

C-ED

C-ED's Tech Review
Pole Climbing

Interview With SCTE's Robert Bilodeau And Judy Baer



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Communications-Engineering Digest

Reporting the Technologies of Broadband Communications

December 1977
Volume 3, No. 12

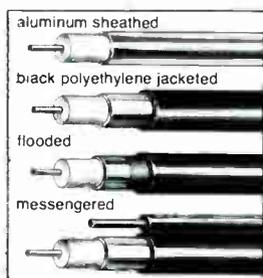
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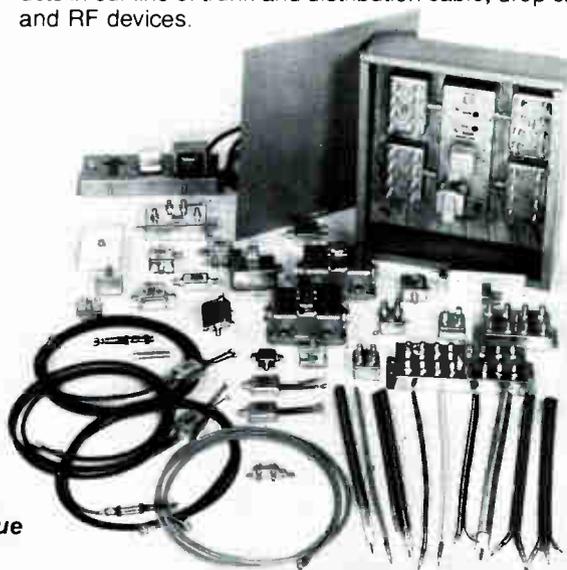


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C-ED News at a Glance

WASHINGTON, D.C.—The **FCC** has **instituted a rulemaking proceeding on "saturated" cable systems** due to the growing problems that have resulted in complying with the FCC's mandatory signal carriage rules. Since most cable systems have a 12-channel capacity and are required to carry all local signals, the commission stated: "as new local stations become operational, cable systems are faced with the problem of which signals to carry and which to delete."

To avoid burdening the cable industry with the heavy capital outlay needed for mandatory rebuilding, the commission asked for alternatives to the problem. See *C-ED* page 20.

WASHINGTON, D.C.—The **FCC** has **released a new quarterly publication called "Aeronautical Frequency Assignments Near Cable Television Carrier Frequencies" to assist cable operators** in determining whether they are interfering with the aeronautical radio services, as required by a change in the rules to become effective January 1, 1979.

The rules prohibit cable operators from using certain frequencies in use by aeronautical radio stations in the vicinity of the cable system. See *C-ED* page 22.

SAN DIEGO, CA—At a meeting during the Western Show, the **NCTA board of directors were briefed on President Carter's proposals for public broadcasting.** The board met with two White House aides, Richard Neustadt, assistant director of the Domestic Policy staff and Robert Sachs, consultant to the office of Telecommunications Policy. The aides informed the board on President Carter's goal to make publicly funded programming available to the widest audience. See *C-ED* page 22.

SAN DIEGO, CA—**Senator Ernest F. Hollings told the Friday luncheon crowd at the Western Show "the Senate subcommittee plans to move next year towards a major legislative initiative on cable television.**

"For better or worse," he stated, "**the days of Congressional neglect are over.**" According to the chairman of the Senate Communications subcommittee, their goals in the cable area include encouraging cable to experiment by dropping "needless bureaucratic restraints. In developing a regulatory framework," he added, "the differences between large and small markets must be recognized."



Senator Ernest F. Hollings

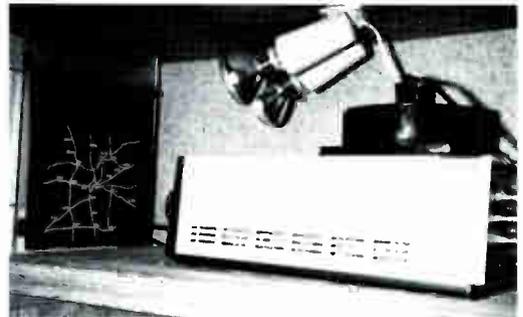
WASHINGTON, D.C.—**Representatives of the FCC's Common Carrier bureau have told cable industry officials that by Feb. 1, 1978 they hope to be able to process earth station applications in 45 to 60 days.**



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Cover: This scenic view of San Diego indicates the Western Show emphasis of this month's issue of *C-ED*.

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Editor's Letter

Year's end, and with it comes an exclusive *C-ED* interview with SCTE president Bob Bilodeau and society executive director Judy Baer. We asked them to bring the industry up-to-date on SCTE activities. You'll find the SCTE has undergone remarkable growth over the past year. And we think you'll be excited when you read about SCTE plans for next year. So turn to page 24 for our main feature.

We also have an interesting story this time around from Technical Editor Ron Cotten . . . on pole climbing. You can find Ron's article starting on page 14. And there's more . . . like *C-ED*'s Tech Review, which starts on page 29. This is particularly timely, because with the Western Show just behind us, we were able to bring you the latest developments. Also, we should point out there's a post-convention wrap-up in the "News" section . . . just in case you didn't make it to San Diego.

Next month *C-ED* will bring you a timely story on earth station construction permit applications. Just what's involved . . . how long do they take . . . why the delays . . . and what's being done to alleviate the mammoth backlog at the Federal Communications Commission. With satellite technology spilling into hundreds of systems around the country, we think you'll like this piece.

From all of us at Titsch Publishing—which now includes New York Bureau Chief Barbara Ruger, who joins us from Communications Publishing Corp. where she was editor of *Vue* and *TVC* magazines—we wish each and everyone happy holidays. We'll see you next year.

Paul A. FitzPatrick

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Earth Station Technology Seminar, January 16-18, 1978, Kansas City, Kansas

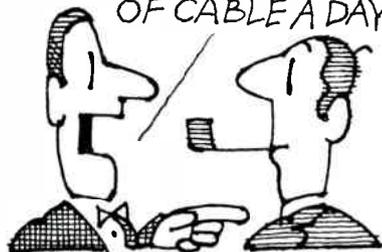
*Patent Nos. 3,611,168 - 3,346,815 - 3,346,814.

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Blue Skies - nothing but Blue Skies. Some of you recognize the words and can hum the tune. It's CATV's rendition of the current nostalgia theme of the movies and Broadway. The Blue Sky physche of the late sixties has reappeared. A legal description of this phenomenon might be Blue Skies Revisited or Reality Eclipsed.

I recently attended the Van Deerlin Congressional Subcommittee hearings and the BCCE Broadcast Symposium and shuffled between technical portions of each. The Symposium had some good papers (without portfolio) on cable-related subjects that drew my attention-but scant attention of an otherwise record Symposium registration. Between papers I sat in on the Congressional Subcommittee hearings to visit my "money" in Washington.

The Subcommittee staff had structured the cable hearings by subject matter: Federal, state, and local relationships in the Regulatory Role; CATV Industry Structure; etc. It was often difficult to relate the testimony of the witnesses and the dialogue of committee members and staff to the indicated subject matter. I guess that's S.O.P. for committees in general.

The most disconcerting aspect of the hearings, to me, was the repeated references to the "advanced state of CATV technology" by such cavalier statements as "unlimited channel capacities," "nationwide broadband communication system," "sixty channels plus in the open market." etc. - ad stratusfereum. Certain regulators even offered as to how the "hardware had outstripped the software" and that the control element in CATV's future was available product (presumably to catch up with the hardware). I keep myself modestly well informed on industry technology, but I must have missed the press releases on the "advanced, unlimited, broadband, wired nation. capacity defying features." Perhaps CATV manufacturers should adopt a new specification: (MEETS ALL CURRENT AND PROPOSED IVORY TOWER REQUIREMENTS FOR BANDWIDTH, PERFORMANCE, COST EFFECTIVENESS AND ABILITY TO KEEP AHEAD OF SOFTWARE).

The Blue Sky Disease (BSD) has plagued our industry in the past and has infected it in a way that still brings occasional tremors.

One of our erstwhile peers, Leonard

Goldenson (ABC) said recently at a broadcast industry function: "It is very easy to be seduced by the promise of technology and to forget the basic nature of communications equipment." I agree and add, we shouldn't fall victim to our own propaganda. More importantly, law makers and policy makers should be continually advised on what is smoke and what is fire.

The unlimited channel capacity proponents want three or four cable channels for anyone who needs one - or who is thought to need one! The relaxation by the FCC of the Channel Capacity and Access requirements was the result of a return from an earlier flight of fantasy to the technical reality of the earth-based (but not always grounded) cable plant. But, there are still those who want to wind up our rubber band again for another flight. We should counsel them on the limitations of Rubber Band Power (RBP).

To some extent they can be excused by the ubiquitous state of such glorious terms as lasers, earth stations, satellites, and home entertainment centers. There are genuine advances in the entire communications arena, and some are mere improvements on existing techniques. Surely we want to guide the application of these advances along reasonable courses. The perceived danger I'm citing is that laws and regulatory requirements can evolve from technology that has yet to be developed. In fiber optics, for example, the transporting of an analog TV channel involves techniques that are either crude and semi-effective or sophisticated and cost ineffective with respect to unlimited channel capacity. Yes, it's technically possible to send Aunt Matilda's Cooking Hour from Nashua, N.H. to the folks in Evening Shade, Arkansas; but who needs it?



Robert Bilodeau, President

Western Show Report

SAN DIEGO, CA—SCTE hosted sessions during the Western Cable Television Convention in San Diego, November 9-11, at the Town and Country Hotel. On Friday afternoon, SCTE scheduled Harold Null of Storer Cable and Dave Fitzpatrick of Cox Cable on OSHA and Safety. Tom Olson of TOMCO programmed a session on Terrestrial Microwave that included speakers from Microwave Associates and Farinon.

SCTE Introduces 1978 Program Plans During Western CATV Show

SAN DIEGO, CA—The SCTE introduced its 1978 program plans and membership campaign during the Western Cable Television Convention at the Town & Country Hotel in San Diego. The program is designed to increase SCTE's visibility in the CATV industry, build membership and improve and increase SCTE member services. It has been developed to provide better communications within the CATV industry and to heighten operation management's awareness of engineering and technical quality. Throughout the year, SCTE will remind management that better engineering will mean better revenues.

SCTE will introduce a complete program on Safety and OSHA designed for the CATV industry in January. The program will be available through a subscription series and includes training aids and lesson plans, along with text, quizzes, important information from the OSHA Act and is a compilation of programs used by CATV operating companies, NCTA programs, and other inputs. Designed and prepared by professional teachers, it will be easy to use and SCTE is expecting a substantial impact on the industry as a result.

Additional plans for 1978 include publication of the first SCTE Annual Report and Membership Directory; redesign of SCTE's newsletter, THE INTERVAL; new committee efforts for SCTE Senior Members; development of a CATV engineering program in conjunction with George Washington University in Washington, D.C.; celebration of SCTE's tenth anniversary; recognition of SCTE Charter Members; development of increased technical communication and presentation of more "hands-on"

technical programming at CATV industry state and regional association meetings. SCTE will host the Third Annual Conference on CATV Reliability in early 1978 and will continue to sponsor programs in cooperation with the Community Antenna Television Association and the National Cable Television Association.

SCTE Announces 1978 Nominating Committee

SAN DIEGO, CA—Robert Bilodeau, president of the Society of Cable Television Engineers, announced the appointment of the SCTE 1978 Nominating Committee during the Western Cable Television Convention. The committee will develop a slate of officers and directors to serve during SCTE's tenth year and will direct the group's election process.

Members of the 1978 SCTE Nominating Committee are Richard Covell, GTE Sylvania; Robert Dickinson, E-Com; James Emerson, Northern CATV Distributors; James Grabenstein, Potomac Valley TV Cable; Ralph Haimowitz, Indian River Cablevision; Richard Hickman, Cox Cable; Earl Quam, Brookhaven Cable TV; and Judith Scharf, TCI.

SCTE has more than 1,100 members who are engineers, technicians and managers in the cable television industry. The organization has doubled its membership in less than six months and is currently the largest membership group in the CATV industry. In order to better serve its growing membership, SCTE is currently revising its By-laws to expand the size of the board of directors to include eight regional and four at-large directors. Structured with nearly thirty chapters across the United States and Canada, this proposed expansion will provide better communications and increased member involvement in SCTE's activities.

UA—Columbia Takes SCTE Over 1,100 Member Mark

WASHINGTON, D.C.—UA-Columbia Cablevision in San Angelo, Texas has taken the Society of Cable Television Engineers and its membership to more than 1,100 CATV industry engineers and technicians. The milestone event is the result of correspondence directed to SCTE's Washington office from G.C.

Kleykamp, UACC director of engineering, requesting that the company be billed directly for dues for thirty UACC engineers and technicians.

"Membership in professional societies and industry groups has been sponsored by UA-Columbia Cablevision since long before the founding of SCTE," says Kleykamp. "We are enclosing a list of those engineers and technicians for whose membership you may invoice this office," he concluded. UA-Columbia was the first CATV operating company to join SCTE as a Sustaining Member and has provided much support toward the group's growth.

GE Cablevision Tech is SCTE Number 1,000 Member

BILOXI, MS—S. Cratin Gautreaux, a technician with the GE Cablevision system in Hattiesburg, Mississippi is the 1,000th member to join SCTE. Gautreaux joined SCTE during the twenty-third annual meeting of the Mississippi Cable Television Association at the Broadwater Beach Hotel in Biloxi.

Also during the meeting, Travis Nabors of Columbus TV Cable in Columbus, Mississippi, enrolled three technical employees from that company as new SCTE members and announced that effective immediately, Columbus TV Cable would support membership in the Society for a total of six technical personnel. Robert Luff, NCTA's vice president of engineering was number 999 as he submitted his application and paid his dues in cash.

Nearly 100 Teleprompter Engineers And Techs Join SCTE

WASHINGTON, D.C.—The SCTE has received a request from Paul Inghram, director of engineering operations at Teleprompter Corporation, to invoice the company directly for enrollment of nearly 100 Teleprompter engineers and technicians across the United States. More than eighty new members will be added to SCTE's roster.

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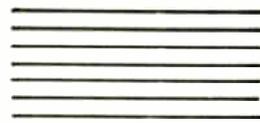
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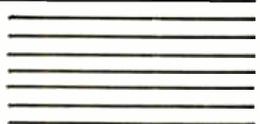
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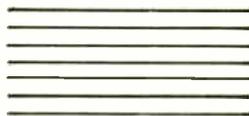
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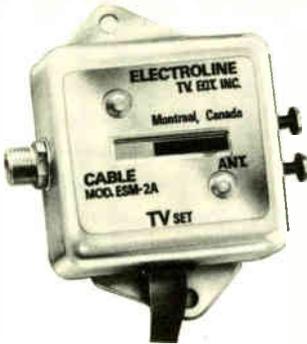
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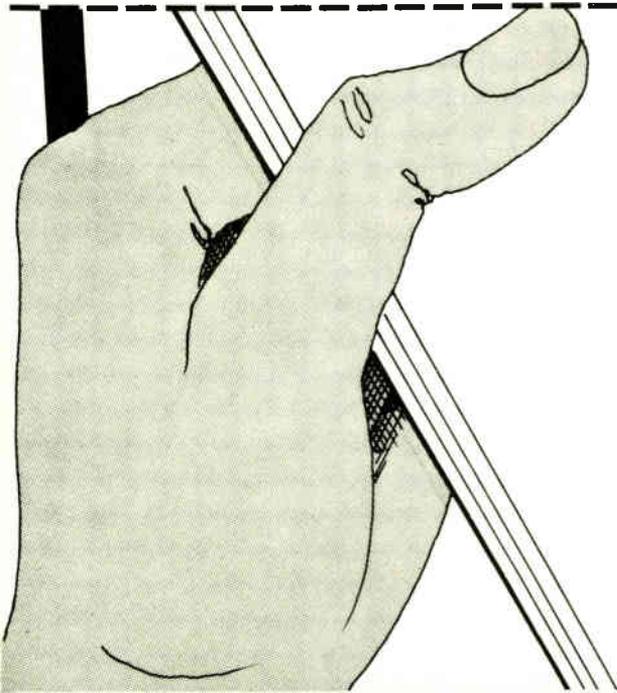
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Or How Not To Kill Yourself In Five Easy Steps

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The cable industry, like other utility-type industries, is an outdoor, action-oriented business. While most of us working on the operational side of the business enjoy this type of working environment, few of us seem to recognize the inherent dangers involved in poleline work—that is, until we burn a pole or receive a serious electrical shock for the first time. Then all of a sudden the whole issue of safety comes into focus, usually while picking at splinters or recovering in a hospital. It is important, particularly for people working in the field on a day-to-day basis, to realize that there is a constant danger of serious injury or even death inherent in poleline work. While this message has been given a lot of coverage in trade periodicals from time to time and is stressed by some companies, it is amazing how many people in the cable industry have not mastered the fundamental skill of climbing poles.

The trend today is away from working off of hooks and belt and toward the use of lift trucks. There are good reasons for this: safety, increased production, the use of increasingly expensive test equipment,

and the fact that most people don't like to climb. There are times, however, when a lift truck is simply not available for any number of reasons: mechanical trouble, scheduling, problems, etc. The cable business is a service industry—virtually everyone involved in field work must climb at one time or another to provide that service. Accidents are usually due to inexperience or because of improperly installed cable, telephone, or power facilities. Serious accidents can be prevented by learning and practicing the proper climbing techniques, having the proper equipment, and maintaining adequate clearances.

Equipment

1. Boots

The right kind of boot is important if you spend a significant amount of time on a pole. Lineman boots are recommended. They are designed to have a fairly high instep to give room for the climbers and have steel arch supports to keep the feet from hurting. The high top gives ankle support and prevents chaffing of the legs. Lineman's boots also function well as a rugged, general purpose work boot.

2. Body Belt

Body belts come in several different styles, most of which are functional. Fit and comfort are important criteria when choosing one. The important thing to remember is that the body belt does not fit tightly. When on a pole, the belt should be worn low, functioning almost like a "seat" rather than like a belt around the waist. The "D" rings should fit so that the pull of the safety strap is comfortable. Usually, they are located near the back of the hips. Tool loops, tool holster, and parts pouch should be selected to suit the individual preferences of the user.

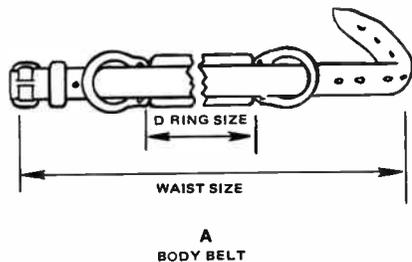


Figure 1



Figure 2: Position of the safety strap when not in use

3. Safety Strap

The safety strap provides support while working on the pole. The length of the strap should be such that on an average pole (35'), the user can lean back into the strap, away from the pole by about an arm's length, and work comfortably. Approximately 12 inches to 18 inches of extra length should be available in the strap to allow lengthening when climbing large diameter poles.

For a righthanded person, the strap, when not in use, is carried attached to the left "D" ring with the buckle end of the strap attached by the snap to the back side of the "D" ring. Lefthanded persons



Figure 3: Position of the safety strap when in use

simply reverse sides. The snaps jaws should face outwards.

The end of the strap without the buckle is attached to the front of the same D ring with the jaws of the snap facing inward. This arrangement makes the handling of the safety strap easier while on the pole (see Figure 2).

When in use, the front snap is removed from the left D ring, passed around the pole, and snapped into the right D ring with the jaws facing outward (see Figure 3).

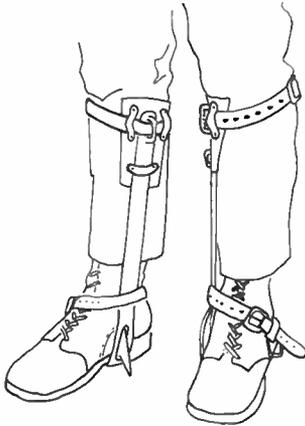


Figure 4: Climbers properly worn

Always look to see that the safety strap snaps are properly attached to the D rings before leaning into the strap after belting off. People have been killed or seriously injured by belting off to a pair of pliers or some other object in a tool loop instead of the D ring.

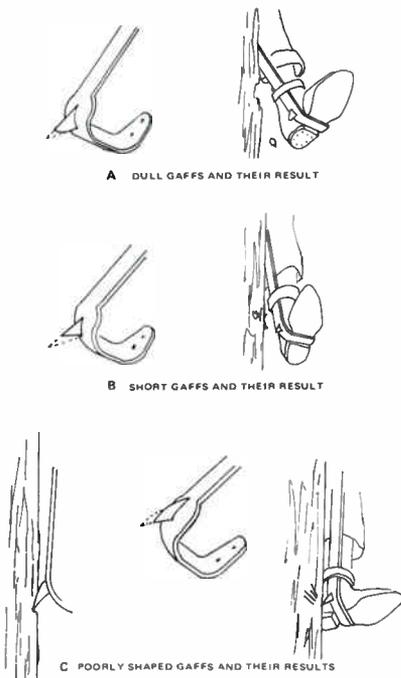


Figure 5: Always check your gaffs

4. Climbers

Climbers should be adjusted so that the leg strap goes around the leg approximately 1 inch below the protruding knob of bone on the inside of the leg just below the knee. Pant legs should be folded to the outside to prevent chaffing. Straps should be fitted snugly but should not hinder circulation.

Climbers with replaceable gaffs are recommended. It is extremely important to your own safety to maintain your gaffs in perfect condition and to sharpen or replace them when they are not. A sharp, properly shaped gaff will tend to dig in when it cuts out, but a poorly shaped gaff will cause you to fall.

Climbers should be used only for climbing, not for walking. Walking in your climbers will result in dull gaffs. A simple test for gaff shape and sharpness is as follows:

- Put the climber on the outside of your leg and fasten footstrap
- Place your hand between your leg and the climber pad. With your leg at a 30 degree angle (normal climbing angle), aim the gaff toward the center of the pole about 1 foot from the base. Gaff into the pole about ¼ inch
- Without adding downward pressure, push your knee towards the pole so that the climber is lying against and parallel to the pole
- Hold the climber firmly against the pole and add weight to the climber. A properly shaped and sharpened gaff will catch the hold within 2 inches. An improperly shaped or sharpened gaff will either cut out or take more than 2 inches to cut in to cut in.

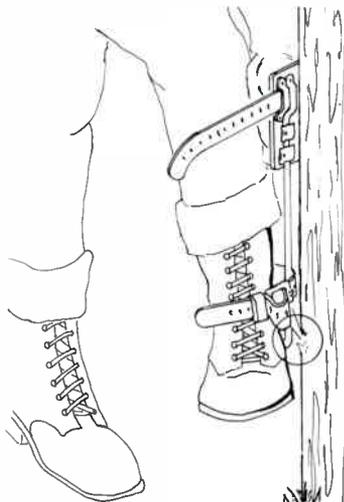


Figure 6: The daily gaff test

If you have any doubt as to the condition of your gaffs, sharpen them or replace them. Sharpening instructions and gaff gauges are available from any distributor that sells climbers. The sharpening procedures are specific, so don't attempt to sharpen your gaffs without precise instructions. Files should not be used to sharpen gaffs because they tend to leave a serrated, rough edge to the blade, which inhibits the ability of the gaff to cut in.

5. Hard Hat

Most companies and OSHA require the use of plastic or fiber glass hats for poleline work. The reason is simple: head injuries! Hard hats prevent head injuries and provide insulation from accidental contact with power.

6. Gloves

Leather gloves should be worn when climbing and descending poles to protect from cuts, bruises, splinters, soft creosote, and so on. Rubber gloves should be available for working on or near power circuits. Rubber gloves must be checked periodically for insulation breakdown.

7. Long-sleeve shirt

A fairly heavy long-sleeve shirt will save your arms from splinters, cuts, and other injuries as well as keep you clean.

8. Handline and Canvas Bucket

A handline and bucket are used to transport hardware, test equipment, drop wire, and just about anything else from the ground to the technician after he has climbed the pole.

Climbing

Step 1—Check your equipment

The first, and most often overlooked, step before climbing a pole is to give your equipment a quick check to see that it is all there, functioning properly, and that you are wearing it properly. The climbers should be put on at the base of the pole to minimize possible damage to the gaffs. The fit should be snug but not tight. The body belt should hang loosely on the hips with the safety strap attached as shown in Figure 2. The length of the strap should be adjusted for the size of the pole. Tools and small hardware should be checked. Large items can be hauled up with the bucket and handline after climbing the pole. Hard hat, long-sleeved shirt, and leather gloves should be worn.

Step 2—Check your surroundings

The second step is to check over the area around the base of the pole, the route to take up the pole, and the area where you will belt off and work. Things to avoid on and around the pole are parked cars, street signs, signs attached to the pole, pole steps or "J" hooks driven into the pole, downguys, telephone or CATV drops, streetlights, trees, and any other attachment or situation that might create a safety hazard. If the pole is leaning, it will have to be climbed on the uphill side. Older poles may have splits and cracks in the wood, or the outer layer of wood may be rotten and come loose when gaffed.

Most poles, new and old, can be climbed safely, but it is important to be aware of potential dangers before starting



Figure 7: Position while climbing

and make the appropriate allowances.

Step 3—Ascending

The correct position for climbing is shown in Figure 7. The legs should be at approximately 30 degrees from the pole. The hips and knees are kept away from the pole to prevent cutting out. The gaff should be aimed into the pole; slapping the gaff against the pole is in-effective and hurts the feet. Figure 8 shows the



Figure 8: The effective leg stroke

proper position of the legs while climbing. Proceed slowly and deliberately, gradually shifting your weight to alternate feet to test your step as you climb. Avoid the temptation to grab onto a handy pole step or "J" hook that may come along, since many times they are loose and may come completely out of the pole. Watch where your gaff is going. Avoid cracks, splits, and date tags that will cause your gaff to miss or deflect.

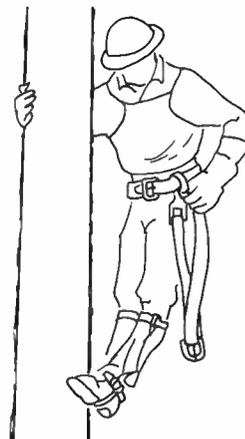


Figure 9: Releasing the safety strap

Step 4—Belting Off

Figures 9 and 10 show the proper



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technique for belting off (right hand shown; for left-handed people, reverse). The knees and hips are kept away from the pole. The outside end of the safety strap is taken loose from the left D ring, passed around the pole, and snapped into the right D ring with the jaws facing outward. The strap may then be positioned, as shown in Figure #11.



Figure 10: Passing the safety strap to the right hand

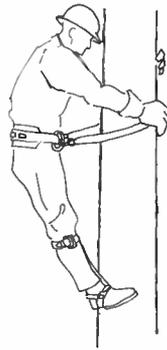


Figure 11: Moving the safety strap

With the safety strap in this position (note: knees and hips away from pole), you are free to move up, down, and around the pole in comfort. If it is necessary to work a distance away from the pole along the strand line, the strap may be lengthened, allowing you to lean out and work up to four feet or so from the pole. To remove the safety strap, simply reverse the procedure, taking care to keep the knees and hips away from the pole. Always resnap the safety strap to the left D ring before starting down.

Step 5—Descending

Descending is essentially the reverse

process of climbing—keeping the knees and hips away from the pole, watching where the gaffs are going, and moving slowly and deliberately.



Figure 12: Descending the pole

This article is not intended to provide a course in pole climbing. It is intended to show the more important points in climbing safety and comfort, and perhaps stimulate some personal reevaluation with regard to climbing skills. Everyone who has to climb, even on an occasional basis, should see to it that they are equipped with the skills to do so safely. Working with an experienced lineman in which one has confidence, plus plenty of practice, is the best way to achieve this. **C-ED**

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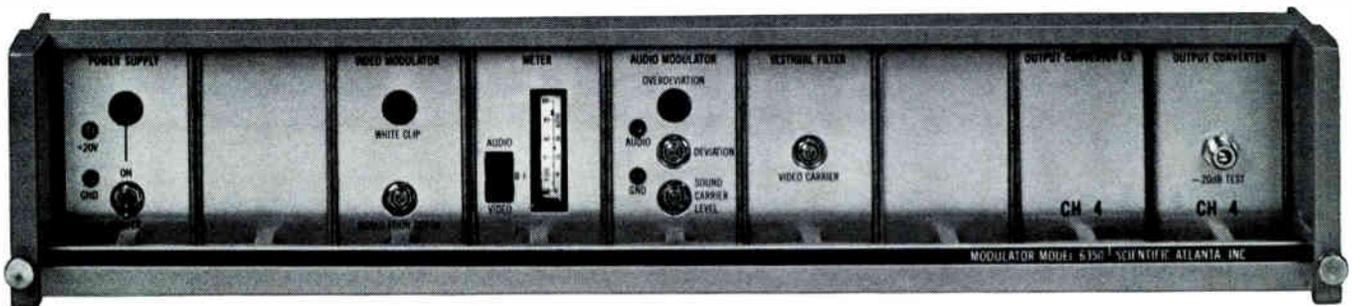
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Fiber Optics Seminar "Hottest" Technical Session At Western Cable TV Show

SAN DIEGO, CA—At 7:30 a.m., November 11th, the Presidio Room at the Town and Country Hotel was literally packed with CATV industry leaders and engineers anticipating the seminar entitled, "Fiber Optics—A Critical Look."

The seminar was moderated by Ed Callahan, of American Television and Communications Corporation. Guest speakers included Jim Godbey, Valtec Corporation; Larry DeGeorge, Times Fiber; Ray McDivitt, Harris Corporation; and George Foot, General Cable Corporation.

Callahan initiated the session by pointing out that fiber optics has some interesting advantages, such as repeater spacing which can be stretched out considerably compared to coaxial systems. In addition, fiber optics is totally immune to RFI ingress because it's inherently a shielded device.

"Quickly, the way fiber optics works," Callahan explained, "is that the glass material is clad with either plastic or glass which has a low index of refraction. What that means is that that surface acts as a mirror. When light rays enter the acceptance angle at the end of a fiber and progress along the axis of the fiber, some of the rays are deflected and go towards the interface between the inner part of the fiber and the cladding material. When the rays reach this interference point," Callahan emphasized, "it undergoes **total internal reflection**. Thus, the ray is reflected back down into the fiber and continues on to the repeater location or on to the final terminal point."

"Optical fiber cable is available which can withstand the use and abuse encountered in field environments."

—George Foot

The first guest speaker was George Foot, vice president of General Cable and general manager of Communications Systems. He's been involved in communications systems; supply and operating companies in several countries; and more recently, he's been in charge of engineering deep-ocean, undersea cable systems.

In contrast to people who have been talking about optical fiber, I have to confess that I have been *actively engaged* with optical fiber and optical

fiber cables for several years," Foot stated. He explained that his company has produced many kilometers of optical fiber in their laboratories, and that they have achieved an average attenuation of approximately 3 dB per kilometer. "We have designed and constructed various types of cable," Foot explained, "and we have learned how to minimize micro-bending so that we add less than 1 decibel to the basic fiber loss in producing a kilometer of cable."

Regarding actual installations, Foot further explained, "We have pulled one kilometer length's of cable into ducts repeatedly in a single piece, without damage to the cable or breakage of the fibers. We have spliced this cable by means of the delicate operation of fusing the fibers together end-to-end, to obtain permanent and reliable splices.

We have achieved with this splicing technique losses of less than 0.1 dB, a tenth of a decibel in attenuation. And we have done this," he added, "in the field under manhole conditions. Such a splice doesn't require a connector; and in addition to its extremely low loss, it has no volume and no mass."

Foot emphasized that his company's standpoint has been that optical fiber cables cannot be regarded as practical for field operations unless those cables can be installed with available equipment, requiring only the same precautions as would be observed for conventional wire cables.

"It can be reported," Foot stated, "that these objectives have been achieved and that an optical fiber cable is available which can withstand the use and the abuse which will be commonly encountered in field environments."

According to Foot, his experience indicates the new fiber optic technology to be sound, practical and highly promising. "We have reached the stage of providing systems of advanced performance which may be prototypes, but which are now working very successfully in operational service." However, Foot stressed, "In sober truth, there is much engineering to be done before existing wire cables become outclassed."

"We believe there is a place for analog/digital transmission in fiber optics"—Ray McDivitt

The next speaker was Ray McDivitt, section head of fiber optics engineering for Harris Corporation. He explained that

Harris Corp. has instituted a fiber optics program since 1973. This program has basically been developing various types of analog and digital transmission equipment for military applications.

The Harris Corporation is involved in a contract with the Canadians to develop a supertrunk fiber optics system. This system is digital and basically consists of two system developments: one approach uses a base-band video transmission in which each video channel, audio signal and FM data is digitized; then multiplexed, creating a result of a 322 megabit fiber optics transmission link.

The other approach falls into the category of a hybrid system. This technique allows the digital signal to be downconverted at intermediate points along the supertrunk directly to a television compatible vestigial sideband analog signal without the need for remodulation. This approach will allow drops to be made along the supertrunk more economically.

"We have, at Harris, addressed the application engineering aspects of CATV, broadband, and telecommunications,"

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stated McDivitt. He further added, "We believe that there is a place for analog transmission in fiber optics, and there's a place for digital transmission in fiber optics."

"What's wrong with fiber is that it's new, small and different"
—Larry DeGeorge

Larry DeGeorge is the president of Times Fiber, and director of General Optronics. He is also director of Electro-Optic Devices. DeGeorge delivered a well-prepared talk on utilizing a practical analog optical system for 12-channel supertrunk applications.

His presentation included slides detailing the schematics of a working analog 12-channel on-frequency system in operation. DeGeorge pointed out that the details of the analog system resembles the current CATV super-trunk schematic. "Other than substituting a laser for an amplifier and eliminating equalization circuits, it's not too different," DeGeorge stated.

DeGeorge rounded out his dissertation by stating, "The fiber optic analog system offers the advantage . . . of being light weight and easy to install. Freedom from random signal pickup is one of the outstanding advantages, especially in high, off-the-air RF situations.

"What, then, is wrong with fiber? What's wrong with fiber," DeGeorge emphasized, "is that it's new, it's small and it's different."

"The fiber optics business is in a state of evolution and not revolution"
—Jim Godbey

The last speaker for this seminar was Jim Godbey of Valtec Corporation. His dissertation included a wrap-up of fiber optic applications around the world.

According to Godbey, he found the most activity concerning fiber optics in Japan. "They are installing a completely interactive communications system using fiber optics, connecting two towns, Higashi and Nukoma. There will be 300 subscribers on this system," Godbey explained. "They will have keyboards, cameras and a video tape machine in each home. You can talk to your neighbor via picture and sound; you can call down movies, train schedules and shopping lists—everything else you'd like to do by TV and computer.

"There is a lot of work that has to be done," Godbey added, "a lot of knowledge has to be gained. Fortunately, there are people around who are willing to pay for this experience and knowledge that we

can all benefit from. We believe that the fiber optics business is in a state of evolution and not revolution."

Spec Revision Heralds New Era In Coax Cable

WALLINGFORD, CT—For the first time since it was promulgated in 1944, the basic specification for coaxial cable has been radically revised.

According to Allen M. Kushner, Times Wire & Cable vice president, the new revision will have a tremendous impact on the coaxial cable industry, as well as those segments of the electronics industry that utilize coaxial cable.

Kushner pointed out that now, for the first time, cable is being specified in terms of performance characteristics across a wide band of frequencies. The new specification calls for significantly improved electronic parameters, plus several important mechanical quality improvements. Prior to this, the specification was based primarily on physical dimensions and mechanical construction.

Each new MIL-C-17E spec cable has a different swept frequency requirement. One of the most demanding is M17/075-RG-214 (replaces RG-214), which must be swept 50 MHz to 11 GHz. Some cables require no sweeping, but those that do must be swept over their entire specified bands for both return loss and attenuation.

Other additional requirements specified in MIL-C-17E include: stress crack resistance of cable jacket; adhesion of conductors to dielectric; high temperature dimensional stability; phase stability testing; flammability testing; and corona testing at altitude.

The net result of the new MIL-C-17E will be the availability of cables with guaranteed performance characteristics over a broad frequency range. Starting with military applications, the new standard will eventually be applied to all microwave applications and will create a new awareness of quality standards even in less demanding fields.

FCC Starts Rulemaking Procedure On Saturated Cable Systems

WASHINGTON, D.C.—The FCC instituted a rulemaking proceeding on "saturated" cable systems because of the growing problems that have resulted in complying with the FCC's mandatory signal carriage rules. Since most cable

systems have a 12-channel capacity and are required to carry all local signals, the commission said that "as new local stations become operational, cable systems are faced with the problem of which signals to carry and which to delete."

In order to avoid burdening the cable industry with the heavy capital outlay needed for mandatory rebuilding, the commission asked for comments on a number of alternatives to the problem. These alternatives include:

- Chronological/operational considerations: "Should certain stations be accorded lesser carriage rights because they became operational after the cable system was saturated; they obtained carriage rights because of increased tower height and/or power; they are not actually operational or evince a pattern of off-and-on operations; or they operate only on a minimum schedule?"

- Signal characteristics: "Should certain signals be accorded lesser carriage priority because of their location and other characteristics when channel capacity is limited—i.e., hyphenated market signals, significantly viewed signals, and translators or satellite signals?"

- Programming considerations: "Should lesser carriage priority be accorded to duplicative network signals, both commercial and educational, and to specialty and subscription television stations?"

- Technical considerations: "Should a cable system be excused from carrying a station demanding mandatory carriage if that station fails to place a consistently reliable signal over the cable system's headend?"

- Composite carriage: "Should the commission establish a priority list of types of stations or programming for composite carriage, or should each system establish its own list, premised on its knowledge of its subscriber's needs and interests?"

The commission said it would continue to respond to petitions for waivers while the proceeding is pending, but added that "it normally would act on a temporary basis and subject any action taken to the outcome of this proceeding." Comments are due by January 23, replies by February 22.

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Harris Corp. Proposes Time Has Come For Stereo AM Broadcasting

CLEVELAND, OH—Harris Corporation believes it can eliminate the major technological barriers that have discouraged the spread of stereo broadcasting by AM radio stations. Only FM stations now transmit stereo programming.

The company's Broadcast Products Division intends to submit to the Federal Communications Commission a proposal for squeezing two-channel (stereo) broadcasts into the frequency bandwidth a radio station must stay within to minimize interference with other stations.

Called "compatible phase multiplex" (CPM), the Harris approach to AM stereo will be one of several evaluated by the FCC. Acceptance of a system for AM stereo broadcasting could have a multi-billion-dollar impact on radio stations, advertisers, equipment makers and the millions of Americans with AM sets in their homes or cars.

Gene T. Whicker, vice president and general manager of the Harris Broadcast Products Division, says the FCC is expected to be reluctant to encourage any AM stereo broadcasting system that would require broadening of bandwidths. There are 4,497 commercial AM stations in the U.S., and the interference caused by increased bandwidths would be highly disruptive. The Harris system can provide stereo within existing AM station bandwidths.

The new Harris system is uncomplicated and straightforward, requiring minimal changes in the transmitters of AM radio stations. A "black box" about the size of an attache case would allow nearly 90 percent of the AM transmitters in use today to transmit in stereo at a price ranging from \$3,000 to \$5,000. Other changes, such as switchovers in programming and adding studio equipment for a second channel, could add up to \$20,000 per station.

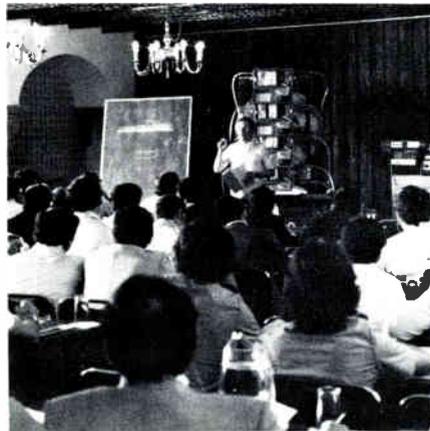
Magnavox and Philips Mexicana Win Points With Highly-Practical Technical Seminar

GUADALAJARA, MEXICO—"That's the kind of seminar we can use—we want you back again." This is essentially what 138 Mexican CATV technicians, from 58 different systems, told the representatives of Magnavox CATV Systems and Philips

Mexicana after a three-day technical seminar preceding the recent third annual convention of Canitec (the Mexican Cable TV Association) at Guadalajara, Mexico.

"We didn't have any secret methods," said Tom Polis, Magnavox International sales manager. "Our approach was a reasonable share of charts and blackboards, and a major share of hands-on practical application work."

Polis headed a three-man Magnavox delegation from the company's Manlius, N.Y. headquarters, who were responsible for the meeting. Also participating were Allen J. Lipp, general sales manager, and Bob Stanton of headquarters system engineering. They were joined in the seminar by representatives of Philips Mexicana and Cable Proyectos, an engineering and construction firm.



Tom Polis, Magnavox international sales manager, stands before a five-amplifier cascade as he lectures to the group of 138 Mexican CATV system technicians at the Magnavox and Philips Mexicana technical seminar.

FCC Releases Publication For Determining Frequency Conflicts

WASHINGTON, D.C.—The FCC has released a new quarterly publication called "Aeronautical Frequency Assignments Near Cable Television Carrier Frequencies" in order to assist cable operators in determining whether they are interfering with the aeronautical radio services, as required by the newly established rules. The rules (Sections 76.610 and 76.611) become effective January 1, 1979, and prohibit cable operators from using certain frequencies which are in use by aeronautical radio stations in the vicinity of the cable system.

According to the commission, until this publication was compiled, "there was no

single source which a cable television operator could consult to find out whether there was any coincidence between cable system carrier frequencies and frequencies assigned to civilian aeronautical radio services in the vicinity."

Prepared with the cooperation of the Federal Aviation Administration and the Commerce Department's Office of Telecommunications, the publication lists civilian aeronautical radio stations using frequencies near those most commonly used for visual, aural, and pilot carriers by cable operators. The lists are organized by state, and include geographical coordinates of the radio stations. If the operator is using the "traditional" frequencies for midband and superband carriers, "the operator can readily identify civilian aeronautical radio stations with which frequency conflicts might exist," the commission noted. However, since the publication does not include all FAA frequency assignments, cable systems which transmit carriers on frequencies other than the "traditional" ones will have to make special arrangements through the commission for determining whether a conflict exists.

The frequency lists will be updated and reprinted quarterly, and may be obtained on a single issue or annual subscription basis from the National Technical Information Service, 5285 Port Royal Rd., Springfield, Va. 22161. For further information, contact Robert Powers, FCC Cable Bureau, 1919 M St. NW, Washington, D.C. 20036.

NCTA Board Meets In San Diego

SAN DIEGO, CA—The NCTA Board of Directors, after being briefed on the president's proposals for public broadcasting, said that "cable television can play an essential role in meeting the president's goal." The board met with two White House aides, Richard Neustadt, assistant director of the domestic policy staff and Robert Sachs, consultant to the Office of Telecommunications Policy, who informed the board on President Carter's goal to make publicly-funded programming available to the widest audience.

NCTA pledged its full support in coordinating the cable industry's involvement and urged that "both the administration and Congress provide equality among media in establishing and administering all public broadcasting programs."

The board also authorized the NCTA staff to challenge the FCC's refusal to take action to break exclusive, long-term contracts obtained by networks and local broadcasters that deny motion picture products to pay cable subscribers. The board said the commission's decision to take no action "ignored the anti-competitive effects of contractual exclusivity and left the cable industry no alternative than to seek relief through the courts."

On the House of Representatives' approval of live coverage of House proceedings, the board endorsed the action, but noted that careful attention should be given to maintaining the present atmosphere of the chamber "so as to avoid influence that might inhibit debate or alter the proceedings in any way." In addition, the board said that coverage should be provided by Congress, and not by any private interest. Other actions taken by the board:

- Established a Jerry Greene Memorial Award to recognize outstanding leaders in the industry who are under 40 years old. Greene, who was killed in a plane crash in August, was a member of the board.

- Approved the selection of Washington, D.C. as the site of the NCTA's 1981 convention, to be held April 26-29, at the Sheraton Park Hotel.

- Authorized NCTA to retain an outside accounting firm to prepare formal comments on an American Institute of Certified Public Accountants' white paper that recommends standardization of accounting practices in the cable industry.

- Presentation from a panel of experts in the fiber optics industry on the immediate and long-term applications of fiber optics in the cable industry.

The next NCTA board meeting will be held February 13-14 in Boca Raton, Florida.

Coaxial Analysts Awarded Viacom Contract

DENVER, CO—Coaxial Analysts Inc., has been awarded a contract by Viacom Cablevision of Dayton for the design of an additional 120 miles for their Dayton, Ohio complex. Coaxial Analysts previously designed the first 455 miles of the 300 MHz Dayton system using an average of 1.3 active devices per mile.

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IN CANADA: Tele-Radio Systems, Ontario

An Exclusive C-ED With Robert Bilodeau

By Toni Barnett, Managing Editor

For the past sixteen months, TPI's Communications—Engineering Digest has been published in cooperation with the Society of Cable Television Engineers. C-ED wanted to provide our readers with an update on the progress of SCTE—from its inception through its progression.

At last month's Western Show in San Diego, C-ED talked with SCTE president Robert Bilodeau and director Judy Baer. The following is an exclusive in-depth interview.

C-ED: What is the basic purpose of the Society of Cable Television Engineers?

Bilodeau and Baer: First of all, we're an apolitical organization. We are not a lobbying organization. We have no council, and we don't respond to petitions or notices for rulemaking from the FCC in a direct manner. However, because many of our members are seated on engineering committees throughout the industry, SCTE does make a contribution. But, we are not on an issue side.

We will not evolve into a guild or union concept. This is one of the biggest problems SCTE has had to get beyond as far as getting managements' backing, support, and understanding.

C-ED: Would you describe the status of SCTE at its inception?

Bilodeau: The Society of Cable Television Engineers was initiated in 1969 by 54 or so people. I was involved in the cable industry at that time, and so I sent in an application like a handful of others. It was a passive kind of involvement for me for about two years until I was approached by one of the original officers to become more involved. I accepted. And for me, that's when my real involvement began.

C-ED: How was the SCTE structured at that time?

Bilodeau: Back then there were maybe 150 to 200 members, and the dues structure was quite modest—about \$5-6 per year. The annual budget when I became president was something on the order of \$4,000-5,000. The current annual budget is now \$33,000.

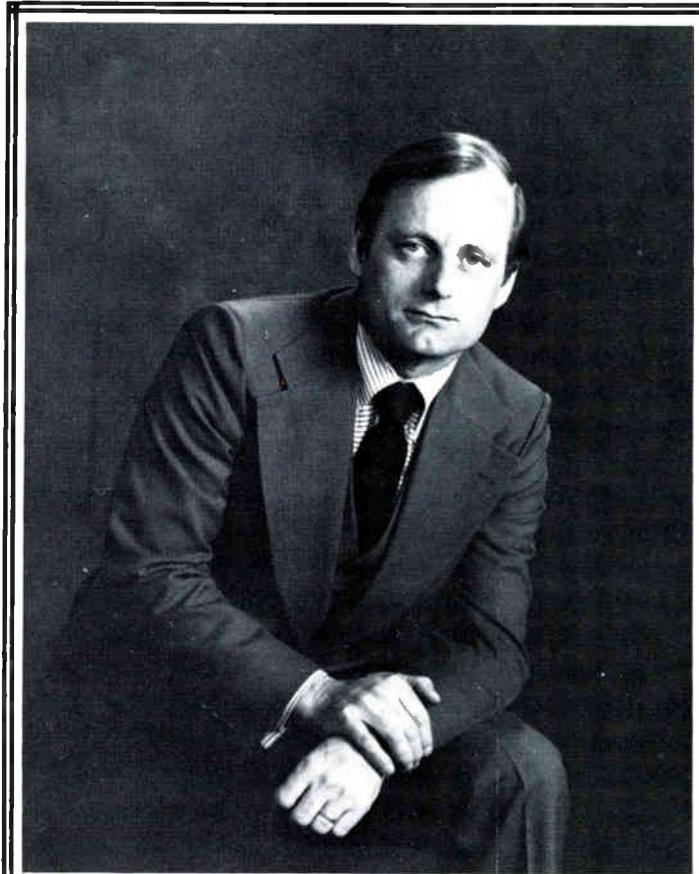
So, we've seen a dramatic increase in the available funds to pursue SCTE projects and to support member services.

C-ED: Were there any projects initiated back then?

Bilodeau: Very few. Membership in the Society was probably the major reason for joining. A technical person's subscribing was probably just the feeling of belonging to a group that supposedly spoke for his profession. The Society attempted to provide some cohesion to the technical industry, which was non-existent at that time.

In terms of an individual membership organization, the NCTA existed, and that was the only real member organization that assistant personnel could be involved in with any kind of contributory activity.

C-ED: Can you give me a rundown on the operational style of the



Robert Bilodeau ponders the upcoming agenda for SCTE

SCTE over the years?

Bilodeau: It's been primarily an outlet for technical people to do something in the way of educating themselves about what's new in technology, what techniques work, and which ones don't.

Our operational style involves a regional meeting format. By regional, I mean the districts that we have set up as SCTE districts hold periodic meetings throughout the year. They bring in speakers and manufacturers to display hardware that involve new concepts and technology. The members get together and discuss their own problems of a technical nature, exchange solutions and occasionally exchange mistakes.

That's been the style of bringing together the system level grassroots technician who really has no other place to go. He can't go locally to his management because they don't speak the same language. He can't talk to any other organization in CATV and get the answers he needs. So, SCTE has really been a vehicle to do just that: an umbrella under which to cover these technicians.

C-ED: What's the current status of the SCTE regarding

ED Interview

SCTE's and Judy Baer



Judy Baer takes a short break in her hectic agenda

membership?

Baer: At the present time, we're up to about 1,115 members, and that represents a doubling in size since the first part of 1977. We have gone on a concentrated campaign to increase the membership. I play a role of promotion and marketing—and marketing SCTE to the industry.

C-ED: I understand you're in the process of re-organizing the Society.

Baer: That's correct. With regard to SCTE internally, we have been going through a re-organization period. This is due to the fact that we are growing. For a long time there have been pockets of great activity across the country with regard to SCTE, but there have been other areas where the activity is not as great.

In the past 24 months the greatest activity and growth, in regard to SCTE, has come from the Southeast. This region had shown little activity prior to our concentrated campaign to work with the Southern Cable Television Association.

C-ED: How will your board be revised?

Baer: According to the present By-laws, we have a president, vice president, secretary-treasurer, and the president of any local chapter served as a director on the board. Unfortunately, that system didn't work because there were chapters with no activity at all.

We don't hold national board meetings and that kind of thing. We don't anticipate becoming a bureaucracy, and we'll work very hard not to. However, we will be asking the membership to approve a change in the By-laws to enlarge the board to eight regional directors and four at-large directors. In addition, we will ask for a different structure at the top level where we will have an executive committee of sorts to provide the highest level of leadership and program development. Also, we will be "beefing up" the senior member participation, the charter member participation, and our Canadian members will have a place on our board of directors.

C-ED: As director of the SCTE, what do you consider your most difficult objective?

Baer: One of the most difficult aspects is to clear some misunderstandings as to what SCTE is, what its goals are, and what its role in the industry is.

I think that the most important objective we have accomplished is what we've managed to do over the past two years: and that is to bring back an awareness that the technical people in this industry have a stature unto themselves. My attitude is that cable television remains a distribution system, and we are a hardware-oriented industry. And as long as we are a hardware-oriented industry, there are personnel who have to design and maintain systems and develop state-of-the-art equipment.

We are managing. I think, to break down some of the barriers between management and engineering. One of my biggest goals is to bridge the gap between management and technical personnel.

C-ED: There has been some question about what the terminology "Society of Cable Television Engineers" really means. Have you thought of developing any new names for SCTE?

Bilodeau: There is a concern on the part of some people in the engineering community, in particular those people who are registered as professional engineers, to look askance at any use of the term "engineering" when it doesn't involve professional engineering qualifications. But I think that concern can be limited to persons or organizations using the term "engineer" for commercial gain. The use of the term "engineer" in the title in no way represents a qualification of the members—it's not intended to. It only implies that he's working in, around, above, or below or through the engineering profession in the CATV industry.

If you go through the girations and try to arrive at a descriptive title, some of the alternatives aren't palatable. For example: The Society of Cable Television Technicians or The Society of People

Working in the Technical Part of the Industry.

Baer: Which would be unpronounceable! We could call it the CCTTEEV or whatever. But that's not the most important part of it. The point is, we're not invisible and we're out there.

C-ED: Have you set a particular goal for the SCTE regarding bridging the "communications gap" in the industry?

Bilodeau: Concerning the distribution of knowledge—or lack thereof—within our industry, there is a lot of room for improvement. I know that the visual medium is perhaps the most successful in communications in terms of retention. It isn't used often enough in our industry because I don't think enough people fully appreciate the difference between oral and visual retention. We should use more visual means of communications, such as video tapes, films, and slides instead of the traditional lecture-type man-on-the-podium kind of thing.

The SCTE already has a couple of projects under way utilizing video tape.

C-ED: By expanding your organization, I assume you'll acquire a lot of new blood.

Bilodeau and Baer: There will definitely be new blood. One of the reasons we're expanding SCTE now is that we feel the potential is there. There are a lot of people out there who are very interested in being a part of the organization, assisting in making the decisions about the direction SCTE is going to take and what it's going to be when it grows up.

We have some exciting programs for 1978, and some of them are going to be at both the professional and technical levels.

C-ED: Do you have many international members?

Baer: We have approximately 200 members in eastern Canada. In Quebec they are direct members of the SCTE. In Ontario, they are affiliated members because of a provincial requirement concerning the word "engineer" and how it can be used.

In Vancouver and British Columbia, there are probably 100 members of SCTE, but they are functioning fairly independently. There is another SCTE in England which has no affiliation with our American SCTE directly, but there is an interchange of interest and publications. We will be working through *C-ED* and your showcasing the fact that CATV is an international industry.

C-ED: Is England the only country that has an organized SCTE membership?

Bilodeau: Yes. That's the only country that has an organization and a publication vehicle. We do, however, have scattered members in Hawaii and Alaska.

Baer: And we have members in Mexico. I have spoken to Mexican operators who are showing an interest in developing more SCTE membership there. We also have members in Brazil and Japan.

C-ED: Do you have a good exchange of ideas with foreign SCTE members?

Baer: Yes, especially in Canada. For years the Canadian cable television industry was considered the pioneering influence as far as technology was concerned. However, because of regulations and their changing modes of government, the Canadians can't do a lot of things we're doing in the United States.

They are, however, doing some other things that are exciting. The interchange of ideas, including the monthly input from Ken Hancock and other Canadians in *C-ED*, is something that we certainly encourage.

C-ED: Do you consider SCTE a service to the industry?

Baer: We are very definitely a service. As a matter of fact, during the first months of 1978, we are going to be working with a Washington, D.C. university that will develop programs for both the technician and the professional engineer. Once the format is

decided, this university will work with other colleges in developing similar programs.

C-ED: Do you feel that the CATV industry is doing a good job of recruiting personnel from outside of the industry?

Baer: Definitely not.

Bilodeau: Cable does not do that, and that's lacking and obvious in its makeup.

Baer: One of the objectives I would like to accomplish through SCTE, in perhaps 12 to 18 months from now, would be to do a trade job recruiting fair where someone could go into an area and showcase the cable industry as an industry that people should get involved in.

Bilodeau: There are other, more traditional ways of recruiting personnel. As the industry grows, the technology becomes a part of the curricular of universities and colleges. Once that's done, you can begin to recruit directly from the schools at graduation and bring people with technical backgrounds into the industry. That's how General Electric, ITT, and International Harvester get their people. They recruit at the college level.

I'm involved in a system in a New York metropolitan market where we have a number of technical schools to draw from. We have been able to directly involve graduates of these schools in the system as employees. We've found they make very good employees and develop very quickly.

But the ends of the spectrum in terms of education also need to be addressed aside from this more traditional approach to recruitment. The continuing education is really nowhere.

The directors of engineering, chief engineers and the consultants in this industry have no place to pursue what would classically be called a continuing education program. They reach their level within their companies and reach a degree of proficiency in their fields. But this process becomes deadended unless you can go outside that or beyond that and reach into someone else's knowledge.

C-ED: What is your feeling concerning SCTE's role in the CATV industry?

Baer: In a word, my feeling about SCTE is "supportive." I think that we are supportive of any national trade association, and supportive of our members. We realize we have to give back more membership services, and we will do that. We'll try to do that without horrendous dues increases, etc.

Of course, we live in a real world. For \$20 a year, our members are getting, I believe, more than anybody else is getting for any \$20 investment. By the time you count the magazine, *Communications-Engineering Digest*; the Interval; reduced registrations at every national, state, and convention meeting; reduced registrations to SCTE programs; plus discounts and price breaks on items that we publish, we think that's quite a package for \$20.

I feel we are trying to be supportive of the industry in general. I'm looking for everybody to win.

C-ED: What makes SCTE different from other CATV-related organizations?

Bilodeau and Baer: Our unique attraction is the fact that we are the only organization in which the membership comes from an individual—a person is a member.

We are not a trade association. We have our Sustaining Members, which are exactly that in nature. They are sustaining and supportive. We also have large and small operating companies—manufacturers and suppliers—who are Sustaining Members for minimal dues structure per year.

We feel very fortunate because within our membership there is no distinction between the operating side of the industry and the manufacturers and suppliers. You are a member of SCTE,

regardless of which side you're on.

C-ED: What's SCTE's involvement regarding the National Cable Television Association?

Baer: For years we have worked with NCTA doing sunrise sessions at the national conventions. Representatives of SCTE are involved in the selection of papers to be presented. We also provide input concerning decisions on engineering awards within the NCTA.

Bilodeau: I'd like to add the fact that it was SCTE that got the NCTA to even institute engineering awards. Engineering achievement awards never existed until we promoted the idea.

C-ED: Do you have any programs lined-up for 1978?

Baer: Yes. We are forging ahead with a well thought-out program of what we intend to do. We are "theme-ing" every publication we provide to promote growth in our organization. We have adopted a color scheme of green and white. We will continue to promote green and white in 1978 because I view those colors as looking like dollar bills.

If I can relate SCTE's success to the cable television industry, it would be that better engineering means better profits. In addition to being promotional, it is also a valid concept to what SCTE ultimately can do and what it will bring back to the cable television industry.

C-ED: Do you believe the SCTE has been successful so far?

Bilodeau: I think we've made a lot of headway. We aren't just interested in members per se in terms of numbers and growth. If we were twelve strong throughout the whole country and doing the things we were supposed to be doing in terms of serving the industry technically, we'd be quite successful.

Success in our minds is not measured in terms of how many members we get; that's a necessary function to support the activity. However, it isn't the main objective. One of the problems we've had for years is the apathy and lack of participation on the part of people who could be involved but who haven't been motivated yet. Part of our work is to get these people motivated.

C-ED: As president of SCTE, do you feel that the people who subscribe to SCTE really believe it's accomplishing a purpose?

Bilodeau: It's difficult for me to draw a profile of our members in terms of their reasons for subscribing. People have various reasons for doing things. I'm a member of the IEEE because I'm involved actively in one of the societies, not because I'm an electrical engineer by graduation.

I think that, to the average SCTE member, it probably represents a way to put a stamp of approval on his degree of proficiency. To be able to say to the world, to his wife, children or whomever might be interested that he is an SCTE member connotes something—connotes that he is a technical person; that he's interested in the industry; he's working in the industry; involved in its operations; concerned about the technology; and wants to read about what's going on in other areas and other systems. So, a membership in this society represents an expression of a part of an individual of what he is—it's kind of like an identity.

C-ED: Bob, you've been president of SCTE for the past six years. Do you plan on remaining in that position?

Bilodeau: I dearly wish someone would come forward and say, "I want your job." Not because I'm tired of it or because it doesn't have its rewards, but because that's the kind of continuity I think an organization like this needs. We need people to come forward and say, "I want a shot at it," and, "this is how I think it can grow."

I know that somewhere out there amongst the 8,000 technical people in the industry there are half a dozen people who could do the job as well or better than I have. All I'm asking is, "Where are you? Please come out!" **C-ED**



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As the official publication of The Society of Cable Television Engineers, C-ED has enjoyed a favored reputation with industry technicians. To further our commitment to the SCTE, forthcoming issues will be provided as a free service.

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C-ED's TECH REPORT

Satellite Communications

Microdyne Corp. Satellite TV Receivers

The 1100-TV(R) (VT) and the 1100-TV(R)(SYN) satellite television receivers are designed for reception of wideband FM signals via domestic and international satellites for a variety of applications where optimum phase linearity and sensitivity are required. Typical applications include pay TV (CATV), independent television stations, wideband business data and related areas of development.

The unique design of these receivers permits the down converter to be packaged separately (split configuration version) for installation. Thus, where long distances exist between the antenna and headend equipment, down conversion to 70 MHz at the antenna for transmission to the demodulator unit minimizes cable losses.

Circle Reader Service #1

Scientific Communications' New LNA

Scientific Communications, Inc., has broken the noise barrier again with its new uncooled 100 degree K GaAs FET LNA. The latest development at SCI is a new design which allows earth station designers to achieve approximately .6 dB improvement in G/T performance.

SCI first offered the 120 degree K GaAs FET early this year and continued improving their design to deliver 110 degree K subsystems. They now offer the 100 degree noise performance as a standard model. The new model, designated the SCF-395-507, will retain the excellent performance of its prior SCF-395-5XX models in all respects while exhibiting the improved noise temperature.

Deliveries of the 100 degree K model will begin in January from stock to 60 days ARO according to availability.

Circle Reader Service #2

Comtech's Satellite Services

Comtech Laboratories Inc., can furnish a complete transmit/receive or receive only earth station on a turnkey

basis. This service includes the supply, installation, and integration of the fully compliant FCC and Intelsat unattended transmit/receive systems, as well as site surveys, civil work and final checkout. Comtech makes use of reliable equipment, rapid turn around and a total product support concept to maintain their position of leadership in satellite communications.

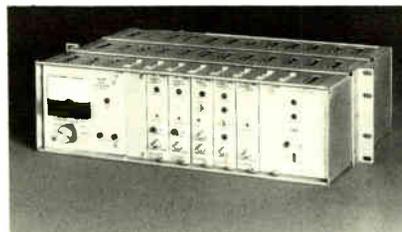
Circle Reader Service #3

Farinon Microwave Receiver

Farinon Electric has announced a new high quality, single channel microwave receiver for use in 4 GHz satellite television receive only earth terminals. The competitively priced FST series receiver converts incoming RF signals into video/audio outputs and is fully compatible with 525/625 line NTSC, PAL, PAL-M and SECAM system requirements.

The new receiver features modular design and a built-in panel meter for monitoring all critical circuits. Versatile power options include -21V dc, -24V dc, -48V dc, or 115/230V ac. Power consumption is less than 40 watts.

Also available from Farinon are frequency agile receivers, high gain parabolic antennas, and 4 GHz low noise amplifiers for a complete earth station package including construction, supervision and turnkey services.



Hughes Introduces New Manually Agile 24-Channel Satellite Video Receiver

Hughes Aircraft Company's microwave communications products division has announced the introduction of a new manually agile 24-channel satellite video receiver.

The new receiver, designated the model SVR-462, provides full 24-transponder coverage in the 3700 to 4200

MHz range. Channel selection, which is factory tuned to a customer specified channel, can be made manually in the field through an internal adjustment. Such changes can be made in less than five minutes without the need for special crystals, test equipment or field modifications.

The unit features the same patented phase-lock demodulation and threshold extension as the Hughes SVR-461 electronically tunable receiver. The threshold extension feature extends the FM threshold to considerably lower than conventional receivers.

Circle Reader Service #4

RF Systems Satellite Earth Terminals

RF Systems is offering 5, 6, and 10 meter satellite earth terminals. These units are specifically designed for high efficiency performance when used in low cost earth terminals. The antennas have been designed to provide small shipping cubage and can be transported to roof tops in standard elevators.

Construction is of high strength, corrosion-resistant aluminum; and flat trusses are used, assuring minimum shipping volume. The antennas are mounted on a polar mount, which provides survival wind loading to 125 mph and allows easy realignment from one satellite to another.

Circle Reader Service #5

S-A's Model 414A Video Receiver

The 414A Video Receiver is a satellite communications receiver used to process any video format satellite transmission. The receiver is flexible by utilizing a variety of standard plug-in units to allow configuration of the receiver for any video satellite reception. This unit provides additional signal-to-noise margin for systems using small diameter antennas and operating at lower carrier-to-noise ratios.

The 414A has been designed with circuitry providing: synthesizer-controlled frequency selection; frequency selection in 2.5 MHz steps; no crystals required; modularity for field repair; expansion capability for stereo, over-the-air frequency selection for additional program channels; trouble-shooting facilitated by five isolated monitor

connectors and metered outputs; and 115/230V ac power supply with optional -24 or -48V dc supplies.

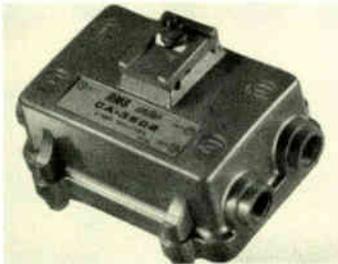
Circle Reader Service #7

System Equipment

RMS Electronics' Unipower Series Splitters And Directional Couplers

RMS Electronics has introduced an innovative new series of directional couplers and splitters. The new passives feature a "Micro-circuit" RF network for consistent RF performance and fused output legs to give control over power routing. With conventional directional couplers and splitters it has been necessary to use an external power block or clip out the power passing chokes results in a degradation of the RF performance of the passive. The RMS unit eliminates this problem by the use of fuses in each output leg. The RMS passives are available in 2- and 3-way splitters and 8 dB, 12 dB, and 16 dB value directional couplers.

Circle Reader Service #8



Control Technology Inc. Features Power Supply Unit

The Control Technology PAX model UPS 900/115-S is a rack mounted power supply unit offering uninterruptable power source which can be used anytime or anywhere. It provides 115 ± 10 percent V ac sine wave power for CATV headends or any other application where power interruptions are critical. Output frequency is normally line synchronized; however provision to accept an external output frequency control signal can readily be incorporated. Frequency stability without line synchronization is ± 0.9 hertz over a -40 degrees F to +140 degrees F temperature range.

The output power of the UPS 900/115-S is rated at 900w maximum. Complete visual monitoring of the system at all times is provided by two front panel mounted meters for output current and voltage and

two indicator lights for line voltage out and inverter voltage out.

Circle Reader Service #9

Microwave

International Microwave Introduces LNA

International Microwave Corporation has announced the introduction of a 11.7 - 12.2 GHz low noise GaAs FET amplifier for use with microwave receivers.

This amplifier, with a 5.0 dB noise figure and 30 dB of gain, will improve the sensitivity and fade margin of existing "Mixer Front End" systems by 3 - 4 dB at a fraction of the cost of a parametric amplifier.

Circle Reader Service #10

Microwave Associates New Microwave Radio

Microwave Associates has introduced a new low cost, small size, solid state CARS band FM microwave radio. The MA-12XC system opens the door to a new era of low cost CATV signal distribution possibilities. This is the first short haul microwave system priced low enough to be a real alternative to cable plant. In developing this dramatically simplified equipment, all of the classic advantages of FM microwave have been retained.

The MA-12XC transmitter uses a Gunn effect oscillator which operates at the RF output frequency. AFC is maintained by reference to a crystal oscillator. Transmitter output power is rated at 20 mw.

Circle Reader Service #11

Terracom's Microwave Radio

The Terracom TCM-7 series "Mini-wave" microwave radio combines small size, simple operation, and reliable high performance in a portable microwave system. The unit is field tunable, with six models to cover the assigned bands of from 1.7 to 15.25 GHz.

Antenna options are available to meet individual application requirements. The TCM-7HA wide beam horn antenna is especially useful in reducing the alignment problems encountered in mobile operation. The high gain TCM-LD2/3 parabolic antenna is designed for permanent installations.

The transmitters and receivers are housed in rugged, weatherproof enclosures to ensure reliable operation, even under severe environmental

conditions. Optional enclosures are available for multiple unit rack mounting configurations.

Circle Reader Service #12

Amplifiers

Triple Crown Electronics CATV Amplifiers

The DL and LA series of amplifiers together form a comprehensive range of 50-300 MHz CATV amplifiers with bi-directional capability. All DL and LA amplifiers are push-pull, have sub-band filters for passive two way operation and will operate on 18-60 V ac or 30-60 V dc. A plug in 5-30 MHz amplifier is available as an option.

Eight different models are available. The DL series are designed solely for distribution while the LA series can be configured to operate in the distribution (high level) or signal transportation (low level) mode.

Circle Reader Service #13

Magnavox Mainstation Power Supply

Magnavox has an improved version of their standard mainstation power supply available. The new power supply, the 7-PS, has an improved transformer assembly with 25 percent higher efficiency. The series regulated supply can be used in 30 V or 60 V systems, with sine wave or square wave supply voltage, and in 50 cps or 60 cps power systems.

Triac and SCR surge protection devices are standard as is a primary circuit breaker to prevent damage to the transformer should the triac device conduct for more than $\frac{1}{2}$ cycle. In the 30 V version the triac fires at 40 V (referenced to primary) and in the 60 V version it fires at 80 V (referenced to primary). This power supply offers improved performance and more flexibility.

Circle Reader Service #14

TRW's Hybrid 31dB Gain Block Amplifier

The CA2601 BU amplifier is a thin film hybrid gain block manufactured with a gold monometallic process for high reliability. The true push pull configuration and the typical flatness of the units in 75 ohm systems provide excellent performance for line extenders and small system trunk line applications. The amplifier has a nominal gain of 31 dB. This unit is divided into two sections to permit the use of interstage gain and tilt controls or filtering

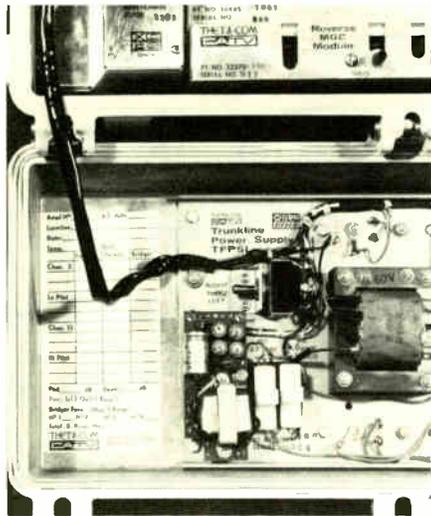
in the case of high output single channel "strip amplifier" or "pre-amplifier" applications. Designed for 24 volt operation, it will give satisfactory performance down to 20 volts. With its improved distortion parameters as a result of improved gold transistors, this amplifier is intended as a direct replacement for the CA601 BU.

Circle Reader Service #15

Texscan/Theta-Com CATV Guardian Power Control System

Recognizing that one of the major contributors to failure of electronic CATV equipment is overvoltage transients due to lighting and power line faults, Texscan/Theta-Com has designed protection devices which provide overlapping protection for each of the overvoltage conditions. This protection package is called the Guardian Power Control System and is available on both the Phoenixian II and XR2+ series lines of amplifiers.

Circle Reader Service #16



Century III-Anaconda Unveils Feed Forward Module

At the '77 Western Cable Show, Century III-Anaconda unveiled their new model 2122—a feed forward CATV module. This unit features the following specifications: 45-110 MHz frequency range; ± 1.5 dB response flatness; minimum full gain at 100 MHz is 34 dB; recommended operating gain at 100 MHz is 30 dB; operating level is +47 dBmV; impedance match is ≥ 20 dB, 75 ohm reference; and the noise figure at 100 MHz is 7.5 dB maximum.

The AGC controls incorporate: a low control channel—tunable from channel 2 to channel 4, factory adjusted to channel 2; a high control channel—tunable from

100 MHz to 110 MHz, factory adjusted at 106.25 MHz; control channel modulation—peak detectors will operate with video, CW of sine-wave modulation; and control channel temperature stability -40 degrees to +60 degrees C.

Circle Reader Service #17

Test Equipment

The AvanteK SL-300 CATV signal level meter is a precision RF voltmeter tunable to any frequency between 4.5 MHz and 300 MHz. It can measure signal levels from -40 dBmV to +60 dBmV (10 microvolt to 1 volt) with a guaranteed accuracy of +1.0 dB. A 3 digit LED display indicates the frequency to which the SL-300 is tuned with 1 MHz resolution and +1 MHz accuracy. The meter features a true logarithmic meter scale and integral calibrator which produces a signal guaranteed accurate to within + 0.1 dB for -10 degrees F to 120 degrees F. The unique sync peak/CW level detector gives reliable, accurate measurements even with modulated signals.

Circle Reader Service #18

Wavetek Test Set

The 1067/75 CATV test set has been introduced by Wavetek. The 1067/75 is a "Measurement by Comparison" test set providing all sweep signals, electronic switching, and attenuation for loss or gain measurements of active or passive CATV components. The addition of optional return loss bridges, wide band amplifiers and tunable bandpass filters allow the measurement and evaluation of return loss and pay TV traps.

Circle Reader Service #19

AvanteK's SLM

The SID was designed to provide an insertion point for a summation sweep signal into the CATV system. This unit provides a low insertion loss, high isolation injection point with excellent return loss, thus ensuring that the sweep signal is not affected by the poor match that the headend combining network exhibits. Any response irregularities noted during summation sweep can then be attributed to the system itself and not to poor match at the point of origin of the sweep signal.

The SID has two modes of operation, NORMAL and SWEEP. In the SWEEP mode, the unit has unity gain to both the headend output signals and the sweep

signal. In the NORMAL mode, all active components are bypassed by a coaxial relay. The 20 dB output test point is operational in either mode. The unit also has a jack for external programming to cut the sweep on and off with an external timer.

Circle Reader Service #20



Viz Test Instruments

The WD-751A is a general-purpose 3 1/2 digit semi-auto-ranging liquid-crystal-display VOM operating on internal batteries, or on ac line current with an adaptor. Its CMOS LSI circuitry is exceptionally stable, can't be damaged by momentary overloads, and, because of its very low power consumption, prolongs battery life.

The WD-752A frequency counter uses a precise 10,000 MHz crystal-controlled time base for ± 0.1 ppm stability, resulting in exceptional long-term accuracy. It covers the range 10 Hz to 60 MHz with selectable 10 mV or 100 mV input sensitivity. Its unique 1 kHz audible side tone is valuable in modulating single-sideband transceivers for carrier-frequency measurements. The counter is also ideal for making frequency measurements in audio, video, CB, ham radio and other communications equipment.

A bright 0.3" seven-segment LED display automatically shows frequency, decimal point, and range (either MHz or kHz) at a glance. The counter operates on ac and is extremely light-weight (4 lb) and compact (only 2-5/8" x 5-3/4" x 9-1/4").

Circle Reader Service #21



Hewlett Packard's Microwave Frequency Counter

The Hewlett Packard 5342A microwave frequency counter now allows frequency measurement as well as amplitude measurement to be accomplished with the same instrument. The counter measures frequencies from 10 Hz to 18 GHz with a resolution of 1 Hz on an 11 digit LED display.

With the new amplitude measurement option the user can now see the input level displayed in dBm (with 0.1 dBm resolution and ± 1.5 dB accuracy) simultaneously with the input frequency. No switching of connectors is required.

Circle Reader Service #22



Converters—Scramblers

Jerrold Electronics' Cordless TV Converter

Jerrold Electronics Corporation is now delivering the Starcom III cordless TV converter. Over 10,000 units of the 36 channel remote converters are currently in use in Canada. The converter is powered from a conventional 115V ac wall outlet and consumes only 16 watts of power. The transmitter unit uses a 9V transistor radio battery which has a projected operational life in excess of one year. The unit remotely controls on/off functions, channel selection and fine tuning from a distance of up to 35 ft., and within an angle of $+30^\circ$ from the receiver centerline.

Circle Reader Service #23

Oak Industries' Mini-Code/ Mini-Scrambler System

The Oak Mini-Code/Mini-Scrambler system insures that only authorized subscribers will view premium programming in MDS systems. The Mini-Scrambler which is used for remote site scrambling can be replaced with a standard Mark II when it is preferable to scramble the channel before transmission.

The Mini-Code also has application in securing pay TV programming in 12 channel cable systems. With satellite programming, more than one channel may be scrambled using the Econo-Code II, a 2 channel midband converter-decoder.

Circle Reader Service #24

Microtime Introduces Total Signal Corrector

Microtime Inc., has introduced the 2020plus totalsignalcorrector. The 2020+ corrects virtually all signal distortions to make the recorded video playback look like the original input signal. This unit is a stand alone digital signal processor for use with all types of video tape recorders. It has an instantaneous correction range of 4 H line (254 micro sec) with optimum digital signal to noise ratio conservatively specified at 58 dB. The units' circuitry is mounted on plug in printed circuit cards and includes an internal sync generator, image processor, dropout compensator, and velocity corrector.

Circle Reader Service #25

Systa-Matics, Inc. Delivering RAIM 1000

Systa-Matics, Inc., is delivering the RAIM 1000 time base corrector, a low cost TBC designed for use with helical VTR's. The RAIM 1000 features virtual instantaneous lockup, full picture correction, and no breakup if the time base error exceeds the correction range of the unit. If this occurs, it will simply correct the picture to the system's correction limit and produce a finished picture that contains only errors in excess of the correction range. Picture degradations such as tracking errors will not disrupt operation of the RAIM.

Circle Reader Service #26

Ampex Corporation Introduces Video Cassette Recorder

Ampex Corporation has introduced the VPR-8300 full editing video cassette recorder. Features include interchangeability with other $\frac{3}{4}$ " U-Standard VTR's built-in dropout compensator, capstan servo drive, and phase locked color signal playback when used with the optional Ampex digital time base corrector. Audio record levels can be controlled automatically by an audio limiter or manually.

The VPR-8300 has full editing functions of simultaneous audio/video assembly editing and independent or combination insert editing for the video and two separate audio channels. Also featured is full dubbing capability.

Circle Reader Service #27

Video Data Systems Master Marquee

Video Data Systems has announced the introduction of the Master Marquee MMS-1 pay promotion system. The MMS-1 provides a full screen color alphanumeric display in the absence of a video input, but automatically detects and switches to a superimposed, alphanumeric crawl over video when a video input is present. The unit is designed to be used for promotion of pay channels.

The MMS-1 features an 8-page memory and an internal NTSC sync generator for use on full page display. In the superimposed mode the character generator is automatically gen-locked to the incoming video, allowing the operator to superimpose ordering instructions over the program or preview while it is running.

Circle Reader Service #28



Programmable Systems Inc. Delivers "Director System"

PSI is delivering the "Director" System, a video cassette programming system which allows the pay television entrepreneur to pre-program up to seven full days of operation. The "Director" system can program up to 19 cassettes for 24 hours a day in any sequence or time interval. The data entry keyboard is designed for easy, uncomplicated programming. Options include a 12" color monitor, second built-in tape deck for continuous running of movie previews, and built-in modulator.

Circle Reader Service #29

MSI Television Offers Video Services

MSI is offering a complete line of automated video services, including weather information, news services, stock exchange information, and operator programmable services such as program guides and public service announcements.

Also available are multichannel displays in the datacasting series of equipment. Memory capacities range from 160 pages of random access memory to 2000 pages disk memory.

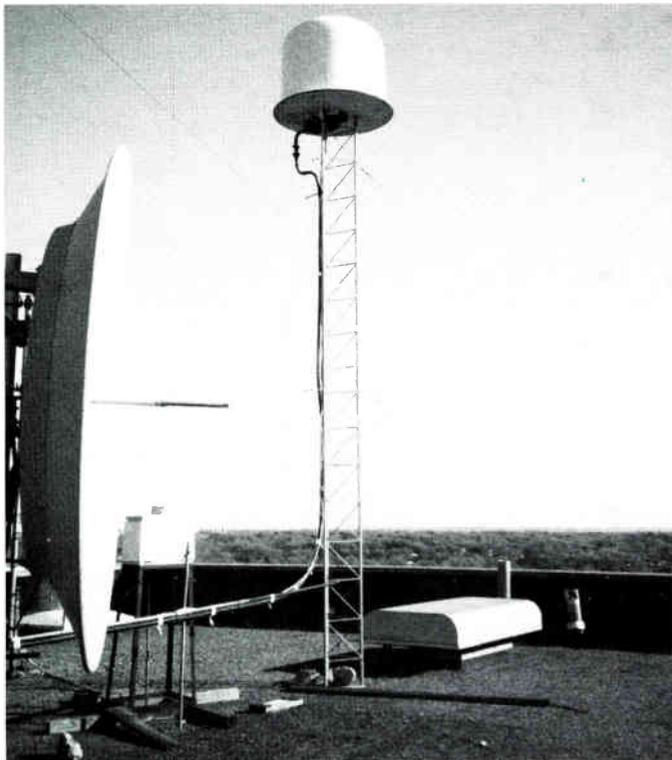
Circle Reader Service #30

More Than Just Entertainment

By Toni Barnett, Managing Editor

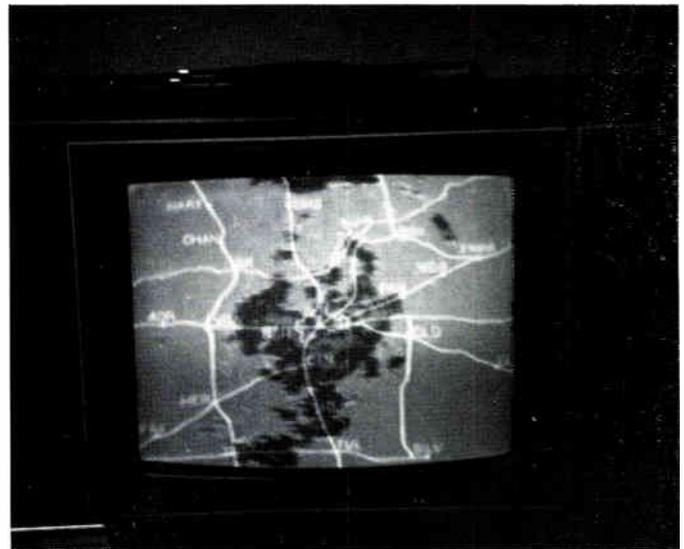
Total Television of Amarillo, Texas provides more than just entertainment to its 16,800 subscribers on cable. According to Chuck Christensen, general manager of Total TV, in addition to good reception and the optional Optical pay programs, Total TV of Amarillo incorporates an emergency alert radar system on their weather station (channel 6).

This system, owned by Stauffer Communications and Marsh Enterprises, is an earth station system utilizing aircraft weather radar (AVQ-10) coupled with a WRT-75 converter. This equipment takes the information from the radar and converts it into a constant image color display with storage capability. Total TV of Amarillo also uses Telemation's 1432D character generator and a weather station to display an actual full-screen photograph of the radar.



Radar antenna with dome

The top half of the video on channel 6 displays weather information, with a weather crawl updating the information three times a day. The lower half contains a seven-page memory in which advertising is sold. During normal conditions the radar display is shown every third page. This radar information is on for seven out of every thirty minutes.



Actual television monitor display

The radar display, covering fifty nautical miles, shows different colors for the intensity of a weather activity. In the event of weather storms, the radar information becomes full-screen.

This earth system feeds signals into the converter or colorizer. It introduces composite video signals that go to Telemation's 1100 camera with a sync clock generator board installed in it. The camera is positioned on an overlay. The two videos are locked into the camera and sped to the modulator. By using a switching device, a clock pulse is taken out of the character generator. Each time it turns a page, it produces a pulse. A relay is activated which switches the video from the character generator to the video from the camera. This series of relays produces the radar information.

The basic components for this radar system incorporates Scientific-Atlanta's 6120 emergency alert system, Jerrold and Anaconda headend equipment and a Telemation camera.

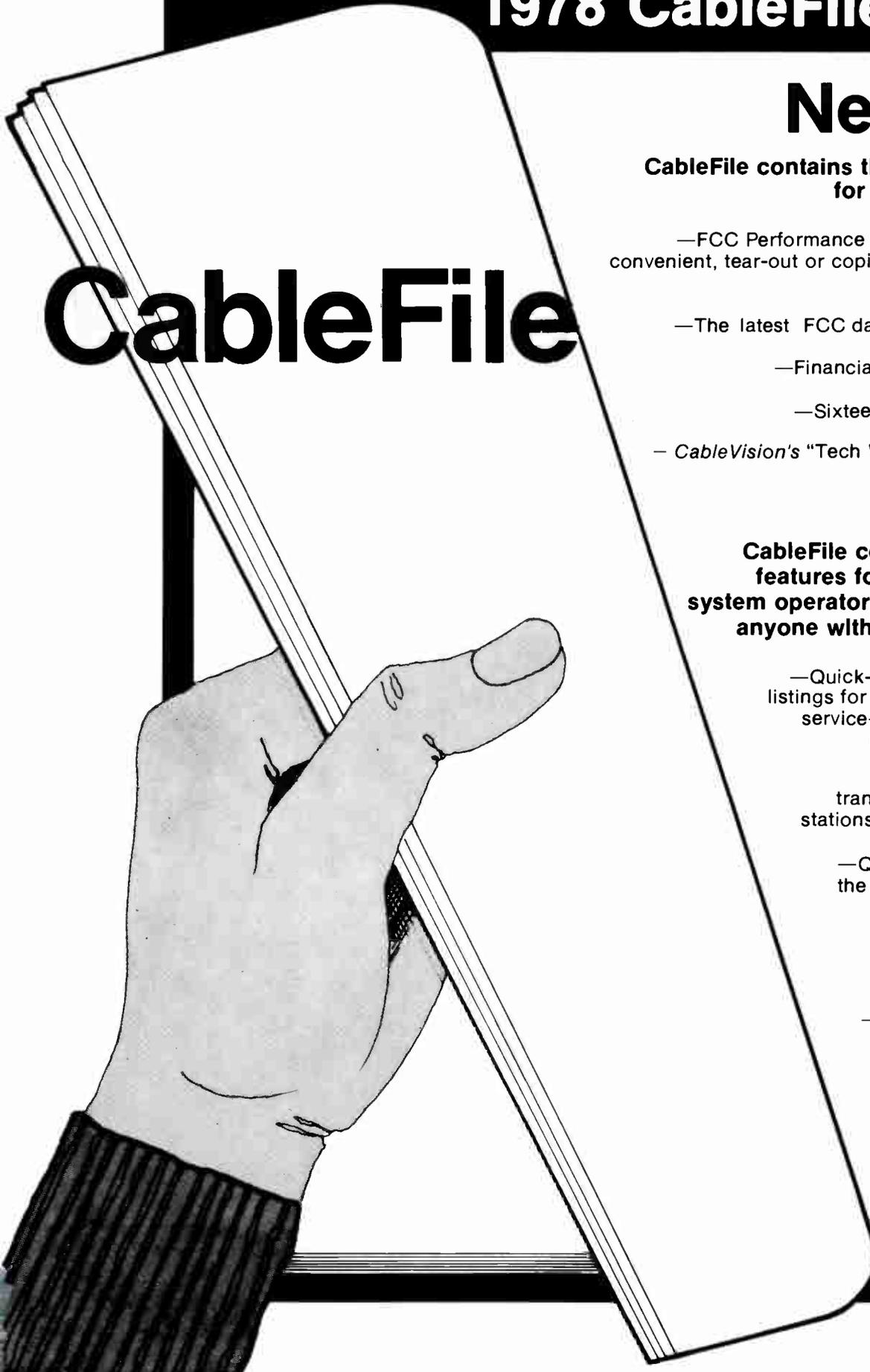
The radar system can be activated via remote control from a local radio station (KGNC-FM) and by the Office of Defense of Disaster Relief by using a special telephone line that will audio interrupt all twelve channels.

Another unique aspect of this system is the night alarm warning. At 9:30 p.m., the audio (FM music) is turned off until 8:00 a.m. the following morning. A subscriber can then leave his set on with full volume and retire for the evening. In the event of an emergency alert, the civil defense audio would wake him up.

Approximately \$50,000 was put into this emergency alert radar system which became operational in 1977. Judging from the response of subscribers to this new service provided by Total Television of Amarillo, the subscribers are more than pleased to have cable TV—and not just for entertainment.

More information on cable than ever before with the 1978 CableFile

CableFile

A black and white illustration of a hand holding a large, thick book. The hand is shown from the side, with the thumb and index finger gripping the edges of the book. The book is tilted, and its pages are visible on the right side. The word 'CableFile' is printed in large, bold, sans-serif letters across the front cover of the book.

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Reference Manual Aids In Documented Occupational Safety And Health Compliance Programs

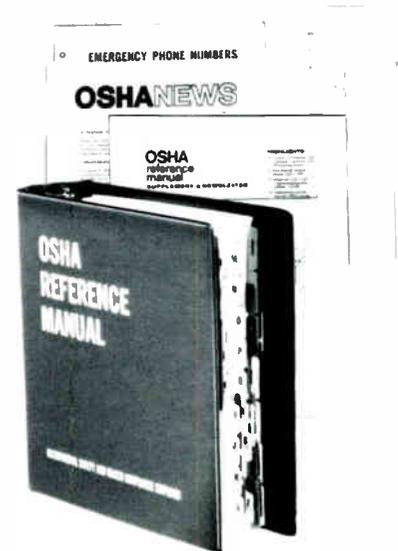
The OSHA Reference Manual for the general industry can be used by owners, managers, safety directors and safety consultants to initiate and document an on-going safety and health program for compliance with OSHA requirements. According to the publishers, the one-volume, loose-leaf bound manual, which is updated bi-monthly, can easily be adapted by any organization to become an individualized compliance procedural guide and records system for overall company operations or for individual departments.

The manual also serves as the basic textbook for management and employee training programs. It has been incorporated into training programs by a number of safety councils and management associations.

The manual features more than 600 pages which are divided into color coded sections for quick reference. The user is also provided with "fill-in" forms which can be used for scheduled self-inspections, equipment and machinery maintenance, accident investigation and reporting, employee medical recordkeeping, safety meeting scheduling, safety training programs, and other essential safety and health related activities.

Guides for developing recommended safety programs, organizing safety committees, and safety motivating activities are contained in a yellow coded section. The manual also offers background data on: OSHA laws: federal and state inspection procedures: how to deal with citations: proposed penalties: abatement procedures: how to prepare variance applications: and how to apply for Small Business Loans to meet OSHA compliance.

The OSHA Reference Manual is available on an annual subscription basis which is currently \$86 for the first year and \$59 for annual renewal. For additional information, or to order a manual, write to the publisher, The Merritt Company, Dept. 3023, 1661 Ninth Street, P.O. Box 955, Santa Monica, California, 90406.



OSHA's All-Purpose Reference Manual

GenRad 44-Page Coaxial Components/ High Frequency Instruments Catalog

A new 44-page catalog describes GenRad's coaxial components and high frequency instruments.

Specifications and performance curves are given on both general-purpose and precision coaxial component products consisting of connectors, adaptors, air lines, attenuators, coupling elements, patch cords, RF bridges, terminations, transistor and component mounts, ell, and precision tubes and rods. Both 50 and 75 ohm coaxial components are available. Over 60 of these coaxial components have a National Stock Number.

Instruments included in this catalog are synthesizers, HF oscillators, slotted lines, UHF admittance meter, IF amplifier, SWR meter, and RF bridge. Five of these instruments have a National Stock Number.

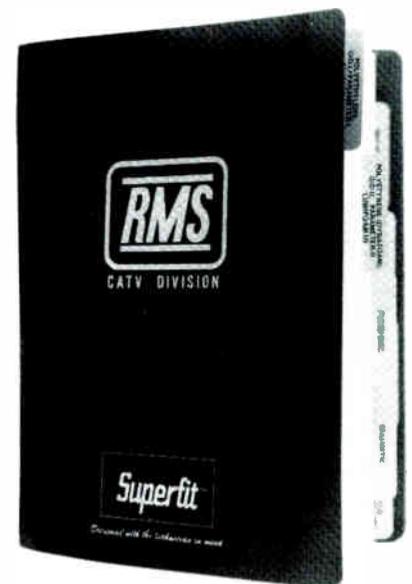
RMS Connector Catalog Available

RMS Electronics, Inc., has announced the availability of the most comprehensive CATV connector catalog ever assembled for CATV.

The catalog features the new "SUPERFIT"™ Series with 169 pages and 350 different types of aluminum sheath, RG-59/U, RG-6/U, RG-11/U, UHF, GU, N and BNC connectors. Included are the newly designed 180 degree pedestal splices, 90 degree right angle adaptors, and the surge protector/test point adaptor.

Other popular items are the locking terminator, pedestal enclosure locks, stapling equipment, crimping tools and the complete line of Cabledmatic™ cable preparation tools and accessories.

All items shown in the catalog are available for immediate shipment from stock.



RMS New Connector Catalog

Belden's New Guide Tells How To Select And Install Alarm And Security Cable

A new 16-page guide for selecting and installing alarm and security cable is now available from Belden Corp.'s Electronic Division. The guide provides timely information for use on the job and during initial evaluation and specification of alarm/security cable interconnection requirements.

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RC-2000 With a system capacity of 96 crosspoints, this unit is intended for high density applications such as program routing and switching matrices. The unit is fully modularized and is field expandable. Each output module contains 8 multi-pole relays and LED status displays. 96 function price . . . **\$4145.**

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Canadian Cable TV Distributes The Proceedings Of Parliament Live And Unedited

By Kenneth Hancock, Director of Engineering, CCTA

On the 11th of October, 1977, the complete proceedings of the Parliament of Canada were televised for the first time. This was not for the purpose of some extraordinary occasion, but the commencement of permanent televising of the daily proceeding of Canada's House of Commons. The 11th of October was also the day that Ottawa's cable companies commenced to distribute these proceedings to their subscribers live, uninterupted and in color.

For the first time members of the Canadian public could see from the comfort of their homes the activities of their government on a continuing basis.

For the CCTA, the cable TV distribution of the proceedings in the Ottawa/Hull area marked the commencement of phase one of a three-phase program aimed towards nation-wide distribution of the proceedings of Parliament.

For many months the CCTA had been working with a special committee of the House of Commons and with member cable TV licensees in the Ottawa/Hull area. The aim was to carry the proceedings of the House of Commons in real-time and unedited over the cable systems of the National Capital Region, leading eventually to national distribution.

CCTA members in the National Capital Region cooperated enthusiastically. In a surprisingly short time, approval had been received from Parliament for the provision of a landline from the House of Commons to a downtown Ottawa microwave terminal and for the provision of a microwave link from the downtown area to the headends of the cable companies. In addition, the necessary additional channel hardware was purchased, installed and tested. On the 11th of October, National Capital Commission subscribers started viewing the proceedings of the House of Commons.

In the short time since this event took place, subscriber reaction in the National Capital Region has been enthusiastic. However, Ottawa and Hull can almost be considered "company towns" with the government being the company. This enthusiasm is therefore not necessarily typical of the likely reaction in the rest of Canada. This is one of the reasons why the CCTA is planning a three-phase experiment over the next two and a half years to permit its members to evaluate the impact of the reception of the proceedings of the House of Commons throughout Canada.

Phase two is the proposed carriage of the proceedings to four selected areas in eastern Canada in real-time, unedited and in color via the Hermes satellite. This is planned to take place from approximately January, 1978 to May, 1978.

The intent is for distribution via the Hermes high power experimental satellite (CTS Satellite) to Halifax, Trois-Rivieres, Toronto and Sudbury. The beam limitations of Hermes prevent distribution further west as Hermes is a joint U.S.A./Canadian satellite and transmissions will only take place every other day. The intervening days are reserved for American experiments. If the CCTA experiment is accepted, the Canadian Department of Communications will provide the ground stations and space

segment on a no-cost basis. Full evaluation of the impact of this programming on subscribers will be carried out.

If this evaluation shows good acceptance, it is planned to continue with phase three of the experiment, which is a one-year pilot project of distribution over the Anik B. satellite. The Anik B. satellite is the second generation of Telesat satellites, planned to be launched at the end of 1978, and operational at the beginning of 1979.

Anik B. is different from its predecessors inasmuch that in addition to the 4 GHz/6 GHz transponders there will be two 12 GHz/14 GHz transponders. These latter transponders are being leased by the Canadian government for a two-year term for experimental purposes. The major advantage of the 12 GHz/14 GHz band over the 4 GHz/6 GHz band is that smaller ground stations may be used, and the band is unshared so that there is no interference with terrestrial microwave. The latter point is a major one, permitting the siting of ground stations in urban areas without the necessity of terrestrial backhaul microwave.

The Canadian Department of Communications is making the Anik B. 12/14 GHz channels available for approved pilot projects, and it is hoped that the carriage of parliamentary proceedings for the whole of 1979 on a cross-Canada basis will be one of these pilot projects. Due to the limitations of the beam, it is likely that the experiment will be carried out in two parts, covering western Canada and eastern Canada.

It is hoped that the pilot project would extend to some 25 ground stations.

By the time that phase three is completed, it is expected that all problems will be ironed out, leading the way to the use of satellites for the carriage of parliamentary proceedings and other services to Canadian cable TV companies from coast-to-coast.



A handwritten signature in dark ink, appearing to read "Ken Hancock". The signature is fluid and cursive, written over a light background.

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Major MSO has openings in the midwest for experienced chief technicians. Must have:

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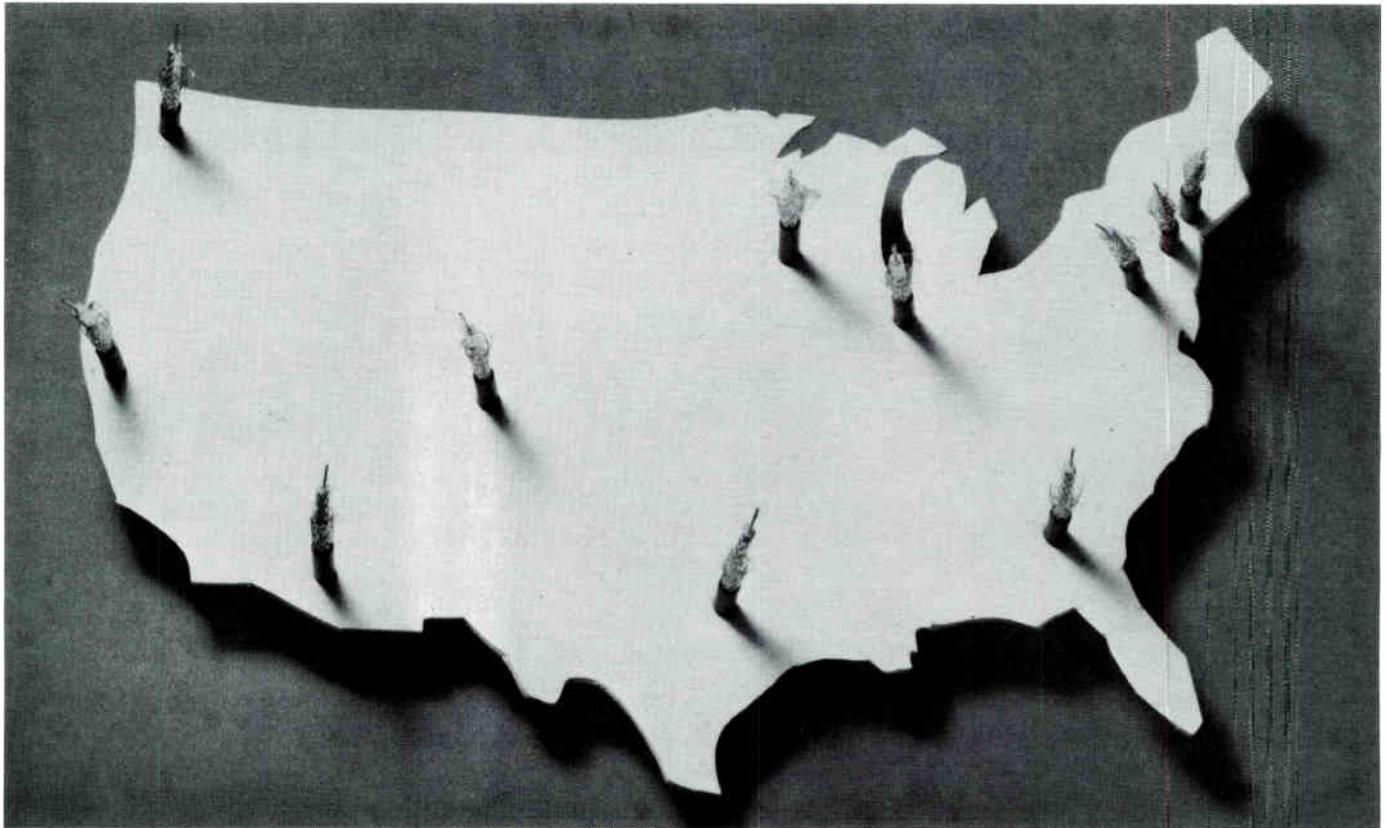
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