


FIGURE 5B

OPEN LOOP SERVO SYSTEM

SEPTEMBER 1965

# CATV TECHNICIAN



- Variable Tap-off Developed for Flexibility
- Phased UHF Antenna System Concept
- Line Powered CATV
- Newest CATV Equipment



Arizona housewife learns value of Cable TV from Donnelley salesman.



NCS's "Top Three", Frank Matan, Jim Stoltzfus and Gene Ross (left to right) map strategy for a new sales project.



Salesman sells CATV with the aid of ice cream cones.

hurt us more than help us. We had no such worry with Donnelley. Their approach was open and without pressure, and it paid off." In 13 selling days, Donnelley delivered a 236% increase in subscribers. Penetration was increased from 20% to 45%. The annual revenue to the operator before the sales campaign was \$12,000. As a result of the campaign, the system will deliver \$27,000 per year. Equity was upped by close to \$75,000. Later Donnelley worked the Saugus and Palm-dale systems for the same operators with success. Recently, these systems were sold as a package and Acker and Miller gave Donnelley credit for the handsome sale price.

The next call led to Boston. Don Spencer of SKL contracted the Donnelley forces for the Lafayette, California, system. System Manager Hy Triller had projected 300-400 sales; Donnelley sold over 900. Triller was the most "unhappy" happy manager in CATV. And his installation crews are still wondering what happened.

Don Spencer says, "They did an A-plus job, expertly handled on all fronts. Not only did they add subscribers but Donnelley enhanced the public relations image of our system tremendously!" Spencer backed up his kind words with more business. Donnelley is now handling the Houma, Louisiana, system for SKL — and is scheduled to work Tonkawa — Blackwell, Oklahoma. The DeRidder, Louisiana, and Savannah, Georgia, systems are next in line.

As the cliché claims, nothing succeeds like success. In short order Donnelley added a success story in Palos Verdes, California (71% penetration increased to 87.3%); a second Tujunga system for DeVoe (10% penetration increased to 32%); and on and on.

National Consumer Services, Donnelley's CATV arm, is headed by General Manager James L. Stoltzfus, a veteran of Donnelley's marketing division. Jim is flanked by Frank Matan

and Gene Ross — both of the STV campaign. Frank heads up the marketing and project analysis staff, while Gene is responsible for all sales activities.

Currently, Donnelley's CATV operation has a regional sales office in Santa Monica and one in Chicago and is shopping for sales headquarters in the southwest and southeast as well as New York or Washington. The trio of Stoltzfus, Matan and Ross keeps the airlines happy by jetting to appointments all over the country to supervise campaigns, to contact system owners and franchise applicants, and to handle contract negotiations for all the NCS services.

How do the Donnelley men perform the marketing services that have paid off for so many CATV operators? Well, for one thing, the NCS group has the Donnelley organization behind it, forty-one offices are staffed with Donnelley specialists. Modern electronic facilities provide them with fingertip market research and data—information in detail on all the significant characteristics of any market—information on the people, their homes, incomes, education, buying habits. But it takes merchandising know-how, too. When sophisticated marketing fails, they get unsophisticated. Once in New York, a Donnelley salesman closed the deal by buying a prospect's twin boys ice cream cones. Another lady said she'd subscribe if they'd paint the cable operator's amplifier an attractive green. It had been bothering her so they painted it. She subscribed.

While analyzing a market in the midwest, a Donnelley expert did his statistical homework and then took to the streets of the cable area. What was the key to sell this low-penetration system? A talk with the mailman gave him his answer. The mailman had a stooped shoulder to prove the community citizens were all "football nuts" —up and down the blocks he delivered every sports magazine published. As a result, the coming sales campaign for

that system will be "football" oriented . . . stressing the fall games and the bowl contests in the ads and mailing pieces. And when it's time for the bows, the Donnelley computer will step aside for the mailman.

At the Denver NCTA convention in July, the Donnelley forces made new friends and their horizons broadened. Canadian interests approached them, as did a man with overseas properties who was interested in Donnelley's western European offices. A convention contact led them to advise the operators seeking one of the few major franchises left in California—and the franchise seekers were successful. For a mid-western company, they did such a thorough job in telling a franchise holder what areas to wire first, the timing and nature of his sales campaign, his pricing, etc., that the man facetiously asked . . . "Tell me, is it or is it not a good year for me to buy my wife a mink coat?"

Donnelley's Vice President, L. W. (Bill) Reich, to whom the NCS operation reports, adds . . . "The peculiar talents of effective marketing and selling that Donnelley has developed over the years fit CATV perfectly. The cream of business has been skimmed from the top now — and selling gets more complicated. It's a rapidly growing industry — and we feel there's a definite place for us in it."

The new Chairman of the NCTA, Ben Conroy, seconds the motion about the changing CATV industry. "Then years ago, it would have been fantastic for a company such as Donnelley to enter our business. Not so now. It's a different business today. And anything that provides us with more profit is good for all of us."

During the next sixty days, the Donnelley calendar lists marketing programs for 32 systems in 24 states. As they travel "door-to-door by jet", the Donnelley men are utilizing their marketing experience and know-how to perform a valuable service for community television operators. □

# DOOR TO DOOR BY JET

By Cally Curtis

In Yuma, Arizona this week a man will be knocking on the door of a prospective cable TV customer. In Canada, a man will be calling on the operators of a large system to present a pre-selling public relations program to rebuild a badly damaged image.

In New York State, a new franchise holder will open his door to hear an evaluation of his franchise. Soon his conference table will be full of charts, graphs and statistics, proving that he bought a lemon or a gold mine.

In Texas, a cable operator with a million dollars in his pocket will begin negotiations on a five-year contract to retain marketing consultants on his proposed new system.

It could be said that it all started in a voting booth. Or if you want to go further back . . . a telephone book. The 79-year-old Reuben H. Donnelley organization was founded by the son



Jim Stoltzfus, NCS General Manager, believes that CATV's future defies imagination.

of a Chicago printer when he contracted to publish a Chicago telephone book in 1886. Today . . . Donnelley is part of a multi-million dollar corporation.

So what about the voting booth???

Well, in 1956, the Donnelley Corporation, in its search for new and profitable ways to serve the consumer, became interested in the potential of wired TV. As a result, it was natural that Donnelley joined a major electronics corporation (such as Lear-Siegler), the Los Angeles Dodgers, the San Francisco Giants, and other pri-

vate investors in the formation of Subscription Television, the California Pay TV enterprise. Donnelley's operational responsibility in the STV picture was in sales and marketing. STV, particularly the sales effort, got off to an auspicious start in the early months of 1964. But the basic concept of wired TV came under immediate and forceful opposition. Theater owners and allied groups were successful in obtaining signatures necessary to have a measure prohibiting subscription television included on the ballot in the November, 1964, election. Thus—we're back to the voting booth. For on November 4, 1964, Proposition 15 on the California ballot sounded the deathknell of STV.

The demise of STV, if only temporary, posed a pressing problem for Donnelley's STV team. They were certain that the vote would eventually be termed unconstitutional in California courts. But legal appeals take time. After weeks of complaining about too much work to do, they had nothing to do. No one was really worried about his pay-check. They had come from Donnelley's other divisions; they'd be absorbed back into Donnelley. But in just 22 weeks, they had sold close to 50% of the homes in the first STV area; they'd learned a lot about subscribers and cable TV. This knowledge was an asset to Donnelley. After exploring numerous alternatives, they decided to sell Donnelley's top management on what seemed a natural transition for the combined talents . . . a transition to CATV. Donnelley management was in a listening mood and agreed to a trial period to test out the idea.

The Donnelley team was interested in more than just the door-to-door sales of subscribers. But realistically, they knew that this was the quickest approach to an operator's pocketbook.

Case History No. 1 for the NCS Division of Donnelley was Dean DeVoe's Tujunga system. Less than a month after the STV vote, they started their sales campaign on the then eight-year old system. At the time they started ringing doorbells—the system had exposure to 3060 homes with 1775 subscribers . . . 58% penetration of the market. Donnelley would charge him less than \$30 for every new subscriber. He figured, quite properly, that each

new subscriber added about \$300-\$350 in equity to his system. What could he lose? Before they started their door-to-door sales campaign Donnelley surveyed the system and the market. What did the subscribers like, or not like, about DeVoe's cable? Who were they? What kind of merchandising techniques would best reach the Tujunga population? For the latter, they called into action Donnelley's modern, push-button electronic data processing centers that provide the Donnelley Quality Index — comprehensive compilation of consumer marketing data. In no time, they had Tujunga's profile. Now to sell them.

Dean DeVoe wasn't aware at the time that he was the new division's guinea pig, but he knows it now and says, "If that's what being a guinea pig is, I'm proud of it! In less than four weeks, Donnelley added 158 new

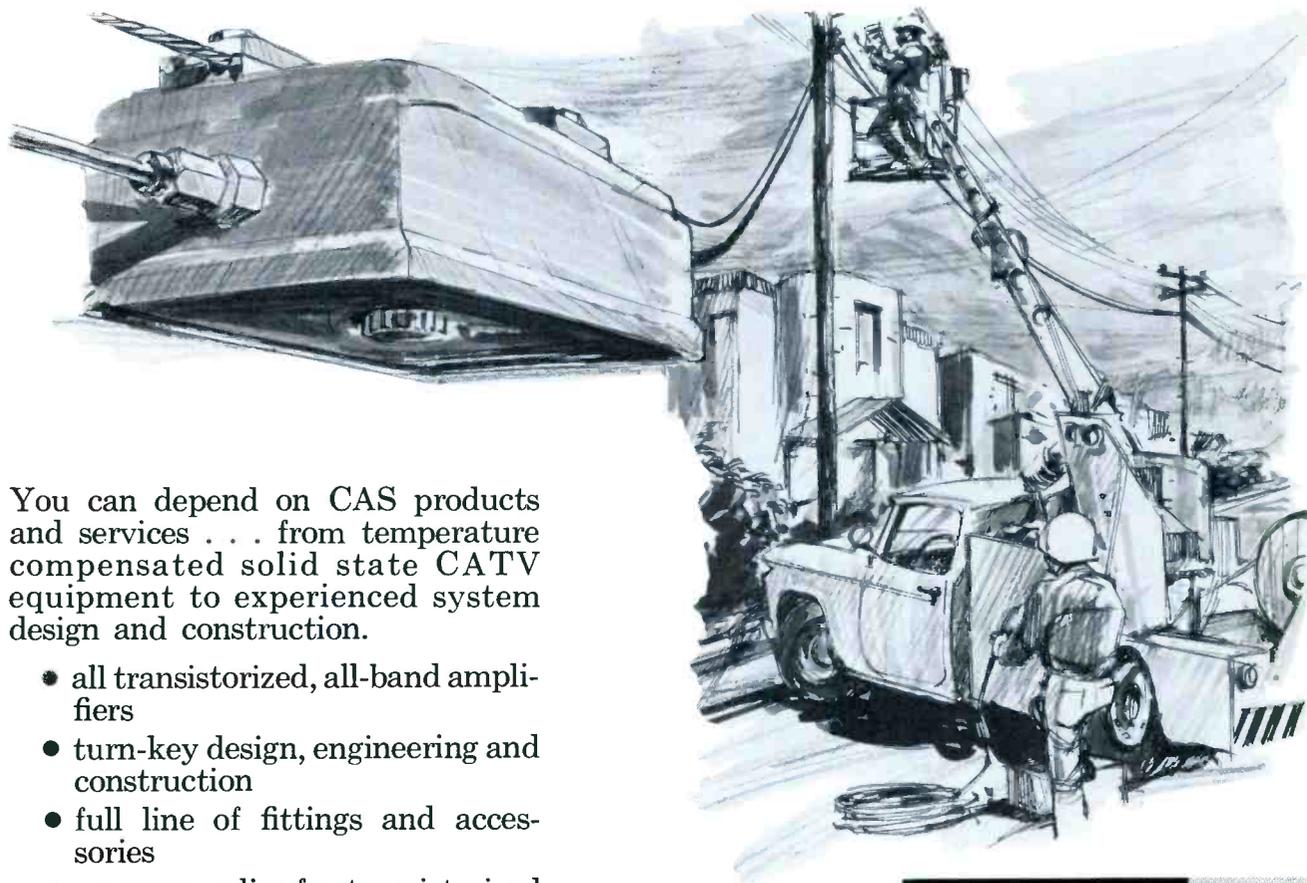


Mailman provides Gene Ross with information Donnelley's computers "overlooked."

subscribers to our 8 year old system. Which means, we picked up 20% of our remaining prospects. From here on out, Donnelley bids on all my systems."

Thanks to DeVoe and all the pipelines known and unknown, the word spread fast that Donnelley had entered the CATV industry. Almost immediately, George Acker and Ray Miller put them to work on the Fallon-Yerington system in Nevada. "We'd needed a selling job for a long time," says Acker, "but we'd been afraid that a suede shoe type of selling would

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ROME CABLE DIVISION OF ALCOA

SIZE 3/4 75 ohm  
 TYPE UNF No Jacket  
 DATE 12/3/64

R. F. Cable Inspection Report

F.O. No. 23959  
 C.O. No. \_\_\_\_\_  
 CUSTOMER \_\_\_\_\_

TRACE NUMBER	LENGTH	CONTINUITY		VISUAL & DIMENSIONAL	CORONA	INSULATION LEVEL	RESISTANCE	CAPACITANCE		ATTENUATION				V <sub>p</sub>	Z <sub>0</sub>	Sweep
		meas	pl					meas	pl	MCS	100 MCS	65	220 MCS			
225 B 9	1195	OK	OK	OK	---	OK	20300	17.0		6.7	612	10.6	888	79.8	74.8	OK
224 C 11	1205	"	"	"	---	"	20000	16.6		6.6	547	10.4	863	80.7	75.9	OK
225 C 7	1197	"	"	"	---	"	19900	16.6		6.7	558	10.3	86	80.7	75.8	OK
225 B 12	1197	"	"	"	---	"	20000	16.7		6.4	535	10.4	87	80.4	75.7	OK
225 B 2	1207	"	"	"	---	"	20100	16.65		6.7	555	10.4	862	81.3	75.3	OK
225 B 10	1185	"	"	"	---	"	19800	16.8		6.5	548	10.3	87	81.0	74.7	OK
225 B 8	1215	"	"	"	---	"	20300	16.7		6.7	552	10.5	864	80.6	75.7	OK
224 C 8	1225	"	"	"	---	"	20000	16.3		6.6	538	10.4	85	82.3	75.7	OK
225 B 4	1210	"	"	"	---	"	20300	16.7		6.7	553	10.5	868	80.4	75.7	OK
224 A 3	1190	"	"	"	---	"	20000	16.8		6.6	55	10.4	875	80.2	75.5	OK
225 C 2	1208	"	"	"	---	"	20100	16.65		6.6	548	10.4	863	81.2	75.2	OK
225 A 24	1198	"	"	"	---	"	19900	16.6		6.5	542	10.3	862	80.8	75.8	OK
223 A 5	1195	"	"	"	---	"	19600	16.4		6.6	552	10.2	854	81.5	76.0	OK
224 E 10	1185	"	"	"	---	"	19600	16.5		6.5	548	10.3	868	81.2	75.8	OK
225 B 6	1207	"	"	"	---	"	20200	16.7		6.6	547	10.4	862	80.6	75.5	OK
224 C 10	1218	"	"	"	---	"	19900	16.3		6.7	55	10.3	846	81.8	76.2	OK
225 B 5	1210	"	"	"	---	"	20300	16.7		6.7	553	10.4	862	80.5	75.6	OK
225 B 7	1210	"	"	"	---	"	20300	16.7		6.8	562	10.5	868	80.3	75.8	OK
225 A 8	1215	"	"	"	---	"	20300	16.7		6.7	552	10.5	868	80.6	75.5	OK
224 C 7	1215	"	"	"	---	"	20200	16.6		6.6	543	10.6	872	81.5	75.2	OK

Remarks *Perl Frank Duffy Maycock A*

Inspector *TM*

**Eyebrows are raised whenever engineers see the outstanding performance data on Rome Unifoam\* cable. In view of Rome's rigid manufacturing specifications, it's no wonder.**

Take this test sheet from a recent production run of 3/4-inch cable, for example. It's like hundreds of others to come out of our Inspection Department, where every reel of Rome Unifoam is examined.

**Record of each length** The first column on this sheet gives the "Trace Number," which appears on the shipping tag and thus gives each length of cable an individual identity, both to our customer and to us. It gives us complete traceability of the length back through every manufacturing operation right from the beginning. From this trace number we can identify and locate the complete manufacturing history of the length, including drawing and inspection of the copper conductor, extrusion of the foamed polyethylene insulation, complete strip-chart records of extrusion conditions, application of the seamless aluminum sheath, and all of the test and inspection data on the finished cable. We are so sure this length is up

to standard or better that we print our name on the surface once every foot.

There are a couple of columns for recording the continuity test on the conductors. This isn't much (and a broken conductor is admittedly a remote possibility) but, after all, the validity of the electrical measurements is based on the assumption that the conductor is continuous. So why not be sure?

**Checked inside and out** The column marked "Visual and Dimensional" means just what it says. And an "OK" here means that the copper is smooth, bright, and clean; that the two are essentially concentric with each other; that the cell size of the foamed polyethylene is within tolerance; that all dimensions are correct. We tell you this is all true on every reel of Rome Unifoam CATV cable and we mean it. If the Inspection Report doesn't say "OK" here, the length won't be shipped to you. The same goes for the dielectric strength test and the insulation resistance test. Just because we never see a failure doesn't mean we should stop spending time on the test.

Capacitance, attenuation at 100 and 220 mc, velocity of propagation, and characteristic impedance are carefully

checked and recorded. You are interested in having these values within tolerance, so we have to be. Every length is given a sweep test, and is only given an "OK" if the return loss between 20 and 220 mc is at least 25 db down.

**Put it to the test** Really, you don't need to test our cable before you put it up, because if it isn't right we won't ship it. But if you've got the time and are curious, we'd love to have you run your own tests. We promise you will be real happy with the results. While you are looking at this test sheet, don't overlook the uniformity and low level of attenuation values. Would Rome Unifoam CATV cable let you eliminate two or three repeaters in your system design? It's something to think about.

**Get the word** For a copy of our folder on Rome Unifoam CATV Cable, call your nearest Rome/Alcoa representative or write Rome Cable Division of Alcoa, Dept. 4095, Rome, N.Y. 13440.

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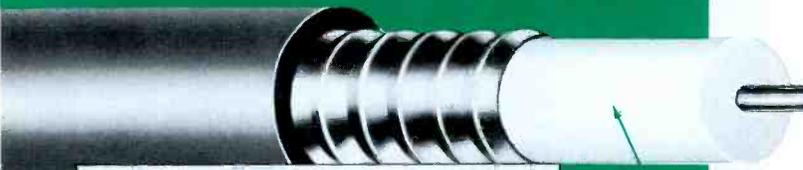
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**SUPERIOR**  
**Cell-O-Air<sup>®</sup>**  
**COAXIAL CABLE**

*Every Reel Sweep-tested over its full length.*

Guaranteed Maximum Attenuation db/100' at 68° F					
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4920	0.75	0.93	1.08	1.41	1.57
4930	0.58	0.68	0.80	1.07	1.20

"Cell-O-Air"  
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	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

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 (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.  
 This five-year guarantee pertains to Superior "Cell-O-Air" expanded polyethylene coaxial cable only when utilized in aerial installation; and pertains to Superior "Solid-D" solid polyethylene coaxial cable when utilized in aerial or direct burial installations; and is applicable only when proper installation procedures and techniques are followed.

### NEW VIKING NATIONAL CATV SALES MANAGER

*Charles (Bill) Dietderich* has joined Viking, to head that firm's solid state amplifier sales, and to direct entry by Viking into turnkey operations.

In announcing the addition to Viking's staff, company president *Arthur Baum* said that Dietderich's job would be putting his CATV equipment cable amplifiers and connectors into turnkey systems with long term financing available, and assisting in the national promotion of the solid state conception. The job will carry the title of National Sales Manager for CATV Operations.

Before joining Viking, Dietderich has been with Ameco, in the contract and turnkey department. Prior to that assignment, he worked in Ameco's Salesmobile division calling on individual system operators in the Northwest section of the country.

### DYNAIR MARKETING DIVISION APPOINTMENTS

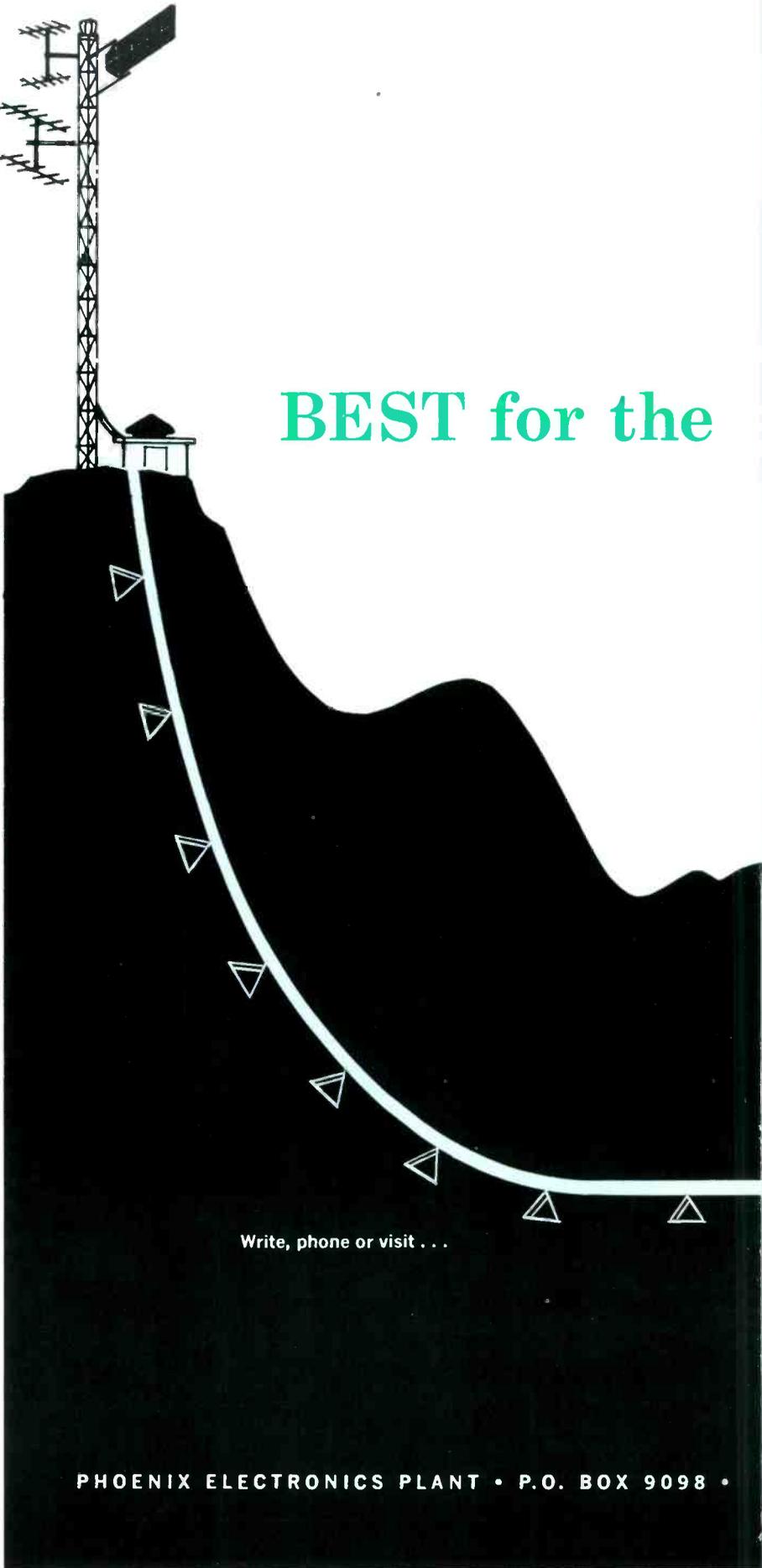
Expansion and re-alignment of the Marketing Division of DYNAIR Electronics, Inc. has been announced by *E. G. Gramman*, President. Continuing as Marketing Manager of the enlarged group will be *Dwain A. Keller*. Assisting Mr. Keller as Supervisor of Sales Engineering will be *Robert A. Jacobs*, who will be responsible for internal sales and contract administration as well as customer contacts on new orders. Also newly appointed is *George Geppelt*, Sales Coordinator and Applications Engineer. Appointments have been made from within the DYNAIR organization and include personnel thoroughly familiar with the design and application of DYNAIR products and systems.

### NEW BLONDER-TONGUE CCTV SALESMEN

*Ernest Sisson* and *Charles L. Hermann* have been appointed as closed-circuit TV sales engineers for Blonder-Tongue Laboratories, Inc. according to an announcement by *Harry A. Gilbert*, vice president and general manager of the firm. Sisson comes to B-T from his own firm, Sisson Electronics, while Hermann was formerly engaged in sales for Lectour-Ingrafco.

### DONNELLEY FORMALLY ANNOUNCES CATV DIVISION

In a formal film presentation to NCTA membership, in Denver last month, the Reuben H. Donnelley Corporation announced the formation of a new division to serve the CATV industry. Known as National Consum-



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Mainline All Band  
Amplifiers

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er Services, with headquarters at 1454 Cloverfield Blvd., Santa Monica, California, this division of Donnelley was organized to provide CATV system owners and operators with comprehensive and integrated marketing and sales services. *James L. Stoltzfus*, Division Manager, stated to the convention, "The CATV industry is matur-



*Mr. Stoltzfus*

ing very rapidly, and as it expands into multi-station markets, a high degree of sophistication will be required to accelerate returns on investment. We are in a position to serve these system owners through market research, system evaluation, financial analysis and the preparation and implementation of complete marketing and sales programs," he concluded.

#### **BLONDER-TONGUE LABS OPENS FIFTH NEWARK PLANT**

Blonder-Tongue Laboratories has begun production operations in a new 30,000 square-foot plant in Newark, N.J. according to an announcement by *Isaac S. Blonder*, Chairman of the Board. The new facility is being used for manufacture of the firm's all channel line, including converters, boosters, antennas and related accessories. This expansion is the second within the last twelve months for the firm, which opened a 20,000 square-foot facility in the last half of 1964.

#### **RAYMOND R. WILLIAMS JOINS JERROLD ENGINEERING STAFF**

*Raymond R. Williams* has joined the Engineering Staff of the Jerrold Electronics Engineering Laboratory. Serving as an administration aide to the laboratory's Assistant Chief Engineer his prime responsibility is the engineering management of laboratory operations. Mr. Williams was previously with Jerrold Electronics as a Development Engineer from 1952 to 1958. In

1958, he joined the National Aviation Facilities Experimental Center of the Federal Aviation Agency, in Atlantic City, N. J. During the following seven years, he held various supervisory management positions involved in providing Range Instrumentation tracking facilities for the aviation test center and in directing experimental projects for the National Aviation Weather and Air Traffic Control Systems. Williams attended Drexel Institute of Technology, Philadelphia, earning his Bachelor of Science Degree in Electrical Engineering in 1948. From 1948 to 1949, he was an Assistant Project Engineer for anti-submarine warfare projects at the Naval Air Development Center in Johnsville, Pa. During the next year, he was a Resident Engineer for the Civil Aeronautics Administration at the General Electric Company plant in Syracuse, N. Y.

#### AT&T TO BUY CABLE FOR CATV INSTALLATIONS

American Telephone and Telegraph Company has announced that it will accept bids from CATV cable manufacturers for in excess of 30 million feet of coax. The cable is for use in building lease-back plants proposed by AT&T's Bell Company affiliates, according to the announcement. Delivery of the cable would be made over a twenty-four month period, it was indicated.

#### FRANCHISE CONSULTATION SERVICE ANNOUNCED

R. B. Cooper, Modesto, Calif., has announced formation of a new company offering a CATV franchise procurement service to new and existing

cable firms. R. B. Cooper & Associates will handle all phases of franchise procurement for clients, including preparation of city ordinance, presentations to city council, negotiations for pole use, cash flow and requirement projections, system layout and design.

Cooper also offers a "franchise situation" package to potential cable operators, including towns which he has surveyed. Clients would contract for company services for completion of the franchise package, which would then be turned over to the client. Cooper will also arrange bank financing for new cable operations in the state of California, he reported.

#### CRAFTSMAN TO SERVE SOUTH WITH NEW WAREHOUSE

Daniel Mezzalingua, President of Craftsman Electronic Products, Inc., announces the opening of a new warehouse, in Greenville, Mississippi.

Hollis Rogers and E. N. Abdo, will be servicing the South and Southwest out of this warehouse, which will stock over \$10,000 worth of connectors for all cables, inline directional matched taps, splitters, and line extender amplifiers.

#### TELEMATION EXPANDS UTAH FACILITY

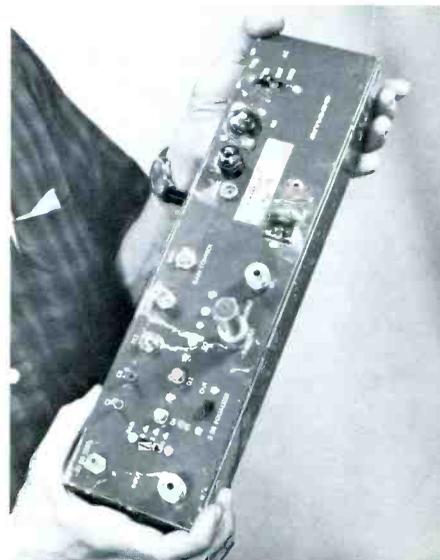
TeleMation, Inc. announces the addition of 3,000 square feet to its facility in Salt Lake City, Utah. This addition will be entirely devoted to increased production space and a newly installed model shop.

The CATV manufacturing firm has also added four new employees in the

Production and Engineering Departments. The TeleMation facility now contains 12,000 square feet under one roof, according to Company President, Lyle O. Keys.

#### AMPLIFIER WORKS UNDER WATER

Recently a CATV amplifier was completely submerged in flood waters in Oregon. The ATM-60 amplifier was installed in the community antenna system owned by Rowan's Television Corporation in Madras, Oregon. "The first day of the flood," Paul Rowan, President of the company says, "the water came over the amplifier but it was still in service. However, after that it was too much for it."



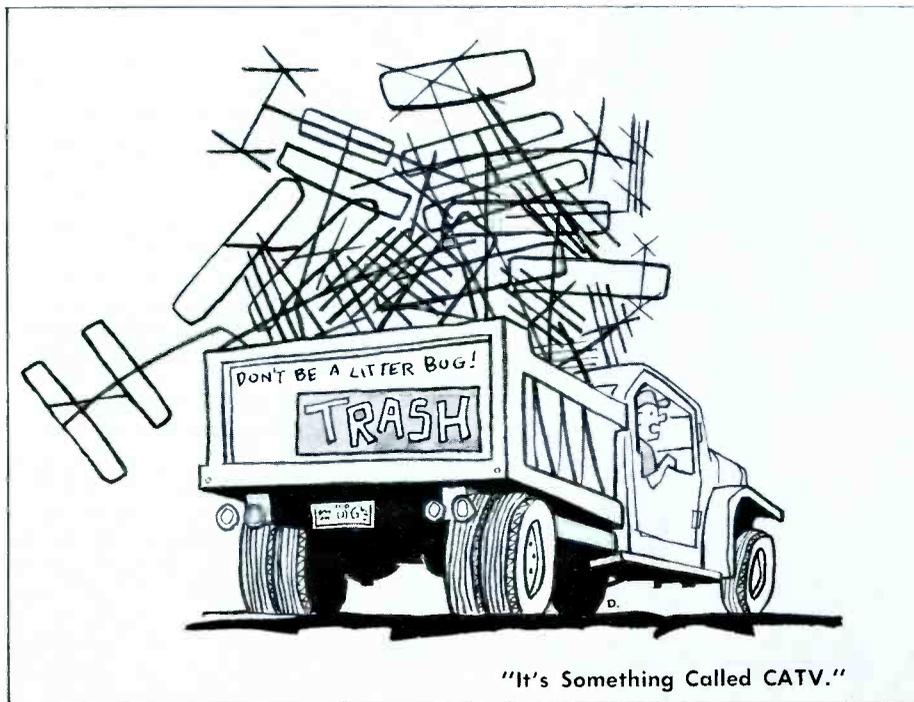
The amplifier was returned to Ameco Inc., the manufacturer in Phoenix for a complete check-out. In spite of the fact that it had been covered with silt and slime, the repair department reported that all it needed was a new rectifier diode to make it work like new.

Rowan says they were able to give their customers service immediately with a new ATM-60 with the fittings under water, using jumpers to bring the amplifier higher. The photo shows the amplifier before it was cleaned up.

#### INGRIM RESIGNS FROM COX

Ward D. Ingram, Vice President of Cox Cablevision Corp. has resigned from the Cox organization in order to pursue and expand his personal CATV and other broadcast interests. He plans to open an office in San Francisco.

Ingram was co-founder (with William D. Pabst) of KTVU, the Channel 2 independent station in the San Francisco Bay Area, in 1958. He served as



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

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

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

Plastoid introduced cable made from precision-rolled strip-aluminum. This is curved up and around the polyethylene foam core, then seam-welded by beams of ultra-high frequency radiation. The process is so fast that the plastic core never heats, yet the welded seam is stronger than

the parent metal as proved by ASTM cone tests. Uniformity and concentricity are assured, yet the basic metal structure remains strong and flexible. Because our manufacturing process lets us test every step of the way, you are assured of the ultimate in strength and reliability.

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

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President of the organization from its inception until the station was purchased by the Cox interests. He later shifted his position from KTVU to Cox Cablevision.

Prior to founding KTVU, Ingram was Executive Vice President and General Manager of the Don Lee Broadcasting System. Before that he was with John Blair & Co. in New York and Chicago. He has been in broadcasting since 1931.

#### CCTV CAMERA SALES MADE

TeleMation, Inc., Salt Lake City manufacturer of television apparatus for the Community Antenna Television and Educational Television markets has ordered approximately \$325,000 in



Lyle O. Keys signs order for 200 TV cameras. Leo M. Storey, Jr., and R. Donald Peterson of G-E look on.

television cameras from General Electric. This order, calling for delivery of 200 TV cameras, is thought to be one of the largest industry sales of CCTV cameras to date. Lyle O. Keys, President and General Manager of TeleMation, stated that this G-E TV camera has played a large part in helping TeleMation achieve its present position in the sale of "Weather Channel" time/weather devices to the CATV industry.

#### MICROWAVE ASSOCIATES REPORTS SALES INCREASE

President, Dana W. Atchley, Jr. has reported a sharp upswing in broadcast TV relay equipment orders placed with Microwave Associates, Inc., in the company's third quarterly financial report issued on 30 July 1965. The all-solid-state broadcast microwave relay equipment introduced last year by Microwave's Burlington, Mass. facility has achieved widespread acceptance according to Mr. Atchley.

#### TRANSISTOR MOUNT PATENTED

CAS Manufacturing Co. has recently applied for patent rights to a heat dissipating mount for silicon (RF) transistors. "Inherent heat from the transistor is efficiently transferred to the chassis without increasing collector to chassis capacitance," according to the manufacturer.



Mr. McMahon

#### McMAHON PROMOTED BY VIKING

Viking, Hoboken, N.J. announces that Kerwin McMahon has been appointed National Advertising & Public Relations Manager.

McMahon will perform the functions of his new position in conjunction with his previous duties as Technical Sales Representative. In his new capacity, McMahon will concentrate upon making better known to the CATV Industry the extensive line of coaxial cables and electronic equipment being manufactured by Viking. □

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# LETTERS

## CATV Info

Gentlemen:

I am a member of a group of business men who have formed a company for the purpose of going into the CATV business. At present we have applications in 45 Communities requesting franchises, none of which have been turned down after being on file. However, we have not yet been granted any franchises although we are expecting favorable action within the next few months.

My purpose in writing you is to request any and all information including pictures that might assist our group in preparing Brochures, Literature and general promotion material to the general public.

Lester H. Allen  
Allen & Hurley  
Trenton, N. J.

*We refer you to National Community Television Association's volume "The Facts About CATV". It is available from NCTA, 535 Transportation Building, Washington 6, D. C.*

## More Convention

Dear Stan:

I would like to take this opportunity to thank you for sponsoring the page service for the NCTA Convention. This service was a definite asset to the success of the convention. All of the boys were very efficient with their duties. We have received nothing but praise concerning their work.

I extend to you my sincerest appreciation for helping to make this convention the best ever.

Bill Daniels  
Daniels & Associates  
Denver, Colorado

## Likes "Technician" Article

Dear Mr. Searle:

I want to commend you on R. L. Cowart's article "Today's Technician", which appeared in the August '65 edition of TV & Communications.

I too, feel the need in our industry for truly conscientious technical people, who keep open minds and are eager to keep abreast of new developments.

I shall be looking forward to forthcoming issues of your excellent magazine.

J. S. Wolanski  
Chief Technician  
Community Video (Nelson) Ltd.  
Nelson, B. C. Canada

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# OPENING A CABLE TV SYSTEM

By Charles Wigutow  
Ameco, Inc.

Building a cable system is a gigantic undertaking, even under normal circumstances. What happens, however, when circumstances are not normal? For example, you are given a two-month deadline to serve two of the major areas of a city or lose your permit.

This was the challenge in building Newhouse Broadcasting Company's first CATV System in Rome, New York. And, Jack Tyler, Superintendent of Construction, Ameco, Inc., Phoenix, Arizona, answered the challenge as did contractors Burnup and Sims of West Palm Beach, Florida.

With the urgency of time, and the need to come up with a performing system, Ameco's engineering vice president, Milford Richey kept on top of every phase of the job. His ambassador, N. W. "Red" Chaote, headend specialist, was on the scene in Rome to make sure of the quality of the signals picked up by the antennas, and processed through the front end. Tom Mattingly, Ameco's man in charge of the R.F. installations saw to it that the system's electronic specs were observed while mounting of electronic equipment was taking place. Tom Pledger headed the operation for Burnup and Sims.

Full steam ahead, and suddenly the day arrived. Eighty miles of system, tower and all were completed in less than two months and a half.

Joel Fleming, Newhouse's director of Community Antenna Systems planned and handled the opening ceremonies with the aplomb of a seasoned trouper. He had a preview of the excitement that was due to break out because of the community's ever increasing surge of interest in the coming of cable television. Even before the first customer could watch the first program carried on the cable, 1200 subscribers had signed up with a cash payment of one month in advance.

The theme of his advertising was — Excitement '65 — The plain statement, "Get Ten Different TV Channels Delivered Crystal Clear in Your Home," in itself was a stirring message. To provide a sense of urgency, a free installation offer was limited to the first 1,000 customers. In about a month the quota was filled. And this became the occasion for a full page

splash: "Thank You Rome, For Your Tremendous Response — To Show Our Appreciation We Are Extending Through June 6, Our Special Offer of Free Installation."

The momentum had been established. Fleming knew that he had an

interested audience. Now to capitalize by piling excitement on excitement so that the City of Rome would know that it was going through a spectacular television holiday.

The performance wasn't limited to a single stage setting. The entire city



Cabletron displays 10 channel TV in building front.



Rome Armory was filled to capacity during open house.



Phil Cologne, System Builder's representative satisfies technical curiosity of Rome people who want to know "how it works."



## It will take you 117 seconds to read this booklet. It took us 8 years to write it.

We started writing this booklet when we started operating our first cable system . . . back in 1957.

Even then, we knew a sound CATV system depended on more than just the equipment.

So, instead of basing our outlook on just nuts, bolts and wires, we took the broader approach. We delved into franchise procurement . . . feasibility research . . . engineering . . . construction . . . financing . . .

sales promotion . . . as well as personnel training and management. These are areas in which TeleSystems serves CATV operators. And you'll find all of our services outlined in this brief little booklet, called "Scope."

Today, when someone wants the broad picture on CATV, he comes to TeleSystems. Or, he fills out this coupon, and we come to him.



## TeleSystems Corporation

113 South Easton Road, Glenside, Pa.  
215 TU 4-6635

TeleSystems Corporation 113 South Easton Road Glenside, Pa.	
Gentlemen:	
Please send your free copy of "Scope."	
Name	_____
Title	_____
Firm Name	_____
Address	_____
City	State _____



"Everyone's for 10 Channel TV in Rome!"

was the stage with the spotlight on two places; first the VIP banquet to be held at the Beeches Restaurant, a country-like eating place on the outskirts of Rome. The second phase of the operation was to throw open the system to the entire town in the Armory which is the biggest indoor gathering place in Rome.

The dinner, held a few days before the official opening gave time for the formal and informal channels of public communications to go to work. The dinner itself was the reason for a newspaper splash with pictures and story of the viewing of the ten channels. The mayor in his speech welcomed the coming of Cable TV as an asset to Rome.

A check list that would do credit to the blast off of a satellite was devised by Fleming. Count down began the day before the dinner, and continued until the last guest had left at about midnight. The thoroughness of preparation contributed to an event that could never be repeated in quite the same way. The importance of every detail being letter-perfect can not be over emphasized.

Now for the grand opening. The armory with its huge arena of open space was a natural to handle the displays and anticipated flow of crowds. Preparations were made to handle thousands of people. But the numbers who came excelled everybody's most optimistic expectations. Before the doors closed Sunday evening, 8,000 individuals had gone through the armory's doors. Hundreds of families had added their names to the lists of subscribers. Success couldn't have been spelled out with any brighter letters.

But it wasn't by accident. Performance and planning contributed to the townwide stirring of excitement, anticipation and fulfillment of curiosity. Announcement of the "Giant Cabletron TV Carnival" was spelled out in a full page newspaper advertisement in color.

The crest of excitement was reached with widely publicized treats for everyone: "Free Admission," "Free Games," "Free Refreshments," "TV Stars," "Free 21" Color TV Prize, "Hundreds of Other Prizes."

Seven full length (22 inches by 9 columns) newspaper pages in Friday's paper heralded the day of the grand opening. News items and quotes about and from Newhouse officialdom were generously and interestingly used by the Rome Daily Sentinel. The distinguished communications career of E. R. Vadeboncoeur, Chairman and President of the Newhouse Broadcasting Company was covered. Albert J. Eichler, Vice President of Cabletron and chief Engineer of WSYR, Syracuse; William J. Calsam, Vice President of the Newhouse cable TV subsidiary; Joel Fleming, Cable TV operations Director; Richard Kelso, Manager of the Rome system, and Lyle Kneeskern, Chief Technician were written up in the issue. Cable Television also was explained.

Congratulatory and tie-in ads, offering free home trial and other special offers were liberally sprinkled through the pages. An interesting ad was placed by the local motion picture

house, "Best wishes to the best in TV entertainment — Cabletron — from the best in movie entertainment."

Anybody reading this supplement knew that the big day was here—TV performers, free prizes, refreshments. Who wouldn't take advantage of the opportunity to treat the family?

And so they came. They came early and late. They came to watch themselves on the closed circuit camera. Kids and grownups alike enjoyed themselves. It was carnival time in Rome, and the occasion for all this celebration was the establishment of cable television.

Dealers were grateful because it was an official television day. People came to watch TV work at its best and display space was free to each of the dealers. Good will was built between these natural allies of cable.

It was a successful few days. If you want some idea of the work that lay behind the successful operation, just run through the check list as observed by key Cabletron people, beginning days before the event, right to the end. For anyone facing an opening, here is a valuable manual on how to run such an overwhelmingly complex undertaking.

## VIP BANQUET CHECK LIST

### Tuesday, June 1, 1965

(The Day Before)

#### A. VIP BANQUET TEAM — BEECHES RESTAURANT

1. Dealers deliver TV sets — 9
2. Check Signal
3. Hook up TV Sets
4. Decorate Ballrooms
  - a. Banner
  - b. Tower
  - c. Podium
  - d. Back Drop
  - e. Table for TV Sets

5. Channel Identification cards for TV sets 30x40
6. Head Table Seating
7. Spare Taps, Splitters, Cable, Emergency tool kit.
8. Tacks, Nails, Masking Tape, Scotch Tape, Glue, Paper Clips, Pins, Eraser, Ball Point Pens (6), Legal Pads, Ink, Fountain Pen.
9. Toggle Bolts
10. Wire (stove wire)
11. Check PA system
12. Script for M.C.
13. Complete Master Guest List.

### Wednesday, June 2, 1965—2:00 p.m.

(The Day)

- A. Check Signal on EACH TV set
- B. Complete Decorations
- C. Place Dealer Identification cards (4x12) Atop TV sets
- D. TV Cable Channel Identification Cards (30x40) Placed over TV screens

- E. 2 P.M. Meet with TV Channel Girls at Restaurant
- F. Check PA system
- G. Rehearse Tower Entrance
- H. Flowers for Head Table
- I. Corsages and Corsage Pins
  1. Mayor's Wife
  2. Company Officials Wives
  3. Staff
- J. "Reserved" signs for Officials' Wives Table
- K. Banners for Channel Girls
- L. Newspaper Supplement (300 Copies)
- M. Check Master Guest List (5 Copies)
- N. Check Accessibility of Pens, Pins, Pencils, etc.
- O. Stapler & Staples (Gun and Desk Model)
- P. Recheck Cocktail Arrangements
- Q. Recheck Menu Preparations
- R. Tape Recorder with Appropriate Music
- S. Name Tags for Officials

### Wednesday, June 2, 1965—5:30 p.m.

1. Verify Personnel
2. Recheck TV signal
3. Cloak Room attendants
4. Reception Committee
  - a. Guest List — 2 Copies
  - b. Corsages — List of Recipient
  - c. Channel Girls — Final Instructions
  - d. Recheck Banquet Room
  - e. Recheck Cocktail Room

### Special Reception Committee

(Arrival of Guests)

- A. Two Channel Girls and One staff Member will receive guests upon arrival
  1. Direct them to cloak room
  2. Give Corsages to those receiving same
  3. Direct Guests to receiving line and Introduce guests
- B. Two Channel Girls will circulate among guests, checking on Hors D'Oeuvres and Cocktails advising manager
- C. At 7:15 **SHARP** Guests will be directed to tables in Banquet Room
- D. Company and officials wives will be directed to their table

### Program

1. 6:30 Cocktails
2. 7:15 Guests enter Banquet Rm
3. 7:30 P.M. Invocation
4. Dinner
5. 8:45 P.M. Master of Ceremonies welcome introduction of Guests at Speakers table not scheduled to address audience
6. 8:55—Mr. Richard Kelso — System Manager
7. 9:00—Mayor William Valentine, Rome, N.Y.
8. 9:05—Mr. Joel Fleming — Gen. Mgr. Cabletron, Inc.
9. 9:10—Mr. William Rothrum — Pres. Cabletron, Inc.
10. 9:20—Mr. Bruce Merrill — Ameco, Inc.
11. 9:25—Mr. E. R. Vadeboncouer, Pres. Newhouse Broadcasting Corp.
12. 9:35—Unveiling of System by M.C.
  - a. Entrance of Channel Girls with Tower
  - b. Channel Girls remove 30x40 Channel Cards covering TV Screens as called
13. Benediction

As Joel Fleming handled the presentation, it was a dramatic triumph, with fanfare on trumpets and the channel girls drawing back the curtain as the sets were turned on one by one.

Preparation began as early as five days in advance of the dinner. Note the dates and the instructions to the technicians to make sure good pictures were delivered on schedule.

### INSTRUCTIONS:

#### TECHNICIANS

**Friday, May 28, 1965** — Complete Signal to Beeches Restaurant

**Tuesday, June 1, 1965**

1. Cable Installed—Beeches Restaurant — 9 connections
2. Install Cable to TV sets and Check Signal
3. Deliver spare equipment — Taps,

splitters, Cable, emergency Tool Kit, Toggle bolts, Stove wire

**Wednesday, June 2, 1965, 2:00 p.m.**

- a. Check Signal on EACH TV set
- b. Stapler & Staples (Guns, Desk Model) Technician arrives for Banquet

**Wednesday, June 2, 1965, 5:30 p.m.**

1. Recheck TV Signal

#### MAINTENANCE CREW — STAFF

**Tuesday, June 1, 1965 —**

Beeches Restaurant 10:00 a.m.

1. Power for TV Sets
2. Tacks, Nails, Masking Tape, Scotch Tape, Glue, Paper Clips, Pins, Eraser, Ball Point Pens, Legal Pads

**Wednesday, June 2, 1965 —**

Beeches Restaurant 2:00 p.m.

1. Recheck Decorations — Power — Signs, etc.

**Florist — Dick Lee, 337-2330**

**Wednesday, June 2, 2:00 p.m.**

1. Head Table — Center-piece
2. Corsages for Officials' wives (see list)
3. Banners for Hostesses (Channel Girls)

**Friday, June 4, 4:00 p.m.**

- 3 Baskets of Flowers — New York State Armory.
- Corsages for Female Personnel  
Dismantling procedures were anti-

ipated so that there would be no need of bungling, and all possibilities of frayed tempers avoided.

**Thursday, June 3, 1965, VIP Banquet**

1. All Dealers will have TV Consoles Removed, Prior to 12:00 Noon
2. Transfer signs and tower to Armory.
3. Disconnect Cable from Restaurant and Remove Primary from Property.

### GRAND OPENING CHECK LIST

#### New York State Armory

**Tuesday, June 1, 1965**

1. Signal to Armory — Recheck

**Wednesday, June 2, 1965**

1. Install TV Booth connections 25 Booths — 8 connections each
2. Start Hall decorations — Designer Contract
3. Check power wiring

**Thursday, June 3, 1965**

- A. Complete Hall decorations and Booth exhibits
- B. Set up TV camera and monitors
- C. Install P.A. system — WSYR
- D. Set up refreshments
- E. Technical crew — 9:00 A.M. — Maintenance crew
  1. Check out Dealer TV sets

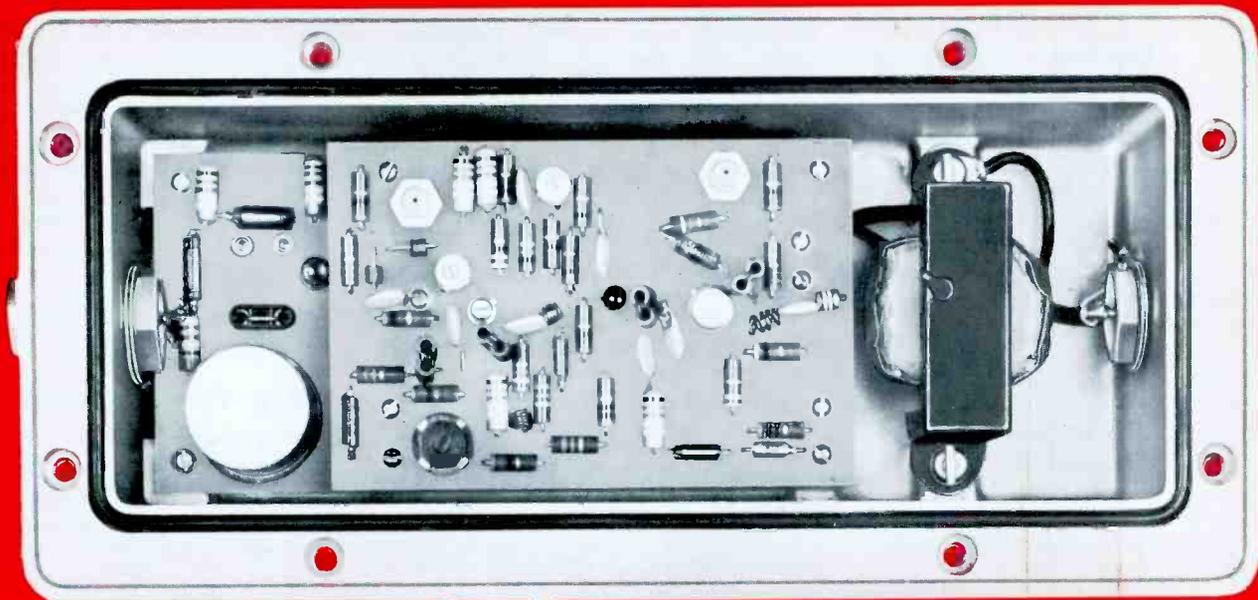


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The SKL Model 265 Trunk Amplifier is an all new high output, wide-band transistorized trunk amplifier with full 12-channel response. Its built-in, exclusive SKL TEMPERATOR\*, gain and tilt controls, AC cable-powering and power regulation adapt it to both new system design and modernization of existing systems. Model 265 with TEMPERATOR\* compensates for all losses in 20 db of cable over the band of 54 to 216 mc from  $-20^{\circ}\text{F}$  to  $+120^{\circ}\text{F}$ . Low noise output and low cross-modulation permit unusually high cascability. In long line applications more than 50 Model 265 amplifiers may be cascaded. Model 265 is housed in a rugged, waterproof, cast aluminum box with a captive cover; it may be mounted on the messenger or on a pole, with a bracket. The unit is equipped with special sealed waterproof Type N connectors. \*Patent pending.

### FEATURES

- High Cascadability
- Exclusive SKL Temperator\*
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- Low Current Drain
- Cable-Powered AC
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- Compact — Rugged
- Messenger Mount



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