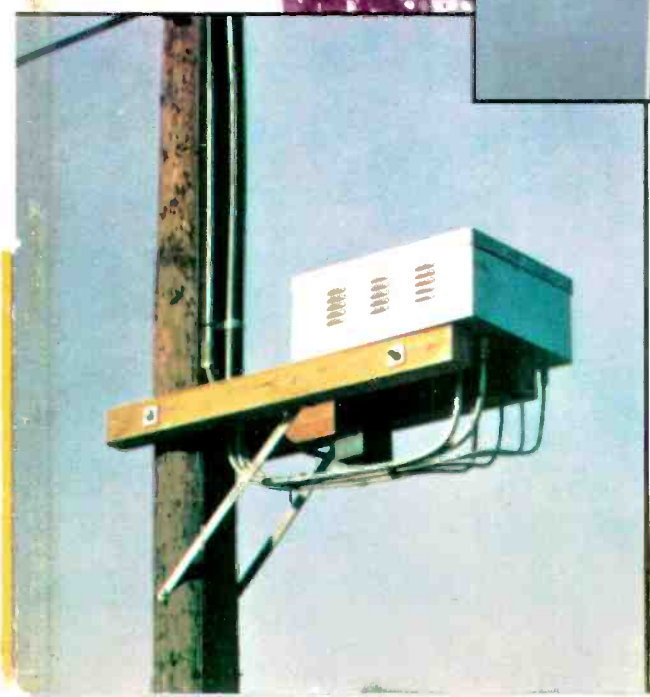
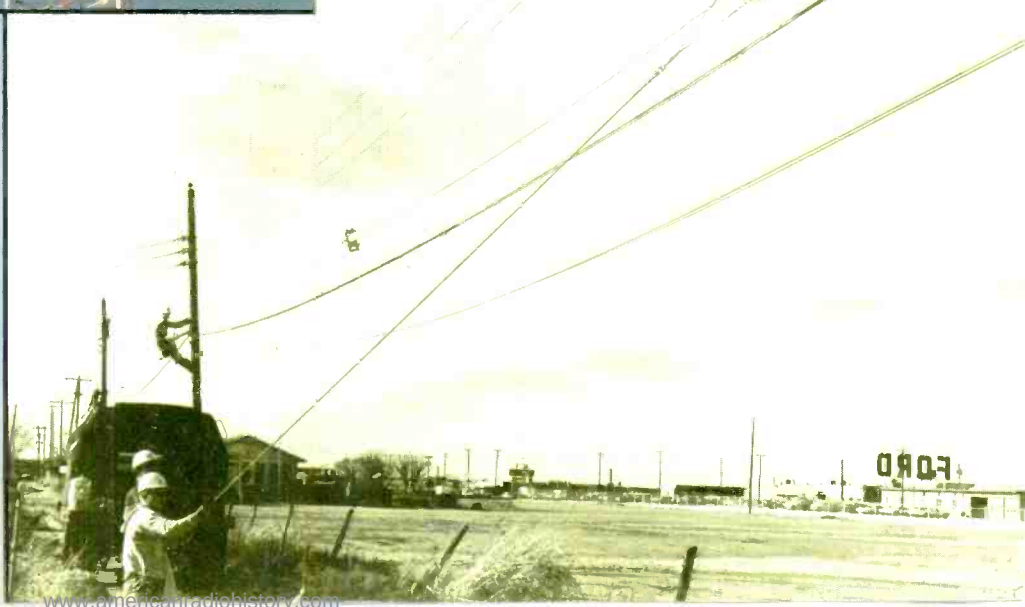
April 1965

TV & Communications





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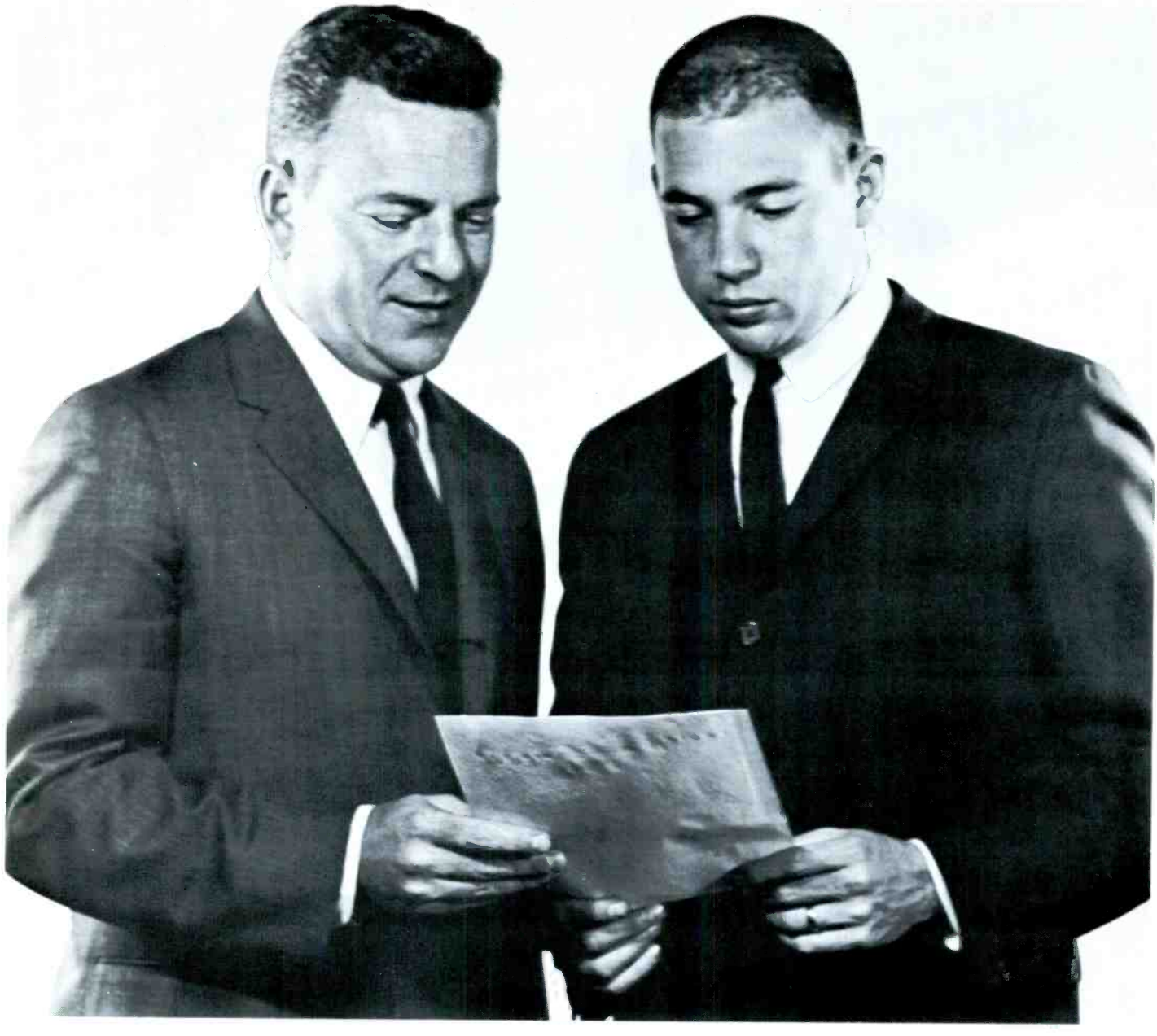

VIKING SIGNS THE BIGGEST!

Robert E. Baum, Vice President of Viking and Lee Druckman, President of Trans Video Corp. are shown signing one of the largest aluminum coaxial cable and tap-off equipment orders in CATV history.

The Cable and subscriber tap-off equipment will be used for systems in San Diego, Bakersfield and Porterville, California. These systems consist of many hundred miles of CATV plant.

On signing, Mr. Druckman said, "Our systems, which will be constructed with Viking cable and subscriber tap-off equipment, will assure our subscribers of the highest quality pictures and provide us with the finest in quality systems."

viking

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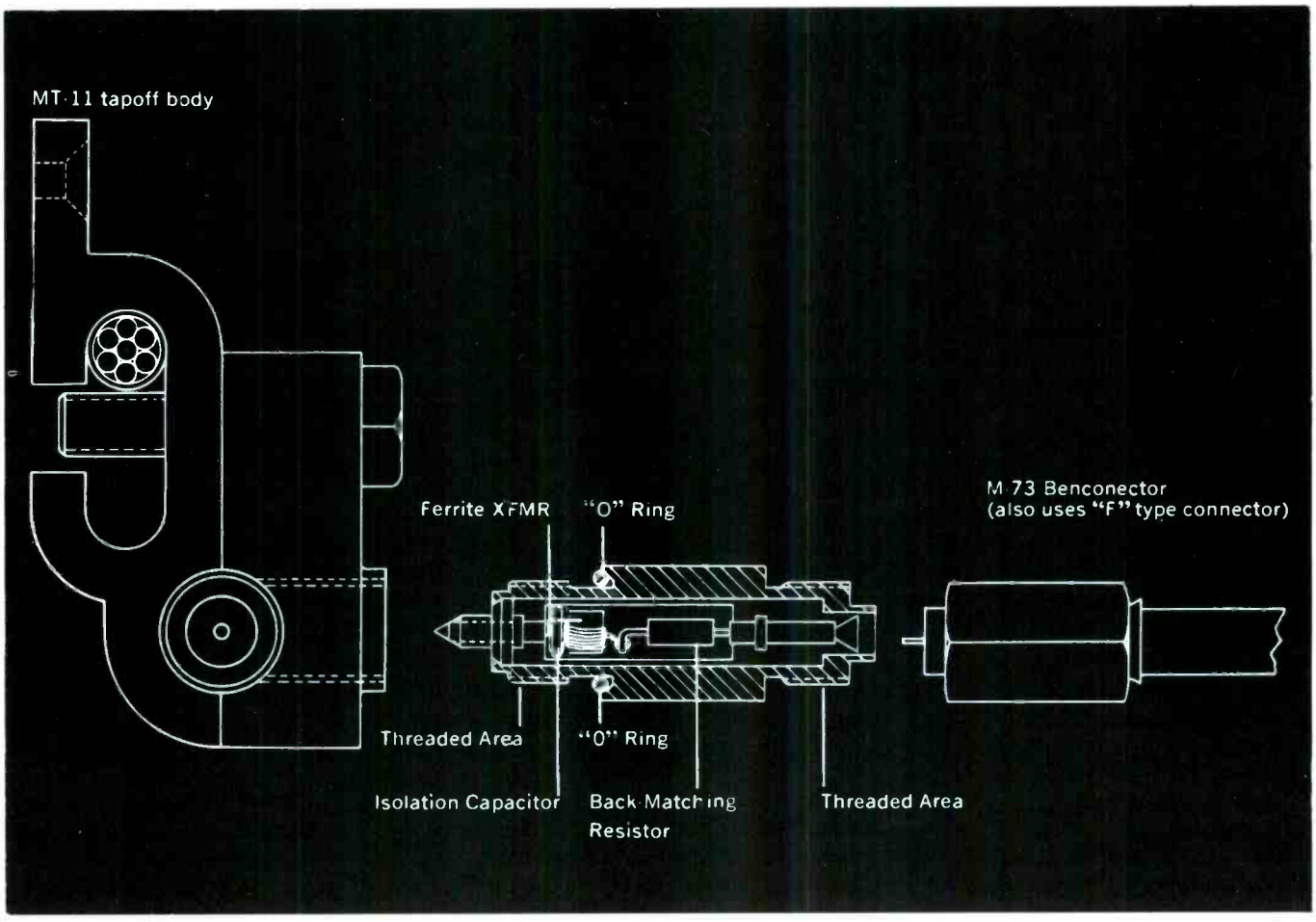

Protect your investment in the rest of the system. New Blonder-Tongue "Stinger"

The purpose of a good CATV system is to deliver superior black and white and color reception to its subscribers. The new Blonder-Tongue "Stinger" VHF back-matched pressure taps helps achieve this objective.

Designed for insertion in the Blonder-Tongue MT-11 tapoff body or the bodies of other tapoff makes, these VHF taps cover channel 2 through 13, sub-channels & FM. They provide excellent results when installed in new systems, or when used as replacements in low band VHF systems being converted to full band VHF. Transformer and resistive models are available in these isolation values: 12, 15, 20 and 25db, transformer type; 30, 35, 40 and 45 and 50db, resistive type. "Stingers" are back-matched to protect against line misterminations — cause of suck-outs, traps and other problems that deteriorate TV reception. An extremely low VSWR, low insertion loss, flat frequency response assure ghost-free, smear free black & white and brilliant color on all VHF channels from 2 to 13.

The "Stinger" offers top quality, maintenance free performance. A weather-proof seal between the tapoff block and the body of the "Stinger" is accomplished by a neoprene "O" ring which, under pressure, completely fills all voids between the tapoff and the "Stinger" body. This minimizes the need of a rubber or plastic boot which tends to collect moisture. Increased attenuation caused by moisture creeping up the threads to the cable conductor is eliminated.

Another vital consideration in CATV and MATV installations is ease of installation. With the "Stinger", no pre-drilling of the coax cable is necessary except where metallic sheathed cable is used. A stainless steel corrosion-proof prod bites through the cable easily. This prod is insulated to prevent loose strands of the sheath from working their way into the cable and causing shorts.

The "Stinger" is designed for universal connection to the drop lines with either a Benconector or type "F" connector. Further, the connector socket of the "Stinger" accepts the center conductor of regular or foam RG-59/U cable creating a positive spring type connection.

Protect your investment with the Blonder-Tongue "Stinger".

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

TV & COMMUNICATIONS

THE PROFESSIONAL JOURNAL OF THE CABLE TELEVISION INDUSTRY

TV&C

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CATV EQUIPMENT BUYER'S GUIDE

Buying a turnkey? Buying a connector? Buying an amplifier? Before you buy, get the facts . . . and once you get the facts . . . chances are you will get Ameco. Ameco the originator. Ameco the leader. Ameco the proven one in CATV!

Before you buy or rebuild your CATV system, consider these important facts . . .

EXPERIENCE: 1. Ameco research and development pioneered and perfected solid-state all-band CATV equipment. Ameco solid-state has become the standard industry strives for. Ameco's proven experience continues to lead the CATV field.

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RELIABILITY: 3. Ameco solid-state is reliable. Solid-state means less time lost from outages. Tube replacement becomes a thing of the past. Month after month, year after year, Ameco solid-state does Trojan duty.

CONSTRUCTION KNOW-HOW: 4. Ameco turnkey construction is experienced construction. Ameco built 50 turnkey systems the past year, nearly one a week. Let Ameco's sound, solid experience turnkey your town for a sound, solid system.

SERVICE: 5. You're not sold and forgotten by Ameco. Once a month you will receive a call from an Ameco Technical Representative and his Salesmobile. Equipment, technical advice, and service at your door!

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Ameco's solid-state head-end, the Ameco-Tran II . . . broad frequency modulator capable of generating a brand new carrier on any desired channel.

The Ameco ATM-70 . . . solid-state trunk line amplifier, hermetically sealed, etched circuit, all-band, temperature compensated for constant output.

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EDITORIAL

It's Almost Unanimous!

Members of the National Electronics Distributors Association at the National Electronics Week in New York City this month approved a resolution to support legislation of Community Antenna Television.

NEDA wants CATV regulated! The National Association of Broadcasters (NAB) wants CATV regulated! Television Accessory Manufacturers Institute (TAME) wants CATV regulated! National Community Television Association (NCTA) is resigned to it! Federal Communications Commission is delighted in the prospects of ruling cable television!

Did we leave anybody out? Oh, yes! How about the CATV operators? What? They want self-regulation? — Nonsense! Has self-regulation via the NAB Code of Ethics for broadcasters worked? Yes! Wouldn't a code of ethics for CATV be just as operative?

NAB suggests that broadcasters want cable television to be legislated, but that isn't what we hear. Some even fear additional federal control of broadcasters through such new legislation. Why, some broadcasters are openly opposed to FCC control of CATV!

The public is being left out too! Everyone professes to know what the public wants — what is in the public interest. But, have any of these groups actually heard what the public wants **from the public?** We have no substantiating evidence of such inquiry. Nor have we even heard of NAB, NCTA, TAME, NEDA, ABC, or AMST attempting to find out. (TAME states that the public isn't capable of making its own choice!)

What happens with CATV legislation? Under the rules proposed by ABC, NAB and TAME, the public would not have to "pay those exhorbitant monthly fees to watch 12 channels of television, listen to background music, receive a weather channel and educational programs, etc." Instead, they could easily pick up three TV channels!

Now, who would ever need 12 channels? After all, you can only watch one channel at a time (so say some of the anti-CATVists)! Follow that logic a little further — who, then, would need 3 channels or 2 channels? **Wouldn't one suffice?**

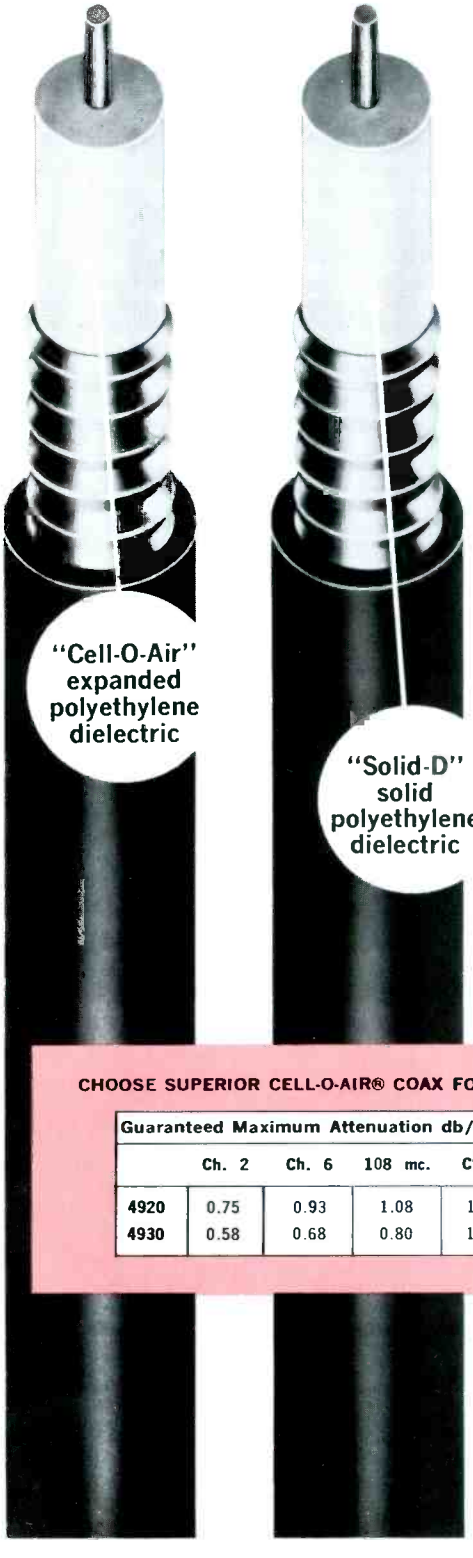
The whole basis for more than one channel is to provide a choice. The public needs and demands a choice of channels as well as a choice of how they receive their television signals! It is not up to any of the above mentioned organizations to deny them the right to television by **whatever means necessary to provide them with the largest selection of channels and the best possible television picture available.**

Whether it is over the air, by wire, "free" or as a paid monthly service, **the public will have a choice.** If we in the television industry won't provide it, isn't it possible that they will find a means of getting it themselves? That is how radio got its start many years ago — television, too, grew up the same way. Cable television was given birth by television repairmen, radio operators, bankers, grocerymen and many others who wanted to watch a better television picture.

We are all in it together. Why don't we work together for the good of the public and ourselves?

Stan Searle

Performance Unmatched by Any Other CATV Cable!



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- Long-term transmission stability
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Superior Coaxial Cable with Coppergard offers you performance unmatched by any other cable. That's because it's quality controlled from raw material through every phase in the manufacturing process.

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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

For detailed information and prices, write

SUPERIOR CABLE

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News SPECTRUM

VIKING TO SUPPLY H&B

Viking, principal supplier of coaxial cable to H&B Communications Corporation, has recently negotiated terms under which it will furnsh its products to H&B for their $2.5 million expansion program.

H&B Communications Corporation is a wholly owned subsidiary of H&B American Corporation, the largest operator of CATV systems in the country, with more than 86,000 subscribers. It operates community antenna television systems in 12 states and in Canada.

H&B will construct new systems and modernize existing CATVs in Wenatchee, Washington; Reno, Nevada; Dubuque, Iowa; Dothan, Alabama; Ventnor, Margate and Longport, New Jersey; Ukiah, Santa Maria and Santa Ynez Valley, California. These systems will utilize over 500 miles of coaxial cable for their signal distribution systems.

FCC TO BAN CATV?

According to Broadcasting Magazine the Federal Communications Commission may "impose freeze on construction of CATV's in markets having three or fewer stations until overall regulatory and legislative issues are resolved." The weekly magazine reports that the freeze may come about as a result of a possible conclusion from the Commission that CATV would impede UHF station development.

Such an action by the FCC would be an apparent contradiction of two recent developments. (1) A three-man FCC panel recently ruled that UHF applicants (in 3 VHF markets) will show adequate financial ability to operate for three years. (2) Dr. Martin H. Seiden, Economic Consultant for the FCC, in his recently released economic analysis of CATV and TV systems reported that CATV does not have a direct adverse impact on local television.

NAB, SOUTHERN CATV, PNCTA MEETINGS HELD

Of prime importance to CATV interests during the past few weeks were three vital meetings. The National Association of Broadcasters met in Washington, D.C. to discuss broadcast television—showed more interest in cable television; Southern CATV Association held its Annual Regional Meeting in Biloxi, Mississippi and learned of developments between NCTA and NAB, and the Pacific Northwest Community Television Assocation met in Spokane, Washington.

A Special Report on each of these meetings follows in this issue.

CITY COUNCILS WITHHOLD FRANCHISES

Members of City Council for two Pennsylvania boroughs have held up franchises for cable television.

Ellwood City, Pa. councilmen voted in a recent meeting not to take action on a request for a CATV franchise by Westinghouse Broadcasting Company. They decided to investigate the feasibility of operating a system themselves. Councilman Stephen Rubino proposed that the city could operate the community television system on the same basis and by the borough electric department. Bids were called for.

The West Wyoming Council (near Wilkes Barre, Pa.) rescinded a resolution that had granted franchise rights to Universal Television Cable System, Inc. The council had originally authorized Universal to operate cable television in the borough for 25 years.

BRANDEIS' MORSE PUBLISHES ANALYSIS OF EDUCATIONAL TELEVISION

A two-year increase of nearly 40 percent in the number of educational stations (ETV) in the Untied States is among the key findings in a study of ETV by Brandeis University's Morse Communication Research Center.

Other major findings in the report, which uses similar studies from 1961 and 1962 as a comparison, reveal a distinct effort by ETV to broaden its popular appeal; a two-year increase of almost 100 percent in news and public affairs programming; and a decrease during the same period in local programming despite an average three-hour rise per station in weekly broadcast time.

The report, "One Week of Educational Television," incorporates a detailed quantitative analysis of the total programming of the nation's 88 ETV stations on the air during the week of April 19-25, 1964.

The report noted that with ETV programming now available to an estimated half of the nation's TV homes, stations have increasingly scheduled popular programs, such as feature films and sports. At the same time, however, ETV cemented its hold on minority audience groups by increasing the number of programs available for the deaf, illiterates, physicians, lawyers, management personnel and other special interest groups.

The report also reveals:

1. News and public affairs programming increased from seven percent of total ETV hours in 1962 to 13 percent in 1964. Daily news was only carried by 19 stations.

2. 88 stations broadcasting in April of 1964 represent a net increase of

Jerrold CATV school in Columbus, Ohio gets overflow turnout. Instructor (standing left) is Vic Nicholson, Jerrold Chief Engineer.

26 stations over 1962 figures. Stations operated in 34 states, the District of Columbia and Puerto Rico, and were located in 21 of the nation's top 25 population and economic centers.

3. The 62 "holdover" stations in 1964 were broadcasting an average of 44 hours and 50 minutes weekly, an average increase of almost three hours.

4. The 26 new stations in 1964 operated an average of 36 hours weekly.

5. Less programming came from local production: 37 percent in 1964; 53 percent in 1962.

6. ETV was primarily a week-day operation. Only six channels broadcast seven days a week.

WDAU-TV IS SUED BY CATV GROUP

The Pennsylvania CATV Association filed a suit April 12 against station WDAU-TV, Scranton-Wilkesboro, Pa.

PCA alleged that from December 15, 1964 to February 12, 1965 (inclusive) the television broadcaster devoted a substantial amount of broadcast time in the presentation of news, comments and opinion, that had the effect of being critical and damaging to CATV.

The complaint states that the Pennsylvania CATV Association made a written request to WDAU on February 10, for a reasonable opportunity to present its views. The broadcaster refused on the grounds that its "editorial account" dealt solely with specific local matters. Even a brief reading of comments and views by WDAU refutes this claim, according to PCA sources.

The statements made by WDAU "tend to degrade each operator of CATV in the eyes of the public generally and, specifically, his customers upon whose support his business depends."

The CATV group also requests that the Federal Communications Commission issue an order to WDAU to show cause why it should not be ordered to cease and desist from broadcasting further anti-CATV presentations without allowing CATV equal time for its viewpoint.

COPYRIGHT LEGISLATION HEARINGS DUE

Committee hearings on the new bill to overhaul copyright law will begin the last week of April. The House Judiciary Committee is expected to

(Continued on page 43)

NAB Convention

Broadcasters showed up in full force at last month's National Association of Broadcaster's Annual Convention. 4,500 strong, the television owners, operators and engineers went to Washington, D.C. to attend what was described as "the largest National Association of Broadcasters Convention ever held."

Top speakers with key topics were scheduled to provide attendees with items to hold their interest throughout the week-long meeting. In addition, broadcasters had the opportunity to inspect equipment exhibits and visit film distributors.

Don Wyckoff, Ameco gets a "technical lesson" from pretty Joan Quill.

Vice President Hubert H. Humphrey addresses NAB.

Entron exhibitors set up display both for show.

Robert Beisswenger with a Jerrold Commander.

CATV CAPTURES NAB ATTENTION

Unlike last year's convention, NAB this year placed major importance on CATV. Virtually every speaker (for the television sessions) covered the subject of community television. Personal opinions of the speakers varied from "in the public interest," Fred Ford, President, NCTA; to "threaten its (television's) vitality," Julius Barnathan, Vice President and General Manager, ABC Television Network. Commissioners Robert E. Lee and E. Willian Henry spoke on the topic as well as Vincent T. Wasilewski, President, NAB. Other key speakers for the convention were Vice President Hubert H. Humphrey and Crawford H. Greenewalt, Chairman of the Board, DuPont Company.

HENRY ON CATV

Mr. Henry noted that the FCC "is now on the brink of issuing regulations with respect to" CATV.

"CATV has grown up to meet deficiencies in the choice and variety of television service provided by broadcasters. CATV should grow so as to supplement, rather than undermine, the optimum development of a free broadcast service.

"But you and I must do more than simply rest on a position that is passive and protective. We must remedy—if possible—the underlying deficiencies that have made CATV a force to be reckoned with in American television. The Federal Communications Commission and the broadcast industry have a mandate from Congress to promote maximum choice and variety —free and off the air—for all the people of the United States. That is my understanding of the Communications Act, its legislative history, and its subsequent development. The growth of cable television—a wire service to be paid for—dramatically illustrates the extent to which we have failed that mandate — and of how much yet remains to be done."

Mr. Henry described the broadcaster's delimma as "a tempest wrapped in a tornado surrounded by a hurricane." But, he charged them to accept the responsibilities of the capacity, power and potential of television.

FORD ON CATV

Fred Ford, in his talk, related the conditions that brought about CATV. He noted that cable television operators are "dedicated to a strong, healthy, nationwide system of free competitive television broadcast services providing maximum service to the public, and they do not want to see it hurt. I do not believe it has been hurt and I do not think it will be hurt by the expansion of CATV, if the actual facts are developed and made known.

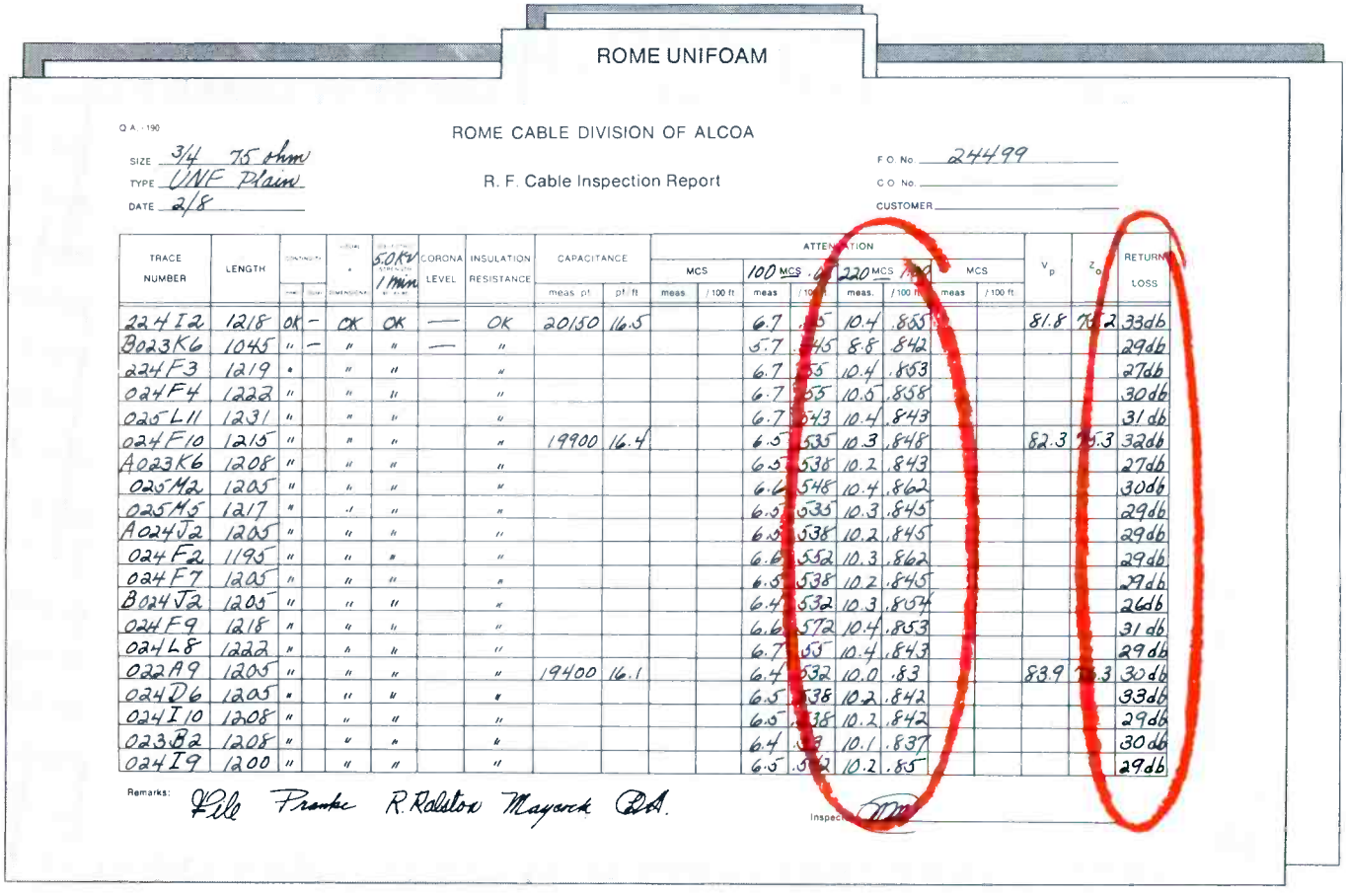
"For example, the original cost of all the tangible broadcast property of television networks and stations in 1963, according to the Federal Communications Commission, was $723,122,000. Broadcast revenue was $1,597,200,000 with profits before Federal income tax of $343,200,000, or roughly a 40% return on original cost on an industry-wide basis. An average CATV system of 1,000 connections at the present time has, I am told, a capital investment of about $200,000 with average revenue of about $60,000 with profits before Federal income tax of $30,000, or a 15% return on capital invested. I say that the claims that CATV is a money machine compared with television is pure propaganda.

"If I had to look into a crystal ball and forecast the future of television, I would predict that the present VHF dominated television system will continue for an indefinite period, with the possibility of additional VHF drop-ins in the first 75 markets; that UHF will grow and expand; and at the same time CATV will fill in the gaps of television coverage with its antenna service in smaller communities as well as in major markets, and make possible the choice of service and the competition between stations that an all-frequency system cannot provide. In short, during the next ten years the American people, one way or another, are going to have the kind of television service they want, and will willingly pay for the antenna service necessary to bring them the extra service they desire."

ABC ON CATV

Mr. Barnathan reported his views on CATV before the Future of Television Conference Panel. He attrib-

The monotonous uniformity of our CATV cable



ROME UNIFOAM

ROME CABLE DIVISION OF ALCOA

R. F. Cable Inspection Report

SIZE 3/4 75 ohm
TYPE UNF Plain
DATE 2/8

F.O. No. 24499
C.O. No.
CUSTOMER

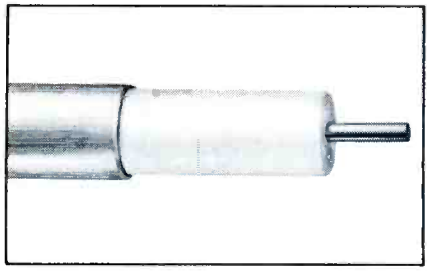
TRACE NUMBER	LENGTH	CONTINUITY	DIMENSIONS	5.0 KV 1 MIN	CORONA LEVEL	INSULATION RESISTANCE	CAPACITANCE meas. pf	CAPACITANCE pf/ft	ATTENUATION MCS meas	ATTENUATION MCS /100 ft	ATTENUATION 100 MCS meas	ATTENUATION 100 MCS /100 ft	ATTENUATION 220 MCS meas	ATTENUATION 220 MCS /100 ft	ATTENUATION MCS meas	ATTENUATION MCS /100 ft	V_p	Z_o	RETURN LOSS
224I2	1218	OK	OK	OK	—	OK	20150	16.5			6.7	.55	10.4	.855			81.8	75.2	33db
B023K6	1045	"	"	"	—	"					5.7	.545	8.8	.842					29db
224F3	1219	"	"	"		"					6.7	.55	10.4	.853					27db
024F4	1222	"	"	"		"					6.7	.55	10.5	.858					30db
025L11	1231	"	"	"		"					6.7	.543	10.4	.843					31db
024F10	1215	"	"	"		"	19900	16.4			6.5	.535	10.3	.848			82.3	75.3	32db
A023K6	1208	"	"	"		"					6.5	.538	10.2	.843					27db
025M2	1205	"	"	"		"					6.6	.548	10.4	.862					30db
025M5	1217	"	"	"		"					6.5	.535	10.3	.845					29db
A024J2	1205	"	"	"		"					6.5	.538	10.2	.845					29db
024F2	1195	"	"	"		"					6.6	.552	10.3	.862					29db
024F7	1205	"	"	"		"					6.5	.538	10.2	.845					29db
B024J2	1205	"	"	"		"					6.4	.532	10.3	.854					26db
024F9	1218	"	"	"		"					6.6	.542	10.4	.853					31db
024L8	1222	"	"	"		"					6.7	.55	10.4	.843					29db
022A9	1205	"	"	"		"	19400	16.1			6.4	.532	10.0	.83			83.9	76.3	30db
024D6	1205	"	"	"		"					6.5	.538	10.2	.842					33db
024I10	1208	"	"	"		"					6.5	.538	10.2	.842					29db
023B2	1208	"	"	"		"					6.4	.529	10.1	.837					30db
024I9	1200	"	"	"		"					6.5	.542	10.2	.85					29db

Remarks: Fib Franke R. Ralston Mayard QA.

Inspected

Examination of the inspection reports on Rome Unifoam* Cable reveals that they are even more monotonous to read than we have been claiming. In fact, they're so monotonous they're exciting.

We have talked so much about the quality and uniformity of Rome Unifoam CATV Cable, that it's about time we got down to specifics.



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

We see literally hundreds of Inspection Reports in the factory, and they serve only to convince us that, if anything, we have been too conservative in what we've said.

For example: Look at this test sheet recording routine tests on 20 reels of ¾" 75 ohm cable. There is nothing special about this report, as far as we are concerned. Length after length, the test data has a monotonous sameness, day after day. Look, for example, at the 220 mc attenuation column on this sheet. The lowest value measured was 0.830 db/100 ft., and the highest 0.862. The average of the 20 reels is 0.847 db/100 ft. All of the individual measurements are within ± 2% of the average. Statistical analysis of data from several hundred lengths tested tells us that no more than 2 lengths out of 1000 will exceed the average by more than 5%.

Return Loss. Notice the last column on the test sheet. Here, Return Loss measurements are recorded. Values range from 26 to 33 db down. And each value recorded is the *poorest* return loss found in that length at *any* frequency between 50 and 220 mc. Each length is checked from both ends and no length is shipped with less than 25 db return loss. That's *25 db minimum at any frequency from 50 to 220 mc!*

Can you use cable like this? Can you afford not to?

Get the whole story. We offer you a fact-filled folder on Rome Unifoam CATV Cable. For a copy, just call your nearest Rome/Alcoa representative or write Rome Cable Division of Alcoa, Dept. 4045, Rome, N.Y. 13440.

*Rome Unifoam—Trademark of Rome Cable Division of Alcoa

Rome Cable
DIVISION OF ALCOA

uted the growth and acceptance of "Free TV" to the "national TV networks together with their affiliated stations."

"Certain specters," Barnathan said, ". . . loom over (advertiser-supported, free) television today and threaten its vitality." He added, ". .. I am talking about CATV, Pay-TV and satellites.

"In my book, these specters threaten television not only in the biggest markets, but in the smallest markets which even today, under a flourishing economy, are finding it most difficult to keep out of the red.

"Now, as to these forces at play that threaten free TV—to me, CATV and Pay-TV are one and the same. CATV was set up to bring service to those places where there was no service, or a minimum of service, or inferior service—that is the purpose it should serve, period. I would like to read to you a quote from the remarks of Leon N. Papernow, Vice President of Operations to a special meeting of the stockholders of H&B American Corporation, one of the largest, if not the largest CATV operator in the country.

'It is true that the successful development of Pay-TV would carry us along in its *engulfing tide* and that companies like H&B American would be among the first to take advantage of and to profit from the increased revenues that would be created by this vital new way of marketing entertainment. We would benefit hugely for the obvious reason that we are already engaged in the city-wide and national distribution of television images and sound via coaxial cable. Thus, I would be less than candid if I were to deny my company's disappointment in the failure of this project. We continue to have implicit faith in the ultimate establishment of a nationwide Pay TV service. It is a social invention whose advent *is assured*. We welcome its continued development by companies like RKO-General, Paramount, and Zenith. The latter firm has a system that is compatible with our CATV technology and was developed with engineering cognizance of CATV.'

"Clearly, Pay-TV, the concomitant of CATV as Mr. Papernow sees it, is the greatest threat to free TV. I know it has been argued that Pay-TV will provide different programming, cultural programming, motion pictures which TV cannot afford. If Pay-TV is allowed to use the air waves which can be used for free TV, it must compete with the broadcaster for product, which all of you know is probably the greatest problem we face today. How do we get enough product to meet the tremendous appetite of the American public?

Mr. Barnathan closed his talk noting that "many broadcasters have jumped into CATV. Some of them, in fact I believe it is most of them, out of fear; others from a sincere desire to diversify. All I say, gentlemen, is that CATV must be a subsidiary service to free TV. Unless it is checked now, it will be the reverse."

NAB ON CATV

In his address Mr. Wasilewski alluded community television as a "swampy thicket . . . a problem confusing to those of us within the industry and totally incomprehensible to most people outside it.

He added, "Let me sum up in a sentence or two (if that is possible) the objective of the NAB in this situation. Presently—except for limitations imposed by local governments, and some restrictions imposed by the FCC where microwave relays are involved—there are no ground rules of any kind regarding the activities of CATV systems. NAB is cooperating in the development of rules which will assure that the role of CATV is confined to the extension—not the replacement—of free broadcasting.

LEE PREDICTIONS

The Honorable Mr. Lee made some significant predictions of things to come in the area of television service. He told broadcasters that within 10 years "subscription television will be a thriving 2.5 to 3 billion industry under Federal Regulation whether by wire or off the air.

"CATV systems, under Federal regulation, will have substantially reached their saturation point in filling out complete service in smaller markets, perhaps below the top 100.

"100 million all-channel color TV sets will service the community, a large portion equipped for home recording and cartridge type reception.

"A fourth network, plus an interconnected educational network will be prospering.

"Human body can generate energy to run a set."

Although there were only four CATV equipment manufacturer's exhibits, activity at those locations was so intense that one attendee compared CATV with radio of 30 years ago. Cable television exhibitors in attendance were Ameco, Entron, Jerrold and Viking.

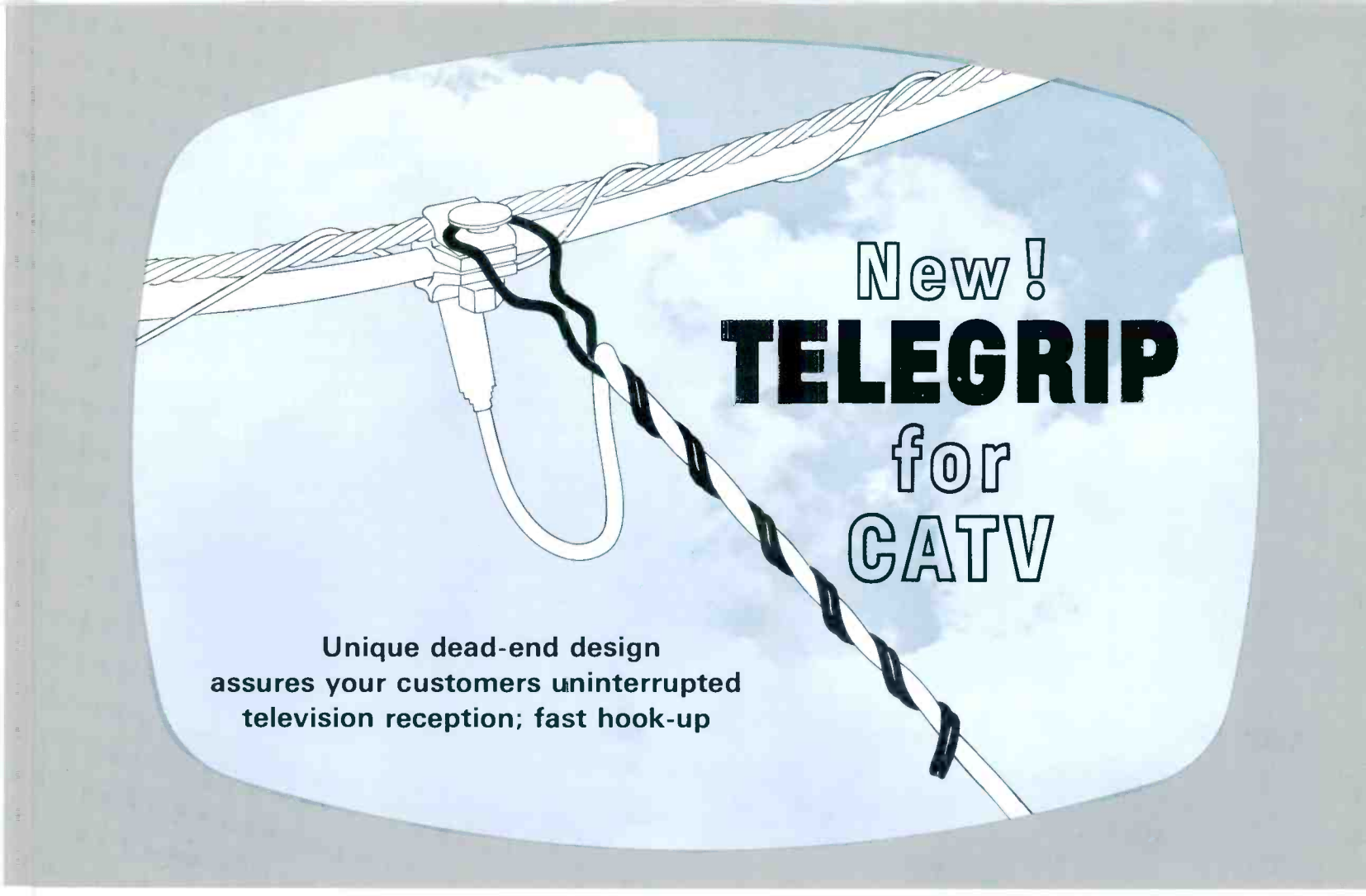
TAME was at the conference too. However, one person pointed out that they were being met "with notable disinterest." □

Joey Pate of Viking's construction division and Dean Shaffer, Eastern States Sales Manager check out new solid state equipment.

New TAGC-213 solid state AGC unit is being inspected by Ed Dart, Frank Martin and Elmer Metz of Jerrold.

Lee Zemnick of Jerrold closes a sale.

Joe Murphy, Cathy Reynolds, Charlie Wigutow chat with AMECO visitor.



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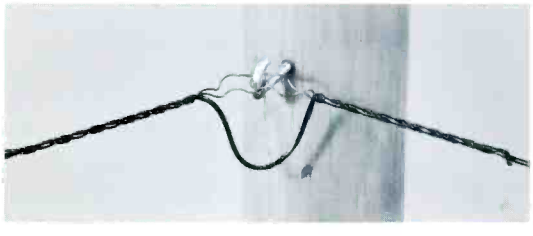
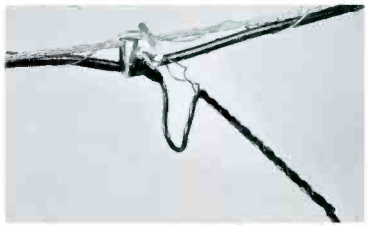
- ✓ Wraps on in seconds without tools.
- ✓ One piece — easy to handle; easy to stock.
- ✓ Made of stainless steel to resist abrasion and corrosion.
- ✓ Only flexible CATV dead-end commercially available.
- ✓ Holds full rated strength of RG-59/U coaxial cable.
- ✓ Won't crush cable or affect its dielectric properties.
- ✓ Holds cable in straight-line suspension; prevents kinking.
- ✓ Twist at end of leg prevents spin-out of cable.
- ✓ Performance proven by extensive laboratory and field testing.

Use TELEGRIP on all three connections — pole, tap, and house





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☐ Please send TELEGRIP Laboratory Test Data.

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COMPANY_____

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CITY_____ STATE_____ ZIP NO._____

Ameco's exhibit caught the attention of Wayne Rawley, George S. Curtiss, both of Coulee Dam; Dick Old of Ameco, Portland, and Rod Runkel of Coulee Dam (a non-profit, community owned system).

New entrant into CATV, American Pamcor attracts visitors. W. F. Prentice is on extreme right.

Head table with (l to r) Bill Schiller, Earl Ake, PNCTA; Bob Cowart, Systems Construction Co.; C. Camillo and Ron Westwood.

Mike Fairhart, Morton, Washington; Al Cummings, Kaiser; Bruce Sears, North Bend, Washington; Gay Kleykamp, Kaiser, and Gene Biassat, North Bend check out newly designed Kaiser CATV amplifiers.

Win Bemis, Ed Foust at CATV Equipment Co. booth showing products handled by CEC including SKL products.

PNCTA Conference

More than 160 enthusiastic members and guests gathered in Spokane, Washington in late March to attend the 10th Anniversary meeting of the Pacific Northwest Community Television Association.

The two-day conclave was opened with a welcome address by Miss Spokane (Sharron Ann Sweeny) and Mrs. Pat Hughes. President, presided over the sessions. Manufacturer's products on display, technical sessions, keynote addresses and functions for the ladies highlighted the activities of attendees.

CATV MICROWAVE SERVICE DISCUSSED

Cliff Collins, general council for PNCTA, described the restrictions now being imposed on microwave served CATV's in stations' grade A contours. He pointed out that the common carrier bureau has attempted to indirectly impose control over CATV operation *per se*. Collins discussed CARS, the new CATV microwave service proposesd by the Commission. The new service would be under the control of the broadcast bureau rather than the common carrier bureau of the FCC. He mentioned "hidden subtle limitations" of the CARS proposal, such as the provision to allow only "video and related audio" signals on the microwave service. Periscopic reflective antennas would be prohibited—although 99% of common carrier microwave operations use this type.

EVANSON ON TRANSLATORS

Reporting on translator operations in the Northwest was Dick Evanson of Seattle. He noted that after 1960 the growth of translators reflects the FCC sanction of VHF units. 70% of the translators now in operation are VHF. Evanson said that practically no translator applications are turned down and that only 7 out of 235 applications reviewed were turned down because of broadcaster's refusal of permission for rebroadcast.

L'HEUREUX ON TRANSLATORS

Bob L'Heureux, NCTA, mentioned a situation in which a cable operator was confronted by four separate translators operating in his service area. Although 294 subscribers initially disconnected from the cable, 90 days later 260 had been re-connected. Even at the outset only one out of the four translators produced a "decent signal." L'Heureux noted that there are "very few areas" in which translators have cost subscribers "where CATV gives a good service."

POLE LINE IS KEYNOTE TOPIC

J. H. Lenahan's pole line report cited an "intolerable situation" in California in connection with General Telephone's handling requirements in at least one pole line contact. The PNCTA Director said, however, that contracts written with phone companies in the Northwest have generally been acceptable. In fact, "insurance, bonding, rearrangement, hold harmless agreements . . . haven't changed much," he stated. Going back to 1952 he reviewed the types of agreements used with telephone and power companies, pointing out that "there has been a change in the permissive language" of pole agreements. Current contracts ordinarily specifically include "television or other" signals as permissible on the coaxial cables attached to poles.

Rearrangement charges of $300 per pole in one instance were cited as a drastic exception to the generally satisfactory relations with utilities. Lenahan pointed out that, while a telephone company may itself violate codes, it is not required to let cable installations perpetuate or complicate the irregularities.

"Most of us," he declared, "have lived with the agreements . . . without undue harassment by the utilities."

Operators whose rates are increased would have no alternative, Lenahan

Bob L'Heureux, NCTA

Haskell Sharrard, Heppner, Ore.; Al Micheli, Jerrold; Joe Leonhart, Gold Beach, Ore., and Don Wise, Heppner discuss JEC transistorized products.

Bob Unger of Portland, Oregon chats with Bill Lasky of Entron.

Ron Westwood, Gene G. Armiger and Rubin Salant in Jack Pruzan Company's booth.

Bob Baum, Viking, Bruno Zucconi, Scala Radio and Charles Clements pause briefly to chat.

noted, other than direct appeal to the phone company. He added that system operators who "cannot live with" a rate increase would be "privileged to remove your attachments within thirty days."

Pacific Power & Light continues to use a two-party agreement with no rate hike clause or other new provision. A new General contract offered in Washington reflects "California language," permitting off-the-air TV signals only. Pole rental is also reportedly increased.

In a town of 13,000 on the Oregon coast a cable operator has "reluctantly agreed to underground construction." General Telephone has refused to permit random burial of telephone and television cables in trenches there—apparently trying to force acceptance of a proposed lease-back arrangement.

Following the report Harley Steiner, Lewiston, Idaho, quoted a telephone industry source revealing an interest in "providing" complete CATV service" or possibly "providing only distribution plant on lease or tariff basis." Bob L'Heureux, NCTA Counsel, reviewed California situation in which P.U.C. "took jurisdiction" over CATV rates last year.

Courtney M. Kirkeeng told the group of five new pole line agreements obtained in recent months with PT&T which are less restrictive than some in California but make it clear that the telephone people "do not want you to compete with them in the closed-circuit educational TV field."

OUR COVER

Credit for the interesting montage of CATV photographs on this month's cover goes to Jerrold Electronics, Davco, TeleSystems Corporation and NCTA.

Southern CATV Association Convention

Community television owners, operators, equipment manufacturers, a few broadcasters — and even politicians converged on Biloxi, Mississippi to attend the Southern CATV Association's Annual Meeting in March. The three-day meeting attracted more than 500 attendees.

Following a day for technicians, the members were welcomed by Southern CATV Association President Bob Jernigan and the Honorable Danny Guice, Mayor of Biloxi. The second day included talks on legal matters, growth and the future of CATV.

Viking Cable Company treated attendees to a social event following a technician's dinner. Exhibitors included Associate Members Ameco, Arco, CAS, Davco, Entron, Jerrold, Rome Cable, Spencer-Kennedy Labs, Superior Cable, Telemation and Viking. Notable speakers were Heinz Blum, Entron, Inc. and Walt Roberts, Superior Cable Corp. at the technical seminar directed by Vern L. Coolidge. Robert D. L'Heureux, Legal Counsel, NCTA spoke on "Pending Legal Matters Pertaining to the CATV Industry in the South"; Ed Whitney, Vice-President, Entron, talked on the "Growth of the CATV Industry." "CATV Auxiliary Services" were discussed by Robert H. Huston, Director of Public Relations and Advertising, Ameco. Bill Daniels, President of Daniels & Associates made "A Prognostication of the CATV Future"; "Financing of CATV Systems" was the topic for Duane Crist, Assistant Treasurer for Ameco and Fred Webber, Sales Manager of TeleSystems spoke on applications of CATV Promotion and Advertising.

WALLY BRISCOE DISCUSSES CATV PICTURE

Pinch hitting for NCTA president Fred Ford, Wally Briscoe, NCTA Administrative Assistant, brought forth a report on the Ford message and on NCTA's relationship with state and regional associations.

According to Briscoe, NAB has indicated a lack of interest in further discussions with NCTA on CATV regulation. It was reflected that FCC, although not an active participant in the NCTA-NAB meeting, was a third party to the negotiations. People at the FCC staff level feel that CATV is a parasitic nuisance that is becoming a threat. Their present concept of the public interest closely approaches the broadcasting industry's views.

Mr. Briscoe added that while Bill Daniels of Daniels & Associates, Denver is rapidly making converts of broadcasters by bringing them into CATV, "the balance of power has not swung far enough yet to be felt at the FCC." Other people are thinking deeply, concerning CATV, who are in a position to influence the FCC more quickly and if unsuccessful, can "change the name of the game." Briscoe mentioned one proposed title . . . "Will the real public interest please stand up!"

He said two things are needed to provide rural CATV service: long term money at low cost and new, long life equipment.

Briscoe said that Congress will start hearings late in April on copyright laws in the house Judiciary Committee. The Senate has not yet set a date on its hearings but identical bills are in both houses. NCTA will testify in these hearings. The bill reportedly may not be disposed of this year.

DANIELS PREDICTS CATV FUTURE

An audience of at least 200 heard Bill Daniels predict that all three television networks "will be in the CATV business" within a year. This was just one of many intriguing predictions and viewpoints presented by Daniels.

The Denver broker identified the "enemies of CATV" as: ASCAP, SESAC, telephone companies, United Artists, CBS, state public service commissions, FCC, NAB, TAME and the "Maximum Service Telecasters."

"CATV," according to Daniels, "has only one friend: John Q. Public."

He noted that even NAB president Vincent T. Wasilewski recently stated that "the question of who shall decide what is to be seen and heard on radio and television should not really be open to question. We all know the answer. The people themselves should decide."

"Every one of our opponents has only one thought in mind," declared Daniels, "economic injury or wanting money . . . greed. All our industry has ever asked for is to be left alone, to let the public decide. We've asked for no protection. All we want is to pursue the free enterprise system."

Specific Daniel's predictions: All three networks in the CATV business within 12 months; 20-30 multiple owners of cable systems; more CATV manufacturers—and better equipment; increased color telecasting to greatly aid CATV cause; Midwest will "explode" with CATV; financing will become even easier to obtain.

"A new, fourth network featuring sports will be serving independent broadcasters and UHF's within 24

Exhibitors at the Southwest CATV Association meeting were, Aberdeen Company, AMECO, CAS Manufacturing Company, Craftsman Electronic Products, DAVCO Electronics Corporation, Entron, Inc., Jerrold, Inc. Rome Cable Division of Alcoa, Spencer-Kennedy Laboratories, and Superior Cable Corporation. Shown above are the exhibits of Rome Cable, Superior Cable, DAVCO, and CAS, with Bill Medlin shown attending the CAS display.

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EXCLUSIVITY

Only Plastoid welds the aluminum sheath around your CATV coaxial cable core, to give you greater tensile strength, to give you easier handling, longer cable life with lastingly lower attenuation. And Plastoid's exclusive manufacturing process also provides longer, unspliced lengths of cable.

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Only Plastoid offers such uniformity of sheath thickness. No thin spots to break in handling. No pin holes to let moisture penetrate, to let radiation leak beyond the cable wall. Plastoid's sheath is made of precision rolled strip, inspected carefully, then joined with a weld that is stronger than the parent metal.

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Plastoid offers aluminum sheath co-ax in a wide choice of sizes, jacketed and unjacketed.

PHYSICAL AND ELECTRICAL STANDARDS

Type	NOM. O. D. Conductor	NOM. O. D. Dielectric	NOM. O. D. Unjacketed	NOM. O. D. Jacketed	NOM. Attenuation (db per 100 ft) Channel #6	NOM. Attenuation (db per 100 ft) Channel #13	Shipping Weight Lbs per M
TA4	.0752	.362	.412	—	.96	1.60	66
TA4J	.0752	.362	.412	.480	.96	1.60	90
TA5	.0980	.450	.500	—	.78	1.26	102
TA5J	.0980	.450	.500	.580	.78	1.26	132
TA8	.1460	.690	.750	—	.53	.89	218
TA8J	.1460	.690	.750	.850	.53	.89	274

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months. . . . Financing will become easier, although the present situation is very satisfactory . . . cable TV will be especially important to UHF's up until the time when the all-channel law has had its full effect."

Daniels concluded his address by telling his highly responsive audience of CATV'ers that their industry's enemies "offer no solution for improving service to the public. Two million home owners can't be wrong! And another 50 million home owners would like to be right!"

Principals at the meeting included (standing, left to right) Walley Briscoe, Robert D. L'Heureux, Jim Davidson, Fred Stevenson, Harvey West, Bill Daniels, (seated, L to R) Mayor Claude Pittson, Jr., Governor Paul D. Johnson, Robert F. Jernigan, and Mrs. Polly Dunn.

AUXILIARY SERVICES FOR PUBLIC RELATIONS

Bob Huston, Ameco, Inc., labeled auxiliary services as "good community relations." There are many ways an auxiliary service may be utilized, he stated. An example was given of a local home show being covered on closed circuit TV. There were about 15,000 people in attendance and many were immediately interested in getting on the cable after seeing the line coverage of the show.

In Sedona, Arizona there is a two-hour daily feature called "Today in Sedona." A Will Rogers type character interviews people and chats about events in the area. Rodeos, town gatherings, anything of interest is put on the cable. This has become a very popular public interest feature there. Many other areas are introducing this type of programming. Also, in Sedona they have a feature whereby they can pre-empt all channels for civil defense, fires, police action, etc. These emergency programs perform a real public service according to Huston.

In Decatur, Alabama a teen-time class affair is featured whereby everyone in the schools takes part with a disc jockey presiding. Relatives and friends of the students see this and want to know how they can receive this program.

Governor Paul B. Johnson

Robert F. Jernigan

Bill Daniels

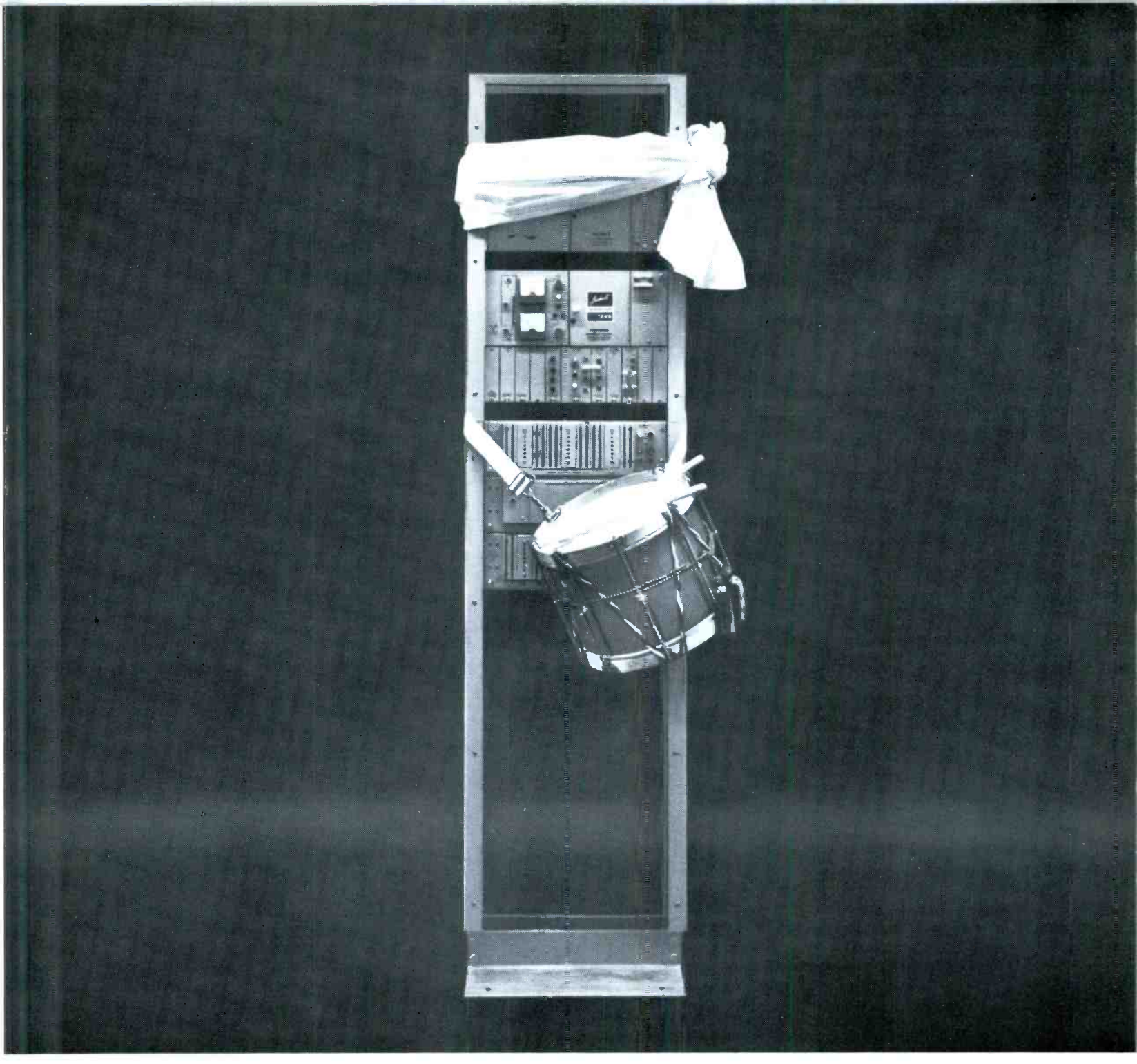
Robert Huston

Betty Dees

Huston feels that a system operator would be sticking his neck out if he originated the programming and put advertising into it. He advised against anything that would call for payments to the system, at all cost. He said there would be little criticism of a strictly public service program.

It was pointed out that many older systems have neglected public relations. Some have tried various gimmicks and sales promotions with little or no success in getting new subscribers.

Closing out the conference in "high political fashion," the Governor of Mississippi, Paul B. Johnson complimented community television. He said "CATV has meant more to the citizens of Hattiesburg than any other utility." He noted that "many powerful interests in broadcasting have opposed your growth and development." And, as a satisfied cable subscriber, he said. "I pledge my personal backing." "What could be more basically American," the Governor commented, "than to provide the television viewers in the area you serve a choice of networks and a choice of stations?"



The spirit of 76 (tv)

We'd like to urge you to buy our 76TV microwave relay system next time you are in the market for monochrome or color video transmission equipment. Not for the obvious reasons, though, like its outstanding performance, low price, and easy maintenance.

No, we think you ought to buy our 76TV because of its demonstrated heroism and valor. And long-suffering patience in the face of overwhelming odds.

How do you think it feels when, year after year, hundreds of tons of explosives are fired off inside you? When, in a typical week—besides three glorious concerts and five exciting football games—about 30 murders, 24 auto accidents, twelve divorces and four or five extortion schemes are perpetrated through your unflinching innards? When headaches, backaches, congested nasal passages all get their appropriate fast relief through you?

To do this day-in and day-out takes solid-state guts. Such devotion ought to be rewarded. Buy a 76TV microwave relay system from Lenkurt Electric Co., Inc., San Carlos, California, now! That's the spirit.

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JERROLD NAMES BEISSWENGER AS EXECUTIVE VICE PRESIDENT

Milton J. Shapp, Chairman and President of The Jerrold Corporation has announced the election of *Robert H. Beisswenger* to the post of Executive Vice President. Beisswenger was formerly Vice President and General Manager of Jerrold Electronics Corporation, the company's largest subsidiary.

Three new Vice Presidents are also named: *Walter Goodman*, Vice President of Consumer Marketing and Special Products; *Lee R. Zemnick*, Vice President of Systems Marketing and Operations; and *Ken Simons*, Vice President of Research and Development.

Shapp said, "The achievements of this management group have contributed in a very substantial degree to Jerrold's recent return to profitable operations. This seasoned team is being elevated to utilize more fully their experience and backgrounds."

Paul Garrison, who has been a Jerrold Vice President in charge of Technical Appliance Corporation (TACO), the company's Sherburne, New York based subsidiary, "will assume additional duties," said Mr. Shapp.

Mr. Beisswenger became associated with The Jerrold Corporation subsidiary, Jerrold Electronics Corporation, as General Sales Manager in 1961. He was promoted to General Manager during the same year.

In 1962, Mr. Beisswenger was also named Vice President of Jerrold Electronics Corporation.

Before joining Jerrold, Mr. Beisswenger was Vice President and General Sales Manager of Whitney Blake Company, New Haven, Connecticut, manufacturers of telephone and power cables. Prior to that, he was Sales Manager of Indiana Steel and Wire Company, Muncie, Indiana, where he supervised sales of high tensile steel wires.

EUGENE, ORE., CATV MANAGER NAMED BY TELEPROMPTER CORP.

TelePrompTer Corporation has announced that *John A. Sullivan* has been named manager of its community antenna television system at Eugene, Oregon.

Mr. Sullivan will direct a major expansion and improvement program for TelePrompTer Corporation's third largest CATV system. The Oregon system currently offers seven channels of television reception to more than 8,800 subscribers.

Mr. Sullivan has been active in CATV systems operation for nine years, and was manager of the Sierra TV Cable Co. of San Jose, Calif., immediately prior to his appointment at Eugene. He formerly was an operations manager for Western Airlines and superintendent of Operations for Bonanza Airlines.

GREGORY TO MANAGE GLASGOW SYSTEM

Leonard C. Gregory, former publisher of the Macon County Times, Lafayette, Tennessee, has been named manager of Glasgow Cablevision in Glasgow, Kentucky. He has been working with this division of Ameco, Inc. since the first of the year, handling public relations and promotional work for all that firm's Kentucky systems. His promotion to the managerial position took place in mid-February.

Prior to joining Ameco, Gregory was in the newspaper business as a publisher and editor.

ANTENNA COMPANY USES WEASELS

One of the larger non-telephone common carriers has mountain top microwave sites which require a bit of ingenuity to reach. The company has purchased five weasels to solve these mountain-climbing problems.

The weasels were built for World War II as an amphibious vehicle and were heavily armor plated. They were built to carry communications equipment and supplies and will travel through mud and snow at speeds of 20-25 miles an hour.

One of the Ansco weasels shown in the Arizona Sun.

Antennavision Service Company (ANSCO) stripped the weasels of armor plating and put them into use in these rough mountain areas. The weasel is used for regular preventative maintenance as well as emergency microwave service. Using it in conjunction with 4-wheel drive trucks, ANSCO has full access to all their microwave locations no matter what the weather conditions. Some locations are very difficult to reach because of extremely severe weather during several months of the year.

VIKING "MAN OF THE MONTH" NAMED

It was announced that *Patric F. Federico* was chosen Viking's "Man of the Month" for March 1965. Pat, one of Viking's oldest employees, has been with Viking since 1950.

As General Traffic Manager, Pat is responsible for the routing, shipping, receiving, and storage of all raw materials in the 14 warehouses across the country.

(Continued on page 36)

ISN'T IT ABOUT TIME?

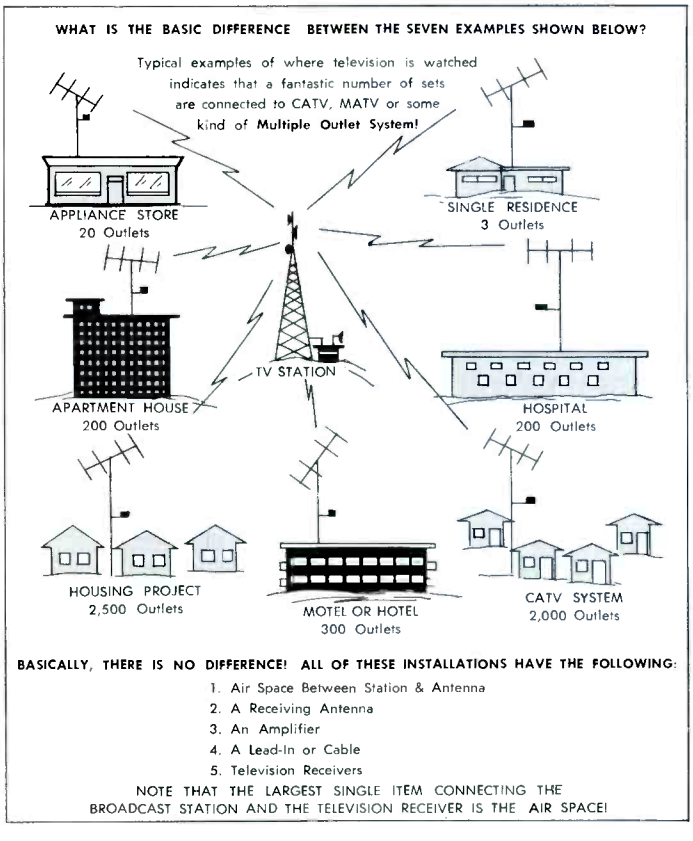
By JIM DAVIDSON
President
Davco Electronics

Community Antenna Television is simply what the name implies; an entire community connected to a single antenna for television reception. (CATV)

From a meager beginning, almost unnoticed, during 1949 and 1950, CATV has grown to an estimated 1500 systems, serving 1.7 million subscribers and ranging in size from less than one hundred up to more than 12,000 subscribers. The average system probably serves 2,000 subscribers.

Because of this growth, over a period of 14 or 15 years, much has been printed about CATV in various trade publications, creating interest from persons in theatre business, broadcasting, telephone and other areas. Most are interested in becoming a part of the CATV industry, either by ownership of a system or by participation in groups of systems. A few, however, are interested in retarding the growth of CATV, and it is because of these few that this is written.

Now, let us take the example of basic CATV, in pure form, highly engineered, skillfully installed, properly maintained and managed. . . . It is doing just what the television viewer is trying to do, improve his reception. The one big difference is that it is impractical for the home owner to install such a large mast or tower in his back yard. Let us assume that a home owner could afford such a large installation, and his back yard was sufficient in size. . . . Would anyone try to stop him? What if he hooked a few of his neighbors to his large antenna? What if he charged a monthly fee for the service he delivered them from his large antenna? Would he be selling programs or service?



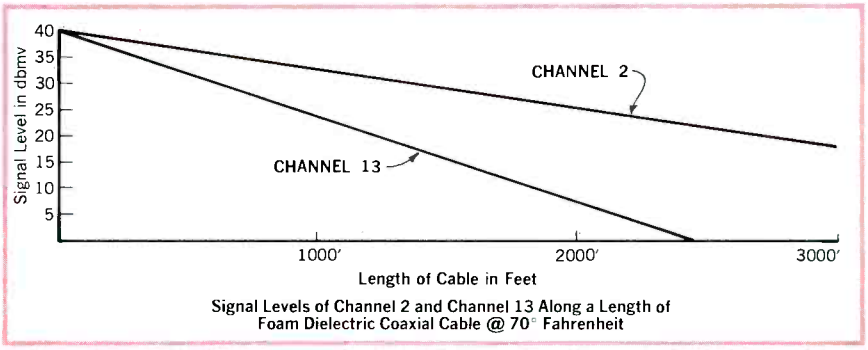
What if word got around that this home owner had better pictures and more channels from his large antenna, and demand for his service extended all over this town? And, soon he found himself with practically every TV owner in town being served from his own large antenna. They are all quite willing to help defray his costs by paying him a monthly fee, rather than tolerate the poorer reception they experienced on their own home antenna. He needs the monthly fee, since he now has maintenance costs for keeping his antenna system in good working order. He feels, also, that he is entitled to a profit from his service fees, since after all, wasn't it his idea and his ingenuity and his labors and his money that made this antenna service possible for his fellow citizens? Opponents of CATV may, at this point, cite all kinds of horrible examples of the "bad" effects of CATV, and how the above example is not representative of all CATV installations. They must remember, however, that *the example is CATV in its pure form, that a very large part of our industry grew out of just such a meager beginning.* Most CATV installations do nothing more than to aid the television set owner in doing what he is trying to do, anyhow, simply improvement of channels that he is already watching. There are many home antenna installations in the towns where we have CATV. One such system receives a total of ten television stations. Those who are not connected to the CATV system receive and watch exactly the same ten television stations! The only difference is that CATV installations improve reception for subscribers.

OPPOSITION TO CATV

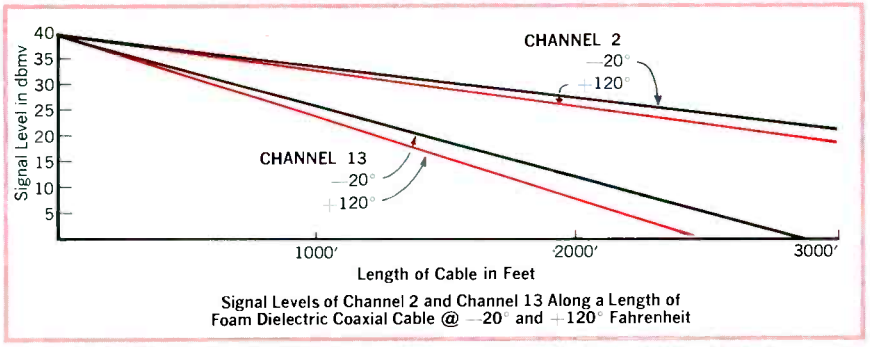
Local TV repairmen are our friends—we work together for mutual advantages. . . . Needless to say, our subscribers are quite happy, as evidenced by the fact they prefer to pay for CATV service rather than revert to their home antenna . . . and, lest we forget, *they do have a choice!* Local city franchises are evidence that city governments befriend and approve of CATV. CATV is an optional service, born out of ingenuity and filling a need

Let's talk about CATV cable loss and "slope"

Let's review the problem: Coaxial cable has the ability to transmit with fidelity, low power signals of very high frequencies. However, the rate of dissipation (loss) of these signals is very rapid and varies directly with the square root of frequency. Thus, the loss of signal strength at Channel 13 (210 mcs) is approximately twice that of Channel 2 (54 mcs). Cable "slope" is this difference in signal loss between various frequencies. (See graph right.)



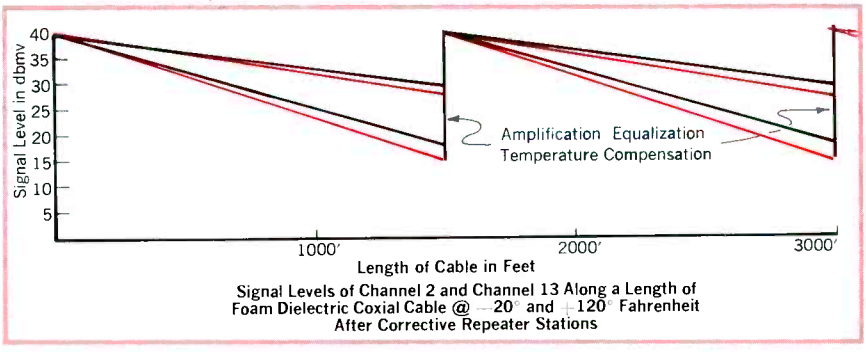
Signal Levels of Channel 2 and Channel 13 Along a Length of Foam Dielectric Coaxial Cable @ 70° Fahrenheit



Signal Levels of Channel 2 and Channel 13 Along a Length of Foam Dielectric Coaxial Cable @ —20° and +120° Fahrenheit

Signal loss is compensated for by inserting amplifier gain at intervals along the cable. "Slope", at any one temperature, is compensated for by designing a reverse slope into the amplifier, by use of frequency equalizers or by a combination of both. However, the amount-of-slope changes as temperature changes. (See graph at left.)

In many CATV localities temperature extremes between mid-winter and mid-summer of 140° are not unknown. It is clearly not satisfactory to provide signal level recovery and slope correction which is optimum at only one temperature. Correction of gain and slope must be appropriate to any temperature encountered. If this is accomplished properly, the channel signal levels illustrated in the graphs above will now appear as follows:



Signal Levels of Channel 2 and Channel 13 Along a Length of Foam Dielectric Coxial Cable @ —20° and +120° Fahrenheit After Corrective Repeater Stations

This admittedly rudimentary discussion is provided to demonstrate the basic problem which the CATV equipment maker is called upon to solve. It is the reason for his existence. He must always solve this problem well, within the constantly narrowing corridor between noise and cross-modulation, without introducing additional distortions and mismatches which could grow to be as bad as those he is trying to correct. He must also take into consideration the fact that as coaxial cable ages, both its loss and slope characteristics change and the degree of change is variable. Finally, unless the equipment maker plans to restrict CATV systems to small pockets of service and/or overlooks the importance of maintenance costs, he must provide for main transmission lines of 10 to 50 miles, and for cities with 300 to 500 miles of street distribution lines.

Spencer-Kennedy Laboratories CATV, and other coaxial cable networks, are designed from an over-all system concept, with the objective of delivering signals of maximum quality at a competitive and economical cost. The opposite page lists and discusses SKL equipment, designed to compensate for cable loss and slope. It embodies the highest standards of quality and most advanced technology available today.

THESE UNIQUE SKL DEVELOPMENTS SET THE STANDARDS IN CATV TECHNOLOGY

1950 First Wide Band Distributed Amplifier

1952 First Automatic Level Control Unit

1957 First Pilot-Operated Equalizer

1959 First "Thermatic" Gain Control

1960 First "Thermatic" Line Equalizer

SKL 222A AMPLIFIER STATION

SKL Model 498-499
Thermatic Equalizer*

Compensates for changes in cable slope due to temperature as these changes occur. Channels are kept at proper relative levels; insertion and removal of fixed equalizers are unnecessary.

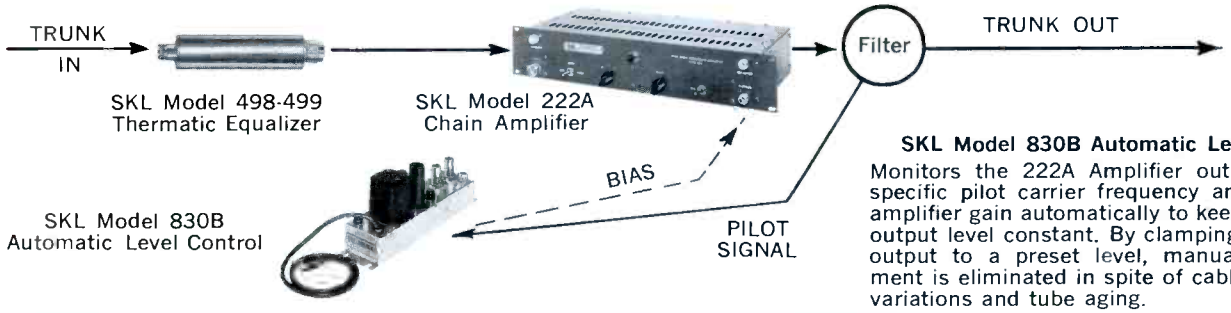
SKL Model 222A
Chain Amplifier

The industry standard for 12 channel and FM operation. Gain is thermatically controlled and response is sloped to fit cable. Over 4500 SKL 222A's are in trouble-free use in CATV systems.

SKL Model 832
Thermatic Gain Control*

By turning the SKL Model 222A Amplifier three-position switch to "T" and exposing the 832 temperature sensor in open air, the amplifier will automatically compensate for changes in transmission line loss due to temperature.

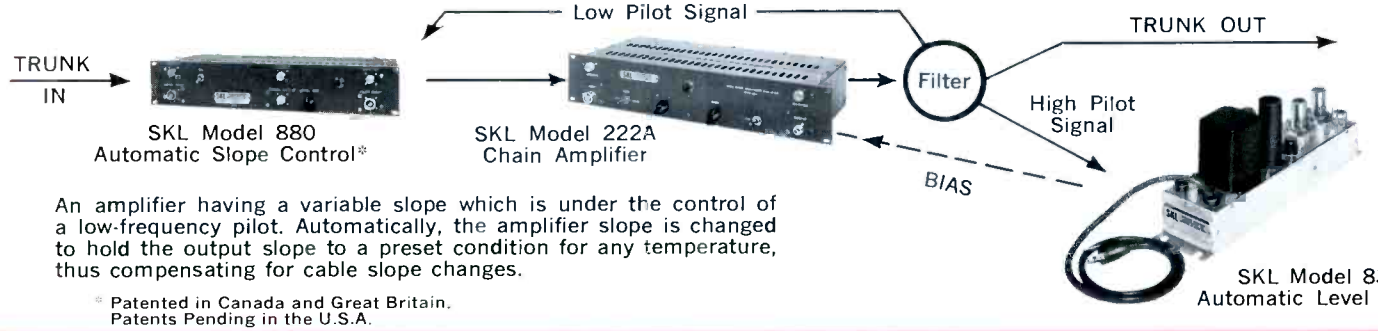
SKL 830B AUTOMATIC LEVEL CONTROL AMPLIFIER STATION



SKL Model 830B Automatic Level Control

Monitors the 222A Amplifier output level at a specific pilot carrier frequency and adjusts the amplifier gain automatically to keep the amplifier output level constant. By clamping the amplifier output to a preset level, manual gain adjustment is eliminated in spite of cable temperature variations and tube aging.

SKL 880 AUTOMATIC SLOPE CONTROL AMPLIFIER STATION



An amplifier having a variable slope which is under the control of a low-frequency pilot. Automatically, the amplifier slope is changed to hold the output slope to a preset condition for any temperature, thus compensating for cable slope changes.

* Patented in Canada and Great Britain. Patents Pending in the U.S.A.

Call or write for the SKL CATV System Equipment Catalog for complete specifications and prices.

SKL

SPENCER-KENNEDY LABORATORIES, INC.

1320 SOLDIERS FIELD · BOSTON, MASS. 02135 · TEL. 617-254-5400

under our system of free enterprise . . . if it did not fill this need . . . if it were not in the public interest . . . *then it would not exist!* Who, then, are these opponents of CATV? Why are they so outspoken? Who is listening? *Is it possible in this great country for misinformed or selfish groups of people to create all this turmoil and cause to be enacted legislation that violates the principles of free enterprise and public interest?*

Let us consider some of these groups, and attempt to justify their reasoning in their opposition to CATV. TAME, for example, is a group of home antenna manufacturers who are obviously trying to eliminate competition. Certainly, CATV reduces the sale of their product. Why? Simply because their product does not, in most instances, fill the public need. CATV does. Wouldn't it be just as reasonable for the CATV industry to ask for legislation to control the manufacture and sale of home antennas? TAME has tried every trick in the book in their attempts to retard CATV. *They know that CATV delivers better antenna service, and they are afraid!*

A local TV serviceman recently installed a "super" home installation, complete with a 15 db mast mounted pre-amplifier and an additional 20 db amplifier at the set. He used coaxial cable. He is telling all who will listen that his "system" is better than the cable. He says that it receives more channels and better pictures than the cable. He states that he can hook up 40 sets in that neighborhood. It is an excellent job. . . . It cost the cable customer $300.00. *(He did not disconnect from the cable.)*

However, let us suppose that the cable customer did disconnect in favor of his "super home installation." . . . Let us suppose he did hook up a few of his friends and neighbors to his "super home installation." . . . Let us suppose that they all disconnected from the cable and are paying him a monthly fee. . . . *May I ask our local city government to enact an ordinance which would prohibit competition from home antennas, such as the installation mentioned here? Or to place controls on sellers of home antennas? Control their type of installation, their prices, areas where they could install their product? No! We consider this fair competition, and it keeps us on our toes!*

LOCAL STATIONS

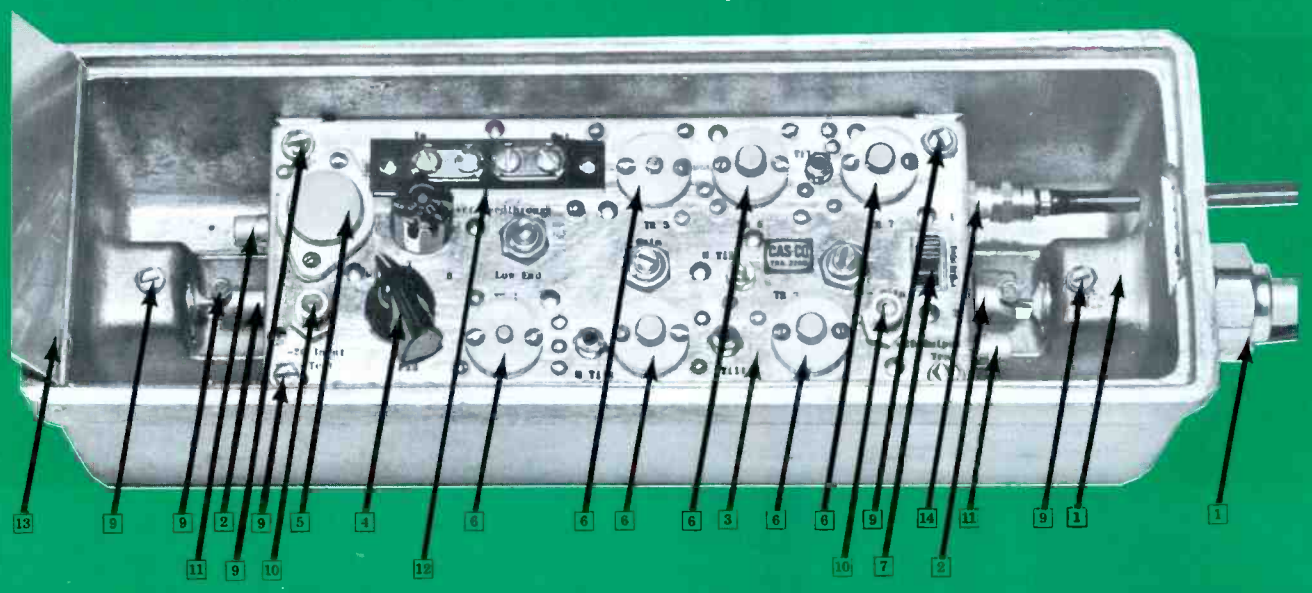
How about small one-station markets? What is their motivation? Can it be that they, too, feel the sting of competition? The facts are that *not all* operators of stations in a single station area are complaining. Are they so selfish as to ignore the public interest? Do they want to deprive the public of live programs from CATV antenna service and have the public sit and wait for their canned fare weeks later? Why don't they meet the competition head-on by utilizing microwave to bring in live network programs? Actually, it is much easier for a TV station to obtain a microwave permit than it is for CATV.

LEGISLATION TO COME

There is sufficient evidence to support the contention that the vast majority of TV stations have always been very happy with the improved coverage and the improved quality of their signals via CATV. *Why, then, can we allow a small minority to promote legislation that will have a derogatory effect on such a large majority? Why are we allowing this to happen, when a few isolated instances are at the root of all this noise? Why can't the powers in our*

TRA-220D

Your Biggest Value in CATV Transistorized All-Band Amplifiers



1. Requires no connector. Adjustable, waterproof entrance fitting provides greater strength, reduces wear, and readily adapts to 0.412-, ½-, and ¾-inch aluminum cable.
2. Unique "floating" feature of CAS center conductor permits temperature expansion or contraction to move conductor into and out of housing with no strain or stress on the positive internal connection.
3. Thick copper chassis assures proper heat transfer from transistors to housing.
4. Attenuator on input adjustable for 0, 3, and 6 db positions.
5. 150-watt power transistor protects other transistor circuits from surges and provides positive regulation of DC voltage with AC input changes of 22 to 35 volts.
6. Exclusive CAS heat dissipating mounts for silicon (RF) transistors are an important factor in the high output capabilities of the TRA-220B.* Because they are not soldered in, transistors can be removed easily for testing or replacement.
7. Switch provides two positions for temperature compensation.
8. Aluminum housing is installed on messenger strand with brackets as shown.
9. Transistor chassis module is inserted in housing, already in place on the messenger strand, and mounts to the housing with eight ¼-inch hex screws.
10. Both input and output are provided with 20 db test points ("F").
11. Parallel "F" fittings provide for easy bench sweeping and testing when the chassis is removed from the housing.
12. Like all CAS transistor gear, the TRA-220D is line powered with 22-35 volts AC. The tab shown provides positive connection to AC source, either at input, output, both or feed-through.
13. Folding door opens downward to provide easy access to chassis module and controls and is provided with a keyed lock.
14. Distribution amplifier output (with output levels up to 50 db) (all band), feeds a 2- or 4-way splitter.

*Pat. applied for on components which provide this and other features.

The TRA-220D is specifically engineered to meet the most rigid environmental requirements of CATV systems. It is a deluxe 25 db high-level CAScader and distribution amplifier in a weatherproof, cast-aluminum housing. Unique features of the TRA-220D, illustrated above, make it the leader in its field.

Also packaged in the 220 housing are two other CAS line amplifiers designed to meet specific CATV needs, The TRA-217 is a 24 db line amplifier for applications not requiring the high performance specifications of the TRA-220D. The TRA-220S is identical to the TRA-220D except that it is a CAScader only.

Write today for complete specifications and prices of the TRA-220D, TRA-220S and TRA-217.

CAS MFG. CO

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legislative bodies listen, to, to the majority and act in the public interest rather than in the interest of selfish minorities? Someone needs to impress these elected representatives with all the good things that have happened as a result of CATV. . . . If we are to be controlled, I pray that it is not spelled out by our enemy. . . . Is it not possible that in some way this great industry can be *protected* by legislation, rather than *controlled* by legislation? Legislation as proposed by the enemy of CATV is unconstitutional, and is contrary to the principles of free enterprise and public interest. We do not violate any laws of our land. We do not force anything on the public. We do not "steal" from anyone.

COPYRIGHT

This brings us to another "enemy." . . . How about the copyright owners of the programs carried by CATV? The answer is simple. CATV does not benefit from the programs, as such. Remember, *CATV is strictly an antenna service.* CATV does not sell programs, does not delete commercials, does not insert commercial advertising, or in any way detract from the broadcast program. In fact, CATV is an ally of the networks, copyright owners and broadcasters, since it improves their signals for them . . . for their viewers. . . . Now, if a CATV operator would take a program off the air, delete the broadcast commercial and insert his own, then and only then would he be stealing or violating copyright. We can safely state, then, that CATV is assisting the networks, copyright owners and broadcasters in their ultimate objetcive.

In the past few years, much has been printed about CATV in all kinds of trade publications and in newspapers. Many persons, because of distorted or slanted news items, and because of a lack of accurate information, do not really understand CATV. . . . The National Community Television Association, with headquarters in Washington, D.C., is the voice of the CATV industry. It now appears that this association will be working more toward an improved public image of CATV, through factual reporting and advertising.

If the true facts are learned by opponents of CATV they would no longer be opponents, would cease their objectives and join the vast numbers of broadcasters, independent telephone operators, theatre people and others, who are either in CATV or contemplating it seriously.

THE FCC AND CATV

The Federal Communications Commission could almost be called an innocent bystander in the CATV controversy. Several years ago, the FCC stated that it not only did not have control of CATV, but that it did not want to have control of this industry. Pressures from the CATV enemies have caused the FCC to take another look, and for some time, now, the NCTA, FCC and NAB (National Association of Broadcasters) have been attempting to come up with compromise legislation. Actually, there is nothing in the Communications Act that can be interpreted to include CATV. . . . The Act is designed to control the broadcast radio frequency spectrum, that is, the signals transmitted through air, and CATV simply does not do this! Because of pressures that have been applied by a relatively few broadcasters and others, the FCC now feels that it should have control of CATV.

Necessary legislation of our industry should be simple,

non-restrictive and should only authorize a committe or board within the FCC for the purpose of resolving situations where a conflict of interest between CATV and broadcasters exists. Nothing more. This board could care less about the other 1500 CATV installations where they are operating quietly and without conflict of any kind. It should be non-partisan and should settle disputes with the public interest in mind. . . . Why is complicated legislation necessary where there is no need? Why not have a simple law that would protect all these fine CATV operations that are serving the public interest, resolve the few situations of conflict, and, most important, aid and assist the CATV industry toward the continued growth it is bound to enjoy, if it is really the fine thing we say it is! Give us a chance to prove ourselves! *If CATV is not in the public interest, then it will die of its own accord. If it is, it will continue to grow and serve our great land.*

Don't forget, CATV is not a public utility. By its very nature, it is a luxury service and could not be in any way considered an absolute necessity such as electricity, gas, telephone and water. Also, CATV is not forced on the public, the public has a choice betwen CATV and their own home antenna. It is unreasonable to think that our fine industry would be retarded by selfish interests. . . . This just isn't the American way. . . . I doubt if anyone can show where there is a single instance of CATV being harmful to the public!

Now, let us contemplate the growth of CATV. . . . In a brief 15 years, CATV has grown to an impressive stature . . . without subsidy from our government, without controls from any level of government, and with the blessings of the recipients. . . . It is simply *antenna service*, or, if you please, *a better home antenna!* Yes, that's all it really is!

Whether a person has a home antenna, CATV or pay-TV, or perhaps all three, isn't the really important thing the fact that all three were available and he had a choice?

So, ISN'T IT ABOUT TIME, right now, for all the interested opponents of CATV to take a fresh look? *Look deep* into CATV, realistically and objectively, and come up with sane and logic answers. . . . In other words, take a "common horse sense" approach to the overall state of things related to CATV, and face reality. . . . *This is the American way!* □

A pioneer in the CATV field, Jim Davidson attended the organization meeting of the National Community Television Association in Pennsylvania, in 1950. Since that time he has helped organize state and regional CATV associations and has served in offices of the groups.

A director of the National Association, Davidson is owner of a group of CATV systems. His company, DAVCO Electronics Corporation is one of the major suppliers to the CATV industry.

TRANSISTORS FOR WIDEBAND TV AMPLIFIERS

by RICHARD S. BURWEN
Consulting Electronics Engineer

While the reliability, low power consumption, small size, and weight of transistor circuits are causing them to rapidly replace tubes in a great many low frequency applications, designers of transistor VHF equipment are finding them quite a problem. The problem can be summed up in three words—narrow dynamic range. Put another way, it means poor signal to noise ratio resulting from too much noise, or limited output due to distortion, or both. Generally, noise can be traded for distortion within certain limits.

In communications receivers which have to handle a wide range of input signals the narrow dynamic range means more complicated and higher Q tuned circuits are needed to filter out unwanted frequencies that can cause undesirable cross modulation. The problem is especially significant in the CATV field where amplifiers have broad bandwidth and must produce extremely low distortion together with low noise. The difficulties are compounded when manual or automatic gain control is added to a broad band amplifier. To illustrate let us consider the problem of designing a CATV trunk line amplifier.

TRUNK LINE AMPLIFIER REQUIREMENTS

Because of the tremendous losses in 10 to 15 miles of 54 to 216 mc CATV trunk line cable it takes typically 15 to 30 very high performance amplifiers spaced along the cable to make up for cable attenuation without degrading the TV pictures. Cable attenuation is much greater at 216 mc than at 54 mc, and this attenuation varies with the temperature and age of the cable. Not only is amplification required, but also equalization, and gain and equalization adjustments which are preferably automatic, are needed to produce the flat system response with time and temperature.

Since noise and distortion of all types accumulate as the signals pass thru each successive amplifier, an individual amplifier must have extremely low distortion. For example, cross modulation down 70 to 80 db becomes important, and frequency response and gain deviations of tenths of a db from the ideal become important. Accurate impedance matching is necessary to prevent an accumulation of ghosts, especially on the low channels where the cable attenuation is minimum.

The maximum output and noise figure together with system performance requirements determine the usable gain. A high gain amplifier is unsuitable unless its output power capability at low distortion is very high.

For a given output higher gain means the incoming signal is closer to the input noise level. Very low gain amplifiers in principle can be cascaded farther for a given signal to noise ratio, but more amplifiers are needed and other problems arise. For practical reasons a suitable trunk line amplifier gain is in the vicinity of 22 db at 216 mc.

DISTORTION

Class A operation of the output stage is universally used in CATV amplifiers because of the extremely low distortion requirement. In practice to deliver an output signal 30 db above 1 mv on 9 TV channels to a matched 75 ohm load (0.4 ma per channel) at 0.02% cross modulation it may take 80 ma or more DC current input to the power stage. Such high current input is necessary so the curvature or nonlinearity of the transistor's output vs input characteristic over the range of signal currents will be small enough to produce this low distortion level.

Nonlinearity arises for several reasons. (1) The base-emitter input impedance is a forward biased diode whose voltage vs current characteristic is logarithmic. (2) The current gain of the transistor varies with its collector current. (3) The collector to base capacitance decreases as voltage increases, producing nonlinear feedback.

In general the power output capability of a transistor at a given distortion level is proportional to the DC power input. There are no transistors available today that are so linear as to make it possible to use a large percentage collector current swing for 0.05% cross modulation distortion.

NOISE

Published specifications on transistor noise figures reach below 3 db at 200 mc. Yet, when used in a practical CATV amplifier the same transistors may produce overall noise figures as high as 10 db. There are several reasons for this difference. (1) Depending upon the type of circuit used it may be necessary to throw away from 1 to 3 db in an input impedance matching network. (2) There is some noise contribution from stages beyond the first. In amplifiers incorporating interstage gain or equalization controls the noise contribution from succeeding stages may equal or exceed that from the input stage. (3) Some signal loss occurs in the equalization networks needed to produce flat response in the first stage. (4) The transistor operating point cannot be chosen for optimum noise figure. This problem arises because the lowest noise figure occurs at a low collector current, typically 1.5 ma. In an amplifier having only 22 db gain the input stage would produce as much distortion as the output stage if operated at only 1.5 ma collector current. It is, therefore, necessary to compromise noise figure to reduce distortion by operating the transistor at higher collector current.

FEEDBACK INEFFECTIVE IN REDUCING DISTORTION AT 216 MC

One of the best ways to produce a very wide dynamic range is to use negative feedback to reduce distortion. At low frequencies feedback can be incorporated around several stages. To take an extreme example, it is quite practical to design an audio amplifier having feedback around 7 DC coupled stages. In a bandwidth from 20 cps to 20 kc its equivalent input noise voltage can be as low as 1 uv rms. The maximum output of such an amplifier can easily be made 20 volts rms or more at any desired amperage and the feedback can be arranged to provide unity gain. At audio frequencies then, transistors are capable of providing a dynamic range as high as 126 db. With feedback of more than 120 db at DC and 100 db at 400 cps the total harmonic distortion of the amplifier can be less than 0.001% at 100 cps at full power output of 50 watts or more.

At higher frequencies it is not possible to incorporate so much feedback and so it is not possible to achieve such low distortion. Phase shift considerations and the limited gain bandwidth of the transistors set a limit on the amount of feedback attainable. At 10 kc it is possible to feed back as much as 100 db around 3 stages. At 10 megacycles, however, the maximum practical number of stages within the feedback loop is only 2, and it is difficult to attain more than 30 db of feedback. At 216 mc you can forget about multistage feedback because it is too difficult to stabilize the loop. Low stage gain, phase shift, low impedances, wiring inductance, and capacitances all contribute to making large amounts of stable feedback impractical at 216 mc. About 5 db of feedback is all that can be used and still leave a useful 6 db power gain in a broad band amplifier stage.

Because distortion reduction due to feedback is proportional to the amount of feedback at the frequnecy of a particular distortion component there can be little reduction in distortion at 216 megacycles due to feedback. In fact, it turns out that so much power has to be wasted in the low impedance feedback network needed at 216 megacycles that the transistor has to work harder thereby producing more distortion to begin with. The net result is that feedback has practically

no effect on distortion at 216 megacycles.

GAIN CONTROL DIFFICULT

In vacuum tube circuits gain control can be achieved by varying the grid bias. This method is successful because the input signal is only millivolts while the grid bias may be several volts.

Base to emitter bias variation can control the gain of a transistor amplifier but results in very high distortion. As the forward bias voltage is decreased the input impedance of the base-emitter diode increases. Less input signal voltage is lost across the source impedance plus the intrinsic base resistance inside the transistor, and more signal voltage appears across the base-emitter diode. Greater distortion is produced by the nonlinear logarithmic characteristic of this diode.

The variation in input impedance with base bias makes a gain controlled transistor unsuitable for an input stage which has to present a matched input impedance at all gains.

One method of gain control that has been used in narrow band receivers is forward AGC of a transistor. In contrast with the reverse bias method just described, gain reduction is accomplished by increasing the forward base to emitter bias. It is effective only with certain types of transistors that have been designed so their gain bandwidth decreases with an increase in collector current and a decrease in collector to emitter voltage. This method produces much greater input signal handling capability at low gain, but still produces input impedance variations.

The device which has been used most successfully for varying the gain at VHF is the semiconductor variable capacitor. With this device, a reverse biased diode, the bias may vary as much as 30 volts. The curvature of its characteristic is so slight that a 10 mv signal is undistorted. Other devices that can be used to vary RF gain are low resistance potentiometers for manual control, thermistors, incandescent lamp filaments, and photo resistors, for automatic or manual control. These devices generally have to be placed following the first stage of the amplifier so as to minimize their effect on its input impedance. When they follow the first stage, this stage operates at a higher output level and greater distortion.

TRANSISTORS VS TUBES

One of the most attractive features of the transistor for CATV is its wider gain bandwidth which makes possible single transistor amplifier stages. Transistors suitable for power stages can produce 7 to 10 db power gain over the range of 54 to 216 mc, while transistors made for input stages can produce 9 to 12 db gain. Vacuum tubes have such limited gain bandwidth that bulky, complicated distributed amplifier circuits involving many tubes are necessary.

On the other hand the transistor cannot produce low distortion and low noise figure at the same time because the former requires low collector current while the latter requires high collector current. Vacuum tubes require nearly the same operating points for lowest distortion and lowest noise. This feature of tubes is a big advantage since it makes it possible to incorporate gain and equalization controls between stages without a substantial increase in total distortion due to increased output from the first stage.

At present transistors are not available that can quite match the low distortion output capability of a distributed vacuum tube amplifier. Transistors are rapidly catching up, however.

ABOUT THE AUTHOR

Richard S. Burwen is a Consulting Electronics Engineer located in Lexington, Massachusetts. He specializes in the design and development of semiconductor circuits including model construction and testing.

At the age of 13 Mr. Burwen received his amateur operator's license; at 14 his first and second class radiotelegraph licenses, and at 16 helped to develop type HRO short wave receivers for National Company of Malden, Mass. He has experimented in electronics for 27 years, holds A.M. in Engineering Sciences and Applied Physics and S.B. Cum Laude in Physics from Harvard.

During his tenure as a consultant, Burwen has worked for Image Instruments, Lafayette Radio Electronics, Titan Electronics and others. He has held positions with Minneapolis - Honeywell, Spencer-Kennedy Laboratories and Bell Telephone Laboratories.

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TAKE THE CHILDREN to the 1965 NCTA NATIONAL CONVENTION Denver, July 18-23

We've thought of everyone...

Everyone loves kids (especially TV people), and so we have made special arrangements for their entertainment if you decide to bring yours along when you go to Denver this July to attend the NCTA National Convention. An outstanding program, under the supervision of a professional camp director and his staff, has been planned for your children (between the ages of six and fifteen) which will keep them happily occupied while you and the other grownups go about the business (and pleasures) of the most terrific national convention we've ever had.

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COST

A minimum charge of
$8 per day
or a five-day charge of
$35
will cover ALL costs.

You may sign your children up for the entire five-day schedule of events... for just one day ...or for as many days within the five-day program that you desire.

The BIGGER the family... the BIGGER the savings: There's a 15 per cent cost reduction for every additional child after the first registered from the same family.

Lunch will be furnished each day along with tee shirts for identification purposes.

EXCITING TOURS

A variety of entertaining and educational tours of the area's Western wonders (both natural and man-made) are a part of the children's planned program. The youngsters will see such man-made marvels as the Air Force Academy, State Historical and Natural History Museum, Buffalo Bill's Grave, the State Capital, U.S. Mint, and the Denver Zoo, etc., and such inspiring works of Nature as the Red Rocks Park and Ampitheatre, Garden of the Gods, Seven Falls, etc.

RELAX AND ENJOY YOURSELVES: Evening entertainment will be arranged for the children during adult social functions and baby sitting services are available through the hotel management.

ADDED BONUS: The Hilton Hotel policy is No Room Charge for children occupying the same room as their parents.

HURRY: Registration for the children's program must be made well in advance. Write now to:

NCTA 1965 NATIONAL CONVENTION
Attention: Children's Activity Committee
285 MILWAUKEE STREET • DENVER, COLORADO 80206

TRUNK LINE AMPLIFIER EXAMPLE

The problem with transistors in designing a 54 to 220 mc broad band trunk line amplifier can be seen from the following example. Suppose the amplifier consists of 3 transistor stages. To produce an output of 30 db above 1 mv across 75 ohms for each of 9 TV channels at 0.02% cross modulation distortion, it is necessary to operate the output transistor stage at a collector current of 80 ma. After wasting 3 db of output power to match the load impedance, the net gain of the stage is 5 db. Incidentally, some trunk line amplifiers available achieve their high output by saving this 3 db and not matching the load impedance.

In a low distortion amplifier the output stage produces most of the distortion, and the power output of a given stage is proportional to its power input. Let us say we operate the second stage at a collector current of 40 ma. This is half the power input to the output stage, and gives the driver an extra 5 db in output capability before its distortion will equal that of the output stage. The second stage may then have a gain of 9 db.

At the input to the first stage some power probably has to be wasted to match the line impedance. When using a small signal, high gain bandwidth transistor, the net gain of this stage after accounting for the matching loss may be 8 db. To produce the same distortion as the driver transistor this stage has to operate at 4.5 ma collector current. However, to produce the best noise figure the transistor should operate at perhaps 1.5 ma collector current. For satisfactory performance either distortion or noise figure or both must be compromised to mate the first stage with the second. This problem arises partly because of the need for only 22 db gain to permit cascadability in long trunk lines.

Adding gain control makes matters even worse. If the gain reducing element is inserted after the first stage to avoid its effects on the input impedance, the first stage has to work harder at minimum gain to drive the second. Thus, first stage noise figure has to be further sacrificed to produce adequate power output.

One good compromise appears to be the use of a three stage amplifier without any interstage cable equalizer or gain control. Gain adjustment, either manual or automatic, should cover the minimum range possible and be inserted ahead of the amplifier. Losses at 216 mc, of course, degrade the signal-to-noise ratio. Low frequency attenuation to equalize the cable can also be used ahead of the amplifier. It will produce the same signal-to-noise ratio on the low channels as on the high channels and this is satisfactory even though the noise figure of the amplifier plus equalizer is substantially poorer at the low channels.

CONCLUSION

There appears to be no solution to the design of a CATV trunk line amplifier with gain control using present day transistors that does not sacrifice either distortion or noise figure or both. The sacrifice occurs because of the conflict of requirements for low collector current to produce low noise figure and high collector current to produce low distortion and the need for only medium gain for cascadability. Transistors are unsatisfactory as gain control elements because of their high distortion at low gain, and because of their changing input impedance with collector currents. Vacuum tubes do not produce this conflict of current requirements to produce low distortion and noise and are still attractive for the gain control portion of a system. A 10 mc and lower, transistors offer many advantages over vacuum tubes. At 216 mc tubes can produce wider dynamic range, especially when gain control is used. New semiconductor devices will be needed to fully overcome the advantages of tubes in trunk line amplifiers. □

Put Yourself In Your Letters

by Charles Wigutow

The letters you write say much more about you as the writer than you mean to say. They may even say things that do not represent your real thinking, or your attitude toward the people you are writing to. That is because most people do not write as naturally as they speak. Formal phrases that most writers have picked up from their early school days simply do not come to life.

Letters from subscribers, or those who have questions, even complaints are valuable. They are just about as direct as a pipe line for judging your acceptance in the community as you can get. These letters are not to be taken lightly because a single letter can represent so many more people who hold the same viewpoint, but do not write.

If it is a complaint, be grateful. It may give you an otherwise hidden indication of a condition that requires immediate correction. Your letters within the community are a valuable public relations tool. They supply you personal contact with someone who bears a relation to the system, whether as friend or opponent.

A reply to every single letter is called for, even if it comes from a crank. Even if your first impression is that the writer is outrageously wrong, you should at least have a "sneaking suspicion" that maybe there is some justice to the complaint.

It pays to be generous in the use of "Thank you" letters. Any special occasion; an award, or some honor is the right time to send congratulations. Write a note of welcome to the newcomer. If you're alert to them, you'll find there are lots of reasons for writing. And your letters can be a regular part of a positive, productive public relations program.

It is a good rule to follow to be prompt in replying to incoming mail. A reply on the same day is ideal if you have the time. There is one exception. If you have been stirred to anger, then hesitate. Clear thinking doesn't come easy with anger. Such a letter is better held until you can have a second calmer look at the matter.

When a response has to be held up until facts are gathered, an acknowledgement is enough with a statement that the requested information will follow when the information is tied together.

In summary, letters can represent you, and increase your range of contacts. By mail you can reach many more people than you can by foot or car. While it is not always a substitute for your personal appearance, it can in many cases, let you be in a number of places at the same time. Unquestionably, every community antenna operator should strive for prompt, effective letter writing as a business essential. □

(Focus continued)

JERROLD ESTABLISHES NEW SALES OFFICE

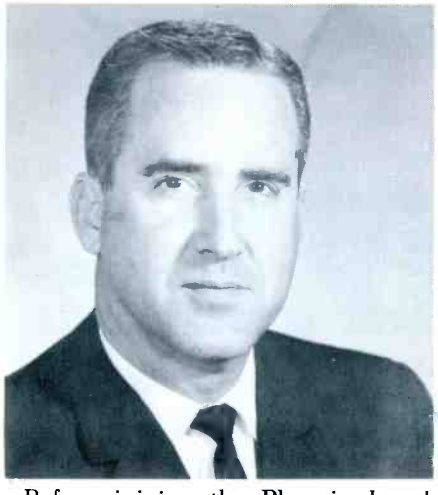
Jerrold Electronics has added two new officers to expand its field sales and field engineering offices. They are: (1) A new Southwestern Region. Based in Dallas, Texas, the new regional office will be headed by *Ed Dart*, Regional Manager. *Roy Pastie*

and *George Henderson* will operate from the Dallas office as field sales engineers; (2) A new Northwest District office in Portland, Oregon. Managed by *Jim Forgey*, Western Regional Manager, the Northwest district staff also includes *Al Micheli* and *Jerry Laufer*.

According to *Elmer Metz*, Jerrold Community Systems Division Sales Manager, the expansion program was made necessary by "the tremendous growth of CATV in recent years."

WYCKOFF NAMED TO AMECO STAFF

Ameco, Inc. announces a new staff member, *Donald Wyckoff*, Director of Marketing.



Before joining the Phoenix based company, Wyckoff was a sales engineer for 18 years with General Electric. Ten years of that time he was manager of distributor sales out of the Denver office. He was also sales manager for automation systems in the internal automation operation for a period of time.

COOLEY NAMED VICE PRESIDENT BY TELEPROMPTER CORPORATION

TelePrompTer Corporation has appointed *Caywood C. Cooley, Jr.*, as Vice President in charge of its Community Antenna Television Division.

Mr. Cooley has been general manager of the division since joining TelePrompTer Corporation last October.

A pioneer in the development o. CATV systems and equipment, Mr. Cooley was a Vice President of Jerrold Electronics Corp. prior to joining TelePrompTer Corporation.

He helped to design and install the first professionally built CATV system in the U.S. at Lansford, Pa., in 1951 and subsequently has been instrumental in development of much of the equipment and many of the engineering techniques now in use throughout the industry.

VIKING STOCKHOLDERS MEETING

The Annual Stockholders Meeting for Rego Industries and its subsidiaries, which includes Viking, was held in Newark, New Jersey during March. Rego Industries was represented by *Theodore Baum*, Executive Vice President, *Robert Baum*, Vice President and *William Bodenstein*, Vice President. Also on hand for the meeting was *Joseph Kramer*, Corporate Attorney, *Morris Winter*, Special Council and *Mr. J. Kramer* representing Oppenheimer and Company.

Open discussion was held and it was announced that Rego Industries has the largest back-order in its history. Progress and expansion was discussed and all recommendations noted. Elections were held and unanimously elected was *Irving Handel* as Accountant for the Corporation and *Mr. J. C. Hubbard* elected to serve on the Board of Directors. The meeting climaxed with the announcement that as of April 1, 1965 a 5% dividend would be given to the stockholders, payable as of April 15, 1965.

NEW EAST COAST SALES ENGINEER APPOINTED BY DORNE & MARGOLIN

Dorne and Margolin, Inc. of Westbury, New York and Chatsworth, California, has appointed *Stuart W. Horne* as East Coast Sales Engineer.

He will be responsible for sales of the company's antennas and microwave systems to government and commercial markets.

Prior to joining Dorne and Margolin he was employed by Antenna Systems, Inc. as Regional Sales Manager.

Mr. Horne obtained his engineering degree at Rensselaer Polytechnic Institute and his MBA from Ohio State University.

AMECO HONORS TARBUTTON

Victor Tarbutton, Wickenburg, Arizona has been named Employee of the Month by Ameco, Inc., Phoenix, Arizona.

Ameco's president, Bruce Merrill (left) is shown here presenting a watch to Tarbutton.

Tarbutton has a bachelor's degree in meteorology, but his love for electronics brought him into the CATV field.

According to Bruce Merrill, President, Ameco, he has made major contributions in the design and development of new products, improvement of old products, technical writing projects. In the latter category he has written extensively for "Technically Speaking."

TELEPROMPTER CORPORATION NAMES FARMINGTON, N.M., CATV MANAGER

TelePrompTer Corporation announced the appointment of *Donald D. Schilling* as manager of its Farmington, New Mexico, community antenna television system.

Mr. Schilling was manager for the past two years of a CATV system at Eau Claire, Wis. Mr. Schilling has an extensive background in sales and office management.

TelePrompTer Corportion is owner-operator of community antenna properties. Its 16 systems serve approximately 250,000 television viewers in the continental United States and Hawaii.

Glenn Scallorn, Manager of Community Systems Operations (West), applies a variety of talents to the systems under his active control. Distances being as vast as they are between systems, and transportation limited, Glenn pilots a plane to keep up with the demands made on his time. He is busy resolving the many evaluation and management problems that come up in the running of a widespread group of systems.

This amply demonstrated ability that has helped make TeleSystems so successful is available to other cable operators, new and old, who seek the answers to soundness and growth.

Keen judgment, the ability to apply knowledge that has been proven in action marks the TeleSystems organization. Another reason why it's smart to work with **Glenn Scallorn** and **TeleSystems Corporation.**

CATV

BUSINESS

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DIRECTORY ADDENDUM

The following information is published to correct or supplement listings in the annual "TV & Communications" Directory for February 1965. This listing does not incorporate products or information introduced subsequent to February's publication. Those items will be included in the 1966 Directory to be released at a later date.

HEAD-END AMPLIFIERS

AMECO

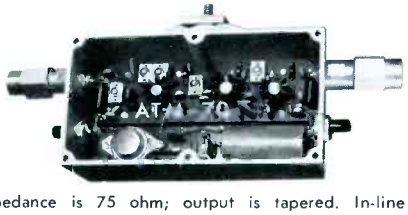
Transistorized AGC amplifier, Model ATAL-35. Low band. One input, 40-110 mc. Two outputs: one trunk; one 10 db bridger. Average gain, 35 db. Maximum output, 50 db. Noise figure, 10 db, measured at 110 mc. 5 db tilt control; manual and AGC gain controls, minus 15 vdc adjust potentiometer. Powered by 28 vac, regulated power supply. 75 ohm impedance. Cascadeable. Pole or strand mounting. Special 1:8 db AGC action temperature compensated plus or minus 1 db minus 50 degrees F. to 160 degrees F. Price: $263.95.

Transistorized low band amplifier, Model ATML-35. One 40-110 mc input. Outputs as above. Average gain, 35 db. Maximum output, 50 db. Noise figure, 10 db. Gain control tilt compensated. Powered by 28 vac or 115 vac. Regulated power supply. Cascadeable, 40 units at 35 db output. Pole or strand mounting. Price: $202.50.

Transistorized all-band amplifier, Model ATM-60. One 50-220 mc input; outputs as above. Average gain, 30 db. Maximum output, 50 db. Noise figure is 10 db measured at 220 mc. 5 db tilt control. Tilt compensated gain control has 15 db range. 28 vac or minus 115 vac powered. 75 ohm impedance. Recommended for remote cable powered cascade. Cascadeable with 40 units at 32 db out. Pole or strand mounting. Price: $295.00.

Transistorized all-band amplifier and bridger combination, Model ATMB-60. One 40-220 mc input, one trunkline and 4 bridger output. Average gain: trunk 30 db, bridger 7 db. Maximum output: trunk 50 db, bridger 45 db. Noise figure, 10 db measured at 220 mc. 10 db tilt control. Mainline gain control and tilt control has AGCP adaptor jack; bridger gain control and tilt control. Cable powered AC/DC; regulated power supply. 75 ohm. Can cascade 40 units. Pole or strand box mount. Price: $375.00.

Transistorized amplifier, Model ATM-70. High level, cascadeable amplifier with cast aluminum housing, hermetically sealed. Low noise, stable temperature, for frequency range 50-220 mc. Input



impedance is 75 ohm; output is tapered. In-line strand mount design with ½", .412 aluminum and "AM" connectors. Price is $338.50.

Solid state all-band amplifier, Model ATM-60. Cascadeable and temperature compensated from -50 degrees to 150 F. In-strand cabinet mounting; 75 ohm input and tapered output impedance. Connector types are aluminum or matched. Price is $295.

Trunkline distribution & bridging amplifier, Model ATB11-C. Solid state, high output (45 db) amplifier that is temperature compensated and operates on all channels. 75 ohm. Has insertion loss of .4 db; 15 db average gain per output. AM matched, 75 ohm or UHF connectors and sells for $135.15.

WESTBURY CATV CORP.

Transistorized silicon amplifier, Model TLA. Cascadeable to forty units; split band construction, separate gain, tilt controls and AGC for low and high channels. Matched output as well as input,

single unit capability plus 50 db/mv, gain 26 db, powered by 115 volt line or 24 vac via cable. F connectors standard. Other types optional. Price: $330.

LINE EXTENDER

WESTBURY CATV CORP.

Transistorized silicon all-band line extender amplifier, Model LEX. Gain: 20 db, maximum output 42 db and noise figure of 10 db measured at 220 mc. 75 ohm impedance. Separate gain and tilt controls. Messenger cable mounted. Cascadeable with 4 units 8 channels, at plus 36 dbmv. LEX-PLP is 117 vac line-powered. LEX-ACC is 24 vac cable powered. Prices: LEX-ACC $99.95. LEX-PLP $104.95.

BROADBAND ANTENNAS

TACO (TECHNICAL APPLIANCE CORP.)

Multi-channel 5-element yagis, Y-53 series. 50 to 500 mc with models broad-banded to cover wide ranges within TV and communications spectrum. Especially applicable for multi-channel use for either high or low TV channels. Construction features include 1½" square heliarc welded crossarm with ½" diameter elements reinforced with ⅝" sleeves. Gain at channel 2 is 7 db; at channel 6, 7 db and 7.5 db at channel 13. Three driven elements. Hermetically sealed terminal boxes. 50 ohm impedance.

SINGLE CHANNEL ANTENNAS

SCALA RADIO COMPANY

Manufactures line of high gain, low noise single channel antennas. Provides VSWR of 1.45 to 1 with either 300 ohm balanced termination or 72 ohm coaxial termination. Available with UHF, N or F61 connectors.

Antennas come in 5 and 10 element models and are either anodized aluminum (HDCA Models) or Cadmium plated dichromate steel (Models HDCS). Models include HDCA 5-2, HDCA 10-2 and HDCS 5-2 through HDCA 5-13, HDCA 10-13 and HDCS 5-13.

TACO (TECHNICAL APPLIANCE CORP.)

Y-03 Series. Omnidirectional antennas for channels 2 through 13 (low power transmitters). Ruggedized, 6 element type with 4.5 gain at channel 2, 6 and 13. Antennas are also available for high power (Y-03A).

Screen reflector yagis, SY-41 and SY-42 Series. For single-channel, high band applications. Screen type yagis have high front-to-back ratios and high gain. All models feature heavy-duty welded construction. Will mount easily to tower mounts. SY-41 models consist of a single 4-element yagi on a screen reflector. Yagi elements are ½" aluminum alloy with ⅝" reinforcing sleeves. Reflector is made with 1¼" aluminum frame and ⅜" reflecting rods. SY-42 models have two 4-element yagis on a screen reflector and are supplied with combining lines providing a single coaxial input. (Specify high band channel.)

5-element multi-driven yagis, Y-51 Series. Selection of two or three driven elements enables the design engineer to select narrow or broad band response with impedance, pattern and gain characteristics to obtain highest possible efficiency. 50 to 112 mc. Features narrow bandwidth and sharp patterns. Relatively flat response over the frequency range and sharp drop-off outside the desired band. Standard models to cover each VHF TV channel and the FM band. 8 db gain. Constructed with 1¼" square crossarm and elements of ⅝" diameter with ¾" reinforcing sleeves. Hermetically sealed terminal boxes. 50 ohm impedance.

5-element multi-driven ruggedized, yagis, Y-54 Series. 30 to 88 mc. This series is more ruggedly constructed than Y-51, to provide additional strength required in areas subject to exceptionally high winds and very heavy ice loading. Crossarms are 2" square and elements are ¾" diameter with ⅞" reinforcing sleeves. Hermetically sealed terminal boxes 8 db gain. 50 ohm impedance.

8-element multi-driven yagis, Y-81 Series. 50-66 mc. Two models available with standard ruggedized yagi construction. Three driven elements. 10 db gain at channel 2. Heliarc welded crossarm is 1¼" in diameter. ⅝" elements are reinforced with ⅞" sleeves. Hermetically sealed terminal boxes. 50 ohm impedance.

Triple-driven dipoles Y-101 Series. 8 and 10 element low-band yagis. Three driven elements. Same construction features as Y-81 series. 11.2 db gain at channel 6. Available for 66-88 mc. 50 ohm impedance.

10-element high-band yagis, Y-102 Series. Utilizes two or three driven elements. Same ruggedized construction as above. 112-163 mc. 50 ohm impedance.

10-element high-band yagis, Y-103 Series. Two driven elements. For television channels 7-13.

Provides 12 db gain at channel 13. Construction same as preceding listings. 50 ohm impedance.

ANTENNAS — FM

TACO (TECHNICAL APPLIANCE CORP.)

Ruggedized yagi for FM. Model Y104 Series. 10-element low-band multi-driven yagi also used for communications and special purposes. Ruggedized design features heliarc welding, square crossarms,

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CATV owners, operators and investors have expressed their urgent desire for a non-broadcast oriented medium which reports objectively and in full on matters affecting cable television. CABLE TELEVISION REVIEW has been specifically designed by the experienced editorial staff of TV & Communications to fully meet this pressing need. Whether you are an established cable television operator, a potential investor, broadcaster or equipment supplier, you need the weekly CABLE TELEVISION REVIEW to be well informed and fully advised on every aspect of CATV. Your satisfaction is unconditionally guaranteed. Subscribe now by simply returning the convenient order card located at the lower right hand side of this page.

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hermetically sealed terminal boxes. Available for frequencies from 43-88 mc. 50 ohm impedance.

ANTENNAS — UHF

SCALA RADIO COMPANY

Model PR-450. "Paraflector" is a parabolic type receiving antenna for 350 to 1000 mc. Features high gain, horizontal polarization, with termination of 72 or 52 ohms. Size is 36" x 67" and connectors are N type. Write for price.

TACO (TECHNICAL APPLIANCE CORP.)

UHF screen antennas, SB-Series. Designed to withstand the most adverse weather conditions. Used for off-air reception for community or MATV systems. In MATV not incorporating electronic amplification, the very high gain of these antennas makes possible signal distribution through dividing networks with satisfactory results. Units are ruggedly constructed, factory assembled, ready-to-install. When 75 ohm coaxial input is desired, order SB-304B tapered line balun. Model SB-16 consists of 16 bow-tie elements on 39" x 66" screen. SB-32 has 32 bow-tie elements on 7" x 66" screen. SB-64 has 64 bow-tie elements on 78" x 132" screen. SB-16 series provides gain of 17 db, SB-32 gain is 20 db, and SB-64 provides gain of 23 db. All three series are for television channels 14-83 (specify channel when ordering). 300 ohm impedance.

MICROWAVE ANTENNAS

GABRIEL ELECTRONICS

Manufactures a complete line of parabolic antennas for microwave communications systems. Selection includes plane and dual polarized, dual frequency, split transportable and high performance antennas. Contact Gabriel, 1073 Main Street, Millis, Massachusetts.

TACO (TECHNICAL APPLIANCE CORP.)

2500-2700 mc ETV Antenna. New lightweight microwave antenna for educational television in Instructional Television Fixed Service. Available in 2, 4, 6, 8 and 10 feet diameters parabolic antenna design produces gain, relative to linear

isotropic radiator, of 21 through 35 db. Total weight, including mount, is less than 50 lbs. Withstands winds to 100 m.p.h. Cast dipole element requires no guying. Provisions are made for installing the feed for either verticle or horizontal linear polarization. Models EPA-2, EPA-4, EPA-6, EPA-8, and EPA-10.

ANTENNA ACCESSORIES

TACO (TECHNICAL APPLIANCE CORP.)

Antenna mounts. A series of antenna mounts for all types of Taco spun and mesh reflectors is available. The series includes: pipe mounts for standard service; heavy-duty pipe mounts for areas with severe wind loading; roof mounts of the three point type with adjustment of plus or minus 5 degrees; tilt mounts for sloping roofs or where an antenna cannot be located directly below a passive reflector; special mounts for specific requirements. Write for additional details.

Anti-icing equipment. Radomes for all size dishes are available for applications where antenna must perform under adverse conditions. Heater units are available to prevent the accumulation of ice and snow on the radome-dish assembly. Individual heaters are available also to heat the dish and feed units where the use of a radome is not desired.

Ruggedized yagi antenna accessories. Write for complete catalog.

MICROFLECT COMPANY

Complete line of towers. Includes round and roof mounted self-supporting towers; range up to 150'. Write for price.

FITTINGS

COMMUNICATIONS DYNAMIC CORP.

Manufactures a complete line of connectors for all air and foam dielectric coaxial cables. Selection includes N male and female, Splice, EIA, UHF male and female, LC male and female, End Seal, HN male and female, TNC male and female, and C male and female.

Contact the manufacturer (289 Nepperhan Avenue, Yonkers, New York) for catalog listing and prices.

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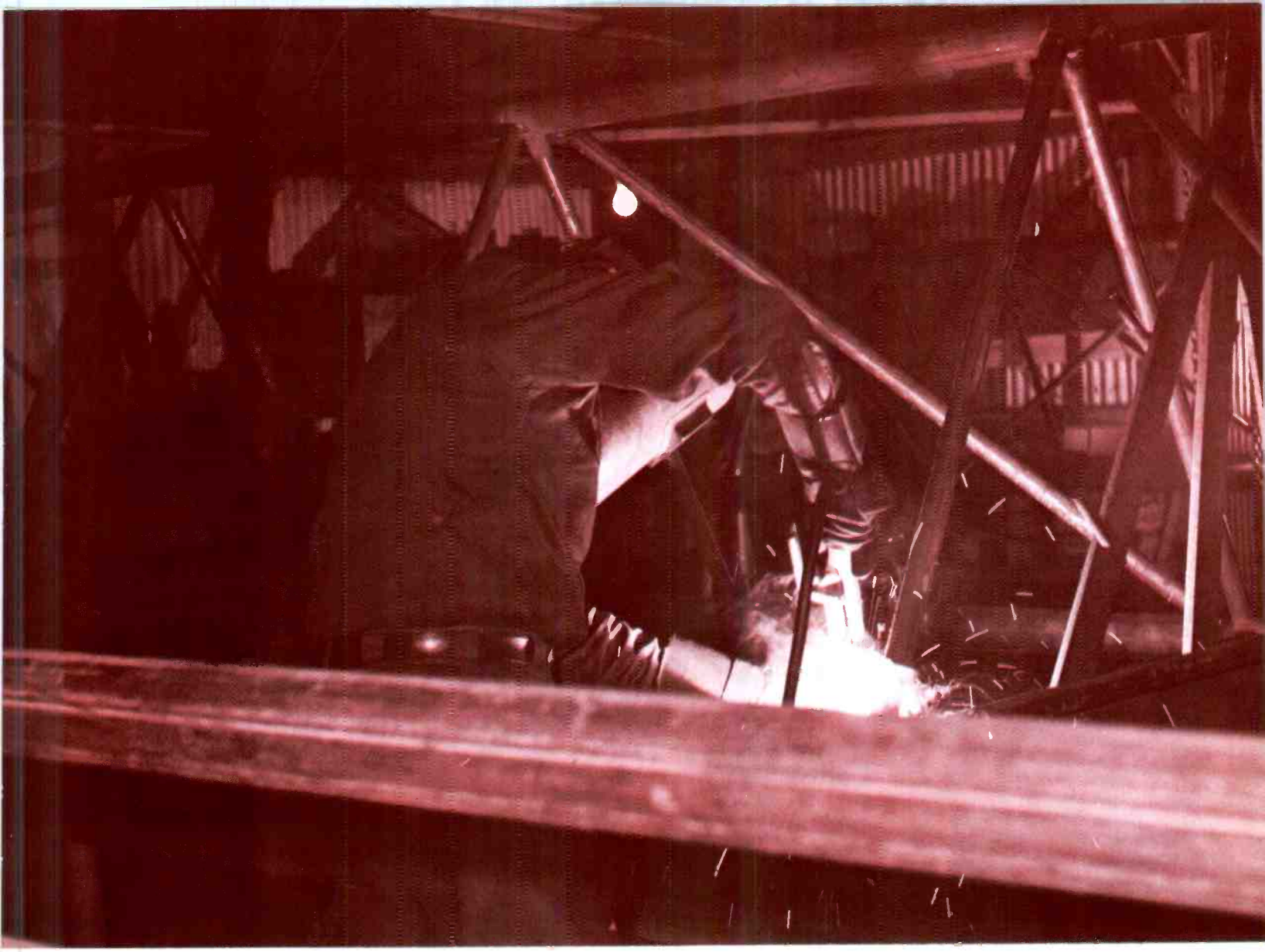

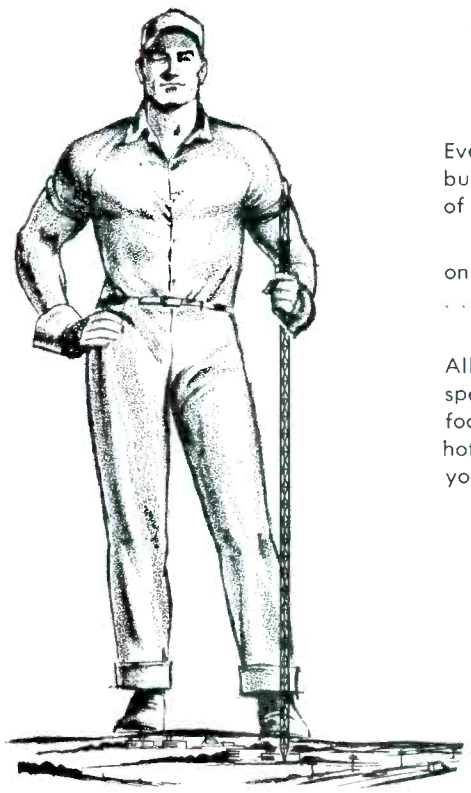

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Utility Towers are available in several designs to meet diversified requirements. All have Quality Certified engineering and workmanship and always meet or exceed EIA specifications. In the seven standard models, round members are welded together in 20-foot sections except for top section which is made to your measurement. Your choice of hot dip galvanized or rust-inhibitive primer finish. Call us for a complete quotation on your next CATV, microwave or other tower requirement.

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LETTERS

Dear Sirs:

In discovering the existence of your magazine from another cablevision company, we were impressed by the terrific amount of helpful information contained in some of the back issues. Hence, if it is possible may we request that you send us as many back issues as possible covering the past year?

Bill Wolfe, Director
Valley TeleVue, Limited
Chilliwack, B.C.

• *Issues covering the past nine months have been mailed to you. Thanks for your compliments.*

Dear Mr. Searle:

We have been looking at some of the cover pictures of towers which you have been running recently. We are not impressed by these piddly little towers.

Our CATV system at Weyburn has a 970' tower, which we consider to be the tallest ever built strictly for TV reception purposes. The tower carries a 10' UHF dish, parametric amplifier, and yagi arrays for four other channels.

There are other antenna "marvels" to be found in the CATV industry in Canada. In Eastern Canada there are at least three very large "tropo-scatter" type antennas built for CATV purposes. These measure 270' wide by about 70' high.

One of the Canadian "Scatter antennas" is at Guelph, quite close to our convention meeting at Toronto, and I believe that one afternoon of the Canadian convention is being set aside for field trip to Guelph to inspect this antenna. Why don't you try to attend the convention of the National Community Antenna Television Association of Canada, at the King Edward Hotel in Toronto in mid-May.

Co-Ax Television, Ltd.
Estevan, Saskatchewan

• *We look forward to attending your NCTA meeting and are interested in visiting the system at Guelph. . . . . .*

Dear Stan:

Just a note to commend you for your editorial in March, 1965 issue (comparing TV services with newspaper services). I hope your editorial gets wide circulation, and reaches the ears of some whom I hope will give it thought.

Congratulations on your outstanding CATV publication and the best of luck on your new "Cable Television Review."

Charlie Clements
Sec'y, NCTA,
Consulting Engineer
Waterville, Washington

Dear Stan:

TV & Communications looks just great. I think the cover is excellent and the typography inside looks much improved. You're on the right track—keep up the good work!

George Runge
Collins Radio Co.
Dallas, Texas

Gentlemen:

I am contemplating a CATV cable operation in our area soon and would appreciate a sample of "TV & Communications." Please state subscriber's cost per year.

Morton M. Arones
William-Morton Co.
Fayetteville, N.Y.

• *Delighted to have new cable operators. Subscriptions are $5 per year.*

Dear Stan:

We will be watching its (Cable Television Review) development with great interest, and wish you all success.

Samuel J. Henry
Samuel Henry & Associates
Phoenix, Arizona

Gentlemen:

I am enclosing a completed subscription order for *Cable Television Review* from our Vice President & General Manager, Joe M. Baisch.

We have checked the thirteen week trial offer section of the subscription form. This subscription is given to you on the condition that, in the event we find this service satisfactory, that we can apply the $15.00 against the $50.00 for the one-year subscription.

Charles Paul
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WREX-TV
Rockford, Illinois

• *Your assumption is correct. The $15 trial subscription to CABLE TELEVISION REVIEW will be applied to a full year's subscription on request. Thank you for your support. We will attempt to fulfill your needs through our weekly news service.*

Gentlemen:

From time to time we read an interesting article that we would like to pass among our customers and friends, such as the one you ran in October *TV & COMMUNICATIONS* about "CATV, A Success in Sedona."

May we have your permission to reprint this article, provided that proper credit is given to your publication?

Cordially,
Dick Hyde, Pres.
Hyde Electronics Co., Inc.
Denver, Colo.

• *Dick, you are certainly welcome to reprint the Sedona CATV article. Thanks for your interest in TV & COMMUNICATIONS.*

Gentlemen:

I am a student at the University of Georgia's Henry W. Grady School of Journalism and am doing research on Community Antenna Television. Please send me any material you might have concerning CATV. . . .

Sincerely,
Donald G. Nichols

• *Donald, your best source of information on community antenna television is the National Community Television Association. The NCTA manual entitled "The Facts About CATV" should be very helpful to you in your research.*

We suggest that you write to Don Anderssen at NCTA, 535 Transportation Building, Washington 6, D.C.

Gentlemen:

In the Sept. 1964 issue of your magazine you refer to a book entitled, "The Facts About Community Antenna Television." You suggest that if we wish to order this book that we contact Don Andersson, NCTA Director of Information. Can you please give us a more complete address so that we may order a copy of this book. . . .

M. A. Roberts
Del Mar, Calif.

• *Address of NCTA is 535 Transportation Bldg., Washington, D.C.*

SPECTRUM

call upon the National Community Television Association for testimony and indications are that NCTA staff has begun preparations for the appearance. Although identical bills were introduced in both houses on February 4, 1965, the Senate has not yet scheduled hearings.

ENTRON, INC. HOSTS CATV SCHOOL

Entron's first three-day course in CATV system maintenance was conducted in January by *Heinz Blum*, Vice President, Engineering, for the community TV equipment manufacturing company.

Students from New York, New Jersey, Illinois, Minnesota, Tennessee, Alabama, Mississippi, North Carolina, New Mexico and Pennsylvania participated in the course which included instruction in all phases of installation, operation and maintenance of Entron CATV systems.

The welcoming address to the group was given by *Ed Whitney*, Entron's vice president. *Irving Kuzminsky*, the company's director of advanced engineering, discussed head-end equipment

and alignment. Other topics covered by Entron's staff included theory; maintenance of various units; systems layout, extensions and practices.

President of Entron, *Robert J. McGeehan*, awarded the students Certificates of Achievement at a dinner held in their honor.

UNREST IN AMST

Several members of the Association of Maximum Service Telecasters have registered dissatisfaction with the AMST position relative to CATV. Roger W. Cliff, Triangle Publications, Inc. was quoted following the NAB Convention as calling the association's hard line on CATV "precipitous and ill-founded."

The group met during the NAB Convention and gave a vote of confidence to its officers and directors, especially with regard to their petitioning of the FCC for strict legislation and containment of CATV. Other members of AMST reportedly dissatisfied with the association's official position on the matter are Newhouse Broadcasting Corp., Cosmos Broadcasting Corp. (formerly Broadcasting Co. of the South), and Cox Broadcasting. These firms, as well as Triangel, hold CATV interests.

COURT UPHOLDS CATV DECISION

On April 1, the Florida District Court of Appeals for the 1st District affirmed a lower court ruling in favor of Florida Antennavision, Inc. of Panama City, Fla. Plaintiff in the case was station WJHG-TV, channel 7, Panama City. The Circuit Court for the 14th Judicial Circuit had previously found in favor of Florida Antennavision, a cable system owned by Bruce Merrill of Phoenix. The case parallels the landmark KLIX case in Idaho.

HARRIS TO ADDRESS NCTA

Guest speaker for the Monday luncheon at this year's NCTA National Convention will be Rep. Oren Harris. The announcement was made by Bill Daniels, convention chairman. The Convention will be held on July 18-23 at the Denver Hilton Hotel. □

PRODUCT REVIEW

NEW ENTRON EXTENDER AMPLIFIER

A new transistorized extender amplifier, Model E-2, is being offered by Entron, Inc. The new unit is designed for use as a high gain, high output extender in CATV distribution lines. Its strand mounting feature and weatherproof design permits installation at any point where the signal level requires amplification according to Ed Whitney, Vice President, Entron.

The E-2 uses silicon semiconductors and is powered through the coaxial cable by 60 V., 60 cycles from an Entron remote transformer of the RPT series.

The Model E-2 accepts remote power from either the input terminal or from the output terminal and will also feed remote power straight through.

For further information contact Mr. Heinz Blum at **Entron, Inc., Silver Spring, Maryland.**

VIKING REMOTE POWER SUPPLY

Recently introduced by Viking Electronics, the No. 949 Remote Power Supply is specifically designed to duplex 12 vac on the same coaxial cable which carries the amplified signal. According to Viking, this simplifies the installation,

since a safe low voltage is furnished to the amplifier while the Viking Remote Power Supply can be installed at any convenient location. A multi-position switch calibrated in 25 foot steps of RG-59/U adjusts the voltage for cable lengths up to 100 feet.

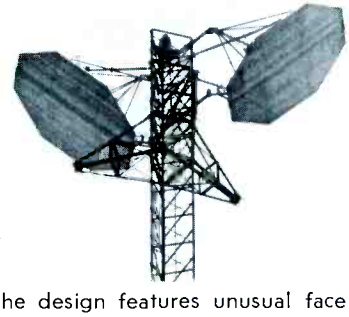
The 949 is said to provide a combination of a highly reliable channel amplifier with its two frame-grid tubes, ultra low-noise circuits, high gain, freedom from interfering signals and overload for supplying snow-free signals in fringe communities.

For further details, contact Paul Switzer, **Viking Electronics, 830 Monroe Street, Hoboken, New Jersey.**

MICROWAVE REFLECTOR

Advance Industries have completed design of a new Microwave Passive Reflector said to be the "most advanced reflector in the industry."

According to the research department of Advance Industries, this reflector incorporates vertical and azimuth adjusting features and gives special attention to the problems of member fatigue due to vibration.



The design features unusual face flatness. It has rigidity for 12,000 megacycle systems and will withstand heavy wind and ice loads.

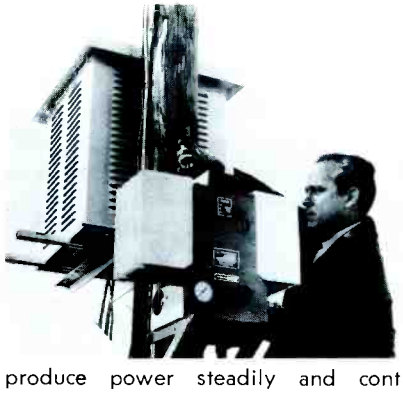
The reflector is "stiff-arm stablized" (one stiff arm stabilizer on the 4 x 6 foot and 6 x 8 foot models, two stiff arm stabilizers on the 8 x 12 foot, 10 x 15 foot, and 12 x 17 foot reflectors; one stiff arm contains vernier screw adjusting assemblies for azimuth adjustment). Adjustment for parabolic face curvature is also included. The entire reflector face is fabricated from extruded aluminum panels.

Advance Industries is offering a complete manual describing the various features of passive reflectors, their assembly, adjustment and other important information. The booklet is available free from **Advance Industries, 705 Douglas Street, Sioux City, Iowa.**

THERMOELECTRIC POWER PLANT

A new all-weather thermoelectric generator—an automatic power plant that operates unattended in snow, heat, rain or wind storms, and provides a continuous flow of electricity from the flameless combustion of propane gas—has been developed for commercial production by the General Instrument Corporation Thermoelectric Division.

According to General Instrument, the new generators—which convert the heat of the "burning" propane gas directly into electricity—will operate for a full year on only 150 gallons of propane gas, at a fuel cost of approximately $40 and, completely unattended, will



produce power steadily and continuously as long as the fuel supply lasts. The generators are available in a range of power outputs from 6 to 50 watts and are priced from $490 to $1,550.

Ruggedized to withstand weather conditions, the new thermoelectric generator will operate at temperatures as low as 30 degrees below zero F. and as high as 120 degrees F. It takes up only 1.5 cubic feet of space (it is 16 inches high, 19 inches wide and 10 inches deep).

For additional information on this remote area power supply contact George Fox, **General Instrument Corporation, Thermoelectric Division, 65 Gouverneur Street, Newark, New Jersey.**

CLOSED-CIRCUIT TV STATION BY DU MONT

A complete closed-circuit television camera system described as smaller than a shoe box and employing fully transistorized circuitry is announced by **Du Mont Laboratories, divisions of Fairchild Camera and Instrument Corp., 750 Bloomfield Ave., Clifton, New Jersey.** It is termed the TC-175.

The camera has its own regulated power supply in a lightweight package that is ruggedized against environmental shock, vibration, and temperature extremes.

It has horizontal resolution of 700 lines, and high signal-to-noise ratio. Useful pictures can be obtained with scene illuminations as low as 1 foot. The camera system may be fed directly to

CALENDAR

May 19-21—**Texas CATV Association** annual meeting will be held in Dallas Marriott Motor Hotel, Dallas, Texas.

July 18-23—**National Community Television Association** annual meeting. Denver Hilton Hotel is site of 1965 NCTA convention in Denver, Colorado. (1966 convention is scheduled for June 26-30 in Bal Harbour, Florida.)

CLASSIFIED SECTION

Rate for classifieds is $1.00 per line or fraction thereof for advertising which, in our opinion, is obviously of a non-commercial nature. A charge of $30.00 per column inch (2¼" col.) is made to all commercial advertisers. Deadline for receipt of copy, 1st of preceding month.

a conventional TV receiver. An additional output provides for inter-connection with any high resolution monitor. Input power required is 117 volts plus or minus 10%, 60 cps, 10 watts.

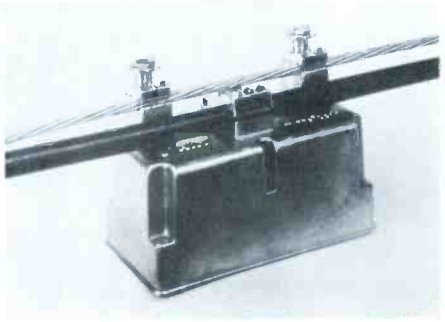
Other features of the TC-175 are external mechanical focus adjustment, automatic light compensation, random interlaced display, printed wire circuits, and beam alignment magnets.

Power switch, neon indicator, electrical focus, beam control, fuse, video output signal connector, RF output connector, as well as mechanical focus are located at the rear of the camera housing.

According to Herman Schkolnick, manager of Du Mont's Electro-Visual Department, the camera will list at $899.00. Write Mr. Schkolnick for more specific details.

"MAVRIC" TAP FROM VIKING

Viking Electronics, 830 Monroe Street, Hoboken, New Jersey has introduced the "Mavric" four-way (534) or two-way (535) pressure tap. The "Mavric" is engineered to provide most rigorous system specifications, by providing 2 or 4 back-matched taps from single line tap. All taps are isolated by over 25 db from each other. The transformer circuitry used is said to assure extremely low line insertion loss and an excellent tap output match. According to the manufacturer, these features guarantee high system quality and sharp black and white or color signals to subscribers.



Installation is "as quick and easy as installing a pressure tap and the cable remains uncut." The "Mavric" is available in a choice of 4 different block sizes and can accommodate both feeder and trunk line, as well as all types of cable. For further information contact the manufacturer.

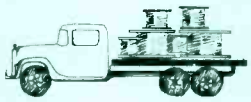
BLONDER-TONGUE ISSUES MATV CATALOG

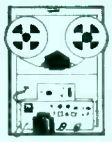
A new catalog of Master Antenna Television products has been released by Blonder-Tongue Laboratories, Inc.

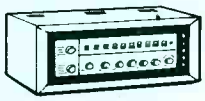
The catalog covers Blonder-Tongue's full line of MATV equipment—amplifiers, converters, housings, attenuators, matching transformers, splitters, mixers, filters, traps and other equipment and accessories—for educational, institutional and industrial use.

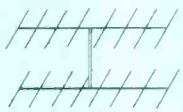
Free copies of the new MATV cataiog are available on request from **Blonder-Tongue Laboratories at 9 Alling Street, Newark, New Jersey 07102.**

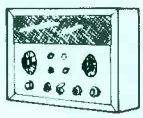
IF YOU NEED . . .

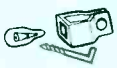
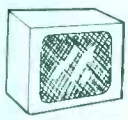
A PLANELOAD OF AMPLIFIERS . . .  . . . A TRUCKLOAD OF CABLE  A CUSTOM HEAD-END . . . 

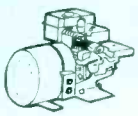
A COMPLETE MUSIC SYSTEM . . .  A POSTHOLE DIGGER, 

HOIST,  CABLE LASHER, TUBE  TESTER, MEASURING WHEEL, . . . STAPLE GUN,  FM TUNER, 

ANTENNA,  SPECIAL CONNECTORS,  TRANSFORMERS, 

AUDIO AMPLIFIERS,  SOLDERING GUNS, 

POLE HARDWARE,  RECORD CHANGERS, SPEAKERS, 

RUGGEDIZED TUBES,  POWER PLANT,  OSCILLOSCOPE, 

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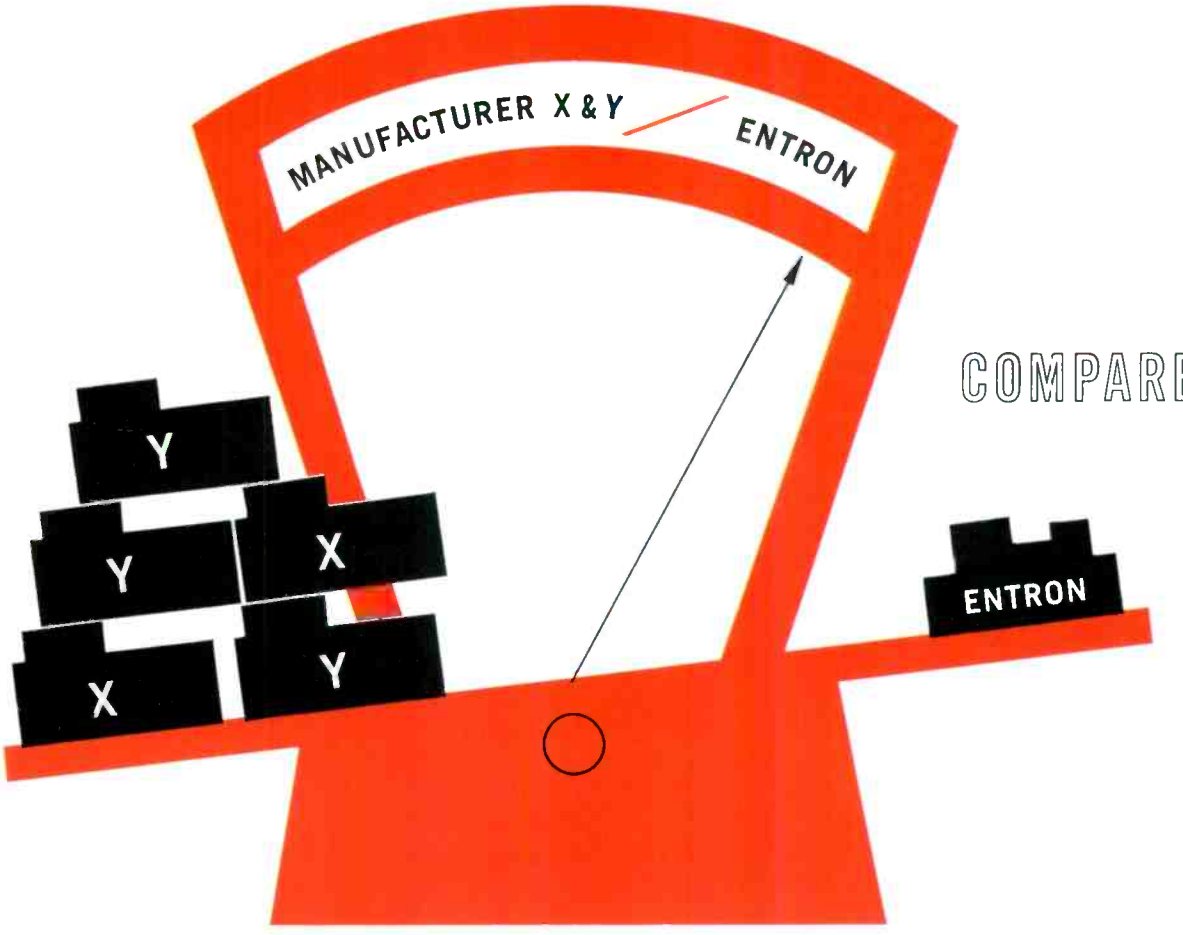

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(from our files of competitive bids)

CASE 1 —A 25 STRAND MILE SYSTEM (½ & 412 ALUMINUM CABLE):

MANUFACTURER X	ENTRON
32 Trunkline/BRIDGING AMPLIFIERS	9 Trunkline Amplifiers
14 Bridging Amplifiers	24 Bridging Amplifiers
82 Line Extenders	17 Solid State Extenders
2 LEVEL CONTROL Amplifiers	0 (none required)
130 total cost $22,000	50 total cost $14,000

CASE 2 —A 30 STRAND MILE SYSTEM (½ & 412 ALUMINUM CABLE):

MANUFACTURER Y	ENTRON
153 units	47 units
$23,500	$13,500

IN EVERY CASE the system owner SAVED MONEY on original equipment. SAVED MONEY—less equipment positions to install. SAVED MONEY—fewer fittings and accessories. SAVED MONEY—fewer units to maintain.

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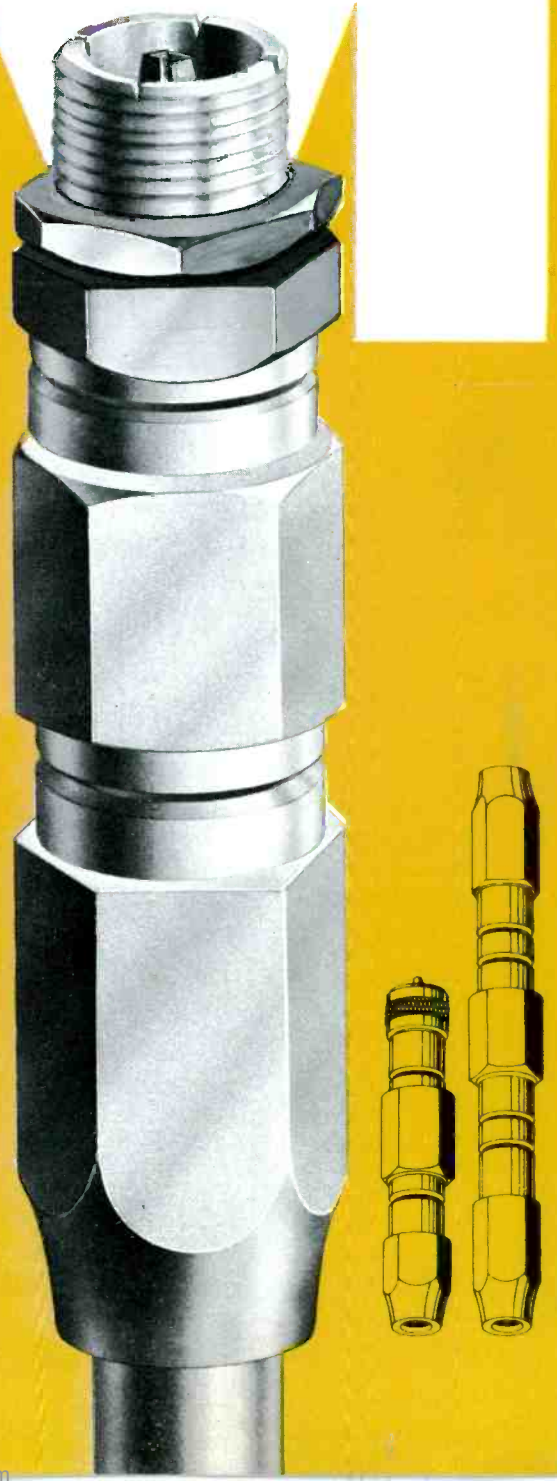

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