JULY 1965

TV & Communications

LION'S SHARE IN DANIELS' DEN

See Page 33

JERROLD

INTRODUCES THE GOLDEN AGE OF CATV

Be our guest throughout the National Community Television Association Convention, July 18-21, at the Denver Hilton.

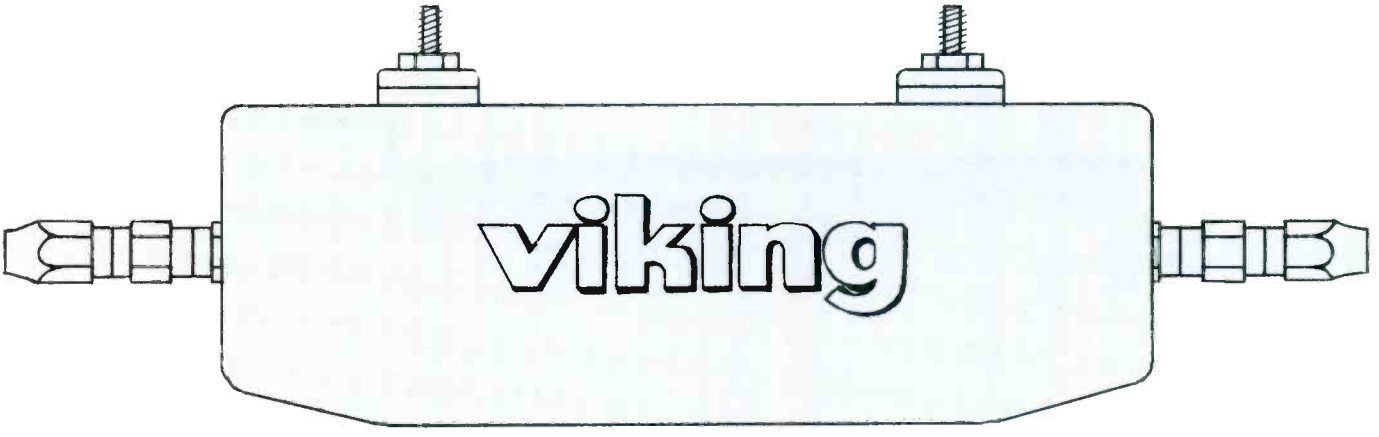
See what's happening—and is yet to happen—in this, CATV's biggest year. Enjoy Jerrold hospitality as you view the latest in CATV technology.

We'll be looking for you at our booth *and* our suite (1217-20). Come in, relax, and go forth refreshed. You'll learn first-hand why Jerrold calls this the Golden Age of CATV.

Jerrold Night • Plan to spend Monday evening, July 19, with Jerrold . . . a big entertainment bonanza.

JERROLD FIRST IN CATV

The nation's largest, most experienced manufacturer-supplier of CATV equipment and services



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IN LINE EQUIPMENT AT BOOTHS 17-21

AT THE 1965 NCTA CONVENTION

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THE STANDARD OF THE CATV INDUSTRY

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Would you have accepted these two lengths of CATV cable?

ROME UNIFOAM

Q A - 190

ROME CABLE DIVISION OF ALCOA

SIZE .412" 75 ohm
TYPE UNF Plain
DATE 4/13/65

R. F. Cable Inspection Report

P O No. 70319
C O No.
CUSTOMER

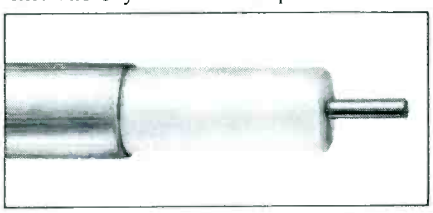
TRACE NUMBER	LENGTH		CONTINUITY		VISUAL	DIELECTRIC STRENGTH 3.5 KV/Min	CORONA LEVEL	INSULATION RESISTANCE	CAPACITANCE		ATTENUATION MCS		100 MCS		220 MCS		MCS		V_p	Z_o	RETURN LOSS
			TIP	DIE					meas. pf	pf/ft	meas.	/100 ft.	meas.	/100 ft.	meas.	/100 ft.	meas.	/100 ft.			
A070A11	1	1217	ok	—	444 448	ok	—	ok	20300	16.7			12.0	.988	18.2	1.5			80.6	75.5	29
B070A12		1219	"		"	"	"	"					12.0	.986	18.2	1.49			REJ. @ 68		MC→ 24
A070A18	1	1218	"		"	"	"	"					12.0	.986	18.3	1.50					29
B070A13		1220	"		"	"	"	"					12.0	.985	18.3	1.50			REJ. @ 127		MC→ 22
A070A9	2	1217	"		"	"	"	"					12.3	1.01	18.3	1.50					32
B070A14	1	1218	"		"	"	"	"					12.1	.995	18.4	1.51					26
B070A19	1	1214	"		"	"	"	"	20200	16.6			12.0	.988	18.3	1.51			80.4	76.2	27
B070A15	1	1215	"		"	"	"	"					12.0	.988	18.4	1.51					28
A070A15	1	1220	"		"	"	"	"					12.1	.993	18.3	1.50					28
B070A16	1	1218	"		"	"	"	"					12.0	.986	18.3	1.50					30
B070A17	1	1200	"		"	"	"	"	20000	16.7			11.9	.992	18.1	1.51					29
A070A5	1	1210	"		"	"	"	"	20000	16.6			11.9	.985	18.1	1.50			81.0	75.6	30
A070A17	1	1228	"		"	"	"	"					12.2	.995	18.4	1.50					28
A070A14	1	1220	"		"	"	"	"					12.1	.993	18.3	1.50					27
A070A20	1	1220	"		"	"	"	"					12.1	.993	18.2	1.49					30
B070A11	1	1213	"		"	"	"	"					12.0	.990	18.3	1.51					26

Remarks: File Pranke R Ralston Maycock DA

Inspector

They're only a little off spec. You might not ever have noticed it. But we did. So these two lengths of Rome Unifoam* cable were never shipped. You see, when it comes to producing uniformly high quality CATV cable, we're good. But we're not perfect. Not yet anyway. That's why we examine every reel we make. And why we still have to reject a few lengths.

For example: This test sheet lists routine factory tests and inspection on 20 reels of .412" 75 ohm Rome Unifoam CATV cable. Length BO70A12 was rejected by the inspector because it failed to meet our quality standard on the 20-220 mc return loss test. The note on the test sheet explains that the 'scope traced showed a spike at 68 mc that was only 24 db down. Our acceptance standard requires that all cable be at least 25 db down at any frequency, 20-220 mc.



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

Cable for tomorrow's system: The inspector also rejected length BO70A13 because the 'scope display showed a return loss spike at 127 mc that was only 22 db down, and our quality standard is 25 db minimum, 20-220 mc. What does this prove? It proves that Rome Unifoam quality is uniform across the entire 20-220 mc spectrum, not just TV channels 2-13. If it isn't, it won't get past our inspectors. This cable is ready to handle tomorrow's added program services anywhere in the spectrum. Where else can you buy cable like this?

Rome Unifoam can save you money. Can you save a few repeaters in your system by buying cable with lower attenuation? Can you save time and worry if you know your cable lengths are essentially identical mechanically, dimensionally, and electrically? If so, get acquainted with Rome Unifoam CATV cable. Ask for our fact-filled folder on the subject. Just call your nearest Rome/Alcoa representative or write Rome Cable, Division of Alcoa, Dept. 40-75, Rome, N.Y. 13440.

*Rome Unifoam—Trademark of Rome Cable Division of Alcoa.

Rome Cable
DIVISION OF ALCOA

SEE US IN DENVER, CATV CONVENTION, JULY 18-23 AT BOOTHS 68, 69, 70

ROHN® tower NEWS

Published by Rohn Manufacturing Co. for those who need communication towers for any purpose

Recent Communications Tower Installation

Rohn self-supporting towers are frequently used when self-supporting towers are deemed to be best suited for the situation. This frequently arises when installation of guy wires would interfere with the surrounding area.

Below is a perfect example of reference. Towers are installed here for an interstate highway communications system. In such cases, self-supporting towers are most practical. A total of 7 Rohn towers are used in this system.

The Rohn tower below is erected to a height of 125 feet and supports one 6 foot microwave disk and two corner reflectors. Tower is capable of handling another 6 foot disk at a future date.

Whenever your situation demands a self-supporting tower, check out Rohn first.

Rohn representatives are located world-wide. For name of one nearest you, write — wire — phone.

ROHN Towers Prove popular for CATV

One of the largest suppliers in the U.S.A. today for CATV towers is Rohn Systems, Inc., the installation, erection and engineering arm of Rohn Manufacturing Co.

This growing service field (CATV and allied broadcast uses) finds Rohn towers ideally suited for these purposes. In addition, these firms can have a "turn-key" package supplied to them, ready for instant use. Considerable economies are available, not to mention the value of experienced erectors and on-the-spot supervision. There can be no substitute for knowledge of the tower field, coupled with flawless, properly constructed towers. ROHN can supply both . . . best.

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Rohn warehouses and sales offices are convenient to you, wherever you are. For nearby service, contact office nearest you:

Rohn Manufacturing Co., *Eastern Office, 509 Webster Street, Marshfield, Mass. Phone 617-834-9521*

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TWX 309-697-1488

TV & COMMUNICATIONS

THE PROFESSIONAL JOURNAL OF THE CABLE TELEVISION INDUSTRY

TV&C

JULY, 1965
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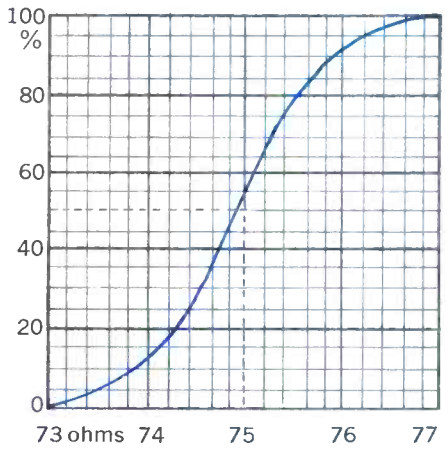
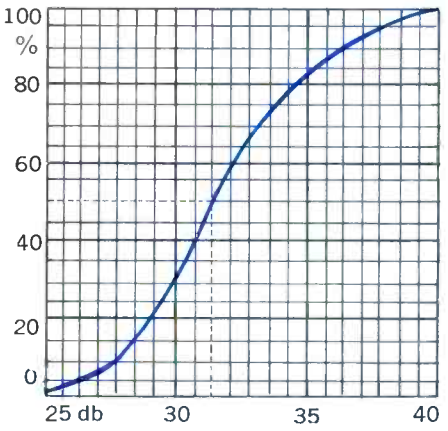
ALUCEL!



Characteristic Impedance
Distribution Curve



Minimum
STRUCTURAL RETURN LOSS
Distribution Curve

Your assurance of coaxial cable quality!

ALUCEL aluminum sheathed polyethylene coaxial cable has been designed and produced since 1961, expressly for all CATV system needs. To date over 50 million feet of ALUCEL is now operating in systems spanning the North American continent.

How can you be sure that ALUCEL is right for your system? Quality Control is Canada Wire's assurance to you. Constant production checks show that at any precise frequency across the 7-216 MC/S band is 32 db, and "ghosting" is easily restrained through careful control of impedance. (Check the distribution curve which illustrates the measure of success in this effort.)

If connector pull-out has been a problem — worry no more, for ALUCEL's precise control of dielectric extrusion diameter, regulated adhesion to center conductor and controlled drawdown of the aluminum sheath through selected dies, absolutely insures properly installed connectors will not pull out.

Make sure that your CATV system is up-to-date equipment — specify ALUCEL by Canada Wire.

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INSURE YOUR SUCCESS WITH ALUCEL . . . It's designed for you!

CANADA WIRE

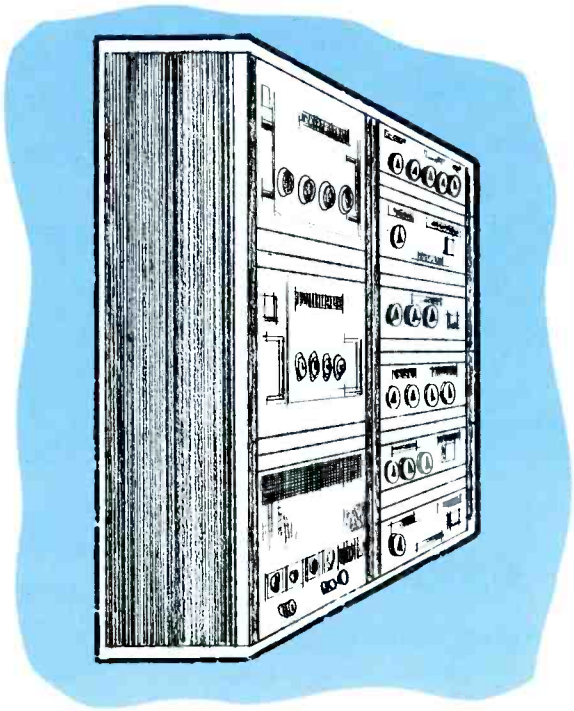
CANADA WIRE AND CABLE COMPANY LIMITED,
Postal Station R, Toronto 17 (Leaside), Ontario, Canada.

YOU CAN GO 100% SOLID-STATE WHEN YOU GO AMECO!

Prove it to yourself. Visit Ameco at the NCTA Convention and see for yourself . . . a 100% solid-state cable system on demonstration. Just as the man from Missouri said, "You have to show me", Ameco will show you just how dependable solid-state can be. No matter where your system is located, you'll never put equipment

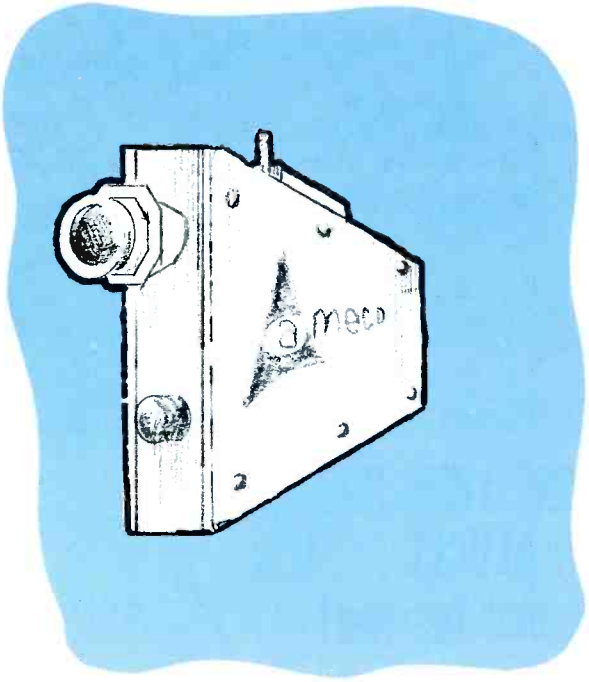
AMECO SOLID-STATE HEADEND

A complete, solid-state headend is available now from Ameco. The dependability of solid-state for signal distribution has been demonstrated. Now this same dependability is available in headend receiving equipment from Ameco.



AMECO SOLID-STATE AMPLIFIERS FOR CATV

The Ameco "70" series solid-state, etched circuit amplifiers will be demonstrated under conditions most systems would never encounter. Recognized for its low noise figure, high output, wide temperature operating range, and cascadability, the "70" is a popular CATV amplifier.



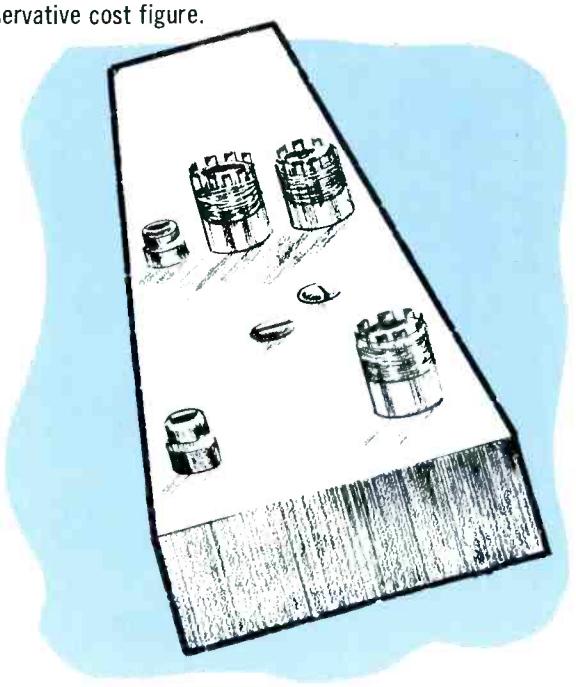
through such punishment or ask for performance under such conditions.

Ameco's Research and Development Department pioneered and perfected the solid-state, cable-powered, all-band concept. Introduced to the cable industry three years ago, Ameco's solid-state concept is now the standard. From head-end to active tap, Ameco offers a complete 100% solid-state cable system. Equipment designed for the maximum in dependability, the maximum in economy of operation and the maximum in performance.

BOOTHS 49-53, 75, 76
DENVER HILTON, DENVER, COLORADO JULY 18-23!

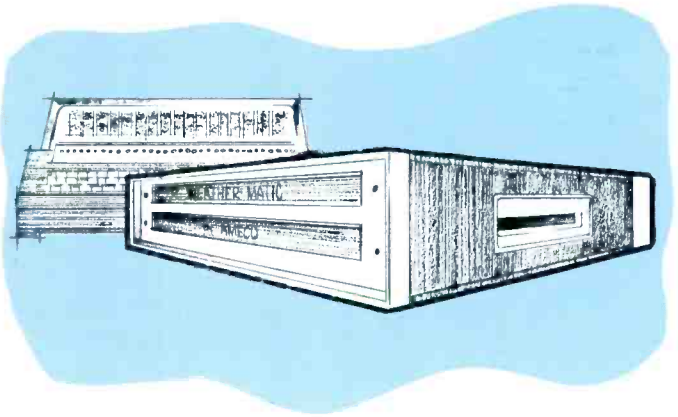
AMECO SOLID-STATE AMPLIFIERS FOR CATV

The Ameco "65" series amplifiers are new to the Ameco product line. The "65" has the same operation characteristics as the "70" series, but is housed in a pole mount configuration. This provides an opportunity to the system operator to convert to a solid-state, cable powered, all band system at a conservative cost figure.



AMECO WEATHER-MATIC

A revolutionary new concept in information channel programming . . . the Ameco Weather-Matic. This is an electronic system for sequential display of time, temperature, wind velocity and direction, as well as news. And in COLOR, too!



ameco

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EDITORIAL

A Myth Exploded

"We do not repair TV sets," proclaims the yellow-page advertisement of Antennavision of Silver City (New Mexico). This community antenna system is no exception; it conforms to the general rule. Some critics claim that a large percentage of CATV operators force their subscribers to bring sets to the cable company for service. This is simply not true.

When NATESA (National Alliance of Television & Electronic Service Association) Executive Secretary, Frank Mock, stated in a "newsletter" that ". . . using past experience as a guide, we have all learned from those high rise single building systems that when service on the antenna system, and on the set are handled by separate organizations, the public is caught in a buck passing act, and right or wrong, invariably pressures are exerted on users of the antenna system to contract the service of the set to the cable people. Community cable operators are following the pattern." We editorially rejected the claim as false. He responded with two threats of liable action. But the fact remains that most operators are **not** interested in servicing sets. And we challenge NATESA (or anyone else) to sue us for stating this truth and for exposing the myth presented in Mr. Mock's "newsletter."

When foes of CATV bring up the subject of cable systems servicing sets, we suggest that you shut them up quickly by asking for significant examples of this supposedly wide spread practice. Incidentally, we bear no grudge against the few television service men who have built community antenna systems and still continue to operate their service businesses. Whether the National "Associations" and "Alliances" like it or not this is free enterprise. Furthermore, most of the fellows who stayed in the service business after starting cable systems did so because their CATV businesses alone would not support them.

In summary: Television set servicing by cable systems is very rare — and in the isolated cases where it occurs it is quite legitimate and justifiable.

Stan Searle

To what lengths must a cable manufacturer go to prove his product is better?

As long as the distance between your amplifiers—even up to one-half mile continuous lengths.

When Times Wire and Cable decided to build a CATV cable to outdistance any other in length and performance, we really went all the way: We built a cable that can span the entire distance between your amplifiers.

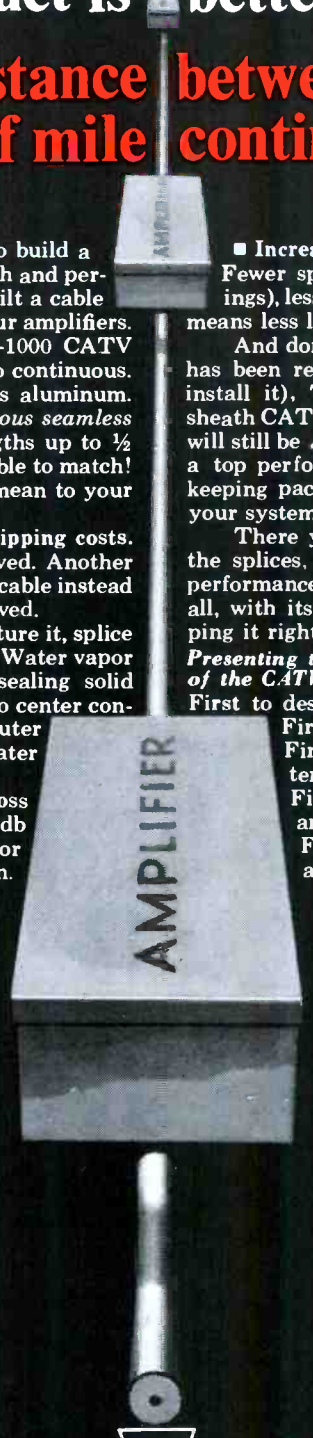
However, it's not just that Times JT-1000 CATV cable is longer that makes it better. It's also continuous. It's seamless for the entire length. And it's aluminum. Put them all together and you have *continuous seamless aluminum tube sheath CATV cable* in lengths up to ½ mile long—a feat nobody else has yet been able to match!

Here's what these new longer lengths mean to your CATV operations:

■ **Easily saves you 10% installation and shipping costs.** Longer lengths mean fewer splices—8% saved. Another example: Only 1 reel needed for 2,500 feet of cable instead of 1 reel for each 1,000 feet—another 2% saved.

■ **Times seamless cable is waterproof.** Puncture it, splice it, apply as many pressure taps as you like. Water vapor and/or water can't travel in Times self-sealing solid sheath cable. Complete dielectric adhesion to center conductor and complete compression seal to outer conductor eliminate longitudinal vapor or water paths.

■ **Times cable gives you minimum return loss guarantee.** Your choice of guaranteed 26 db or 30 db minimum return loss—a must for minimum ghosting, true color reproduction.



■ **Increases profit by decreasing splices and scrap.** Fewer splices mean less material wasted (fewer tailings), less maintenance needed, too. Less maintenance means less labor cost and more profit.

And don't forget: long after so-called economy cable has been replaced (it starts deteriorating the day you install it), Times continuous seamless aluminum tube sheath CATV cable will still be a top performer, keeping pace with your system's planned potential.

There you have it: the longer the cable, the fewer the splices, the lower the maintenance, the better the performance... and the higher the profits. Times did it all, with its new longer CATV cable... and we're shipping it right now!

Presenting the Times Family of Firsts— The Standards of the CATV Industry...

First to design a long-life cable specifically for CATV.
First with foam dielectric cables for CATV.
First with cable that made all-band CATV systems economically feasible.
First to offer 26 db minimum return loss guarantee for CATV.
First again with ½ mile lengths of seamless aluminum sheath CATV cable.

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

Visit Our Booths #77, 78 & 79
at NCTA CONVENTION

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

CATV TOPIC OF COPYRIGHT HEARINGS

Film Industry Opposes CATV Exemption

June 24th was termed "CATV Day" at the House Judiciary Copyright Subcommittee hearings of the new copyright bill (H. R. 4347). CATV opponents and proponents alike journeyed from all parts of the nation to voice their opinions. And, observers noted, that the cable television industry was badly outnumbered.

Appearing earlier in the hearings, the Hollywood film industry was represented by Motion Picture Association of America attorneys Adolph Schimel and Edward A. Sargoy. Although CATV was not scheduled for discussion until June 24, the lawyers expressed concern "about the potential inroad of highly sophisticated so-called community antenna operations . . . which are affecting, without license or investment in films, the TV licensing market for our pictures."

Schimel and Sargoy agued that "The CATV station does not license the right to transmit our films, but freely plucks them from the air, to the unfair injury of our local TV licensee and our copyrights." They concluded that community antenna operators are presenting "a performance to the public of the copyright owner's work. We believe not only that the performance results in a profit which in fairness the copyright owners should share, but also that, unless compensated, the performance can have damaging effects upon the value of the copyright."

MPAA did not include an exemption for commercial community antenna systems in the bill. And, the attorneys commented, "we feel that it is imperative that this provision remain in the bill."

Also speaking in favor of the CATV provision was the three music licensing organizations, BMI, ASCAP and SESAC. BMI and ASCAP counselors expressed appreciation for the CATV features, but opposed exclusion of transmissions to hotel rooms.

Urging passage of the bill as written was George D. Cary, Deputy Register of Copyrights and L. Quincy Mumford, Librarian of Congress. Cary proposed that those who favor a requirement for CATV to get permission from copyright owners be responsible for figuring out ways of accomplishing the goal without putting the CATVs "in grave trouble."

AMST TV Film Producers Testify for Copyright

Ernest Jennes of the Association of Maximum Service Telecasters was lead-off witness for the official hearing on CATV. Also appearing were Arthur B. Krim, president of United Artists and famed attorney Louis Nizer. Krim and Nizer appeared in behalf of television film producing companies.

Jennes expressed great worry about "CATV unlimited" as opposed to "historic CATV." He explained that the latter group supplied TV programs to those unable to receive them. Jennes described the former group as big businesses offering up to 20 channels in large markets and competing with the local stations.

The AMST representative argued that "free" TV will be in danger and the public at large will suffer unless exclusivity is preserved. He charged, "the bill should unmistakably provide that a CATV system's unlicensed transmission of copyrighted television programs is an infringement . . . it is imperative that any copyright bill . . . deal with the CATV problem in a clear and unambiguous manner."

AMST requested the right for television stations to prevent use of their programs in other markets. Stations should also be permitted to sue in addition to copyright owners because it would be the stations which could more easily detect infringement Jennes said.

Following NCTA President Frederick W. Ford's appearance (reported elsewhere in this section), Krim and Nizer resumed the attack.

Krim said, "we believe that CATV operators should pay a fair compensation for the privilege of using our copyrighted property in their business for profit . . ."

"Commercially," he said, "CATV republishes and sells our copyrighted products. There is no reason why CATV or any other exploiter for gain . . . should not be required to secure the copyright owner's license, and to pay him compensation for the use of his property."

CATV will have a "devastatingly destructive" effect upon his industry, Krim commented, if it is permitted to continue avoiding payment. In addition, he denied that it would be difficult for CATVs to clear for advance copyright permission. He contended that there are no more than 25 to 30 owners with only a dozen accounting for most programs.

Claiming that CATV is subject to present copyright laws, Nizer referred to cases presently before the courts involving CBS and United Artists. He asked the committee not to grant an immunity to CATV which it does not now have and asked that Congress clearly state that CATV is subject to copyright laws to remove any doubt about Congressional intent.

Ford, Operators Back CATV Freedom from Copyright

Fred Ford, in his testimony before the House Copyright Sub-Committee, proposed that CATV be exempt from copyright and at the same time, gave strong rebuttal to testimony of George D. Cary, Deputy Register of Copyrights. Several CATV operators appeared as witnesses backing Ford's proposal.

Ford said that "nowhere, either in the above report or in his (George Cary) testimony, do I find any reasoned analysis of the facts, conclusions of fact or any application of the legislative criteria to them. His conclusions are unsupported except for his subjective opinion."

The NCTA president warned that to give copyright owners sway over CATV "would be a grant of monopoly control." It would also give copyright owners double payment and constitute a discrimination against cable television subiscribers.

"The effect of the bill as presently drafted," Ford said, "will be to force the antenna systems into the broadcasting and perhaps the pay-TV business, thereby creating the very competition with local stations with which the Commission has been concerned, and upsetting the present economic structure of the television industry."

Ford suggested an amendment to Paragraph (5) of Section 109 to exempt "the further transmitting to the public, by means of broadcast receiving equipment of whatever design,

including antennas, and related equipment, wherever located, which receives and makes available by means of cables or wires and related equipment to individual reception sets of the kind commonly used in private homes, of a transmission embodying a performance or exhibition of a work provided: The further transmission is made without altering or adding to the content of the original transmission and no direct admission fee is charged for the privilege of seeing or hearing such transmission and the receiving apparatus is not coin operated."

In addition, Mr. Ford called attention to aspects of concern to the CATV industry. Most important "is a serious conflict between the objectives and effects of the legislation being considered by the Interstate and Foreign Commerce Committee and this copyright revision legislation (National Television Policy)." "Should a community antenna system operator be required to receive the signals of certain stations broadcasting programs, and at the same time be required to secure and pay for licenses for the reception of these programs?"

Operators appearing as witnesses included Alfred F. Dougherty, Montana Cable Television Association; Robert K. Weary, Oklahoma-Kansas Community Television Association; Thomas J. Whyte, West Virginia and Mid-Atlantic Community Television Association; Tom Creighton, Texas Community Antenna Television Association; Clifton W. Collins, Pacific Northwest Community Television Association, and Don Corbitt, Arizona Community Television Association.

ANNUAL NCTA MEET

More than 1400 company members of the National Community Television Association—with management personnel, their wives and children swelling the total attendance to something more than 2000 persons—will meet at the Hilton Hotel in Denver, Colorado, July 18 through 23, for their 14th Annual Convention.

Bill Daniels, President of Daniels & Associates, Inc., Denver, host NCTA member, said the business of the convention would be to, "take a look at past accomplishments, and to examine our potentials for increasing our service to the public in the future."

The association will be welcomed to the mile-high city and to Colorado by Mayor Tom Currigan and Governor John Love. Other featured speakers during the convention include U. S. Representative Oren Harris, NCTA President Fred Ford and David M. Snow, President, National Education Sciences Corp.

In addition to the Board and Business meetings, several panel discussions will be conducted on subjects affecting Community Antenna Television. These include a session on successful sales and promotion methods, presided over by Frank Thompson, NCTA Vice President; a question and answer period with Sol Taishoff, Editor and Publisher of Broadcasting Magazine acting as moderator; and a period devoted to legal and legislative developments and aspects affecting the industry, presided over by George Barco, past president and presently a board member of NCTA.

A special reception also will be held in honor of attending FCC Commissioners, with NCTA President and Mrs. Ford hosting.

Special programs and activities for wives and children of attending delegates have been planned by Daniels & Associates, as well as arrangements for hotel accommodations, transportation and tours. Special entertainment for the convention includes The King Family, courtesy of the American Broadcasting Co. and Viking; Debbie Drake, television's figure-development expert and The Ray Block Orchestra.

Entron, Inc. will sponsor the "Entron

Discotheque Au Go Go" each night of the Convention through Thursday. Scheduled to begin at 9:00 P.M., the Au Go Go will feature Arthur Murray instructors and nightly dance contests.

Other social activities include a Ranch Party, Annual Old Timers' Breakfast hosted by Arizona CATV operators, a Hawaiian Luau hosted by Ameco, Inc., a social sponsored by New Mexico CATV Association and Times Wire & Cable, Jerrold Electronics Corp. party, the Annual Banquet and TeleSystems' outing to an amusement park with golfing available.

This Convention has been predicted to be the biggest and best yet. CATV system owners, operators, management and technical personnel are all urged to attend.

TV & Communications and Cable Television Review also urge you to stop by our booth — number 46A — to get acquainted with our editors and staff. 'See you in Denver'.

DISPUTES CONTINUE TO RAGE OVER HARRIS BILL

The House Subcommittee on Communications and Power has formally ended hearings on H. R. 7715 (Rep. Oren Harris' bill on National TV Policy). A multitude of witnesses appeared before the committee proclaiming that CATV was everything from near Utopia to the ultimate destruction of free TV. Witnesses included the Honorable Mr. Harris; Frederick W. Ford, NCTA President; Vincent T. Wasilewski, NAB President; FCC Chairman E. William Henry; Commissioner Lee Loevinger, and a host of CATV operators and broadcasters.

Harris expressed concern about the Commission's "doublecross" in reporting the imminence of agreement between NCTA and NAB which, it was believed, would form the basis of an FCC request that Congress give it regulatory power. He warned that the FCC "is asking for a lawsuit and it's going to be a big one."

The Commerce Committee Chairman told the subcommittee they should draft interim legislation to derail FCC actions while "giving us time to work out these problems."

Commissioner Loevinger accused the Commission majority of assuming power over non-microwave CATV without jurisdiction, without legal power and without Congressional authorization. He charged that "the Commission started with certain fixed views that are not likely to be changed . . . with evidence." Loevinger suggested that Congress establish a policy, but "the choice should be left to the public."

FCC Chairman Henry said he feared UHF stations in large markets would be unable to survive CATV competition. Without further explanation, the Commissioner warned that many "undesirable" elements are entering CATV.

Fred Ford told the Committee of "the virtual necessity of Congress stepping in and giving the policy guidance and authority proposed, which is so critically needed." The NCTA president said that his organization had been willing to compromise and to permit FCC regulation. However, he protested the 15 day non-duplication protection and denied that CATV caused adverse economic impact. He accused the Commission of denying "any present expertise on the subject of CATV," admitting an "inadequate factual basis for the action already taken," and emphasizing "its faulty procedure of adopting rules first and getting the facts later."

NAB's Wasilewski warned that unrestrained and unregulated expansion of CATV could lead to the destruction of our system of "free television." He proposed a multiplicity of repeater stations as an alternative to CATV to satisfy the major objective of communications policy. Wasilewski opposed the Harris bill because it doesn't contain the 15 day non-duplication provision; it contains no prohibition against "leapfrogging", and because it does not prohibit program origination by CATV systems.

The broadcaster said that "CATV systems must be regulated now," without waiting for Congressional action.

Subcommittee Chairman Walter Rogers (D., Tex.) accused NAB of wanting regulation to benefit broadcasters and to hold down competition. Rep. Arthur Younger (R., Cal.) agreed.

Also favoring CATV interests was Rep. James Harvey (R., Mich.).

Standing with NAB's position was Rep. John Moss (D., Cal.), William Springer (R., Ill.) and John M. Murray (D., N.Y.).

NCTA Files Additional Comments

To "fully and properly inform" the House subcommittee studying H. R. 7715, National Community Television Association has submitted additional comments. NCTA said the comments came because it "felt a need to respond to statements offered by several of the witnesses."

The comments first took issue with witnesses who claimed existing and potential adverse economic impact on television stations by CATV. NCTA said the "Comments . . . are not supported by an examination of relevant facts."

The CATV organization then analyzed economic impact in two parts. Part I dealt with "The Effect of Existing CATV Systems on Broadcast Revenues. It quoted FCC's economist Dr. Martin H. Seiden when he reported that "CATV penetration does not explain the loss in local revenue experienced by these 86 television broadcasters."

In addition, NCTA dissolved claims of economic injury by several broadcasters by citing their increase in weekly circulation and network base hourly rate to advertisers. Many of the broadcasters, it reported, claimed greater circulation and increased their network hourly rate on that basis.

Part II dealt with "The Potential Effect of CATV in Large City Markets." Again, NCTA expressed that "the best response to this concern over the potential impact of CATV systems in large cities is best answered by Dr. Martin H. Seiden." NAB's Dr. Franklin M. Fisher was also quoted in dispelling claims of witnesses.

From the Seiden Report, "It does not seem . . . that the CATV will threaten the off-the-air television market in Philadelphia and this analysis is based on the assumption of 50 percent penetration which exceeds by many times the most optimistic hopes of the franchise applicants themselves." He added that "it is quite possible that the CATV will bring them into more homes than will be lost to them through distraction."

The remainder of the CATV Association's report was concerned with the effect of FCC rules on subscribers of existing systems, the all channel set law and its effect on UHF, broadcasters' fear of pay-TV, FCC's actions to prevent construction of CATV systems in some markets, probability of widespread litigation, effect of "interim rules" on microwave-served systems, reception of "local" stations, Federal preemption and origination of programs. Attached to the report as supporting evidence was a series of exhibits including a story from the Ogallala (Neb.) News and one from the Columbia (Mo.) Tribune. Some 20 letters from broadcasters praising CATV were also attached.

(*Continued on Page* 18)

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Offers You...

A Full Line of Temperature Compensated Solid State CATV Amplifiers backed up by SEVEN YEARS of actual field testing of transistorized, high-reliability equipment.

Best under the Sun!

LIFT HERE . . . FOR THE WHOLE EXCITING STORY

(*Spectrum Continued*)

CATV RULES TAKEN TO COURT

The United States Court of Appeals for the Eighth District located in St. Louis, Mo. has been asked to review and set aside the FCC's rules regulating microwave-served CATVs.

Midwest Video Corp. and Black Hills Video Corp. of Little Rock, Ark. filed the petition to test the Commission's stated authority over cable TV systems that use microwave to receive signals. The petitioners claimed that the Commission acted without proper statutory authority; that necessary, lawful and appropriate administrative procedures were not observed, and that, as adopted, the rules were not reasonable.

In conclusion, the petitioners urged the Court to review the FCC's actions; to make the First Report and Order invalid; to set aside the Report and Order, and to award such other relief as may be just and equitable.

LOEVINGER BLASTS COLORADO BROADCASTERS

FCC Commissioner Lee Loevinger has gone right into the lion's den to tell the Colorado Broadcasters Association nothing of what it wanted to hear about the great job broadcasters are doing. Instead, he told them about how short-sighted and fearful they are in their attitude toward CATV.

Speaking in Colorado Springs, the Commissioner termed TV "the most spectacular success" in the history of communications, however, he said, "the most widespread mood seems to be one of anxiety and uncertainty about the future."

Loevinger said the Commission doesn't have the legal power to regulate CATV. Its proposals and actions are "improper without Congressional sanction." He said the commission is dealing with symptoms rather than causes. Limitation of competition through selective program control "is wrong because it limits the choice of the public, interferes with the free operation of economic forces, and intrudes into the area of free speech."

The approach is negative and restrictive rather than "positive and expansive," he added. He argued that the claim to control CATV's simply because they use common carrier microwave is reasoning under which the FCC could control almost all U.S. businesses. "It sems to me to be fundamentally erroneous to regard the growth and proliferation of CATVs as an ominous or threatening phenomena," he said. "CATVs . . . are simply helping fill a public demand for television service . . . a demand that deserves fulfillment, not frustration by regulation. The television industry should welcome this manifestation of public demand and should do everything in its power to encourage and satisfy it."

Loevinger said that if TV gives people what they want, they have nothing to fear. "However," he warned, "if television broadcasters try to deny the people the service they want, then not all the power of government will be able to save television from the depredations and inroads of alternative services, whatever they may be."

CATV IN LIMELIGHT AT GAB MEET

CATV was the most controversial topic when the Georgia Association of Broadcasters held its 30th Annual Convention—featuring three of the most important names in the broadcasting industry as speakers—on June 12-15, at Callaway Gardens.

Heading the list of speakers was Vincent T. Wasilewski, President of the National Association of Broadcasters; Chairman Paul Rand Dixon of the Federal Trade Commission and Frederick Ford, former FCC commissioner and now President, National Community Television Association.

Mr. Ford pointed to the FCC's banning of leapfrogging of TV signals by CATV systems as an indication that the commission should have a full-scale inquiry into CATV before proposing rules. Attacking the idea that CATV and pay TV are synonymous, Mr. Ford charged that if pay TV comes, the broadcaster will bring it and not the CATV operator. He said CATVs would concede to no simultaneous duplication of programming in a station's Grade A contour, but said beyond that the decision should be made by the CATV systems on a case-by-case basis.

Mr. Wasilewski defended his organization by saying the NAB's support of FCC regulations over CATV did not mean that the NAB is trying to destroy CATV or that it is determined to preserve the status quo by legislating a potential competitor out of business. He also pointed out that the FCC didn't attempt to formulate rules on several aspects of CATV such as the origination of programs and commercials, importing distant signals, pay TV, cross-ownership of CATV and stations and the relationship of CATV to radio, and that the FCC, he said, had asked for comments in these areas.

FCC QUERIES CATV SYSTEMS

The FCC has sent a questionnaire to all CATV systems on the advisability of a transition period for compliance with rules requiring carriage of local TV stations. The letter of transmittal and the questionnaire have been approved by both NCTA and NAB according to the Commission.

The Commission stated it is "exploring the possibility of affording a transition period for some systems before requiring full compliance with the rules." It explained that "the questions are designed to elicit specific information with respect to the effective channel capacity of each system, the local television signals which might fall within the carriage provisions of the rules, and the number of channels in use for nonlocal television signals or other purposes."

MICROWAVE PURCHASES APPROVED

The transfer of nine microwave radio stations in the Business Radio Service to Jack Kent Cooke has been approved by the FCC. Mr. Cooke, who owns 19 community antenna TV systems in 10 states, plans to use the stations to serve his CATV systems in Casper, Wyo.; Gallup, N.M., and Berlin and Ocean City, both in Maryland. He is the head of the American Cable Co., which owns 19 community antenna TV systems in 10 states.

Of the nine facilities purchased, seven were from Wentronics Inc., one from Eastern Shore CATV Inc., and the other from Gallup Cable TV Co. No purchase price was disclosed.

Approval of the transfers by the commission was made subject to its interim and adopted nonduplication conditions.

NEW NCTA OFFICERS NOMINATED

Benjamin J. Conroy Jr., Uvalde, Tex., has been nominated to be new chairman of NCTA. A community antenna television operator, he will succeed Bruce Merrill, owner of Phoenix-based CATV and also head of Ameco Inc. Election will be held during the Association's annual Meeting July 18-23.

Beginning CATV business when his Uvalde TV Cable Corp. began operations 10 years ago, he now has almost 2,500 subscribers with five San Antonio stations via microwave, FM stations from San Antonio and Austin,

We make aluminum sheath co-ax up to 5000 ft. long!

Does that make our cable great?

Turn the page

KVOU Uvalde and weather. His most recent position in the association has been chairman of the pole-line committee.

Several other officers were nominated for election. The nominating committee headed by Fred J. Stevenson, Rogers, Ark., recommended Robert J. Tarlton, Lansford, Pa., as vice chairman; Alfred R. Stern, Television Communications Corp., New York, as secretary and Franklin R. Valentine Jr., Unicom Inc., New York, as treasurer.

Directors nominated were E. M. Allen, Winona, Minn.; Homer Bergren, Seattle; Robert Clark, Oklahoma City; Robert F. Jernigan, Hattiesburg, Miss.; Irving B. Kahn, Teleprompter, New York; A. J. Malin, Laconia, N.H.; John Morrissey, Durango, Colo.; James Palmer, State College, Pa., and Buford Saville, Cumberland, Md.

NEWSPAPER SUPPORTS CATV EDITORIALLY

An Austin, Texas newspaper endorsed the advantages of CATV in a May 27 editorial. The *Austin (Tex.) Statesman* reviewed the background of Congressional and FCC actions on CATV leading to the hearing on H.R. 7715. The editorial was predominately a factual report but contained these comments on CATV: "The cable system of direct connection to each client's household offers a means of excellent picture reception and clarification. The systems also carries the original commercials."

FEDERAL COURT DISMISSES LAW SUIT AGAINST GAVIN

The Federal District Court for the southern district of New York City dismissed the patent infringement law suit recently brought against Gavin Instruments, Inc. of Somerville, New Jersey by Isaac S. Blonder of Blonder-Tongue Laboratories, Inc. of Newark, New Jersey.

The Court held that this law suit was "wrongfully" brought by Blonder against Gavin in New York City and ordered the Complaint against Gavin dismissed.

This law suit had charged Gavin's UHF converters with infringement of a patent issued to Isaac S. Blonder.

GAB ELECTS

Ridley Bell, Columbus, was elected president of the Georgia Ass'n. of Broadcasters. The GAB re-elected Don McDougald, Statesboro, as vice president for radio and Esther Pruett, Savannah, as treasurer. Newly-elected vice president for television is Virgil Wolff, Augusta. Jack Williams was named to serve his fifth year as executive secretary of the GAB.

Elected to the Board of Directors for the coming year are C. James Murphy, Allen MacMillan, Paul Reehling, H. E. Ray, Jim Popwell, James Rivers, Mark Shor, N. B. Mills, "Red" Cross, Bob Thorburn. Outgoing president Charles Doss automatically remains on the board.

"COMMUNITY" UHF STATIONS PLANNED

The FCC took still another step it felt might bring more TV service to more people. It junked its table of assignments for UHF, removed channels 70 through 83, and spread the rest once more. Under the new table, no channels are assigned to communities with populations under 25,000.

Channels 70 through 83 are not assigned, but are reserved for low, 10 kw maximum, power stations to serve the smaller communities. Anybody can apply for any channel anywhere, and they will be assigned if there is no interference. But the low power will permit much closer spacing. FCC evidently hopes these stations will be cheaper to construct, cheaper to operate, and that they may therefore serve many communities which would otherwise have to rely on CATV.

H&B REPORTS EARNINGS

For the first nine months of the fiscal year ending July 31, 1965, the gross income of H&B American Corp. totaled $4,136,050. This represents a 17% increase over the gross income total of $3,544,322 for the corresponding period of the preceding year. Harold R. Sugerman, vice-president-finance and treasurer of H&B announced these figures during the first part of June.

Net income was $167,883 for the nine-month period of the current fiscal year, corresponding to six cents per share on the 2,582,192 shares outstanding, as against $257,935 or nine cents per share for the corresponding period of the preceding year on the same number of shares outstanding.

CATV DECLARED PUBLIC UTILITY IN CONNECTICUT

Community antenna television's classification as a public utility has been underscored by two bills passed by the Connecticut General Assembly.

One defines CATV as a public service, similar to power, telephone and telegraph services. An imposition of a 6% gross earnings tax on CATV companies doing business in Connecticut, along with the telephone company that serves the state was proposed by the other.

DISMISSAL ASKED FOR CATV MICROWAVE APPLICATIONS

KWTX-TV Waco, Texas recently asked the FCC to dismiss (or designate for hearing) four microwave applications to serve four community antenna TV systems within the station's area.

The protest is aimed at Telephone Utilities Service Corp. of Killeen, Tex. Telephone Utilities has applications pending for microwave facilities to serve CATV systems in McGregor, Temple, Waco and Belton, Texas.

The station asked the commission to defer action on the applications pending outcome of the rulemaking in a petition filed prior to the FCC's adoption of its new rules designed to "protect local TV stations from microwave-fed CATVs". But, under the terms of the newly adopted rules, it was felt that the conflict between KWTX-TV and TUSCO could be resolved without the FCC's intervention.

The Texas Broadcasting Corp. of which the Johnson family is majority owner holds a 29% interest in KWTX-TV.

BEST QUARTER IN HISTORY REPORTED BY JERROLD

The Jerrold Corporation had its best single quarter in history for the three months ended May 31, stockholders were told at the annual meeting in Philadelphia.

Milton J. Shapp, President, reported that the firm's profits for the period amounted to "more than $600,000" versus a nominal profit in the first three months of the previous year. Because of the company's loss carryover position as of February 28, 1965, no provision for Federal income taxes has been made in estimating the first quarter profit.

Mr. Shapp said sales for the first quarter totaled approximately $9 million, up about 50 per cent from the comparable period last year. He predicted that Jerrold would report all-time records in both sales and earnings

We make
aluminum sheath
co-ax that's stronger
than seamless!

Is that what makes our cable great?

Turn the page (please)

for the full year which ends next February.

Executive Vice-President Robert H. Beisswenger told stockholders attending the meeting that the total corporate backlog of orders now stands at $5.3 million.

Community antenna television operations are at an all-time record level, he said, emphasizing that the market for transistorized equipment continues to expand rapidly.

ABC ENTERS CABLE TV

In a letter to Walter Rogers, Chairman of the House Communications Subcommittee, ABC stated that it was planning to enter the CATV field as a "supplementary" service. Martin F. Malarkey, Jr., NCTA founder is a major stockholder in Cablesystems Corp., the subsidiary company set up by ABC to acquire CATV properties. NCTA board member, Archer Taylor serves as technical consultant to the company.

ANSWER TO ETV MONEY WOES

Richard D. Heffner, professor of communications and public policy at Rutgers University, has suggested the use of satellites and/or pay-TV to help pay the way for ETV. In a speech before the Institute for Education by Radio-Television at Ohio State University, Mr. Heffner called educational television "the most promising, most exciting element on the current television scene," which, if solvent, "could revolutionize American broadcasting and the whole field of communications. . . ."

He explained that ETV is somewhat like the specialized magazines which are received by audiences "not satisfied with what America's mass culture provides." Following that point, he reasoned that ETV, like these magazines has a much smaller audience than the commercial media. He suggested that Pay-TV or satellite-to-home communications could be the partial answer to the "massive financial challenges" it now faces.

CATV ENGINEERING-CONSTRUCTION FIRM OPENS DENVER OFFICES

James F. Collins, former consultant-engineer on microwave installation for Southwest CATV, Inc., Houston, Tex., has opened the Pete Collins Co. in Denver, for constructing and engineering CATV systems.

Collins, 29, has 10 years' experience in the CATV field; acting both in specific capacities and on a consulting basis at installations in a number of states and in Mexico. He has designed and supervised construction and equipment installation, as well as consulted on site selection, pole rearrangement and cable handling.

The Pete Collins Co. will offer CATV systems-design and construction, engineering, drafting, maps, equipment specifications and installation, pole line arrangement, cable handling, installation of house-drop distributing devices, routine maintenance schedules for amplifiers and the technical training of local personnel.

NORTH DAKOTA PSC TO CONDUCT CATV HEARING

Public Service Commission of North Dakota has scheduled public hearings on the question of CATV jurisdiction for July 27. PSC will hear testimony for and against the commission taking authority over CATV rates, engineering factors and other facets of system operation. The hearings will convene at the State Capitol in Bismarck, at 10 a.m. on that date.

ANACONDA OFFERS CATV SYSTEM TURN-KEY PACKAGE

Anaconda Wire and Cable Company has announced that it is offering a complete Community Antenna Television (CATV) system package, covering feasibility studies, design engineering and full system installation. A CATV Operations Group has been organized at Sycamore, Illinois as part of the company's Communications Products Division.

Specifically, the firm is engaged in a system of research, development, design and engineering of Cable Television Systems. They are also offering such services as signal verification surveys, receiver site location studies, local marketing assistance, as well as a completely engineered system.

BRIEF FILED OPPOSING RKO PAY-TV EXTENSION

The Joint Committee Against Pay-TV has filed a brief with the FCC in opposition to extension of Pay-TV experiment in Hartford, Conn. by RKO General. The document stated that limited scope of the trial operation yielded little meaningful information for future Pay-TV decisions.

Philip Harling, Joint Committee chairman, stated that "this application coming on the heels of the Zenith plea for nationwide permission — and requests for CATV franchises in hundreds of municipalities in the country, which they hope to convert to Pay-TV purposes, is . . . vigorously opposed by the joint committee."

Meanwhile, International Telemeter Corp. (Paramount Pictures) filed a brief calling for acceptance of a nationwide Pay-TV service. The document supports those filed earlier this year by Zenith Radio Corp., and Teco, Inc. which petitioned Commission to start rule-making proceedings for authorization of national subscription television.

SCIENTIFIC-ENGINEERING FIRM COMMENTS TO FCC, COMMITTEES

Campbell & Campbell, Los Angeles scientific and engineering firm, has filed statement with FCC and Congressional communications sub-committees concerning legislation and/or regulation of CATV. Pointing out the technical advantages of wired distribution of television signals in many locations, the document also notes the relief of spectrum congestion which could be realized by replacing broadcast TV with nationwide cable distribution.

In addition, the statement suggests that "such a system . . . would conveniently lend itself to such diverse applications as the remote metering of water, gas and electric power consumption at individual dwellings, picture-phone communications, centralized computing operations for business, and many other types of communications. The firm is developing central office billing system for closed circuit Pay-TV operations, and therefore has interest in federal action concerning wired TV distribution, the statement concludes. □

REMINDER:

Deadlines for Comments, Replies

July 26—Reply comment deadline on Part I and Paragraph 50 of Part II, Notice of Inquiry and Proposed Rule Making relating to jurisdiction and regulation of CATV (non-microwave).

August 3—Reply comment deadline on frequency allocations and technical standards for microwave stations serving CATV systems.

August 6—New reply comment deadline on Part I and Paragraph 50 of Part II, Notice of inquiry and Proposed Rule Making relating to jurisdiction and regulation of CATV (non-micro-wave).

August 27—Comment deadline for Part II of FCC notice of inquiry and proposed rule-making, looking toward regulating non-microwave community antenna TV systems.

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1. Plastoid welds for strength.

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

2. Plastoid welds for length.

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

3. Plastoid pre-tests six ways.

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

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CABLE COMPANY INSTITUTES AWARDS

MPTV Cable Company (The Alarm Corporation) of Carmel, California has instituted a cash award system for electronics technicians. The company recently donated two annual cash awards in the amount of $125 each to the Monterey Peninsula College, Monterey, Calif.

Shown in photo are (l. to r.) Owen Patrick, electronics instructor; Charles R. Mulkey, Dean of Technical-Vocational Education; Roger L. Schmeltz, Daniel L. Capp, and MPTV President William McPheeters.

Designed to enable students to continue their studies, MPTV will duplicate the cash award at the end of the college semester if the student still qualifies. First awards were presented to *Daniel L. Capp* and *Roger L. Schmeltz*.

CATV COMPANY FORMED: OPENS NEW OFFICES

National Teline Corporation has opened new offices in Waltham, Massachusetts. The company was formed in April of this year by *William K. Headley* and *Richard Surprenant* for the purpose of investing in and operating CATV systems.

National Teline now has six franchises and has two of these currently under construction. The others are scheduled to begin construction in the next few months.

Headley, president of the new firm, said that National Teline would use transistorized equipment and aluminum sheathed cable. In addition to more TV channels, several channels of music, including FM and FM stereo radio, would be made available to all subscribers as well as background music and a channel for 24 hour time and weather service and the latest weather forecast.

Headley was formerly vice president of Spencer-Kennedy Laboratories in Brighton, Mass. Surprenant, Vice President and Treasurer, was formerly with the Surprenant Manufacturing Company of Clinton, Mass. and more recently with IT&T.

AMECO NAMES EXECUTIVES

Ameco, Inc. has named two new vice presidents according to company president, *Bruce Merrill*. *R. Bruce Walters* is vice president in charge of production and *Milford Richey* is vice president in charge of engineering for the Phoenix based firm.

Walters

Richey

Walters started with Ameco in April, 1956 as a technician. He is a cable television owner, a member of the American Management Association and is Ameco's representative to the Arizona Association of Manufacturers and Western Electronics Manufacturing Association.

Richey was engineer for KOOL-TV in Phoenix prior to joining Ameco. He began working for Ameco in 1957 and later became Chief Engineer responsible for all the company's engineering. Merrill reports that Ameco's ability to produce a complete solid state CATV package is primarily through Richey's efforts.

ANACONDA OFFERS CATV TURN-KEY SERVICE

Anaconda Wire and Cable Company is now offering a complete cable TV system turn-key package. The package will cover feasibility studies, design engineering and full system installation. A CATV Operations Group has been organized at Sycamore, Ill. as part of the company's Communications Products Division.

A company spokesman stated that "This package concept makes it simpler for . . . companies to enter the CATV business. In addition, it is complete—from initial financial studies and commercial surveys of potential market, to the actual detailed engineering and construction of a CATV system."

Anaconda is also offering such services as signal verification surveys, receiver site location studies and local marketing assistance.

HUSTON LEAVES AMECO, JOINS COX BROADCASTING

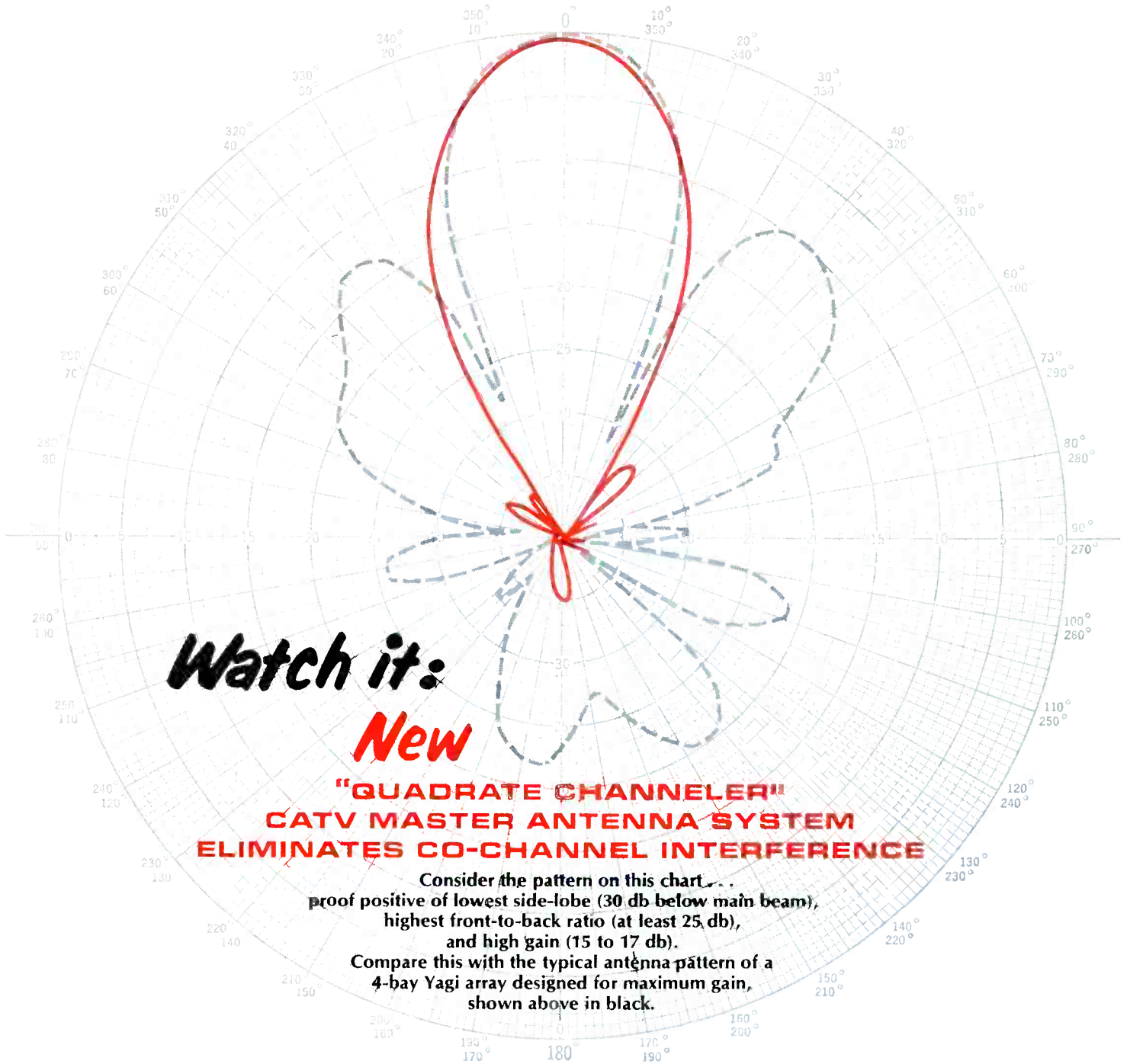
Robert H. Huston has joined Cox Broadcasting Corporation as Director of Public Relations and Information.

According to *J. Leonard Reinsch*, president of the Atlanta, Ga. firm, this is a newly created post with work at the corporate level and duties encompassing all of the many diversified fields of the company.

Prior to joining Cox, Huston was Director of Public Relations and Advertising for Ameco, Inc. Before entering the cable television field, he held a similar position with Lone Star Steel Company of Dallas, Texas.

ENTRON ELECTS BOARD AT ANNUAL MEETING

Silver Spring, Md. based CATV equipment manufacturer Entron, Inc. held election of its Board of Directors at the Company's annual meeting last month. *Robert J. McGeehan*, President,



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New

"QUADRATE CHANNELER" CATV MASTER ANTENNA SYSTEM ELIMINATES CO-CHANNEL INTERFERENCE

**Consider the pattern on this chart . . .
proof positive of lowest side-lobe (30 db below main beam),
highest front-to-back ratio (at least 25 db),
and high gain (15 to 17 db).
Compare this with the typical antenna pattern of a
4-bay Yagi array designed for maximum gain,
shown above in black.**

Low side lobes and high front-to-back ratio means rejection of all signals arriving at the antenna except those in the direction of the main lobe. The measured and guaranteed values on the antenna pattern above signify just one thing—elimination of co-channel interference.

Proven by years of operation in military communications systems, satellite tracking stations, and on the national missile ranges, these broadband antenna elements combined in quadrate arrays bring to CATV a new standard of performance.

Because of the inherent broadband characteristics of these arrays, only 3 sizes cover all VHF channels. And a single array can be used to receive all channels in its band provided their directions fall within the main lobe beamwidth.

Electrical characteristics exceed those of any other commercially available antenna system. Mechanical features assure years of trouble-free operation. Rugged, corrosion resistant materials are used throughout. Cantilevered members are vibration damped, and all electrical connections are hermetically sealed. The severest environment will not faze these arrays.

Quadrate Channeler antenna arrays are shipped complete with antennas, array structure, feed harness, and all tower mounting hardware.

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announced the election of two new members as well as re-election of all previous members.

Boston attorney *Kevin R. Doyle* and *Lawrence J. O'Connell*, assistant business manager of the Boston Herald Traveler were added to the board of directors to bring it total to 10.

Financial report given at the meeting reflected a 15.7% increase in sales for the fiscal year 1965. Sales increased from $1,974,716 in 1964 to $2,284,399 according to the report.

HOUMA TV CABLE NAMES MANAGER

Earnest E. Bliss Jr. has been named manager of Houma T.V. Cable Co. in Houma, Louisiana.

Mr. Bliss has been Chief Engineer of the system since it first began operation nine months ago.

Previous to that he was employed by Vestal Video, Inc., Vestal, New York as chief technician, and has been in CATV for a number of years.

JERRY HASTINGS NAMED MANAGER OF JERROLD CATV SYSTEMS DIVISION

Jerry Hastings has been named Manager of the CATV Systems Division of Jerrold Electronics, according to *Lee Zemnick*, Vice President of Systems Marketing and Operations.

Mr. Hastings' responsibilities include the sales, engineering and marketing of all of Jerrold's CATV equipment and systems.

He joined the Baltimore sales office of Jerrold Electronics in 1952, and soon became Sales Manager of the office. In 1960, Mr. Hastings moved to Philadelphia as Assistant Sales Manager of the Systems Division. Two years later he became Sales Manager of the Communications Systems Division, which manufactures microwave equipment. In 1964, he became Special Projects Manager of the CATV Systems Division, a post he held until his appointment as Division Manager.

Previously, Mr. Hastings sold Jerrold equipment for a Baltimore distributor of Jerrold gear. Prior to that, he operated his own TV service company.

CAMPBELL GETS VICE PRESIDENCY OF COX CABLEVISION

Formerly general manager of cable operations, *John P. Campbell* has been named vice president of Cox Cablevision Corporation, a wholly-owned subsidiary of Cox Broadcasting Corporation.

Campbell has been active in CATV since 1954, having established the Dubuque, Iowa cable system for Jerrold Electronics Corporation at that time.

He was later eastern regional manager for H & B American for five years and has been with Cox Cablevision since July of 1963.

TRANSAMERICAN MICROWAVE FORMED

Jack Kent Cooke, President of Jack Kent Cooke Incorporated has announced the formation of Transamerican Microwave Inc., a California corporation specializing in the communications field.

According to Cooke, the chief objective of Transamerican Microwave Inc. is to supply national microwave service. Additionally, the new corporation proposes to include a program of research and development encompassing every phase of the microwave field.

Shortly, Transamerican Microwave Inc. will announce the purchase of a number of microwave systems, and the building of new ones.

President of Transamerican Microwave Inc. will be *William R. Lastinger*. "Bill", a graduate engineer of the University of Texas and formerly president of American Television Relay, Phoenix, Arizona, first entered the microwave field in 1954. He has pioneered in the operation of CATV systems, internationally, and for the past number of years has enjoyed a reputation as one of the leading "professionals" in the microwave field. He is a member of the board of directors of the National Association of Microwave Common Carriers.

Transamerican Microwave is located at 9888 Wilshire Boulevard, Beverly Hills. Mr. Cooke is Chairman of the Board of the new company.

BLONDER-TONGUE APPOINTS WILLIAMS VICE PRESIDENT

Sheldon Williams has been named a vice president of Blonder-Tongue Laboratories, Inc., according to Isaac S. Blonder, Chairman of the Board.

Williams has been Personnel Director of the electronics firm since joining it in March 1957. Prior to that he had been Personnel Director at JFD Electronics Corporation in Brooklyn, New York, and a member of the personnel staff of Associated Transport, Inc., of New York.

The New York-born executive holds his Master of Business Administration from the New York University Graduate School of Business Administration. He received his Bachelor's degree from the Bernard Baruch School of Business Administration of The City University of New York.

The Blonder-Tongue official is active in professional societies and industry associations. He is a member of the Executive Committee of the Industrial Relations Department of Electronics Industries Association.

COLLINS SELECTS BOARD MEMBER

John Nyquist, vice president and general manager for Collins Radio Company's Cedar Rapids region, was named to fill the unexpired board term of *M. L. Doelz*, who recently resigned.

Since joining Collins in 1941, Nyquist has held various management posts in engineering and manufacturing divisions. He served as vice president of manufacturing for Cedar Rapids from 1962 until 1964 when he was named Vice President, Operations. He has held his current position since January of this year.

BRAND-REX CONSOLIDATES, MOVES TO NEW PLANT

Brand-Rex, the wire, cable and dielectrics Division of *American Enka Corp.*, has moved its former Concord, Massachusetts, executive offices and two production sites at Acton, Massachusetts, and Windham, Connecticut, to a single new location at Willimantic.

Reports indicate the company's purpose in centralizing its management, technical, marketing and production personnel is to create an "ideal environment" for the production of wire, cable

and dielectrics. The new plant has a manufacturing area of 340,000 square feet on one floor, under one roof. Almost 500,000 feet of total floor space will permit further expansion to meet future customer needs.

VIKING ADDS TEXAS REPRESENTATIVE

Viking has announced the addition of *James D. Cook* of Houston, Tex. to its staff of Technical Field Representatives and Engineers.

Cook was formerly General Manager at *Phonoscope, Inc.* and his new responsibilities will include servicing new and old accounts with cable and equipment in the Texas area.

WINN-CABLE HAS NEW MANAGER

Sam Holland has been named plant manager for Winn-Cable TV, Winnfield, La. according to *Robert M. Rogers, President* of TeleService Corp. of America, a subsidiary of Texas Antennas, Inc. TeleService recently purchased the Winnfield system (formerly known as Winn Video) from Virgil Jackson.

CAS APPOINTS SOUTH-EASTERN REGIONAL SALES ENGINEER

R. L. (Bob) Taylor has been appointed South-Eastern Regional Sales Engineer by CAS Manufacturing Company, Irving, Texas. Taylor's territory includes Florida, Georgia, Kentucky, North and South Carolina, West Virginia, and Tennessee, with his headquarters in Buford, Georgia.

Formerly from Charlotte, North Carolina, Taylor has been associated with Collins Radio of Dallas, Texas for the past seven years in the Microwave Systems Engineering Department where he gained experience in CATV through microwave applications.

APPOINTMENTS BY DYNAIR

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 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.

PLP APPOINTS NEW PRODUCTS MANAGER

Preformed Line Products Company, Cleveland, has announced the appointment of *E. J. Pleszko* as manager of its New Products Department.

In his new position, he will serve as consultant to industry on new applications of the company's helically formed hardware for terminating and supporting power and communications conductors, wire rope, and cable.

He will also function as liaison with customers for potential new metal and plastics products for rhombic antenna construction, cabled communications, etc.

Pleszko joined the company in 1958 as project engineer and has served most recently as assistant manager of the department he now heads.

EASTERN SALES EXECUTIVE APPOINTED VICE PRESIDENT OF AMERICAN CABLEVISION

J. Fred Weber has been appointed vice president in charge of sales for *Jack Kent Cooke's* American Cablevision Co. American Cablevision is one of the largest group owners of cable television systems in the industry.

Weber was formerly sales manager for TeleSystems Corporation, Glenside, Pa., a multiple systems owner and operator of 33 CATV systems. While in his capacity as sales manager, Weber developed the "Aida Sales Promotion Plan" which was so successful it has been adopted by CATV systems throughout the industry.

Before joining TeleSystems, he was district sales manager for Century Metalcraft Corp., a national direct sales organization and subsidiary of Presto Industries.

HAUPT JOINS ATR

Charles Haupt recently joined the staff of American Television Relay according to *William Lastinger*, president. His work includes civil engineering and writing of structural specifications.

Haupt is a graduate civil engineer with graduate studies in structural engineering. Before joining Ameco he was senior bridge engineer for the State of Arizona, engineering inspector for the City of Phoenix and held various positions with the Atomic Energy Commission, and with the electrifications division of the Pennsylvania Commission.

LAIRD NAMED REGIONAL MANAGER

C. Henry Laird has been named Midwest Regional Sales Manager of Blonder-Tongue Laboratories, Inc., in an announcement by *Harry A. Gilbert*, Vice President and General Manager.

Before joining Blonder-Tongue, Laird had been Midwest regional manager of the Reeves Soundcraft Division, Reeves Industries. Prior to that he was Eastern divisional manager for Beattie-Coleman, Inc.

LETTERS

Gentlemen:

I did not receive my *TV & Communications.* This is a very good publication. and I do not want to miss a single issue. This magazine has been a big help to us!

J. W. Krellner
Jersey Valley Community TV
St. Marys, Pa.

● *Your subscription has been corrected and your copies are once again on their way to you.*

Editor:

Enjoyed your article ("A CATV Manager" by Charles Wigutow, Ameco, Inc.) in the May issue of *TV & Communications.*

I've never forgotten that you told me a long time ago that a CATV manager was everything from Manager to Janitor and all the jobs in between. You are so right!!!

Julien Smith, Jr.
Cablevision
Selma, Ala.

Stan:

We have a "TAME" organization here in Houma, La.

I have made it a "special point" to show the ring-leaders your article (Editorial) in the June issue of *TV & Communications.* I need all the info I can get to let some of the "followers" here know what they're a part of. — Just Great!

This Helps!

Chick Williams, Mgr.
Houma TV Cable Co., Inc.
Houma, La.

● *Glad to be of service to you, Chick. Another excellent source is NCTA's "The Facts About Community Antenna Television". It is full of ammunition for you.*

Gentlemen:

Please enter a one-year subscription for your *Cable Television Review* in the name of Mr. J. R. Woods. Your . . . review met with many favorable comments here at Rome Cable and we feel confident that this weekly newsletter will bring us much useful data on current CATV trends.

R. L. Coleman
Rome Cable Division of Alcoa
Rome, N.Y.

Dear Mr. Searle:

I was very impressed with your April 12 issue of CABLE TV REVIEW. It was interesting, factual and comprehensive.

We are currently negotiating to acquire some CATV systems and if you are aware of any for sale we would certainly appreciate your assistance.

Norman Knight
Knight Stations
Boston, Mass.

● *Our readers frequently list CATV systems for sale in our Classified Advertising Section. We suggest you watch that section for such listings.*

Dear Stan:

It sure looks as if CPC is growing by leaps and bounds. Congratulations on your new CABLE TELEVISION REVIEW. . . .

I've watched your growth with considerable interest, and must admit you fellas are really moving.

Forest H. Belt
Editor, Magazine Division
Howard W. Sams & Co., Inc.
Indianapolis, Indiana

THE LION'S SHARE IN BILL DANIELS DEN

By Stan Searle and Ron Palmquist

"Bill Daniels . . . very expressive".

Would you call a million-dollar CATV brokerage house a toy? Or, would you term a twice-successful, 45-year old businessman a kid? Perhaps not, yet that's how Bill Daniels of Denver describes himself, the young, dynamic business that bears his name, and the 25,000 miles of air travel required each month to bring together sellers and buyers of cable television systems.

"My business is generated by visiting the owners of properties and by keeping in contact with the large investors and bankers who provide the money," says Daniels. And his business now includes the "lion's share" of all CATV system brokerage.

A former Navy pilot and leader of the famous "Blue Angels", with 1,500 hours of military jet flying time, Daniels doesn't mind all the travel necessary to accomplish this mission. "It used to be rough in DC-3's, DC-6's and DC-7's," he reminisces, "but commercial flying in jets — and television — I'm like a kid with a toy."

Bill Daniels' introduction to television was the direct result of his keen interest in sports. A Golden Gloves boxing champion in his youth, he relates how he was completely taken by the Wednesday night televised boxing matches which he saw for the first time on a set in a Denver restaurant. The incident occured during a post-Korean war visit to Denver, immediately following the lifting of a government freeze on commercial television channel allocations.

On his arrival in Casper, Wyoming, to resume an insurance career begun in New Mexico, Daniels found no television. A thorough investigation further showed that construction and operation of a commercial station in the Wyoming city was at that time an economic impossibility. But through Daniels' efforts in urging a group of local oilmen to provide financial backing, Casper received television — from Denver, 300 miles to the south.

Thus, an admitted TV "nut" Bill Daniels found himself personally involved in Community Antenna Television. As he puts it, "I could smell what I thought was a tremendous future industry."

The big step from CATV builder and operator to cable television broker, consultant, appraiser and systems manager took Daniels through several successive phases as an industry pioneer and innovator. Daniels recalls, "In the early days I was a builder, and pioneered the first CATV system in the world to use microwave, which we had to do in Casper because of the distance from Denver stations. People thought I was nuts then." Later, when he entered the brokerage and consulting business, Daniels sold his cable properties so that, to use his words, "I could act as a pure broker and consultant, which I discovered was my forte."

Daniels and Associates was founded in 1958 as the only exclusive CATV brokerage-consulting-appraising firm in the United States. His primary function was obtaining for sellers a fair price for their cable television property. "We are finders of money and new capital to pump into the cable television field," Daniels states.

THE SUCCESS FORMULA

Bill Daniels has piled up an enviable track record during the seven years his firm has been serving America's commun-

ity antenna television industry. In that time, the brokerage division of Daniels and Associates has sold CATV systems valued in excess of $105-million. In fact, D & A has handled 80 per cent of all CATV system sales. And during that past 12 months Daniels' business volume has tripled, attesting to his success formula; keeping advised on what's going on in the industry and staying on the telephone, talking with friends and getting a tip on a sale.

"We know everyone in the business and we work hard," declares Daniels emphatically. "We are finding more and more buyers who are willing to pay more money for CATV properties . . . we are starting to realize the fruits of seven years in the brokerage business."

Daniels has a backlog of buyers who have told him what they're looking for, and a good set of records in a pair of black books which he claims he wouldn't sell for $100-thousand cash! As a result of this knowledge and intuition, Daniels says, "I usually know I've got a property sold before I talk with the buyer."

In addition to his leading role as a CATV broker and appraiser, Daniels' management division operates many cable systems throughout the country, advising clients on operation, finances, equipment maintenance, personnel supervision, promotion and public relations. The firm also acts as a consultant to CATV systems in Canada and other foreign countries.

Bill Daniels, the successful cable television man, is also a broadcaster. In 1961, he bought KFML-AM-FM, Denver, and was president of KTVR (TV), a Denver independent channel. Daniels is sorry he entered the radio-television broadcasting business, but, he says, "I've learned a lot and felt that in order to really learn the cable television business I had to learn the other side of the business." As a result, Daniels has received a well-rounded education in the problems of commercial broadcast managers and owners.

THE "TEAM"

The "D & A team", is an organization made up of people with a working knowledge of all the facets of cable television and an intense loyalty to their boss. Monty Rifkin, Daniels' top man and executive vice-president, has ten year's experience in the CATV field. A "bear" for work, Rifkin is well qualified to run the office when Daniels is out of town. "The finest management man I have ever seen, the finest detail man, a top notch certified public accountant. I simply could not run our company without him", says Daniels. "He is a good negotiator and a tremendous help to me in following up and closing deals."

Alan Harmon is Daniels' right hand man in daily contact with sellers and buyers and works primarily in the brokerage division. Bill says of him, "An indispensable part of our team, well known by all CATV operators and ready to go any place any time to help any of our clients."

Ross MacGregor, builder and operator of one of Canada's largest CATV systems, is the firm's expert on the blossoming Canadian television territory. He also doubles in management and is considered by Daniels to have "an absolute knowledge of the industry, and the willingness to travel any place any time as all of my men must have." Occasionally Bill says he feels sorry for his "team mates" because of their family responsibilities, but he adds, "they well realize that the industry has never had the opportunity it has now and if we drag our feet in any way, competition will pass us. And we don't intended to let that happen."

Dick Zell, company comptroller, has been with Daniels for over six years. "His responsibility is tremendous," Bill says. "He must keep up to date on internal revenue rulings and normal day to day tax and accounting problems. I feel no company can survive without good financial records and I am thankful for Dick."

Bill Ross, Daniels' engineering vice-president, is a highly qualified practical CATV engineer. John Saeman, the newest member of the Daniel's team, has spent the last five years in sales. He brings with him a degree in finance plus two year's experience in selling CATV service as a consultant. John serves as Monty Rifkin's assistant.

Tom Johnson specializes in sales and public relations and is rapidly becoming Daniels' assistant in all matters pertaining to D & A and its customers. Tom has been active in direct sales programs for CATV throughout the country during the past two years.

The Daniels organization is complimented by five distaff employees, about whom Daniels comments, "We couldn't get along without the girls; all have been here a long time. They are dedicated and will work all night if we have an emergency job that has to be done."

CATV PIONEER

Bill Daniels has been in CATV a long time. He was the second president of NCTA and has been active in the As-

Alan Harmon

Monroe Rifkin

Tom Johnson

Dick Zell

sociation for a dozen years. Consequently, he is well known by leading cable owners, financiers and broadcasters. To get their views of Daniels, and how he happened to bring the "lion's share" of the brokerage business into his den, we talked with some of Bill's acquaintances.

The Daniels team in conference. (L. to R.) Tom Johnson, Ross MacGregor, Monroe Rifkin and Daniels.

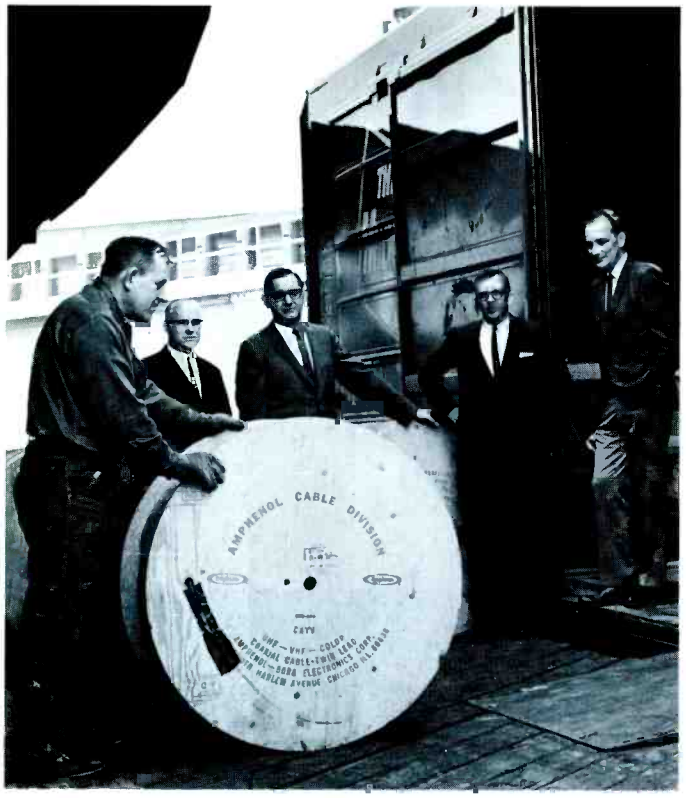
Frederick W. Ford, president of the National Community Television Association (NCTA), and past chairman of the Federal Communications Commission, describes Daniels as, "a very outstanding fellow, a go-getter who occupies a unique position in the industry, having pioneered the purchase and sale of CATV systems. He has been successful in one of the oldest services to any industry, bringing willing buyers and sellers together."

Another Daniels fan is Jack Kent Cooke of Beverly Hills, California, who, like Daniels, soared to success in earlier enterprises and wound up a cable man. Cooke says: "Daniels transcends the ordinary role of a broker. He is knowledgeable, and has an instinct which is rarely matched by a broker in most fields that I have been interested in. Daniels and Associates is a first-class organization. I'm entirely uncritical of everything they've done for us."

Daniels also enjoys an enviable rapport with investors and bankers who pump life-giving capital into the CATV business. Jim Ackerman of the Economy Finance Co., Indianapolis, Indiana, was introduced to the cable television industry by Daniels about four and a half years ago. "Bill is one of the most informed about CATV, so I always learn something new about the field from him. It's always a pleasure to work with him." Daniels' six-year association with Rex Rhodes of the Bank of New York stems from a mutual interest in CATV. Says Rhodes: He is dynamic, far-sighted and has a little bit of the entrepreneur in him. Daniels is really a grandfather of the industry and can well act as a spokesman for segments of the business."

Another former NCTA chief executive, cable system owner Glenn H. Flynn of Tyler, Texas, says "I've known Bill for 12 to 14 years, and in my book he's one of the top men in the industry. His activities have made a marketable industry out of CATV."

Broadcasting magazine's editor and publisher, Sol Taishoff, credits Daniels drive, verve and enthusiasm as being responsible for broadening the CATV industry. Says Taishoff; "Bill Daniels has had more influence than any other person



Wayne Scheppele and Charles Camillo (rear) of Amphenol join Dougal ("Jim") Mackenzie and Ed Foust of CATV Equipment Co. as workman rolls reel of new Amphenol cable into box car in Chicago.

in bringing broadcasters into the CATV field." Daniels is quick to point out that every multiple-owner broadcaster in the nation — with two exceptions — is in the cable television business today. And, he confidently states, "I'll get them in the next 12 months."

A long-time Daniels associate, Al Malin, is a Rochester, New Hampshire CATV system owner and radio broadcaster. He says: "His (Daniels') great success resulted from bringing together people who had no cable television experience, including money men and bankers, and persuading them to invest in CATV."

DANIELS ON REGULATION

One direction forseen by most people in the CATV business is regulation by the Federal Communications Commission. "I don't think it should be controlled," states Daniels. "I'm violently opposed to any control over private business." It's Daniels' firm belief that as long as cable television serves the public there is no reason why CATV should be controlled by the Federal government.

Despite his objections to governmental meddling into CATV's business, Daniels admits, "the handwriting is on the wall. As much as I hate to admit it, we will be under the control of the FCC. The question now is to what degree." Daniels sees the tremendous political power of the nation's television stations as the primary reason for FCC control of cable television. As a result of this proposed regulation, Daniels believes the industry will be forced into becoming an innovator.

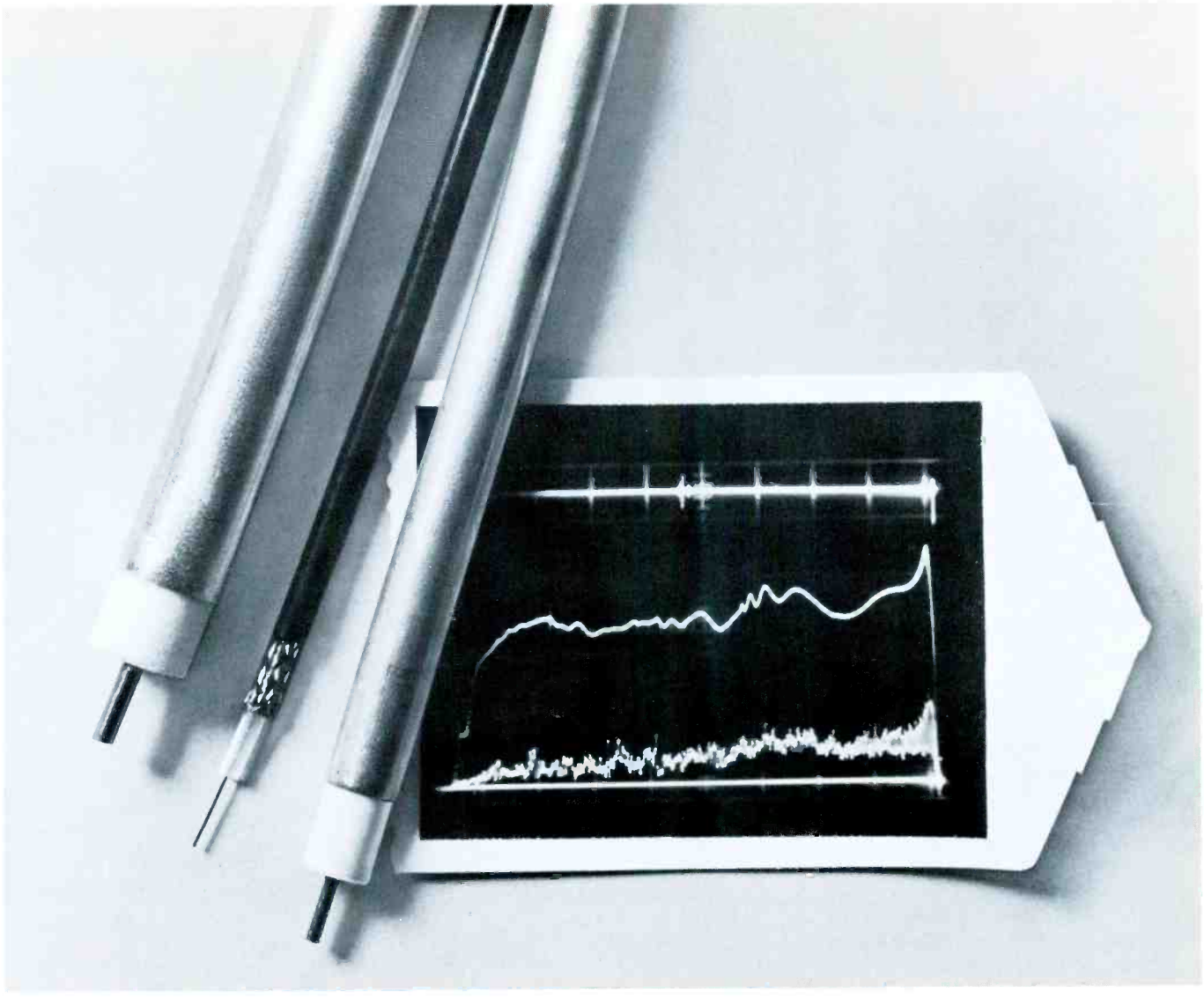
As chairman of the 1965 Denver convention of the NCTA this month, Daniels will serve up a sneak preview of an industry innovation. It's an instant news service that, according to Daniels, "quite simply takes a normal AP or UPI press wire and converts it into a service on a television channel in the home, allowing the public to tune in a designated channel and get the news at the exact same second that newspapers and radio and television stations get the news. This to me is most exciting." Already, cable television is providing subscribers with time-of-day and weather information.

CATV: A ROSY FUTURE

Bill believes the cable industry's overall picture is immensely rosy. "As long as you provide a service the public needs and wants, nothing can stop you," states Daniels. He believes however, that CATV, through stubbornness and ignorance, has made some mistakes. For example, CATV's relationship with the TV stations whose signals it extends, are not the best. Daniels points out that any television station owner or manager would be delighted to have a cable system owner comment on the quality of the channel's signal and programming. "We haven't done enough of this; we've got a long way to go in our public relations with stations, to whom, of course, we are grateful." But Daniels is happy that mistakes in handling the general public have diminished, and that public relations have improved 100 per cent in the past three years.

Still a TV fan, Bill notes that television is "a remarkable influence on our lives." There's not a thing the television industry can do to make it better, he claims. "I think it's fantastic." Daniels just believes people want more television. As he puts it, "It's so good they want more."

Bill Daniels, CATV pioneer, spokesman and entrepreneur, pictures commercial television as an infant, a 20-year old child! As for cable television, Daniels notes that approximately 20 new CATV franchises are awarded each week. Gazing into his cable television crystal ball, Bill Daniels borrows a show business expression to describe his overall view of the future of cable TV. Says Daniels; "You ain't seen nothin' yet." □



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

The proof is in the picture! Every inch of Amphenol CATV cable is tested for structural return loss. It must pass these quality standards: 26 db structural return loss for minimum ghosting, consistently low attenuation and uniform 75 ohm impedance. Based on this performance, CATV contractors have installed over 1,000,000 feet of Amphenol cable.

1. HEAD-END CABLE. Seamless, lightweight aluminum cable, .750" in diameter, gives you moisture and radiation protection. Attenuation variance is minimal from the smooth curve: 0.25 db/100' at channel 2, 1.01 db at channel 13. Easy to install in 1000' minimum lengths. Available with all-weather black poly jacket.

2. FEEDER CABLE. Amphenol .500" aluminum cable is a star performer from deep South to stormy Seattle. Attenuation is low for its size: 0.65 db/100' at channel 2, 1.22 db at channel 13. This CATV cable also comes in .412" diameter with attenuation figures of 0.85 db/100' at channel 2, 1.57 db at channel 13. Both available with black poly jacket.

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

SEE VISUAL PROOF of Amphenol CATV cable quality at the NCTA Show, July 18-23, Denver, Colo. Amphenol Cable Division, 6235 S. Harlem Ave., Chicago, Ill.

Amphenol® CABLE DIVISION
amphenol corporation

Specify Amphenol . . . the leading name in cable, connectors, assemblies, RF switches, potentiometers, microelectronics

CONSIDERATIONS FOR THE

BURIED CATV PLANT

FIGURE 4

By Don W. Hoffman
Superior Cable Corporation
Hickory, North Carolina

As television systems grow in scope and stature, the long, studied look is replacing the quick glance. More and more system operators are making long-range plans for upgrading service and for maintaining high grade service over a period of years. Such plans usually involve the consideration of buried plant construction. Although its application to the CATV field is new, the buried plant concept is a working reality in the telephone industry and is acknowledged to be one of the most significant developments in the history of communications.

Long a primary objective of telephone engineers, buried plant became feasible with the introduction of equipment, material and techniques which made it possible to install buried wire and cable in a manner acceptable from both an economic and an engineering standpoint.

One of the first major uses of direct burial plant was made in 1957 by an independent telephone company in Missouri and involved some 300 miles of buried telephone cable. Latest figures released by the Rural Electrification Administration show that in 1964, of more than 30,000 miles of telephone wire and cable installed by REA borrowers, buried plant represented 70%. REA estimates that use of buried plant will continue to increase until it represents more than 80% of total telephone route miles.

Such widespread acceptance surely indicates that buried plant has progressed from concept to field-proven practicality.

Direct burial construction for television systems will benefit from the long experience gained in the development of buried plant for telephone communications.

There are obvious advantages provided by buried cable systems. One is protection from weather. Hurricanes, tornadoes, wind storms, hail storms, ice storms, extreme temperature variations — all become of less concern when cable is properly buried below ground.

Another is speed and ease of installation. With the modern trenching and

FIGURE 1

FIGURE 2

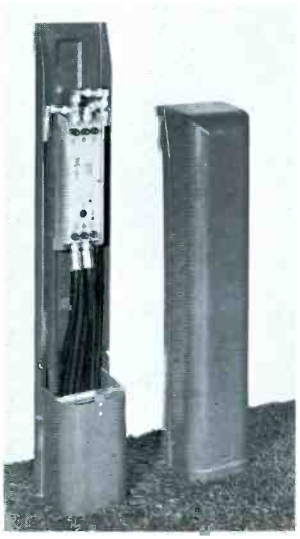


FIGURE 3

Experience has shown that direct burial cable, after installation, remains vulnerable to damage caused by outside or foreign workmen, by frost heaves, and in some areas, by rodent attack.

Design considerations, then, must be given to mechanical properties as well as to electrical characteristics. The need for a high degree of crush resistance and the ability to withstand general mechanical abuse led to the selection of solid polyethylene, rather than expanded polyethylene, as the recommended dielectric material for direct burial coaxial cables. As a testimonial to its suitability, solid polyethylene is being used as a dielectric material in current transoceanic coaxial cable designs.

The major strength of a direct burial coaxial cable lies in its solid core. Around that core, a corrugated copper shield is longitudinally applied; the cable construction being completed by the extrusion of an overall jacket of polyethylene. Such a cable construction provides the capability required to withstand the stresses and strains of placement operations and to resist damage after placement.

Electrical characteristics remain of prime importance. The coaxial cable construction just described retains the same electrical characteristics available with expanded polyethylene; better mechanical properties have been achieved without sacrificing electrical integrity. To maintain the standard 75 ohm impedance has, of course, required an increase in physical dimensions.

The question of water or moisture penetration in buried plant is a recurring one, despite field experience

FIGURE 5

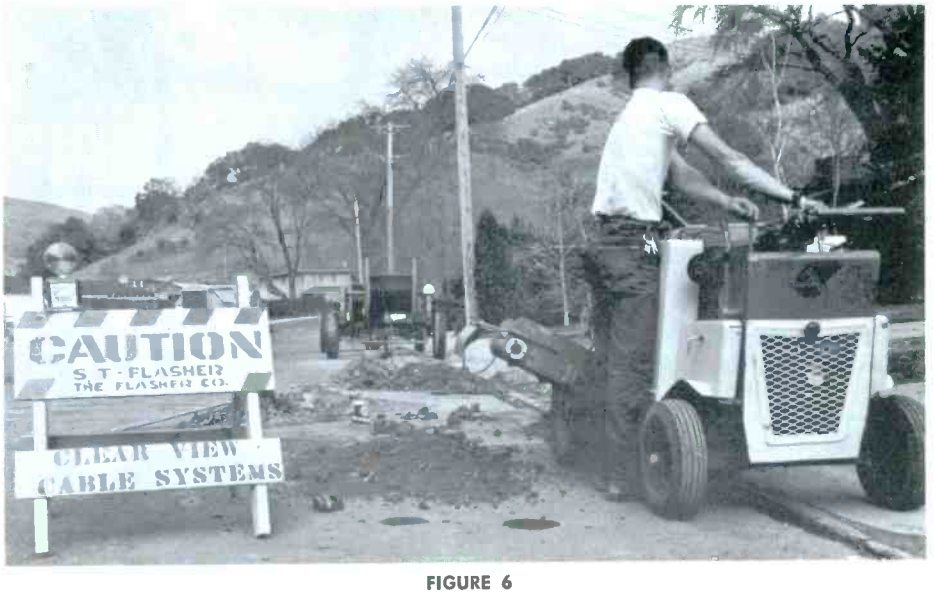


FIGURE 6

ploughing equipment available today, buried cable installation can be completed at a faster rate than a comparable aerial installation will require.

A third advantage is appearance. Perhaps as a result of the mounting public concern about community beautification, buried cable systems are becoming more acceptable than aerial installations and, in fact, are being specified by many appearance-conscious cities and towns.

A greatly improved safety factor is also provided by buried cable systems. From installation to maintenance, most work is done at ground level, eliminating the climbing hazards and minimizing the power contact hazards typically encountered in aerial systems.

As in buried plant for the telephone industry, buried plant for direct burial television system applications has required the development of low-cost housings to permit equipment and cable installation within easily accessible enclosures above ground.

The design of direct burial coaxial cable reflects the hard-earned lessons learned in the development of direct burial cable constructions for telephone communications use.

FIGURE 7

which has proven it to be more of a constant question than a constant problem. First of all, the solid polyethylene dielectric recommended for direct burial applications does not have the moisture attracting and absorbing additives present in the expanded polyethylene or "foam" types. As a result, the solid polyethylene dielectric provides almost complete stability of attenuation in the presence of severe moisture conditions or even under total immersion.

Secondly, before water can reach the core in direct burial coaxial cable, the polyethylene outer jacket and the underlying copper shield must be penetrated and opened in what must be considered major damage. Even then, unless the conductor is severed or the dielectric cut through or damaged so as to expose the bare copper conductor, the cable will remain operable with no noticeable change in electrical characteristics. (While direct burial coaxial cable can be and is manufactured with an additional jacket of polyethylene and with a copper shield of greater thickness, the use of such cable constructions in buried plant installations is somewhat uneconomic.

FIGURE 8

The introduction of dependable direct burial coaxial cables accelerated the development of enclosures specifically designed for television system use.

On the market now is a new line of all-weather fiber glass equipment housings for installation of trunk line amplifiers, distribution amplifiers, splitters, multi-tap units, and other system equipment. There are several models, different in size, shape and capacity, with some types permitting installation of equipment in combination. Figure 1 shows an equipment housing with line extender installed. Figures 2 and 3 show a larger housing used for trunk line amplifier and bridging amplifier installation. All housings can be stake-mounted or pole-mounted and all have single lock closure to prevent unauthorized entry. The low silhouette and no silhouette designs, forest-green in color, provide the attractive, unobtrusive appearance desirable in residential installations. Figures 4 and 5 illustrate the neat, clean look which can be achieved with two different types of fiber glass equipment housings.

The choice of fiber glass material for the equipment housings was determined by engineering and economic considerations requiring a light-weight, non-conductive material which would not rust or corrode or be affected by chemical atmospheres. Fiber glass housings, in use by independent telephone and power companies in widely differing areas throughout the United States, are proving excellent in field performance and durability.

Similar state of the art advances have taken place in the installation aspect of buried plant construction.

The greatly improved equipment which is now available has made possible the development of new and more efficient techniques of cable ploughing and trenching. The depth of cable installation can be more precisely controlled. Earth displacement can be kept to a minimum. Cable installation, even in rocky areas, can be accomplished at higher speeds with consequent improved economy. Views of a typical direct burial coaxial cable system installation are shown in the accompanying photographs, taken on the job site at Fairfax, California and supplied through the courtesy of Clear View Systems, Inc.

FIGURE 9

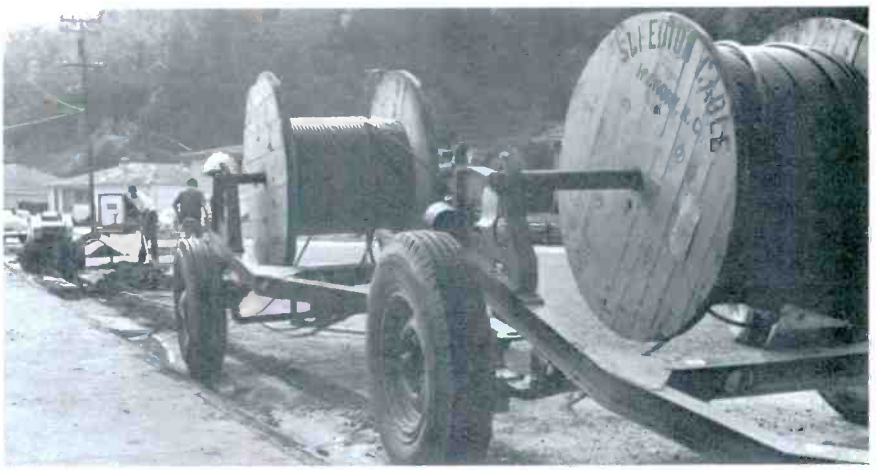


FIGURE 10

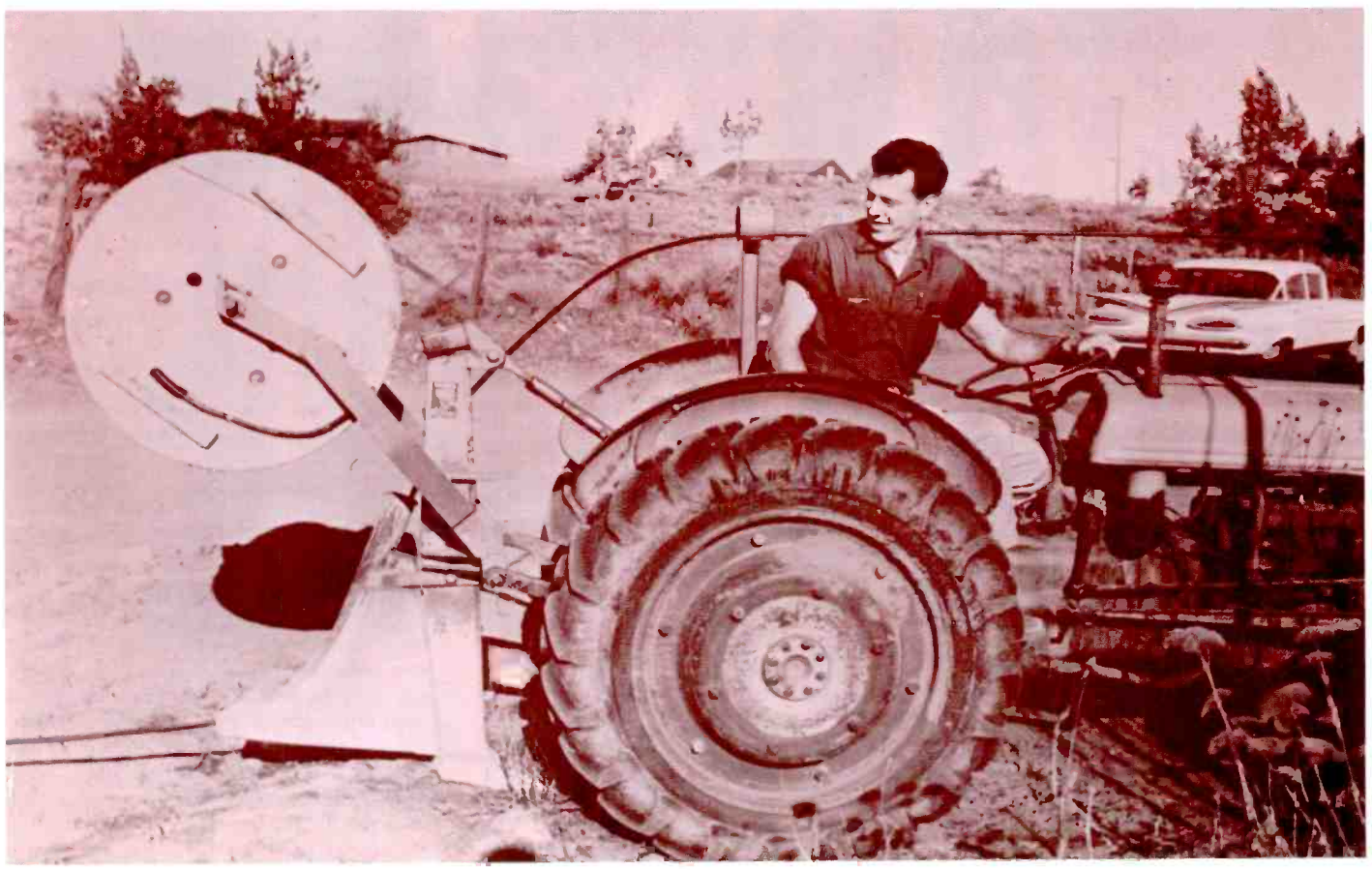


FIGURE 11

Figure 6 shows a "Trench Devil" in action, a powerful, compact trenching machine which placed the cable at a depth of 18-24 inches below ground level. It is equipped with a hydraulic ram to punch holes under paved drives and under curbing, permitting the cable to be threaded under such obstructions and thus eliminating the need to cut through or disturb the paved surface or curbing installation.

Figure 7 provides a close-up view of a reel trailer, set up in this instance to permit the simultaneous placement of both trunk line cable and distribution cable within the same trench.

lead-ins, cast-coated single tap units were buried at the edge of driveways and the service drops were ploughed-in to subscriber premises. However, for easier access and for greater protection, it is recommended that all taps be handled in the same manner as equipment installation, i.e. placed within housings above ground — with multi-tap units utilized to permit multi-subscriber service from the same enclosure.

In Figure 9, a line-crew member is shown completing a multi-subscriber trunk installation, trenched in along the backlot line of a number of homeowners.

equipment and material, were furnished through the courtesy of Rowan's TV, Inc. in Madras, Oregon.

Figure 11 shows a standard farm tractor adapted for cable laying operations by the addition of a ploughing attachment and reel holder. This tractor rig was used for ploughing-in cable in areas without sidewalks or curbing and did a very effective job.

To provide secure enclosures for installation of system equipment, Rowan's TV, Inc. adapted standard water meter boxes. Figure 12 shows a line extender prior to placement within the concrete meter vault; Figure 13 shows a bridging amplifier installation. In Figure

FIGURE 12

FIGURE 13

FIGURE 14

The Clear View system handled system equipment installations by utilizing fiber glass equipment housings. Figure 8 shows a trunk line amplifier and a distribution amplifier within the same housing, placed against a fence in a backlot installation. For subscriber

It sometimes becomes necessary to deviate from the planned cable placement route because of property owner objections.

Such a case is pictured in Figure 10. In this particular area, the planned cable placement route ran along the lot side of the sidewalk, directly adjacent to the sidewalk. As shown in the photograph, an alternate cable route was established in the street in order to bypass the front footage involved.

Even in these days of elaborate equipment and specially developed system components, it is still true that the creative ingenuity of system operators and crew chiefs plays a major part in the construction of an efficient, economical buried plant system. The following photographs, showing what can be done with locally available

14, note the special locking arrangement for the meter cover.

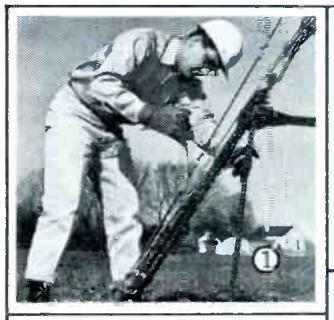
What about cost figures?

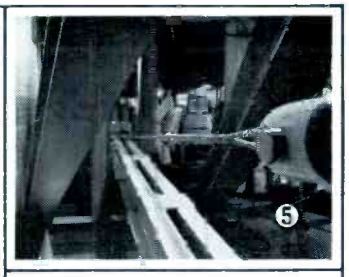
Due to the many variables involved, including system size, type and location, the cost of buried plant construction can best be determined by specific system survey. Many buried plant systems have been completed at a cost of 22 to 25c per foot. Others have cost more; some have cost less.

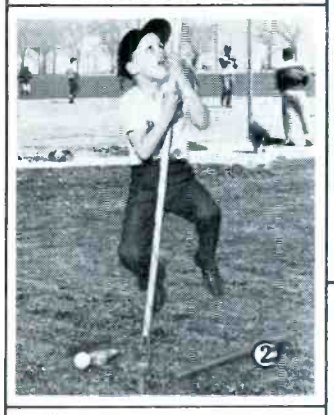
Certainly, in areas favorable for its use, buried plant deserves careful study and consideration because of its inherent long-term stability and long-term economic advantages. If the acceptance of the buried plant concept in the television industry parallels its history in telephone communications, a rapid increase in the number of buried television systems can be expected in the near future.

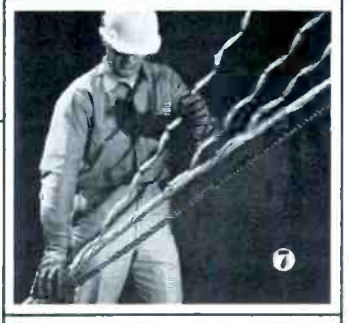
Ideas in HELICAL DESIGN

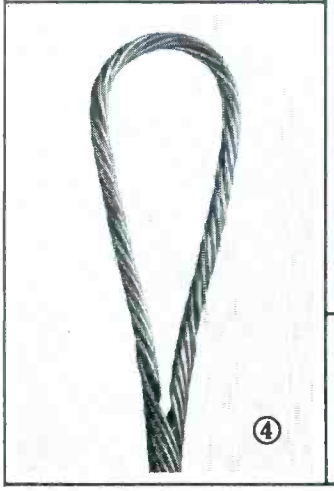
What every engineer should know about guys

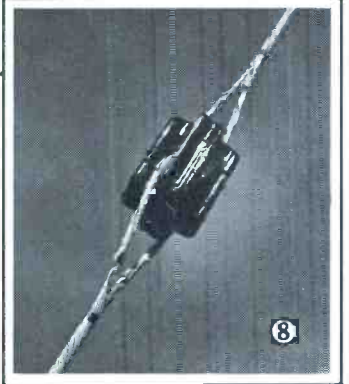










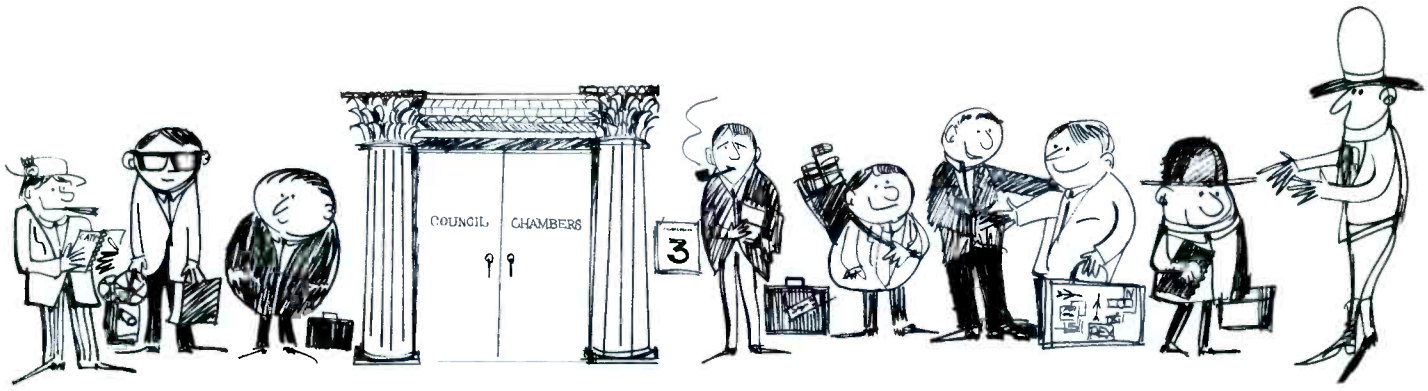


Most utility buyers have specified at least one of the guying products made by Preformed Line Products Company. Here are reasons why it is good sense to construct good guys with "Preforms": ① ***EASY TO APPLY,*** linemen say. They like the simplicity, ease of handling and uniformity of application of all guying products made by Preformed. They also find that the ease of equalizing tension speeds up multiple guying. ② ***PROTECT GUYS WITH PREFORMED GUY GUARDS.*** They are made of rugged, smooth PVC. No sharp edges to cut people — and people can't damage them. Neither can vehicle impact. Choice of yellow, green or grey to blend with the scenery or signal a warning. ③ ***TENSILE STRENGTH*** exceeds strength of strand. Even stray busses won't weaken the holding power a GUY-GRIP dead-end exerts on the strand. ④ ***CABLE LOOP DESIGN,*** unique with GUY-GRIP dead-ends, allows plenty of clearance in eye of anchor rod for multiple guying; looks smooth as the strand itself. Cabled construction beefs up the loop, assures positive protection. ⑤ ***REPEATED IMPACT LOAD TESTING*** in the Preformed Research & Engineering Center is one of the many grueling tests employed to prove high performance of GUY-GRIP dead-ends under extreme operating conditions. ⑥ ***PREFORMED PULLING EYES*** assure fast, easy application with plenty of clearance for wrapping on dead-ends. ⑦ ***BIG-GRIPS FOR BIG HOLDING JOBS*** are used to support guyed transmission towers, H-frames, transmission and receiving antennas, and various grid arrays. ⑧ ***NO BULKY SILHOUETTE*** with GUY-GRIP dead-ends. They promote improved appearance programs. ⑨ ***SEE NEW PREFORMED MOVIE*** on how to improve guying, achieve greater speed of application, and attain uniformity. We'll schedule a showing for your group. Contact your local Preformed representative, or PREFORMED LINE PRODUCTS COMPANY, 5349 St. Clair Avenue, Cleveland, Ohio 44103; dial 216-881-4900.

You can look up to

PREFORMED

Proposals-CATV Style



By S. S. Street
Adler, Street & Associates

There was a time when you could stand up before a town council and tell its members about the benefits of CATV and receive a franchise in a couple of weeks.

Those days are over.

Now when your company goes before a council you have to get in line, make your presentation and wait.

There are many ways to get CATV franchises, but in this article, we are concerning ourselves exclusively with the presentation. Your CATV presentation can be one of the following:

1—Oral
2—Audio - Visual
3—Proposal Book

The main thing to remember in any presentation is the objective — What are you trying to sell?

If you are a local group you should emphasize . . . local people, local spirit, local investment, your neighbors, etc. in short, local, local, local.

An existing cable company should stress experience, efficient operation, and past performance. If the company has been doing a good job, they can utilize endorsements from town officials, customers, institutions, TV dealers, church groups and local broadcasters.

Large operating groups can point to experience gained by big scale operations, public service contributions and most important — financial stability. The large groups have to guard against labels such as: "big business", "impersonal", "monopoly" that will be affixed to them by competetion.

Individuals might try to appeal to the "underdog" spirit or the "little guy" trying to get ahead. If the applicant has another successful business he can point to, it would be most helpful. Individuals should hire outside consultants and/or manufacturers to assist them in their presentations.

Now let's examine the various types of presentations.

ORAL

Unless you personally know every member of the town council, and can get an immediate action, this is a difficult way to go. No matter how good the speaker, when he leaves the meeting — his presentation goes with him. If you wish to make an oral presentation — at least leave a written outline for each council member. A flip-chart presentation containing salient features of your talk would be helpful and examples of CATV equipment also helps fill out your talk.

AUDIO-VISUAL

Audio-visual presentations can take various forms. All are expensive and should be handled professionally. Vari-

PROPOSAL COSTS

Production	Books	Slides	Film	Oral
Copy	$200—$1000	$200—$500	Approximately $1000.00 Per Min.	
Artwork	$250—$500	$35—$75 @		
Preparation	$10—$12 p/pg.	(same as art)		
Binding	$3—5 p/pg.			
Photography	$10—15 p/shot	$2—4 @		$10—15 p/shot
Typesetting*	$10—20 p/pg.			
Cold Composition**	$3—10 p/pg.			
Foldouts	$20—30 p/pg.			
Flipcharts				$10—15 p/bd.
Time cycle (normal)	2-4 weeks	2-3 wks.	4-12 wks.	2-5 days
Overtime ($-?)	7 days	4 days	2-4 wks.	1 day
Total (normal delv)	$1200—$5000	$1000—$4000	$1000—up	$100—up

* Choice of machine set typography ** IBM, Varitype typewriter

ous techniques include: Slides — 35 MM are standard size and are most easily handled. A "story board" should be created first — outlining your pitch. Slides should be colorful and should employ artwork, as well as, actual installations. A ten minute presentation might contain 36 slides. Movies — Probably the most expensive method for the individual or small group. However, if handled properly a film can be the most interesting presentation and leave the feeling of "professional" attitude with the council.

There is a danger of making "too slick" a presentation, and careful editing should be employed to produce the desired impression. There are many combinations of film strips, continuous film and tape cartriges and other special projectors that can be rented or purchased at a reasonable cost. Contact your local camera store or if available, an audio-visual center.

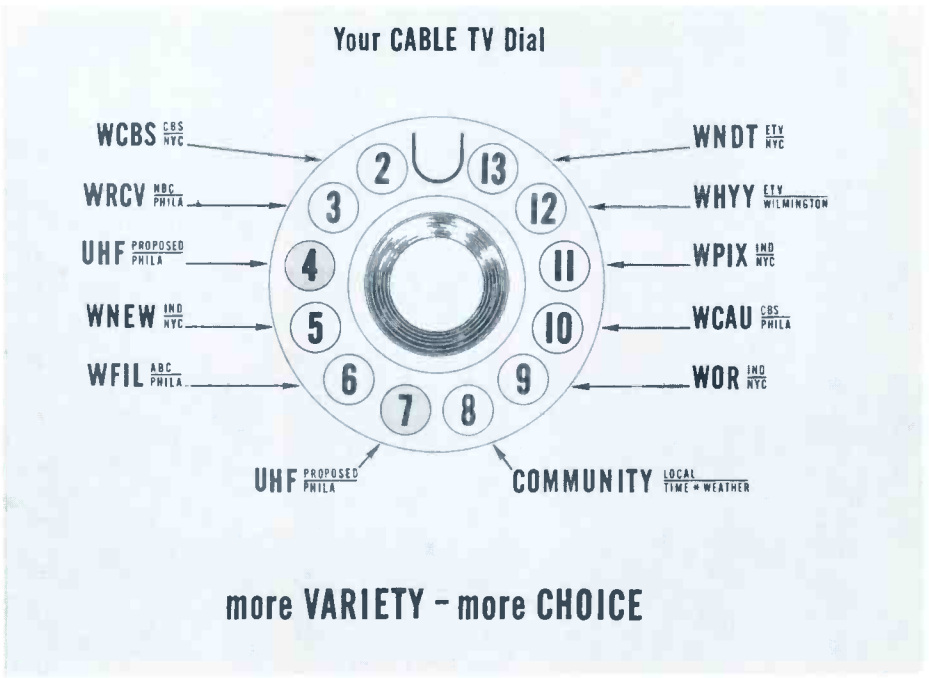
Proposal Book — A written proposal should contain the following information.

1—Cover . . . CATV, Community Antenna Television — in bold type. The name of the applicant, and to whom the proposal is directed.

2—Opening letter — Summary of your proposal signed by your president.

3—Table of Contents — Could be broken down as follows:

A—History of CATV
B—Proposal
C—Suitability of cable company
D—Sample Ordinance
E—Summary and Close



An interesting foldout shows councilmen what they can expect on cable TV.

Tabbed breaker pages should be utilized for easier reference.

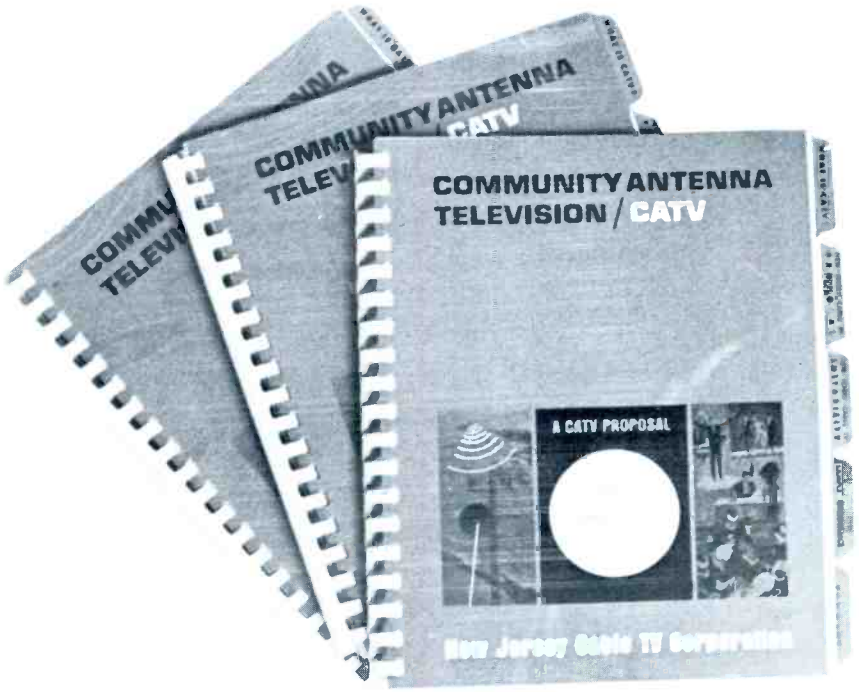
4—A thank you letter (by manager or other important personnel.)

5—Exhibits — This could include pole attachment diagrams, sample electronic layouts, polar plots, photographs of poor TV pictures, unsightly antennas, pole line constructions, set connections, service trucks etc., etc.

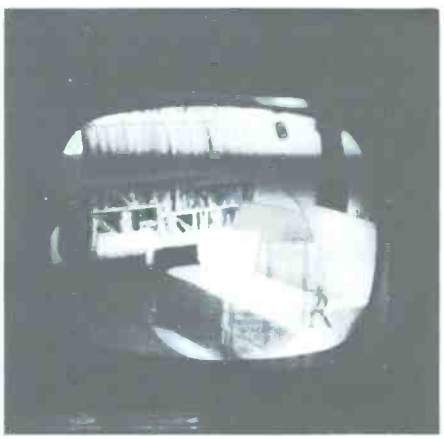
A good CATV proposal contains only essential information, and should be informative and not overbearing.

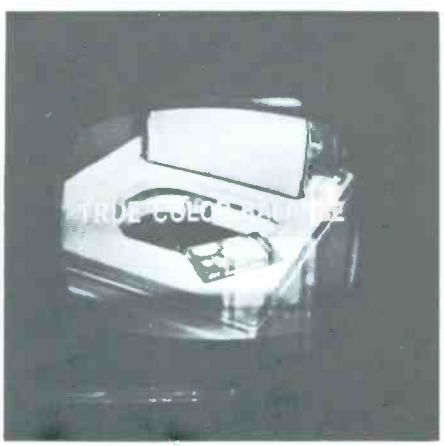
Councilmen are not generally paid officials and consider their time very valuable. They normally have other business pending so your presentation should be complete and to the point.

The councilmen are concerned with: "What is this thing going to do for our



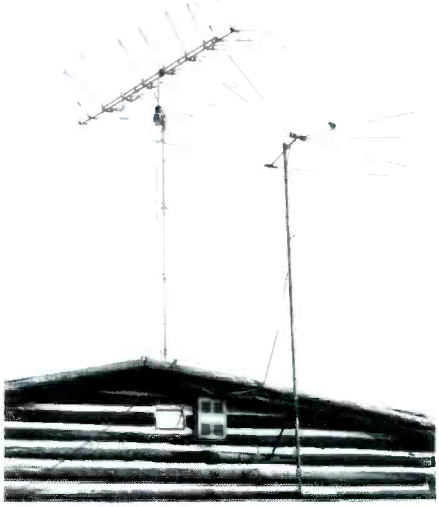
This 77 page proposal cost the author $3,250 and was presented in 37 communities.





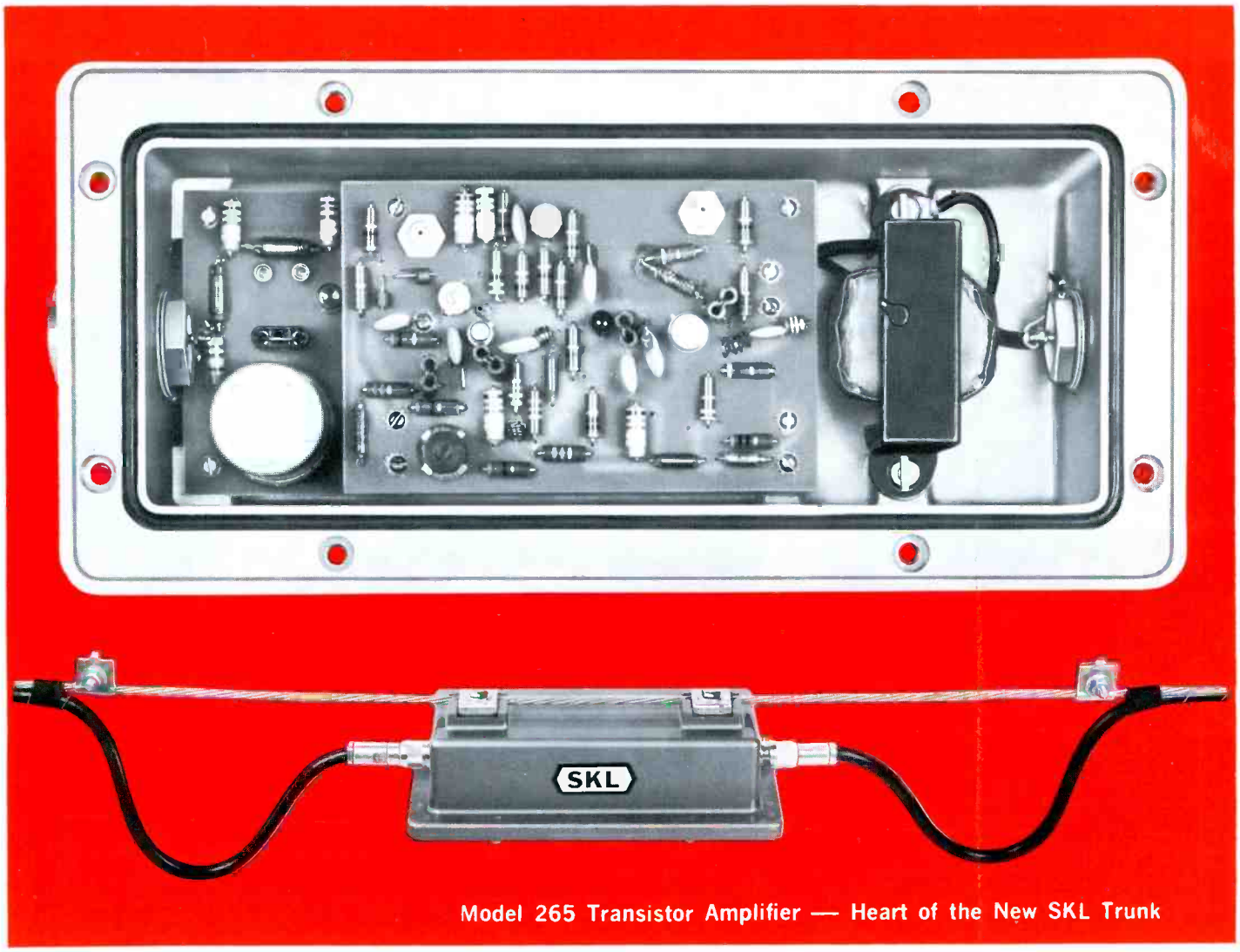
Actual photos of poor reception will document the need for CATV.

town? How much revenue will the town receive? Will it affect non-subscribers? When will you be in operation? Is your company financially sound? Are you public minded and interested in our community? What are the legal problems? When making your presentation you must be able to give direct answers to these questions.



Examples of unsightly TV antennas and how they could be eliminated by CATV make good exhibits.

Basically a CATV proposal is a good old fashioned sales pitch — attractively packaged. But remember, no matter how dynamic a speaker you are, when you leave the meeting your proposal is the only thing left. And as far as "going to all that expense" is concerned — there is no second place in a franchise fight. □



Model 265 Transistor Amplifier — Heart of the New SKL Trunk

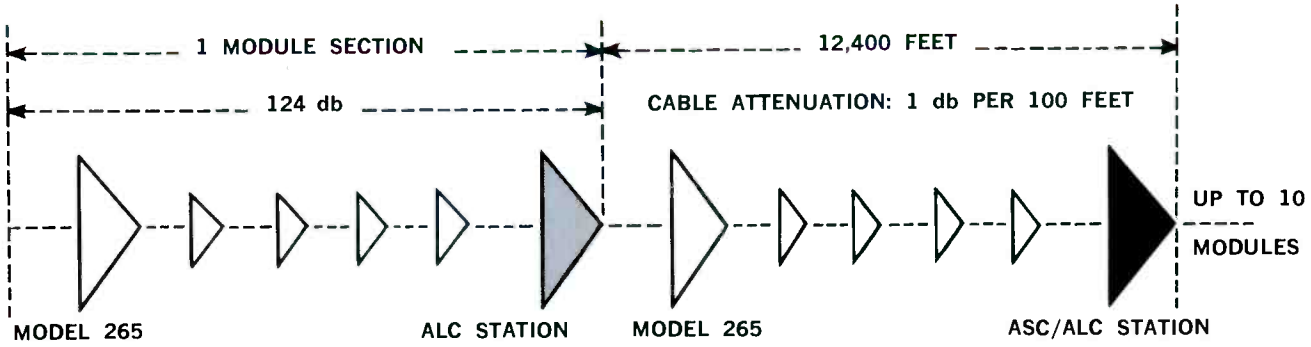
9 REASONS WHY THE NEW SKL TRUNK IS YOUR BEST BUY...

- **HIGHEST WIDE-BAND CASCADABILITY:** Over 50 amplifier total with 12-channel capability.
- **MOST EFFECTIVE TEMPERATURE COMPENSATION:** SKL's exclusive TEMPERATOR* in each Model 265 Amplifier compensates for 85% of cable variations due to temperature and frequency.
- **MINIMUM ALC STATIONS:** Required at only every sixth amplifier.
- **HIGHEST ALC PERFORMANCE:** Regardless of cause, input signal variations are compressed by a db ratio of 30:1, without affecting noise and cross-modulation.
- **FULLY AUTOMATIC SLOPE CONTROL:** An SKL exclusive . . . The ultimate in long line, automatic, total cable equalization.
- **LOWEST AC CABLE CURRENT:** Less power wasted in the cable, more reserve power for operating amplifiers.
- **MINIMUM POWER CENTERS:** Located only at ALC stations, this means savings in equipment, installation and operating costs.
- **MINIMUM MAINTENANCE:** SKL quality in every aspect, from design to finished product, guarantees long, trouble-free service and minimum maintenance.
- **ECONOMY:** Competitive in first costs and the most economical over the long term.

* Patent Applied For

12,400 Feet is the Distance Between Power Centers

IN SKL's NEW WIDE-BAND MODULAR PRIMARY TRUNK



SKL 265 TRANSISTOR AMPLIFIER: Cable TV's most cascadable wide-band trunk amplifier. Messenger-mounted, cable-powered, waterproof.

SKL 222A/275 AUTOMATIC LEVEL CONTROL (ALC): Provides the industry's most stable ALC action without affecting noise and cross-modulation. This station contains the SKL 284 fully regulated AC power supply for remote cable powering.

SKL 880 AUTOMATIC SLOPE CONTROL (ASC): The only all-electronic fully automatic slope control available for total cable equalization in long trunk lines.

Each module section comprises five Model 265 Transistor Trunk Amplifiers cascaded in alternate sections with an ALC or ASC/ALC station. The module section length totals 124 db of cable. SKL's exclusive TEMPERATOR provides both thermal gain control and cable equalization at every Model 265 Amplifier. The extremely low cross-modulation and noise characteristics of these amplifiers permit cascading up to ten module sections. Using the above cable, this would represent a distance of 23 miles. Remote cable powering of the amplifiers is accomplished by regulated power supplies located at ALC or ASC/ALC stations.

Visit us at the NCTA Show, Booths 61-62,
Denver Hilton Hotel, July 18-23

Call or write for literature and prices.

SKL

SPENCER-KENNEDY LABORATORIES, INC.

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It's time again for the Annual National Community Television Association Convention — the 14th. And, it's time again to reintroduce you to the leadership of NCTA. The Officers and Directors pictured on this and succeeding pages include many of the men who have pioneered in the cable television industry. They have worked together to help expand the frontiers of television reception; they have combined knowledge and talents to provide national and local support for large and small systems alike, and they have exhibited the zeal to put CATV in the forefront of the business world. We now present to you a

"Profile: NCTA Officers and Directors"

OFFICERS

PRESIDENT

Frederick W. Ford, a former FCC Chairman, was named President of NCTA in January of this year. Mr. Ford served the FCC from 1947 to 1953. Moving to the Department of Justice in 1953, Ford remained there until President Eisenhower nominated him as Chairman of the Commission. He was Chairman until March of 1961. President Johnson nominated him for a second term effective July 1964 and Ford held that position until his resignation to fill the NCTA vacancy.

NATIONAL CHAIRMAN

Bruce Merrill, Phoenix, Ariz., President of Ameco, Inc., is a CATV pioneer. Active in television and AM broadcasting as well as CATV manufacturing and construction, Mr. Merrill is also past president of the Arizona State CATV Association. He founded Ameco in 1952.

NATIONAL VICE CHAIRMAN

Frank P. Thompson, Rochester, Minn., is vice president of Cable, Inc. and Desert Cable TV, Inc. Cable has systems in Rochester and Brainerd, Minn. Desert Cable has

systems serving Palm Desert, Rancho Mirage, Cathedral City, Indio and Coachella, all in California. He is also father of the first "Miss Abel Cable".

SECRETARY

Charles E. Clements, Waterville, Washington. Owner of Clements TV in Waterville; past Vice Chairman of NCTA. Charlie installed the

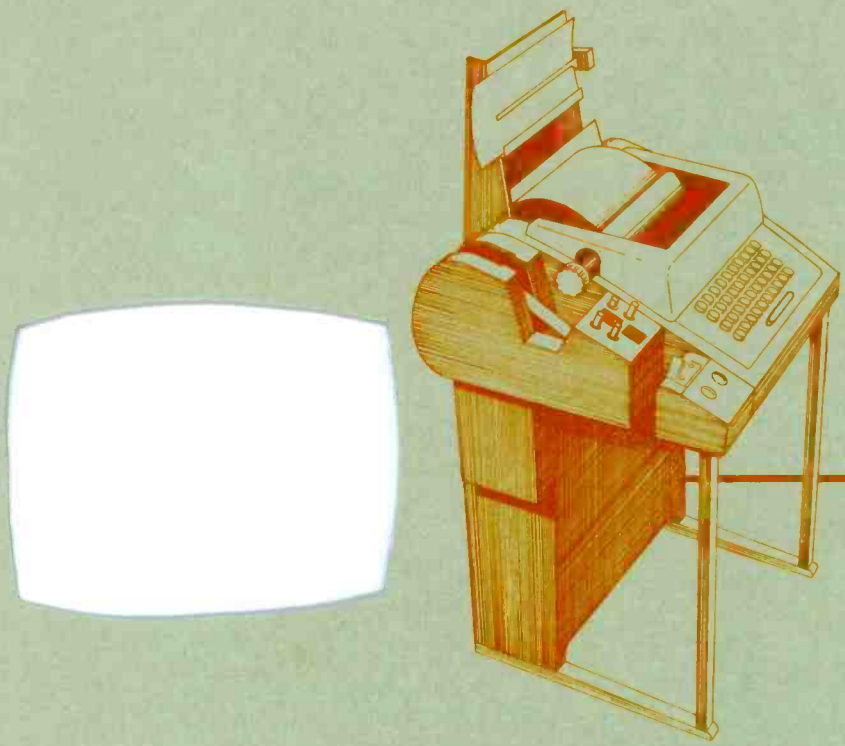
first TV cable distribution system in eastern Washington in 1952. He also serves as a consulting engineer for cable systems.

TREASURER

R. Lee Stoner, La Grande, Oregon, has served as manager of Eastern Oregon Television, Inc. since September 1954. Lee is past president of the Pacific Northwest Community Television Association. He is serving his fifth year as NCTA Director.

Instant News...

UP-DATED



NEWS CHANNEL BY THE ASSO

PUBLIC SERVICE & PUBLIC RELATIONS (AT A PROFIT)

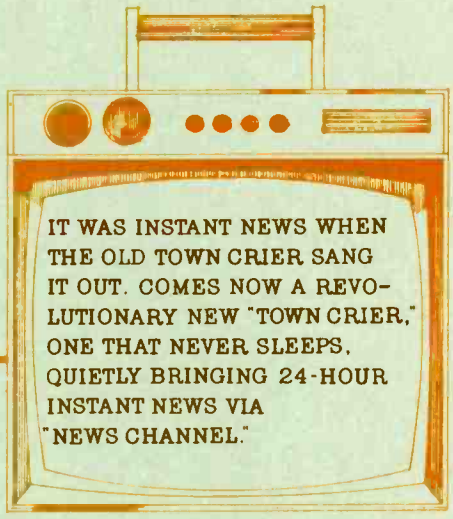
NEWS CHANNEL offers a new dimension in CATV public service at a time when more and more CATV operators recognize this need. NEWS CHANNEL brings all of the news into the home, 24 hours every day. At his convenience, the viewer can turn to NEWS CHANNEL and see the news instantly as it is transmitted on the wire from news centers throughout the state and around the nation.

NEWS CHANNEL also expands the potential base of subscribers to include businessmen and investors who are interested in hour-by-hour reports from the major world stock exchanges; restaurants and other businesses that wish to offer their customers news and sports features with minimum noise; and people who have difficulty hearing regular news broadcasts.

A concrete indication of profit potential for CATV through auxiliary equipment is found in the current success of WEATHER CHANNEL. In a recent coast-to-coast survey of existing installations, WEATHER CHANNEL was shown to be adding thousands of dollars revenue each year, as well as providing a much-needed public service vehicle. The complete AP News Service delivers outstanding features that are certain to make NEWS CHANNEL an even greater attraction for every system—a service that is available through no other source.

SOURCE

NEWS CHANNEL brings you minute-by-minute reports as gathered by The Associated Press News Wire Service. The AP is a cooperative non-profit organziation with a membership of 3,700 papers and well over 4,600 radio and TV stations in every country in the Free World. It's the world's oldest and largest news gathering agency. With more than 100 bureaus in the U.S. and some 70 bureaus overseas, the AP can cover the significant events of the day no matter where they occur and, via NEWS CHANNEL , the CATV viewer sees it first. AP's pre-eminence in the field is reflected by its 20 Pulitzer Prizes.



IATED PRESS AND TELEMATION, INC.

Some of the NEWS CHANNEL features that can be seen 24 hours a day are: International, National, Regional and Local news; high school, college and professional ball scores; sports summaries; financial reports; grain and livestock markets; weather reports and forecasts; news headlines and capsules; Hollywood news; women's features, news analyses. AP national, international and regional bulletins are shown as they occur.

OPERATION

NEWS CHANNEL alternates between two modes of operation, "Read" and "Scan". During the "Read" mode the camera views copy being typed out by a news printer. In the "Scan" mode, it scans the printed material at a comfortable reading speed. This provides the viewer with complete news coverage at his convenience, and there is never a time during which a variety of moving news copy is not being presented.

The addition of a modulator and a source of audio such as background music provides a complete entertainment and information package for system installation.

EQUIPMENT

NEWS CHANNEL was developed by TeleMation, Inc., the leading manufacturer of CATV local origination equipment. TeleMation has had many years' experience in the design and manufacture of closed circuit and broadcast television apparatus.

The General Electric television camera chosen for the NEWS CHANNEL equipment is the same rugged type used with WEATHER CHANNEL systems by nearly 200 CATV operators throughout the country. A precision electro-mechanical scanning device ties the camera to the standard AP news printer. All NEWS CHANNEL equipment, including the news printer machine, is specifically engineered to provide continuous trouble-free operation. Power consumption is approximately 300 watts; dimensions are 18"W, 54"H, 36"D; shipping weight is 200 pounds; and video output is 1.0 volts.

FOR RATES FOR YOUR CATV SYSTEM AND ANY FURTHER INFORMATION, CONTACT THE ASSOCIATED PRESS SALES REPRESENTATIVE FOR YOUR STATE.

ALABAMA — Bob Shipley, Shreveport, La., Phone (504) 529-5501
ALASKA — Murlin Spencer, Seattle, Phone (206) 682-3522
ARIZONA — Dave Shuirman, San Francisco, Phone (415) 362-6575
ARKANSAS — Tom Dygaard, Little Rock, Phone (501) 374-5536
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DELAWARE — Frank Stearns, Washington, Phone (202) 234-5400
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FLORIDA — Bob Sundy, Jacksonville, Phone (305) 356-2829
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DIRECTORS

George J. Barco, Meadville, Pa., is President, Meadville Master Antenna, Inc. George has been National President and National Vice President. He is senior member of Barco and Barco Law Firm and Special Counsel to the Pennsylvania CATV Association.

Benjamin J. Conroy, Jr., Uvalde, Texas. Ben has been president and manager of Uvalde TV Cable Corp. since 1955 and was a participant in the Effingham TV Cable Co., Effingham, Ill. Former Secretary, NCTA, Ben was president of the Texas CATV Association 1960-1962.

Harry C. Butcher, Santa Barbara, Calif., is president of Cable TV of Santa Barbara, Inc. A former broadcaster, Harry was first director of CBS's Washington office in 1929. He also built and operated radio station KIST and TV station KEYT, both in Santa Barbara. He started Cable TV in 1962, the company that recently joined with Golden West Broadcasters to serve 46,000 homes.

Jack R. Crosby, Del Rio, Texas. 1964 secretary for NCTA, Jack has held executive positions for Westex Cable Corp., Frontier Electronics, Southern Television Systems, Divide Cable Corp., all CATV's in Texas. He has also been with Montpelier Television, Inc., Vermont; Effingham TV Cable, Illinois; and radio station KDLK in Del Rio, Texas.

Douglas B. Danser, Naples, Fla., entered CATV in early 1960 when he formed General Television Systems, Inc. He started the cable TV system in Naples at that time and has since expanded to several surrounding towns.

Jim Davidson, Batesville, Ark. Owner of Davco Electronics, Jim also owns Davco Construction Co., Community Antenna Company, Guion

TV Cable. Pocahontas TV Cable (50%). Newport TV Cable and Cave City Cable. He started his system in Batesville in 1950, however he hooked up the first paying CATV subscriber in 1949. A pilot with more than 10,000 hours, Jim helped organize the Ozark CATV Association and South Central CATV Association.

F. Gordon Fuqua, Bluefield, W. Va. He is manager of Bluefield TV Cable, a division of Southern CATV Systems, Inc. A radio station sportscaster, Gordon is Technical Director, National General Systems.

Harry H. Harkins, Webster Springs, W. Va., is owner of Webster Television Cable Corp.; president of Belington Television Cable Corp.; President, Five Channel Cable Co.; Secretary, Ohio Valley Cable Corp.; Secretary of Mountain Cablevision; Secretary, University City Television Cable Co., (Fla.) and Secretary, Wayeross Cable Co. Harry has also held executive positions with West Virginia Community Tele-

vision Antenna Association and Mid Atlantic Television Cable Association.

Robert M. Regan, Mankato, Minn., founded Minnesota TV Signal Distributing Co., New Ulm TV Signal Co. and Casco Construction Co. A practicing attorney since 1937, Regan built CATV systems in Mankato, Jackson, Fairmont, New Ulm and Winona, Minn.

Bob J. Magness, Bozeman, Mont. Bob is President of Community Television, Inc. operating systems in Montana, Wyoming, Nevada, Utah and California. He also holds interests in Mineral Wells and De-Leon, Texas systems. Former owner of CATV systems in Memphis, Cisco and Eastland, Texas, Bob is now President of Western Microwave and Mountain Microwave. He is an officer for Montana Cable TV Association and Director, Pacific Northwest CATV Association. Bob also owns television and radio stations.

Albert J. Ricci, Keene, N. H. Owner of Better TV, Inc., Ricci also has system in Bennington, Vt. and is owner of several non-CATV businesses. He pioneered wide band reception in New England and is now doing management consultant work for cable TV.

J. Leonard Reinsch, Atlanta, Georgia. A president of Ohio Cablevision, Inc., Dayton, Ohio, Reinsch is active in broadcasting. Original drafter of TV Code of NAB, member of TV Code Review Board, and is on the Board of Directors, BMI. He has also served with NBC, Ohio Association of Broadcasters, Reinsch is also President, Carolina Broadcasting Co., Charlotte, N. C.

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U/V sweep generator, model 4122

Solid-state. Has two switch-selected electronically swept ranges: entire UHF TV spectrum (470 to 890 mc); entire VHF TV spectrum including subchannels (20 to 240 mc).

Sweep widths are continuously variable from 5 mc to the entire VHF or UHF range in one sweep. Center frequency can be tuned across the complete band on each range regardless of the sweep width setting. An output level attenuator is adjustable over a 60 db range. Automatic Level Control (ALC) on both ranges assures constant output. Fully regulated power supply for stable operation.

The sweep oscillator is varacter tuned (no moving parts) for silent operation and long life. For VHF output the UHF sweep is mixed with a fixed oscillator signal at 900 mc and the resultant difference signal is amplified and level controlled to cover the complete VHF TV spectrum.

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UHF sweep generator, model 4114

Same quality features as the Blonder-Tongue 4122 UHF/VHF Sweep Generator but covers range of 470 to 890 mc only.

only all-channel field strength meter in a single unit

UHF/VHF field strength meter, FSM-2

Solid-state superheterodyne circuitry. Accurate enough for the lab. Portable enough for field work. Instantly convertible from VHF to UHF with the flip of a switch. Measures RF signals at 75 ohm impedance (VHF/UHF balun supplied for 300 ohm measurements) in two ranges: VHF (52 to 216 mc) and UHF (470 to 890 mc). Sensitivity variable from 100 microvolts to 3v. for full scale meter deflection. Reads both average and peak level. AC line or integral battery operation. Fully regulated power supply. Indispensible for field strength surveys, MATV/CATV system maintenance, loss and gain measurements and percent modulation tests. Precise amplifier gain and attenuation measurements.

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Electronically-actuated, high-speed switch, solid-state, permits two signal tracings to be simultaneously displayed on an oscilloscope, either superimposed or alternately, at the rate of 30 cps. Either tracing can be seen independently for making direct, immediate comparisons between input and output voltages of any circuit under test for precisely measuring VSWR, amplifier gain, or attenuation and other applications involving equipment performance evaluation against given standards. Provision for 360 degree phase adjustments.

Delay line (dc to 900 mc) 4107

Compact and portable, fully shielded, precision 75 ohm coax delay line for use as a match cable for impedance measurements and other laboratory applications where a standard cable of superior quality is required. Designed primarily for use in conjunction with the Blonder-Tongue 4102 RF switcher, this delay line provides an accurate impedance standard to make fast and precise VSWR measurements over a very wide bandwidth. Designed to be one half wave length at 5 mc, the line allows convenient measurement of bandwidth, sweep width and sweep linearity.

See Blonder-Tongue test instruments—"standards for industry"—at NCTA SHOW booth 26.

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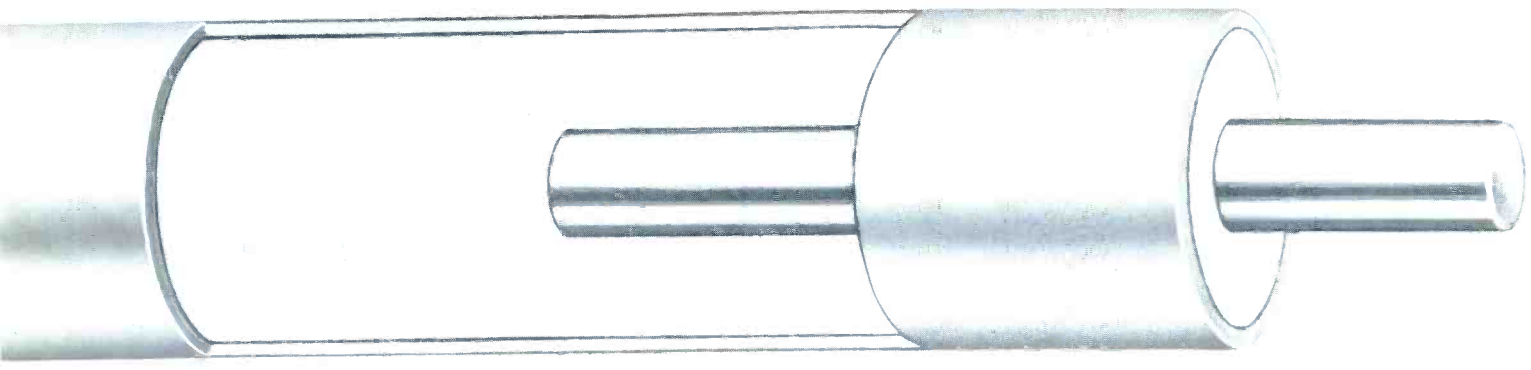


■ Now, the availability of 75 ohm Foamflex coaxial cable in four diameters — .412", ½", ¾" and 1⅝" — fills the needs of all-band CATV systems for rugged, high-performance cable in all required sizes. Foamflex, the original foam polyethylene dielectric cable, offers unequalled low loss for superior operation in community antenna and closed circuit television. Foamflex has a proven record in demanding applications in telemetry, missile guidance and microwave in addition to CATV.

Excellent uniformity of impedance with an average VSWR of 1.05 over all channels, and low attenuation, result in remarkably good video reception for tomorrow's color TV and auxiliary service. Surprisingly, this semiflexible, air dielectric cable is competitively priced with cables covering only the low-band frequencies.

Construction consists of a copper inner conductor, foamed polyethylene dielectric, and thin wall aluminum outer conductor providing a permanent moisture vapor barrier. Foamflex is superior on the basis of operational characteristics over long use and under extreme environmental conditions. For underground use, a Habirlene jacket can be furnished.

■ *average VSWR of 1.05 on all channels* ■ *uniform electrical properties over wide temperature variations* ■ *low loss, no radiation, high phase stability* ■ *stable attenuation at high band frequencies* ■ *lighter weight for easy installation* ■ *modified pressure taps or multi-tap distribution may be utilized* ■ *long term operating life*

NEW! *Send for new Foamflex CATV Bulletin CA Issue 1 with full engineering data.*

PHELPS DODGE ELECTRONIC PRODUCTS
NORTH HAVEN, CONNECTICUT

Charles Warren Fribley, Jr., Corning, N. Y., serves as president and treasurer of Corning Community Television Corp. and New York-Penn Microwave Corp. Founder of both companies, Warren set up a small system in Gibson in 1951. His microwave and CATV systems now serve many townships in New York and Pennsylvania. He was an officer and director of the New York State Community Television Association.

Alfred Robert Stern, New York, N. Y., has been vice president of National Broadcasting Company and Chairman of NBC International Ltd. In 1962 he was Board Chairman and Chief Executive Officer, Television Communications Corporation. Television Communications was formerly Televents Corp.

Archer S. Taylor, Kalispell, Mont., is owner-partner of Northwest Video in Kalispell. Northwest, established in 1953, was the first CATV system in Montana. Taylor is also a consulting radio engineer and has been associated with Aircraft Radio Laboratory, Dayton, Ohio and with a radio engineer's consulting firm.

Franklin R. Valentine, Jr., Dallas, Texas, represents Charles A. Sammons, Dallas, in acquiring, selling and legal problems relating to CATV systems. Valentine is a practicing member of the American Bar Association.

John Walson, Mahanoy City, Pa. John is an executive officer of Service Electric Co., Service Electric Microwave, Service Electric TV, Inc., Service Electric TV Cable Co., Tele-Service, Inc., and Penn Service Microwave Inc. all in Pennsylvania.

Robert J. Tarlton, Lansford, Pa. Bob organized the Panther Valley Television Co., Inc. in 1950 and was first to establish a commercial multichannel coaxial CATV system. He not only helped organize the Pennsylvania Community Antenna Television Association, Inc., but was instrumental in the birth of NCTA itself. Bob worked for Jerrold Electronics from 1952 to 1956.

Ralph L. Weir, Jr., Junction City, Kan. "Bud" is President, Junction City Television, Inc. and has owned radio station KJCK since 1949. He has been National Director, Daytime Broadcasters Association for Kansas and Oklahoma. In addition, he held the presidency of Junction City Broadcasting, Inc., Manhattan Cable Television Inc. and Mid-Kansas Inc. (microwave).

Sidney E. Young, Rutland, Vt., is manager of the Rutland Cable TV, Inc. He is also part owner of Youngs Community TV Inc., Springfield and Woodstock; Windsor Community Antenna Corp., Windsor, and has systems in several other small Vermont towns. Sidney was the first president of New England CATV Association. □

TV RECEIVING RANGE DATA

By Robert L. Cowart
Systems Construction Company

There have, over the past few years, been several techniques developed whereby a system technician could estimate the amount of signal expected at a tower of a given height. Most of these procedures involve lengthy and complicated mathematics plus the use of special charts and tables. We have resolved these procedures into two simple steps so that they can be used by the system technician with only a *TV Factbook* required. From the Factbook one can obtain the essential information required for the use of these charts. This information is tranmitter height above average terrain, transmitter visual power, channel and the approximate distance from the transmitter site to the receiving site. The only additional information required is the projected receiving tower height. These charts are also useful in determining what signals can be expected at various levels on a given tower. Generally, most systems prefer to place the lower frequency antennas lower on a tower in order to reduce the effects of wind loading. These charts should be useful in helping one to determine the lowest point on a tower at which these lower frequency antennas could be attached.

In practice, there are almost always obstacles in the transmission path between transmitter and receiver. These obstacles may be mountains, large bodies of water, turbulent air masses or desert country where the normal pattern is broken up by heat waves. Since it is impossible to predict, without actual path examination, the additional path losses that will be introduced by these barriers, it is possible only to predict the maximum amount of signal that would be present at the receiver if these obstacles were ignored. The charts will be extremely useful in eliminating those channels which fall below the minimum useful signal at the proposed receiving site. For example, in a new system we are often interested in signals from all stations which lie within approximately a 100 mile contour from the proposed receiving site. When we do this we need to know what the chances for reception are from those proposed signals. Each signal should be examined by the use of the accompanying charts to determine if there is sufficient signal during maximum conditions to warrant an on-the-spot examination. The predicted signal levels are based on a one watt transmitter. The actual difference in power between the one watt reference power and the actual power of the transmitting station will cause the resultant received signals to be adjusted according to the following scale:

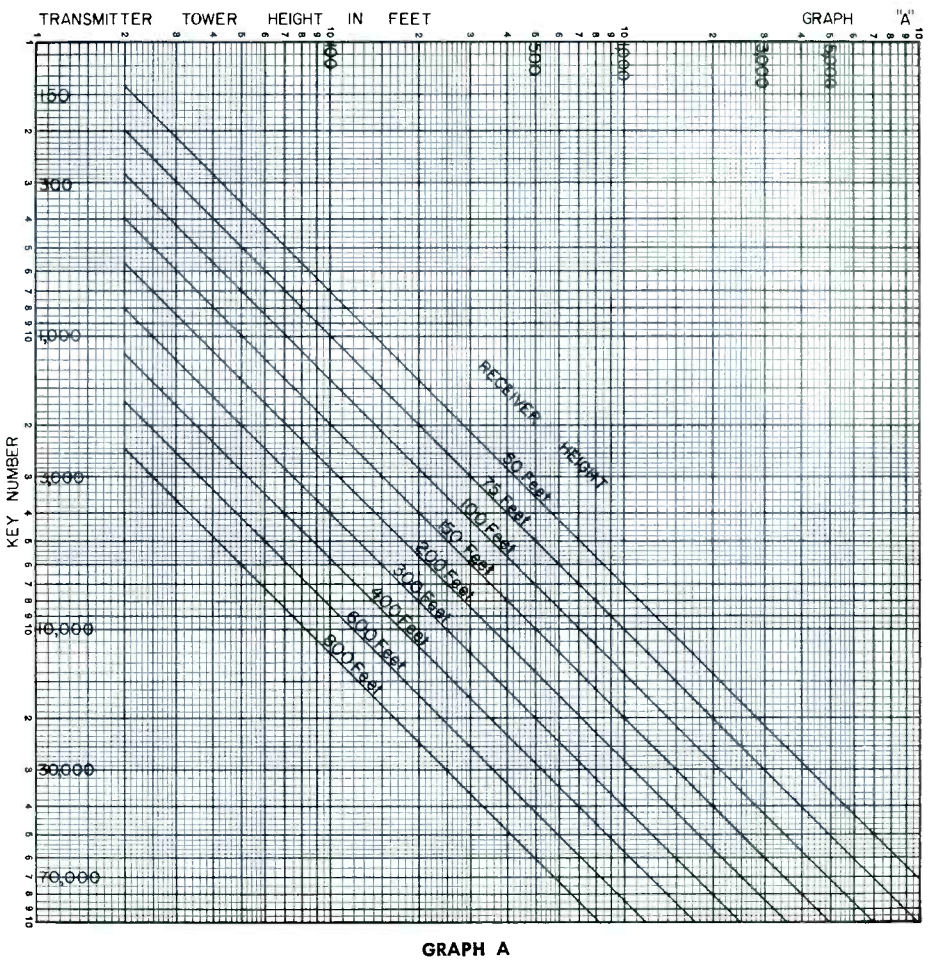
1 watt	0 db
1 kw	+30 db
5 kw	+37 db
10 kw	+40 db
50 kw	+47 db
100 kw	+50 db
316 kw	+55 db
500 kw	+57 db
1,000 kw	+60 db

EXAMPLE 1

Channel 4

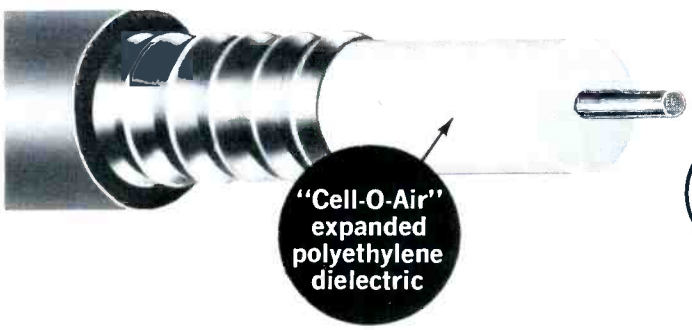
Transmitter Height	1,200'
Receiver Height	200'
Transmitter visual power	100 kw
Distance from Transmitter to Receiver	90 miles

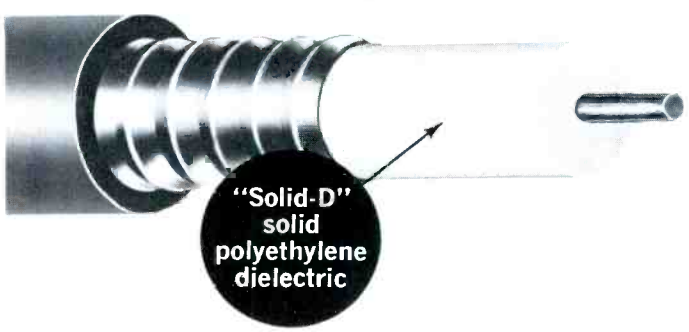
From Graph "A" locate 1,200' on transmitter height column. Note the key number on left hand column where the 200' receiver height line intersects 1,200' transmitter height. The key number for this point is 33,000. Since we are working with Channel 4, use Graph "B" (low band) and locate Key No. obtained from Graph "A"; in this case 33,000. Locate the intersection of Key No. with the 90 mile line which occurs at 0.22 microvolts or -73 db. This is the value for a one watt transmitter and dipole receiving antenna. We now add the db increase of 50 db for our 100,000 watt transmitter. -73



GRAPH A

CATV Cable GUARANTEES FULL-SPECTRUM CAPABILITY





SUPERIOR Coaxial Cable

with "Coppergard"

Superior Coaxial Cable with Coppergard guarantees no attenuation discontinuity over the continuous range — through 219 MCS *and beyond!* This means you can *use* all the frequencies available to you. Unlike ordinary cables, which offer only the television band, Superior Coax was specifically designed for CATV to provide for full utilization of the frequency range in aerial and buried plant.

When you buy cable, insist on the brand that gives full-spectrum capability at no extra cost. Install Superior Coaxial Cable with "Coppergard," the cable your system will never outgrow.

CHOOSE SUPERIOR CELL-O-AIR® COAX FOR AERIAL PLANT

Guaranteed Maximum Attenuation db/100′ at 68° F					
	Ch. 2	Ch. 6	108 mc.	Ch. 7	Ch. 13
4920	0.75	0.93	1.08	1.41	1.57
4930	0.58	0.68	0.80	1.07	1.20

CHOOSE SUPERIOR® SOLID-D COAX FOR BURIED PLANT

Guaranteed Maximum Attenuation db/100′ at 68° F					
	Ch. 2	Ch. 6	108 mc.	Ch. 7	Ch. 13
6020	0.74	0.91	1.05	1.38	1.55
6030	0.56	0.67	0.79	1.05	1.19

Every Reel Sweep-Tested Over Its Full Length

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SUPERIOR CABLE

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db + 50 db = 23 dbmv or 70.79 uv which is the maximum value of signal expected from the receiving dipole. To this value we add the gain over a dipole of the receiving antenna array.

EXAMPLE 2

Channel 20

Transmitter Height	600′
Receiver Height	400′
Transmitter visual power	316 kw
Distance from Transmitter to Receiver	60 miles

k = 34,000, received signal .22 uv = -73 db

-73 db +55 db = -18 db = 126 uv from zero gain antenna or if the receiving antenna is 100', then:

From Graph "A"
k = 8,500
From Graph "D"
60 miles and k = 8,500
uv = 0.055 or -85 db
Correcting for Transmitter power
316 kw = +55 db
So.
-85 db +55 db = -30 db or 31.62 uv from a dipole

Another use of graphs is the determination of change in received signal that will result from a change in either transmitting or receiving tower heights. Suppose one wishes to know whether an increase of 100' in a receiving tower would help a critical channel enough to justify the cost involved; Let us consider the following example:

Channel 7

Transmitter Height	900′
Receiver Height (present)	400′
Receiver Height (proposed)	500′
Transmitter visual power	50 kw
Distance from Transmitter to Receiver	50 miles
Present receiver signal	100 uv

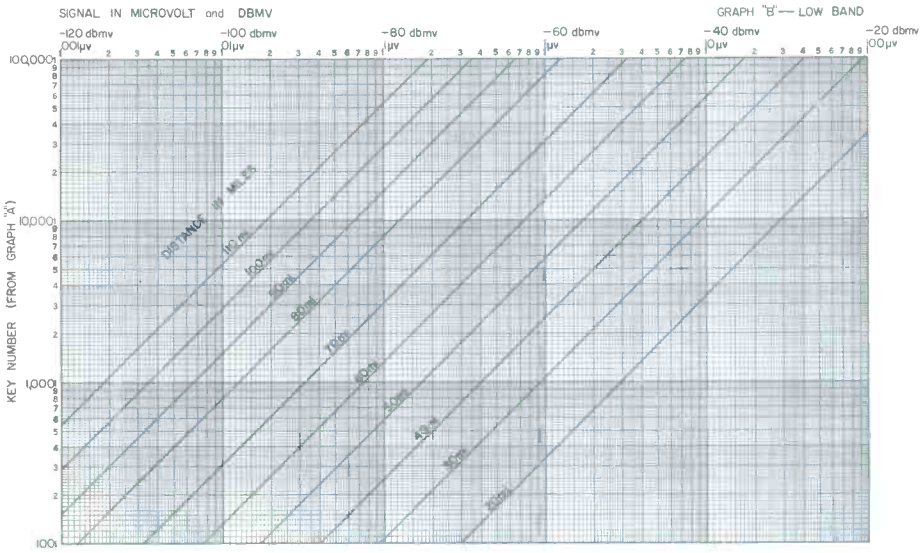
From Graph "A":

K_1 (T=900' and R=400') = 52,000
K_2 (T=900' and R=500') = 61,000
and from Graph "C":

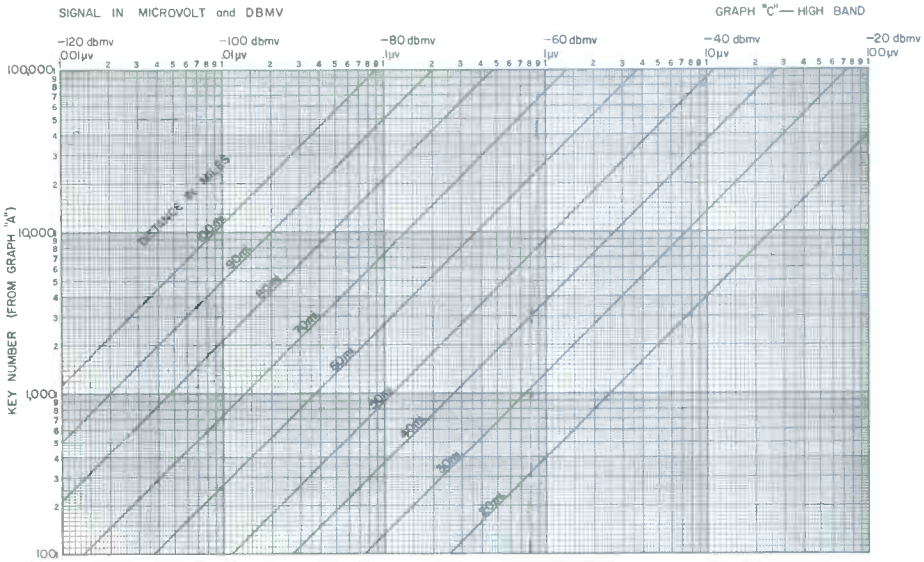
K_1 at 52,000 and 50 miles = 5.8 uv or -45 db

K_2 at 61,000 and 50 miles = 6.8 uv or 43.5 db

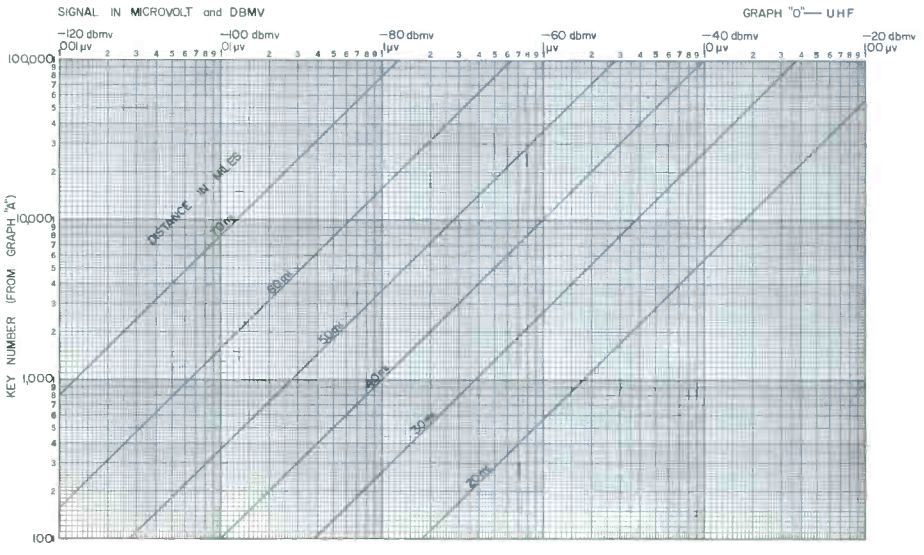
If the present signal is actually 100 uv then the increase in height could be expected to increase this value to approximately 120 uv.



GRAPH B

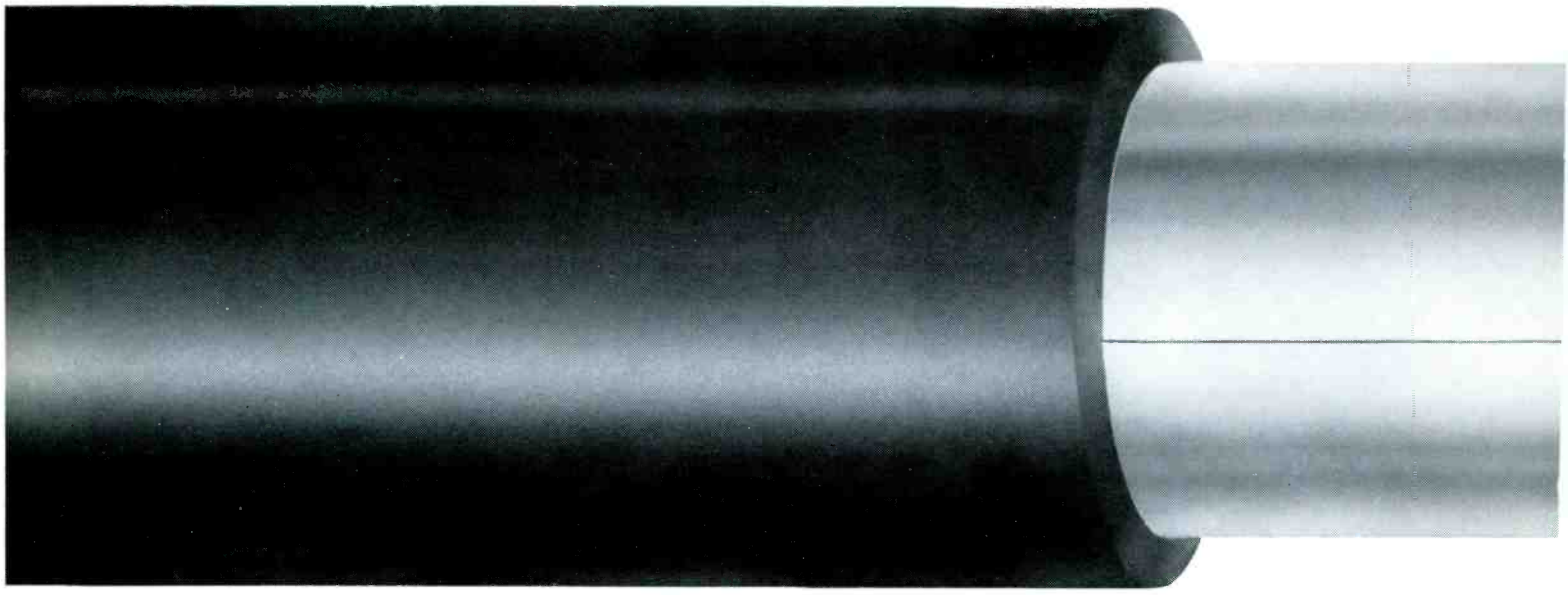


GRAPH C



GRAPH D

This is Sealmetic® Coaxial– the cable Anaconda designed especially for CATV



Sealmetic's positive moisture barrier makes the big difference. The Sealmetic sheath is hermetically sealed at the shield overlap, and is bonded between the entire outer conductor and the polyethylene jacket to form a unitized sheath. Moisture or humidity can't get between the shield and the jacket nor enter the core. The core stays dry and maintains the electrical characteristics of the cable.

Sealmetic Coaxial is the flexible, moistureproof CATV cable—the cable that solves attenuation problems.

More flexible, easier to install than any other CATV cable. The bond at the shield overlap has been balanced against the bond between the entire outer conductor and jacket, resulting in a completely homogeneous composite sheath. This unique design allows easy bending without kinking, cracking or rupturing of the sheath. Sealmetic is less susceptible to installation damage; installation goes faster and costs less, and the cable will last once it's installed.

When you're considering CATV, you should know about Sealmetic Coaxial. For more information, contact your Anaconda man, or write to Anaconda Wire and Cable Company, 605 Third Avenue, New York, N. Y. 10016. 65221

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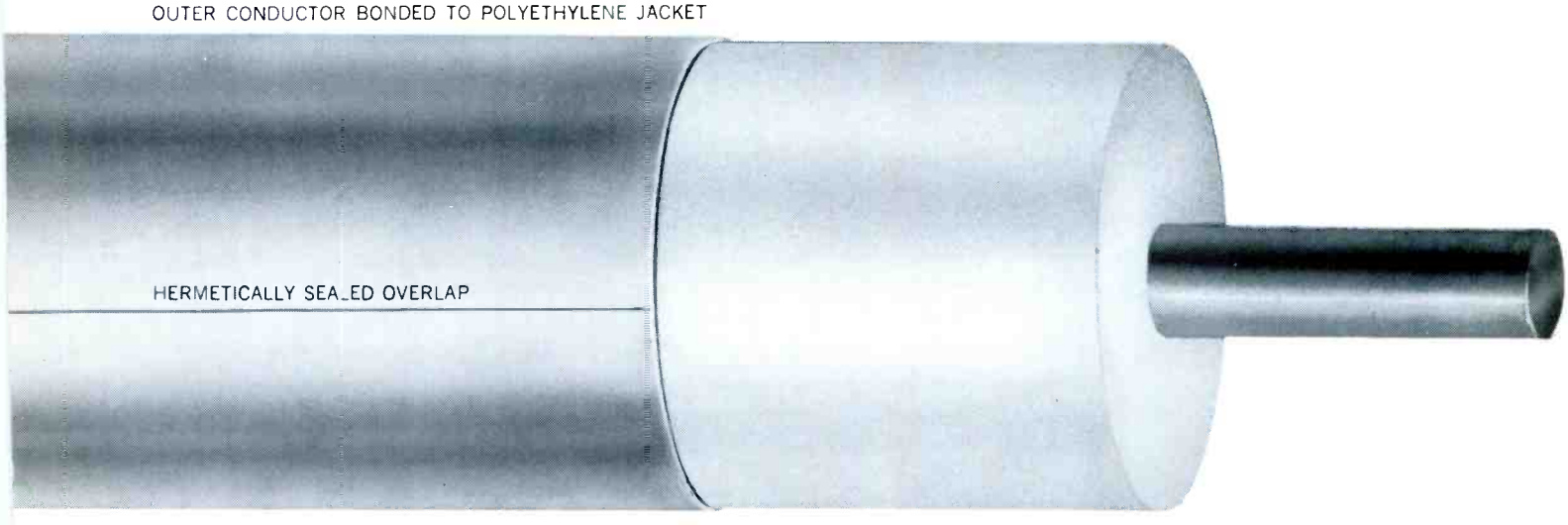
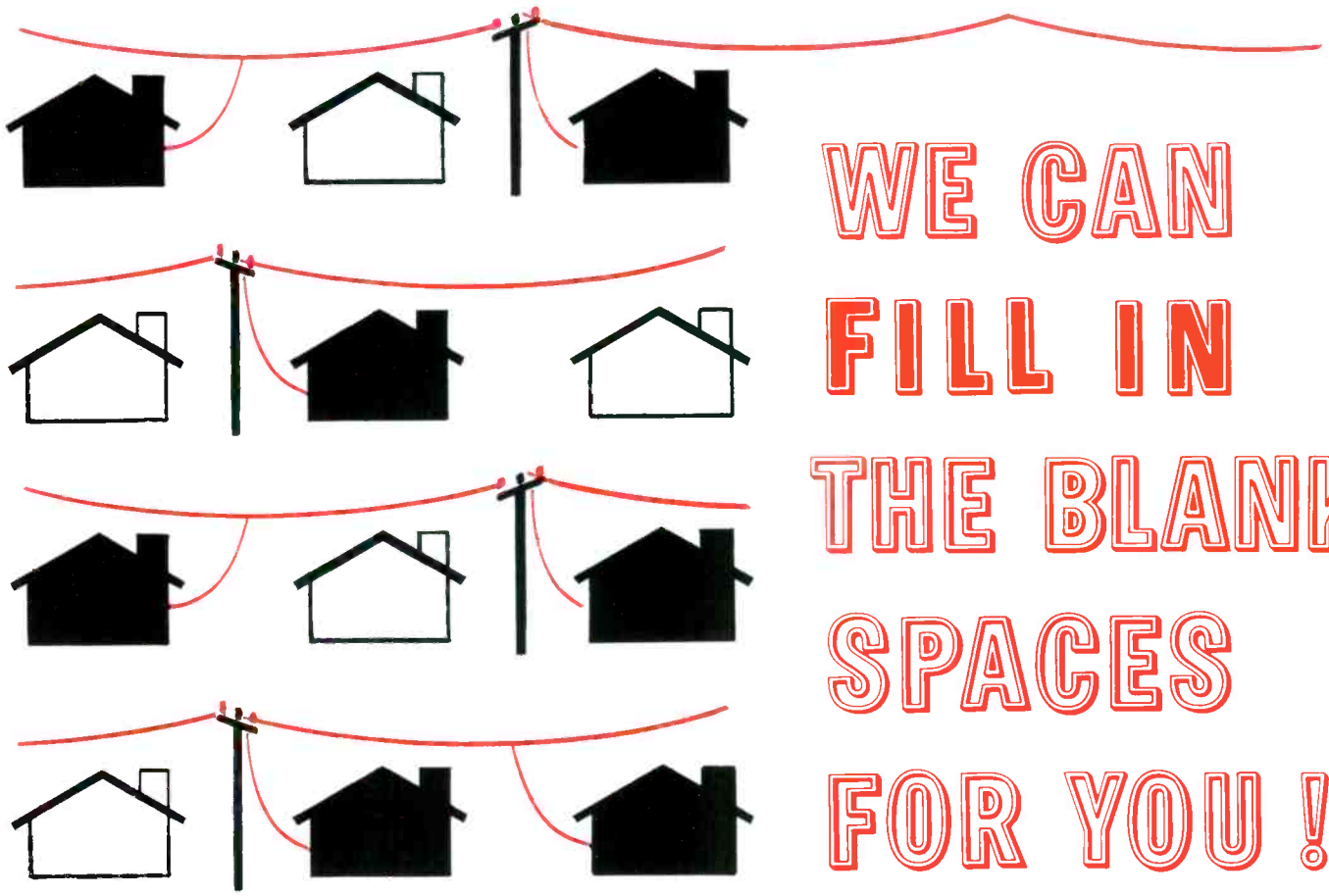


ANACONDA CABLE TELEVISION SYSTEMS



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National Consumer Services is a Division of the Reuben H. Donnelley Corporation, since 1886 one of the nation's leading marketing organizations. We offer the CATV operator an exciting new service which has been specifically designed for just one purpose: to obtain new subscribers for CATV systems by means of professional sales campaigns, administered by trained, experienced, responsible sales personnel.

ADVERTISING SUPPORT: Every NCS campaign is supported by comprehensive advertising and sales promotion programs tailor-made for your system. These include the preparation and placement of newspaper, radio and television advertising. Direct mail promotions are organized and handled in an individual manner—geared to your particular system.

MERCHANDISING: Sophisticated marketing techniques are required to achieve maximum penetration of cabled areas. These involve public demonstration centers to introduce your services to the community, contest premium and prize offers as incentives to help promote new subscriber sales, and group presentations to civic leaders.

NCS: Market research facilities of NCS provide valuable data on subscriber reactions, economic conditions, vacancy factors, etc. In the areas of public relations and publicity, the NCS professional approach enhances the CATV operator's "community image".

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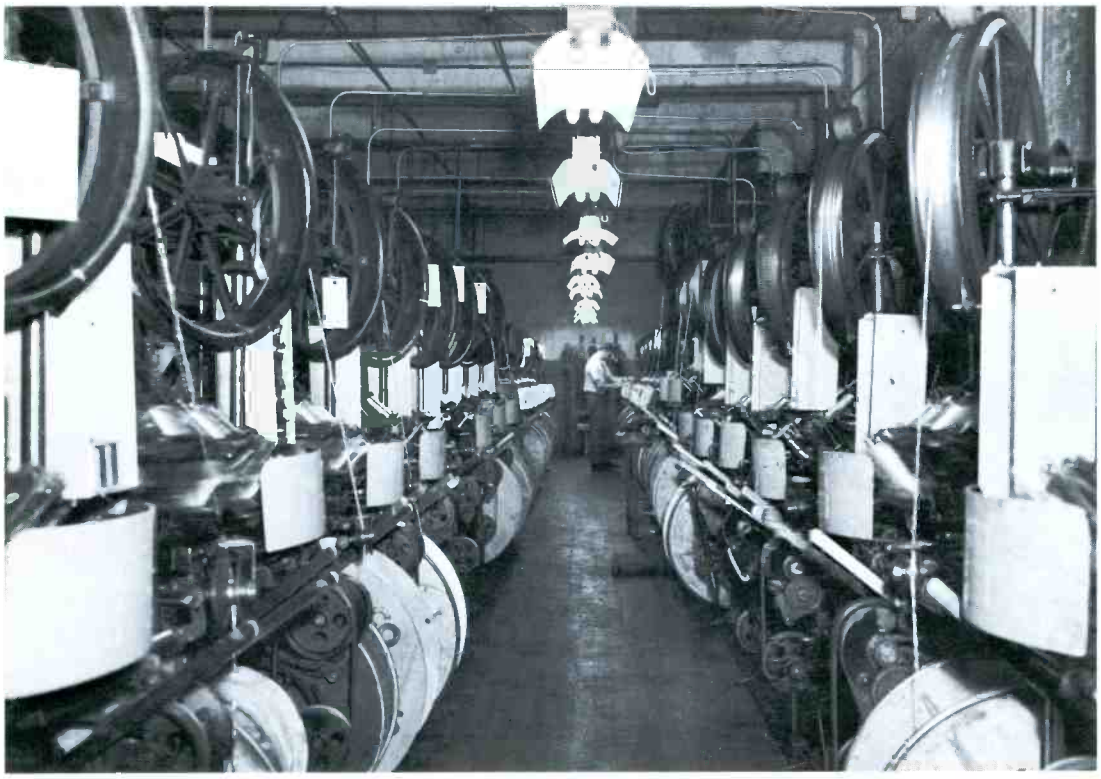
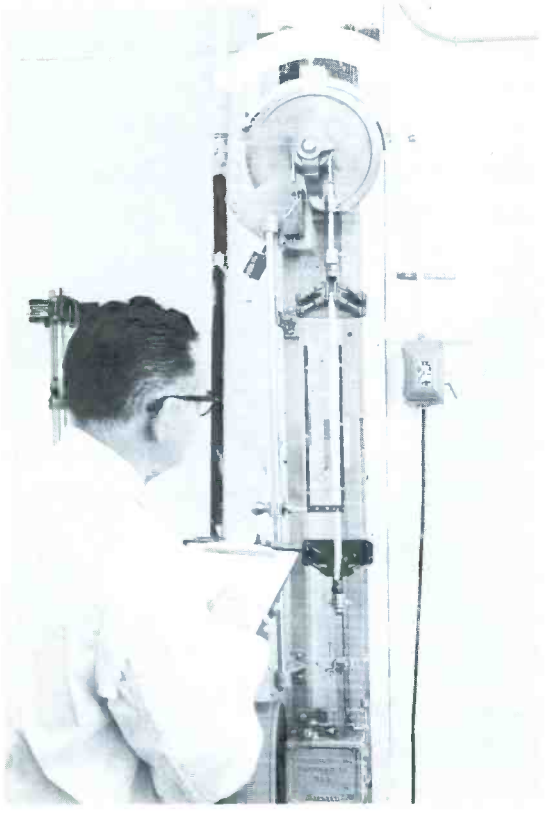
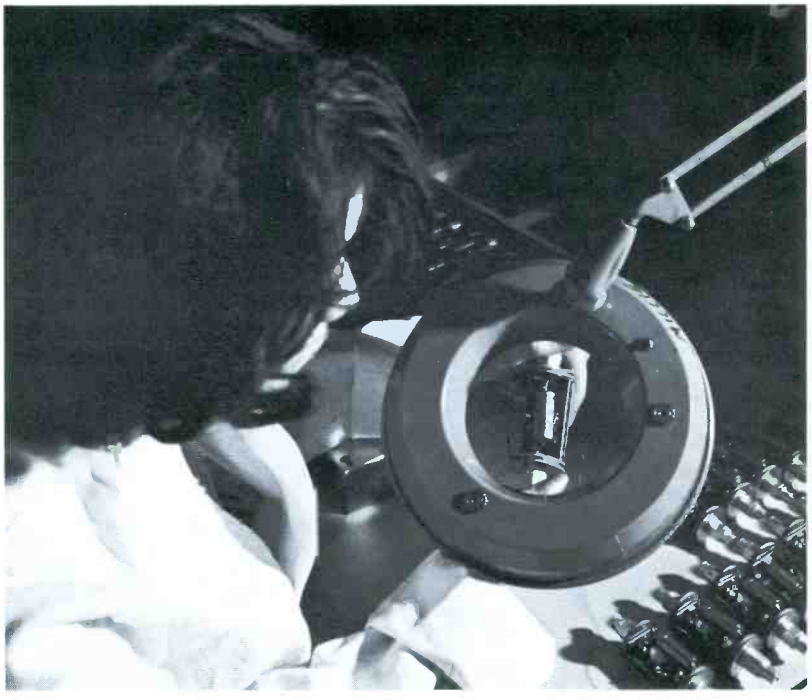


Automated machine produces Viking cable.

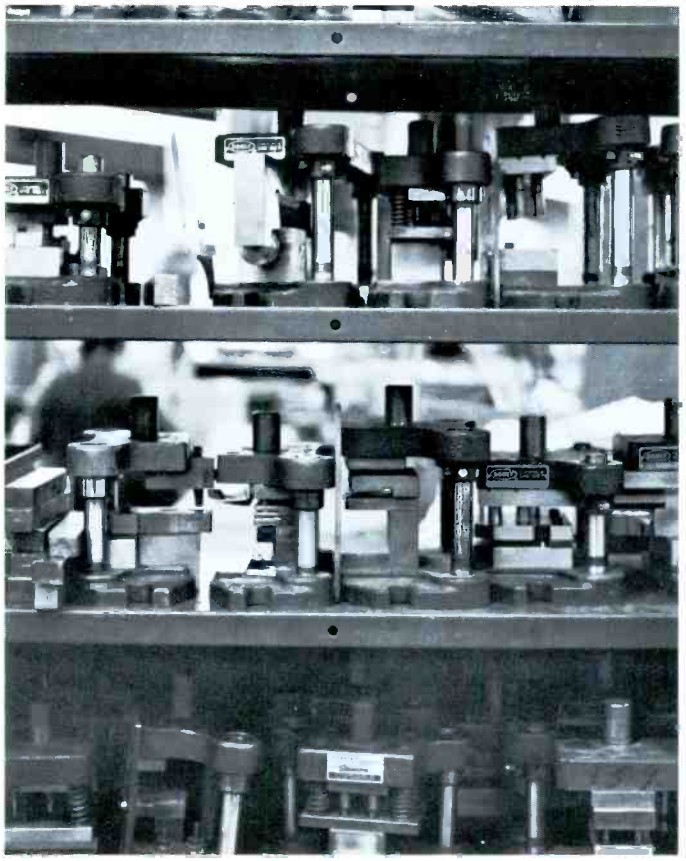
TV & COMMUNICATIONS VISITS VIKING



Inspector Torture tests Viking cable.



Viking "Bullet" gets close-up inspection.



Vikings were always courageous, bold, daring and rugged . . . the people we encountered on our visit to Viking lived up to that reputation.

As we entered the industrial town of Hoboken, New Jersey, which lies directly across the river from New York City, we were aware of Viking's size.

Viking's facilities are located in two buildings. Our first stop was to see Bob Baum, Vice President in charge of sales. After a friendly greeting, we listened to a great sales pitch that would require an entire edition of *TV & Communications* to print. However, as we visited various departments of Viking, we began to wonder how we could condense what we saw into one short article.

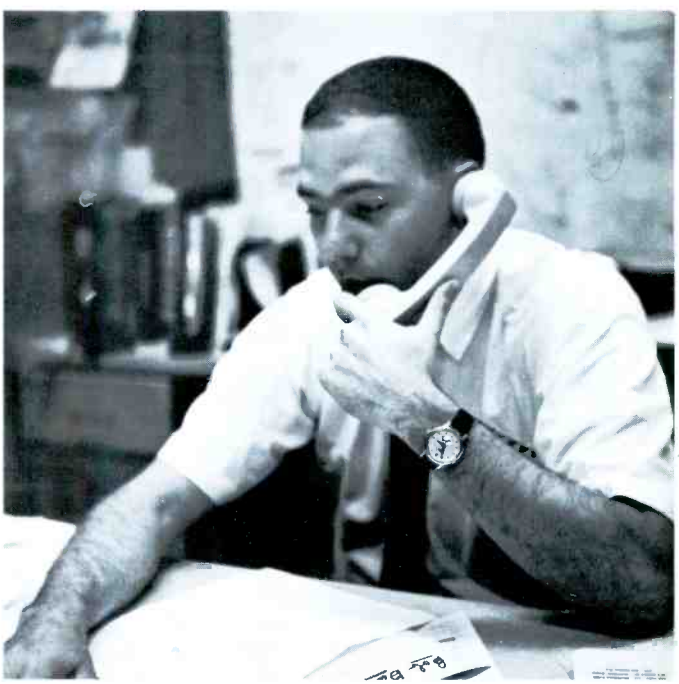
The telephones were constantly ringing, depicting the pulse of the Viking organization. We stopped by Allen Lipp's office, The Director of Marketing, and were briefed on how Viking's vast staff of technical outside representatives and field engineers service customers with their salesmobiles. Allen also showed us a stack of orders for the new Super-Match connectors and Solid State equipment. As we left the phones were starting to ring again.

Employees assemble matching transformers.

Next stop was to see the President—Arthur Baum. As usual he was on the phone. We exchanged views about the industry and then Mr. Baum enlightened us to the fact that Viking is the only company manufacturing cable, equipment and accessories for CATV.

"We're designing a new line of Solid State products for which we hired the best engineers available, did you know" . . . . . riiiiiiiiiiiiiing. As we left—Mr. Baum was closing an important cable and equipment sale for a new turnkey CATV system. Bob told us his father traveled over 180,000 miles last year using every conceivable method of transportation from airplane to Burro. After a brief talk with Robert Cowart — of the Systems Construction Company, an affiliate of Viking, Bob showed us some of the turnkey projects in their various stages.

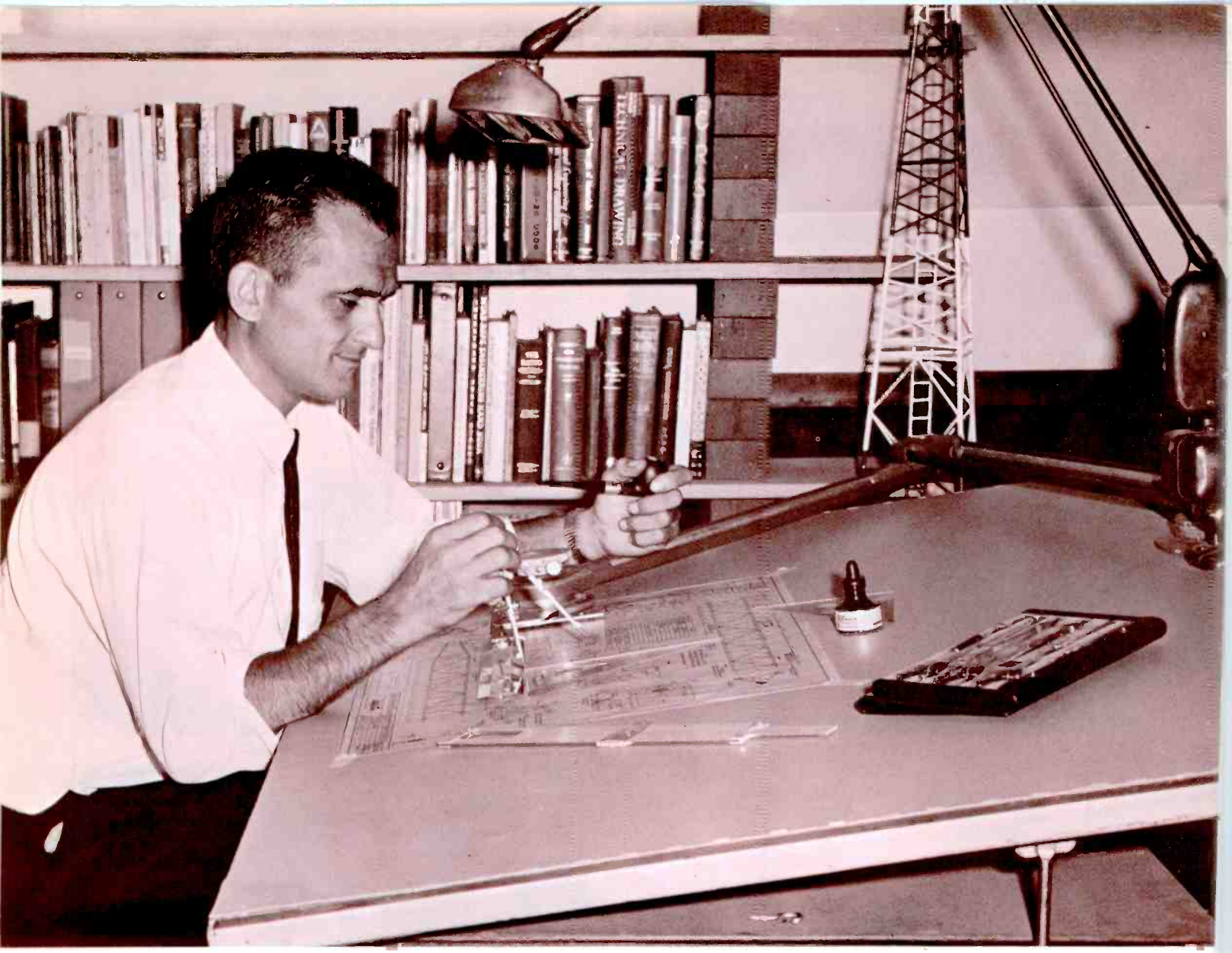
Arthur Baum, President.

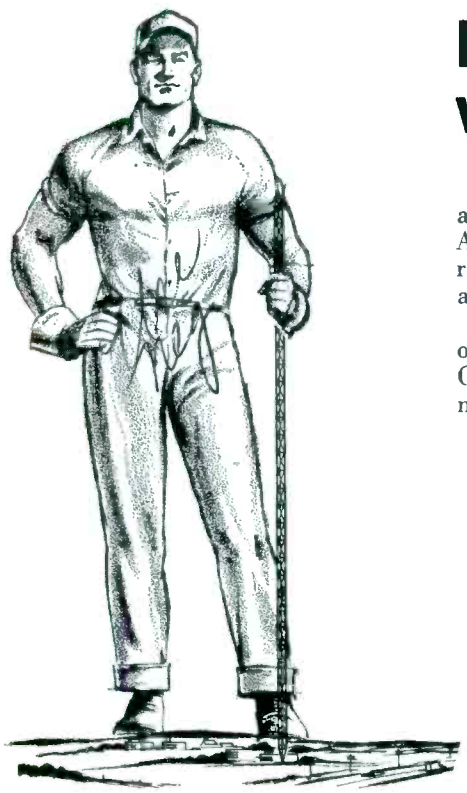


Bob Baum, Vice President — Sales.

MANUFACTURING

A short walk to the other plant where we were greeted by brother Ted, who is in charge of financing Turnkey and manufacturing. We finally made it to the 3rd floor and were amazed to find several hundred women fabricating electronic





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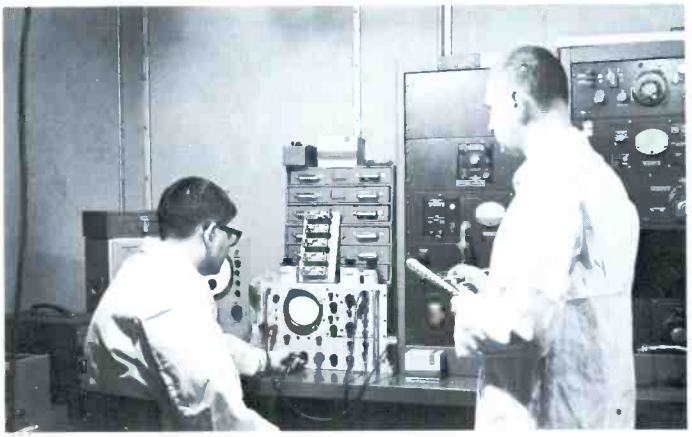
equipment. It was fascinating to watch each product being built, checked, life tested, inspected again, documented, packed and shipped. Bob Baum showed us a label he includes with each product which says "made and packed with loving care." We certainly know why.

Alan Lipp, Director of Sales.

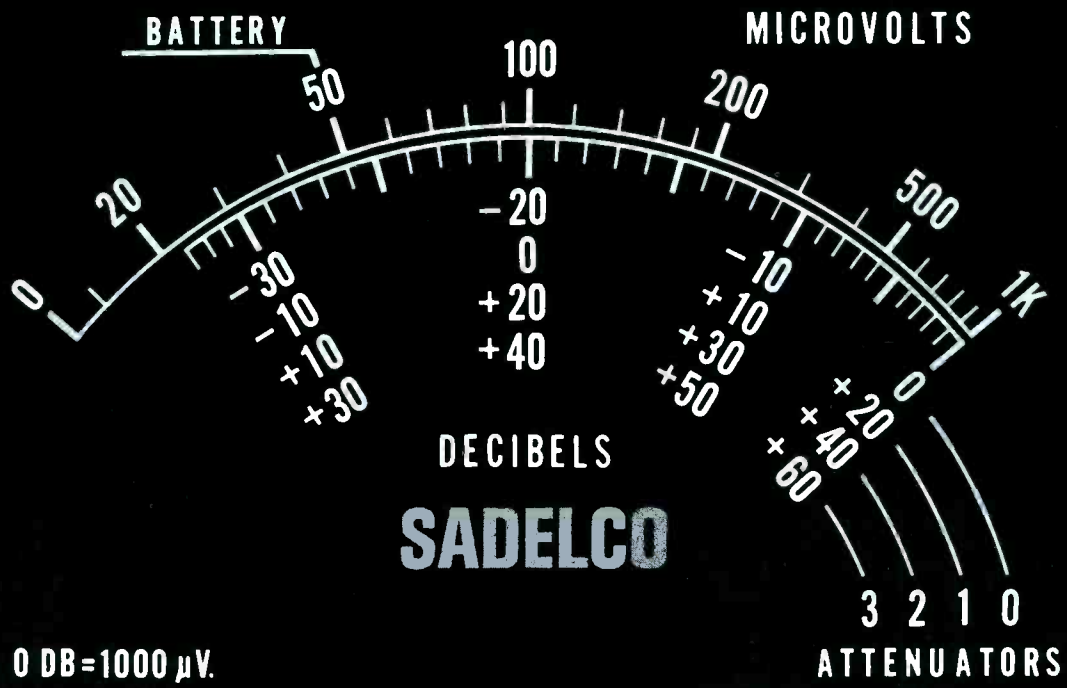
Ted Baum



Cable test area.

. . . and more testing.

The Research Development and Engineering Department is under the able direction of Bill Bodenstein. Bill showed us Viking's new inline solid state modular equipment undergoing final tests before being placed on the production line. The new line incorporated many unique ideas and we were impressed with the ease of handling from a technicians point of view. All Viking solid state equipment is designed on the "building block" or modular principal, allowing CATV systems to expand without replacing obsolete equipment.



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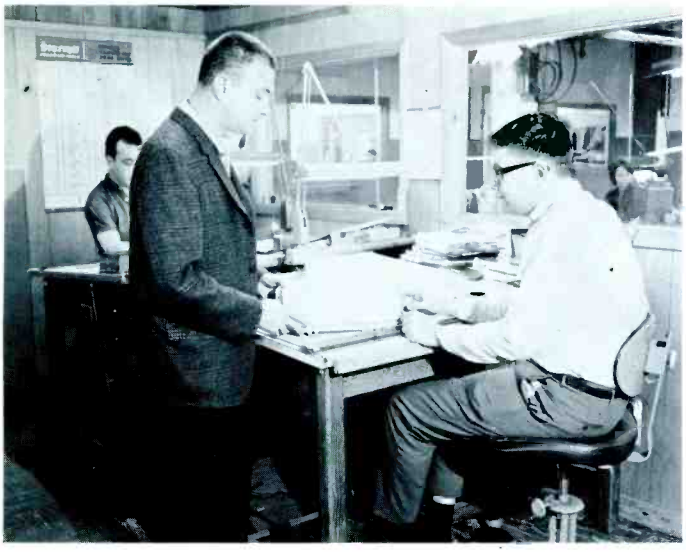
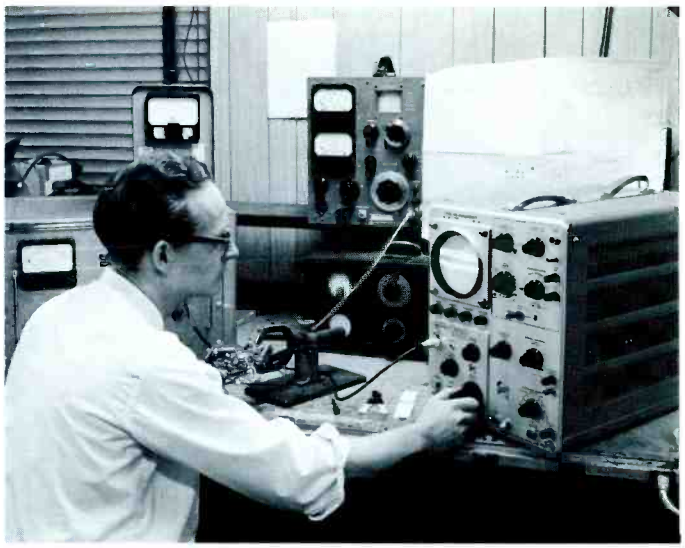


Ted Baum and design engineer work on new solid state amplifier.



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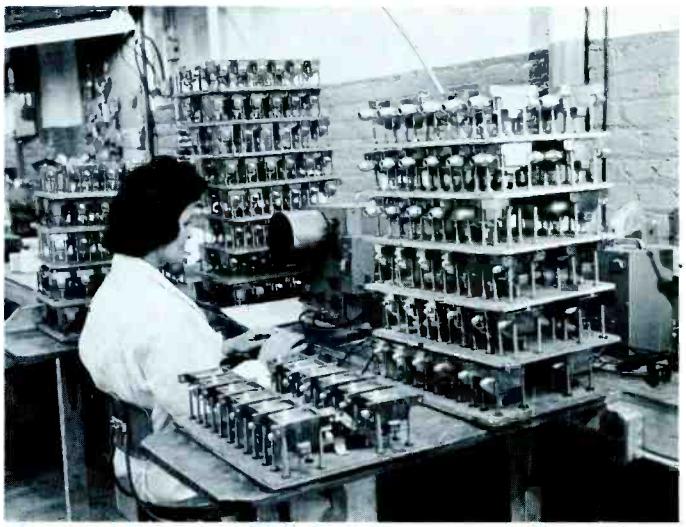
CABLE

Meanwhile, back on the second floor a huge extruder was consuming plastic and drawing copper wire through foamed polyethylene to form the core for Viking Solid Seamless Aluminum Sheath cable. The entire operation was so smooth and automatic we wondered why every cable system didn't have such a machine. But after learning of the details and rugged Quality Control and Supervision necessary, we easily understood why. Ted showed us their cable testing chamber, that is a lead shielded and static free room where each roll of cable is checked, numbered, logged and rechecked for return loss, radiation, attenuation and continuity. Then pieces of cable are cut from each reel and subjected to the life-testing cycle which tests tensile strength, resistance due to corrosion and humidity. Hal Roveda, manager of this department, then proceeded to get very technical as to "why Viking cable was the best."



Quality control — unceasing.

We had a sandwich and a bottle of Coke for lunch and kept moving. Next on the agenda was the brading operation where copper strands are woven into a shielding for 59U, 11U and other cable constructions.

Viking is a friendly place and most employees are called by their first name. Considering the 620 employees, remembering names is a job in itself. Besides talking to people, we were interested in the company bulletin boards. We learned that Viking has 6 inter-company softball teams, one of the best safety records in the area and a big red sign which says "If it's not right — don't make it."

We kept touring and taking pictures—trying to keep up with the tireless Baums. If you had to summarize Viking in one word — that word would be "BIG".

Around 7 PM as we were starting to leave, both Bob and Ted were being paged for long distance calls. You might say we were saved by the bell. □

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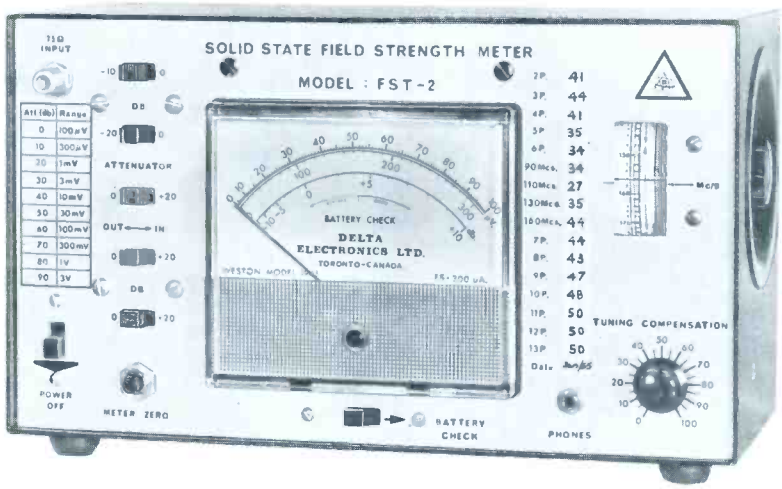

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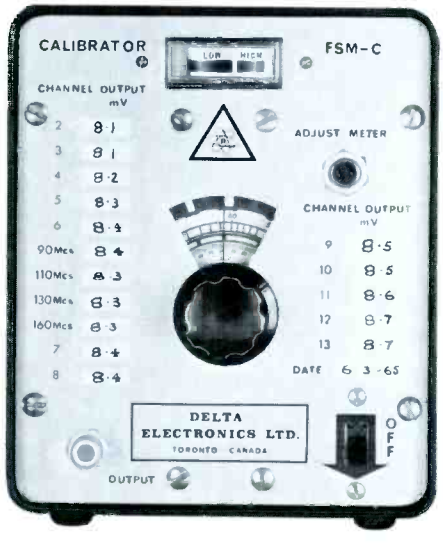

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THE CATV INDUSTRY

Its History, Nature and Scope

By Robert D. L'Heureux
NCTA Legal Counsel

Community Antenna Television Does Not Provide a Public Utility Type Service and State Legislatures Are Prohibited by the Due Process Clauses of the Federal and State Constitutions from Regulating Such Systems as Public Utilities

It would seen axiomatic that a state legislature should not enact legislation classifying a community antenna as a public utility unless the community antennas can be properly and legally so classified. Before discussing the constitutional limitations which are a complete prohibition against the classification and regulation of CATV systems as public utilities, some of the obvious reasons why a community antenna system is not a public utility should be considered.

A Community Antenna is a Private Business

The criterion for determining whether or not a business or property is a public utility has been variously stated in the following language.

a. Whether it is, or has been, devoted to a "public use of a service,"
b. Whether the public has a legal right to the use, of its facilities, or,
c. Whether the public has a legal right to the use, "which cannot be gainsaid, or denied, or withdrawn, at the pleasure of the owner."[28]

It would seem clear that a community antenna system is a private business and not a public utility under any of the above-mentioned tests. Certainly it cannot be seriously contended that a multiple unit master antenna system for an apartment house, hotel, motel, or hospital, for which service charges are made, is a public utility, whether such a system is for the purpose of providing television reception of a superior quality, or improving the appearance of the property, or because of a desire to reduce installation costs and servicing problems. Following the same reasoning, a community antenna system which is simply an enlargement or adaptation of the same type of system to deliver signals to residents in an area or community cannot be said to be a public utility.

From a general point of view it is clear that the service rendered by a community antenna system is incidental to television broadcast service and is not in any way a "necessity" type service. A community antenna system can render no greater service so far as the public convenience, interest and necessity is concerned than the television station or stations whose signals are received. A television station is not a public utility as has been clearly established by the Communications Act of 1934, as amended,[29] and by various court decisions. *Sanders Brothers Radio Station* v. *Federal Communications Commission*, 1939, 70 App. D.C. 297, 106 F. 2nd 321, *reversed on other grounds*, 309 U.S. 470, 60 S. Ct. 693. Radio broadcasting and television broadcasting have always been regulated as free enterprises and not as public utilities.

In *Commission* v. *Sanders Brothers Radio Station*, 309 U.S. 470, 474, 60 S. Ct. 693, 84 L. Ed. 869.

In contradistinction to communications by telephone and telegraph, which the Communications Act recognizes as a common carrier activity and regulates accordingly in analogy to the regulation of radio and other carriers by the Interstate Commerce Commission, the Act recognizes that broadcasters are not common carriers and are not to be dealt with as such. Thus, the Act recognizes that the field of broadcasting is one of free competition. The sections dealing with broadcasting demonstrate that Congress has not, in its regulatory scheme, abandoned the principle of free competition, as it has done in the case of railroads in respect of which regulation involves the suppression of wasteful practices due to competition, the regulation of rates and charges, and other measures which are unnecessary if free competition is to be permitted.

In *United States* v. *Radio Corporation of America and National Broadcasting Company, Inc.*, 1959. 358 U.S. 334, 79 S. Ct. 45, 3 L. Ed. 2d 354, the Supreme Court of the United States made it abundantly clear that regulation of a private business and of a "public utility" are two very different things when it said:

"While the television industry is also a regulated industry, it is regulated in a very different way. That difference is controlling. Radio broadcasters, including television broadcasters, see **Allen B. DuMont Laboratories** v. **Carroll**, 184 F. 2d 153, are not included in the definition of common carriers in Section 3 of the Communications Act, 47 U.S.C. Section 153(h) as are telephone and telegraph companies. Thus the extensive controls, including rate regulation, of Title II of the Communications Act, 47 U.S.C. Sections 201-222, do not apply. Television broadcasters remain free to set their own advertising rates . . ."

It is well recognized that the services of the television broadcast stations and of facilities incidental to broadcasting do not provide essential services in the sense in which railroads, water works, gas works and telephone and telegraph systems provide essential public utility services. This distinction, as well as the fact that the right of the public to the use and enjoyment of the facilities of a privately owned radio station or television station is of a much more limited character, were clearly enunciated by the United States Court of Appeals for the District of Columbia which has exclusive jurisdiction over all appeals from rulings of the Federal Communications Commission on broadcast matters, in *Pulitzer Publishing Company* v. *Federal Communications*, (1937) 94 F. 2nd 249, 251, where it was said:

"But we have never said that a radio broadcasting station is a public utility in the sense in which a railroad is a public utility. Generally speaking, that term comprehends any facility employed in rendering quasi public services, such as water works, gas works, railroads, telephones, telegraphs, etc. The use and enjoyment of such facilities the public has the legal right to demand, but its right to the use and enjoyment of the facilities of a privately owned radio station is of a much more limited character. We have often said that radio communications as contemplated

28 Illustrative cases where this criterion has been used are cited in pages 22-23 of this memorandum.

29 Section 3(h) of the Act which defines the term "common carrier," the only type of public utility mentioned in the Act specifically excludes a person engaged in broadcasting from the scope of the definition.

by the Act constitutes interstate commerce and involves the public interest and that in this respect Congress could exercise its power to regulate it. We have said also that the regulatory provisions of the Act are a reasonable exercise by Congress of its powers and that one who applies for and obtains a license receives it subject to the right of the government in the public interest to withdraw it without compensation. **Trinity Methodist Church, South** v. **Federal Radio Commission,** 61 App. D.C. 311, 62 F. 2nd 850, but the power of Congress has not yet been extended to the point of fixing and regulating the rates to be charged by the licensee or the establishment of rules requiring it to serve alike the entire public in the use of its facilites. Nor has Congress assumed the right to limit the profits on the basis of its investment or otherwise. The licensee of a radio station chooses its own advertisers and its own program, and generally speaking the only requirement for the renewal of its license is that it has not failed to function and will not fail to function in the public interest. See also **McIntire** v. **Wm. Penn Broadcasting Co.,** 3 Cir. 1945, 151 F. 2nd 597."

The Federal Communications Commission rejected on March 23, 1962, an argument made by Rust Craft Broadcasting Company to the effect that CATV systems are common carriers or public utilities and that, therefore, they should be regulated under Title II of the Communications Act of 1934, as amended. The Commission dismissed petitioner's "complaint" against the intervenor, Fortnightly Corporation (No. 17, 038), because it was "unable to perceive any substantial differences in the essential facts put forward by complainant" and CATV systems involved in other specified cases "wherein was held that CATV operations similar to those here described did not constitute a common carrier endeavor within the meaning of the Communications Act, and that consequently this Commission was without Title II jurisdiction over the CATV systems."[30]

The distinction drawn in the *Sanders, Radio Corporation* and *Pulitzer* cases, *supra,* as between the services of broadcast stations and those of "public utilities," was recognized as valid by the Supreme Court of California as applied to services of community antennas compared to those of "public utilities" in *Television Transmission, Inc.* v. *Public Utilities Commission of State of California,* 1956, 301 P. 2nd 862, in holding that a community antenna is not a "telephone corporation" or any other type of public utility (including "common carrier") under the Public Utilities Code of that state. Among other things, the Court said:

"The Commission urges that television is merely an advanced form of telephony, the art of reproducing sounds at a distance. It is true that television and telephony have in common the transmission of voices, for sounds, including voices usually accompanying the pictures of the persons or things televised. Not only are the methods of transmission different in each art, however, but in telephony one may carry on a two-way communication by speaking as well as listening, and pictures of speaker and listener do not yet form a part of the communication. (See **Re Edwin Bennett,** 89 P.U.R. (N.S.) 149, 150). Telegraphy differs from both in that ordinarily neither voices nor pictures are transmitted. Each may have in common the use of electricity, conduits, ducts, poles, wires, cables, instruments, appliances, et cetera, but no one of them includes all of the features of the others. **Furthermore, the service by television as well as radio is more akin to that of music halls, theaters, and newspapers than it is to that of either telephone or telegraph corporations.** Thus, under the Communications Act of 1934 those engaged in the telephone or telegraph business are regulated as common carriers, whereas television and radio broadcasting is recognized as a field of free competition" (Emphasis added) (**FCC v. Sanders Bros.,** 309 U.S. 470, 474-475). Footnotes omitted.

Thus broadcast stations, theaters and newspapers serve the public, which has a substantial interest in their continued operation; however, they are not public utilities in the legal sense.[31] In the same manner community antenna systems benefit, accommodate and provide enjoyment for the public but they do not provide so-called essential services. The community antenna like the radio and television stations, newspapers and theaters provides service to the public but also like the other services this fact does not constitute the community antenna a "public utility." A business is not affected with a "public interest" merely because the public derives benefit, accommodation, ease or enjoyment from the existence or operation of the business. *Tyson & Bros. United Theatre Ticket Offices, Inc.* v. *Banton, supra.*

Since a television station can discontinue service at will merely by notifying the Commission and surrendering its license,[32] the community antenna system must logically be in the same position. The accommodation to the "public interest" in community antenna operation can be no greater than that inherent in television station operation. In other words, a community antenna is not the type of industry which has dedicated its property to the public service in such a manner that it cannot be withdrawn at will. It is as was said, a private business. This has been established by the Federal Communications Commission in its opinion, In Re *Application of Ohio Valley Broadcasting Corp.,* 1954, 10 RR 969, 984, *reversed on other grounds; Clarksburg Publishing Company* v. *Federal Communications Commission,* D.C. Cir. 225 F. 2nd 511, wherein it was stated that:

"Community antenna systems are private business activities that may be varied or discontinued at will . . . "

The courts not only have said what a community antenna is not, they have said what a community antenna is. The late Chief Justice John J. Parker of the U.S. Circuit Court for the Fourth Circuit in *Lilly* v. *United States,* 238 F. 2nd 584, in holding that certain excise taxes imposed on "wire and equipment" services by the Internal Revenue Code were not applicable to community antennas said:

"that a community antenna system merely furnished an attachment to a TV receiving set which enables a set disadvantageously located to operate like an ordinary set . . . "

In other words, it is merely an adjunct of a television receiver. A similar conclusion was reached by the United States Court of Appeals for the Third Circuit in the decision rendered in the case of *Pahoulis* v. *United States,* (1957) 242 F. 2nd 345, where it stated that:

"The service (of a community antenna system) is supplied as an aid in reception only. The wire and equipment have nothing to do with the origin of the electronic signal which occurs at a television station many miles away and wholly separate from the service supplied by the community television antenna company."

In *Television Transmission, Inc.* v. *Public Utilities Commission, supra,* the California Supreme Court said:

"Petitioner's community television antenna is not operated 'in connection with or to facilitate communication by telephone or in connection with or to facilitate communication by telegraph' as those words are commonly understood, but simply to enable subscribers to receive television broadcasts that might otherwise be inaccessible to them."

Thus a community antenna system is not any more devoted to the public use or service than is any other television equipment manufactured or distributed for use to the general public. It would be just as logical to regulate the distributor of conventional antennas as to regulate a community antenna system as a public utility; or, for that matter, the renting of television sets might just as reasonably be declared to be a public utility service.

Even if there were common characteristics in which a community antenna system is similar to a particular public utility this fact would not make the system a public utility. It will be recognized that a private trucker and a motor carrier line both use motor trucks. They both may carry the same kind of freight; they may both serve the same areas along the same highways, yet one may be subject to regulation as a common carrier, and the other as a matter of law is not subject to such regulation because it has not dedicated its property to public use. *Cf. United States* v. *Contract Steel Carriers,* (1956) 350 U.S. 409, 76 S. Ct. 461; *McCarthy* v. *Public Service Commission, III Utah* 489, 184 P. 2nd 220.[33]

In addition to the foregoing indications that a community system is not

30 To the same effect see Frontier Broadcasting Co., 24 FCC 251, 16 Pike & Fischer RR 1005 (1958).

31 For authority that a theatre is not a public utility, see **Tyson & Bros. United Theatre** v. **Banton,** 1927, 273 U.S. 418, 47 S. Ct. 427, 71 L. Ed. 718; that a newspaper is not a public utility, in re **Louis Wohl, Inc.,** D.C. Mich., 1939, 50 F. 2nd 254, **Sharon Herald Co.** v. **Mercer County, Pa., supra,** 300 A. 880; **Chronicle & Gazette Pub. Co.** v. **Atty. General,** 94 N.H. 148, 48A. 2nd 478, 168 A.L.R. 879.

32 Section 3.667 of the Rules and Regulations of the Commission reads as follows: "Discontinuance of operation — The licensee of each station shall notify the Commission in Washington, D.C., and the Engineer-in-Charge of the radio district where such station is located of permanent discontinuance of operation at least two days before operation is discontinued. The licensee shall, in addition, immediately forward the station license and other instruments of authorization to the Washington, D.C., office of the Commission for cancellation."

33 See also quotations from **Television Transmission, Inc.** v. P.U.C., supra, at p. 9 herein and from **Frontier Broadcasting Co.** v. **Laramie Community TV, et al., infra pp. 14-17**

a public utility type business, the business has characteristics of high competition and risk which make it totally unlike a public utility business. In the first instance, there is no certainty as to the future of the community antenna business by reasons of the changes and improvements in broadcasting techniques which are being developed daily. The Federal Communications Commission, for example, is constantly endeavoring to promote television broadcasting without regard to its impact on community antenna television systems. The Commission has established so-called UHF and VHF translator broadcast services and permits the operation of so-called "TV Satellite" stations, all of which are "competitive" with CATV community antennas and have as their basic purpose with provision of extended coverage for regularly authorized television broadcast stations. Thus, translators are small-powered television broadcasting stations which are permitted to receive the signals of distant broadcast stations, "translate" or convert them to a different television channel, and rebroadcast them for public reception. A TV "satellite" is a regularly authorized television broadcast station but it is not required to orginate local programs. Because these are broadcast systems that provide wider coverage than community antennas, the Commission favors their methods of providing rural television reception services. The regulatory philosophy of the Commission in this particular respect is clearly stated in its Report and Order in Docket No. 11611, 1956, 13 RR 1561. One party filing comments in this rulemaking proceeding had suggested that because community antenna systems have been installed in good faith and offer enormous potential to local communities, they should be afforded a period of three or four years to amortize their investments before being subjected to competition from translators. The Commissions's comment follows:

We recognize that during these formative years in the development of the television service, community antennas, although not established under Commission authorization, have contributed significantly in providing televsion reception to isolated areas without service from regular stations. But community antennas do not provide a broadcast service available to the public at large. Their service is limited to subscribers who must pay a fee, and often is not available even at a fee for those members of the community in outlying areas. **The Commission, under the Communications Act, is obligated to provide a fair and equitable distribution of television service. We would not be warranted in withholding the authorization of translators, designed to provide television to isolated communities merely because they would compete with community antennas providing service to some people at a fee. Investments in community antennas were not made on the basis of any assurance that the areas served by them would remain without direct television reception.** Such systems have been interim measures, taken without Commission authorization, to provide outlying areas with television until direct reception could be achieved. **The public interest would not be served by depriving a community of the privilege of obtaining direct television reception to protect these investments.** (Emphasis supplied).

Docket No. 11611 was the proceeding resulting in the establishment of the UHF Translator Service. Subsequently, in a Report and Order issued July 27, 1960, in Docket No. 12116, 20 RR 1536, the Commission provided for the construction and operation of VHF translator stations, which although operating in the very high frequency channels as distinguished from the ultra high frequency channels are intended to provide the same service as the UHF translator.

It is fair to say that most community antenna systems today are in competion with one or more methods of providing rural area television reception; each community antenna system may be subject to competition from any of them in the future. In some instances a community antenna system must compete with other community antenna systems servicing the same area. Very often a community antenna system is in "competition" with the conventional antenna. In other cases local television stations have been placed in operation subsequent to the establishment of the community antenna operation. In fact, there are some localities where even two and three television stations have been constructed in competition with community antenna systems, or, if not all in the same community, Grade A service may be available by direct reception from one or more stations whose coverage area includes the CATV community.

No protection is available to community antennas from any of these alternate methods of providing local television coverage. With current developments in space communications technology, it is to be expected that the future will produce television broadcast systems utilizing satellite broadcasting techniques which will provide for substantially greater rural television coverage than is available today. While public utilities are not necessarily entitled to freedom from competition in exchange for the public exercising control over their properties, they must be reasonably protected from unlimited competition. *Brady Transfer & Storage Co.* v. *United States*, D.C. Iowa, 80 F. Supp. 110, Aff'd 335 U.S. 875, 69 S. Ct. 239; *Chicago Ry. Co.* v. *Commerce Commission*, 336 Ill. 51, 167 N.E. 840, *Egyptian Trans. System* v. *R. Co.*, 321 Ill. 580, 152 N.E. 51; *Crown Coach Co.* v. *Public Service Commission*, 238 Mo. App. 287, 179 S.W. 2nd 123; *General Alarm, Inc.* v. *Underdown*, 76 Ariz. 235, 262 P. 2nd 671. No state legislature can give to community antenna systems the traditional protections to which a public utility must necessarily be entitled, if for no other reason than that these states are completely without authority over the competing methods of extending television reception to rural areas. As previously discussed, the Federal Government has completely occupied the field of radio and television.

Before turning to the question of the constitutional limitations which preclude the states from imposing public utility regulation or status upon community antenna systems, it might be useful to consider some of the specific decisions that have been issued by Federal and state governmental agencies and courts. In a significant and far reaching decision the Federal Communications Commission has ruled that community antennas are not "common carriers." *Frontier Broadcasting Company, et al.* v. *Laramie Community TV Company, et al.*, 1958, 16 RR 1005. The Commission's Opinion in this case resulted from a "complaint" filed on April 6, 1956, purportedly pursuant to Section 308 of the Communications Act, by thirteen licensees of standard or television broadcast stations against 288 community antenna television system operations located in 36 states. The "complaint" requested that the Commission exercise jurisdiction over community antennas as communications common carriers. The essence of the Commission's Opinion holding that a community antenna system is not a

common carrier in the ordinary sense of the word is found in the following two paragraphs quoted from the Opinion:

"Upon consideration of the facts outlined above with respect to the pattern of operations followed by CATV systems generally, we do not believe that such systems are engaged in performing the service of the communications common carriers within the contemplation of the applicable provisions of the Communications Act of 1934, as amended, Section 3 (h) of the Act states that:

'Common carrier' or 'carrier' means any person engaged as a common carrier for hire, in interstate or foreign communication by wire or radio or in interstate or foreign radio transmission of energy, except where reference is made to common carriers not subject to this Act; but a person engaged in radio broadcasting shall not, insofar as such person is so engaged, be deemed a common carrier.

It should be noted that the specific test as to what constitutes a common carrier for the purposes of the Act is not set forth in the above definition. However, the legislative history of the Act makes it clear that Congress intended that the common carrier regulatory provisions thereof should not apply to persons who are not common carriers in the **ordinary** sense of the term. Accordingly, the question is presented as to whether CATV systems conform to the traditionally accepted concept of common carriers and hence become communications common carriers. Fundamental to the concept of a communications common carrier is that such a carrier holds itself or makes a public offering to provide facilities by wire or radio whereby all members of the public who chose to employ such facilities and to compensate the carrier therefore may communicate or transmit intelligence of their own design and choosing between points on the system of that carrier and other carriers connecting with it. In other words, the carrier provides the means or ways of communication for the transmission of such intelligence as the subscriber may choose to have transmitted. The choice of the specific intelligence to be transmitted is, therefore, the sole responsibility or prerogative of the subscriber and not the carrier.

Even though the operation of a CATV system may have several attributes in common with the operation of a communications common carrier, particularly to the extent that there is an offer to transmit, by wire, intelligence in the form of television broadcast signals, to any member of the public who desires to subscribe to the service, there appears to be at least one significant difference. This difference lies in the fact that the specific signals received and distributed by the CATV system are, of necessity determined by the CATV system and not the subscriber. No individual subscriber has the option or may he compel the CATV system to receive and deliver a particular signal at a given time; nor has he the option or right to compel the station to receive and deliver signals different from or in addition to, those offered or selected by the CATV system. While it is true that the CATV system would, in adhering to good business practice, be governed largely by the preferences expressed by the majority of its subscribers, the ultimate final choice of signals is the sole responsibility and prerogative of the CATV operator. It is axiomatic that a CATV system which serves a group of subscribers cannot possibly accommodate the preferences or desires of each individual in the group. To further illustrate the control exercised by the CATV operator and the lack thereof by the individual participant, visualize the CATV system whose antenna site is so situated that it is able to receive more broadcast television signals than the capacity of the system is able to handle. In these circumstances, the CATV system must make a selection based upon such factors as relative strength and quality of the various signals and the system's evaluation of the preferences of its customers as a group. The subscriber has no right to dictate policy concerning these matters. These considerations appear to militate against a conclusion that CATV systems are engaged in a common carrier undertaking." (Emphasis added)

In its Report and Order in Docket No. 12443, *supra*, acting on a petition which was filed by the complaintants in *Frontier* for reconsideration, the Commission reaffirmed its decision in Frontier.[34]

It is significant to note in this connection that the Committee on Interstate and Foreign Commerce of the United States Senate in its Report No. 923, 86th Cong., 1st Sess., reporting a Bill, S. 2653, to establish licensing jurisdiction in the Federal Communications Commission over community antenna systems, made it clear that it did not consider a community antenna system to be a common carrier by proposing to amend Section 3 (h) of the Communications Act defining common carrier to read as follows:

" 'Common carrier' or 'carrier' means any person engaged as a common carrier for hire, in interstate or foreign communication by wire or radio or in interstate or foreign radio transmission of energy, except where reference is made to common carriers not subject to this Act; but a person engaged in **radio broadcasting or in operating a community antenna television system** shall not, insofar as such person is so engaged, be deemed a 'common carrier.' " (Emphasis added)

The Supreme Court of California in the case of *Television Transmission, Inc.* v. *Public Utilities Commission of California, supra,* has held that under the Constitution and Public Utilities Code of California, the only classes enumerated in the definition of public utility in that Code which "could conceivably include a community antenna system are electrical corporation, telephone corporation, or telegraph corporation." The Public Utilities Commission had held that it could make no finding that the corporation operating a CATV system was an "electrical corporation" or "telegraph corporation" but it has found that the community antenna "operated as a telephone corporation" and was subject to its jurisdiction. The Supreme Court vacated the order of the Commission finding that "telephone corporations and television corporations are each different from each other."

It was in this case that the court stated that an antenna system is more like the unregulated music halls, theaters, and newspapers than either telephone or telegraph companies.

In a case captioned *In The Matter of: Community Television Systems of Wyoming, Inc.*, (17 Pike & Fischer, Radio Reg. 2135, Wyoming District Court). the District Court for the First Judicial District of Wyoming on appeal from a contrary decision of the Public Service Commission of Wyoming reversed the Commission and held that community antennas: (1) are not public utilities, and (2) are engaged in interstate commerce. The significant aspect of this decision is that the court was interpreting a statute which included within the term "public utility," "any plant, property or facility for the transmission of intelligence by electricity."[35] This was clear recognition that notwithstanding broad, general language in the statute defining the term public utility, a community antenna lacked the basic jurisdictional characteristics of a public utility, and for this reason could not be so considered.

The Public Service Commission of Utah on December 18, 1956, in a case captioned, *Vetere Perfect TV, Inc.* (Case No. 4172), 14 RR 2064, dis-

34 26 FCC 403, 427-28.

35 Section 64-101, Wyoming compiled statutes 1945: "The term 'public utility,' when used in this Chapter shall mean and include every person, or municipality, that owns, operates, leases, controls, or has power to operate, lease or control

"(b) any plant, property or facility for the transmission to or for the public of telephone messages, for the conveyance or transmission to or for the public of telegraph messages or for the furnishing of facilities to or for the public for the transmission of intelligence by electricity . . ."

missed an application for a certificate of public convenience and necessity filed by *Vetere* for authority to operate a community antenna in the State of Utah as a public utility. This action was based on an Opinion (No. 56-129), 14 RR 2063, of the Attorney General of Utah issued on November 8, 1956, that community antennas are not "subject to control by the public service commission as a public utility." The attorney general cited *Television Transmission, Inc.*, v. *Public Utilities Commission of California, supra.*

Attorney generals in several other states have also been called upon for opinions as to the status of community antennas under the public utilities codes of their respective states. The Attorney General of Arizona in an Opinion (No. 55-206), 12 RR 2094, issued October 18, 1955, intepreting Article 15, Section 2, of the Arizona Constitution, ruled that a community antenna is not a "public service corporation" within the contemplation of that constitutional provision which referred to companies engaged in transmitting messages, etc. An Opinion of the Attorney General of the State of New Mexico (No. 5942), 10 RR 2058, issued April 19, 1954, holds that a community antenna need not secure a certificate of public convenience and necessity from the State, although the Decision contains no clear ruling as to whether such a system is a public utility. An Opinion of the Attorney General of Colorado has been cited which follows the view that the States cannot enact legislation pertaining to CATV systems because television has been preempted by the Federal Government.[36] Another holding of particular significance is that of the Attorney General for the State of Washington (AGO-53-55, No. 346), 14 RR 2059, issued November 22, 1954, that the Washington Public Service Commission does not have jurisdiction over community antennas under the public service laws of that state.[37] The term "public service company" as used in the Statute is construed that a community antenna is not a similar utility to any of those named in the statute." In addition it was said:

"It is doubtful in our mind whether the state regulatory bodies have any jurisdiction to regulate television companies at the time due to the broad authority given to the Federal Government under the Federal Communications Act. The case of **Allen B. DuMont Laboratories** v. **Carroll** . . . is authority for this proposition."

During the past several years legislation has been proposed in several state legislatures designed to impose public utility status on community antenna systems. In no case has such legislation become effective. Proposals made in the states of Arizona, Arkansas, California, Connecticut, Kentucky, New Hampshire, Pennsylvania, Utah, Washington, and West Virginia were not approved by the legislatures. Legislation approved by the Montana Legislature in 1959 was vetoed by the Governor. Neither the Federal Government nor any state is currently regulating community antennas under the public utility concept although for several years the Public Service Commission of Wyoming purported to do so until overruled by a State court. *In the Matter of Community Television Systems of Wyoming, Inc., supra.*

In the State of Connecticut in 1963 several proposals were made to the Committee on Public Utilities of the General Assembly which would have provided for the control of CATV systems somewhat in the manner of public utilities, but instead a bill was passed which allows the Public Utilities Commission to issue franchises in lieu of allowing the cities to do so. (Sections 16-330 through 16-333 — Chapter 289 — of the General Statutes of Connecticut.)

It is no secret that the reason why CATV systems did not blossom out throughout Connecticut, as they did throughout the country, is that Southern New England Telephone Company refused to permit pole attachments for CATV service. Instead, they offered a tariff at prohibitive rates. Only if the CATV operator allowed the telephone company to own the main facilities and lease them back at prohibitive rates would the telephone company do business with a CATV operator.

Although several communities in Connecticut granted permits to do business to CATV operators (sometimes popularly called "franchises"), CATV systems could not get under way because the telephone company refused to permit pole attachments. This took place, although telephone companies throughout the country, operating under telephone franchises similar to or identical with that of Southern New England Telephone Company and under similar prevailing laws, readily permitted CATV systems to make attachments to their poles in order to serve the subscribing members of the public.

Legislation to permit CATV systems to overcome these difficulties was introduced in several forms in the Connecticut General Assembly. Because Connecticut is not one of the "home rule" States, it was determined by the Committee to which these bills were referred to lodge the power to grant franchises for CATV systems in a central authority of the State Government. Because the Public Utilities Commission had jurisdiction over the telephone company which would be required to grant pole attachment rights, it was deemed expedient to lodge this franchise power in the Public Utilities Commission. Nothing in Public Act 425 or in the discussion of the bill contains the slightest hint that the Committee or the General Assembly intended to lodge powers in the Commission to regulate CATV systems as public utilities.

Although this is the first example of a State statute lodging the grant of franchises in a central authority, there are States, such as Nebraska and California, which have granted expressly to the municipalities the power to grant to CATV systems permits ("franchises") to use the city streets or to erect poles along city streets in order to provide CATV service and to issue regulations on this matter. These grants of authority do not differ materially from the grant of authority to the Public Utilities Commission of Connecticut, except that the power is vested in municipalities, rather than in a State central authority, as in Connecticut. Other municipalities exercise the same jurisdiction under their general powers. In no State are CATV systems held to be a public utility, because they are not, in fact, of a public utility nature.

The Public Service Commission of Nevada is presently conducting a study of CATV systems in Nevada with a view to regulating them as public utilities. A news item of September 29, 1964, from Carson City, Nevada, states:

"The Public Service Commission of Nevada announces that it will undertake a study of all matters concerning regulation of Community Antenna Television (CATV). For some time the Commission has been reviewing various features of CATV and correlating procedural regulatory practices of other state commissions.

"The 1963 Nevada Legislature amended the law in NRS Chapter 704.020 defining public utilities to include 'any plant, property or facility furnishing facilities to the public for the transmission of intelligence via electricity.' Interstate communications are exempted.

"An opinion from the Nevada Attorney General's office interprets the legislative amendment to authorize regulation of CATV by the Public Service Commission.

"Many communities throughout the State are now receiving community antenna television service offered by local companies. Reception of outside channels is provided through the local facilities.

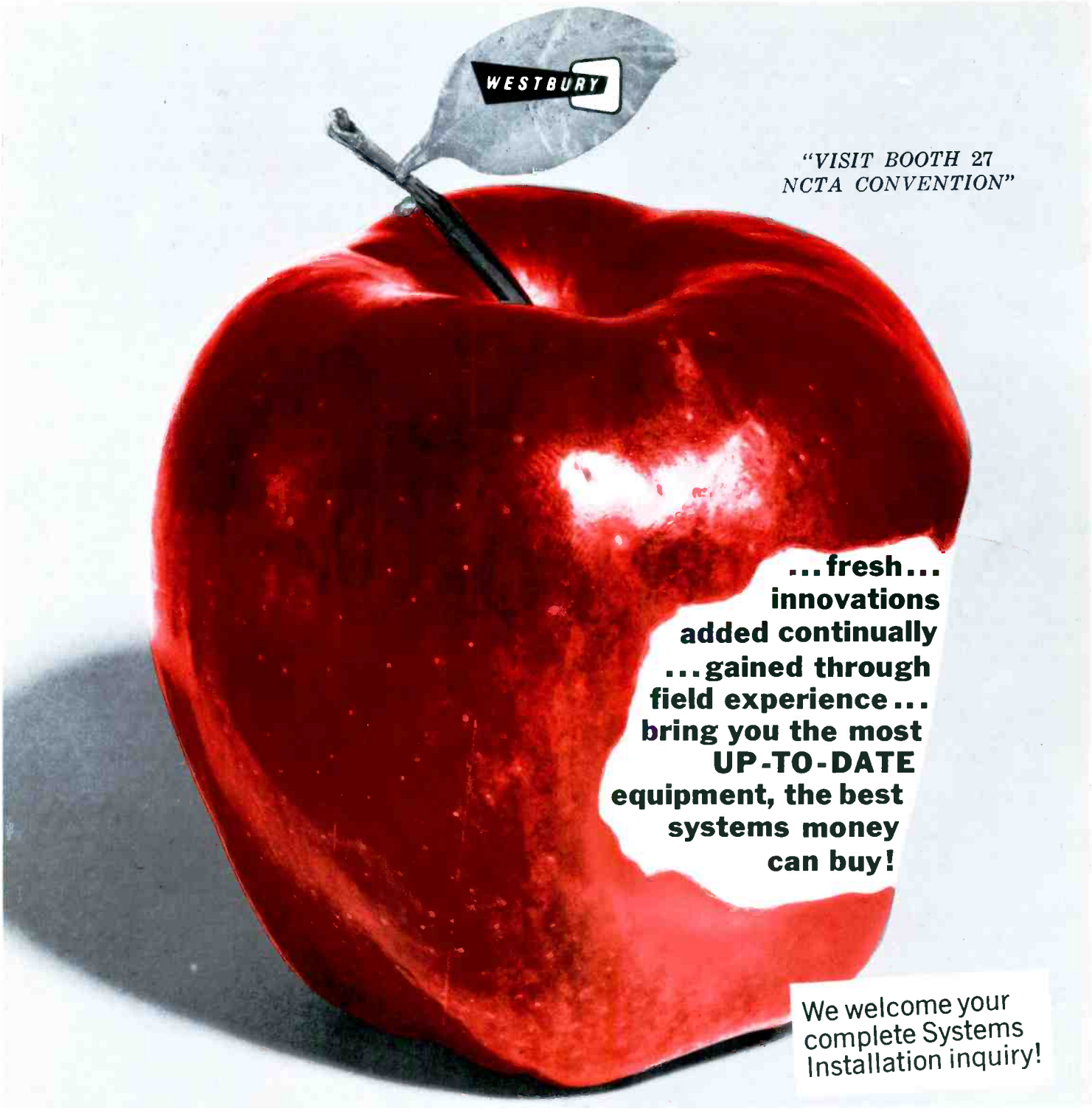
"Community antenna television companies throughout the State are requested to advise the Public Service Commission at Carson City of the type of service now being offered, description of rules and regulations, contracts and rates charged to the public.

"All information will be reviewed by the Commission with a view toward issuing Certificates of Public Convenience and Necessity to qualified applicants."

The *Las Vegas Sun* of October 1, 1964, carries the following UPI item which quotes Mr. J. G. Allard, Chair-

36 The Colorado Opinion is mentioned in the Opinion of the Wyoming Public Service Commission, **In the Matter of Cokeville Radio and Electric Company,** 6 PUR (d) 129, CCH State Utilities Reported, para. 16746.

37 **Revised code Washington 80.04.010.**



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man of the Nevada PSC, as follows:

"Allard said the commission was acting on the advice of the attorney general's office which interpreted a 1963 law change to include the system under state authority."

The advice of the Arizona Attorney General's office contradicts the plain facts. For one thing, there can be no question that a CATV system is a business engaged in interstate commerce. The television signals which they receive originate in large measure from outside the State, such as those containing network programs.

The Nevada legislature was very careful to state expressly that "interstate commerce" was not within the scope of the statute. The statute provides:

"Sec. 9, NRS 704.020 is hereby amended to read as follows:
"704.020 1. As used in this chapter, 'public utility' shall mean an embrace: —
(d) Any plant, property or facility furnishing facilities to the public for the transmission of intelligence via electricity. **The provisions of this paragraph do not apply to interstate commerce.**
(e) Radio or broadcasting instrumentalities **except those subject to the jurisdiction of the Federal Communications Commission** and airship common contract carriers." (Emphasis added).

By the very wording of the statute, community antenna television systems are not included. They are not encompassed under (d), above, because they are engaged unquestionably in interstate commerce. They would be excluded under (e), even if they were "radio or broadcasting instrumentalities," because all CATV systems are instrumentalities subject to the Federal Communications Commission with respect to the Commission's radiation rules, and through the Federal Communications Commission's authority over microwave grants when they are served by common carrier or private microwave.

Furthermore, there was clearly no intent on the part of the Nevada legislature to bring CATV systems within the laws governing public utilities. The title to Senate Bill No. 258 from which the Act springs makes that obvious. It reads as follows:

"AN ACT to amend 704 of NRS, relating to regulation of public utilities, **by adding new sections providing for an annual assessment on all public utilities,** except motor vehicle carriers, based on gross operating revenues from intrastate operations; prescribing methods of notice and collection of such assessment; prohibiting the levy of such assessment under certain circumstances; creating the public service commission regulatory fund; providing for the sources, uses and disbursement of moneys in such fund; **and bringing certain cocperative associations and nonprofit corporations within some of the laws governing public utilities; to amend NRS sections 704.020 and 704.330,** which define 'public utility' and relate to certificates of public convenience and necessity, **by clarifying such definition and providing for elimination of duplications of service by public utilities;** and providing other matters properly relating **thereto.**" (Underscoring added)

The title to the Bill properly pointed out, as it was supposed to, the *changes* which the Act would contain. It served notice upon the affected parties that a bill was being considered which affected them. It added "new sections providing for an annual assessment on all public utilities . . ." with relevant general notice on how this was to be administered. The title to the Bill served notice on what type of entities were being brought for the first time under the laws governing public utilities, namely "certain cooperative associations and nonprofit corporations." In amending NRS Sections 704.020 and 704.330, which define "public utility" and relate to certificates of public convenience and necessity, the title to the Bill did not state that it was thereby "bringing certain business enterprises within some of the laws governing public utilities," as it had done expressly with respect to "certain cooperative associations and nonprofit corporations," but it pointed out that it was "clarifying such definition and providing for elimination of duplications of service by public utilities; and providing other matters properly relating *thereto*." (Emphasis added).

It was well known to the Nevada legislators that CATV systems were not of a public utility nature, that they were springing up all over the United States and in Nevada in the twelve years preceding the enactment of this law. It is inconceivable that the Nevada legislature intended to convert a business which is of a private business nature into a public utility without intimating this drastic change in the title to the Bill and without one word being said about it on the record in committee or in the proceedings in the legislature: It would be a slur upon the judgment and ability of Nevada legislators to conclude that they would thus violate a basic requirement of valid legislation in Nevada as in the other States of the Union.

By subjecting to public utility regulation "Any plant, property or facility furnishing facilities to the public for the transmission of intelligence via electricity" with the exclusion of those engaged in interstate commerce, the Nevada legislature was using language which has been applied to business enterprises of a public utility nature by other legislatures. The legislature was simply "clarifying" the definition of "public utility," as it stated in the Title to Senate Bill No. 258.

Thus 864-101 of Wyoming Compiled Statutes 1945 defines "public utility" as "(b) any plant, property or facility . . . for the furnishing of facilities to or for the public for the transmission of intelligence by electricity . . ." This language was used five years before the first community antenna television system was constructed in the United States. When the Wyoming Public Service Commission seized upon those words to regulate CATV systems, the District Court for the First Judicial District of the State of Wyoming in a case decided in October 1958, on appeal from an order of the Public Service Commission of Wyoming, decided that a community antenna system is not a public utility and is engaged in interstate commerce. (*Community Television Systems of Wyoming*, 17 Pike and Fischer, Radio Reg. 2135, Wyoming District Court). Thus, the court reversed the Wyoming PSC which had held that a CATV system was a public utility under the language of the Wyoming statute and that it was subject to its jurisdiction. It is difficult to imagine how the office of the Attorney General of Nevada could reach the conclusion that CATV systems are subject to the Nevada Public Service Commission under this identical language.

Webster's Encyclopedic Dictionary defines "intelligence" as follows:

"Intelligence, intel'i-jens, n. (L. intelligentia) Intellectual power, knowledge imparted or acquired; general information; information communicated; news or notice; an intelligent or spiritual being." (Webster's Encyclopedic Dictionary, Library of Universal Knowledge — 1963 edition — Page 384)

It is evident that if the Nevada legislature had used this descriptive language to include all business ventures which could be brought under it, rather than as a further "clarification" of the type of business of a public utility venture which is already under the statute, it would have converted into public utilities the newspaper business, the typing of letters by a commercial firm which uses electrical typewriters and almost every conceivable business which conveys information to customers or others and which makes use in the process of electrical energy. This construction would be absurd and an interpretation which includes a CATV system under this Nevada statute is equally unrealistic. There is no State today which regulates a CATV system as a public utility. Bills have been introduced in several State legislatures over the years to regulate CATV systems as public utilities and all have been defeated.

The Television Factbook, 1964 Edition No. 34, on page 116-C, states that there has been a CATV system in Reno, Nevada, since December of 1953, one in Tonopah, Nevada, since December of 1955 and one in Elko, Nevada since January of 1956. It is obvious that Nevada legislators knew of the existence of CATV systems and that they would have asked for their testimony before the Committee which considered this legislation if they had intended to convert them suddenly from a private competitive type of business into a business of a public utility nature. At the very least, a mention that community antenna television systems were being brought under public utility regulation would have been made in the Title to the Bill which was enacted

into law. It is a basic rule of statutory construction that a law will not be interpreted to convert a private business into one of a public utility nature without a clear expression on the part of the legislature of its intent to do so. Even then, the State cannot convert private property into use without giving rise to grave Federal and State constitutional questions. If the statute reasonably can be construed to avoid this question, the courts will not favor a construction which imperils the very validity of the statute. The National Community Television Association has filed a brief before the Arizona PSC pointing out these facts.

The Pennsylvania and Ohio PUC's decided in 1964 that they did not have jurisdiction over CATV systems as public utilities because they are not of a public utility nature. The Ohio decision contained a slight error in that it did not state that the Wyoming PSC's assumption of jurisdiction of CATV systems had been overruled by the District Court, the First Judicial District of the State of Wyoming, in 1958, as stated above. (In the matter of the application of Seneca Radio Corporation for a certificate of convenience before the OHIO PUC, No. 32646, November 19, 1964).

In addition, now that CATV is penetrating larger cities such as New York and Philadelphia, city councils are looking into the advisability of regulating CATV systems in various ways including rate regulation or rate supervision. Several city franchises do contain a provision for rate supervision. Many CATV operators who would oppose rate regulation, because a CATV system is not of a public utility nature, will resist less strongly an approach which allows the CATV operator to set his own rates but which requires him to justify further rate increases. Most CATV operators are convinced that there is no reason to control their rates to subscribers, because subcribers can listen to off-the-air television from regular television stations or translators. CATV operators do not have a captive audience. Therefore they do object strenuously to rate regulation. However, for the sake of peace with the city councils many have not objected too strenuously to rate supervision. City councils, under a rate supervision approach, have been reasonable generally in allowing later rate increases because, for instance, added expenses had been incurred by the CATV operator in making possible the reception by his subscribers of additional television channels through the use of microwave. As a matter of fact, the amount of the rate charged to subscribers has very seldom been raised as an issue between the CATV operator and his subscribers. In the few instances where this has been made an issue it has come from opponents of CATV systems who are trying to create the impression that a CATV system has a captive audience and should be regulated as a public utility.

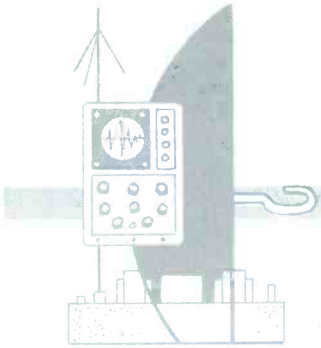
Some of these criticisms of the rates charged by CATV operators came about in the very early days of CATV, when they could receive only three television channels. Despite that fact, would-be subscribers stood in line to pay as much as $100 to $175 to be connected to the cable and to sign contracts for continuing service at rates which varied between $4.00 to $6.00 monthly. At that time the CATV business was believed to have a very limited life span. Small CATV operators decided to obtain as rapid a return on their investment as possible because it was felt that when the freeze imposed by the Federal Communications Commission on new television stations would be lifted, television stations would broadcast throughout the country and there would be little to sell in the way of television reception. Contrary to this expectation, the public has shown that it is desirous of receiving as many television channels as it is reasonably possible for them to obtain, but they obviously were no longer interested in paying connection fees of $100 to $175 when several television channels were already available to them off the air. As a result the average connection fee today will run from $10.00 to $20.00, and it is my impression from traveling throughout the country that a $4.00 to $5.00 per month subscriber rate is quite common.

As has been said, a community antenna is a private business lacking the essential jurisdictional features of a public utility. Under the due process clauses of the Constitution of the United States and of the several States, private property may not be converted into a public utility by legislative or administrative fiat. Thus, even assuming that a community antenna system technically comes within the general meaning of a definition of "public utility" in a State public utilities code (such as that previously quoted from the Wyoming Public Utilities Code), as a private enterprise it may not be transformed into a public utility without just compensation being paid to its owners. This proposition is "not open to doubt." *Frost* v. *Railroad Commission of State of California*, 1926, 271 U.S. 583, 46 S. Ct. 605, 70 L. Ed. 1101; *Michigan Public Utilities Commission* v. *Duke*, 1925, 266 U.S. 570, 45 S. Ct. 191, 69 L. Ed. 455; *Producers Transportation Company* vs. *Railroad Commission of the State of California*, 1920, 251, U.S. 228, 40 S. Ct. 131, 64 L. Ed. 239.

The rule has been succinctly stated by the Supreme Court of Utah in *State ex. rel. Public Utilities Commission of Utah* v. *Nelson*, 65 Utah 457, 462-63, 238 P. 237:

"No one may successfully contend that it is competent for the legislature to regulate or control in such respect a mere private business or to declare a private business to be a public service or a public utility. In other words, that State may not, by mere legislative fiat or edict or by regulatory orders of the Commission convert mere private contracts or a mere private business into a public utility or make its owner a common carrier . . . so, if the business or concern is not a public utility, where the public has a legal right to the use of it, where the business or operation is not open to an indefinite public, it is not subject to the jurisdiction or regulation of the Commission . . . Where the act constituting a common carrier or public service does not clearly express such element of public use or service, words 'for the public use or service' or their equivalent nevertheless are to be understood and implied . . ." (Citations omitted)

This also is the law in other jurisdictions. *Allen* v. *State R. Commission*, 1918, 179 Cal. 68, 175 P. 466:*Chippewa Power Co.* v. *Railroad Commission*, 1925, 188 Wisc. 246, 205 N.W. 900; *Inland Empire Rural Electrification* v. *Department of Public Service of Washington;* 1939, 199 Wash. 527, 92 P. 2nd 258; *Humbird Lumber Co.* v. *Public Utilities Commission of the State of Idaho*, 1924, 39 Ida. 505, 228 P. 271. □



PRODUCT REVIEW

NEW SOLID STATE REPEATER AMPLIFIER

Entron, Inc. has announced the availability of a new fixed gain, fully transistorized repeater amplifier covering the low VHF, FM and high VHF bands. The new unit, Model R-1, is designed for use in CATV trunklines in conjunction with ALC amplifiers such as Entron's LHR-45R to provide an economical systems layout. (One ALC amplifier station provides constant signal levels and remote power over the coaxial cable for two succeeding R-1 amplifiers.)

The R-1 is available with electronically regulated power supply for 28 vac or 60 vac. The unit is housed in a sturdy, weatherproof, cast aluminum enclosure designed for strand mounting.

The amplifier can be supplied with a variety of connectors, including UHF and aluminum flare types for 0.412", 1/2" and 3/4" cable. Other features of the new Entron unit include 22 db gain and variable tilt. Model R-1-28 is wired for 28 volt operation; Model R-1-60, for 60 volt operation.

Write **Entron, Inc., 2141 Industrial Parkway, Silver Springs, Md.** for additional details.

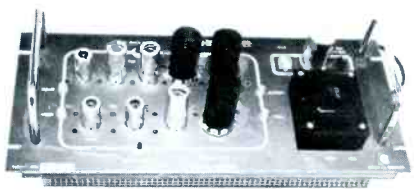
NEW CERAMIC TUBE AMPLIFIER

C-COR Electronics, Inc. of State College, Pa., has announced the availability of its new Model 2155 Low Noise Ceramic Tube Amplifier. This device is specifically intended for use as an antenna preamplifier, or in any other application where it will be subjected to weather. It is available in center frequencies between 50 and 500 mc, with bandwidths up to 40% of center frequency. Gain is between 15 to 30 db, depending on bandwidth with noise figures available as low as 3 db. The Model 2155 is designed to operate from 115 volts AC over the temperature range of −30° F. to +130° F. Further information concerning this model is available by writing to the factory at P.O. Box 824, State College.

MULTI-PURPOSE BROADBAND AMPLIFIER FROM BENCO

Benco's BB-500 is a multi-purpose, high gain-high output broadband amplifier. The input match and low noise figure make it an appropriate utility amplifier for CATV and large MATV systems.

The unit features individual hi and lo band tilt control, plus provision for automatic level control (BB-ALC accessory). It is designed for 19" rack mounting.



For further information contact **Benco Television Associates Ltd., 27 Taber Road, Rexdale, Ontario, Canada.**

In U.S.A. contact **Benco Television Corporation, 1051 Clinton Street, Buffalo, New York.**

CAS INTRODUCES NEW CATV PRODUCTS

New from CAS Manufacturing is a strand mounted housing to accommodate transistor line extenders, splitters, and in-line taps. The housing is hermetically sealed and is made of die cast aluminum. The weatherproof bottom plate is attached with a single thumb screw. A choice of fittings is available.

Several units go in the new housing. They include the silicon transistor 20 db line extender, (All band TRA-215A); the

16 db line extender with dual output, (All band TRA-215-2); the 20 db amplifier line tap, (All band TRA-215-T), and the 25 db line extender, (Low band TR-105).

The directional In-Line Taps come in 9 tap loss values (34, 30, 24, 20, 16, 12, 8, 3, and 0 db). They can be used for a single drop or with a 2 or 4 way splitter for multiple taps which are mounted on an interchangeable cover, available as an accessory. Two and four way matched splitters for splitting trunk and feeder cables pass voltage for line powered systems.

Write the manufacturer, **CAS Mfg. Co., 3301 Royalty Row, Irving, Texas,** for full details.

KAISER OFFERS NEW LOW-BAND AMPLIFIER

The Kaiser Low-Band Line Extender Amplifier Model KLL-20 is a new high-output, all silicon, transistorized line extender for use in CATV Systems with up to 5 low-band TV channels (Channels 2 through 6) and full FM band coverage. Cable powered by remote AC units (Kaiser Model KCP-3 or KCP-12) through either the input or output connectors, it provides 20 db gain at Channel 6 (88 mc) and 16 db at Channel 2 (54 mc).

Frequency response for the amplifier is 54 to 108 mc within plus or minus 0.5 db with 20 db of cable. The input impedance is 75 ohms, 1.2:1 maximum VSWR and output is 2.1 maximum VSWR at 75 ohms. The unit measures 1½" x 1½" x 6" and mounting is Messenger type. Price fob is $80.

Contact **Kaiser Aerospace & Electronics, P.O. Box 9098, Phoenix, Arizona.**

BENCO SOLID STATE AUTOMATIC LEVEL CONTROL

Benco Television Associates announces a new solid state automatic level control for use with Benco broadband amplifiers BB-500 and BB-1000A. The BB-ALC automatic level control samples hi and lo band separately, and will correct amplifier output within 1 db for input change up to 10 db.

"Quick check" meters are provided for monitoring. Designed for 19" rack mounting.

Write **Benco Television Corporation, 1051 Clinton Street, Buffalo, New York** for prices and details.

NEW SOLID-STATE VHF-UHF TUNER FOR CATV

Dynair Electronics, Inc. has announced a new solid-state television tuner of "unusually small size and low power consumption," capable of operating on all VHF and UHF channels. The Model RX-4A TV TUNER is suited for both color

and monochrome performance and is completely compatible with existing TV headend equipment.

The RX-4A provides separate video, audio and 4.5-mc aural signals and can be readily adapted for a combined video and multiplexed 4.5-mc aural signal output. An automatic-gain control circuit is utilized to assure constant output with variations in input signal level. A front panel meter makes it possible to monitor the video and audio output levels as well as the voltages from the unit's self-contained regulated power supply. An optional crystal-controlled oscillator is available if the unit is to be used in single-channel operation.

While the RX-4A tuner is primarily designed for use on all standard VHF and UHF channels, it is also available on order for special VHF channels. In addition to its main application as an all-channel, in-line tuner for CATV systems, the RX-4A also contains circuitry which permits its use as a test instrument on headend systems. When used with a monitor, the RX-4A provides accurate signal information to check the quality of a broadcast station transmission or TV modulators.

The unit will have its first public showing at the National Community Television Association Convention in Denver. Contact William D. Killion, **Dynair Electronics, Inc., 6360 Federal Boulevard, San Diego, California.**

VIKING OFFERS SOLID STATE TAP

The Solid State Tap-Viking No. 566 has just been introduced by **Viking, 830 Monroe Street, Hoboken, New Jersey.** This all-band, solid state, tap has zero tap attenuation and improved specifications.

It provides four back-matched taps with signals at the same level as in the main line. A compact single transistor in-line amplifier compensates for the tap attenuation with less than 1/2 db line insertion loss.

Viking reports that, due to the high signal levels available before re-amplification is necessary, distribution lines can be increased in length. More customers can be served from existing feeders and the quality of the system has been improved due to better matching and greater isolation.

Packaged in zinc die cast cases, the tap is equipped with its own built-in power supply and has the Vik-O-Process coating.

Contact Robert Baum at Viking for further inquiry.

NEW COAX LINE SIMULATORS

Kaiser Aerospace & Electronics, P.O. Box 9098, Phoenix, Arizona, has announced a "new design in coaxial line simulators" for CATV systems.

The units are designated as Models KSL-25 and KSL-20. Pocket-sized, (2" x 2" x 5¼") the units provide a substitute for long lengths of coaxial cable in per-

forming alignment and checkout of CATV amplifiers. Model KSL-25 simulates 25 db of cable (at Ch. 13) and Model KSL-20 simulates 20 db of cable (at Ch. 13). FOB price is $50 for both models delivered in U.S.A.

For specifications contact Kaiser at above address.

"QUADRATE CHANNELER" CATV ANTENNAS

Developed by Scientific-Atlanta, Inc., the "Quadrate Channeler" Master Antenna Systems are 4-bay arrays of broad band, high gain antenna elements. The array configuration is designed to align minimum sidelobe planes vertically and horizontally, the two directions of maximum co-channel interference arrival. Measured electrical performance is outstanding.

Because of the inherent broadband characteristics of these arrays, only three sizes are required to cover all VHF channels, the manufacturer reports. A single array can be used to receive all channels within its band provided their directions fall within the main lobe beamwidth. Single antenna elements are also available offering the same band, VSWR, and front-to-back ratio figures as the arrays.

The "Quadrate Channeler" is constructed of corrosion resistant material and is designed for operation under extreme weather conditions. Features include vibration damped dipole elements and hermetically sealed electrical connectors.

All antennas are shipped complete including elements, array structure, assembly and mounting hardware and brackets, and coaxial feed harness.

The antenna array models are: QCS-2, Channels 2-3, $2030; QCS-4, Channels 4-6, $1765; QCS-7, Channels 7-13, $1500. For additional details contact **Scientific-Atlanta, Inc., Post Office Box 13654, Atlanta, Georgia 30324.**

HERMETICALLY SEALED UNDERGROUND TERMINALS

A series of new hermetically sealed terminals, developed for underground installation in buried cable systems—pressurized or non-pressurized—is available from Channel Splicing Machine Co.

These terminals are the first to be specifically designed for direct burial under ground, or installation in a manhole or vault, according to the manufacturer. Since unit is hermetically sealed, the entire housing maintains pressure, hence terminations do not need to be potted in epoxy, or dammed off and by-passed.

Housings are constructed of inert ABS plastic, with 300 series stainless steel metal parts. Terminals are corrosion-proof, rust-proof, and impervious to all chemicals normally found in soil or atmosphere. Electrolytic and galvanic action is also eliminated.

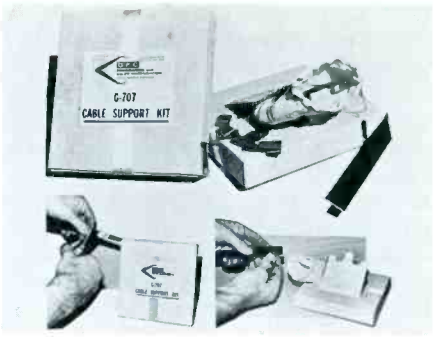
Two models provide terminations for up to 36 pairs, and up to three cable entrances for cable diameters to 2.125".

Write Glenn M. Rhode, **Channel Splicing Machine Co., Inc., 620 Foothill Blvd., Glendora, California 91740** for additional information and prices.

NEW CABLE SUPPORT KIT FROM GFC

GFC Engineering and Sales Corporation, 11725 Mississippi Ave., Los Angeles, California has announced its new G-707 Cable Support Kit. The compact kit is designed to eliminate the need for stocking all the different sizes and types of lashed cable supports normally used in plant construction operations according to GFC. With the kit, small short straps can be made, eliminating the need to cut and waste larger straps. The manufacturer reports a material savings on a per-foot basis of over 50% when compared with pre-cut supports.

The G-707 Cable Support Kit is intended for use in aerial cable construction in lieu of pre-cut lashed cable supports. It consists of a 100 ft. coil of 3/4 inch stainless steel ribbon and a cloth



bag holding 75 stainless steel buckles, both packaged in a 6"x6"x3/4" heavy-duty cardboard container. All stainless steel used is type 430. The container has a tuck-in slot for the ribbon, and also a "tricky" trap door for access to the buckles. The door is designed with interlocking "fingers" so as to prevent any accidental loss of the buckles when the kit is not in use.

One of the features is that the steel ribbon is factory honed to remove any sharp edges or burrs that might cause injury to the workman. Suggested list price of the G-707 Cable Support Kit is $3.81 FOB Los Angeles.

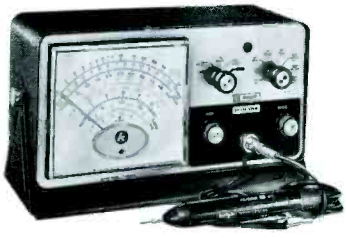
NEW SOLID STATE AMPLIFIER/SPEAKER

Lang Electronics, Inc. introduces its new broadcast Monitor Amplifier/Speaker. Primarily intended for use in broadcast offices where good quality monitoring is required, the Lang Amplifier/Speaker contains its own solid state amplifier, power supply, and volume control. The price of the unit is $78.

For complete information and details write to **Lang Electronics, Inc., 507 Fifth Avenue, New York, N.Y. 10017.**

VACUUM TUBE VOLTMETER FROM ALLIED RADIO

The Knight-Kit 6" Vacuum Tube Voltmeter has just been introduced by Allied Radio. Among the new features of the Knight-Kit, Model KG-625, is the 1/2-volt full scale DC range.



The meter used has a 200-microamp movement with a fluorescent knife-edge pointer, 100° meter arc for larger scale

Photo Courtesy of Ft. Worth Tower Co. Inc.

Owners, Managers, and Technicians, need TV & COMMUNICATIONS, the only established cable television monthly magazine.

Each issue is packed with late news of the CATV Industry —plus detailed, informative articles to help you engineer, build and operate a community antenna television system. In addition, TV & COMMUNICATIONS provides incisive discussions of legal and financial aspects of CATV management, sale and acquisition.

In short TV & COMMUNICATIONS is the single, unrivaled source of information to help you and your key men construct, promote, and operate a successful cable system. *Want more proof?* Just read through this partial list of articles published in TV & COMMUNICATIONS during the last six months: The Future of Television–CATV: Past, Present, Future–The Art of CATV System Management–Evaluation Guide for Proposed System Location–Additional Services for CATV Systems–Tropo-Scatter Reception via Parabolic Antennas–Guide to Installation of Aluminum Sheathed Cable–Isn't It About Time? — a Fresh Look at CATV–Practical Amplifier Cascading Calculations–CATV Manager — Many Jobs, Many Talents, Annual Equipment Directory–Trip in a Salesmobile–Television in the U. S. Today–Transistors for Wideband Amplifiers–the CATV Industry's History, Nature and Scope (a continuing series)–Put Yourself in Your Letters–a Maximum-Ratio Combiner for Reliable Reception–TV Science Series via Tape–Problems and Procedures of Handling Aluminum Cable–Microwave Service to Community Antenna Systems–Selecting Head-End Buildings–Physical Requirements of Systems are Getting Bigger–Proposed CATV Legislation and Regulation–and Your Friend, the Civic Club.

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area and easy viewing from all angles, plus a gimble mounting bracket. The instrument utilizes a pre-aged bridge tube with matched triode sections. Precision 1% resistors are used as multipliers. For easy assembly, there is an inverted internal chassis. The DC range accuracy is plus or minus 3% of full scale reading while the AC accuracy is plus or minus 5% of full scale reading.

The new VTVM is available in kit form ($36.95) as well as factory assembled ($53.95). Details are available from J. W. Rubin, **Allied Radio Corp., 100 N. Western Avenue, Chicago, Ill. 60680.**

CONRAC CCTV 25-INCH MONITOR

The CEA25, a 25-inch monitor which provides a picture area comparable to that currently available in 27-inch models has been developed by the Conrac Division of Giannini Controls Corp.

Designed for use in closed-circuit television installations, the monitor is voltage regulated for stable operation under varying line voltage conditions.

The CEA25's relatively small size for the large display area is made possible by using a shorter 110-degree picture tube. Fitted for ceiling mounts, as well as pedestal and three-wheel dolly installations, the instrument weighs 104 pounds.

CEA25 is available from current production at $430 FOB. Contact Ted Michel, **Conrac Division, Glendora, California** for further information.

NEW GENERAL PURPOSE TV MONITORS

A new series of general purpose television monitors featuring transistorized circuitry and printed circuit construction is now available from Miratel Electronics, Inc.

Cost is low; reliability and performance is improved by solid state circuitry.

All standard mounting configurations are available.

Specifications and performance data are available from **Miratel Electronics, Inc., 3600 Richardson Street, St. Paul, Minnesota 55112.**

CONTINUOUSLY VARIABLE REGULATED VOLTAGE SUPPLY

The new Model 780, continuously variable regulated voltage supply available factory wired, has been announced by **Precise Electronics & Development Corp., Mineola, New York.** Price is $99.95 factory-wired.

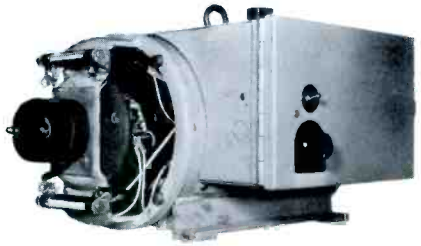
This power supply provides any voltage from 0-400 V. It also provides two meters for voltage and current. It is valuable for service testing, and for experimentation and new circuit development. Regulated DC output is available from 0 to −400 volts and 0 to −150 volts via front panel control. It is also useful as a regulated bias source. Filament voltages are also available at 6.3 volts (center-tapped or untapped) and 12.6 volts.

The dimensions of the Precise 780 are 9" x 14½" by 7½". Shipping weight is 20 lbs.

Write Precise for full specifications.

NEW DC TO AC POWER SUPPLY

A new compact motor-generator that converts DC to AC is now available from KATO Engineering. Designed and manufactured to meet demands for a reliable source of emergency or continuous duty AC power from a DC power supply, it can be used as a standby system for emergency signals, alarms, and timing devices.

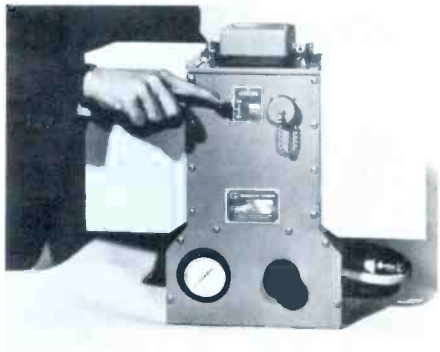


The unit has a 2 HP, 220 volt DC motor driving a 1 KW, single phase, 115 volt, 60 cycle generator. Operating speed is 3600 RPM. A speed governor controls the speed and maintains output frequency within one cycle.

Specifications, price, and delivery information will be supplied on request by **Kato Engineering Company, 1417 First Avenue, Mankato, Minnesota, 56002.**

THERMOELECTRIC GENERATORS FOR ALL-WEATHER OPERATIONS

The "No Flameout" line of all-weather, thermoelectric (heat-into-electricity) power generators, guaranteed to operate in any kind of weather and designed for unattended use in remote areas has been introduced by **General Instrument Corporation, 65 Gouverneur Street, Newark 4, N.J.**



The small (22 to 125 pounds) automatic power plants produce low-cost, 24-hour-a-day electricity from the flameless combustion of commercial LP (propane) gas. The smallest (6 watt) generator uses $23 worth of gas a year; the largest (50 watts), $159 worth. They are designed for a wide range of commercial and industrial power uses.

Using a General Instrument no-flame (or catalytic) burner, the generators are not subject to "flameouts" in high winds. They are weather and corrosion resistant, have no moving parts, and employ solid state thermoelectric modules, hermetically sealed to prevent deterioration.

Operational life of the generators, based on tests, is estimated by the Company to be five years. Each is guaranteed for a full year of operation. The line includes eight models, ranging in price from $440 to $1,550, with higher power units, up to several hundred watts, available on special order.

VIKING RELEASES BOOK

Viking has announced completion of its new catalog that features "The Viking Story," a brief but informative section on the history and future of Viking. Also added is an application section for the benefit of CATV systems builders and prospective builders on the techniques used in the industry.

The catalog has a hard vinyl cover and index tabs have been provided for quick and easy reference to avoid unnecessary probing. Viking has coded each page for insertion of new pages

as they are needed. Each product page contains complete technical and descriptive information.

For your copy of the catalog write **Viking, 830 Monroe Street, Hoboken, New Jersey 07030.**

TACO COMMERCIAL ANTENNA CATALOG

A complete selection of ruggedized TACO antennas for CATV, MATV, and ETV is described in a new short-form catalog made available by Technical Appliance Corp. Features of the antennas include vibration dampeners in the longer elements to reduce fatigue; an internal balun for direct coaxial input, potted insulator cavities and foam filled terminal box; reinforcing sleeves at element-to-boom contact points, and heavy duty aluminum construction.

For free copy of catalog write to **TACO, Sherburne, N.Y.** and request catalog No. 610.

AMPEX RELEASES VTR BROCHURE

Detailed description, features, specifications and prices for Ampex Corporation's new VR-303 Videotape television recorder and Videotrainer closed circuit television recording system are described in a new brochure, No. 2229. Series 143 tape, designed for use with the VR-303, has price and descriptive information in bulletin No. 2246. Contact **Ampex Corp., Video/Instrumentation Div., 401 Broadway, Redwood City, California 94063** for details.

"FROST AID" SPEEDS TV SERVICING; LOCATES ELECTRICAL INTERMITTENTS

TV servicemen and electronic technicians can now locate faulty components faster and easier with "FROST AID," according to Chemtronics, Inc. of Brooklyn. Improved "FROST AID" aerosol spray quickly chills suspected faulty components to minus 20 degrees F. in just 2 seconds without leaving messy liquid residue . . . actually revealing components with thermal intermittents. "FROST AID" pinpoints the trouble by selectively chilling individual components and isolating the faulty one.

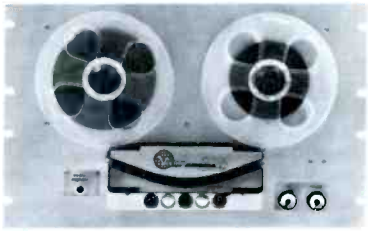
The "FROST AID" aerosol can is packaged with a long plastic extender tube, called Spray Aid, for accurate and economical dispensing. In operation, the TV serviceman simply aims at the suspected component (while the TV set is operating) and sprays the chilling agent on the component. "FROST AID" quickly evaporates to complete dryness, cooling the component. Any thermal intermittent reveals itself and the faulty component can be replaced immediately.

"FROST AID" is offered in two sizes, the easy-to-carry 8-ounce aerosol can at $1.98 and the bench technician's 16-ounce economy can at $2.70.

For further information, contact **Chemtronics, Inc., 1260 Ralph Avenue, Brooklyn, New York 11236.**

BG MUSIC SYSTEM

Viking of Minneapolis, Inc. announced Model 225, a new, 16 hour reel-to-reel background music tape system.



According to Viking, Model 225 will sell for $500.00. The new system uses pre-recorded quarter track monaural tape at 1⅞ IPS with automatic reverse play providing a total of 16 hours unrepeated background music on a 7" reel. Model 225 comes equipped with playback preamplifier and connects to any sound system. A push-button permits selection of tracks during operation.

Viking revealed that the 225 system is based on the design of an industrial tape transport manufactured in quantity by the firm in recent years. Several prototype Model 225's were successfully field tested at the New York World's Fair during the entire 1964 season.

A company spokesman also announced the availability of music for the 225 system and said that several units were already shipped recently and stepped up production now makes immediate delivery possible.

Peter Schwarz, **Viking of Minneapolis, Inc., 9600 Aldrich Ave., South, Minneapolis, Minn.** will supply complete details.

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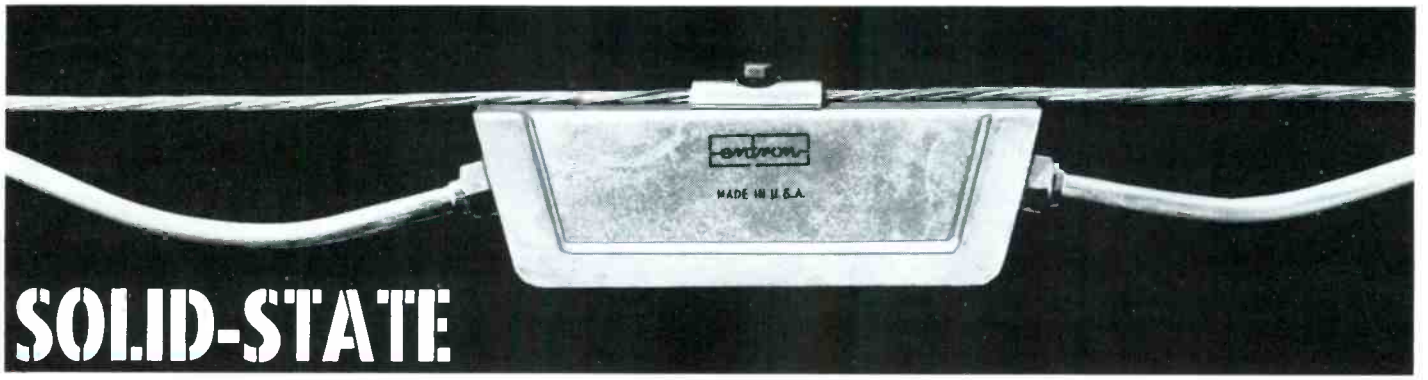

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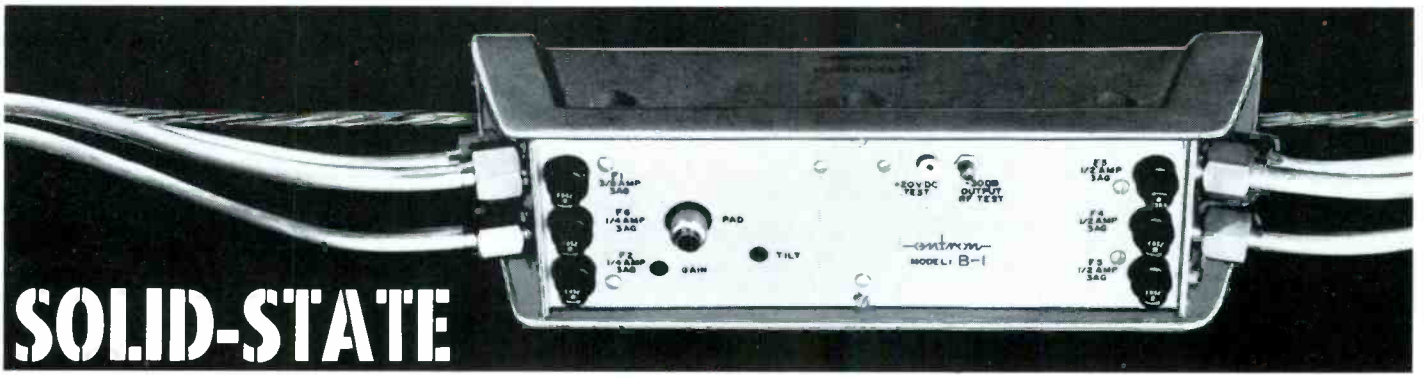

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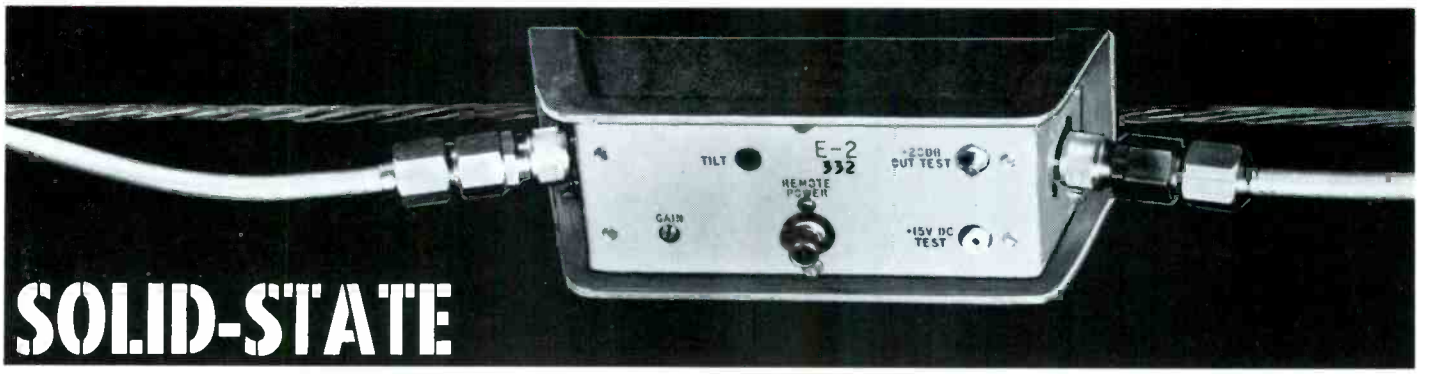

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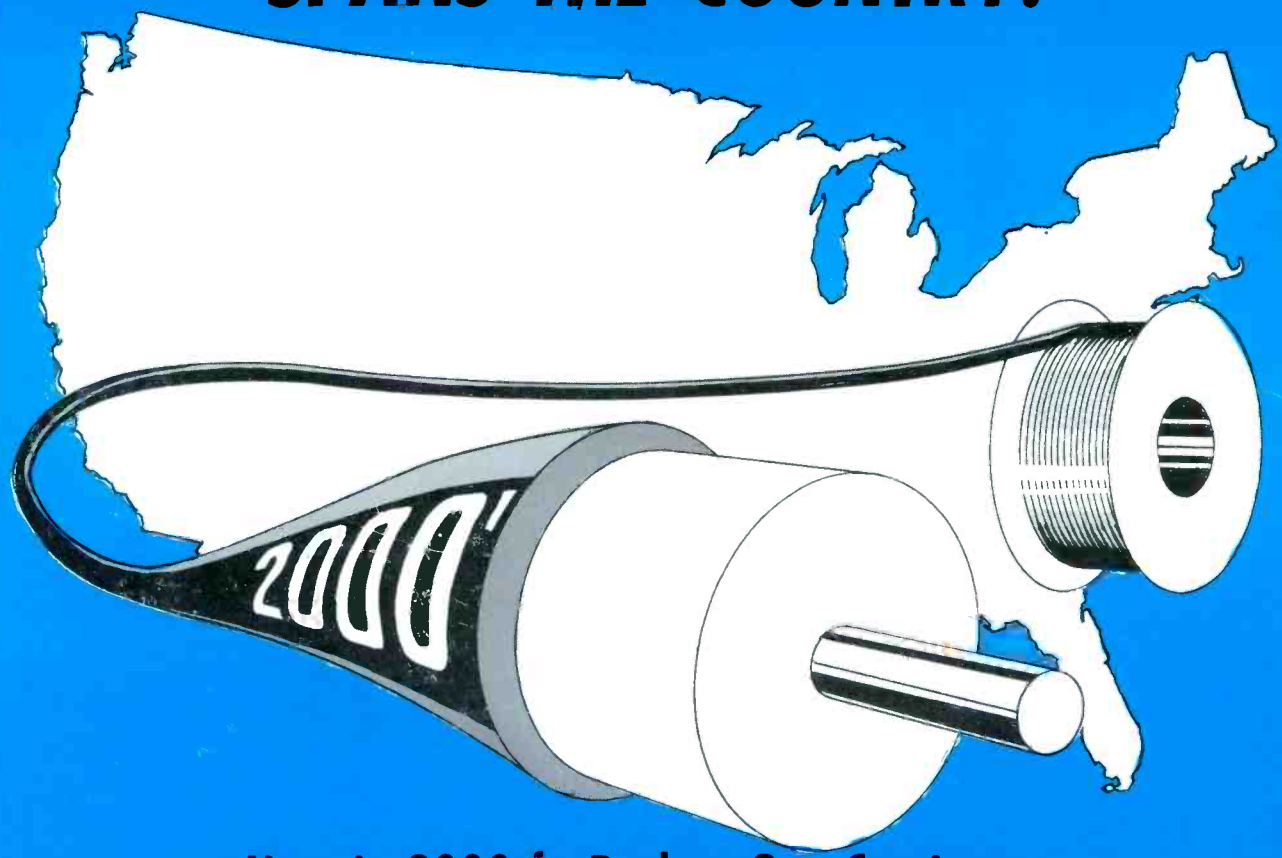

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