

# CEED

TM

Communications Engineering & Design/The Magazine of Broadband Technology

May 1984

Special Section  
NCTA Exhibitors

## Public access videotex goes online

CD1PA58105MCC522 083184/1  
FRED E MCCORMACK ENG  
HASTAD ENGINEERING CO  
BOX 5221 ST UNIV  
FARGO ND 58105



# The TEN DEMANDMENTS

With the FCC's intensified enforcement of signal leakage limits, you can't afford questionable quality or erratic sensitivity in a leakage detector for your system.

That's why it pays to heed our Ten Demandments and not simply settle for any leakage detector.

I

## Demand High Sensitivity.

You'll need all you can get, so demand *the* detector with -86 dBmV sensitivity.

II

## Demand Ease-of-Use.

Make sure it's lightweight and portable. With simple controls. And no separate transmitter required for operation.

III

## Demand Quality.

With proven reliability. Documented field success. Plus support from a major US CATV/electronics company.

IV

## Demand Full Frequency Capability.

Be sure you can choose a detector for *any* channel frequency—from 54-300 MHz.

V

## Demand Metered Readings.

For quantifiable results and measurements—not just basic “leakage/no leakage” indications.

VI

## Demand Frequency Trim Adjustment.

From a front-panel control. For accurate readings of the *exact* frequency you're tracking, not a “nearby” frequency.

VII

## Demand Audible Tone Alarms.

For fast tracking and location-sensing. With a pleasant, non-abrasive tone.

VIII

## Demand “Standards,” not “Accessories.”

Be sure you get all necessary equipment—a near-field probe, tuned dipole antenna, AC charger/adaptor, headphones, and 50-hr.-rated rechargeable batteries—as standard.

IX

## Demand Quick Delivery.

Be sure you can get your detectors in a matter of weeks—not months.

X

## Demand the Tracer.

Don't take chances with either the FCC or with any other detector. Demand the *only* leakage/detector that can meet the Ten Demandments. Demand The Tracer.



For more information, or a demonstration at your system's offices, contact your nearest VITEK sales representative, or call (201) 287-3200.

**AUGAT VITEK**

Quality and Innovation

Vitek Electronics, Inc., 4 Gladys Court, Edison, New Jersey 08817 (201) 287-3200

Reader Service Number 1

Net one of our new Taps in Booth #801 Las Vegas and you'll be able to test and evaluate it on the spot.

Your results will show it's everything we said it would be, and less. Because our exclusive SMD technology let us cut Tap prices. Dramatically.

SMD also let us cut the size to a compact 4.94" x 3.44" so it fits into a roomy 6" pedestal, and it's ideal for aerial installation as well.

But most importantly, our new modularly-designed 8-Way Tap gives you superior 5-600 MHz performance and 100 dB RFI isolation. (Our Tap complements our new sub passive line which improves RFI isolation by 150%.)

However, don't take our word for it: Catch our Tap at the NCTA and prove it to yourself.

When you do, you'll note it's

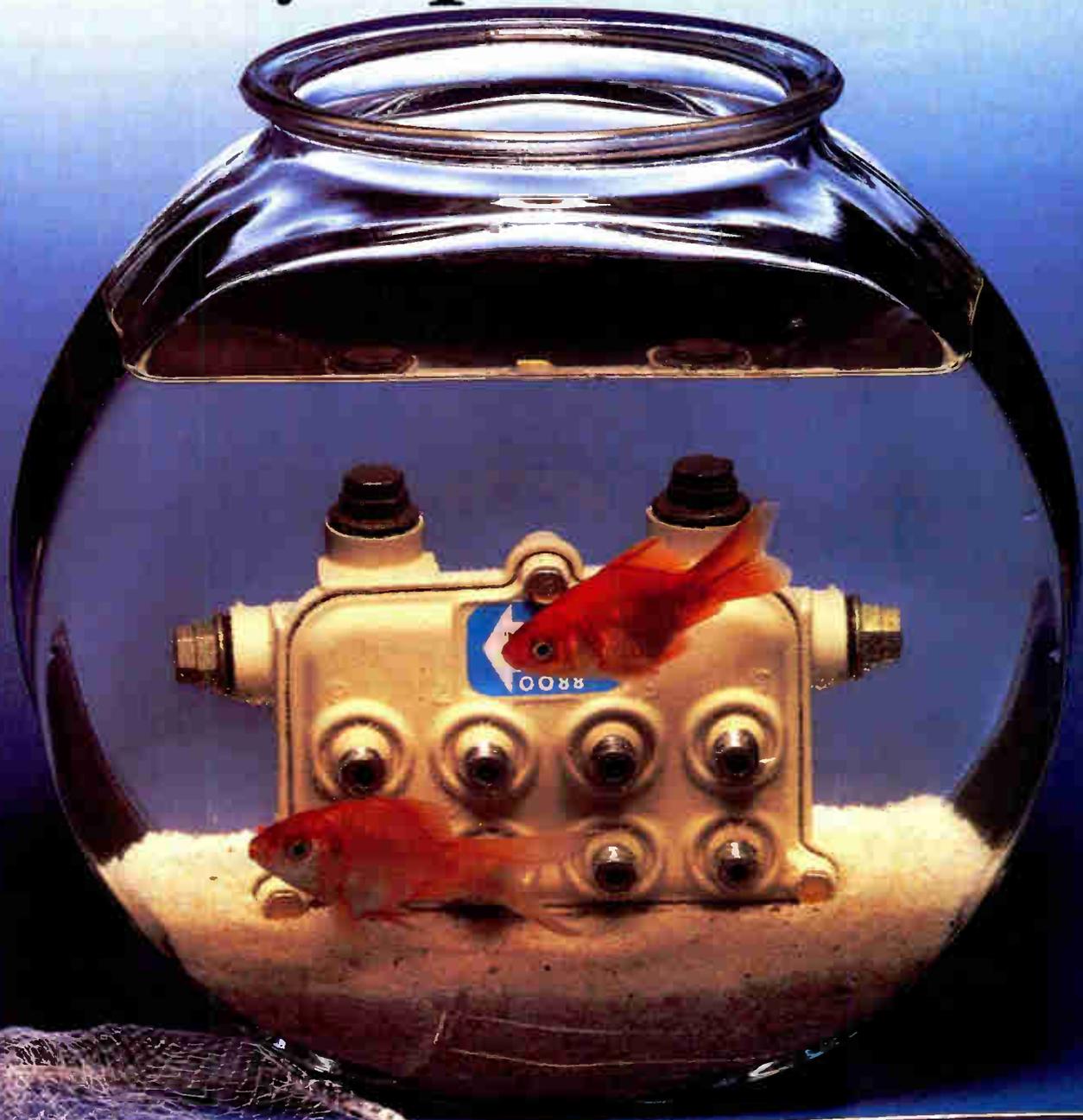
weathersealed extraordinarily well. One reason why? We expect to be flooded with orders.



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TOLL-FREE 800-448-5171 (IN NY, 800-522-7464)

Reader Service Number 2

# Catch a Magnavox 600 MHz 8-Way Tap at the NCTA.

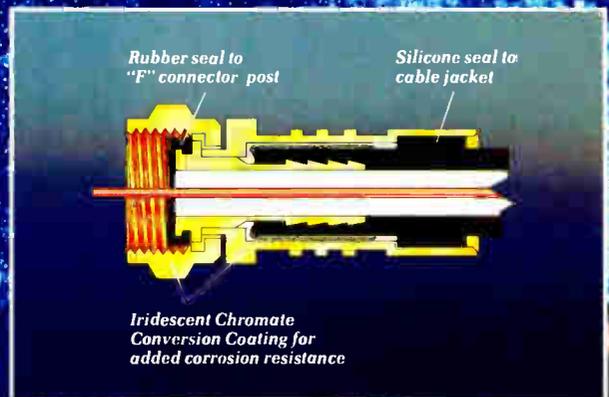


# LRC Connectors keep working in all weather... *So you won't have to.*



LRC Electronics introduces the DUAL SEAL "F" CONNECTOR, a premium style "F" fitting. These connectors seal to both the female post by tightening, and to the cable jacket by crimping. With the use of both rubber and silicone seals at the front and back of the connector, moisture is prevented from migrating down the braid of the cable. Keeping moisture out insures longer life to subscriber drops.

These connectors require standard cable preparation and are available in all RG59U and RG6U cable sizes. Consult LRC for specific recommendations.



**COMMUNICATION NEWS 16**  
**FBI agent heads anti-theft campaign; Commco consolidates**

General Instrument intensifies its war against cable pirates by hiring Ronald Putnam, a former FBI agent, as group director of security. Meanwhile, Commco Construction Co., reacts to a weak construction market by retreating from national operations.

**INTERFACE 21**  
**Public videotex goes on-line**

While most of the attention has been focused on home and business videotex services, some players see other applications, such as public access systems, as commercially viable products.

**FEATURE 24**  
**Technicians talk tools**

Engineers and chief technicians from systems across the country choose their favorite tools, with many citing test equipment as essential to their system operations. Developments in both construction and test equipment have improved overall system performance.

**SPECIAL FEATURE 31**  
**NCTA exhibitor list**

A listing of NCTA exhibitors, arranged in alphabetical order, is presented.

**TECH II 39**  
**Plastic pedestals: A superior alternative?**

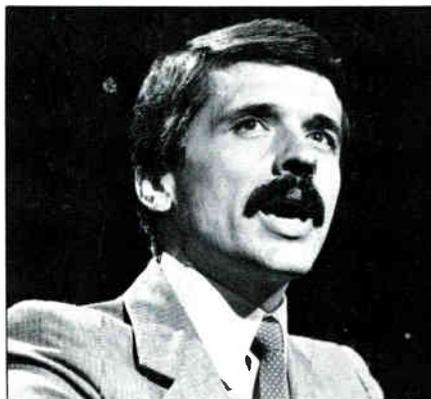
Roger Scommegna, product manager, American Technology Co., recounts the evolution of plastic pedestals and points out the benefits and drawbacks of using these types of pedestals over traditional metal enclosures.



*The San Francisco's Bay Area Teleguide is one of the first videotex systems that is targeting the tourist industry as its primary market. See Interface, page 21.*



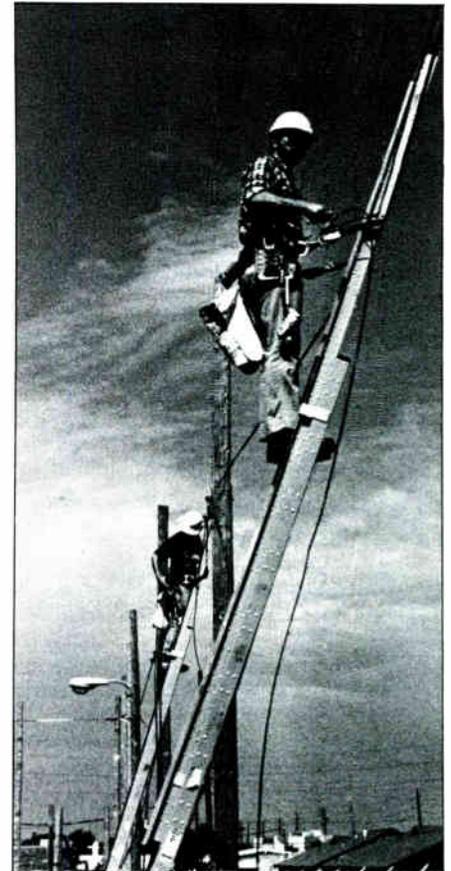
*This month's Product Profile focuses on signal level meters. Sadelco's DL-200 signal level meter is featured above.*



*Tom Wheeler gives up NCTA post. He will join the NABU Network July 4 as president and CEO. See Techscope, page 6.*

**PRODUCT PROFILE 46**  
**Signal level meters**

CED explores signal level meters. A sampling of equipment and a listing of specifications is provided.



*Engineers and technicians depend on test and construction equipment to maintain their systems and improve plant performance. See tools, page 24.*

**DEPARTMENTS**

<b>Techscope</b>	<b>6</b>
<b>Seminars</b>	<b>11</b>
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<b>Hardware Hotline</b>	<b>55</b>
<b>In Orbit</b>	<b>60</b>

## Engineering degrees by satellite

Employees at high technology firms soon will be able to take courses leading to master's degrees in computer science and electrical engineering by satellite.

National Technological University, a consortium of 24 engineering schools, plans to broadcast engineering classes from major universities beginning in 1985.

When NTU starts up this fall, it will deliver some 32 courses to students at as many as 40 sites. The university initially will deliver its instruction by videotape, and by the time NTU begins satellite transmission, expects to be awarding 500 or more master's degrees in engineering each year.

Grants from a dozen corporations such as IBM, Hewlett-Packard, Control Data, Kodak and General Electric, as well as a \$125,000 grant from the Defense Department, will help NTU get started.

Among the schools providing faculty to NTU will be the University of Massachusetts, Colorado State University, the University of South Carolina and the University of Arizona. By 1985, another four to six additional universities will be providing lectures.

NTU is headquartered at Colorado State University in Fort Collins, Colo., and can be reached at (303) 491-6603.

## RCA tosses videodisc venture

RCA Corp. is getting out of the videodisc player business. Low product volumes as well as low market prices were cited by Roy Pollack, RCA executive vice president, as reasons for the firm's exit.

RCA launched its videodisc player in March 1981 and has invested more than a half billion dollars supporting it. But price cutting moves by videocassette recorder manufacturers have lowered VCRs to a level just above RCA's videodisc player.

## Ford Aerospace to build DBS satellites

Two Ku-band DBS satellites will be built by Ford Aerospace and Communications Corp. for Direct Broadcast Satellite Corp. The contract, valued at more than \$177 million, also includes an option for a third satellite, to be used as an in-orbit spare.

DBS Corp. plans to beam six nationwide channels of entertainment programming and information services to homes and offices. An additional six spot beams, each containing four television channels, will be targeted at major metropolitan areas throughout the United States.

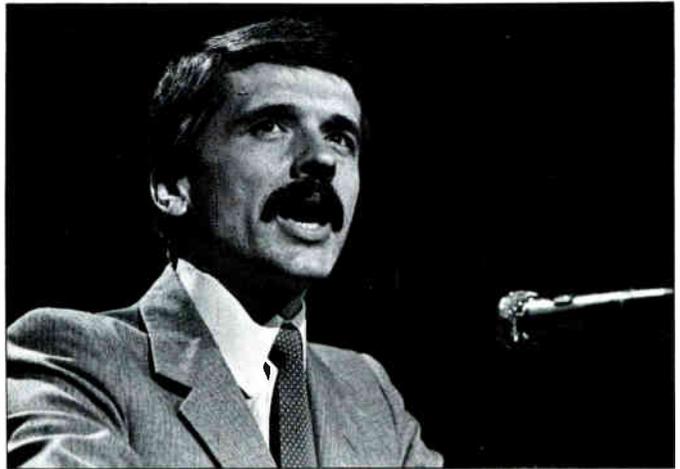
Operating as a common carrier, DBS Corp. will lease all of its channels.

Ford plans to deliver the first of the satellites early in 1987, in time for a March launch aboard the French Ariane rocket. The second bird is scheduled for launch in September 1987. Each satellite will serve half of the continental United States, and they have an expected working life of ten years.

## S.A.L. supplies Antigua system

S.A.L. Cable Communications Inc. has been selected as the exclusive equipment supplier for the cable system under construction on the island of Antigua. The 200-mile system is the first on a Caribbean island not governed by the United States. The agreement is worth about \$1 million.

Also in March, the company passed the \$100 million mark for cumulative sales of hardware.



*Wheeler leaves NCTA helm for new waters at NABU*

## Wheeler resigns

NCTA President Tom Wheeler handed in his resignation at the group's March 4 board meeting. Executive Vice President Jim Mooney got the nod as Wheeler's successor.

Wheeler, who had been with the NCTA since 1976, expects to assume the post of president and chief executive officer of NABU by July 4. Mooney's term will begin at that time.

## TV channel at NCTA convention

For the first time, NCTA is leasing a television channel at major Las Vegas hotels so video programmers and equipment manufacturers can promote their products during the group's annual convention.

Leased time will be available in 15-, 30- or 60-minute segments from 6 a.m. until midnight in the Las Vegas Hilton, the MGM Grand and the Riviera Hotel.

NCTA plans to provide both technicians and equipment to handle 3/4-inch videotape. Additional equipment, such as earth stations, will be the responsibility of the company using the channel.

Costs for airing tapes will be \$1,600 for 15 minutes per day for four days; \$3,000 for 30 minutes per day; and \$4,000 for 60 minutes per day.

Call Ann Dorman at (202) 775-3649 for further information.

## General Instrument gains

General Instrument's Jerrold Division recently signed two contracts valued at \$4.3 million. Adelphia Communications Corp. will be buying \$1.3 million worth of converters as well as an addressable computer-controller.

Cable Services Co. will be buying about \$3 million worth of converters, computer-controllers and associated equipment.

## AM Cable contracts

AM Cable TV Industries has booked more than \$9 million in new cable construction contracts since November 1983, the firm recently announced. Turnkey contracts totaling 425 aerial and underground miles, as well as other projects totaling 1,353 miles are included in the sales total.

# IN THE BATTLE OF THE ROUTING SWITCHERS, THERE'S A NEW HEAVYWEIGHT CHAMPION.

	3M Series H 128 x 32	Fernseh TVS-TAS 2000	Grass Valley GL 440	Grass Valley Horizon	Utah Scientific AVS-1
<b>VIDEO</b>					
Crosstalk Video to Video	-65/4.43	-60/4.43	-60/5	-60/5.5	-60/4.4
Hum & Noise (0-4.2 mHz)	-75	-75	-65	-75	-
(IRE WEIGHTING)	-82	-	-	-	-75
Frequency Response (dB to mHz)	± 1/5.5	± 1/5.5	± 1/5	± 1/5	± 1/5
Diff Gain (10-90%) 3.58	.1°	.1°	.25°	.1°	.1°
Diff Phase	.1°	.1°	.25°	.1°	.12°
<b>AUDIO</b>					
Crosstalk (dB/kHz) Audio to Audio	-88/20	-85/15	-80/15	-80/15	-75/20
Hum & Noise (dB below out ) / FILTER	-122/15k	-109/*	-92/15k	-104/15k	-109/15k
Freq Resp @ Max Out (dB/dBm)	± .1/30	± .2/24	± .1/24	± .1/24	± .2/24
Over Freq Range	20-20k	30-15k	20-20k	30-15k	30-15k
Com Mode Rej Ratio (dB)	-80	-75	-80	-65	-70

\*Data not available

Data based on manufacturers specification as of 4/83

Compare our Series H Hybrid Switching Systems to the competitors and the advantages are easy to see. If you'd like to compare a few more specs, call us toll-free at 1-800-325-1684. In Minnesota, call toll-free

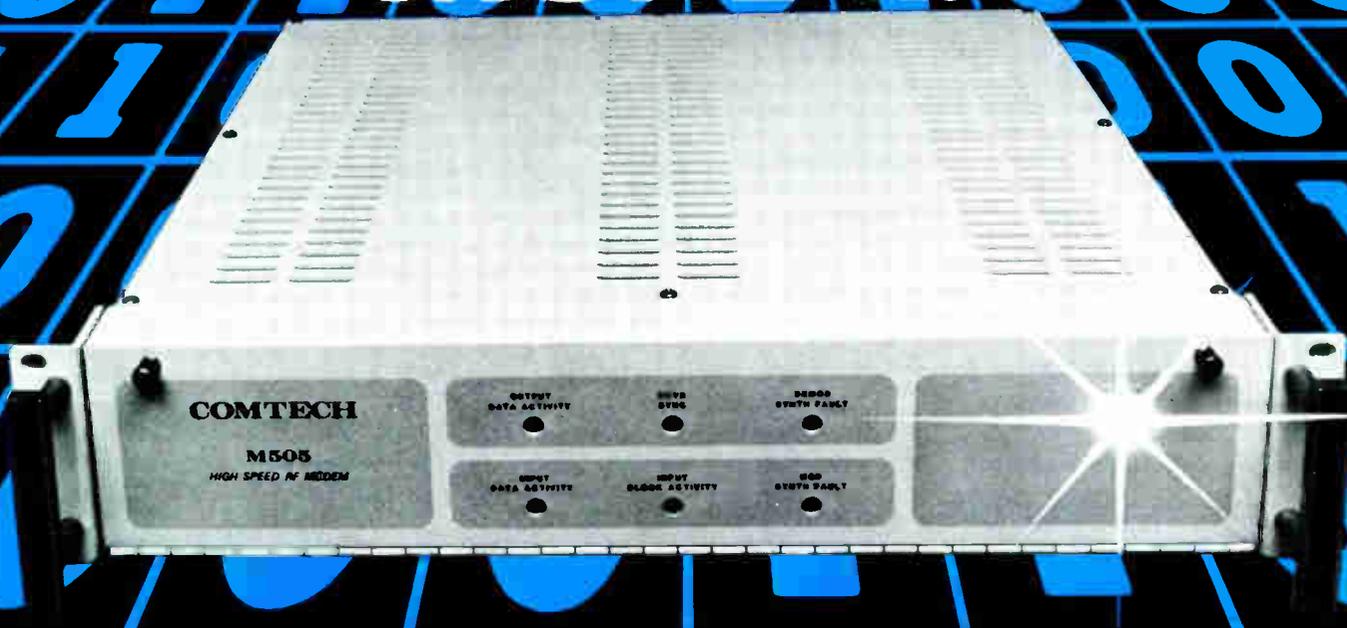
1-800-792-1072. Outside the continental U.S., call International Operations collect at 1-612-736-2549. You'll be knocked out by all our advantages. Broadcast and Related Products Division.

3M hears you...

# 3M

Reader Service Number 4

# THE BROADBAND MODEM.



## Over 8,000 Carrier Frequencies in One High Speed Broadband Modem.

The company that has produced and shipped more high speed broadband modems than all of its competition combined now offers the ultimate in advanced (and deliverable) technology. Here's what our new 505 high speed broadband modem offers:

**Frequency Agility**—Comtech's 505 Frequency Agile High Speed Modem is more flexible than ever with 8,000 field-selectable carrier frequencies available (up to 400 MHz). This means more on-line time covering more applications with a minimum of spares required.

**Changeable Data Rates**—Unique plug-in modules permit selectable data rates between 56 KBPS to 10 MBPS. Aggregate rates of up to 500

MBPS are possible. You select the rate that fits your system.

**Increased Output Levels**—The greater signal strength output of the 505 permits extended cable runs without the need for trunk amplifiers.

**Low Spurious Signal Content**—With fewer stray signals, there is less interference with other signals on the cable.

**Advanced Diagnostics**—Convenient network system diagnosis is now possible using the 505's numerous test points, indicators, signals and built-in test equipment.

**Multiple Power Sources**—Options include 110 VAC, 230 VAC, 48 VDC and 24 VDC.

**Cost Effective**—The improved 505 is the most economical high speed digital broadband modem on the market with the most wanted features and the highest through-put.

The 505 can make your coaxial cable or local area network system operate better, faster and more efficiently. Current worldwide applications using Comtech Broadband Modems include: PBX interconnection, CAD/CAM remote graphics, remote terminals, process automation, robotics and data acquisition and control. Let our 505's increase the productivity of your system—call or write: **Comtech Data Corporation**, 350 North Hayden Road, Scottsdale, AZ 85257, (602) 949-1155 or TWX 910-950-0085.

**COMTECH** Data Corporation

A Subsidiary of Comtech Telecommunications Corp.

Reader Service Number 5

# Seminars

## May

**1:** An Executive Seminar on U.S. Government Applications for Fiberoptics Systems, sponsored by the **Kilty Company**, will be held at the Congressional Club in Washington, D.C. Contact Mildred Christian, (301) 657-3910.

**1-3: ABC TeleTraining, Inc.** will hold a comprehensive course in subscriber loop design, installation and maintenance in Birmingham, Ala. Contact ABC TeleTraining, Inc., (312) 879-9000.

**1-3:** The **West Virginia Cable Television Association** will hold its Spring meeting in Wheeling, W.V. Contact Roger Price, (304) 345-4710.

**2-3: Frost and Sullivan** will be sponsoring a Networking Personal Computers conference at the Halloran House in New York City. Contact Ginny Kania, (212) 233-1080.

**4-5:** The Robert Woodruff Library in Atlanta will be the site of the **NFLCP** Southeast regional Spring conference. Contact Jabari Simama, (404) 874-8000.

**5-9:** EUROCAST '84 will take place in the halls of the Swiss Industries Fair in Basel, Switzerland. EUROCAST is sponsored by the **Society of Cable Television Engineers** and the **Swiss Association Satelliten Rundfunk**. Contact Mark Voss, (713) 463-0502.

**6-9: Comunicaciones Expo '84**, the only show dedicated to the Latin American and Caribbean Communications Market, will be held at the Curtis Hixon Hall in Tampa, Fla. Contact Gene Bignami or Martha Hammerquist, (617) 329-8090.

**6-11:** The **International Communications Association** will hold its 37th annual conference and exposition at the Hilton in Las Vegas. Contact N.H. Sefton, (919) 684-6363.

**7:** The **Rocky Mountain Chapter of Women in Cable** will offer its Cable Course at the University of Denver in Denver, Colo. Contact Roxanne Barlow or Dawna Hunka, (303) 321-7550.

**7-9:** The 1984 Sat Expo and Satellite Direct Conference takes place in Denver, Colo. The annual event is sponsored by **Channel Guide**. Contact Leslie Howard at (303) 761-1135 or (303) 761-7930.

**7-9: Business Communications Review** offers a data communications concepts seminar in Atlanta. Contact Marcia Kaplan, (800) 227-1234.

**8-10: Jerrold** will hold a technical seminar in Boston. Contact Kathy Stangle, (215) 674-4800.

**8-10: ABC TeleTraining Inc.** offers a course in CATV management, engineering and operating principles in Chicago. Contact ABC TeleTraining, Inc., at (312) 879-9000.

**8-10: Scientific-Atlanta** offers a CATV product training seminar in Minneapolis. Contact Vickie Gilleland, (404) 449-2127.

**8-11: TV Watch of Atlanta**, a Scripps Howard company, will demonstrate commercial insertion equipment in New York City on a live cable hookup. Contact Patricia Coe, (800) 554-1155.

**9-11: A Magnavox** CATV training seminar will be held in Rapid City, S.D. Contact Ms. Mancini, (800) 448-5171; in N.Y., (800) 522-7464.

**9-11: A Community Antenna Television Association** advanced technical training seminar will be held at the Best Western Monticello Motor Lodge near Philadelphia. Contact (305) 562-7847.

**14: The Rocky Mountain Chapter of Women in Cable** offers its Cable Course in Denver, Colo. Contact Roxanne Barlow or Dawna Hunka, (303) 321-7550.

**14-16: A Magnavox** CATV training seminar will be held in Rapid City, S.D. Contact Ms. Mancini, (800) 448-5171; in N.Y., (800) 522-7464.

**15-16: Blonder-Tongue Laboratories Inc.** offers an SMATV/MATV/CATV/TVRO technical seminar at the Greenwood Inn, Bellevue, Wash. Contact Clarence Scott, (206) 771-6016.

**15-17: C-COR Electronics Inc.** will conduct a technical seminar in San Francisco. Contact Deb Cree, (814) 238-2461.

**15-18:** An international exhibition of telecommunications, radio and information technology, **Communications '84**, will be held at the National Exhibition Centre in Birmingham, England. Contact (201) 652-7070.

**21:** The **Rocky Mountain Chapter of Women in Cable** will hold its Cable Course in Denver. Contact Roxanne Barlow or Dawna Hunka, (303) 321-7550.

**21-22:** A digital communications systems seminar is offered by **Business Communications Review** in N.Y. Contact Marcia Kaplan, (800) 227-1234.

**21-23:** Hazardous Radio Frequency-Electromagnetic Radiation, a class designed to convey "working knowledge" of electromagnetic dangers, will be offered by **George Washington University** in Washington, D.C. Contact George Harrison at (800) 424-9773.

**22: New York Women in Cable's** chapter meeting will be held at the Viacom Conference Center, N.Y. Contact Maureen Pressel, (212) 988-9117.

**22-24: ABC TeleTraining** offers a course in telecommunications transmission systems in Chicago. Contact (312) 879-9000.

**22-25:** An intensive short course on modern antennas will be held by **Technology Service Corp.** in Bethesda, Md. Contact TSC, (800) 638-2628 or (301) 565-2970.

**23-25:** The 8th annual Teleconferencing and Interactive Media '84 conference, sponsored by **Center for Interactive Programs**, will be held in Madison, Wis., following the May 22 meeting of the International Teleconferencing Association (ITCA). Contact the Center for Interactive Programs, (608) 262-8997.

**23-26:** A conference on Computer Art and Design Education (CADE), cosponsored by **Artronics Inc.** and **RIT's College of Fine and Applied Arts**, will be held at the Rochester Institute of Technology in Rochester, N.Y. Contact Brenda Reimherr (716) 475-2757.

**24:** Fiberoptic suppliers will present a seminar on fiberoptic technology sponsored by **Fotec Inc.** on Long Island, N.Y. Contact Jim Hayes, (617) 542-1719.

**25:** Fiberoptic technology will be the topic of a seminar held by **Fotec Inc.** in New Jersey. Contact Jim Hayes, (617) 542-1719.

**31-June 1:** A satellite communications seminar sponsored by **TeleStrategies Inc.** will be held at the Stouffer's National Center in Washington. Contact (703) 734-7050.

## June

**1-3:** A National Cable Forum event, sponsored by **National Cable Forum**, will be held at the Arizona Biltmore Hotel in Phoenix. Contact Louise Rauscher, (213) 655-4150.

**3-6:** The annual convention of the **National Cable Television Association** will be held at the Las Vegas Convention Center. Contact (202) 775-3629.

## Looking ahead

**June 3-6:** National Cable Television Association convention, Las Vegas (Nev.) Convention Center.

**June 11-14:** Canadian Cable Television Association convention, Capital Congress Center, Ottawa.

**July 15-19:** Community Antenna Television Association convention, CCOS-84, Tan-Tar-A Resort, Osage Beach, Mo.

**Aug. 12-15:** Cable Television Administration and Marketing Society convention, Waldorf-Astoria, N.Y.

**Sept. 6-8:** Eastern Show, Georgia World Congress Center, Atlanta, Ga.

**Oct. 16-18:** Mid-America Show, Hilton Plaza Inn, Kansas City, Mo.

**Oct. 30-Nov. 1:** Atlantic Show, Atlantic City Convention Hall, Atlantic City, N.J.

**Nov. 17-20:** The American Market For International Programs trade show, Miami.

**Dec. 5-7:** Western Show, Anaheim Convention Center, Anaheim, Calif.

# LECTRO POWER SYSTEMS BEAT THE OTHERS COLD.



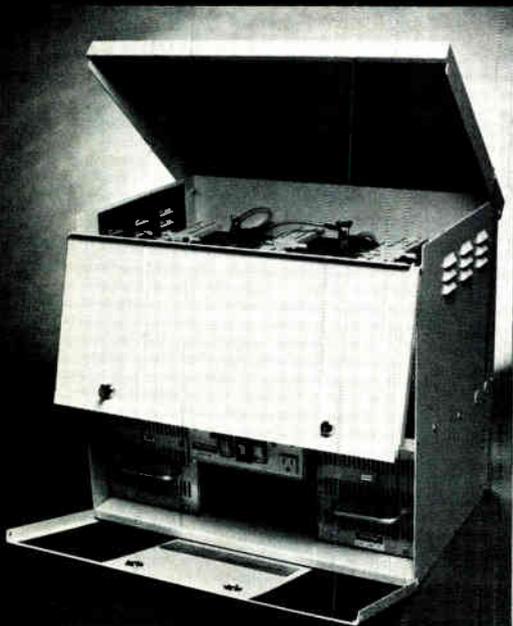
Whatever requirements your cable system is likely to face, Lectro has the power system that's right for you.

From Mini Brutes to Add-Ons to the new Sentry II, Lectro offers over 50 different models—nobody else even comes close.

Our computer-aided design and manufacturing capabilities are the most advanced in the industry. So we have the flexibility to meet a wider range of standard and standby power needs—including our ability to custom build cabinets to your specifications.

Pole mount or ground mount. Batteries on top or on the bottom. Lectro's design is the most flexible on the market.

Call for complete specs on our whole family of power supply products. Compare for yourself and you'll agree, for quality, price, flexibility and serviceability—Lectro standard and standby power systems are the natural choice.



#### SENTRY II

##### Features:

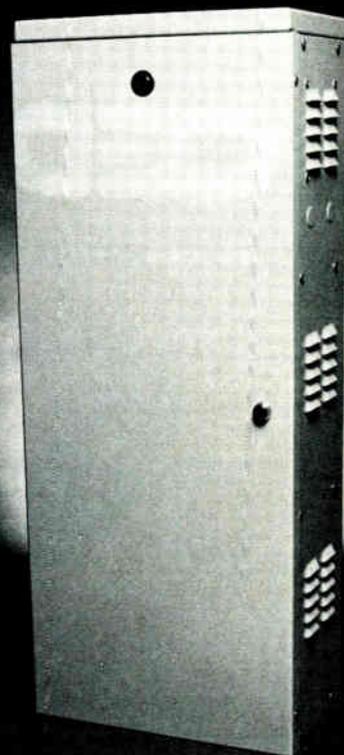
- Total modular construction, customized to your needs.
- Automatic switchover when either module is unplugged.
- Auto restart overload protection.
- Constant voltage taper charger.
- Under-voltage protection.
- Top or bottom battery position, optional.
- Accommodates group 31 batteries.
- Ground or pole mount.
- Status indicator lights.
- Metered battery voltage & output current.
- MOV surge protection, standard.
- Optional heavy-duty surge protection available.
- Optional daily battery exercise charge available.



#### MINI BRUTE

##### Features:

- 89.4% operating efficiency (tops in the industry).
- Fan cooled for extended life.
- 5% load regulation.
- 1% line regulation.
- Modular design.
- Positive disconnect for added safety.
- MOV surge protection standard.
- Time delay and current limit options available.
- 7" W x 8" D x 15 1/2" H
- Wt.—37 lbs.



#### ADD-ON STAND-BY UNIT

##### Features:

- 60 Volts output or optional 30 volt.
- 720 Watts.
- 2 Hr. 20 min. operating time at full load.
- Compatible with any standard make Ferro supply.
- Dual battery operation.
- 5% load regulation between 3 & 5 amps.
- Automatic low voltage shut down.
- Plug-in connectors for simple installation.
- Built in fan for longer life, standard.
- 13" W x 8" D x 33" L
- Wt.—38 lbs. (without batteries).



**Burnup & Sims**

**Lectro**

**The Natural Choice.**

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Reader Service Number 6

"grandfather" present holders of FCC first and second class radio licenses.

The association also will offer an expanded range of endorsements to the basic certificate. The initial categories are Radio, Satellite, Broadcast (AM, FM, TV), Land Mobile Radio, Cellular, Microwave, Millimeter and Frequency Coordination.

The group also plans to add endorsements for telephone inside and outside plant, laser telecommunication, fiber-optics, cable transmission systems, multiplex systems, telephone switching and other areas.

NARTE plans to charge fees ranging from \$30 for a first class certification to \$10 for a third class license. Endorsements will cost \$5 each, and NARTE certificates will be valid for five years.

The group can be contacted at P.O. Box 15029, Salem, Ore. 97309, or c/o Keller & Heckman, 1150 17th Street, N.W., Suite 1000, Washington, D.C. 20036.

## NewsSweep

■ The FCC gave broadcasters permission to use stereo sound at its March 29 meeting. But the commission didn't rule on whether stereo sound is a must-carry

requirement for cable systems.

■ Oak Industries lost more than \$166 million in 1983, the company recently reported. Most losses occurred in the Communications division, which manufactures cable TV hardware and operates STV systems. Despite the losses, Oak's auditors say the company's financial condition remains sound.

■ Corning Glass Works and The Plessey Company of the United Kingdom have formed a new company to make and sell active and passive components to the North American fiberoptics industry. PlessCor Optronics Inc. will be based in Los Angeles.

■ Texscan Corp. and STC Telecommunications Ltd. of the United Kingdom have formed a joint company to market Texscan cable products in the UK.

■ Chyron Corp. also has signed a deal with a British firm for distribution of its products in the UK. General Electric Co.'s McMichael Ltd. subsidiary will handle Chyron's sales efforts aimed at non-broadcast video users.

■ General Instrument Corp., on the other hand, has broken off talks with General Electric Co. of England. GI had sought a cable equipment agreement.

■ Showtime/The Movie Channel is seeking a buyer for its Laguna Nigel,

Calif., satellite uplink and production facility. Located halfway between Los Angeles and San Diego, the 13,000-square-foot site includes two complete control rooms, support electronics, editing and production equipment. Two 10-meter uplink antennas, as well as a 5-meter portable downlink, will be sold as part of the package. An 11-year lease on the site will be transferred to the new owner.

■ Scientific-Atlanta has received an order for six addressable tap systems from Terrestrial Systems Inc. of Sanger, Calif. The company also has booked an order for cable security equipment from Cableguard Inc.

■ A new study by Frost & Sullivan Inc. predicts that DBS will gain 10.4 million subscribers in North America by 1990. The market research firm estimates that DBS will attract 30,000 U.S. customers this year, 123,000 by the end of 1985, and as many as 46.6 million by 1994.

■ C-SPAN plans to feed live, unedited coverage of this year's NCTA convention to 1,350 cable affiliates with more than 18 million subscribers. The network hopes to carry 25 hours of programming from the convention floor, marking the first time that the convention has been covered live on such a scale.

# QUICK, CALL THE DOCTOR!

Your system has developed a strange illness...the ailment is confusing and quickly becoming worse! You must get immediate professional help, but who to call? Of course, the new Triple Crown **HELPLINE**.

In a short time, you're outlining the sickness to one of our staff. He consults with other specialists. They study the symptoms, evaluate the condition and prescribe a suitable treatment. In this case the problem is not too serious and the remedy, not too hard to swallow. A few minor adjustments and the picture begins to brighten; another potential crisis averted by Triple Crown.

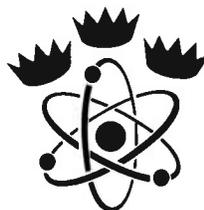
This type of call is part of our routine. Some systems suffer from seemingly terminal disorders, often requiring major

surgery or even complete head end transplants. Even our most difficult cases have completely recovered... we never lose a patient.

Don't let your system reach an untimely end...call the Triple Crown Doctors...NOW!

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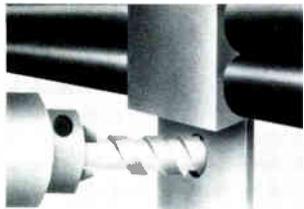


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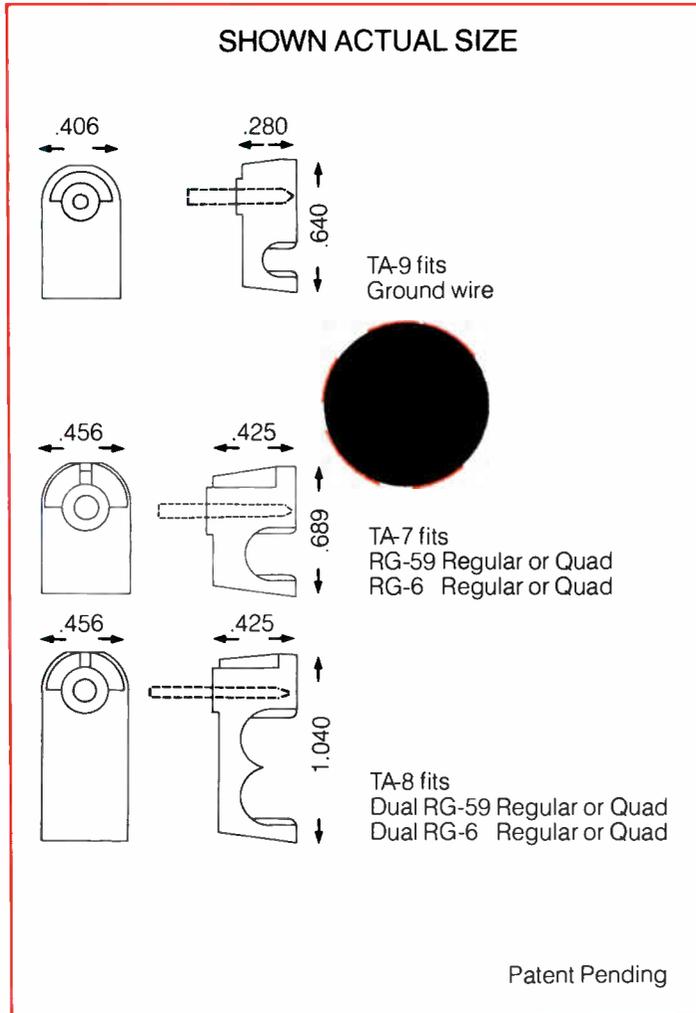
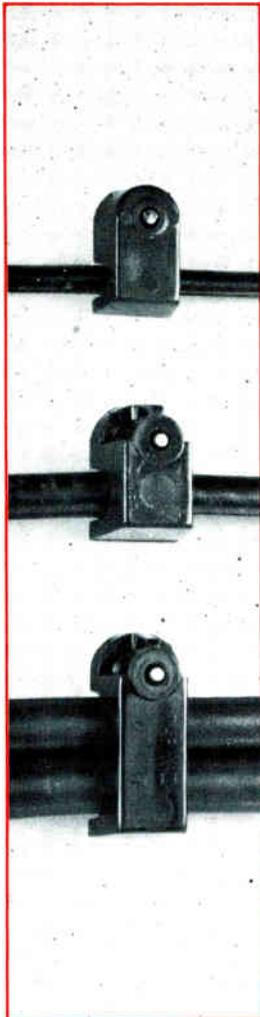
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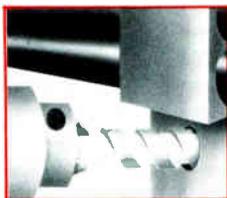
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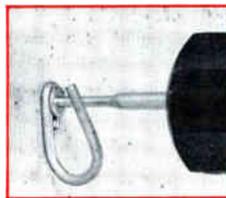
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Form #32584

## Public videotex goes on-line

*Operators cautiously test the market*

Public videotex systems may be on a voyage to prosperity, but for the moment, it's a shakedown cruise. Plotting courses through uncharted waters, managers are keeping their hands steady on the helm; their eyes on the watch for shoals and their legs braced for sudden lurches.

Few have yet to unfurl full sail, and while many are preparing for launch, some have already floundered.

Dallas-based Insource Corp., for example, launched its system, aimed at shopping malls, hotels and office buildings, in late 1983. But the firm recently suspended operation of its public access videotex system at least temporarily.

Some three dozen public access terminals around Dallas have been removed while the company reassesses its involvement with the public information business.

Other companies seem to have found deeper water and smoother sailing. Toronto Teleguide, the first system in North America, has been in operation for over a year, and now has 400 terminals in place at some 200 sites.

More than 900 pages of information typically are viewed on each terminal daily, with a total weekly access rate of almost two million requests.

The Bay Area Teleguide, modeled after the Toronto Teleguide, had its first terminals on-line in December of last year. Terminals currently are in place at key tourist destinations such as the Embarcadero Center, The Cannery, the California Academy of Sciences and Ghirardelli Square.

Once the system is complete, 300 terminals will serve the 11-county region. And the company soon will be joined by others seeking to navigate their way to profitability.

Shopper's Touch activated its system in an Orlando, Fla., shopping mall on March 1. Its free-standing kiosk, soon to be joined by two additional terminals, dispenses shopping and gift suggestions, information on mall events, news, weather, sports and a mall directory.

Information on sales seems to be the most frequently accessed category of information, according to Patti Hawkins, manager of the system.

Moving out of their slips are



**Bay Area Teleguide terminals are located at key tourist spots in San Francisco**

systems to be marketed by Videotex America in Sacramento, Calif.; Phoenix, Ariz., and Honolulu. In Oklahoma City, Okla., infoVision is getting ready for the May 1 christening of its system, which will offer information through terminals at 40 locations throughout the city.

But it's still a bit early to predict when the services will reach open waters. "We're still experimenting," says Terry Dorrington of Melvin Simon & Associates.

And although Dorrington says the outlook is good two to five years out, near-term the problem is the shoals. Insource found that the cost of selling ads as well as the expense of installing and maintaining terminals was enough to sink the venture, for example.

Still, danger has never kept sailors from the sea. "Thirty or so companies are already in the market or studying it," Dorrington says.

Critical questions for all the potential entrants are where to put the terminals and what information people will use. High-traffic areas are necessary, but not sufficient.

"Amusement parks and ballparks have high traffic, but patrons don't have a high need for information," Dorrington says.

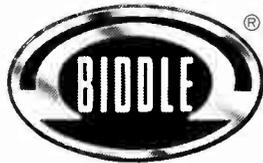
Consequently, most companies are studying sites like hotels, airports and shopping malls. Touch Dialogues has a system in place at the Chicago Convention Center, and Bay Area Teleguide also will add one of its terminals at the San Francisco Convention Center.

A low cost of entry is one of the attractions public access videotex has for many companies. Cablesare Inc., a Canadian supplier of videotex software, for example, supplies versions of its programs that will run on both mini- and microcomputers.

Using Cablesare's products, a system operator can program a system using an IBM PC or XT, as well as the Digital Equipment Corp.'s Rainbow 100 microcomputers, for example.

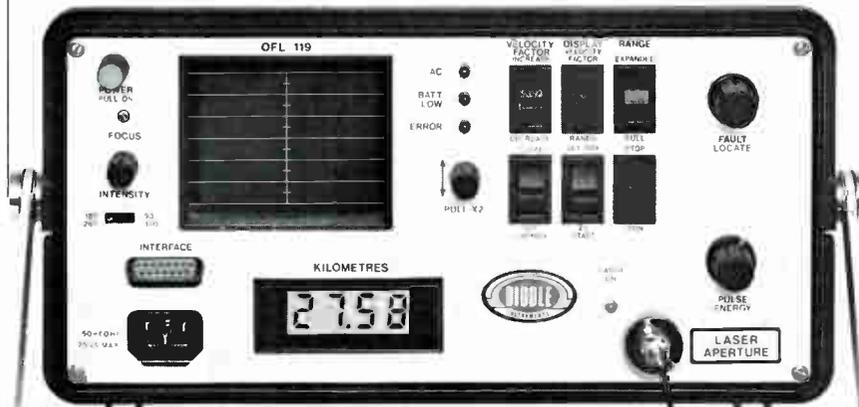
Driven by coaxial cable, the Cablesare system also supports full-motion video in addition to graphics. Melvin Simon will be testing such videodisc applications later this year.

Also getting a 1984 sea trial is a telephone-based system to be installed in Boston's Logan Airport. New England Telephone Co. will be setting up a prototype terminal made by Quazon Corp. A combination pay phone and "dumb" VDT, "it will be only as good as the data bases the



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## Interface

user has access to," says Pete Cronin, a New England Telephone spokesman.

And although the firm has not yet made a formal announcement, AT&T reportedly is working on a public access terminal based on its Sceptre system. Designed for use in hotel lobbies, shopping malls and other public sites, the device will feature a "hardened" keyboard and a relatively small storage capacity of about 50 frames.

Up to this point, Quazon has been active in home applications for videotex, but the technology used for public applications is the same.

And that is what makes Insource Corp.'s situation a grounding, not a shipwreck. The firm continues to move ahead with its building directory business and is considering private applications for videotex.

Closed-user systems, designed for in-house use by business, were expected to receive considerable attention at Videotex '84, the annual spring conference for videotex firms and users.

—Gary Kim

## Download

■ **AT&T finally has entered the computer market.** At a recent New York City press conference the company introduced six versions of its 3B2/300 mini-computer. The firm also introduced an Ethernet compatible local area network capable of linking its computers over distances of 1/2 km. Called 3BNet, the LAN uses coaxial cable and the same 32-bit processors as the 3B computers.

■ **A new teleconferencing service linking sites in the top 60 telecommunications markets will be in place by September 1984.** The Campus Conference Network is being built by SatServ, and each uplink site will include a room seating 100 people, four television monitors, a phone and earth station. Additional locations will be scattered throughout the 50 states.

■ **Eight CableData subscriber management systems have been purchased by General Electric Cablevision Corp.** GE will use the \$1.3 million worth of software to communicate with and control addressable converters made by Zenith, Oak, Jerrold and Scientific Atlanta.

■ **Ungermann-Bass Inc. has teamed with Protocol Computers to develop protocol conversion products for PC's Net/One local area network.** These will allow a Net/One user to access different IBM host computers, as well as non-IBM host computers and networks.

# HOW TO TAKE THE RECALL OUT OF THE INSTALL



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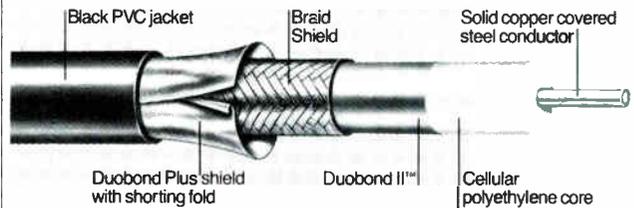
The DUOBOND PLUS shield features a foil/braid/foil construction with a shorting fold in the outermost foil which provides superior shielding effectiveness to typical 4-layer shield constructions. The transfer impedance graph demonstrates this effectiveness.

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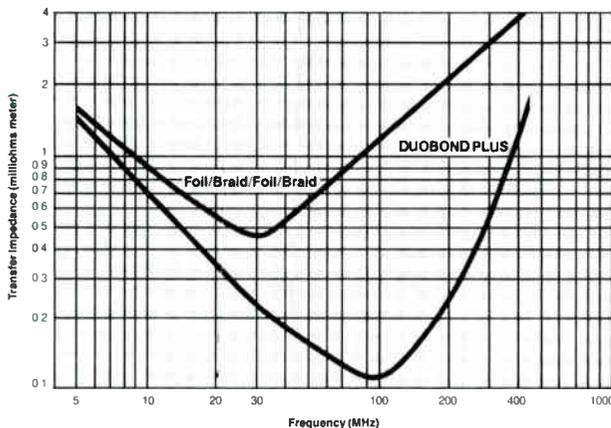
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Reader Service Number 30

# Techs talk tools

**"The people who work for me are my most valuable tool."**

Roger Nelson  
Cable Services of Jamestown



By Constance Warren

Every professional depends on his tools and the cable operator is no exception.

The cable distribution plant is the operator's most precious tool. Without it, he would not be able to provide the services that assure his survival in a fiercely competitive industry.

Maintaining and improving the plant is essential to keeping the system up and running. Outages cause churn and churn jeopardizes the operator's chances for success.

Given this fact, the operator is as dependent on the tools that maintain his system as the plant itself. And every chief technician has his favorite tools.

According to Jerald Weaver, chief technician for Phoenix City CATV in Alabama, "experience is your most valuable tool." Signal level meters and ohm meters also are important. He uses them to determine if the system was constructed properly and to help him perform his biannual system adjustments.

Roger Nelson, chief technician for Cable Services of Jamestown, N.D., and Gene Richmond, plant manager and chief technician for Group W Cable's system in Walla Walla, Wash., both identified their crew as their most important tools. "The people who work for me are my most valuable tool," said Nelson. The spectrum analyzer and basket truck tied for second on his priority list. "You can see everything with a spectrum analyzer," Nelson claimed, "You don't need anything else."

Using a basket truck, installers and technicians avoid wearing climbers. It also allows them to work from pole to pole without dismounting.

## Test equipment

Besides his crew, Richmond cited the system sweep, the Wavetek 1880 spectrum analyzer and vehicles as helpful in carrying out maintenance and construction jobs. Two years ago, no system sweep was being used in his system. At that time, the average backlog of service calls was 160 per day. Now, with the system sweep, the operator has reduced that number by 4.7 percent to 15 complaints per day.

The Wavetek 1880 "can do everything," Richmond says. "And you don't need to have a degree to use it. I can send a tech out with the 1880 after spending a few hours with him and that



Group W's Richmond swears by the Wavetek 1880

saves me a lot of time," he explains.

Richmond also believes "you can't do the job without the vehicles." Nor can you get to the customers or do construction, he adds.

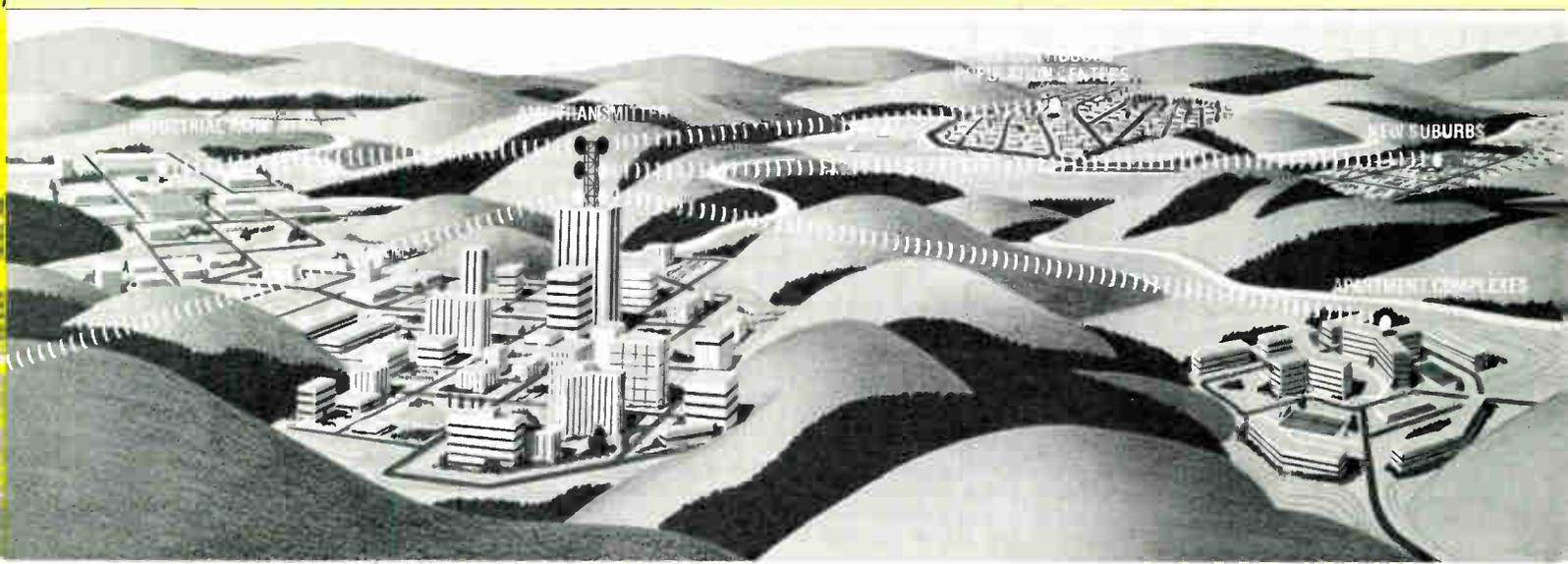
"The field strength meter is an absolute must," remarked Wayne Aylward, general manager for Century Cable of Northern California, Ventura, Calif. Without it, "you can't set the levels in your system and you can't tell if you have a problem. The whole operation of the system is predicated on levels. The field strength meter lets you read those levels," he says.

Another person who cited a piece of test equipment as the tool he relies upon most was Ted Chesley, plant manager and chief engineer for Cox Cable TV Spokane, Spokane, Wash. "The signal level meter is the overriding piece of equipment that you can't operate the system without. It is the most important, even though it doesn't give you as much information as some other instruments," he argued.

Of course, your preference depends on the job you're performing, Chesley conceded. If I were involved in construction, I'd pick a climbing belt and climbing equipment and an engineer would choose a spectrum analyzer. Any tool that is particular to the industry serves a valuable purpose, he added. Among those he mentioned were fitting crimpers, coring tools and special cable preparation tools, bending boards and cable lashers.

Other technicians who voted a test instrument their number one tool are Tom Hommel, plant manager for Group W of Silver City, N.M.; Robert Harlin, plant manager, Community Television of Utah Inc., Park City, Utah; Gary Hemenway, chief technician, General Electric Cablevision, Watertown, N.Y.; Don Palmer, chief technician, Sammons

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Reader Service Number 17



**The bucket truck permits safe and efficient construction**

Communications, Whippany, N.J.; Eric Kisinger, chief technician, Group W Cable of Irving Inc., Irving, Texas; and Lawrence Taylor, senior technician for Viacom Cablevision, Mountain View, Calif.

"The signal level meter is the installer's and technician's bible," said Tom Hommel. "It tells you what's going on in your system."

Harlin argued that "without your meter you're in the dark with finding problems."

Hemenway called the system level meter a necessity, while Palmer acknowledged that as a technician he was biased toward the field strength meter.

Kisinger said the Tektronix 7L12 system analyzer was used extensively in his system and "has saved a whole lot of time in tracing beat, triple beat and co-channels in his 108 channel system."

"It's real easy to learn and versatile," he added. "Even for a dumb tech, it's easy to learn."

Veering off in a slightly different direction, Richard Johnson, technical director, Cox Cable Vancouver/Clark County, Wash., cited sensitivity for

detection as the reason behind his choice of the HAM radio. "It has a sensitivity for detection and ingress of cable of half a microvolt, which allows you to maintain a very tight system," he remarked. He uses the HAM radio to detect problems with fittings and other system components and even to locate cut cables under ground.

Rich Meyerhoff, chief technician and owner of Meyerhoff Cable System, Mi-Wuk Village, Calif., also chose a rather unusual item, the calculator, as his favorite tool. "The calculator gives me the information I need to do the system design and layout," he claimed. He also pointed out the value of the signal level meter, saying "without it, you can't tell how your system is operating or where the problems are."

### Construction tools

Other technicians touted construction tools as key to system operations. Ed Ohman, manager of North Kent Cable Co., Grand Rapids, Mich., said "I use a pair of cutters more than anything else. I use them for just about everything."

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Reader Service Number 23

May 1984/27



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## FEATURE

Among these applications are preparing drops, cutting wires and fitting on the F fittings.

While Jim Niswender, chief technician for Laramie Community TV Co., Wyo., recognized that "for the average person working in the system, crimp tools, side cutters and screwdrivers are the most valuable" implements, his personal choice is the crimp tool. He utilizes the crimp tool for putting on 90 percent of his system's fittings and, even though he admits you can tighten down the fittings with pliers, he says, "you'd probably get fired."

Steve Burch, chief technician for Cable TV of Durango Inc., Colo., said that for troubleshooting and system balancing he'd pick the SAM I signal level meter and for construction, the lasher. "If you don't have a good lasher, it's hard to build cable very well," he remarked.

He said he uses the SAM I everyday, for troubleshooting, balancing amps and running sweeps in the headend.

Like Niswender, Hommel chose the crimping tool as his most useful hand tool. "With a weak hand tool," he explained, "ground potential is lost. You can develop leakage at fittings even if you've got a good, tight system."

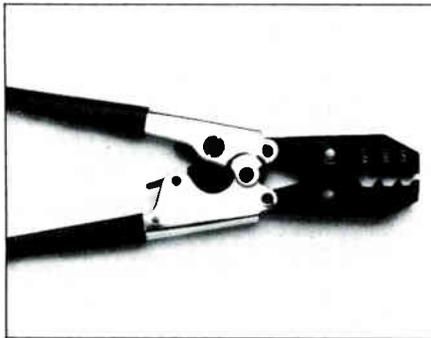
Meanwhile, Hemenway said that his system had experienced a lot of success with the new coring tools.

Mike Mason, technical supervisor, Group W Cable of La Grande, Union and Baker, Ore., couldn't select one tool as most essential to his system and decided to list a number of tools instead. In the field, the bucket truck rated top on his list. "With the bucket truck, you can do system construction and maintenance safely and efficiently," he said.

Referring to the bucket truck as "my portable bench," Mason said that he uses it to carry all the tools and equipment he needs into the field. The truck also helps by placing all this equipment before him directly in front of an amp. "You couldn't do it (construction) with hooks or a ladder," he adds.

Mason also finds the Wavetek 1880 spectrum analyzer very useful, particularly in determining specific system problems. "The Tektronix TDR is another very valuable field tool" while the sweep generator has proven useful in determining responses of equipment in his headend as well as in his system. "Nine times out of ten," though, he says, "I use the field strength level meter to determine if I'm operating in the parameters of my amplifiers and headend."

Noting the interdependency of all his test equipment, Mason qualified his choices somewhat by saying "it's extremely difficult to say this is the thing that is most valuable. They (the test



**Niswender uses the crimp tool for fittings** (equipment) definitely interact together."

## New developments

While no agreement was reached over which tool is most valuable, technicians did concur on one point: New and improved construction and test equipment has increased system integrity. These developments also have helped systems handle additional bandwidth requirements.

One of the most significant developments Chesley has seen is a change in the attitude of small system operators. "One of the most promising things," he said, "is smaller cable systems are beginning to realize the necessity of using more expensive types of test



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## FEATURE

equipment to maintain their systems." The result is a better built and better maintained system.

More specifically, Chesley has noticed enhancements in tools to prepare and make specific fittings, in cable forming tools, crimpers, and in tools that work with aluminum cable.

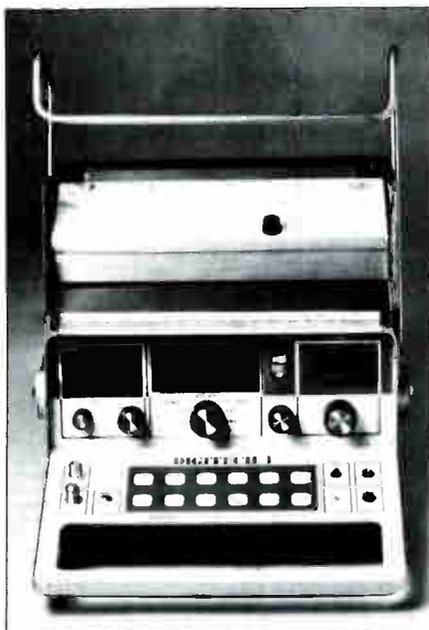
He labeled the development of specialized test equipment—such as sweep generators, cable TDRs and signal level meters—as "one of the greatest improvements" he's seen during his 15 years in the industry. These instruments have made the job of analyzing and troubleshooting much easier, he said.

Besides being more accurate, these instruments have become portable, battery operated and capable of taking more than one measurement. These developments "have been a major boon," he underlined.

Palmer also said the increased measuring capabilities of test equipment "has been a great help." The example he cited was the signal level meter, which now can measure both signal-to-noise and hum noise.

In the construction arena, he has benefited from the new coring tools, which have eliminated the need for cutters to pry out the dielectric from the cable.

Echoing Palmer and Chesley, Hommel agreed that signal level meters have not



*Digitized SLMs simplify the job*

only become easier to use but more sophisticated too. "The signal level meter can read volt measurements and how much voltage is on your line," Burch explained. "In the old days, the signal level meter just didn't do that."

The development of the "magic box" is something else Burch has found useful. "When you're lashing multiple

cables, it's really important to use a magic box to prevent ripples. The magic box takes these ripples away so your cable doesn't break as easily," he explained.

Increased integrity in hand tools has resulted in ease of operation, maintains Hommel. "Coring tools used to be so primitive, you had to finish the job with a knife," he said. The new coring tools can isolate the semi-conductor, so there is no need for a knife.

"The use of modern technology and microprocessors allows for more exacting measurements with a minimum amount of equipment," claims Mason. This consolidation of equipment into one unit "makes us more inclined to take measurements," he added.

The advent of the spectrum analyzer, which "can do just about everything but talk," is one development Richmond applauds. He acknowledges, however, that he is the only person in his system that can use his expensive, sophisticated Avantek unit.

The signal level meter with digital readout, on the other hand, is very easy to understand, he says. He has had this piece of equipment for three months and already is finding it easier to use.

Nelson also welcomed the introduction of the spectrum analyzer. Before the spectrum analyzer, "we had to go with the field strength meter and other equipment on hand," he said. The spectrum analyzer allows "you to look at the whole spectrum at once and to determine which band and what the possible sources of a problem are," he added.

Developments that have proven valuable to Kisinger are slicing tools and fiberoptics. "I've seen a lot of development of slicing tools," he notes, which "have made construction more precise and easier." Fiberoptics, which he uses for his system's hub interchange, also "have made constructing a system tremendously less expensive and easier to work with."

Harlin was more theoretical in his response, citing modernization as key to system improvement. "Everything has become more modernized," he states. "You take something and modernize it so it's more convenient for personnel to use. Crimpers, for instance. They have modernized them so they can make various crimps and better fittings, which in turn saves us a lot of problems and hassles."

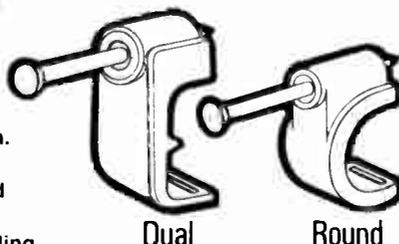
The impact of the computer and digital devices had had a positive effect on the cable industry, Taylor noted. "Everything's going to digital," he claimed, "with mainly electronic devices going to digital readout." The influx of digitization has made "the equipment more advanced and the job simpler," he stressed.



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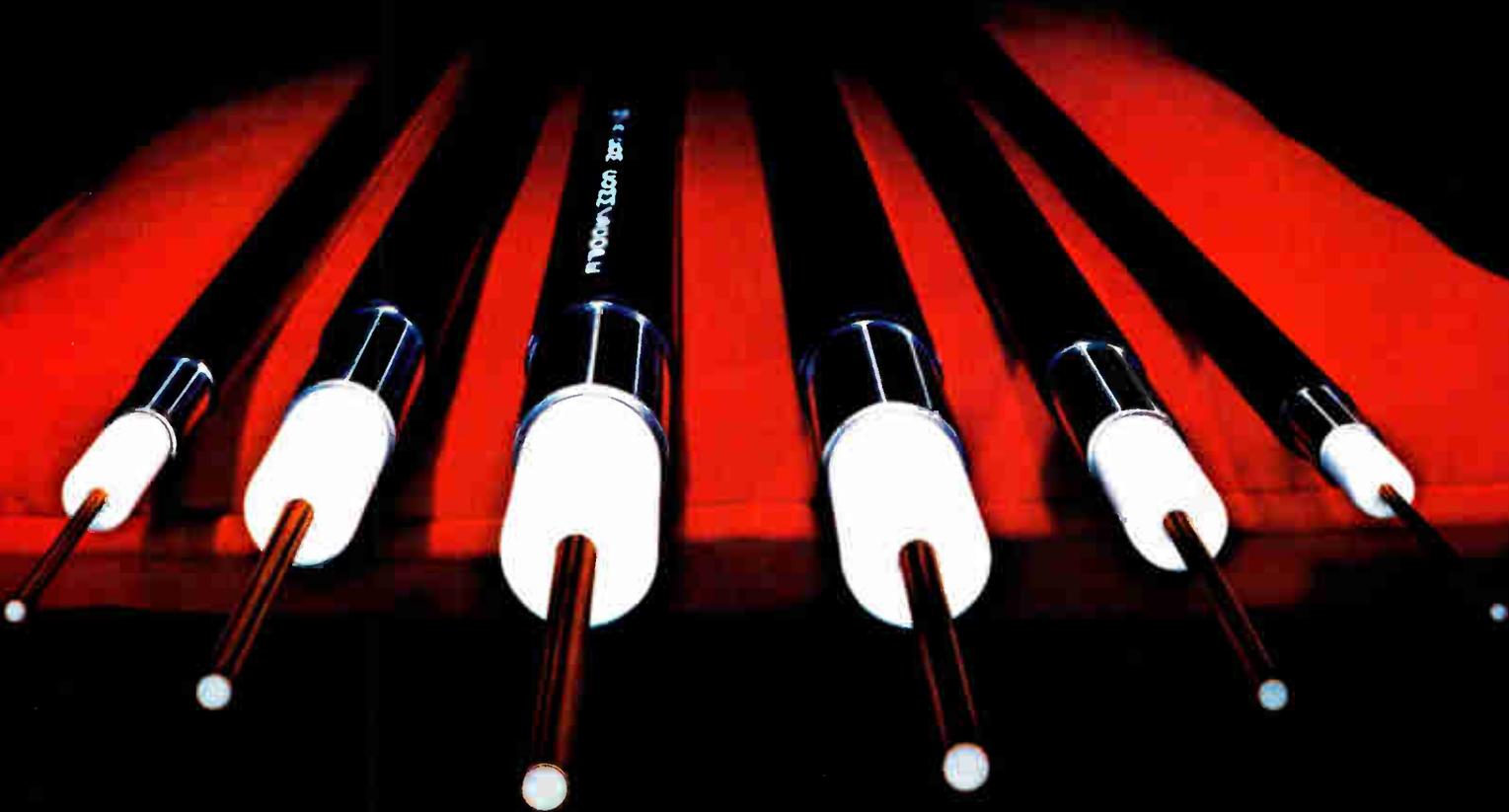
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**SelectTV**  
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**Triple Crown Electronics Inc.**  
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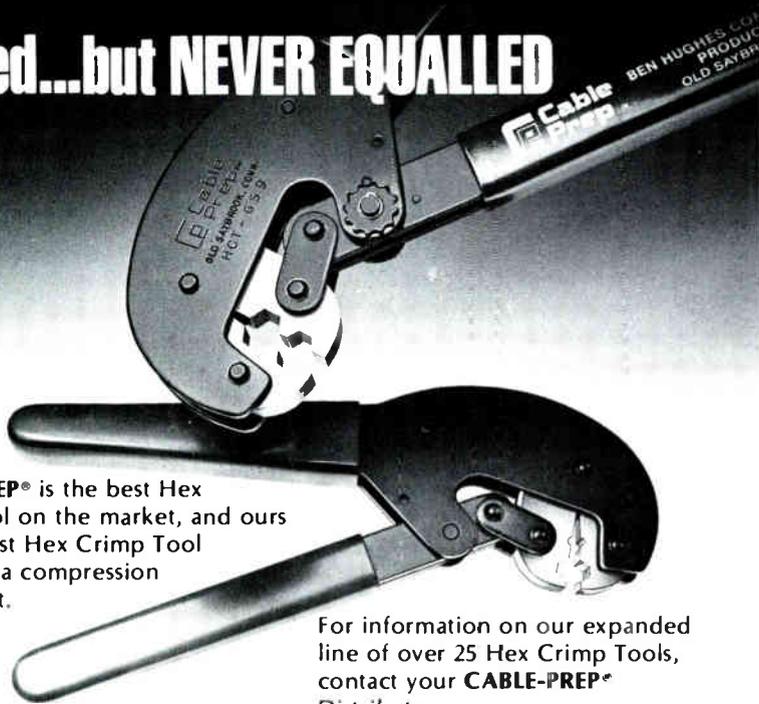
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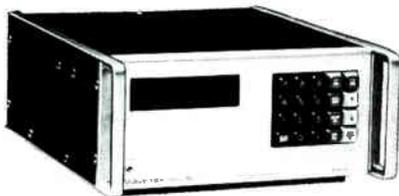
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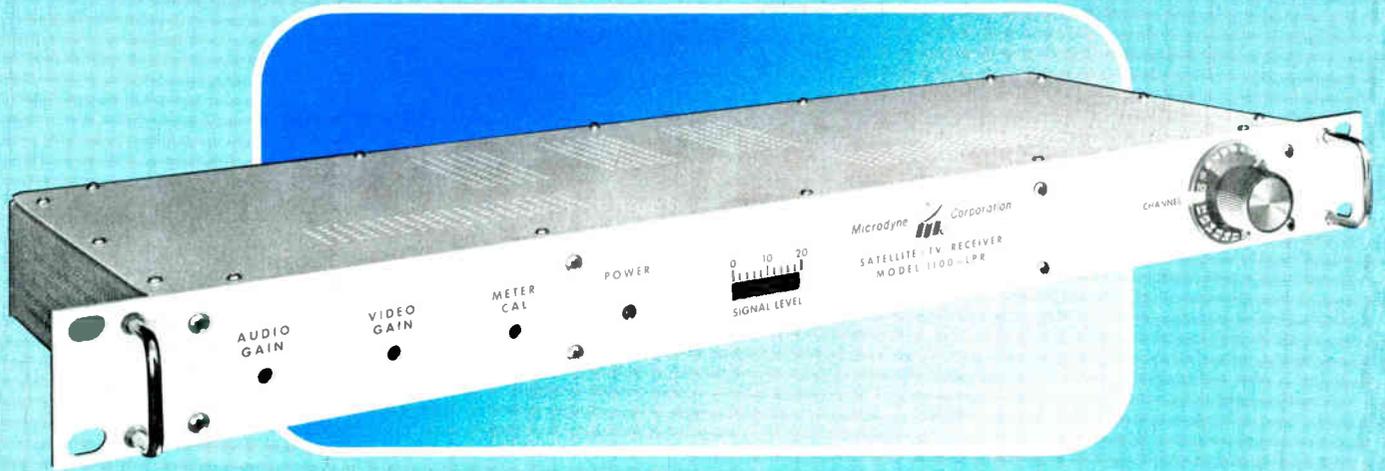
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## Answer These Six Questions Before You Buy Your Next TVRO Receiver

### 1. How Good Is the Picture?

Make comparisons. Ask your distributor to set up a side-by-side or A-B comparison test (switching from one receiver to another). Often you can see the difference in picture quality. And if you can see the difference, so can your subscribers.

### 2. How Long Will It Last?

Most TVRO equipment has to run all day, every day, year after year. Marginal receivers that are poorly designed or cheaply made will end up costing you money, and subscribers.

Microdyne takes no short cuts in the design, manufacture or testing of its products. Our equipment is extremely reliable. Typical Mean Time Between Failure rates for our TVRO receivers are in excess of 80,000 hours.

That's over 9 years.

That doesn't mean that every receiver we make will run that long without failure, but it indicates the average expected rate of failure, and that's important.

### 3. Can I Get It Serviced?

No matter how much care has gone into the design and manu-

facture of electronic equipment, failures do occur. So, we offer a 48-hour repair policy. If your receiver is in warranty, we fix it free within 48 hours. If we can't fix it, we replace it. If the unit is out of warranty, we provide the same service, for a nominal flat rate which we quote *before* you send in the unit.

### 4. How About Delivery?

We have nine nation-wide factory authorized distributors who routinely stock our equipment, so it's a pretty good bet that you'll be able to get just what you want, when you want it. And our distributors are selected on the basis of their experience, knowledge and willingness to provide the support you need.

### 5. How Reliable Is the Company?

You have already seen several big, established companies abandon the TVRO market. But not Microdyne. We have been involved in satellite

communications since it all began, and we are here to stay. TVRO isn't a sideline for us; it's our business.

### 6. What Else Can the Company Do For Me?

Right now you may only need a receiver. But some day you will need a lot more, and a lot more *is* what Microdyne can deliver. We make a full range of antennas, downconverters, modulators, demodulators, and related TVRO equipment.

And our Customer Support covers all the bases: site surveys, turnkey transmitting and receiving system installations, customer training, program management of network systems, on-site service, and a 24-hour toll-free phone number for emergency engineering support.

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Reader Service Number 19

Trunk	Data RF dBmV	ALC RF dBmV	Rw DC volts	DC(B+) volts	Temp °C	DC amps	Trunk Lid	Rev Sw	Status
1	15.0	31.0	50.8	23.8	38	1.10		Off	ALARM!
2	15.0	31.0	40.8	24.1	38	1.10		Off	
3	15.0	31.0	43.3	23.8	41	1.10		Off	
4	15.0	31.0	48.6	23.9	43	1.00		Off	
5	15.0	31.0	43.8	23.8	39	1.10	Open	Off	ALARM!
6	15.0	31.0	40.8	24.1	42	1.20		Off	
7	14.9	31.1	49.7	24.1	40	1.20		Off	
8	15.0	31.0	49.3	24.0	42	1.00		Off	FAULT
9									
10	15.0	31.0	43.6	24.0	36	1.10		Off	

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# TECH II

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Which is better?**
- ❑ **Product Profile:  
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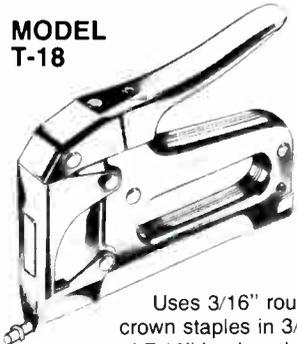
Rugged, reliable Arrow Wire & Cable Staple Gun Tackers are made of all-steel for lasting durability and engineered for safety, speed and efficiency with these built-in high performance features:

- **GROOVED GUIDE** positions wires and cables for proper staple envelopment and safe, secure fastening.
- **DRIVING BLADE** automatically stops at the right height to prevent staple from damaging or cutting into wire or cable.
- **AUTOMATIC, SINGLE-STROKE COMPRESSION ACTION** speeds up fastening, reduces installation time and minimizes hand fatigue.
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These outstanding features have made Arrow Wire & Cable Staple Gun Tackers the top choice in fastening tools of professional installation men in every field, including - CATV, telephone, electrical, electronics, communications, alarm systems and many more.

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**MODEL T-18**



Uses 3/16" round crown staples in 3/8" and 7/16" leg lengths - for diameters up to 3/16".

**MODEL T-25**



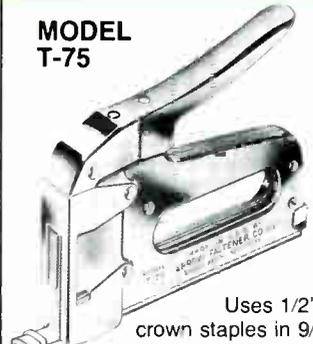
Uses 1/4" round crown staples in 9/32", 3/8", 7/16" and 9/16" leg lengths - for diameters up to 1/4".

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**ARROW FASTENER COMPANY, INC.**

Reader Service Number 26

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# Plastic pedestals: A superior alternative?

By Roger Scommegna,  
product manager,  
American Technology Co.

Plastic pedestals for passive housings are beginning to pop up in many new cable builds. MSO's have finally realized the enormous advantages that plastic can bring to the outside plant portion of the cable industry.

This plastic technology has developed a pedestal that not only can outlive the standard metal pedestal, but out performs traditional pedestals in nearly every test.

Polyvinyl chloride, or PVC as it is commonly referred to, was first introduced in the United States in the early 1950's. At that time, application of this material was somewhat limited. However, steady development of technology and the discovery of materials, which, when incorporated, improved impact resistance and processibility, led to the formation of new applications. PVC is now the dominant plastic used in the building and construction market and has a multitude of applications. One of

the reasons for this is that polyvinyl chloride is a most versatile material. Properties of vinyls vary from complete flexibility to extreme rigidity and include such significant material characteristics as corrosion resistance, thermal insulation, electrical insulation, good flame ignition resistance and good weatherability.

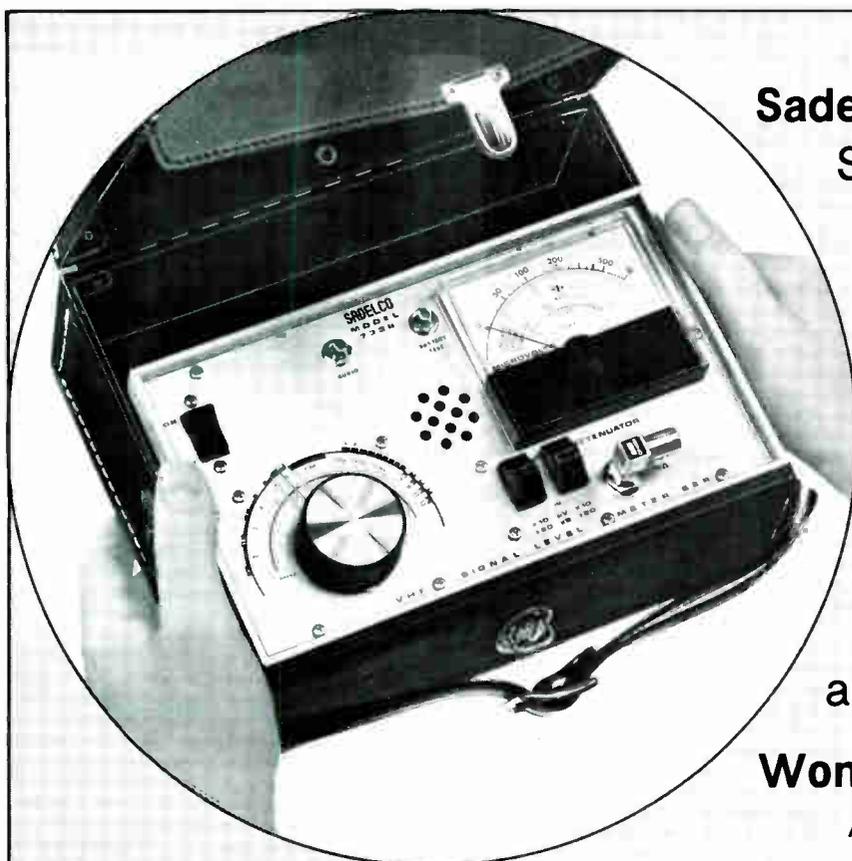
Coil Sales, Rollings, Ill., first became interested in PVC, and particularly in the rigid vinyl, in the late 1960s. The company found that rigid vinyl PVC is one of the most chemically inert plastics available. The resistance of rigid PVC to a wide range of chemicals, coupled with its low moisture absorption, protection of appearance, surface integrity, and color of PVC products during exposure to severe environment conditions lends itself to a variety of applications.

The PVC compounds that currently are used in the manufacture of pedestals are formulated to meet the long term durability and weatherability requirements of this line of equipment. For example, special impact modifiers have been

added for increased durability. It should be noted that since not all impact modifiers are resistant to oxidation, they must be chosen carefully for such outdoor applications. An ultra-violet inhibitor also has been added for long-term protection against degradation.

Many of the properties of PVC have proven themselves over the long term in the construction and building industry. The application of rigid PVC in the cable industry, however, is relatively new and has caused questions in some people's minds as to its true weatherability. Since the introduction of Coil Sale's Pedlock® in 1974, the product and PVC material has been tested for a multitude of purposes. The most extensive of all testing was a battery of tests performed by the Rural Electrification Administration (REA) in meeting their specification requirements for buried plant housing. The details of their specifications and tests follow.

- **Salt spray resistance**  
Under this specification, two different



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## TECH II

tests were conducted as described below:

A) When an unscribed test panel was subjected to a 5 percent salt fog test of 1,000 hours in accordance with ASTM-B117, latest issue, the test panel showed no signs of film delamination, color loss, blistering or steel corrosion.

B) Test panels were subjected to a 5 percent salt fog for 1,000 hours in accordance with ASTM-B117, latest issue, and then subjected to a 100 inch-pounds of direct impact, using a Gardner-Impact Tester. Upon inspection, the test panels showed no substrate or coating cracking or loss of coating adhesion on either side.

### ■ Humidity—condensation

Test panels were subjected to 1,008 hours (42 cycles) of exposure per ASTM D-2247, App. 2, in the Cleveland Condensation Tester. One cycle consisted of 23 hours of 100 percent humidity (with condensation on the panels) at a cabinet temperature of  $100^{\circ}\text{F} \pm 2^{\circ}\text{F}$  and an ambient temperature of  $77^{\circ}\text{F} \pm 2^{\circ}\text{F}$  without heat input. Upon completion of the cycling, the test panels then were subjected to a 100 inch-pound impact test

using the Gardner-Impact Tester. Upon inspection, the test panels showed no substrate or coating cracking or loss of coating adhesion on either side.

### ■ Weatherometer

Test panels showed no signs of checking, blistering or delamination on either side after 400 hours in an Atlas Sunshine Carbon Arc XW-R Weatherometer, or equivalent, conducted in accordance with ASTM Specification D-822-60, Practice G-23-69, paragraph 4.6; or Practice D-1499-64, paragraph 4.2.

### ■ Freeze—thaw

The test panels from the weatherometer test then were subjected to 25 cycles of the following test:

Test panels were saturated with water soaking for 4 days at  $72^{\circ}\text{F}$  in distilled water. When the test panels were submerged in the distilled water, entire container was frozen to  $-20^{\circ}\text{F}$ . The panels were held for 24 hours at this temperature and then thawed to  $72^{\circ}\text{F}$ . The panels were held at this temperature for 24 hours and the process was repeated. These samples then passed a visual inspection for cracking, delaminating, wickering, crazing or deforming.

### ■ Impact test

After completing the weatherometer and freeze—thaw tests, the samples were tested to determine if they meet or exceed an impact of 100 inch-pounds in a Gardner-Impact Tester Model 1G1120 WI without perforation of the sample. This test was run at  $160^{\circ}\text{F}$ ,  $72^{\circ}\text{F}$  and  $-20^{\circ}\text{F}$ .

Test results were positive.

### ■ Strength

Free standing buried plant housings should develop a minimum strength in place through a horizontal pull test. The fully assembled housings to be tested were held rigidly in place by a mechanical means to simulate the manner in which they normally are installed in the field. A length of wire, wire rope, or other suitable fixture was placed around the top section of the housing. This wire or cable was pulled initially at a right angle to the pedestal to a tension of 50 pounds. At this tension, a measurement was taken of the deflection of the housing. The deflection was recorded at incremental loads of 50 pounds until complete destruction of the housing occurred. The housing withstood not less than 300 pounds. Test results: positive.

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Reader Service Number 16

# The High Standards

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Pioneer's basic tunables — 26, 36 and 58 channel units for single and dual cable — exceed the industry's highest technical specifications. They carry one of the industry's lowest price tags. Their failure rate is the industry's lowest. That adds up to trouble-free, low cost operation.

Our top-of-the-line tunable converter with infra-red remote control is an attractive 67 channel unit that gives you more control over channel allocations, overlapping frequencies and block-out of upper tiers. It gives your subscribers favorite channel memory, up/down scanning, last channel recall and the responsibility for programming parental control channels. Together with Pioneer's record for reliability and competitive pricing, that adds up to increased system revenue for you.

The Pioneer premium audio block converter is also available if you're looking for a new revenue stream and increased penetration.

All Pioneer standard converters carry our two year warranty — the industry's first and strongest.

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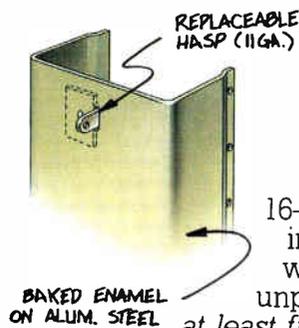
Reader Service Number 28





## We put the cable industry on its own pedestal

While others were adapting telephone pedestals for cable television applications, CWY was designing pedestals exclusively for the cable industry... a complete line of pedestals built to your specifications... not someone else's.



For example, CWY pedestals feature 16- and 18-gauge T2 aluminum steel construction, which tests show outlasts unpainted galvanized steel at least five-to-one. Plus, the rectangular design assures ease of installation and maximum use of interior space.

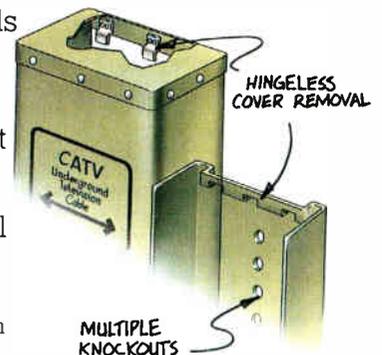
CWY pedestals are easier to service, too; the positive, secure, hingeless cover removal system allows the front cover and top to lift off as one unit, giving you full exposure of the pedestal interior.

And while other manufacturers bend out a piece of steel and call it a hasp, CWY pedestals feature tough, 11-gauge plated steel hasps that are rugged and fully replaceable.

Multiple knockouts for ease and flexibility in equipment mounting... interior lid guides for extra security... an innovative stake lock that keeps the pedestal right where you planted it... and a whole lot more. All at prices you'll find very competitive.

So why buy pedestals made for someone else? CWY designed them just for you. For more information about CWY's complete line of pedestals and other cable TV solutions, call or write today.

Standard sizes: 4"x5", 5"x8", 7"x7", 6"x9", 10"x14". Call with specifications for custom sizes.



**Not just supplies. Solutions.**



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Reader Service Number 11

## TECH II

### ■ Flame test

In order to determine the resistance of non-metallic housings to burning, a flame test was conducted. Twenty-five pounds of U.S. No. 1 wheat straw was placed loosely in a dry condition around the base of a housing to a radius of three feet minimum and a depth of two inches minimum. The test was conducted under light wind conditions (maximum wind velocity of 7 mph). The housing was examined carefully after all flame was extinguished and the housing did not ignite during the test. If it had ignited, the housing would have failed the test.

### ■ Firearms test

All enclosures were tested for resistance to penetration by direct impact from a 12 gauge No. 8 shotgun shell from a distance of 40 feet. Penetration through the housing wall by the pellets would have constituted a failure.

Test results were positive with no penetration cited.

There is an additional characteristic of rigid PVC that provides a notable advantage. Rigid PVC has a thermal conductivity or K factor of 1.3 compared to 312 for steel. This low K factor means that any temperature change is transferred at

a much slower rate through PVC compared to steel. A PVC pedestal will, therefore, be cooler inside during the heat of the day and that will prolong the life of the plastic insulation on the conductors and also minimize any rapid temperature changes which may cause condensation. As a practical application of this point, manufacturers of aluminum windows use a rigid vinyl profile for a thermal break between outside and inside window segments to reduce thermal conductivity and minimize condensation on frame and sash.

PVC has been used in outdoor applications in the United States now for approximately 25 years and has been used by the telephone industry for about 20 years and by the cable industry for about 10 years when it was introduced as a soft vinyl and used as plastic insulation for conductors (PIC) in telephone cable. Rigid PVC is merely an extension of the technology in the development of today's plastic. Many MSO's believe plastic pedestals, as represented by the Pedlock, are far superior to any conventional metal or fiberglass pedestal currently on the market.

Not only is the new Plas-Tech material superior to most metal, but the endless

design features allow more flexibility to install and maintain.

### Features and benefits:

**PVC:**

- Excellent tensile, flexural and shear strength;
- impact strength exceeds 35 ft. lbs. at -40°F and increases with temperature;
- does not support combustion (UL 94 V0);
- excellent resistance to gasoline, butane, chemicals, salts and acid soil conditions;

**Design:**

- Integral stake (self-supporting) and stake or pole mount models are both available;
- integral stake offers high degree of stability;
- the extruded profile of the base offers 360°F working area above ground;

The time has come for cable operators to look past the old school of metal, metal and more metal and welcome the new kid in town, Plas-Tech II. The advantage that this newcomer is bringing to the cable industry has created a lot of attention. Old school metal or new school plastic, you decide.



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## Signal level meters

Co. name & model number	Frequency range	Measurement range	Amplitude accuracy	IF bandwidth
Avantek SL-450	4.5—450 MHz	-40—+60 dBmV (10 microvolts to 1 volt)	± 1 dB at any temperature from -10°F—+120°F	N/A
B&K Precision Dynascan Corp. model 425 VHF/ CATV meter	50—450 MHz	-30—+60 dBmV	± 2 dB, +18°C— +28°C to 450 MHz; ± 3.5 dB, 0°C—+40°C	less than 0.5 MHz @ 3 dB
model 430 VHF/ UHF/CATV meter	50—450 MHz; UHF: 470—810 MHz	-30—+60 dBmV	± 2 dB to 450 MHz; ± 4 dB to 470—810 MHz, +18°C—+28°C;	less than 0.5 MHz @ 3 dB
Blonder-Tongue FSM-8 UHF/VHF field strength meter	VHF: 54—216 MHz, continuous. UHF: 470—812 MHz	-32—+2 dB, basic scale; -12—+22 dB with one attenuator IN; +8—+42 dB with two attenuators IN; +28—+62 dB green scale with all built-in attenuators & one 20 dB external attenuator	VHF: ± 2 dB or better; UHF: ± 3 dB or better	0.5 MHz typical
Leader Instruments LFC-945B CATV level meter	VHF: 40—300 MHz; UHF: 470—890 MHz	-30—+60 dBmV	VHF: within ± 1.5 dB; UHF: within ± 2 dB	500 kHz
Sadelco 733C Super	VHF: 54—216 MHz; Super band: 216— 450 MHz; 4.5—45 MHz with optional model MK III low frequency adaptor	-32—+2 dB, basic scale; -12—+22 dB with one 20 dB pad IN; +8—+42 dB with two 20 dB pads IN; +28—+62 dB with external 20 dB pad IN	± 1.5 dB or better at 75°F at 54—450 MHz	0.5 MHz
DL-200-VS	VHF: 54—216 MHz; Super band: 216—450 MHz	-30—+60 dBmV	± 1 dB or better at 75°F, 54—450 MHz	0.5 MHz
Texscan 7272	5—50 MHz 54—405 MHz in 6 bands	-35—+70 dBmV	± 0.5 dB typical	0.6 MHz
Installer 800	50—216 MHz and 470—812 MHz, channel 2—70 & FM & mid bands	-35—+60 dBmV	± .75 dB, 5—216 MHz; ± 2.0 dB, 470—812 MHz	280 kHz
Digitech I	4—450 MHz	-40—+60 dBmV	± 0.5 dB in program mode	280 kHz
Wavetek SAM III	4—450 MHz, 470—890 MHz optional	-40—+60 dBmV	± 0.5 dB @ room temperature; ± 1 dB over temperature, when calibrated @ that temperature	280 kHz @ 3 dB point; 600 kHz @ 40 dB point
SAM I	4—300 MHz or 4—450 MHz; 470—890 MHz optional	-40—+60 dBmV	± 0.5 dB @ room temperature; ± 1.0 dB over temperature, when calibrated @ that temperature	280 kHz @ 3 dB point; 600 kHz @ 40 dB point

Input VSWR	Maximum sensitivity	Calibrator	Video output	Temperature range
N/A	N/A	internal, built-in, ovenized calibrator; accuracy: $\pm 0.1$ dB from $-10^{\circ}\text{F}$ — $+120^{\circ}\text{F}$	4V p-p for $-20$ dBmV input	$-10^{\circ}\text{F}$ — $+120^{\circ}\text{F}$
1.5:1 maximum	N/A	N/A	N/A	storage: $-40^{\circ}\text{C}$ — $+60^{\circ}\text{C}$
1.5:1 maximum	N/A	output: $+20$ dBmV $0.5$ dB; $150$ MHz nominal	N/A	storage: $-40^{\circ}\text{C}$ — $+60^{\circ}\text{C}$
VHF: 1.4:1 with no attenuator; 1.2:1 with one attenuator IN. UHF: 1.8:1 with no attenuator; 1.4:1 with one attenuator IN	N/A	N/A	N/A	$\pm 2$ dB variation $+20^{\circ}\text{F}$ — $+100^{\circ}\text{F}$
VHF: 1.5 or less (att. out), 1.3 or less (att. in); UHF: 1.8 or less (att. out), 1.5 or less (att. in)	N/A	N/A	N/A	operational: $0^{\circ}\text{C}$ — $+40^{\circ}\text{C}$
VHF/Super band: 1.4:1 (no attenuator); 1.2:1 (one attenuator IN)	$-40$ dBmV or $10$ microvolts	N/A	N/A	$+20^{\circ}\text{F}$ — $+100^{\circ}\text{F}$ , $\pm 2$ dB variation
VHF: 1.4 or better; 1.2 or better with any pads IN; UHF: 1.8 or better; 1.4 or better with any pads IN	N/A	total calibrated range: $90$ dB ( $-30$ — $+60$ dBmV); calibrated max. individual range: $20$ dB each attenuator setting	N/A	$+30^{\circ}\text{F}$ — $+90^{\circ}\text{F}$ $\pm 0.5$ dB or less; $0^{\circ}\text{F}$ — $+100^{\circ}\text{F}$ $\pm 1$ dB or less
N/A	$-35$ dBmV	N/A	$0.8$ V p-p for $+10$ dBmV input with compensator control set for no over-load	$-18^{\circ}\text{C}$ — $+60^{\circ}\text{C}$ ( $0^{\circ}\text{F}$ — $+140^{\circ}\text{F}$ )
N/A	$-35$ dBmV	N/A	N/A	N/A
N/A	$-40$ dBmV	@ $58$ MHz: single button activates calibrator and tunes the calibrator frequency. Accuracy: $\pm 0.25$ dB	$1$ V for $+10$ dBmV DC coupled	$0^{\circ}\text{F}$ — $+120^{\circ}\text{F}$
N/A	N/A	frequency: $150$ MHz $\pm 2$ MHz; amplitude: $+20$ dBmV $\pm 0.25$ dB	approximately $1$ volt	$0^{\circ}\text{F}$ — $+120^{\circ}\text{F}$
N/A	N/A	frequency: $150$ MHz $\pm 2$ MHz; amplitude: $+20$ dBmV $\pm 0.25$ dB over temperature range	approximately $1$ volt	$0^{\circ}\text{F}$ — $+120^{\circ}\text{F}$

**Dick Hancock** has been named vice president of sales and marketing for Anixter Microsat, Canada's CATV supply specialist, it was announced by Gordon Halverson. Hancock has been national sales manager for Anixter Microsat since 1981. Previously, he was with GTE as central regional sales manager in Houston, Texas.



**Donald Pisarcik** has been hired by C-COR Electronics Inc. as vice president, sales and marketing. He will be responsible for the company's overall marketing and sales effort. Most recently he was director of marketing for Burnup and Sims Cable Products Group, Atlanta, Ga.

Oak Media Corp. has announced the following promotions in its ON Satellite Television Division: **Christopher Clarke** has been named director, satellite operations and affiliate sales. Reporting to Esther Rodriguez, division vice president, Clarke will continue to oversee the satellite uplink operation in Salt Lake City while handling all aspects of new affiliate sales. Clarke has been with Oak since 1978 and has served in a variety of functions, including development and implementation of ON Air promotion, and customer service. **Nancy Held** has been named director, affiliate services and also reports to Rodriguez. Held will direct the marketing, affiliate relations and public relations activities of the satellite service. She joined Oak in 1982 and has worked on the distribution of Oak's pay-per-view events, public relations and advertising for Oak Media Corp., and the launch of the satellite service.

C-COR also has announced the promotion of **Rod Cozort** as sales manager-data products at the company's data products subsidiary in Beaverton, Ore. Cozort is responsible for a new line of products intended for application on two-way broadband coaxial networks. **Mark Dineson** has been appointed director of data marketing.

Palmer Cablevision has promoted three staff members and announced the appointment of a plant manager to direct operations. **Bob Michael**, formerly Palmer's cable advertising and production director, has been appointed to program and sales manager, and **Jim Fredrickson** has been promoted to cable chief engineer, after having been

Palmer's electronics engineer for the past several years. **Bob Madsen**, formerly Palmer's troubleshooter supervisor, has appointed **Pete Smith** to serve as plant manager. Smith came to Palmer from Storer Communications.

Satellite Television Corp. has made three additions to its Washington staff. **Carolyn Davenport** has been named manager, corporate information systems, and comes to STC from Group W Cable Inc. In her new position, she will help implement the computer systems STC uses in all facets of its direct broadcast satellite operation. She also will be responsible for STC's billing and collection systems. **Robin Rather** comes to STC as planning advisor for planning and business development. Rather will be responsible for developing informational and communications services for STC's DBS system. And **Gary Traver** joins STC as project manager, software development. Traver will oversee the design and procurement of computer hardware and software for STC's subscriber authorization and billing system.

**Kent Franke** has been named senior vice president-group operations of Times Mirror Cable Television. Franke had been associated with Group W Cable/Teleprompter Corp. since 1982, most recently as vice president of operations in New York. He will presently direct operations in four regions, which are comprised of 32 cable systems.



**Richard Smith** has been named director of human resources for Pioneer Communications of America Inc. Smith will be responsible for the direction of the total human resources function, including recruitment, policy making and benefit administration at Pioneer. Smith joins Pioneer from Cambridge Plan International where he served as manager of human resources. He brings to Pioneer 16 years of personnel management experience.

Cable TV Supply Co., the wholly owned subsidiary of Cable TV Industries, has added a new sales representative to its Startron Systems division and promoted two of its operations managers to Startron positions. **Bill Robinson**, a 20-year cable sales and management veteran, has joined Startron Systems as sales engineer. **Neil Serafin**, operations manager of Cable TV Supply's Grand Prairie,

Texas facility, was promoted to Southwestern sales and engineering manager for Startron Systems and **Roger Fallihee** was promoted from operation manager of the company's Los Angeles facility to Western regional sales manager for Startron. **Sam Elliott** replaces Serafin and **Jim Snow** takes over Fallihee's former position.

**Robert Smith Jr.** has been promoted to the newly created position of executive director for the Videotex Industry Association. With this promotion by VIA's board of directors, Smith becomes the first executive director of this 2-year-old industry association. The Videotex Industry Association is the national organization solely devoted to the promotion and development of videotex and teletext in the United States. Formed in December 1981, VIA has over 120 member firms.

**John Cummings** has been promoted to product manager for the Cable Security division of TOCOM Inc. He had been sales manager for the division.

Satellite Television Corp. has named **Stephen Hofflich** vice president, information systems, and **David Beddow** senior vice president of engineering and broadcast operations. Hofflich comes to STC with 19 years of experience in the management information systems field, while Beddow was most recently senior vice president of operations and strategic planning at Group W Satellite Communications.

**Guy Davis** has been appointed vice president of Uniden Corp.'s new Satellite Technology Group. Davis had previously worked for Intersat Corp. as vice president of sales.



**Ron Cunningham** will join Gill Management Services Inc. to head up the marketing of GMS' personal computer system for cable television operators. Cunningham will assume the post of national marketing manager for micro business systems, and was previously vice president of sales and marketing for International Cable Consultants.

The Drop Shop Ltd. has announced the addition of **Ric Charel** and **Dennis Sarantapoulas** to its staff. Charel will assume the newly created post of special accounts manager, and Sarantapoulas

will join the company's house sales staff and service existing and new accounts throughout the U.S.

**George Green** has been appointed president and chief executive officer of CableBus Systems Corp. He was formerly vice president for operations with the company.



**Clyde Campbell** has been named vice president, branch operations, and an officer of Cableguard Inc., an independent provider of sensor-based cable monitoring services. Campbell will oversee the day-to-day operations of new facilities.

**C.J. (Chuck) Trautner** has taken over as North Central Region Sales Manager for the Lectro/Capscan division of Burnup and Sims Cable Products. Prior to joining Burnup & Sims, Trautner was employed by Magnavox as senior account representative.

**Joseph Cadile** has been named director of corporate administration for AM Cable TV Industries, Inc. Previously, Cadile was director of administration for E-COM Products Division of AM Cable.



**Guy Cayton** has been named president of National Microtech Inc.'s wholly owned subsidiary, International Micro-Cable. Cayton previously was vice president of engineering for IMC.



**P. Horne**



**F. Godwin**

**Paula Horne** and **Fred Godwin** have joined Mycro-Tek as representatives for the Mycro-Vision™ video display information system. Horne is based in Atlanta, and previously worked for TV Watch, the program guide. Godwin is based in Philadelphia, and previously worked for Savin Corp.

**Theodore Papes, Jr.**, an IBM vice president, has been named president and chief executive officer of the joint videotex venture announced last month by CBS Inc., IBM Corp. and Sears, Roebuck and Co.

Augat Inc. announced the appointment of **Dr. Christopher Tocci** to the position of electronics project engineer in the fiberoptics division. In this capacity, Tocci will be responsible for providing technical support for existing

fiberoptic products, research and development of new fiberoptic communication systems and new product applications. Prior to joining Augat, Tocci worked extensively with the medical application of optical signal-processing technology and has done considerable research in this area.

**Joseph Rocci** has been appointed manager of product development for E-Com Products Division of AM Cable TV Industries, Inc.

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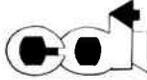
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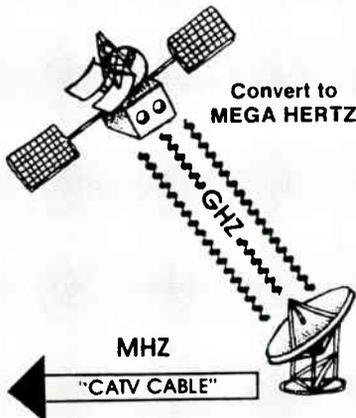
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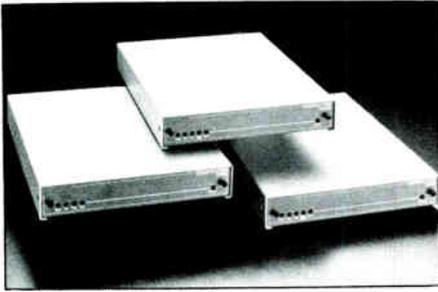
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**C-COR 7100 series narrowband modems**

## C-COR data modem

C-COR Electronics Inc. has unveiled a narrowband synchronous data modem, the model 7140, which operates at speeds up to 9.6 kB/second and is for use in two-way broadband coaxial networks. Equipped with point-to-point and multidrop capabilities, the 7140 can operate in simplex, half-duplex, and full-duplex modes and features 25 kHz channel spacing. The modular unit is priced at \$650, although quantity discounts are available.

For more information, contact C-COR Electronics Inc., 60 Decibel Rd., State College, Pa. 16801, (814) 238-2461.

## S-A debuts feedforward

Scientific-Atlanta has debuted a complete line of feedforward amplifiers, equipped with field interchangeable gain blocks. Labeled the series 6800, these amplifiers are for use in newbuild and upgrade applications, yield a distortion improvement of 18-20 dB over standard push-pull electronics, feature a bandwidth of 550 MHz and are compatible with existing trunk housing. The gain blocks available with the 6800 amplifiers allow on-line testing and replacement, which reduces the need to return modules to the factory for repair.

For more information, contact Scientific-Atlanta Inc., One Technology Parkway, P.O. Box 105600, Atlanta, Ga. 30348, (404) 441-4000.

## Pascal billing software

Apple/Store Computer Services has introduced a pascal version of its cable billing software. This software program is compatible with most microcomputers, including the IBM PC and IBM XT, Apple II, IIE and III; Radio Shack models II, 12 and 16; and Xerox 820 II. The program can accommodate cable systems with as many as 10,000 subscribers. Training, telephone support and a maintenance program are provided. The program sells for \$2,000 to \$2,500, depending on the system's hardware

configuration and on-site requirements.

For more information, contact the Apple/Store Computer Services, (414) 887-7964.

## Times Fiber catalog

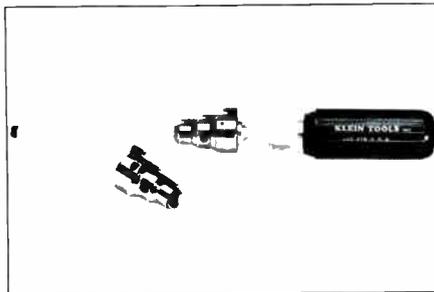
Times Fiber Communications has released a new coaxial catalog entitled "RF Transmission Line, The Complete Catalog and Handbook." The 42-page catalog contains a selection guide, application notes and a guide to the company's coaxial cable line.

For more information, contact Times Fiber Communications Inc., 358 Hall Ave., P.O. Box 384, Wallingford, Conn. 06492 (203) 265-8500.

## The SC-1018 TV antenna

Winegard Company has added the Model SC-1018 TV antenna to its product line. The antenna delivers 39.5 dB gain; complies with FCC two-degree spacing requirements, with a beamwidth of 1.6 degrees; and weighs 92 pounds. The dish can be assembled in 20 minutes. The antenna has an anodized finish, which helps it withstand corrosion, and can weather winds of up to 125 MPH.

For more information, contact Winegard Co., 3000 Kirkwood St., P.O. Box 1007, Burlington, Iowa 52601, (319) 753-0121.



**Klein Tools PAL conduit reamer**

## Klein expands product line

Klein Tools has expanded its product line with a conduit-fitting screwdriver and conduit reamer. The screwdriver features a hooded blade design, which keeps the tip from slipping out of screws, a collar around the tip and an amber plastic handle. The tool can be used on 1/2-, 3/4- and 1-inch fittings and has a 3/8-inch blade tip width.

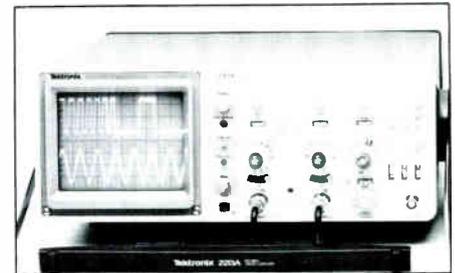
The conduit reamer, called "PAL," can ream both the inside and outside of thinwall conduit ends and is designed for conduit with 1/2-, 3/4- and 1-inch diameters.

For more information, contact Klein Tools, 7200 McCormick Blvd., Chicago, Ill. 60645, (312) 677-9500.

## RMS attenuator pads

RMS Electronics Inc. has developed a new line of male/female "mini-sized" fixed attenuator pads for use with set-top converters. Designated the model numbers FAP-3, FAP-6, FAP-10, and FAP-20, these pads feature attenuation values of 3 dB, 6 dB, 10 dB and 20 dB, respectively. Each attenuator pad is equipped with an F-59 male F connector on one side and an F-61 female F terminal on the other side. Impedance is 75 ohms; accuracy, 5 percent or  $\pm 5$  dB; and price, \$.85 each.

For more information, contact RMS Electronics Inc., 50 Antin Place, Bronx, N.Y. 10462, (212) 892-6700.



**Upgraded 2213A Tektronix oscilloscope**

## Upgraded oscilloscopes

The 60-MHz bandwidth 2213 and 2215 portable oscilloscopes by Tektronix Inc. have been upgraded to incorporate over 25 new features and specifications. These features include brighter displays, greater accuracy and more sensitive triggering. CRT brightness on the new product is up 40 percent, and vertical accuracy is specified over a wider temperature range. Sweep accuracy (in 10X) has increased from 5 to 4 percent, also over a wider temperature range. Trigger sensitivity has increased in both internal and external A trigger, and in the B trigger on the 2215A as well.

For more information, contact Tektronix Inc., P.O. Box 500, Beaverton, Ore., 97077, (503) 644-0161.

## "The Channelizer"

Triple Crown Electronics Inc. has unveiled "The Channelizer," a modular headend system made for small system design and consisting of three basic modules: the Channelizer-CVM, a video/audio modulator; Channelizer-CVR, a CATV satellite receiver; and Channelizer-CPS, a power supply with AC/DC-battery standby capability. The Channelizer CVM is a full television VSB I.F. modulator, with a separate audio I.F. The modulator and RF converter are crystal-controlled, and the channelizing

filter/oscillator modules are interchangeable with other Triple Crown products. The Channelizer CVR can receive FM signals from satellite transmitters within the frequency spectrum of 3.7—4.2 GHz. The CPS-24 can transfer automatically to standby power, without interrupting service. Its design of current limiting regulation eliminates failures from accidental overloads or short circuiting of auxiliary connections. With the dual power input to all modules, Channelizer power supplies can be interconnected, from two power sup-

plies powering one Channelizer module up to one power supply powering a six-channel CVM Modulator/CVR Receiver combination.

For more information, contact Triple Crown Electronics Inc., 4560 Fieldgate Drive, Mississauga, Ontario L4W3W6, Canada.

### Seven-meter uplink

A seven-meter transportable uplink made by Byers Communications Systems Inc. will be ready for sale and lease by

early summer. The self-contained, all-weather teleport is designed for operation in both high-density metropolitan as well as remote locations. The trailer-mounted system can be set up in two hours by a two-person crew, and was engineered for the maximum 30dB adjacent satellite isolation from any location accessible by truck within the continental United States.

For more information, contact Byers at (404) 351-8212.

### Burkeen B-30 plow

Burkeen Manufacturing's new B-30 plow, a replacement for the older DP30, features a redesigned hydraulic system, articulation, a spring-isolated plow and gearbox-driven trencher. The B-30 also has a lower profile for better stability, a larger hydraulic reservoir, an hour meter, muffler guard, key switch and trencher safety bar. "Big Foot" tires, heavier wheels and a more powerful boring attachment are optional.

For more information, contact Burkeen Manufacturing, 11200 High Point Cove, Olive Branch, Miss. 38654, (800) 895-9824.

### Augat's new wire stripper

Augat Inc.'s Interconnection Components Group now is marketing the TMS-1G Micro-Strip, a precision non-nicking wire stripping tool. It's designed to remove hard or soft insulation, such as teflon, kynar tefzel, kapton, milene, PVC and others, from solid or stranded wire of 18 to 34 gauge. It also can be used to prepare wire for use in aircraft instrumentation, missile guidance systems, telecommunications systems and fiber-optic cable links. A unique feature is its replaceable cutting blades. The tool also has a built-in wire strip length gauge.

For more information, contact Augat Inc., 33 Perry Ave., P.O. Box 779, Attleboro, Mass., 02703, (617) 222-2202.

### MFC notch filter

Microwave Filter Co. has designed a notch filter, designated the model number 3468-Hyp/1, which is tunable from 300-400 MHz. The filter can be used to reduce out-of-band interference when the exact frequency is unknown and features a notch depth of 25 dB at 300 MHz and 40 dB at 400 MHz. Other specifications include 3 dB bandwidth at  $\pm 3$  MHz and  $\pm 8$  MHz at 400 MHz and 75 ohm impedance. The unit costs \$80 and can be delivered in 20 days.

For more information, contact Microwave Filter Co. Inc., 6743 Kinne St., E. Syracuse, N.Y. 13057, (800) 448-1666.

**ALL  
GROUND  
RODS  
ARE NOT  
CREATED  
EQUAL**



Safe grounding can only be assured when materials are used that meet the requirements of the National Electric Code. Carolina Galvanizing ground rods do.

Our electrolytic process assures every rod a continuous inter-metallic copperbond so that life-threatening cracks that lead to rod corrosion and deterioration will not appear.

Don't make the mistake of thinking that all ground rods are the same. Specify Carolina Galvanizing ground rods. You and your customers will be glad you did—all things not being equal.

**CAROLINA GALVANIZING  
UTILITY PRODUCTS DIVISION**

PO Box 487, Aberdeen, N.C. 28315. Call Toll free 1-800-334-2156. In NC 919-944-2171.

Reader Service Number 32

**Burkeen Announces  
The New B-30 Cable Plow**

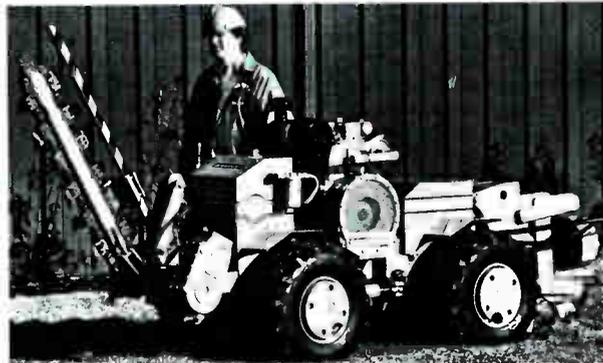
# Why Burkeen?

## HERE'S WHY

- Compact & Maneuverable
- 30 Hp fuel efficient Hatz Air Cooled Diesel
- Exclusive spring isolated vibratory plow
- Exclusive "Replaceable Tip" Plow Blades
- Heavy Duty Gear Box Drive Trencher
- Heavy Duty Boring Attachment

**PLOW - TRENCH - BORE  
Burkeen Does It All**

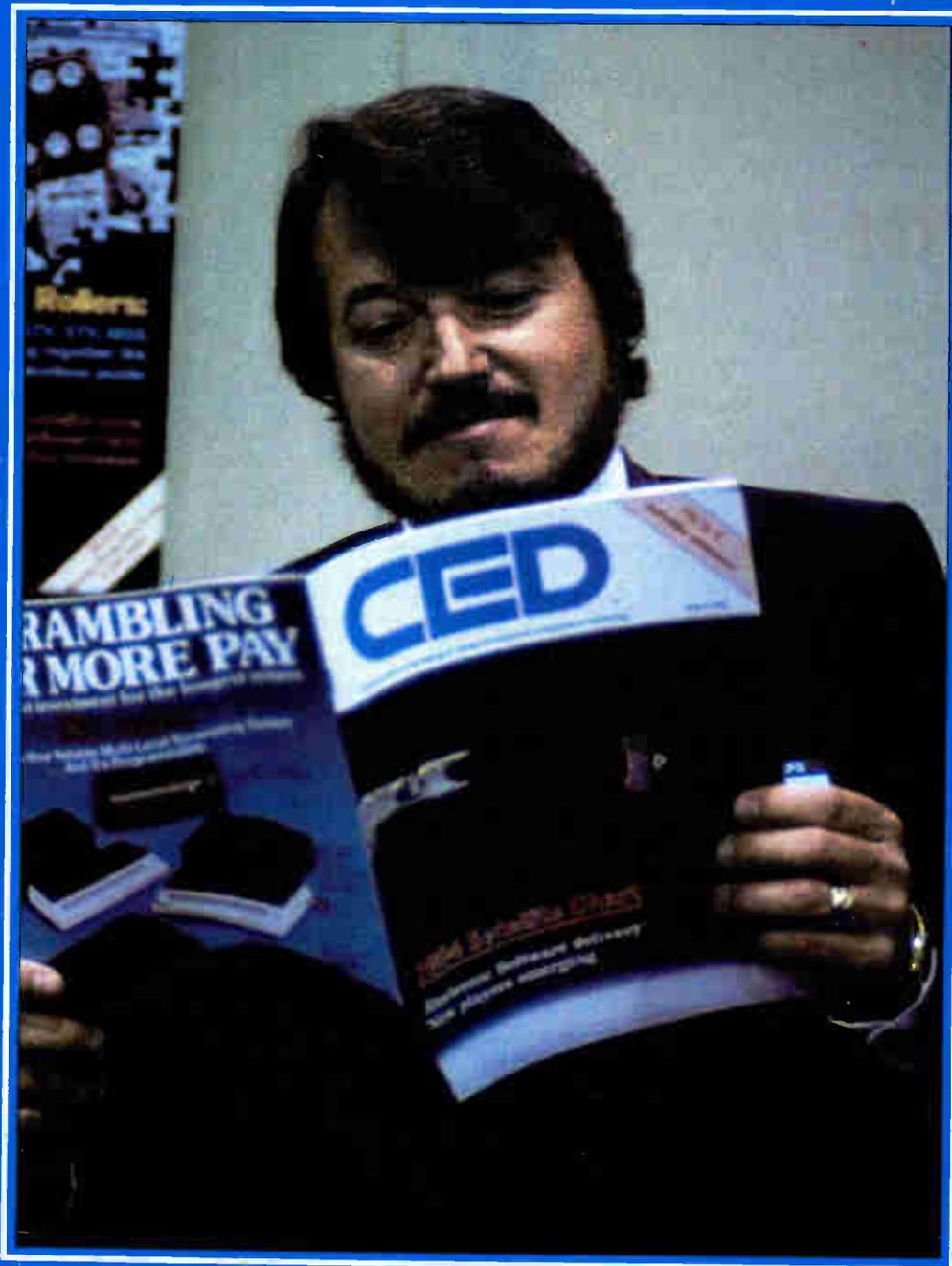
**For the Dealer Nearest You  
Call 1/800/647-9824**



**Burkeen B-30 "IT WORKS"**



1200 HIGH POINT COVE + OLIVE BRANCH, MS 38654

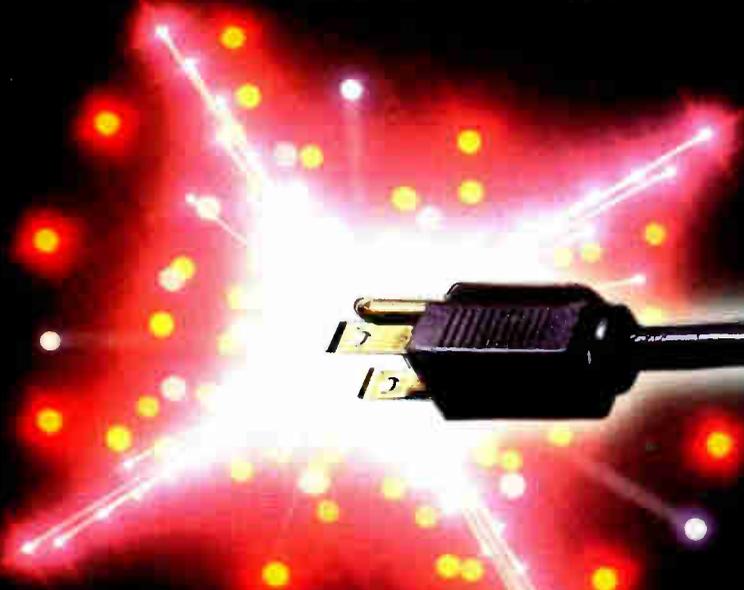


*Wes DeVall, District Engineer for Group W Cable, Inc.*

**“CED keeps you abreast on the latest technology. I use it as a training tool. Our chief technicians and all plant managers in my district read it. . . CED is the only way they can keep up with it all.”**

**CED**  
**The Right Stuff**

# HOW TO PULL THE PLUG ON CABLE TV THEFT



## PLUG INTO SUPER SAFE

Start by fighting back with the industry's newest high security enclosure, Super SAFE. It works like a SAFE because it locks in cable service, that only you have the combination to. Now thieves and would-be viewers get only what they pay for!

You can bank on a Super SAFE because it is next to impossible to enter or destroy. Heavy-gauge steel construction and an interlocking cap quickly deter thieves. Plus, there are no bolts or rivets to facilitate illegal entry. For added security, all corners are welded.

Super SAFE is available in a variety of sizes and locking systems. Arm yourself with the one best for your system.

Act now for a demonstration on how we can pull the plug on your cable TV theft. Simply fill out the attached coupon and mail today.

Yes, I'd like to Pull The Plug On Cable TV Theft. Phone me for a Super SAFE demonstration.

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

5/84/CED

Reliable Electric/Utility Products 11333 Addison Street/Franklin Park, Illinois 60131/312-455-8010

Reader Service Number 34

**RELIANCE**  
**COMM/TEC**

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					<b>The Playboy Channel</b>	Daily	8 p.m./6 a.m.	869*/#	12																																																																																																																																																			
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					<b>SPN</b>		24 hrs.	429*/#	3																																																																																																																																																			
					<b>Trinity Broadcasting Network</b>		24 hrs.	None	17																																																																																																																																																			
					<b>Westar IV</b>																																																																																																																																																							
					<b>SIN</b>		24 hrs.	None	3X																																																																																																																																																			

\* Ku-Band  
 \*\* C-Band  
 \*\*\* Dual C/Ku-Band

Orbital slots and launch dates often change without notice.

Contact programmer's technical department for more information on transponder use and alert tone.

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