

# TV Communications

The Professional Journal of Cable Television

42567  
 2KY42567TACEMKSOX7105 1 #  
 MARSHALL F TACKETT  
 WKSO-TV  
 EUBANK  
 KY 42567

ORIGINATION ISSUE  
 Use of Film  
 Years of Cablecasting  
 Sell Advertising



# "I frankly believe Jerrold's Push-Pull Amplifiers are built with 'years ahead' systems design."



Charles F. Erickson  
Vice President & General Manager  
Durfee's TV Cable Co.  
Parkersburg, W. Va.

"CATV moves fast. Durfee's engineers require a system which is easy to maintain, economical to operate, and with maximum flexibility for the future. That's why we went to Jerrold's Starline Twenty Push-Pull amplifier stations for our main trunk, and push-pull line extenders for our feeders.

"We have found that this equipment is designed with the future in mind . . .

that it employs the most advanced cable engineering techniques available . . . and has, with our firm, a most distinguished record for field service throughout past years.

"It all figures. Jerrold was first with push-pull amplifiers for our long-haul needs . . . first with reliable push-pull solid-state distribution equipment . . . and, in fact, first in CATV. Our cus-

tomers' satisfaction and system growth are more than sufficient justification for our systems equipment decision."

*If you want to get cracking with a CATV system that turns a profit, write or phone the Jerrold regional office nearest you.*



**FIRST IN CATV**

a GENERAL INSTRUMENT company

**EASTERN OFFICE**  
401 Walnut St.  
Phila., Pa. 19105  
(215) 925-9870  
TWX 710-670-0263

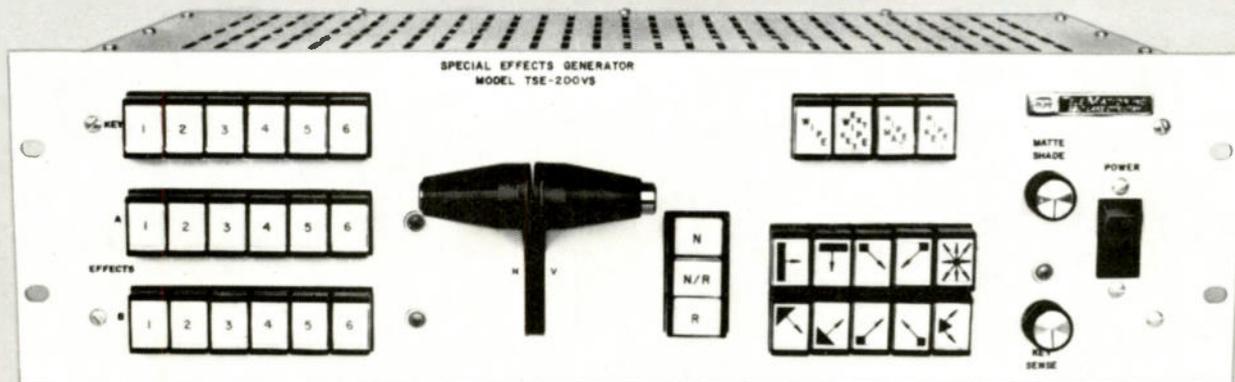
**SOUTHERN OFFICE**  
1 Perimeter Place, Suite 101  
Smyrna, Georgia 30080  
(404) 532-3102  
TWX 810-766-4895

**MIDWESTERN OFFICE**  
1334 Atlantic Ave.  
N. Kansas City, Mo. 64116  
(816) 842-1130  
TWX 910-771-3180

**WESTERN OFFICE**  
1255 Veterans Blvd.  
Redwood City, Calif. 94063  
(415) 365-5200  
TWX 910-378-5418

**CANADIAN OFFICE**  
Jerrold Electronics (Canada) Ltd.  
60 Wingold Ave.  
Toronto 395  
Ontario, Canada

# effect EFFECTS EFFECTIVELY



**If you are a cable operator  
involved in local origination,  
and you're looking for a special  
effects generator that...**

- Allows you selection of Wipe, Key, Matte, Wipe-Key, Wipe-Matte modes of operation with Self-Key (two signals) or External-Key (three signals), and
- Offers ten wipe choices, including Circle wipe and
- Handles color or monochrome signals (wipe or key color into monochrome, or monochrome into color), and
- Is all solid-state with a three-bus, six-input pre-select switcher, and
- Provides locking split wipe arms and full tally circuitry, and
- Costs less than \$2,500.00...

You're looking for the TeleMation TSE-200VS. This special effects generator handles all these requirements and costs only \$2,295.00! (If you don't need the pre-select switcher, the TSE-200 is available for \$1,695.00.) TSE-200 generators feature state-of-the art design techniques, broadcast performance, total flexibility, and TeleMation reliability standards.

We invite you to compare performance, reliability and price with any other special effects unit on the market.



**TELEMATION**

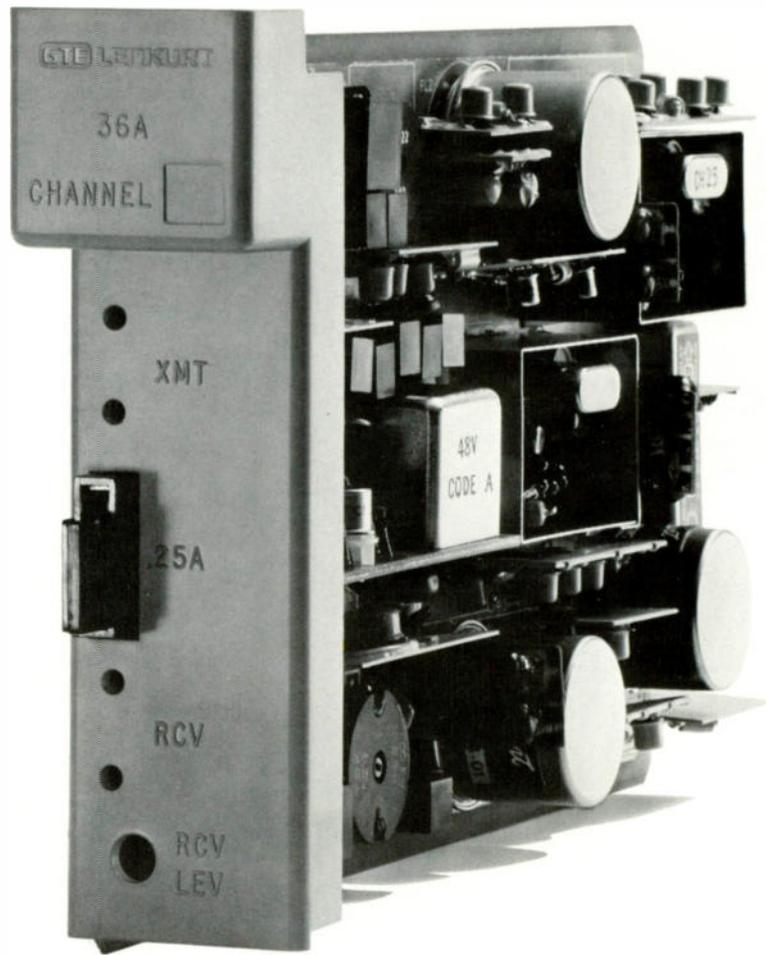
Post Office Box 15068  
Salt Lake City, Utah 84115  
Phone: (801) 486-7564

BRANCH OFFICES: ALBUQUERQUE • ATLANTA • BOSTON • CHICAGO • DALLAS • DENVER • HOUSTON • INDIANAPOLIS • LAS VEGAS • LITTLE ROCK • NEW YORK • NORWALK • MILWAUKEE • PALO ALTO • PASADENA • PHOENIX • SAN DIEGO • SALT LAKE CITY • ST. LOUIS • TULSA • WASHINGTON • RIO DE JANEIRO • SAO PAULO

March 1971, Volume 8 Number 3.

TV COMMUNICATIONS is published on the first day of each month by Communications Publishing Corporation, 1900 West Yale, Englewood, Colorado 80110. Second Class postage is paid at Englewood, Colorado with additional entries made at Oklahoma City, Oklahoma. SUBSCRIPTIONS: One Year, \$10, Two Years, \$17, Three Years, \$26. Foreign subscriptions (except Canada) add \$4 per year. Single copies available at \$2 each plus postage.

# We've reduced the size of 2 GHz " " " price " " "



Actual Size

# radio and low density multiplex.

“ “ “ “ “

Our new systems are by far the most compact, most economical you can buy.

The 36A system has 74 different channel assignments and is one-third the size of any comparable domestic unit. One duplex channel, complete with signaling, fits on a single card. And since each card is a self-contained, one channel system, there is no need for expensive common equipment.

We get a duplex channel on a single card by using our 1-cubic inch, polyolithic crystal filters. In addition, these filters make it practical to use the latest integrated circuitry to reduce size, price and maintenance problems. We've applied for patents on the manufacturing process of these filters, so nobody else is likely to have them for quite awhile.

The 78F2 600-channel 2GHz radio is the smallest on the market, yet simple to service. The all solid-state transmitter and receiver are combined on a single shelf. And built-in test facilities will keep costs down by reducing all routine maintenance to a 5-minute job.

Compare the specs and prices on our systems with everybody else's, then give us a call: Atlanta (404) 261-8282—Chicago (312) 263-1321—Dallas (214) 363-0286—Falls Church (703) 533-3344—San Carlos (415) 591-8461.

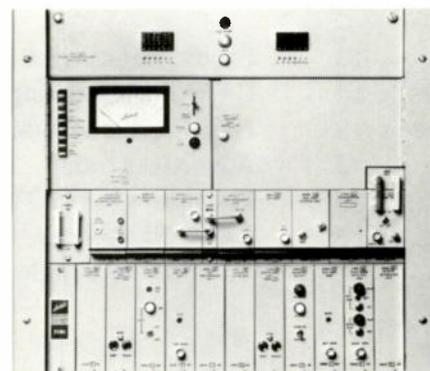
Or write: GTE Lenkurt Incorporated, Dept. C720, 1105 County Road, San Carlos, California 94070, for complete literature.

**The 36A Radio Multiplex** single channel stackable — 74-channels — 12 channels (three mounting spaces high) on a 19" rack — channels are identical

except for small plug-in channel selection oscillators, so one channel (less oscillator) is all the "spare parts" you need — operates directly from 24 or 48 volts with 17-18 dBncO noise — built-in E&M signaling.

## **The 78F2 600-channel 2GHz Microwave Radio**

5 watt power output — operates directly from 24 or 48 volts — 8 dB receiver noise figure — 18 dBncO/hop noise performance — a duplex system with baseband and power distribution equipment takes up only 10 mounting spaces on a 19" rack — push-button monitoring of power output, deviation, transmitter frequency and receive signal level — built-in alarms monitor power output, off frequency, receive signal level, transmit pilot and operation of hot standby switch.



78F2 Microwave System

**GTE LENKURT**

# TV Communications

The Professional Journal of Cable Television

**A Long, Hard Look at Film for CATV**  
In-depth review of film as a production medium for cablecasting . . 32

**Experienced Perspective on the Origination "Bug"**  
Case history of origination pitfalls, profit-picture after four years . . 44

**A Local Origination Basic: Start With Step One!**  
Jack Rickel cuts through baloney surrounding program origination . 53

**Advertising Sales: A Time To Cash In**  
Gene Cook provides guidance on ad rates and sales methods . . . 62

**Test Equipment for Your Origination System**  
Last of two-part review of test gear for studio, control room . . . . . 69

**Cablecasting by Teens Advances the War on Poverty**  
System gets programming as teenagers get marketable skills . . . . 79

## CATV Technician Section

**How To Plan for Studio Lighting**  
First of two-part article on power needs, equipment, layout . . . . . 84

## Departments

Editorial . . . . .	13	Studio Equipment Report . 76
Perspective on the News . 14		CATV Programming . . . . . 81
Management Guidelines . 18		New Product Review . . . . 92
Letters to the Editor . . . . 20		Advertiser Index . . . . . 97
CATV News Briefs . . . . . 23		Literature for CATV . . . . . 98
Focus on People . . . . . 28		CATV Classifieds . . . . . 98
Studio Notebook . . . . . 74		Calendar of Events . . . . . 99

**Publisher**  
Robert A. Searle

**Executive Editor**  
B. Milton Bryan

**Managing Editor**  
D. Stuart MacPhail

**Art Director**  
D. A. A. Lindmark

**Associate Editor**  
Jacqueline B. Morse

**Contributing Editors**  
I. Switzer  
Jack A. Rickel  
Kenneth D. Lawson  
Robert D. Bilodeau

**Production Editor**  
Tom L. Callaway

**Artists**  
Steven E. Riley  
Helen F. Thomas

**Production Assistant**  
Jayne L. Barrick

**Director of Advertising**  
Robert Titsch

**Advertising Sales**  
Phil D. Cook  
Sidney Y. Black

**Traffic Manager**  
Carol L. Falconer

**Circulation Manager**  
Buford S. Marsh

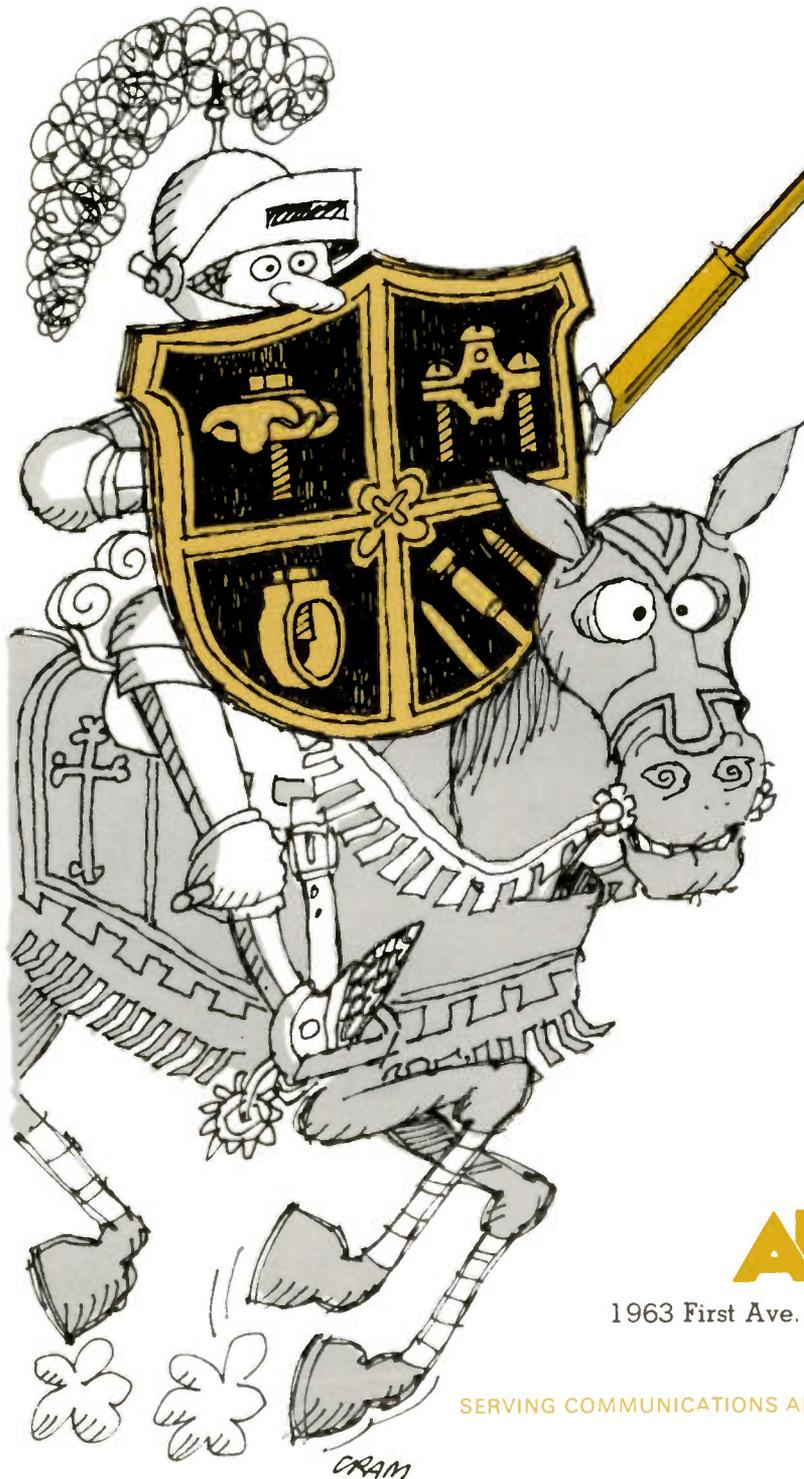
## This Month's Cover...

The two young ladies on our cover are in the process of filming a commercial (for a suburban shopping center) that will run on a cable system. See the article on use of film for CATV originations (page 32) and the article on advertising sales (page 62), in this issue. TVC pays \$50 for cover photos supplied by readers and selected for publication. Contact the managing editor for a "Cover Photo Requirements" sheet.

**CPC** Published by: COMMUNICATIONS PUBLISHING CORPORATION  
1900 West Yale • Englewood, Colorado 80110 • (303) 761-3770

TV COMMUNICATIONS is circulated monthly to individuals and firms in cable television (CATV) and allied industries. ADVERTISING: Display advertising accepted at discretion of the publishers. Rates available upon request. COPYRIGHT: Entire contents copyrighted by Communications Publishing Corp., and may not be reproduced in any form without permission. SUBSCRIPTIONS: See page 3 for regular subscriptions. Group subscription rates available.

# Protect your system with **GROUNDING MATERIALS** from Pruzan.



## **Complete from head-end to house-drop.**

Protect your subscribers and your entire system with a complete range of grounding material available from Pruzan. You'll find all sizes of Weaver bonded copper ground rods and clamps, bonding clamps, station ground clamps, split-bolt connectors and both bare and insulated copper wire in all sizes. Immediate shipment from huge warehouse stocks so you can install grounds as you expand your system. Special pricing on our exclusive 3/8" x 4' CATV ground rod with clamp.

**Phone today for low prices  
and fast action:  
(206) 624-6505.**

## **ANIXTER-PRUZAN**

1963 First Ave. S./Seattle, Wash. 98134/(206) 624-6505

SERVING COMMUNICATIONS AND POWER NEEDS FOR INDUSTRY NATIONWIDE

# Longview, Washington, knows more about TV viewing than New York City.

Longview has CableGuide.

A unique new service that is now available to all CATV systems. It offers the ultimate in accurate, up-to-the-minute program listings. Right where they belong. On the TV screen.

CableGuide has other features, too. Like local news, public service information, and advertising revenue.

Best of all, the CATV operator doesn't have to lift a finger.

Cableview, a CATV operator in Longview, Washington, recently joined the CableGuide ranks. They'll soon be another CableGuide success story. Like GT&E Communications, Inc., Edmonds, Washington, who reported a significant profit the very first month.

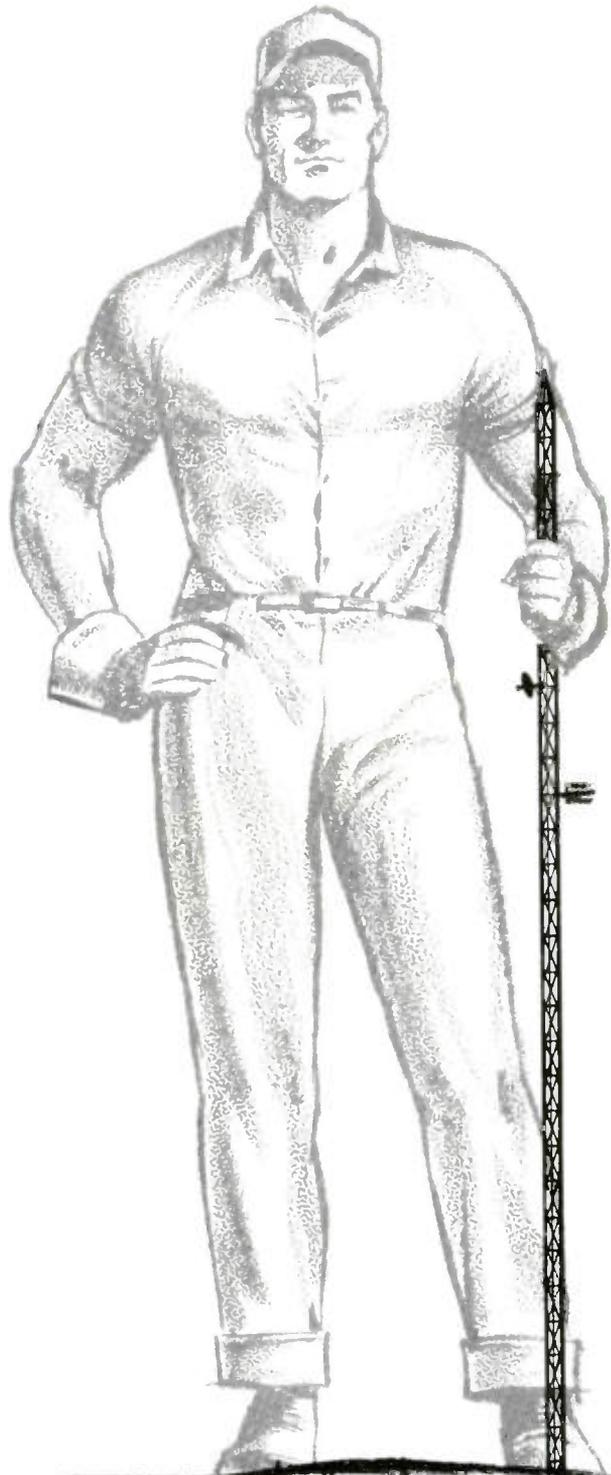
We think CableGuide is the most innovative thing to hit cable television since the cable.

We'd like to tell you more about it. Write us at CableGuide, 938 Denny Building, Seattle, Washington 98121. Or give us a call: (206) MA 2-1052.



Dave Warmuth  
President





You get a  
**TOWER OF  
STRENGTH**

When you buy

*Utility*

Better engineering, better construction,  
better installation — you get all  
these when you buy Utility.

Utility Towers are easier to tune,  
easier to maintain.

And these money-saving extras cost  
you no more from Utility.

There are Utility Towers in every  
state in the nation . . . in Canada,  
South America, Puerto Rico, Europe  
and Korea.

Choose Utility — known the world over  
as the “Tops in Towers.”

*Utility Tower*

COMPANY

POST OFFICE BOX 12027  
OKLAHOMA

CITY, 3200 NORTHWEST 38th STREET  
OKLAHOMA



# Comm/Scope goes to great lengths to produce Alumagard<sup>®</sup> coaxial cable.

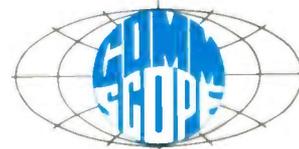
Like 2640 running feet of cable. Without seams. To do it requires a building over half a mile long. To give you Comm/Scope quality, there are other requirements, too. Constant monitoring keeps diameters precise. Continuous checks keep physicals and electricals up to critical standards. And every reel is 100% sweep-tested before shipping.

## And then Comm/Scope offers you Alumagard<sup>®</sup> in short lengths.

Like 1650 feet. Made-to-measure for usual amplifier spacing with little footage left over. No waste. No scrap. No problem.

Specify Alumagard<sup>®</sup> coaxials. You get a written 5-year guarantee. Comm/Scope goes to great lengths to make Comm/Scope quality something special.

*For information and prices, write or call:*



## COMM/SCOPE CORPORATION

P. O. Box 2406  
Hickory, North Carolina 28601  
Phone 704/328-5371

A SUPERIOR CONTINENTAL COMPANY

**Warehouse locations:** San Rafael, California;  
Dallas, Texas; Tampa, Florida; Seattle,  
Washington; Sherrills Ford, North Carolina;  
Las Vegas, Nevada.



# Happy Subscribers.

We help keep them that way.

With over 250 different signal distribution devices, we can assure you of picture processing integrity. Our Taps, Multi-Taps, Splitters, Multi-Splitters, Filters, Amplifiers, Distribution centers with Amplifiers and Transformers permit you to wire any structure and deliver quality pictures to happy subscribers. Our new catalog is yours for the asking.

**View/All** VA

TELEVISION PRODUCTS CORP.

2510 Electronics Drive, Anniston, Alabama 36201  
(205) 831-2140

## SALES OFFICES

26 Duffy Place  
San Rafael, Calif.  
(415) 454-5214  
Hank Geist Jack Penwell

1206 Maple Avenue  
Los Angeles, Calif.  
(213) 747-0401  
Bill Wallace Denny Williams

2837 Anode  
Dallas, Texas  
(214) 358-3435  
Ed Lasberg

1235 Granville Road  
Newark, Ohio  
(614) 344-3261  
Floyd Mack

3800 S. Jason  
Englewood, Colo.  
(303) 761-3093  
Roland Yount

200 Fifth St.  
Stamford, Conn.  
(203) 325-4301  
Walter Hotz

# The TVC Viewpoint

## EDITORIAL



Robert A. Searle  
Publisher

### Bullish—Very Bullish

This writer has just returned from the first two days of FCC CATV hearings in Washington, and is very much encouraged by what he saw.

I saw the Justice Department representative tell the Commission cable should be set free to expand in the competitive market.

I saw the Rand Corporation inform the Commission that — as far as Rand think-tankers could determine — CATV has virtually no impact of a detrimental nature on broadcast television. As a matter of fact, Rand indicated, there is good evidence to suggest that CATV actually *helps* broadcast television in some instances.

I heard the AMST representative Jack Harris make at least one statement which indicated at least some receptiveness to the possibility of distant signals in small TV markets.

But some broadcasters looked pretty stupid in the face of solid CATV “reasonableness” (perhaps too reasonable) and unanimity. Among the broadcast ranks were the industry’s best known mouthpieces — including David Baltimore, Bill Putnam and Dale Moore. They were crying “economic destruction” and “degraded signals” but had little or no evidence to back up their allegations.

In general, the atmosphere of the first two days of hearings (and probably the most important days) was strongly pro-cable. No commission could sit through the successive waves of expert opinion in favor of freeing the CATV industry and not be influenced in that direction.

What can cable expect? A lift of the freeze, but only after further delays. The FCC is notorious for taking endless periods of time to resolve sticky problems. Although the time already allotted to the CATV problem has been extensive, in many ways, the progress has just begun. There is

always the very complex problem of copyright, for instance.

But don’t be surprised if the FCC gives cable a real break in the next 90 days. An “interim lift” in the freeze could come in the form of a relaxation of Footnote 69 restrictions. NCTA estimates 24 percent of the nation’s TV households — approximately 14 million in number — are included in the overlapping Grade B markets from which CATV is restricted by Footnote 69.

Of these, approximately ten million are adjacent to or near CATV service areas. Assuming a lift in the Footnote restrictions, the CATV industry could — with 60 percent saturation in these areas — more than double its size!

Should this happen, it could be the boost that will really put wavering manufacturers in the black for several years to come. It will initiate a technological build-up which will leave the industry much better prepared for the huge growth opportunities when the top-hundred markets are opened.

There is some fear, however, that the Commission may lift the Footnote restrictions and stop at that. This would give the industry that much-needed boost to insure its health and survival while the FCC tables the broader issue of cable’s entrance into the top markets. The Commission could then sit on the larger issue for a number of years, while the slow gears of Congress resolved the copyright problem.

But this editor for one doesn’t think that will happen. Pressure on the FCC and Congress with regard to CATV is mounting — from groups outside either the CATV or broadcast industries. That pressure cannot be ignored much longer. The Commission will have to move, and it will have to move quickly. Cable can no longer be kept on the back burner.

# Perspective

on the news



*B. Milton Bryan  
Executive Editor*

Commissioner Burch has promised expeditious action and an early answer on CATV rule changes, but Commission forecasts on their own performance are often wildly optimistic. So despite comments from Burch, Commissioner Johnson's recent remark that, "We are dangerously close to a solution," and Bartley's statement that, "I believe a majority of the present Commission really wants some answers . . . at least some rules are going to be finalized," it should not surprise any cableman to see more frustrating delays before the FCC musters the courage to act on distant signals and other key questions.

Some of the FCC's answers, and some more delays, may be provided by the courts. The Commission's local origination rule is already in trouble with the 8th Circuit Court of Appeals, which has enjoined the FCC from forcing Midwest Video to originate programming until the court has ruled on the matter.

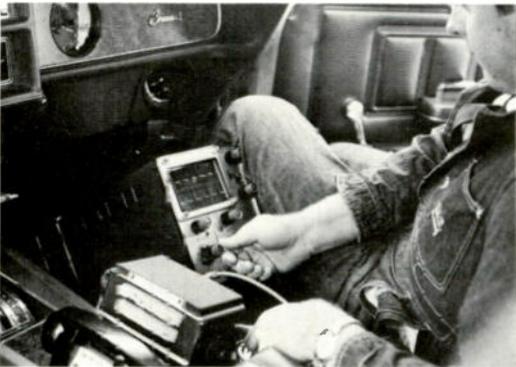
CATV hearings at the Commission this month may result in at least a better feel for the FCC's timetable, or may produce more new questions than new answers. At least these hearings will be extensive enough to let cablemen state their case in full, unlike some hearings in the past. It seems safe, therefore, to assume that the Commission is really interested in finding a way out of the forest this time -- probably hoping that someone will miraculously appear with a workable regulatory plan which will make everyone involved comfortable.

Unrealistic proposals on cable regulation are not limited to Washington these days, as Canadian cablemen are faced with the same kind of unreasonable concepts at the CRTC that U. S. operators have been hearing for years. In a recent "white paper" the CRTC suggests that CATV should subsidize Canadian broadcasters, even though recent figures show broadcast profits to be many times greater than CATV's. In fact, profits from telecasting were almost as great as CATV gross revenues in 1969, according to officials in Canada.

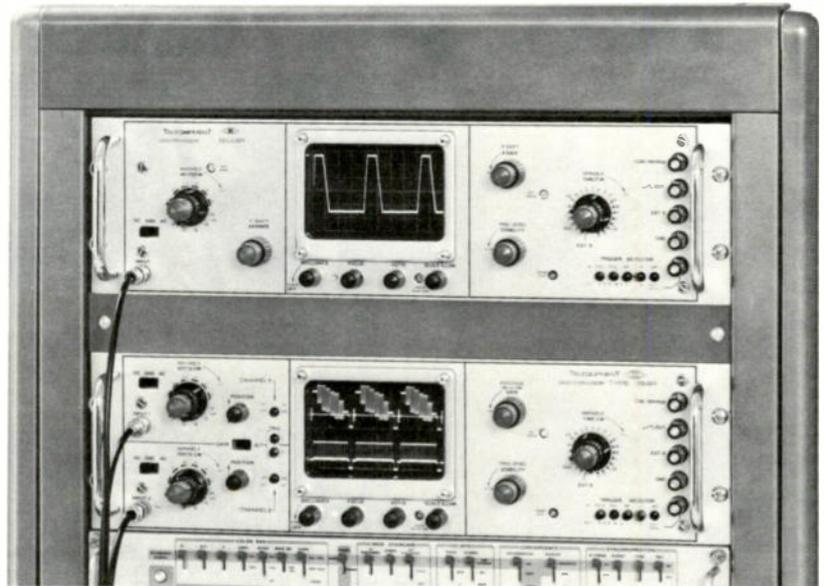
Now is still a pretty good time to build more plant. Lenders have money again, and are looking for places to invest it -- the money market is more of a buyer's market now, and probably will be for at least another six months. With a considerable amount of "profit-taking" activity on Wall Street, and the Dow Jones about to move past 900, many money sources are breaking out of their cautious mood, and will be looking for new investment opportunities . . . and CATV should remain high on the list. But cash flow projections for extensions, rebuilds or new systems should take into account increased pole attachment rates, now pending or expected in many areas. Hopefully we will see more definitive guidelines on pole rates at the federal level soon, but even under such regulation, charges are apt to jump up from present levels in most areas.



Single Trace—Type S54F—\$450



AC DC Battery Powered—Single Trace—Type S54U—\$715



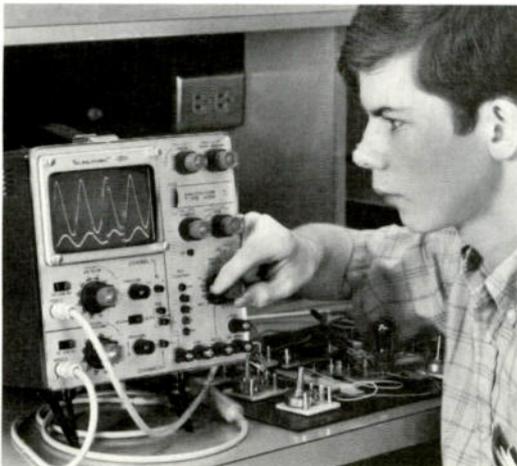
5 1/4-Inch Rackmounts—Single Trace—Type S54AR—\$495—Dual Trace—Type D54R—\$640

*the world's  
most popular  
low-cost 10-MHz  
oscilloscopes  
...the 54 series  
from Telequipment*

- 10 mV/cm DEFLECTION FACTOR
- BRIGHT TRACE

- FET INPUTS
- VERSATILE TRIGGERING

- 200 ns/cm SWEEP RATE
- SOLID STATE



Dual Trace—Type D54—\$595

On your bench, in the field, or built into your system, if you require a 10-MHz oscilloscope, look no further. One of the 54 Series from Telequipment is designed to meet your needs.

Telequipment products are marketed and supported in the U.S. through the Tektronix network of 58 Field Offices and 30 Service Centers. The instruments are warranted against defective parts and workmanship for one year. For a demonstration or more information, call your nearby Tektronix Field Engineer or write: Tektronix, Inc., P.O. Box 500, Beaverton, Oregon 97005.

U.S. Sales Prices FOB Beaverton, Oregon



# 18 OUT OF 25 AIN'T BAD

MUSIC IN 18 OF THE TOP 25  
BOX OFFICE FILMS OF 1970  
WAS COMPOSED BY BMI WRITERS.  
EACH YEAR MORE AND MORE  
OF THE MUSIC IN MOVIES IS BMI.  
AND TODAY'S SUCCESSFUL MOVIES ARE  
TOMORROW'S SUCCESSFUL TELEVISION VIEWING.  
BMI HAS A LOT TO LOOK FORWARD TO,  
AND SO DO YOUR AUDIENCES.



**BMI**

All the worlds of music for all of today's audiences. Broadcast Music, Inc.

# PARAGOULD CATV TOWER DESTROYED...SERVICE RESTORED THANKS TO E.R.S.

*After tornadic winds leveled Paragould Cablevision Company's 450 ft. tower September 4th, 1970, an E.R.S. temporary tower restored partial service in 24 hours and full service to all CATV customers in 48 hours!*

This quick response by Emergency Restoration Service (E.R.S.) prevented loss of thousands of dollars in revenue as well as permanent loss of subscribers who could not be expected to wait a month or more until a new tower could be constructed.

**HOW MUCH TIME AND MONEY WOULD YOU LOSE IF YOUR TOWER WERE DESTROYED BY HIGH WINDS, VANDALISM, STRUCTURAL FAILURE, ICE OR LOW FLYING AIRCRAFT?**

Let us tell you how E.R.S. can protect your service and revenue anywhere in the United States. Call us collect at 314 966-2116, today!

E.R.S. Division of  
**J. C. BARNARD & ASSOCIATES**  
Consulting Communications Engineers  
10121 Manchester Road, St. Louis, Mo. 63122



Broken tower of Paragould Cablevision Co. hidden by trees.



Fifteen man crew assembling 300 ft. tower.



E.R.S. semi-trailer truck loaded with emergency tower, antennae, tools and coaxial cable.

Gentlemen: Please send me detailed information on your EMERGENCY RESTORATION SERVICE.

Name

Firm

Address

City  State  Zip

Phone

# our mini- pro kit is not a birth control device !

It's a rugged, portable lighting kit designed for the professional.

Colortran's Mini-Pro Kit:  
Three of our versatile Mini-Pro lights.

Three of our new Pro - Stands with extendable base legs.

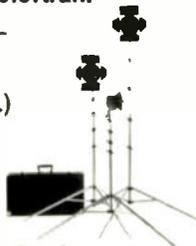
Two barndoors, a set of scrims, a 25' extension cable, one handle.

Three 600 watt, 3200°K lamps, and one rugged case to carry it all in.

Amazingly light at 29 lbs., only \$342.00.

For lighting see **Colortran**.

(For birth control - well . . . that's not our bag.)



## Colortran

A Division of **Berkey** Photo Inc. **Berkey Colortran** • 1015 Chestnut St. Burbank, Calif. 91502 • 213 843-1200



## Management Guidelines

*D. Stuart MacPhail*  
Managing Editor



### Decisions Involve Risk

Habitual indecision not only prevents growth of a business but it also disrupts operations and destroys morale. However, the greatest cause of frustration is the unavailability of decisions from that part of management which reserves the right to make them.

People make massive studies, recommendations, reports . . . discussions are held . . . and then nothing happens. Important operations for which people are held responsible are delayed because someone will not give the word at the right time.

Indecision may result from fear. It may also stem from perfectionism, the desire to make a decision without risks and without disadvantages. Decision without disadvantages is, of course, a contradiction in terms.

If every course of action was exactly right and no alternative action was necessary to consider, no real decision would be called for. Avoiding risk is also illusory, since the outcome of a decision lies in the future which can only be partially foretold.

Again we return to the human element, personality. Persons with two opposite types of personality difficulties may have special troubles in deciding. The professional "strong man" who can be happy only when he dominates all situations has a pathological fear of failure. He worries even over small decisions because if the slightest thing

goes wrong, it may crack his armor of infallibility and endanger his control.

The dependent character, whose self-esteem hinges on the liking and approval of his associates has an even tougher time. He gets others to decide for him as often as possible. When forced to make a choice, he tries to appease the contradicting demands of all persons concerned and thus achieves total confusion.

There is one special type of decision which gives pause to otherwise resolute managers. The manager can decide in his shower on a new sales program, recommending a new product or purchase of an expensive piece of equipment, but will pussyfoot for months and years over an issue involving personnel.

Pussyfooting in personnel matters is natural; on the job, as in personal life, most of us try to avoid unpleasantness. A man shrinks from criticizing a subordinate and from facing the possibility of an angry or hurt reply, just as he would shrink from starting trouble with a member of his own family. Yet delay usually defeats its purpose.

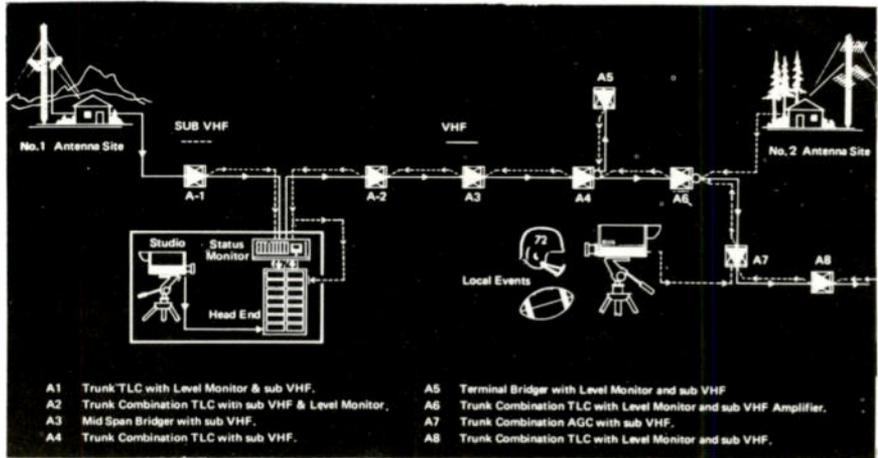
The man under criticism senses he is failing even though he does not know how, and this vague sense of failure may discourage him and further deteriorate his own performance. The situation grows tighter and tighter until it explodes. 

# two way communication

The hot new item for the CATV operator in 1971 would seem to be the advent of two-way communications, carried on one CATV cable. Possible uses of this additional facility include monitoring the output level of amplifiers, tying together remote head-ends without resorting to miles of additional cable and electronics, and remote "live" video telecasting giving on the spot, instantaneous news and sports coverage, to name just a few of the numerous possibilities.

To facilitate this new approach in CATV, one manufacturer, Cascade Electronics Ltd., has introduced a new series of CATV amplifiers called UNICOM. These UNICOM amplifiers, in their basic configuration are normal one-way CATV amplifiers, very similar in operation to those units produced by other major manufacturers. The UNICOM is unique in that the housing has space available for adding the optional two-way and level monitoring systems. These options can be added at any time by plugging in modules, with no major modifications required.

Cascade's approach to facilitating the return of these signals has been to utilize the sub band frequencies in the 5-25 MHz range. This sub band is wide enough to accommodate up to three full video channels and 64 level monitoring signals. These signals are each assigned a 10 KHz slot in the 5-5.64 MHz band, while the three video channels occupy the band from 5.75 MHz to 23.75 MHz. Utilizing this low frequency has two important advantages



over the super high band:

- (a) fewer amplifiers are required for a given distance in the sub VHF band.
- (b) ancillary equipment such as converters are readily available.

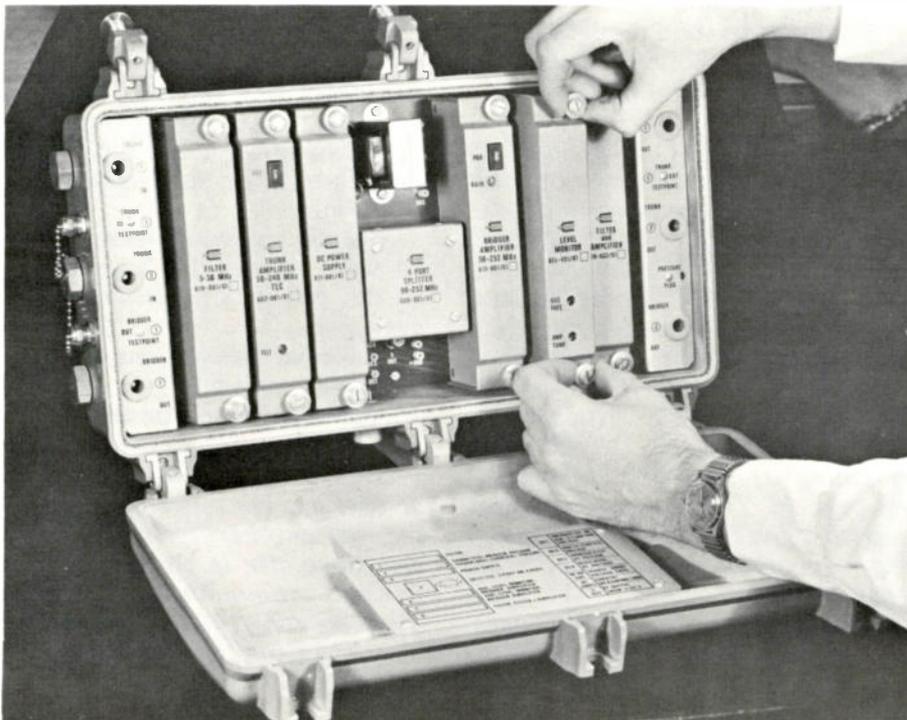
To pass this sub band signal around the VHF section of each amplifier, a filter is used at the input and output of each housing. This filter separates VHF, sub VHF, and A.C. signals, directing each via a different route through the amplifier. Amplification is accomplished while the signals are separated. A VHF amplifier module is required for every 22 dB of cable, and a sub VHF amplifier module is required for every 66 dB of cable. These losses quoted are at CH 13. The sub VHF is amplified in a combined filter plus amplifier module, which is simply an AGC controlled amplifier mounted after the filtering section.

For purposes of level monitoring some of the composite VHF signal is tapped off from the output of the trunk amplifier. This signal passes through a buffer stage where it is converted to an audio signal whose frequency is varied by the trunk output level. This audio signal is used to provide amplitude modulation of a crystal controlled oscillator. Output from this oscillator is coupled into the sub band circuit, and it is subsequently carried to the Status Monitor location.

The status monitor receives a number of signals, each one on a different carrier frequency, with the modulation on each carrier dependent on the signal level of the monitored amplifier. The status monitor sweeps through these incoming signals, and will set off an alarm should the level change exceed pre-determined limits.

The enterprising operator now has a straightforward method of increasing versatility of his CATV system without resorting to dual cable or degrading his existing system. Although it would seem likely that the reverse transmission of locally originated video would be the prime consideration, the level monitor system could be an important bonus at very little increase in cost. The cost of this new UNICOM amplifier in a configuration similar to their Series II gear would present an increase of approximately 10% for equipment. As this equipment cost is only about 25% of the complete system, the percentage increase for UNICOM becomes very small indeed.

Cascade presently has two systems operating in the "loaded" condition (two way and level monitor) with a third system of over 80 miles now nearing completion. For more information on this equipment contact—



**CASCADE ELECTRONICS**  
 Port Moody, B.C.: Electronic Avenue 604/939-1191  
 1111 C Street, Bellingham, Washington 98225 206/733-5315  
**FRED WELSH ANTENNA SYSTEMS**  
 Rexdale (Toronto), Ont., 1770 Albion Road 416/749-5043  
 Vancouver, B.C.: 5594 Cambie Street 604/327-9201

## 3 WAY BETTER HOOK UP...

### LASHING WIRE



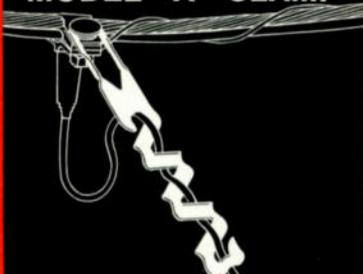
AISI Type 430 quality stainless steel. Superior resistance to corrosion under normal conditions. Fully annealed and coiled with wax coated finish.

### LASHING WIRE CLAMP



Permanent termination for lashing wire at the pole. Aluminum alloy plates fit and hold 1/4" strand. Hot dipped galvanized washers and nut hold lashing wire.

### MODEL "A" CLAMP



Designed for all multi-taps. One piece construction assures easy hook up. Offers superior holding power. Low price schedule means ultimate in economy. Stainless steel.

**ABERDEEN**  
COMPANY

P.O. BOX 2663  
CULVER CITY, CALIF 90230  
(213) 870-5353

## LETTERS

### Information Please!

• It would be most helpful to me if you would have your editorial research department send me a list of all articles published regarding aerial construction of CATV systems with the date of issue in which the article appeared.

Also, I would like to know the price of these back issues so that I can order those that are not already in our technical library.

Richard MacMillan  
Kaiser CATV Division  
Kaiser Aerospace &  
Electronics Corporation  
Phoenix, Arizona 85020

*A list of published articles on this subject is on its way.—Ed.*

• Do you have an index of articles you may have published on CATV accounting and record keeping? We are particularly interested in billing procedures and customer accounts.

We have copies of your magazine for the past three years and would appreciate any assistance you can give us in locating this material.

Rosalee Auger  
Secretary to the President  
Community Antenna Television  
Calgary, Alberta, Canada

*Each year TVC publishes an index of the articles of the preceding year. See page 45 of last month's TVC for 1970 articles. An article in the January 1971 TVC (page 40) "Computerized Records for Modern Management" will be of interest to you. Two other articles on the subject appeared in 1969. The March edition carried "Effective Handling of Past Due Accounts" on page 16. The December edition carried "The High Cost of Neglecting Accounts Receivables" on page 47.*

*A limited number of TVC back issues are available at \$2.00 each.*

*As a service to TVC readers, we will photocopy any articles at \$.25 per page.—Ed.*

### The Percentage Game

• For some reason, most cable operators seem to be willing to play a percentage game with subscriber saturation.

I have conversations every day with owners or operators who tell me that they are satisfied with the 60 or 70 percent saturation level they have achieved over the years.

I think the reason is that 70% of something seems to indicate a reasonable accomplishment. The problem is, though, that the remaining 30% may be a large number. Thus, there are 2,700,000 homes cabled that are not subscribers.

These millions should present a tremendous challenge to the cable operators in this country. You have a marvelous product to offer and you owe it to those homeowners who are not enjoying this low cost service to make them aware.

Don't believe that you can't get those hold-outs to subscribe. Recently a Southern California operator had a professional marketing company take on a three-year old system that was only 1/3 saturated. Several previous sales efforts resulted in only limited increase in sales. The new approach by this company nearly doubled the system in five weeks and left a large percentage of the remaining potential seriously considering subscribing. A follow-up in a few months will no doubt bring in another group of them.

So roll up your sleeves and go to work. If you don't know what to do, call in a professional; he'll get results.

National Telesystems Corp.  
Bob C. Hilliard  
Vice President, Marketing

*Next month TVC will carry an article by Paul Crabtree who is playing another type of percentage game. He is building systems in two communities where he plans to wire 100% of the homes . . . right from the start!—Ed.*

TVC

*Now that CATV is  
finally coming of age,  
who do you think  
was there helping  
it along all the time?*

## *AEL Communications Corp.*

That's who.

Because, at AEL, we realized long ago that CATV was something special. That it wasn't going to be a passing fancy. And now that CATV is finally coming of age, AEL is proud! We've helped it come a long way.

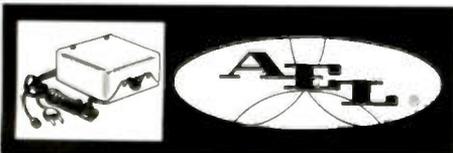
Since the beginning, AEL has produced, through research and development in the laboratory and the field, advanced electronic designs for today's CATV systems. Advanced designs such as the new AEL SUPER-BAND® *Tunerless* CONVERTER that expands any SUPER-BAND CATV system to 19 channels quickly and easily.

It's been developments such as this that has enabled CATV to come as far as it has.



If you're contemplating a CATV system, let AEL help you too. In this way you'll be turning on to the best.

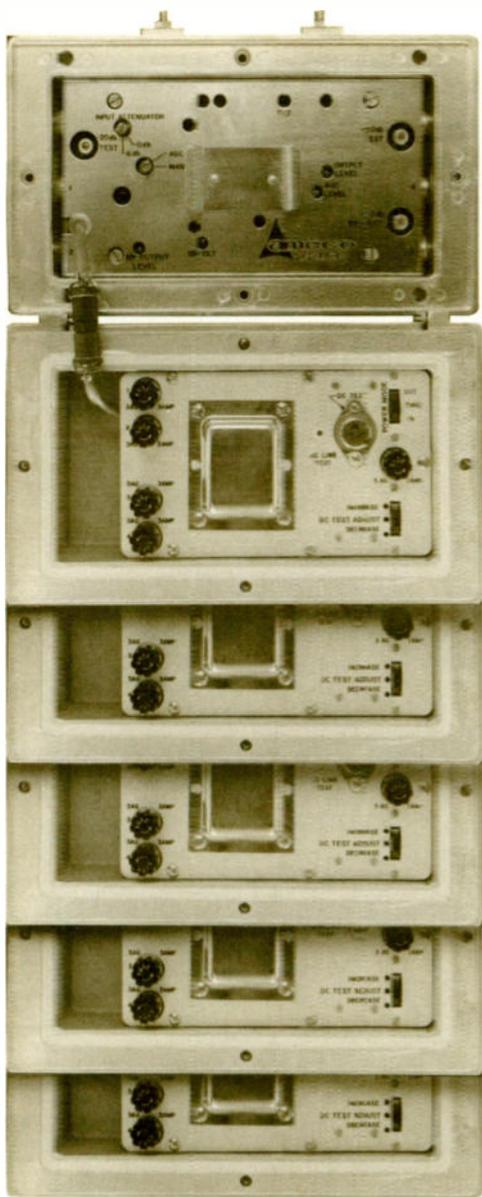
See us at the NAB show.  
AEL BOOTH # 243



**COLORVUE**

**AEL COMMUNICATIONS CORP.**

Subsidiary of **AMERICAN ELECTRONIC LABORATORIES, INC.**  
P.O. Box 507 • Lansdale, Pa. 19446 • (215) 822-2929 • TWX: 510-661-4976 • Cable: AMERLAB



# AMECO'S PII SERIES AMPLIFIERS ARE ALL ALIKE\*

**\*Modular . . . Exceptionally Stable . . . Excellent Cross Mod . . . Low Noise . . . Built-in Bridging Tap . . . Extra Surge Protection . . . Ten Combinations of MGC, Bridger and AGC plus Line Extenders!**

Ameco PII Amplifiers and Extenders give you reliable operation under all weather conditions. They are easily installed and set-up through a series of non-critical adjustments. The excellent specifications including low noise figure at normal gain and extremely low cross-mod coupled with circuits that automatically control both gain and slope assure you and your subscribers of optimum system picture quality. Stability? Just set 'em and forget 'em. Your men don't have to go out several times each year to reset levels. Ameco amps are stable from  $-40^{\circ}$  to  $+140^{\circ}$ F!

Your subscribers expect good pictures, and you deserve some relaxation. So write us, or call our sales manager Collect so we can start helping you towards the best in system performance. And consider our new Push-Pull amplifier line for your large-channel-system needs.

	TRUNK AMPLIFIER Models PII-M, PII-AP, † I-AC, PII-ABP, † I-ABC, PII-MB	Bridger Section of TRUNK AMPLIFIER Models PII-ABP, PII-ABC, PII-MB	BRIDGER AMPLIFIER Model PII-B	LINE EXTENDER Model PII-LE	"Mini-Amp" LINE EXTENDER Model PMA
Bandwidth	50 to 260 MHz $\pm 0.25$ dB	50 to 260 MHz $\pm 0.5$ dB	50 to 260 MHz $\pm 0.5$ dB	50 to 260 MHz $\pm 0.5$ dB	50 to 260 MHz $\pm 0.5$ dB
Cross Mod Ratio <sup>c</sup>	-90 dB @ +32 dBmV	-72 dB @ +38 dBmV	-72 dB @ +38 dBmV	-72 dB @ +38 dBmV	-57 dB @ +45 dBmV
Noise Figure, Max.	10 dB, Ch. 13	—	10 dB, Ch. 13**	10 dB, Ch. 13	12 dB, Ch. 13
Input Level (Typical)	+10 dBmV @ Ch. 13	—	+5 to +32 dBmV @ Ch. 13	+18 dBmV	+20 to +33 dBmV @ Ch. 13
Spacing (Typical)	22 dB @ Ch. 13	—	0 to 17 dB @ Ch. 13 from last preceding amplifier	14 dB of cable @ Ch. 13 plus 6 dB tap-loss (flat)	5 dB of cable @ Ch. 13 plus 7 dB tap-loss (flat)

<sup>c</sup>12 synchronously modulated channels, 5 dB block tilt, per NCTA standards. <sup>\*\*</sup>Direct input, no directional coupler or equalizer. <sup>†</sup>Models PII-M, PII-AP and PII-AC have built-in bridger output tap, 10 dB down from trunk output level.



AMECO, Inc.  
Box 13741, Phoenix, Arizona 85002  
Telephone 602/252-7731

# CATV News Briefs

A Summary of News from CATV, the Newsweekly of Cable Television

---

**CATV "Big Show" in Washington:** The Commissioners listened attentively, they all participated, and the sessions had lots of vitality. Scores of cablemen, broadcasters, government people, educators and foundation representatives took part from the start on March 11. An audience of 350 followed the dialogue while a network of ETV stations provided continuous coverage. Sessions continue through March 25. Use of panels to replace regular oral hearings received favorable reaction from all. Early meetings seemed to weigh in favor of cable interests. Numerous non-cable people spoke in behalf of a regulatory setting in which CATV can grow. Calls for broadcaster protection from "audience fragmentation" seemed to stir less support than in the past. Many groups expressed desire to use the "unlimited" channel capacity of cable. New CATV rules and regs. are expected result of hearings. (CATV 3/15 p3)

**McClellan Promises Brief Wait on FCC:** Senator John McClellan, chairman of Senate Copyright Subcommittee has promised to hold off action on his copyright bill until after FCC has acted on CATV rulemakings . . . IF the FCC "proceed(s) expeditiously." Burch has reportedly promised McClellan the Commission will act on CATV after March hearings. (CATV 2/22 p3)

**Canadian Operators Asked To Subsidize Broadcasting:** Canadian Radio-Television Commission Chairman Pierre Juneau has released a "White Paper" on CATV. The 30-page document outlines various alternatives to allow Canadian operators to continue carrying U. S. television signals while at the same time financially supporting Canadian broadcasting. The paper, entitled "The Integration of Cable Television in the Canadian Broadcasting System," will be subject of week-long hearings in Montreal beginning April 26. (CATV 3/8 p7)

**New Deadline for Comments on Program Logging:** The FCC has moved the April 2 deadline to April 15 for comments and reply comments on proposed program logging procedures for cablecasting. (CATV 3/15 p5)

**CBS/Viacom President Quits:** George B. Clark, president of the CBS/Viacom Group, has resigned "for personal reasons," and Ralph M. Baruch will replace him. Baruch has been president of Viacom Enterprises. Viacom still has not been able to "spin-off" from the CBS network. FCC blessing continues as missing component. (CATV 3/15 p11, also see 3/8 p3)

**U. S. Appeals Court Says Franchise Fees Illegal:** The U. S. Court of Appeals for the Sixth Circuit has upheld an Ohio court in declaring "the imposition of a gross receipts tax upon proceeds from interstate commerce violates the commerce clause of Article I of the Constitution of the United States." (CATV 2/22 p5)

**TelePrompTer, Kahn Enter "Not Guilty" Plea:** As reported last month in TVC, Irving Kahn and TPT and three Johnstown, Pa. officials were indicted by a Federal Grand Jury on bribery charges. "Not guilty," pleaded TPT and Kahn . . . \$10,000 bail was set . . . motions are due to be heard in next couple of weeks . . . TPT expected to move the case be dismissed. Trial date not yet set. (CATV 2/22 p3)

---

**CATV Subscriber Fees Now Due May 1:** Originally due on April 1, the new fees will now be due one month later and the FCC has promised to send system operators a form for computation of amount owed. In case you did not get your worksheet, contact the FCC and ask for Form 326-A, "CATV Annual Fee Computation Form." A separate form must be completed for each separate and distinct community served. (CATV 3/15 p5)

**Canadian CATV May Get Mid & Super Bands:** The Canadian Department of Communications has announced it will accept applications from CATVers for use of the complete spectrum between 0 MHz and 300 MHz. If technical requirements are met, this could give Canadian operators up to 20-channel capability. (CATV 2/22 p14)

**Sterling Manhattan Demonstrates Two-Way Service:** SM and Video Information Systems joined forces for a working two-way operation. Manhattan president Dolan expects some 500 subscriber sets will be two-way equipped by end of 1971. System allows subscribers to "talk" to a computer. (CATV 3/8 p14)

**CATV Seminar for Minorities:** About 150 people (mostly black . . . many were city and state legislators) attended a two-day CATV seminar in Washington in mid-February. Seminar was Ford Foundation-sponsored. FCC Chairman Burch and Clay Whitehead of OTP were among speakers. Potentials of CATV for minority communication was theme . . . ways minorities could become involved in CATV were discussed. . . . most went away highly enthused with future of minorities and cable. (CATV 2/22 p3)

**Another Rand Report Says CATV Helps:** The report, filed at the FCC in early February, concludes that the FCC's fears about CATV impact are unfounded. "Cable will help, not hurt, non-network UHF stations through the 1970s," says the study. (CATV 2/15 p5)

**Chicago Represented at CATV Hearings:** Paul Wigoda, Chicago alderman and chairman of that city's hearings on a CATV franchise . . . will have someone in Washington to express windy city's views on cable and regulation . . . "is in absolutely no hurry to grant a franchise" and no ordinance will be drawn up until May at earliest. (CATV 2/22 p5)

**NCTA Survey Brings Minimal Returns:** During February, the NCTA sent cablecasting surveys to all members in an effort to gain information that would be useful as the association represents the industry before the FCC. "Response to the survey has been very disappointing" reports NCTA. Results of the replies are being coded and stored in a data bank. (CATV 3/8 p5)

**Cablemen Lead Off Canadian Conference:** Sruki Switzer (Maclean-Hunter), Ted Rogers (Rogers Cable TV) and Garth Pither (Fred Welsh Systems) were among cablemen appearing on the program for the 8th Annual Conference on Law and World Affairs at the University of Toronto. Theme was "Communications and the Public Interest." Switzer participated in a panel with Marshall McLuhan that discussed technical alternatives for media expansion. (CATV 2/15 p3)

---

---

**Union and Cypress Settle Palm Springs Cable Strike:** After a month-long strike, the differences between Cypress Communications Corp. and the International Brotherhood of Electrical Workers, Local 45 have been settled. Workers are now back on the job. Two-year settlement was made. (CATV 2/22 p14)

**NCTA Announces Origination Seminar:** April 21-23 at the Palmer House in Chicago, agenda will include an in-depth look at economics of cablecasting and possible alliances of cable operators for programming efforts. Also on the agenda: discussion of efforts to standardize cablecasting equipment, problems related to the soliciting and use of advertising, distribution systems for common interest programming. (CATV 3/15 p5)

**Communications Properties Inc. Has New Subsidiary:** Dubbed Communications Advisors, Inc., the new group will concentrate on the financial end of CATV. James F. Ackerman, formerly a senior v. p. for Economy Finance Corp., will head CAI, according to Jack Crosby, CPI president. (CATV 3/15 p23)

**CATV Museum Under Consideration:** Robert Tarlton, one of the first CATV pioneers, is exploring the possibilities of establishing a cable television museum in Pennsylvania. Museum would exhibit the various stages of CATV technical advancement. (CATV 2/22 p14)

**Houser Is Spectrum Management Commissioner:** Thomas J. Houser, most junior of the seven FCC Commissioners, has been appointed responsibility for long-range planning of effective utilization of the spectrum. He will also be a member of the FCC study group which is coordinating with the OTP in the review of spectrum use. (CATV 2/22 p6)

**CPC Promotes Two Executives:** Patrick T. Pogue, board chairman for Communications Publishing Corporation (publisher of *TVC* and other CATV periodicals) has appointed Robert A. Searle as Publisher. Jacqueline B. Morse, who has served as managing editor of *CATV Magazine*, has been named a vice president of CPC. She now heads the firm's operations in Washington, D. C. (CATV 2/15 p11 and 3/15 p12)

**Massachusetts UHF Begs Advance Protection:** Bill Putnam, operator of station WRLP in Springfield, has appealed to the FCC for protection from the cable system that is under construction in Peterborough, New Hampshire. He blames cable systems for his station's inability to produce its own local programming. Putnam's petition criticizes the Commission as he asks for assurance that his station will be carried on the New Hampshire system. (CATV 3/15 p9)

**Two Firms Land Healthy Contracts:** GTE Sylvania, a subsidiary of General Telephone, has won a \$1.2 million contract to install a number of cable systems in several northeastern states for Colony Communications, Inc. MSI Television, a company newly formed by Ken Lawson, is the recipient of a contract exceeding \$300,000 from Television Presentations, Inc. MSI will supply specially designed equipment for TPI's "Alphamatic News" service which offers automated stock market quotations and UPI news. (CATV 3/15 p9, p23)

---

---

**Georgia Assn. Draws Record Attendance:** Nearly 100 cablemen gathered in Augusta for a two-day annual meeting on March 5-6. Glen Heck of Warner Robins is new president; Hugh Smith of Rome is vice president; William Keller of Valdosta is secretary-treasurer. Don Taverner, Jack Cole, Morton Berfield and Jacob Mayer (of FCC's CATV Bureau) were main speakers. ( *CATV* 3/15 p19)

**Hughes Told To Do Further Work on Satellite Proposal:** Hughes Aircraft was told by the FCC that it must work out some problems in its proposal for satellite-to-CATV systems proposal. Seems Hughes applied to use frequencies the FCC says it does not qualify for. When Hughes completes and returns the application, there will be a total of three applicants for domestic satellite systems. General System Company (GT&E) and Hawaiian Telephone Company are others. (*CATV* 3/1 p9)

**Mass. System Buys Facilities from Telco:** High Fidelity Cable Television of Great Barrington, Mass. has become the first New England leaseback system to purchase its distribution facilities from the telephone company. Transaction involves nearly 80 miles of operating plant and another 23 miles of non-operating plant. Telco has owned the maintained the distribution system since it became operational in 1967. (*CATV* 3/1 p19)

**Jerrold "Basic Schools" Now on the Road:** Jerrold Electronics will take its "CATV Basic Technical Schools" to six more cities during 1971. Cities scheduled in the tour include Boston, Minneapolis, Dallas, Kansas City, Denver and Portland. The schools are open to all CATV technicians. For more information contact D. de Brier or E. Velez at Jerrold, (215) 925-9870. (*CATV* 3/8 p7)

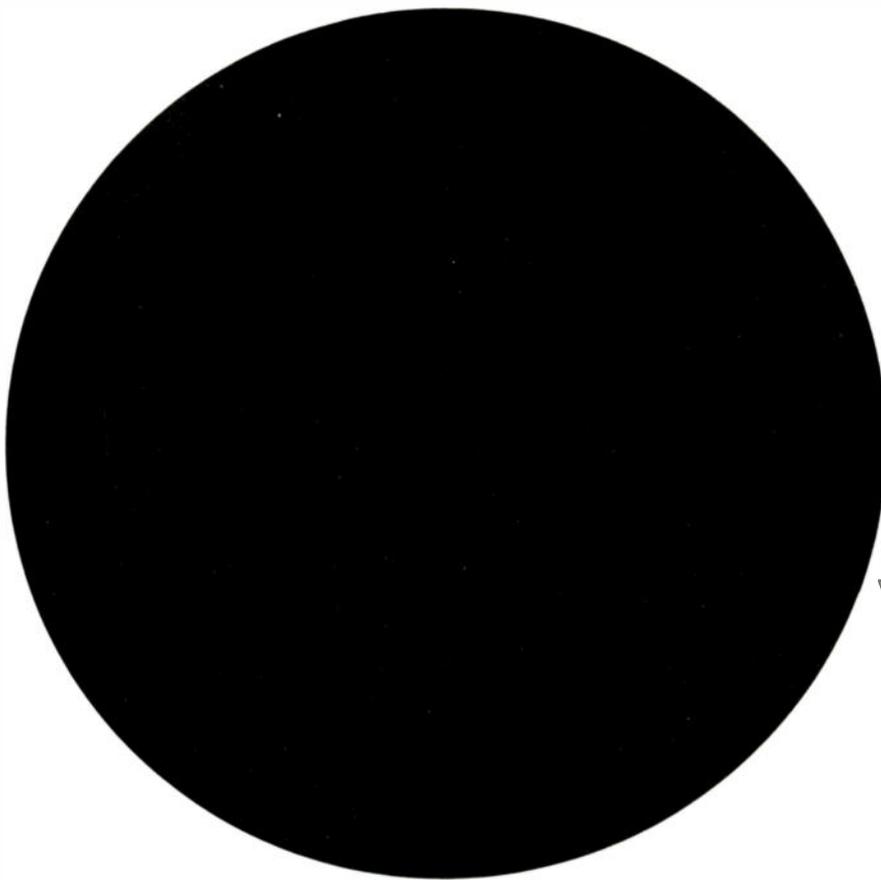
**Action in the Franchise Arena:** TelePrompTer has received its 28th Florida grant, a 30-year contract from the town of Haverhill. In New Jersey, TPT franchises in Trenton and Hamilton Township looked shaky as city fathers threatened to revoke franchises . . . but this action seemed unlikely at press time. American Television & Communications has purchased the 6,000-subscriber system (Suburban TV Cable) serving suburbs of Reading, Pa. Communications Properties, Inc. has purchased the system in Springfield, Ill. TeleVision Communications Corporation has acquired the Boston area cable franchises belonging to Cablevision Corp. of America. Included are two operating systems and ten unbuilt franchises. (*CATV* 3/1 p5, 3/8 p14, 3/15 p18-19)

**Financial Developments Affecting CATV:** Cypress Communications is currently marketing a 360,000-share common stock offering through Hornblower & Weeks-Hemphill, Noyes at \$7.50 per share. Essex International reports that 1970 brought the highest sales figures in the firm's forty-year history. Rising sales and lower earnings is the third quarter (ending on Jan. 30, 1971) report of Ampex Corporation. Systems Wire and Cable reports a per-share earning of \$3.20 for their first quarter (ending Dec. 31, 1970). Spencer-Kennedy Laboratories closed out its first fiscal half of 1971 with a loss on continuing operations of \$369,264. Eastman Kodak set new sales and earnings highs in 1970. Kaufman and Broad (parent of cable MSO Nation Wide Cablevision) reports a 52% increase in sales and a 43% increase in net income for 1970 (over 1969). Cohu Electronics reports a 22 cent per share net loss during 1970. LVO Cable, Inc. has filed a registration statement with the SEC for a proposed 340,000-share common stock offering. Columbia Cable Systems, Inc. has announced record earnings for the first quarter of 1971. (*CATV* 3/3 p33, 3/8 p17, 3/15 p26)

---

# abto**graphy**

(color from black & white film)



**black**  
**&**  
**white**  
**is**  
**red**  
**is**  
**blue**  
**is**  
**green**  
**is**  
**yellow**  
**is**  
**purple**

Write for details

**abto**, INC.

1926 Broadway  
New York, N.Y. 10023  
(212) 787-5000

Affiliated with:  
American Broadcasting Companies, Inc.  
and Technical Operations, Inc.

# FOCUS

... On People

## Systems

National Trans-Video, Inc., Dallas-based MSO, has awarded a vice presidency to company treasurer James R. Arnold. The appointment was made at a special meeting of the board of directors of Sammons Enterprises, Inc., parent company of NTV.

Arnold joined the cable firm in May, 1967 as treasurer after three years of the auditing staff of Price-Waterhouse & Co. He is a member of the American Institute of Certified Public Accountants and the Texas Society of CPAs. A native of Denton, Texas, Arnold is

married and has two children.

Clearview Cable Television of Richmond (Va.) has named Glenn M. Rawlings director of engineering for the system now under construction; John E. Von Pein, Jr. will be in charge of origination, sales and advertising . . . William J. Raschka, former broadcast engineer, has been appointed chief engineer for the Lewiston-Clarkston, Idaho systems.

American Television & Communications has added two key staffers to its Denver headquarters force.

J. Michael Galloway has joined

the firm as director of budgets and James F. (Pete) Collins as ATC director of field engineering. Galloway, whose background is in the steel and oil industries, will be responsible for analyzing



Mr. Arnold



Mr. Galloway

individual CATV system performance and assisting ATC vice president Douglas Dittrock with daily corporate operations.

Collins brings more than 16 years' CATV experience to his job as field engineering director. He's had his own engineering and construction firm and was involved in the building of several ATC systems. In his new position he will centralize control in the firm's nationwide design and construction activities. Collins will be responsible for field supervision as well as system design and layout.

James M. Vickers is new manager of Antietam Cable TV, Hagerstown, Md.; he has been in CATV since 1962 and for the past six years has worked for Television Communications Corp. . . . Martin County Cable Company, Inc. and St. Lucie Cable Company, Inc., both of Florida, have new general manager Thomas J. Heran; Heran, a former newspaper man, succeeds Edward H. Benedict.

William M. Files joins Peninsula Broadcasting Corp. as vice president for finance; will shoulder financial responsibility for firm's CATV division as well as its other operations.

John W. P. Mooney, general manager of High Fidelity Cable Television in Great Barrington, Mass. has announced several personnel changes in connection with the firm's acquisition of its cable system from New England Telephone Co.



# Pipe PIPER<sup>®</sup>

Write for free brochure

## SOD MASTER

(Div. of Jacobsen Mfg. Co.)  
3456 No. Washington Ave.  
Minneapolis, Minnesota 55412

**buries cable, pipe, or wire without damage to the finest lawns.**

Bringing service to a home is easy, fast, and safe when you use the PIPE PIPER. You'll never have to be concerned with damage to turf because the exclusive PIPE PIPER burial method lays cable, pipe, and wire underground without removing turf or earth.

**Saves 80% on burial time!**

One man can operate the PIPE PIPER with ease. This remarkable machine is easy to maneuver around shrubbery, trees, flower beds, and other obstacles. PIPE PIPER is available in three models. Burial can be made at constant depths of from 5" to 16".

# we're ready **now** to go **two ways** with your future!

In the cable television industry today, the "buzz word" is two-way or bi-directional usage of the cable. Everyone is talking about it; EIE is not only talking about it, but has available all the active bi-directional equipment required for your immediate needs. **EIE is here today for tomorrow.**

The system operator can efficiently and effectively accomplish the link for broadband

communications by integrating a bi-directional capability into his system now.

EIE is now ready with a complete line of distribution equipment that will extend your system into a two-way operation right now, and prepare you for new worlds of profitable service.

## **WE GET INTO YOUR SYSTEM**

It's all put together...complete system capability that is compatible for new construction or readily inter-faced with your existing cable system. Everything from the head-end to subscriber's set, including a rugged line of trunk, trunk-bridger, distribution amplifiers and a new shielded, coaxial A/B switch.

## **EIE TWO-WAY AMPLIFIERS MULTIPLY CAPABILITIES OF CATV SYSTEMS**

Total design thrust of EIE's complete in-system line of two-way, solid state amplifiers is to extend bi-directional options such as studio to head-end or local origination within your system, and to pace your operations ahead of the growth demands we all know are coming. **PROGRESS IS BUILT-IN.**

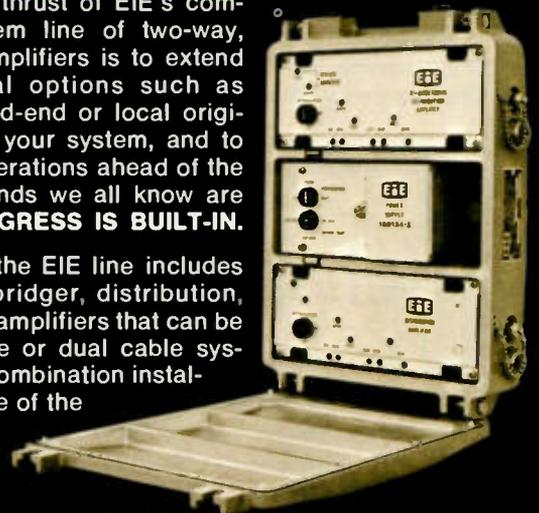
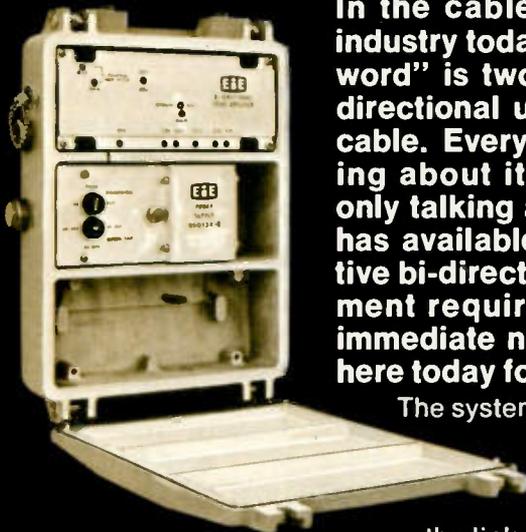
All modular, the EIE line includes trunk, trunk-bridger, distribution, and multi-set amplifiers that can be used in single or dual cable systems or in a combination installation with use of the 24 channel in-system converter.

## **COST IS LOW**

Powering cost for EIE's dual cable amplifiers is the lowest of any other equipment used in a dual cable plant. And, think of it, you also have bi-directional capabilities.

## **MECHANICAL DESIGN**

All models are designed for today's changing technology and contained in a heavy-duty RFI shielded housing. Completely weather-proof, they meet all environmental conditions in either underground or overhead installations.



**Electronic Industrial Engineering, Inc.**

7355 FULTON AVENUE • NORTH HOLLYWOOD, CALIFORNIA 91605 • TELEPHONE (213) 764-2411



Clarence D. "Monte" Chamberlain, who has been with the system for about a year, will move up to chief technician. Chamberlain's promotion will free John L. Diegel, who has been serving as both system manager and chief technician, to concentrate on day-to-day supervision of operations.

Joining the cable firm as technicians are William P. Reed and Wesley P. Davis, both of Great Barrington.

Chamberlain is a licensed electronics technician and formerly operated his own television sales and service company in Great Barrington.

## Suppliers

Vikoa, Inc. has announced the appointment of Gerald H. Mattison to the position of Director of Sales and Marketing for CATV/Communications Products, effective February 22, 1971.

Mattison, who holds a MEE degree from New York University, was formerly with Fairchild Hiller



Mr. Balsam



Mr. Mattison

Corporation and Litton Industries and brings to his new position more than 17 years of experience in the communications industry.

Mattison will assume the responsibilities of Allen Lipp, Vice President of Sales, who has resigned his position, effective February 28, 1971.

Marvin McNeil is new manager of quality control for the Cable and Equipment Division of Superior Continental Corp. with responsibilities for providing policies, procedures and guidelines on production quality.

Jean De Joux, the inventor and developer of the De Joux anima-

tion process and shutterless motion picture projection technique, has been named vice president and director of research and development for the Cinematographics Division of Optical Systems Corporation.

Allen Lipp, vice president, Vikoa, Inc. has announced the appointment of Gary J. Balsam to the position of northeast district manager. Balsam will continue to act as director of international sales in conjunction with his new appointment.

In his new capacity, he will be responsible for domestic sales in the states of Virginia, W. Virginia, Maryland, Delaware, Pennsylvania and all New England states.

His present foreign territory includes, Canada, Switzerland and the Benelux countries; the Caribbean, Japanese, and Philippine Islands; and, the continents of Australia and South America.

F. Russell Ide, formerly marketing manager of Sarkes-Tarzian broadcast equipment division, is the new manager of broadcast operations for TeleMation, Inc. with responsibility for accounts in the United States and Canada.

## Professional

Hubert J. Schlafly, TelePromp-ter senior vice president and director, will head the new Broadband Communications section established by the Electronic Industries Association.

The new section, which meets for the first time this month, is concerned with the many new services made possible by modern communications technology. Besides CATV transmission and origination, these services encompass home computer transactions involving high-speed data transmission. Such services will permit instantaneous political polling and market research, push-button shopping and banking, outpatient medical diagnosis and student response to programmed learning.

IEEE has created a new position of Director-Member Services and asked Charles F. Stewart, Jr. to fill the slot.

rvc

## Nobody loves us...

(Except the dozens of cable operators who look to the "BIG W" for system design, construction and rebuild!)

**WESTERN  
COMMUNITY TV  
CONSTRUCTION, INC.**

Box 1131  
Scottsbluff, Nebraska 69361  
(308) 635-0100





**We have  
only one standard.  
The finest. And that's  
how it's going to be at our new cable plant.**

**Coming soon:**



*Phoenician*  
**COAXIAL CABLE**

We knew it was the one way to be certain that the cable in a system matched the meticulous engineering, manufacturing and performance standards of our Phoenician and Phoenician XR Series electronic equipment.

Our million-dollar, 60,000 square-foot plant nearing completion in Phoenix will be the most modern facility of its kind in the world. Both coax and house drop cables will be manufactured. And they'll be available soon. Watch for the announcement.



Division of Kaiser Aerospace & Electronics Corporation  
P.O. Box 9728, Phoenix, Arizona 85020, Phone (602) 944-4411

# A Long, Hard Look at Film For Local Origination Work

Should you use that thin, flexible cellulose as a medium for the production of local programming? Film has numerous advantageous applications for both large and small cablecasting operations.

*By Dr. Norwood L. Simmons  
Eastman Kodak Company*



**P**resumably a growing number of cable operators are now responding to the "encouragement" of the FCC by producing and programming local shows. We all know, however, that there is more to it than that. No one wants to just fill time.

Access to the viewers tuned to your channel is too valuable. In addition, the image of your cable system means too much for you to be anything but professional in the type and technical quality of locally produced programs.

The choice is simple. Local programming can be static or it can be exciting. It can bolster your worth to your community and your image in it, or it can mark you as being strictly a conveyor of other people's offerings to the market. Also, local programming can either be a costly chore or an excellent opportunity to increase your cable system's income.

### Programming Prerequisites

Within this context, the experience of commercial and public broadcasting stations bears out that if your decision is to use your local programming time effectively, there are two **MUST** production prerequisites:

1. You must be able to produce a good portion of your programming where the action is occurring, and that means on location. It's one thing for a commentator to read the day's news; it's another for him to be able to describe a film showing what happened, taken where it happened. As a viewer, which type of news would you prefer to see?
2. You must be able to produce programs in color. Monochrome can no longer even be considered as a serious stepping stone. Practically all commercial television and much public broadcasting now either is in color, or is being converted to color. Not only is a black-and-white image noncompetitive for

attracting audiences, it also lessens your opportunities for selling local spot commercials.

So, it is within this context . . . developing a capability for originating programming on location in color . . . that I approach this article. I suggest that the most aesthetically pleasing, and most economical medium for producing color programming on location is film.

### The Advantages of Film

It is comparatively easy for a novice to develop a color film production capability on a building-block basis. In comparison to videotape, it is also much less costly. Finally, the opportunities and economical benefits of having a film production capability far exceed those of any other television production medium.

The experience of CableVision (Channel 3) in Colorado Springs, Colorado, is a good illustration of how a film production capability can be built. CableVision is one of 40 cable system subsidiaries owned by Cablecom General of Denver, Colorado. It began cablecasting in the spring of 1970, after laying 500 miles of cable underground within the city limits of Colorado Springs.

At this writing, some 11,300 subscribers pay a fee of \$4.50 a month. The number of viewers, however, is much greater, since many subscribers are apartment house owners. (An important distinction when it comes to selling spot commercial time.) The plan of CableVision management is to expand their system to the entire county, gradually building up their subscribers to over 30,000.

From the beginning, Program Director Terence E. Skelton knew he wanted to originate some local programming on color film. He indicates that he decided to develop this capability because, "film allows a single person more individual creativity and control."



*Cameraman Michael Huffer braces himself on the shooting platform of the mobile unit of CableVision Channel 3, while behind him, Program Director Terence Skelton adjusts a tape recorder.*

*Barbara Hunter of CableVision Channel 3 records what will become a "voice-over" commentary as Huffer pans for a sweeping view of a new municipal swimming pool in Colorado Springs.*



*After a brief wait in which their color motion-picture film is processed by a local laboratory, Deborah Hopple of CableVision Channel 3 previews the footage, selects the frames she wants and then edits the sound track to conform.*

What he means is that one or two people can leave the studio with a lightweight camera and recorder that can be hand-held or used with a shoulder pad. In many documentary uses, this can replace a large television remote van and large crew.

In addition, color film can be processed, dried, and ready to edit and project within a few hours of being exposed. The total investment in film editing equipment needn't run over \$100 (although CV3 spent \$1,200 in order to achieve truly professional results). Because CV3 chose to use double-system sound, they also purchased a Palmer-interlock projector for about \$2,700.

One of Skelton's first tasks after being hired was to put together a staff that could handle both studio video tape work and location film production. One of the hidden plusses supporting a decision to develop a film production capability: There are virtually millions of amateur motion picture enthusiasts in the United States. Tens of thousands of them go on to study filmmaking at specialized schools or colleges. As a result, there is a sufficient and growing number of personnel available to staff film departments at every cable system in the country.

Skelton and his nine-man staff decided to make their first investments in film production and transmission equipment. Unlike taped video, the same cameras are

used for originating either black-and-white or color film.

### Selecting the Equipment

Approximately \$13,000 was invested to buy two 16mm film projectors, a double-drum slide projector and a Kodak multiplexer. With this equipment and a TV camera, any black-and-white or color films and slides can be programmed.

That, of course, provided CableVision with an immediate capability for cablecasting the literally thousands of theatrical films and syndicated shows available for sale or rental. Almost all such programs produced during the past six or seven years are in color. CableVision purchases some 10 hours of such programming weekly.

A similar investment was made in film production equipment. Skelton purchased a 16mm camera, a sturdy tripod, several easy-to-use filters, a 12-120mm zoom lens, a few portable quartz lights and a Nagra sync audio recorder — for a total investment of around \$3,850. Skelton estimated it would have cost \$15,000 to purchase similar color videotape recording equipment that would have been much less portable, and would have required ac power sources.

Although Kodak offers a variety of 16mm color films, CableVision decided to initially

standardize on one, Kodak Ektachrome EF 7242 film, a high-speed, color positive film that is used by most commercial television news operations.

Skelton felt that by standardizing, those of his staff who use the camera would have less to learn and could concentrate more on the aesthetics of production. Although it is entirely feasible for a cable system of this size to machine process all Kodak Ektachrome EF and MS films with automatic quality control and consistency for an initial investment in equipment ranging from \$10,000-\$30,000 (depending upon the volume of film that will be used), CableVision opted to utilize an outside service.

Because Ektachrome EF film is so popularly used, there are virtually hundreds of qualified laboratories in the nation licensed by Kodak to use the ME-4 chemistry system. This is a packaged chemistry system that, if properly used, assures the uniform processing of Ektachrome EF films.

CableVision pays a package price of \$30 for the purchase and processing of a 200-foot reel of Ektachrome EF film with magnetic strip. If all of that film on a reel was used on the air (which is not likely, since one of the major advantages of film over tape is the ease with which it can be edited) it would run a little longer than five and a half minutes. In other words, it could cost CableVision less than six dollars a minute for film color programming produced on location.

### CV3 Put Film to Work

The first ambitious project attempted by the CableVision crew involved the production of 1,800 feet of color film taken of children visiting a zoo, where guides explained the animals' feeding habits and other characteristics to the excited youngsters.

Working outdoors with the high-speed film, the staff placed a Kodak Wratten No. 85 filter over the lens. This filter is used when Ektachrome EF 7242 film is exposed without the aid of artificial tungsten lighting. Even with the filter, the film is rated for an

exposure index of 80, which permits excellent latitude for out-of-door cinematography.

By latitude, I mean that the available light during the day allows a cameraman to select a shutter speed and lens opening that assures sharp depth-of-field focusing. It's really quite simple to do this.

The answers are built right into the light meter that every cinematographer should carry while he is working. All he has to do is set the light meter for the recommended exposure index and read the dial. The dial will tell him the combinations of shutter speeds and lens openings that can be used under the available light conditions.

At the zoo, the CableVision crew operated a lightweight camera and a Nagra tape recorder. The last was used to document sound on location. Generally, it is not wise for a novice to attempt to synchronize sound to lip movements while working with this kind of equipment.

The standing agreement between the Colorado Springs cable system and its processing lab is that dry film will be ready to pick up within two hours of being turned in. This means that if CableVision schedules a six p.m. news show, they can turn in exposed color film as late as 3 p.m. and still routinely have time to edit and get it on the film chain.

The above describes the exposure and processing of Ektachrome EF 7242 film under optimum conditions. Suppose you want to expose it indoors, say, to document a seminar or convention? Or, how about shooting outdoors, because something is happening that you want to get on film, but there isn't enough natural light to expose pictures with the desired latitude?

Here is where the versatility of the film really pays off. Indoors, you remove the filter from the lens and rate the exposure index at 125, which is considerably "faster" than the outdoor rating for this film when the Wratten No. 85 filter is used. This means that you can use the same lens opening and shutter speeds to achieve the desired latitude with considerably

# the golden touch

## WITH THE GOLDEN TOUCH TURN YOUR CATV SYSTEM INTO DOLLARS!



Give your CATV System the GOLDEN TOUCH . . . exciting program packages that will make your system the most talked-about system in your area . . . when you have the audience . . . you have the dollars!



Diversified is operating a successful originating channel, our personnel are familiar with *your* needs, so let a Diversified sales representative show you how practical experience can make local origination profitable!



We'll be glad to send you more information on our wide variety of entertainment, religious, educational and industrial programs, all available on 1" videotape on any format.



Advertising dollars slipping by you? Apply the GOLDEN TOUCH with our pre-produced professional commercials, and learn how to sell your advertising time from our own experts!

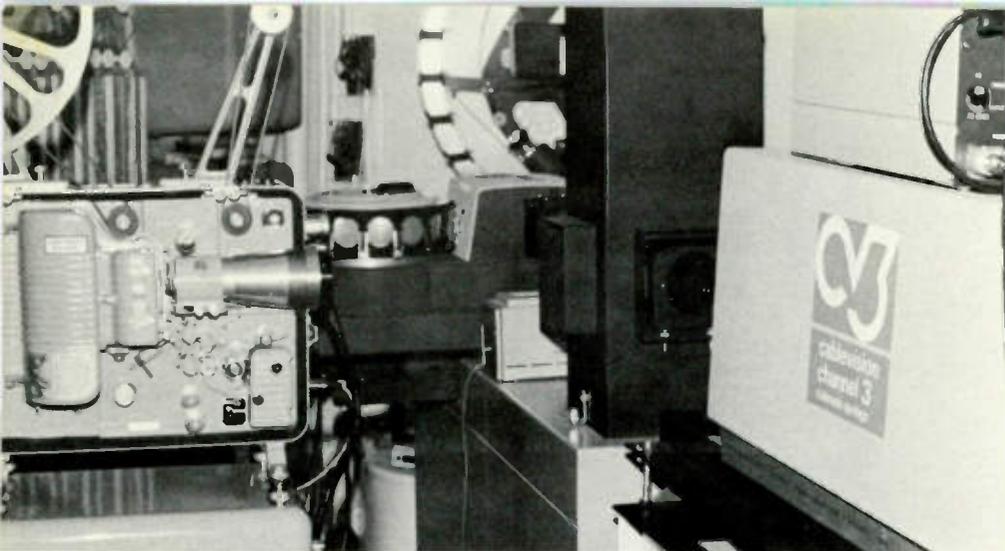
With your CATV System and our GOLDEN TOUCH . . . you can't lose!

Call or write Diversified CATV Services  
and let us go to work for you NOW!



# DIVERSIFIED CATV SERVICES INCORPORATED

511 North Akard, Suite 713, Dallas, Texas 75201 • 214/742-8580



With a film chain incorporating two 16mm motion picture projectors, a double-tray 35mm slide projector and a Kodak multiplexer, Channel 3 can cablecast entire programs or intercut into studio taping sessions.

less available light. In many circumstances, the film will be fast enough for use in normal room-light... for example, at high school basketball games, in a well-lighted gymnasium.

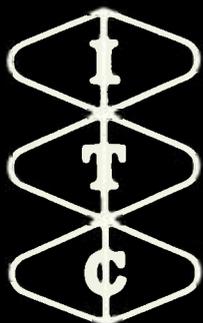
Other times, you will probably have to use a small amount of tungsten lighting. All that is generally necessary is two or three

small clamp-on halogen cycle lamps (650 or 1,000 watts) and some extension cable. Most audio-visual dealers sell highly portable, suitcase-sized kits that usually includes three or four lamps, stands and cable. You might also want to consider carrying a battery-powered light, for use in cases where power sources aren't

available.

An alternative for filming outdoors or fast-moving action is to "push" the film by increasing the exposure index used to determine lens openings and shutter speeds by one-half to two stops or more, depending upon the capabilities of the laboratory. In other words, if an exposure index of 125 does not provide for acceptable latitude in the available light, the cameraman can arbitrarily rate the film at 200 or 400 if necessary. He then gives that information to the laboratory, where they modify the processing time of the film. In effect, "push" is to develop faster.

This makes the picture slightly more grainy, and is only recommended when the subject justifies the compromise in overall quality. Nevertheless, it should be comforting to know that the great majority of commercial television stations use this technique when the subject justifies it. The difference between film produced this way and that exposed as recom-



**INDEPENDENT  
TELEVISION  
CORPORATION**

presents to

**CATV  
PROGRAMMING  
WITH A  
PURPOSE...**

**CINEMA 100**

full length features... action, adventure, suspense... many are post-1960 productions, 34 in color.

**SPACE AGE THEATRE**

for young viewers, science-fiction adventure in spectacular Supermarionation... 213 1/2-hours, 135 in color.

**RECESS TIME**

39 1/2-hours in color, each with four 6-minute segments of whimsy, charm, fun and adventure... adaptable for live origination.

**ACTION PLAYHOUSE**

117 1/2-hours of jungle action, swashbuckling sea adventure, frontier Indian thrills.

**MYSTERY THEATRE**

26 hour adventures of crime detection, suspense and intrigue with Scotland Yard's Criminal Investigation Department.

**SPORTS ON PARADE**

Golf Tip Of The Day with golf pro Dow Finsterwald, Magic Moments in Sports hosted by Leo Durocher. 195 and 156 5-minute segments respectively.

**FURY**

114 1/2-hours of network-famed western adventure starring FURY the Wonder Horse and Peter Graves of "Mission Impossible."

**THE GALE STORM SHOW**

125 1/2-hours of hilarious situation comedy starring Hollywood's Gale Storm as a fun-seeking cruise hostess.

**WHIPLASH**

Peter Graves of "Mission Impossible" stars in 34 western-type 1/2-hour adventures.

... and much more!

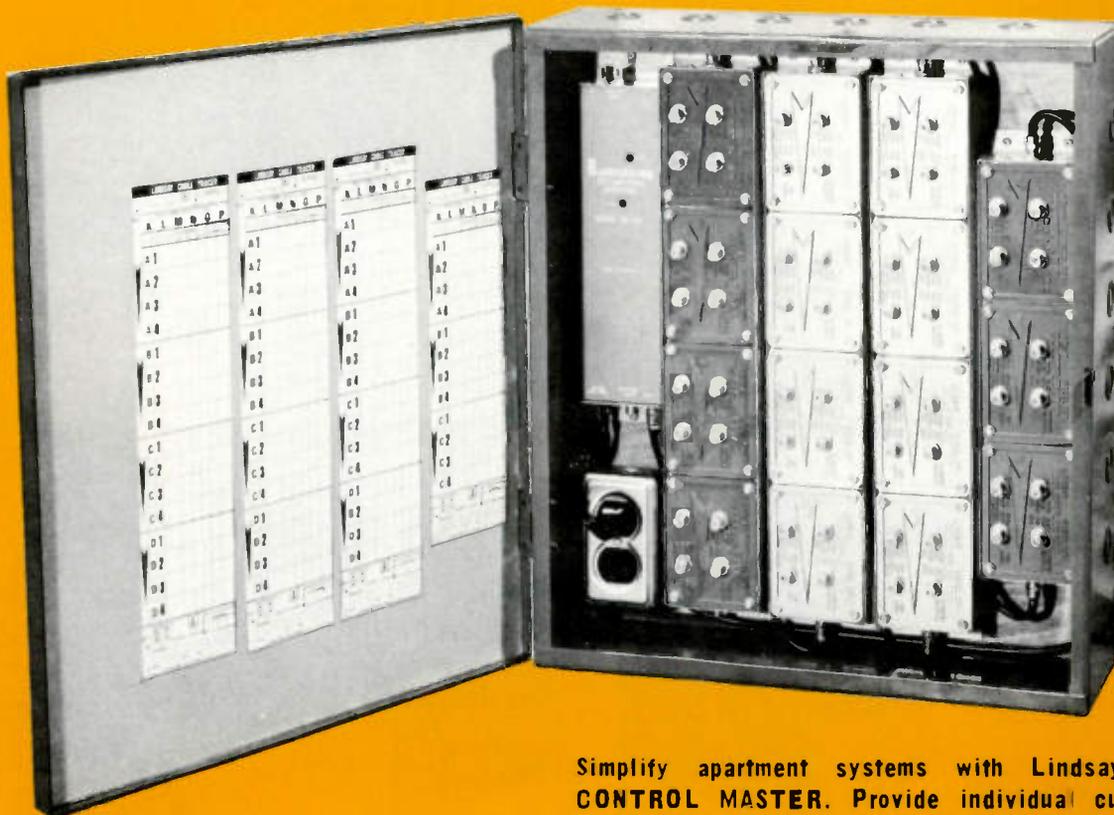
*Stills • trailers • slides • advertising art • synopsis... complete promotion material provided for your sales, advertising and exploitation use.*



**INDEPENDENT  
TELEVISION  
CORPORATION**

555 Madison Avenue  
New York, N.Y. 10022  
(212) 755-2100

# Lindsay CONTROL MASTER® Apartment System



Simplify apartment systems with Lindsay Apartment CONTROL MASTER. Provide individual customer control from a central accessible location and at the same time upgrade system performance by eliminating ghosts, reflections and smears.

Choose from Lindsay's wide range of apartment amplifiers — 12 dB, 24 dB, 42 dB and 48 dB of gain all with high output capability and low second order; combine an amplifier in a readily available NEMA box with Lindsay Colorflex Directional Taps in 'CMB' series multiple housings.

Tailor tap values to your needs with snap-in color coded plates. Specifications fully to 300 MHz with guaranteed directivity greater than 20 dB and isolation higher than 26 dB between taps. Meet strict FCC and CRTC guidelines.

Handy trace sheets supplied for subscriber identification.

Buy these devices individually or call them up as loaded stations, fully tested.

This is the modern accepted method being evolved for central and full control. Its faster to install, lower in cost, more efficient and tamper-proof. Ideal for bulk or individual billing. Equipment available Now!

## Lindsay

LINDSAY SPECIALTY PRODUCTS LIMITED  
50 Mary St W. Lindsay, Ont, Canada. 705-324-2196

Call us or write for the Lindsay Brochure "Apartment Control Methods". In the USA contact Bob Toner, API, Telephone (215) 647-1000, P.O. Box 1776, Paoli, Pennsylvania 19301. In CANADA contact LINDSAY.

# own this complete **COLOR** studio



# for less than the cost of a broadcast camera



We can now deliver and install a complete color studio for you at an amazingly low cost.

You get a versatile, broadcast quality studio: the new IVC COLORCASTER III studio package capable of live, videotape, slide or film programming. You'll own all the equipment necessary for television commercial and program production in color.

We designed the COLORCASTER III package to specifically meet your needs. And there's no trick about the price. Most studio color cameras used in broadcast applications cost far more than our complete, 2-camera system.

The COLORCASTER III package includes two IVC-90 color cameras—one studio and one filmchain. These are the most widely used low-cost color cameras in television today. Another major item is the new IVC-870 color videotape recorder, with assemble and insert editing. Also included are the: audio and video consoles, multiplexer, slide projector, film projector, switcher with special effects, and a studio lighting kit plus the sync generator, distribution amplifiers, intercom, cabling, and all other items necessary to give you a totally complete package. Every component has been pre-selected for your optimum operating efficiency. Home viewers will see color pictures on your cable channel that match the quality of the network channels on your system.

The COLORCASTER III package sells for \$47,900. If this combination doesn't suit your needs, ask us about other available studio packages.

## Why an IVC System?

Owning an IVC system provides you with three forms of insurance: (1) Insurance against incompatibility—all equipment has been engineered to work together. (2) Insurance against malfunction—an IVC cable television studio is designed for upgrading, expansion, or re-configuration to suit your future needs.

## We Install What We Sell

You provide the location—IVC will handle all details of system planning, installation, set-up and training. Our experienced personnel are part of the package, with systems know-how that parallels the proven performance of IVC equipment.

IVC is a pioneer in the installation of cameras, recorders and complete color systems in CATV. IVC has supplied the cable television industry with more color recorders and cameras than any other manufacturer.

Local origination of full color programming is easily and economically within your reach, with broadcast-proven color cameras and videotape recorders. For complete color studio systems information write us in Sunnyvale or contact your local IVC sales office.



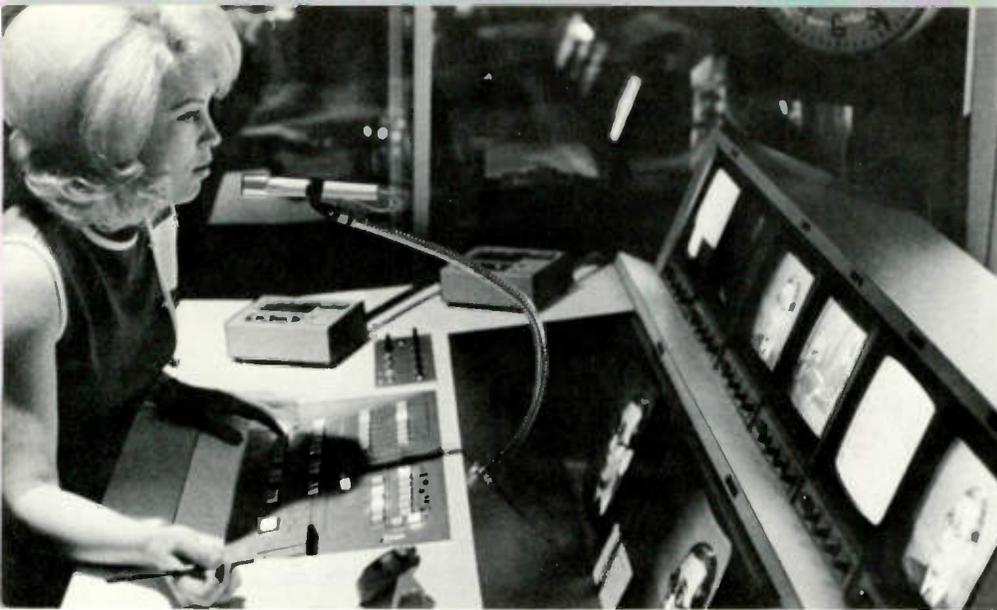
*This complete color studio at Peninsula TV Power, Inc., Sunnyvale, California is typical of studio systems designed, and installed by IVC.*



**International Video Corporation**

675 Almanor Avenue  
Sunnyvale, California 94086  
(408) 738-3900

**The standard for color in cable television.**



From this control panel, Barbara Hunter of Channel 3 cues television cameramen in the studio and can punch up 35mm slide or 16mm motion-picture segments as dictated by the script.

mended is barely discernible on the television screen, except perhaps to the eye of a professional.

The same economy and production flexibility carry over to the editing of film. All you'll really need is a clean table or working surface, a good film splicer, rewinds, extra reels, and a

reliable action viewer. Adequate viewers cost around \$100.

CableVision purchased a Zeiss Moviscop machine for \$270. Using that machine with a synchronizer and sound reader, however, allows any trained person to edit film and simultaneously synchronize location sound.

The first criterion for successful editing is to have enough exposed film available to allow for creative options. During CableVision's first experiences with film production, they shot at practically a 1:1 ratio. That is, they had to use almost all of the film that they exposed to fill the time requirements of the programs.

Film is like any other visual medium. The more you expose, the more selective you can be. Larger commercial stations sometimes expose 10 times as much film as they can use for their daily news operations.

At a cable system, a more realistic ratio would be 2:1 or 3:1, depending upon the type of show. To determine how much film should be exposed to provide the editor with a good working ratio, I suggest this simple formula:

If you expose 16mm film at 24 frames a second (standard for television), you need 180 feet to fill five minutes. For 25 minutes of air-time, the editor must end up with 900 feet of film. In order to provide him

## SPECIAL CATV BONUS

The Biggest CATV Equipment Directory Ever Published! Catalog Listings of Every Type of Equipment, Material and Service.

This new *Equipment Directory*, available right now, is the most comprehensive book of its type ever compiled in the cable television industry. It features catalog listings of virtually every piece of equipment, material and service currently marketed to cablemen. This Directory has been the authoritative source book in CATV for over seven years... order your copy of the 1971 edition now, and receive your...

# 20% DISCOUNT!

### 1971 CATV EQUIPMENT DIRECTORY

Please send me \_\_\_\_\_ copies, at the 20% advance order discount. Upon shipment, bill me \$5.50 each. (\$1.45 reduction from regular price of \$6.95).

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_



Hurry! This offer expires April 30.

Communication Publishing Corp. • 1900 West Yale • Englewood, Colorado 80110

# CAS BUY-BACK COMPLETED



## CAS MANUFACTURING COMPANY

P. O. BOX 47066 • DALLAS, TEXAS 75247 • 214/253-3661

CATV Industry  
Gentlemen:

At a time when mergers were a fashionable and expedient means of expanding your (share of the industry), CAS Manufacturing elected to join the Avnet organization in early 1969. Aspirations were quickly confronted with a depressed economy, resulting in conservative management policies that we found to be inconsistent with the momentum and needs of the CATV industry. Consequently negotiations were begun in June, 1970 to re-purchase CAS from Avnet.

I am pleased to announce that my associates and I consummated a buy-back agreement in early January and CAS Manufacturing Co., a division of Avnet Inc., is now CAS Manufacturing Co., a Texas Corporation.

We look forward to sharing the future of CATV with you. We accept the challenge of innovation that is synonymous with CATV and we will continue to serve the CATV industry in the future as we have done for the past fifteen years.

Yours truly,

A handwritten signature in black ink that reads 'John G. Campbell'.

John G. Campbell  
President



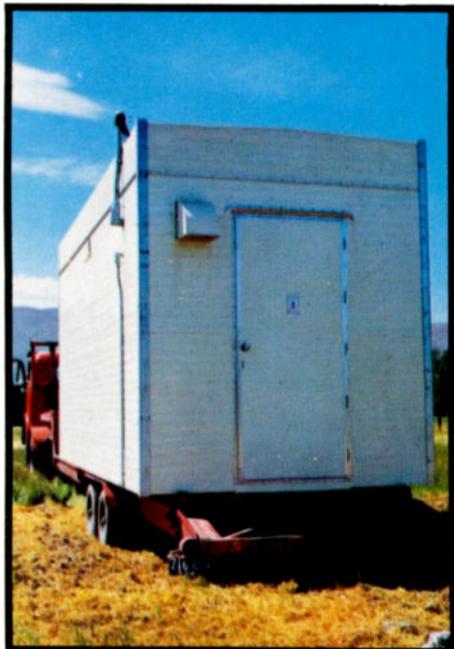
John Campbell signs buy-back agreement re-purchasing CAS Manufacturing Company from Avnet Inc [Seated left to right] John Campbell, president, CAS Manufacturing Company Sylvester Herlihy, vice president, Avnet Inc [Standing left to right] John O Grady, comptroller Avnet, Inc Joe Friedman counsel, Avnet Inc Tom Creighton, secretary-treasurer CAS Manufacturing Company Jim Scott vice-president CAS Manufacturing Company



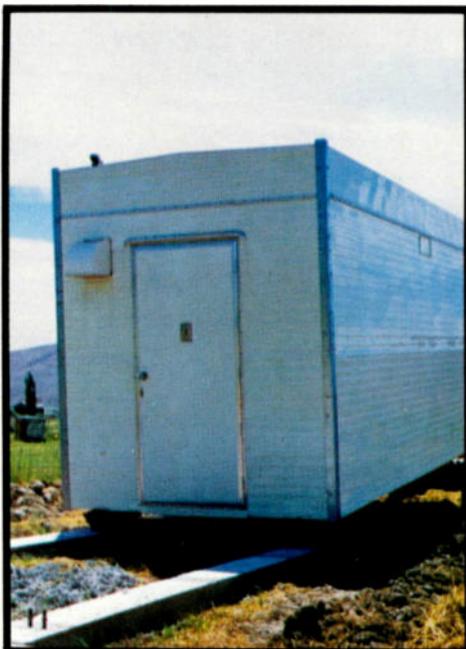
## CAS MANUFACTURING COMPANY

P. O. BOX 47066 • DALLAS, TEXAS 75247

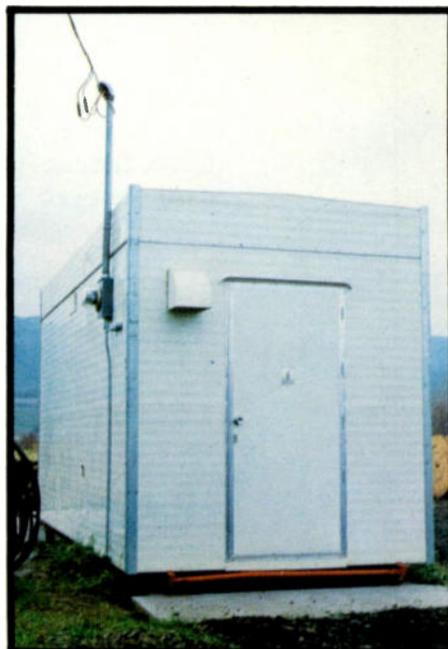
# INSTANT HEAD-END BUILDING



**BACK IT UP . . .**



**SLIDE IT OFF . . .**



**BOLT IT DOWN!**

It took just 90 minutes to finish the job at West Valley Cablevision's new plant in Yakima, Washington. And the same convenience, economy, and quality can be built into your system with a new MOBILT Head-End Building from Fort Worth Tower Company. Designed expressly to house CATV and microwave electronic equipment, MOBILTS withstand any climate or location problem . . . house electronic equipment according to the most rigid standards.

## ■ INSTALLED IN MINUTES

Your MOBILT can be ready to work for you in minutes. You have no rig-up delays on arrival because your building comes with supporting I-beams. Simply drop on your site, connect the service inlet, and you're in business.

## ■ REDUCED COST AND WAITING TIME

MOBILTS save you time and money because complete wiring is installed at the factory. Unlike conventional buildings,

equipment can be delivered with it rather than installed on location.

## ■ QUALITY CONSTRUCTION

MOBILTS are designed expressly to house electronic equipment. Result? Problems like inadequate tightness, poor ventilation and improper sealing of doors are non-existent. And . . . an absolute minimum of maintenance is required.

## ■ FAST DELIVERY

No matter what the weather conditions, site or local labor situations, MOBILTS offer fast delivery and uniformity. We promise delivery on time.

Many options are available in size, outside finish, wiring and ventilation. You owe it to yourself to write for full specifications on these rugged, versatile head-end buildings. You'll find one exactly suited to your needs . . . at an economical price.



**Fort Worth Tower Co., Inc.**

P.O. BOX 8597 / 5201 BRIDGE STREET / FORT WORTH, TEXAS 76112  
FORT WORTH PH. (817) JE 6-5676 • DALLAS PH. (214) AN 4-2822

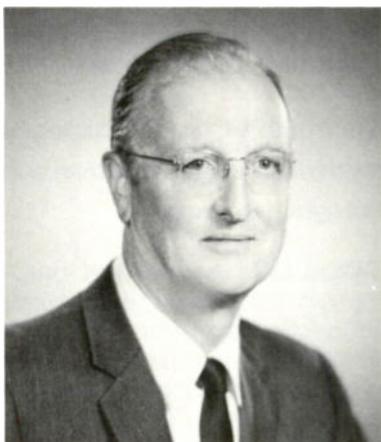
with a 3:1 ratio 2,700 feet of film should be exposed. That will allow the editor to "cut" from wide-angle scenes to close-ups, and to integrate background or establishing scenes wherever necessary.

The procedure is a simple "cut-and-splice" technique that can be easily learned. The prime requisite is cleanliness; you should work in a clean, dust-free area with white gloves, keeping the film clean for the best projection results.

If you are estimating production costs, remember that you will probably want to schedule the same program three or four times a week in different time slots. The chances are good that if a program attracts an audience, it can be shown during the day with one sponsor, and afternoons and/or evenings, with others.

Even the unused film can be valuable. The good footage, whether used or not, should be edited and spliced on subject reels. At the same time, a cross-index should be made for every new entry on a subject reel — by name, or names, and subject.

#### ABOUT THE AUTHOR



Dr. Norwood L. Simmons is general manager, Motion Picture and Education Markets Division for Eastman Kodak Company. He received his B.S. in chemistry from the University of North Carolina and a M.S. degree from the California Institute of Technology. In 1937 he received his Ph.D. from the University of North Carolina, and began his work for Eastman. He is the holder of seven patents and an assistant vice-president at Kodak.

That allows each cable system to build its own film library, which can prove to be invaluable for documentary and other special programming. Say, for example, that you are programming local high school basketball games. Years later, if one of the local boys becomes a super star at college, a documentary of his high school playing days can easily be put together from film in the library.

#### Build for the Future

In this article, we have touched on the experiences of one cable system, and the way that they got started in color film production. There are other options and considerations that should be understood, or at least stated. At the beginning, we mentioned building blocks. With the system that we have described, you are, in effect, building blocks.

Later, a single-system camera that records sound simultaneously with film can be purchased for around \$5,000. All Ektachrome films are available prestriped for magnetic sound recording. Pre-striping film is processed in exactly the same way as the silent film.

Once you have developed this capability, the single-system camera is generally used to conduct location interviews with synchronized sound, and the silent camera is used to produce background or establishing shots. Used together, the two cameras greatly improve the product that the film editor has to work with.

Also, once you have developed a film capability, you might want to consider the possibility of running your own processing equipment. That, too, is largely a push-button operation. The sole determining factor should be whether you can process enough film to justify the cost of purchasing and operating the processor.

But don't count only the film that you plan to expose yourself... there might be a lucrative market in your community. Many industrial firms and schools use Ektachrome EF films. Few of the organizations own processing equipment. That makes them potential customers. TV

**World's Best Pipe and Cable Locator**

**Still Second Best**

#### Our Model TW-5

We'll continue to admit that the trenching machine is foremost when it comes to *uncovering* underground pipe and cable. However, if your mission is to *discover*, the Fisher M-Scope® Model TW-5 deserves your investigation.

Here is a field-proven, highly versatile instrument which will locate underground pipe, cable, equipment boxes and other concealed metal objects with electronic accuracy. TW-5 is capable of inductive location of buried objects and both inductive and conductive tracing of pipes and cables. It determines depth with accuracy. And all of this at a time when safety conditions are at their best *before you dig*.

Like all of our instruments for the utility industry, model TW-5 is loaded with performance features. Such as dual-tone signal, all solid-state circuitry, "humiseal" moisture protection, built-in loudspeaker and battery test, and 3-way power adjustment.

We'll be glad to send you a data sheet and complete specifications. Just write or phone and we'll put our story in the next day's mail.



**FISHER DETECTION INSTRUMENTS**

Palo Alto, California 94303  
Telephone (415) 322-4646

# Experienced Perspective On the Origination "Bug"

You have heard much speculation about the glorious future in CATV programming. . . but this case history of the pitfalls and profit-picture at the Pittsfield, Mass., system gives experienced perspective to the viability of local origination.

**P**rogrammis Origination/program mis orig in a tus/N. 1: a plague 2: a promise.

Program origination is a dichotomous "bug." To some afflicted cable operators, it is an unwelcome epidemic, whose symptoms are manifested by the wringing of hands as bottom-line profit is reduced by a new expense item: CABLECASTING. To them it marks the advent of germ warfare against an industry already afflicted by government-induced ills.

To others who have caught the "bug," program origination is a promise . . . heady with profits.

Like so many concerns that are viewed with both favor and alarm, there is, also, a vast middle ground.

This writer stands somewhat off-center: Having been once smitten by the promise and sobered by reality, he has empathy for the anguished afflicted.

There are those who rightfully question the legality of the FCC's program origination edict. There are those who rightfully bemoan the capital expense and operational costs imposed upon them. There are those who rightfully view program origination, irrespective of the Commission's requirement, as an opportunity to attract subscribers in given situations, or for any number of other purposes: altruistic reasons, political considerations, social significance, educational or public relations concerns . . . and cable-originated programming expenses may well be justified in serving such ends.

It is understood and rightfully recognized by this writer that origination equipment manufacturers and program suppliers are naturally delighted with the opportunity to expand their markets.

Recognized, too, are the parasites and promoters who follow

the flight of the easy "buck" through the blue skies they themselves paint for the unwary.

**"What follows . . . is a sharing of experience . . . as a practical guide to program origination."**

What follows does not purport to point the direction that cablecasting should follow. Rather, it is a sharing of experience and long-considered reflection as a practical guide to program origination. It is hoped that the greening of this one concerned cablecaster will get equal time from the reader when the "blue sky" dreams of programming and profit are reviewed.

Pittsfield-Dalton TV Cable, owned and operated by Television Communications Corporation, serves the two Massachusetts cities from which its name derives. Headquartered in Pittsfield, the system's service is available to approximately 60,000 residents

within 17,500 housing units. As of this writing, the system has 10,000 subscribers — 57 percent saturation.

Off-air reception is limited to the signals of three television stations, each representing one of the three national networks.

The cable system offers 12 channels of television; 5 network-affiliated stations; 3 independent stations from New York City; 2 ETV stations; a 24-hour news channel; and one local origination/weather channel.

Local origination began in March 1967, on a limited scale one-man operation, and has grown steadily in terms of hours of operation and dollars spent. Beginning in the Spring of 1968, the average "program day" has been 4 hours in length, Monday through Friday. Currently, the program day is 3½ hours in length.

**"Our appeal to potential advertisers has played down the 'cost-per-thousand' approach."**

The programming — constantly reviewed, revised, scrapped, added and expanded as audience, system or advertiser interest ebbs and flows — has run the gamut from city council meetings; high school sports; ethnic-oriented programs; news, sports, children's and women's programs; parades; specials; election returns; political "meet the candidate" shows; speeches, interviews, etc. . . . to syndicated motion pictures and other features offered by the hordes of program suppliers. State officials from governor to political appointees, U.S. Senators and Representatives, nationally prominent politicians, artists, stage and motion picture personalities have all appeared before the cameras of Channel 2 in the quest for audience attention.

To accomplish the current schedule within the \$5,000 monthly operating budget, there are two full time employees: Robert Burke, a former and long-time local radio personality, who directs the operation and doubles as director, news photographer (via a Sony back-pack one-half inch VTR), talent (as host on

nightly one-half hour children's program), and sales chief (and then produces the spots for the time slots sold); and Ken Farquharson, technical director, who also doubles as program director, commercial producer, and maintenance engineer.

One part-time technician, two part-time high school student cameramen, three salespeople (paid by commission only, at the time the client's check is received), and four modestly compensated program hosts and news men complete the staff.

With a \$60,000 annual operating budget that would otherwise show pre-tax profit on the bottom line, there is a significant incentive to sell advertising time (especially in view of our overwhelming evidence that program originations do not in themselves attract additional subscribers to the cable).

Because of the belief that specific local programs could attract selective and faithful audiences, our appeal to potential advertisers has played down the historical "cost-per-thousand" approach. Instead, advertiser acceptance is solicited by attempting to convince him that he would be reaching limited local audiences with specific interests, who, most likely, would be more receptive to the advertising message within a program the *family* has selected to view, and, thus, could influence "instant" family decisions on a purchase — as opposed to newspaper or radio advertisements, which are, more or less, individually read or heard.

**"The dream was replaced by a businessman's look at what we had and where we could take it."**

Even so, many of the potential large local advertisers — those who are the most consistent advertisers in the local newspaper and on the local radio stations, and who are avidly sought by us to provide the basic continuing source of advertising revenue — are represented by advertising agents or agencies who are concerned with size of audience and cost-per-thousand in making their decisions as to how they can best apportion their

advertising budgets to reach the most people.

The "limited but selective" audience does not excite the banks, the department stores or most other major advertisers . . . although one national food chain is currently contracted for 32 weeks as sponsor of a weekly bowling tournament.

**"One has to wonder about the sufficiency of advertising revenue."**

TeleVision Communications Corporation has found that the cable channel advertiser tends to be the less consistent newspaper and radio advertiser; the short-term contract buyer; and not much of a repeater once his initial contract has run its course.

We have conducted some limited viewer surveys, and in our most comprehensive effort (a random telephone survey of 300 homes) we could discern no significant audiences for any particular programs, nor could we extract

#### ABOUT THE AUTHOR



Don Andersson is Director of Market Research/Promotion for TeleVision Communications Corporation (TVC), a post he has held since 1966. His responsibilities include market research, advertising and promotion for TVC's systems throughout the U.S. Prior to joining TVC, Don was Director of Information for NCTA. He holds a Masters Degree in Communications from Boston University's School of Public Relations and Communications.

**Table I. Advertising Revenues**

Month	Total Billings	Net Income (Billings Less 20% Commission)
July	\$1,911	\$1,529
Aug.	2,144	1,715
Sept.	1,695	1,356
Oct.	2,548	2,038
Nov.	2,305	1,844
Dec.	3,403	2,722
<b>TOTALS:</b>	<b>\$14,006</b>	<b>\$11,204</b>

from our findings any significant data to influence advertiser support.

At one time (for a six-months period) we retained as a consultant in advertising an individual with impressive credentials as a television time salesman, who had broad experience with major

national advertising agencies, local television stations, and a major group owner of television stations. Rarely has anyone worked harder. Rarely has anyone been so persuasive. And yet, the fruits of his efforts were only modest indeed.

The reality rose reluctantly. When it surfaced, the dream was replaced by a businessman's look at what we had and where we could take it.

Until July 1970, we had received no appreciable advertising revenues. With a stepped-up sales effort, the figures in Table I reflect our success during the period of July-December 1970.

Our average monthly billings during this 6-month period were \$2,334 equal to 47 percent of our monthly operational expense of \$5,000; average monthly net income is \$1,867, equal to 37

percent of the operating budget.

Political advertising income in October and November, and Christmas promotion revenues in December accounted for the fall upsurge, which has receded to approximately \$1,800 billings in January.

To attract these billings, a major effort is undertaken daily by the sales people, who offer commercial message rates as shown in Table II.

The rate structure is derived as follows: (1) local origination totals 3½ hours daily, 5 days a week, or 264 days per year, or 924 hours per year; (2) annual operating budget is \$60,000, or \$227 per day or \$64.86 per hour; (3) assuming 8 minutes of advertising available per hour (one minute on top of the hour, one at the half, and three minutes within each half), and assuming a "goal" of selling four availabilities per hour at a rate that would cover operating expenses (\$64.86 cost-per-hour divided by 4), a minute spot would cost \$16.22, plus 20% commission of \$3.24, or \$19.46. Thus, the rate structure reflects the need of attracting an "average" one-minute rate of \$20.

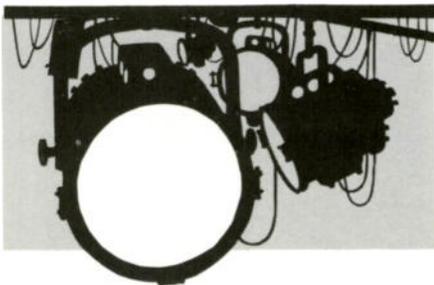
The advertiser also pays for the actual costs of producing his spot announcement. Since current programming does not use syndicated film or tape shows, there are no "program costs" to be passed on to the advertiser.

In comparison to cable TV rates, there are two local radio stations which charge \$6.00 and \$6.80 respectively for one-minute spot announcements. The daily newspaper's basic rate, b&w, ROP, is \$3.25 per column inch.

Two alternatives are open to use in reducing our rates in Pittsfield. Neither however, is practical. On one hand, we could assume a "goal" of selling 100% of availabilities at a rate of \$9.73 per minute — an unrealistic goal. On the other hand, we could expand the program day, using syndicated shows to provide more commercial availabilities. But this would entail additional salaried personnel and program costs, which would permit only a slight reduction in our rate — assuming, of course, the availability of relatively inex-

**Table II. Pittsfield-Dalton TV Cable — Ad Rates**

Length	1X	13X	26X	52X	104X
1 min.	\$25	\$20	\$18.50	\$17.50	\$15
30 sec.	\$20	\$18.50	\$17.50	\$15	\$13.50



lighting...lenses...make-up...  
audio...set construction...  
camera operation...  
presentation techniques...  
studio animation...  
floor management

These and other essential television production subjects come under thoughtful and engaging study in the superbly-produced

## CETO TELEVISION TRAINING FILMS

The CETO Films — 20 titles produced by the Centre for Educational Television Overseas in London, England — will provide basic instruction for new production personnel... superior upgrading for present crews... or enriching refreshment for the "old hands". For more information, contact:

**GREAT PLAINS NAT'L ITV LIBRARY**  
University of Nebraska — Lincoln 68508

## HIMCO SPACE-AGE FIBERGLASS SAFETY LADDERS

Designed on principles used in the Space Industry

### NOW

Pre-stressed unit directional Fiberglass filament winding, Fiberglass cloth, and Tedlar, bonded into one unit.

NONCONDUCTIVE LIGHTWEIGHT

WRITE FOR TEST DATA SHEET CATALOG AND PRICE LIST

HIMCO, INC.  
P. O. BOX 228  
VALLEY HEAD, ALA.  
35989

pensive programming of sufficient appeal and quality to distract viewers from the other television stations on the cable. This is an assumption that we can not make, based on our knowledge of syndicated program offerings.

### Three summary conclusions on programming, audience and advertising revenues.

We have arrived at three summary conclusions: (1) cable-originated programming, even with limited staff, is expensive; (2) sizable audiences are difficult to attract; and (3) advertising revenues, sufficient to defray even a portion of the cable origination costs, are difficult to obtain.

If this is so in Pittsfield, with 10,000 subscribers, one has to wonder about the sufficiency of advertising revenue in lesser populated communities.

Can national advertising accounts supplement the local and regional revenues? Is there a solid basis for the belief that the na-

tional advertiser will commit himself on long-term cable origination?

Representatives of TeleVision Communications Corporation have spent many hours discussing these matters with the top representatives of some of the nation's largest advertising agencies, in New York City.

Most of these agency people are generally knowledgeable about CATV as a reception service. Most are aware that many of us do and others soon will have to originate programs.

Many, however, were unaware of these facts (1) that only about 60 cable systems have in excess of 10,000 subscribers; (2) that only about 350 systems serve more than 3,500 subscribers, and it is only this number that falls under the FCC's cablecasting edict; (3) that it is several years away before cable systems will be interconnected; and (4) that to reach the cable audience, he must make spot announcements available on 16mm film or several different types of videotape (depending

upon the VTR models in use at the systems).

**"We compete against ourselves when we offer local origination."**

Several agency people, however, were very good at arithmetic. By sharing information both parties had, we developed the following data:

(1) Using the 1970-71 *Television Factbook* as a guide, we arrived at an approximate total of 2,800,000 homes served by the approximately 350 cable systems having over 3,500 subscribers.

(2) Using a figure of 33% of all TV homes watching television at a given time (67% either not at home or not watching TV), we arrived at a total viewing cable audience of 924,000 homes.

(3) Guided by the FCC-published figures of a 15% Neilson rating and a 16% ARB as the largest share of audience (in

## Cable Blocks for High Safety, Smooth Handling, Economy

Strong, two-way blocks—of cadmium-plated alloy steel and toughest aluminum—virtually unbreakable, long lasting. When repair may be necessary, wrench and pliers are the only tools needed. Spare parts, seldom called for, are always available—no need to return blocks to factory. All of which spells ECONOMY.

Model PY-750, with locking cam, is for  $\frac{3}{16}$ " or  $\frac{1}{4}$ " messenger strand, has roller for maximum safety in stringing coaxial cable. Model WH-48 (not shown), with locking cam for  $\frac{5}{16}$ " or  $\frac{3}{8}$ " messenger, has roller for up to  $2\frac{3}{4}$ " cable, will not crease or disfigure cable jacket. No. 500 "Econo-Block" is an inexpensive block for coaxial cable and distribution lines, has spring-held locking pin, clears two lashed .750 trunks.

D-66 Lifter for placing PY-750 and WH-48 Blocks is alloy steel with precision-machined working parts, will also handle General Machine Products D cable blocks. "Econo-Block" uses an EC-555 Lifter. WRT-100 Wire Raiser is alloy steel, 25% stronger than cast metal, has two hooks for simultaneously raising messenger strand and telephone line. All affix to  $1\frac{1}{4}$ " diameter extension poles.

Write or call us for full information and prices.



**BUTELCO**  
BUCKEYE TELEPHONE & SUPPLY CO.

1250 Kinnear Road, Columbus, Ohio 43221  
Telephone . . . Area Code 614 . . . 438-0655

November 1969) attained by a VHF independent station in a 4-station market (Dallas-Ft.

**"We are disturbed . . . by the dream merchants who promise a pot of advertising gold."**

Worth), we agreed that a cable system (which can "create" up to a 12-station market in its community) might, with provocative programming, obtain a 10% share of audience.

(4) Ten percent of 924,000 homes would mean an audience at 92,400 homes, watching local programs at 350 cable locations. This comes to an average of 264 homes per cable system; with a range of 1,320 for a 40,000-subscriber system, and 116 for a 3,500-subscriber system. Our Pittsfield system of 10,000 subscribers would attract 330 homes.

(5) Assuming each cable system would be paid on the basis of \$3 per 1,000 homes per

commercial minute (a rate, we were informed, that would be equivalent to the costs borne by advertisers on television stations — not network rates, which are higher, but local station rates), the largest-audience system of 1,320 homes would net \$3.96, and the smallest (116 viewers)

would net 35 cents. Our Pittsfield system would receive \$1.00 - or 1/20 of our \$20 rate.

Only the cable system that could attract at least 1,000 homes was singled out as an interesting, "limited but specific," audience situation. A 500 home situation would be "worth testing . . . perhaps."

However, when we were asked and the questioner was informed that perhaps 100 percent of cable systems receive the three national network stations, comments were offered that (1) a system delivering 1,000 viewers would have to exceed 35,000 subscribers, and (2) since they also had access to the three network stations, even the lowest rated network would attract more cable viewers than the local programs . . . unless, of course, this 35,000-subscriber system were so isolated from a television market that local commercial insertions would, more realistically, be considered. We informed them that only San Diego could today better that figure.

In support of the advertiser's concern for audience, and the cable operator's concern for that magical program source that will draw viewers to his channel (against the best the indies and the network affiliates can produce), it is apropos here to quote briefly from the lead article in the October 5, 1970 issue of *CATV Magazine* which reported the results of an impact study in Canada on the effect of CATV on TV stations.

The study, conducted by A.C. Neilson and Canadian Family opinion, centered on the cable systems serving the greater London, Ontario market, where nearly 50,000 cable subscribers constitute 80% saturation in London and 60% in the County. Although the study primarily dealt with CATV impact on local

## WHY ARE HTV AMPLIFIERS BETTER ?

48 HOUR  
MODULE BURN-IN

12 CHANNEL NOW  
36 CHANNEL LATER  
MODULE CHANGE ONLY

HOUSINGS  
PRESSURE TESTED

MIL-SPEC  
DESIGN

VISUAL FAULT  
INDICATION

BELL LABS  
VERIFIED SPECS

LOW 2ND AND 3RD  
ORDER DISTORTION

OUTSTANDING  
RFI-EMI SHIELDING

THERMAL CONTROL  
PLUS AGC-ASC

### THAT'S WHY !

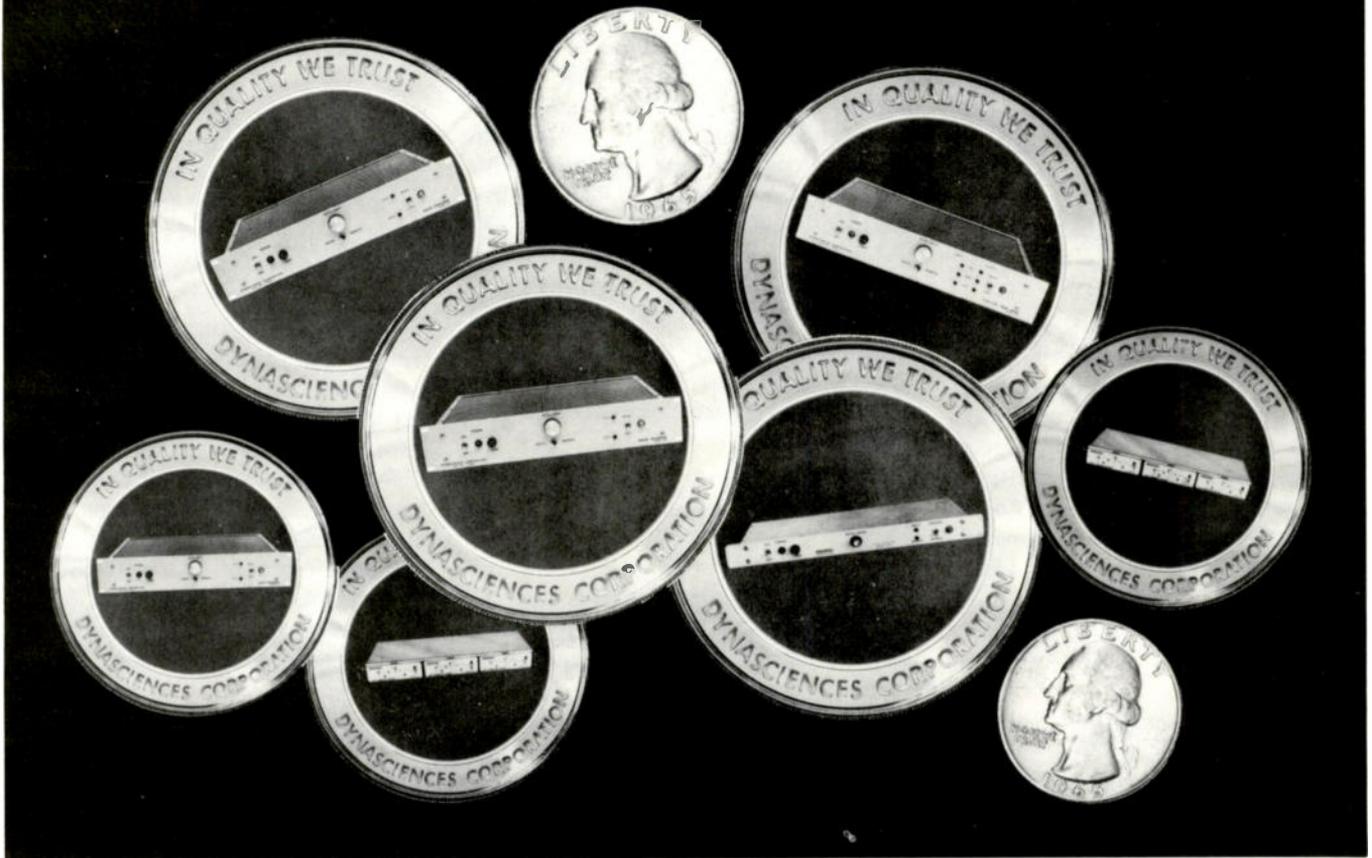
**HTV Systems, Inc.**

**10 Monroe St.**

**East Rochester, N.Y. 14445**

**Phone (716) 385-1200**

# *In Quality We Trust*



*We Trust the Quality of Our Product . . . Let Us Improve the Quality of Your Product . . .*

## **YOUR TELEVISION PICTURE**

Dynasciences offers a complete line of enhancers priced for any budget. One will meet your specific operational and technical requirements.

Our enhancers give maximum improvement to the clarity of fine detail and sharp definition of the TV picture at low cost. No modification to your present video system—just plug in and turn on. Operates with camera, video tape recorder, or other source. Color or Monochrome.

Simplicity of operation is built in—only unit on the market with single control knob—requires just one input. Why not call us collect? Let us recommend an enhancer for your specific application and send it to you for trial. There's no obligation.

*Model 852 Contours from Green*

*Model 832 Image Enhancer*

*Model 444 Video Enhancer*

*Model 468 Vertical Aperture Equalizer*

*Model 234 Vertical Aperture Equalizer*

**DYNASCIENCES  
CORPORATION**

TOWNSHIP LINE ROAD, BLUE BELL, PA. 19422 • (215) 643 0250

stations, it did reveal that extensive local origination of 35 hours per week was in competition with 21 TV stations carried on the system.

**"Where is the magic programming that will draw viewers away from the network, independent . . . ?"**

The cable channel drew "no viewing of measurable proportions," according to the published survey results. (Your writer, with cablecasting experience at several CATV system locations, was not surprised nor set back by this — to me — expected finding.)

By its very nature (bringing in more signals to attract subscribers), a cable system creates its own multi-channel market, and, thus, we compete against ourselves when we offer local originations.

Just where is the magic programming that will draw viewers away from the network, independent, and ETV stations? If there is, indeed, such a product available, why is it not now a

network offering? Or, if it's "as good" as the network shows, why are not the independent stations (which exist in nearly every top market) carrying these audience-appealing programs? And why isn't there a fourth network tying the indies together to provide this "program diversity"?

If there is an "angel" in the wings waiting to select US, why isn't he offering this sure audience-grabber to the networks or syndicators from whom he could expect a bigger gross? Why should he choose US as the adopted parents of his brainchild? Why US?

The programming isn't available today. The syndicators have not found the handle that is going to crank any significant dollars out of our local or national advertisers.

Consider the independent UHF station in the major markets. In its report of July 15, 1970, "The Economics of TV-CATV Interface," the FCC's Research Branch of the Broadcast Bureau reported that there were 45 independent

UHF television stations in the top-100 markets; that 43, or 95.6%, showed a loss in 1968; and that 11 of the 45 stations, or 24%, had revenues of less than \$100,000.

In Pittsfield, Massachusetts, the cable origination facility would have to attract \$75,000 annually to net out the \$60,000 we need to cover our local origination expenses.

If 24% of independent U's in the top-100 markets (with the high penetration today of UHF-equipped TV sets) couldn't attract \$100,000 worth of revenues, what can we expect in Pittsfield?

Yes, we believe the national or regional advertisers will experiment (as some are now doing) with advertising on cable systems to test audience reaction to programs used as vehicles for advertising . . . to test reaction to the commercials themselves . . . to determine audience sizes and preferences, etc. . . and the practical aspects of the "limited but selective" audience as a market to justify exposure on cable TV.

## 1970 EDITION NOW AVAILABLE

**The Most Comprehensive Systems Directory Ever Published! This Valuable Reference Book Is One You Won't Want To Miss!**

This new Directory, just off the press, is the most comprehensive reference book ever compiled in the cable television field. Features include U.S. and Canadian system listings, MSO data, CATV system location maps, and other detailed reference sections. This Directory has been the authoritative source in CATV for over five years . . . order your copy of the 1970 edition today and receive your . . .

## 20% CASH DISCOUNT!

### 1970 CATV SYSTEMS DIRECTORY

Please send me \_\_\_\_\_ copies, at the 20% discount. Enclosed is \$7.10 each. (\$1.85 reduction from the regular price of \$8.95.)

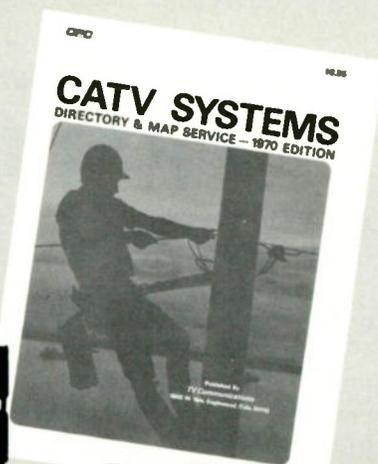
Please send me \_\_\_\_\_ copies, and bill me at the regular price of \$8.95 each.

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_



# 1970

Satisfaction Guaranteed, Of Course

Communication Publishing Corp. • 1900 West Yale • Englewood, Colorado 80110

Yes, we believe that some advertisers and some agencies will get their feet wet in the "new media" to find out what it's all about . . . just because, like Everest, it's there.

Yes, we believe that counter-programming (such as bingo in those states where it's legal and, in the conduct of which, advertising messages can be legally inserted) will attract some fair sized audiences, and ad revenues.

But . . . we would advise the system owner debating on the extent of his cable origination commitment that he carefully consider *present* CATV efforts to attract advertising dollars before he makes a decision that could entail heavy capital outlay and operating expense in expectation of profitable advertising revenues.

We would also advise those operators in applicable situations that equal consideration be given to the claims of surging subscriber gain as a direct benefit from cable originations. Check out the reliability of the source and whether or not special promotions were

offered to account for subscriber-growth claims.

In special instances (such as the New York City cable operations, wherein FCC regulations prohibit the carriage of "outside" TV stations) local originations such as Madison Square Garden events, local area college basketball, and extensive programming in other areas are, obviously, a useful means of attempting to attract new subscribers. In some other instances, particularly in markets where the FCC rules restrict the number of imported signals above those locally available, we have seen and acknowledged justification of cable originations as a "promotional" expense in pre-selling subscribers.

In sum: For the bulk of existing cable systems required to begin originations by April 1, this author would recommend that a conservative but technically good studio operation be established as a base from which both equipment and operating budget can be expanded as the value of such service becomes known (through

subscriber acceptance, or advertising revenue, or subscriber gain, etc.).

**"We are, through experience, more attuned to reality than we were . . . many dollars ago."**

TeleVision Communications Corporation (operator of 23 CATV systems) would not profess to know what the future may be. We are, however, disturbed by the dream merchants who promise a pot of advertising gold or other significant monetary rewards. And, we are, through experience, more attuned to reality than we were four years and many dollars ago.

If the industry is not diverted (by revenue expectations) from the more realistic and promising aspects of cable origination, then we can fulfill the promise others see for us: a community outlet for local expression and services which can be mutually beneficial to the cable operator and the community at large. TVC



**EFFICIENT!  
SAFE!  
FAST!**

No. **T-25** AUTOMATIC **STAPLE GUN**



for **COAXIAL CABLES**

-  UP TO 3/16"  
No. T-18
-  UP TO 1/4"  
No. T-25
-  UP TO 1/2"  
No. T-75

**3**  
**MODELS**  
Write for Catalog

**ARROW FASTENER COMPANY, INC.**  
271 Mayhill Street, Saddle Brook, N. J. 07663

## Identified Object

Your new TRI-EX T-26 Tower. Designed for CATV Systems.

Variable designs for variable antenna loads.

You Can't Go Wrong. . . TRI-EX antennae system design is tested by computer analysis.

Choose your height. . . TRI-EX T-26 Towers range from 50' to 300'.

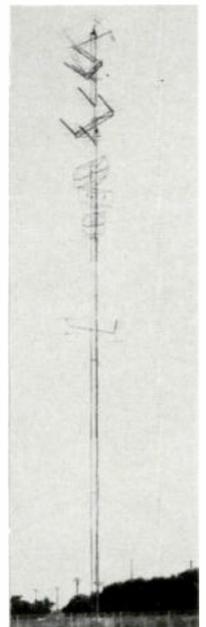
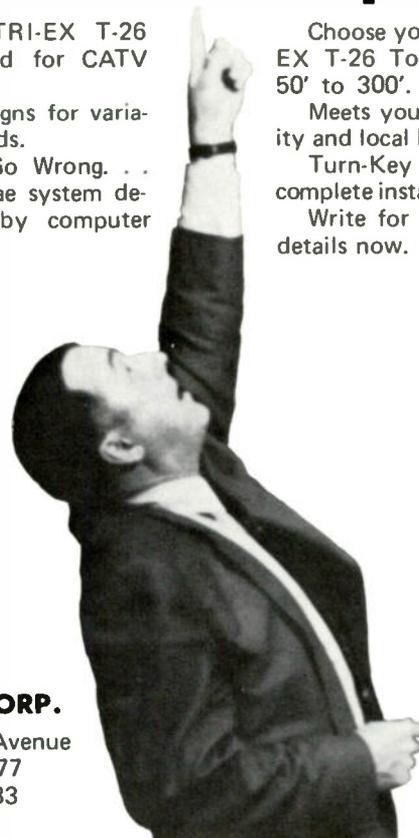
Meets your CATV capability and local building codes.

Turn-Key Systems with complete installation available.

Write for full details now.



7182 Rasmussen Avenue  
Visalia, Calif. 93277  
Ph: (209) 732-8383



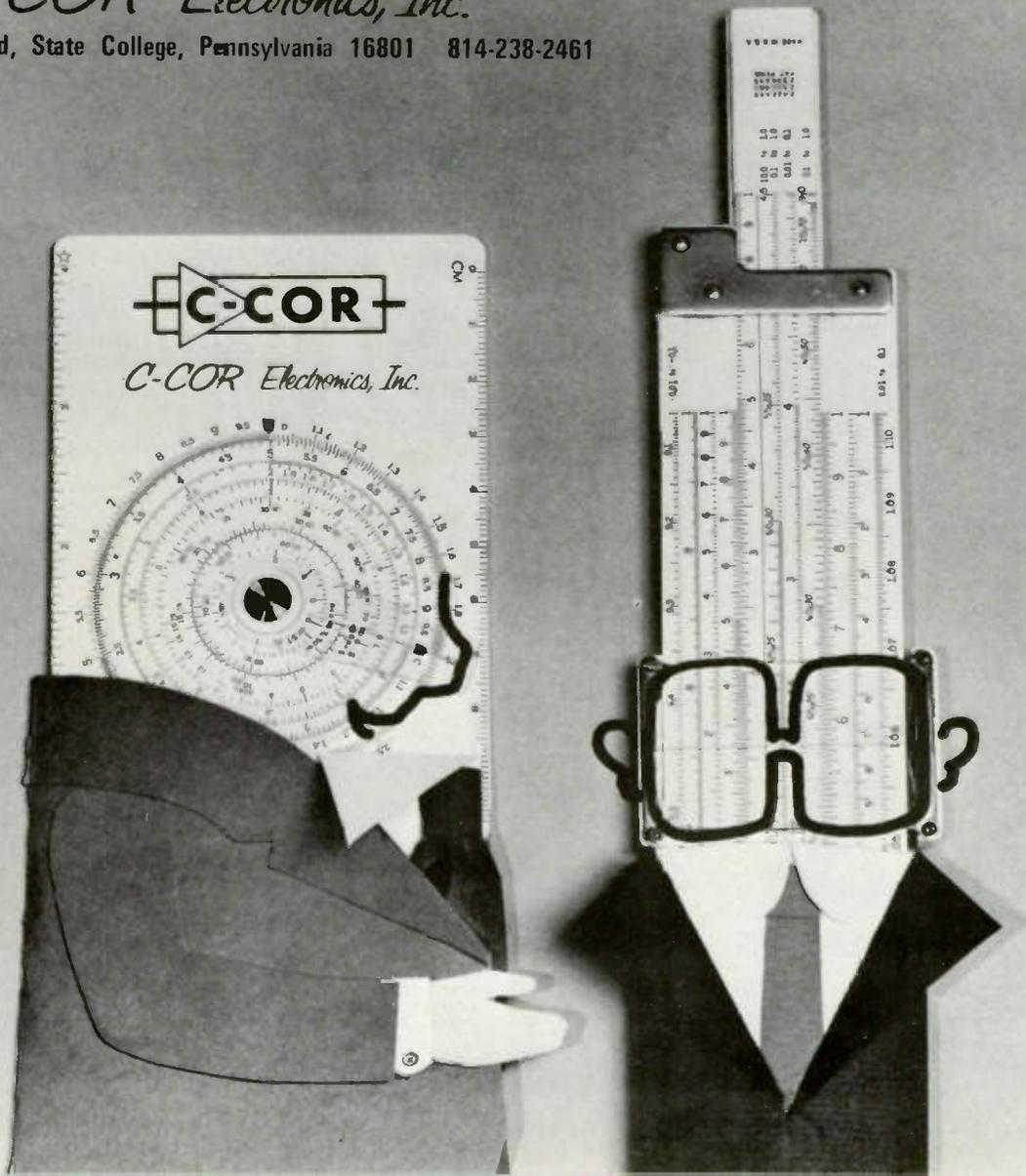
# Some People Think Of Us As Faceless Personalities

We're often called "technical types" . . . and why not? In reality it describes a very important part of our real personality. There are even those people who think of us as walking slide rules. They're right, too! As faceless personalities we've managed to keep our feet on the ground, while developing a capability to produce amplifiers with high level output . . . amplifiers that are spaced at 34 dB and can require up to 50% fewer active locations in the system (half the parts . . . half the problems). There are still some system operators who have not put their slide rule to the C-COR high level approach to system performance. If you are one of them you owe it to yourself to evaluate the C-COR concept. We can provide the necessary data — the theory, the specifications and even a slide rule for your study. And if you have any questions, call Tom Kenly, one of our faceless personalities.

We don't make a lot of noise . . . we simply concentrate on results. Isn't that what YOU want?

*C-COR Electronics, Inc.*

60 Decibel Road, State College, Pennsylvania 16801 814-238-2461



# OPINION

FROM THE INDUSTRY



Jack Rickel, president of Jack A. Rickel & Associates has designed and supervised the installation of nearly 100 television studios and served as a consultant to numerous cable television systems.

## A Local Origination Basic: Start with Step One...Then Grow!

Next month is the time when many CATV systems will begin origination. Although the FCC has modified its position on mandatory CATV origination in recent weeks... many operators are still concerned with the possibility of being "encouraged" to begin local origination efforts.

When the FCC announced its proposed rule making that all systems with over 3,500 subscribers must originate, general panic hit the CATV industry. Most system owners in that category did one of three things:

1. They went out and bought the cheapest, non-professional television equipment they could find so they could say they were ready to originate without spending a lot of money;
2. Or, they went out and bought enough color television equipment to baffle even a professional broadcaster;
3. Or, they did nothing, hoping the whole thing would go away.

Of the three solutions, which is the better one? None of them, because they are equally unrealistic! One does not start origination by buying any equipment at any price. First you must decide what and how much you wish to originate and then obtain the necessary equipment to do so.

To avoid the issue altogether is like hoping the sun won't go down this evening. Growth and change have kept the CATV industry young and vital and it must

continue to change if it is to meet the needs of the community it serves.

But we're getting ahead of ourselves. Let's go back and see what the original FCC proposals said. Unless we misread, it said that all CATV systems with 3,500 or more subscribers must originate on *one* channel. It did not say:

1. How many hours a day of programming are necessary;
2. That it had to be in color;
3. What type of programs should be originated;
4. That originated programs had to be live;
5. That programs were expected to be complicated and compare with the networks.

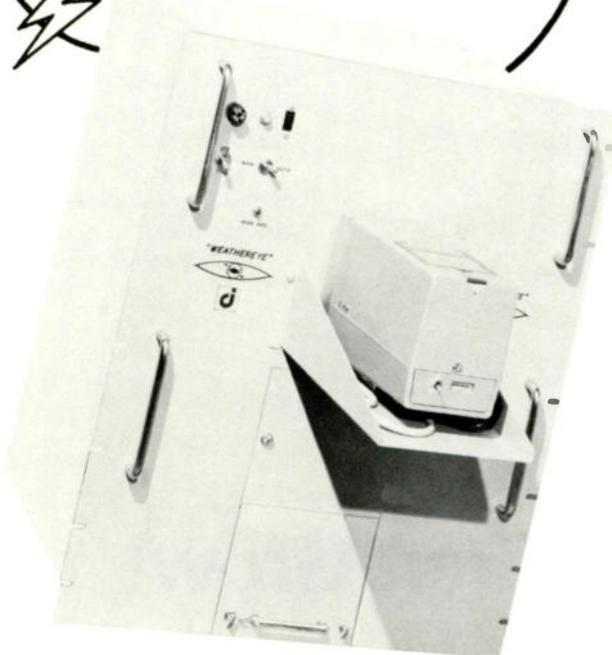
It did say:

1. System owners could experiment with various types of programs;
2. That programs should be geared to the needs of the community;
3. That local government and political coverage would be nice;
4. That the system owner may sell advertising;
5. That program logs probably would be required to show what programs were shown and when.

The commercial broadcaster, as tightly as he is controlled, would give his eye teeth for a set of operating rules as generous as these.

So you can see that the larger cable operator, instead of bemoaning the misfortune that has befallen

**NEW**  
**Weathereye**  
**AUTOMATIC**  
**LOCAL PROGRAM**  
**ORIGINATOR**  
 for CATV



**TIME 4 TO 6 WEATHER INSTRUMENTS**  
 Plus an integrated, interchangeable  
**20, 40 or 80 CARD MESSAGE SYSTEM!**  
 in ONE easy to operate unit

- Infinite Variety Instantly
- 24 hours Public Service
- Any Number of Cards in Sequence
- Eliminates Projector & its Problems
- No Film Loop to Move & Discard
- Unlimited Advertising

SEPARATELY PROGRAMMED  
 EACH MESSAGE SYSTEM  
 INSTANTLY INTERCHANGED

**MODE OF OPERATION**

Remote Control    Program Repeater Tape  
 Automatic            Manual

Ideally suited for integration with control centre or Head-End

**IT FITS ANY STANDARD 19" INSTRUMENT RACK!**  
 and is ONLY 24 1/4" high. Completely Enclosed!

Camera: 2:1 - Ext. Sync Supplied

For Further information contact

**CONCISE**  
**INSTRUMENT**  
**DESIGN** LTD.  
 37 NIAN TIC CRS. DON MILLS, ONTARIO, CANADA  
**416 445-4555**

him, should be delighted at the opportunity to be a voice in his community . . . and make money at it besides.

**Start with the Program**  
**. . . Not the Equipment!**

All right, you say, how do I get started? *NOT* by inviting your friendly equipment supplier or manufacturer in and saying to him, "What do I need to originate?" At the moment he doesn't know any better than you do, what equipment you need. But you can bet, with that kind of an entre' he'll try to sell you everything he can.

The first thing you need to do is figure out what you want to originate. You will notice I said "what," meaning "what will the program be about." It needn't be complicated. Even an automatic time and weather machine is local origination on one channel, if you think about it. Particularly if your time and weather machine is one of those that will permit you to insert slides of local scenes and businesses, or motion picture films of local interest.

But let's suppose you want to do more complex origination than that. You still need to know what type of program your community needs and wants. Sit down in front of a good receiver connected to your own system, and watch it every evening for two weeks and take notes. Ask your wife or secretary to do the same thing during the daytime.

As you make notes you should keep these questions in mind: "Which programs do I like best? What kind of programs would I like to see that I'm not seeing? Are some nights of the week full of programs and other nights dead? Are the programs we're getting really of interest to our community? Is the news relevant to our people? Would our viewers like to see how-to-do-it programs, or those geared to technical training? Discuss the matter with your friends and business acquaintances every chance you get.

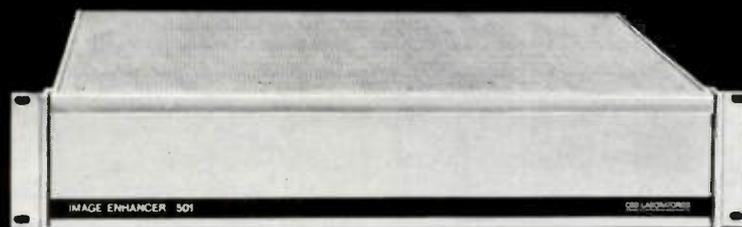
You don't need a rating bureau to judge the pulse of your own community. Send out form letters with questions so stated that the person filling it in can make a simple check (yes or no) after each question. Enclose a stamped, self-addressed envelope if you want to get a good response. Send these to both non-subscribers and subscribers. You may stimulate enough interest to get non-subscribers to hook up to see what's going on.

Once you get a sampling of some of the things your community would like to receive that they're not getting, you can begin to develop those which might by locally originated economically.

**Origination Staffing**  
**Need Not Be Expensive**

Try locating people in your community who can help you. Look for volunteers or people to moonlight at a modest fee . . . people who either are, or were, in the entertainment business. Such people may be with the local radio station, or a little theatre group . . . or

# The enhanced Enhancer



The CBS Laboratories' Mark II Image Enhancer — with "crispended comb filter" — delivers spectacular picture clarity. You have to see it to believe it.

The Mark II is the finest yet! It provides truly effective enhancing of both vertical and horizontal detail.

A remarkable CBS Laboratories' innovation, "crispended comb filter" separates chrominance signals from luminance signals — to permit luminance enhancing without chrominance

signal distortion. No degrading of color quality.

What's more — the exclusive "crispending" technique works like an electronic retoucher . . . eliminates unwanted noise . . . preserves picture detail enhancement.

Results? Spectacular! Details are sharper. Colors are cleaner. Pictures have unbelievable clarity.

Models for all cameras and NTSC program line.

You have to see it to believe it. Write us for a demonstration. Or better yet, call us: 203-327-2000.

PROFESSIONAL PRODUCTS

## CBS LABORATORIES

A Division of Columbia Broadcasting System, Inc. 227 High Ridge Road, Stamford, Connecticut 06905



# FREE TRIAL OFFER

\*See coupon below

*New*

## SPECTRUM ANALYST

WIDE COVERAGE: 4.5 to 300 MHz

THE SECOND GENERATION CATV/MATV TEST INSTRUMENT

NOW you can measure gain, loss, response, VSWR, and much more without an oscilloscope.

### Fast and easy to use

Measure virtually all vital characteristics of active or passive CATV/MATV components, amplifiers, splitters, B.P. filters, cables, etc.

### Measure return loss and VSWR

Built-in 75 ohm bridge.

### Calibrate field strength meters

Wide band facility can check field strength meter calibration faster than any other known method.

### Determine the location of opens or shorts

The wide band signal facilitates the location of cable shorts and opens using field strength meter readings. The distance to the short or open can be determined from graphs supplied with the Analyst.

### Make many other measurements

Without the use of elaborate equipment such as oscilloscopes, sweep generators, switchers, standard signal generators, etc. All that is required is a field strength meter.

### Use it in the field or lab

Portable. Weighs only 7 pounds including carrying case and rechargeable batteries.

SADELCO, INC. 299 Park Ave., Weehawken, N. J. 07087

\* For immediate free trial call (201) 866-0912 collect. (Ask for Harry Sadel)

Please contact me for free trial offer.

Please send descriptive brochure.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_

TVC-2

a photographer may prove to be a prospect. Get all these people together and have a bull session on how you might produce the kind of show or shows you want to originate.

Then draw up a plan of attack. It needn't be grandiose or complicated. Suppose you want to do a program on quail shooting. Either one of your friends can go out in the field with his movie camera and get some action shots of hunters, guns, dogs and quail in flight, or one of the ammunition companies might loan you some film. The rest can be done in the room you've chosen for origination, with someone in hunting clothes, explaining what type of shells to use, where to go to find the birds, how to lead the shots, etc. Maybe the props will be as simple as a blackboard with some chalk diagrams on it.

Local merchants may furnish clothing and furniture in return for program credits. The art department at the local high school or junior college can help with backgrounds and scenery. Any good amateur photographer knows at least the basics of lighting.

Now that you have an idea of the kind of program you're best suited to originate, you can call in the origination equipment supplier and explain what it is you'd like to do. Your needs for equipment will vary with the type of program you plan. If you're going to cover city council meetings, you need portable equipment that you can carry in a car or station wagon. If you're going to do football games, you need long zoom lenses and sturdy tripods. If your goal is panel discussions, you need studio equipment and you don't need portable gear at all.

As a generalization, don't buy any more equipment than the absolute minimum you need to produce the type program you wish. A common mistake many people make in buying origination equipment is to buy everything they think they'll ever need so they'll be equipped to meet all circumstances. Unless you've got a lot of money to spend, you'll never make it.

Be like an old time craftsman. Buy only those tools you need and buy the very best you can afford. Work with them and live with them until you've exhausted their possibilities and you are being hampered with their limitations. Then go out and buy the other things you need. By that time you will know exactly what you want. The manufacturers will still be willing to sell you the few pieces you want to add, and by then there might even be new models available.

After you have the idea, the people, the plan and the equipment you need to originate . . . don't try to overdo it. You will be lucky if you get one program on the cable a week in the beginning. Remember, even people with experience at program production may take a minimum of four or five hours rehearsal to produce one hour of program.

Be as polished as you can with your effort before you show it, but don't try to match a Hollywood production, you'll never get it on the cable. Besides, the people in your community are your friends. They will be tolerant if you goof up once in a while. Nor, if it is good, should you rest on your laurels.

# Planned non-obsolescence.

Sylvania's CATV transmission equipment doesn't go out of date.

Its modular design makes sure of that.

You can start out with our 50-to-270 MHz wide-spectrum trunk amplifier. When required, you can add total automatic control and bridging amplifiers. An extra-service module can be added to give sub-VHF for bi-directional or long-haul low-loss transmission, band multiplexing, or fault reporting.

In addition, we've got a complete line of other distribution equipment, including a family of

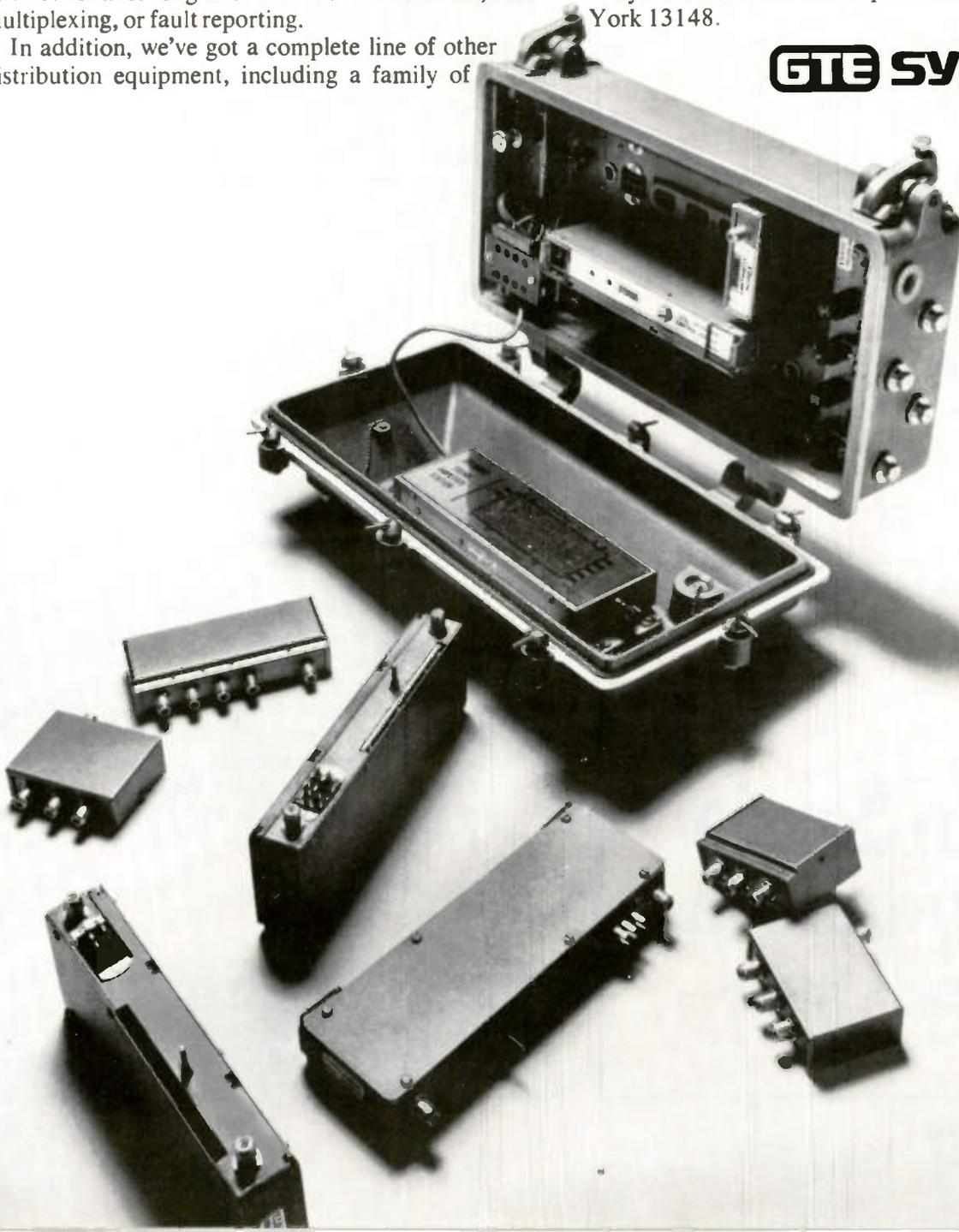
line amplifiers, directional coupler multi-taps, and other outdoor passive devices.

All outdoor equipment is housed in rugged cast aluminum housings with total environmental seal and electromagnetic interference protection.

Sylvania CATV equipment has the future designed in, so you'll never have to design us out.

Sylvania Electronic Components, Seneca Falls, New York 13148.

**GTE SYLVANIA**



# 4 Ways

## Stan Socia Can Help You Have A Profitable CATV Operation.

1. Expert Consultation At No Obligation
2. In Depth Field Engineering
3. Excellence In Construction
4. Individual Services or A Complete Package

We're one of the largest, most experienced CATV construction firms in the nation . . . and we'd like to help you build or modernize your system! We're independent, we're nationwide, and we have the know-how to build the finest quality and highest profitability into your system.

If you're going underground, our professional crews can handle that, too, no matter how complicated the job . . . and you'll get a system that requires an absolute minimum of maintenance.

**If It Has To Do With CATV, Call On Stan Socia.  
We're Ready To Serve You . . . With The Best.**

# Stan Socia Corporation

217 W. Houston, Tyler, Texas  
Area Code (214) LY3-0911

Inquire around and ask the people if they saw it and what their honest opinion was. Be guided by that opinion on future work. If no one that you talk to saw the program on the cable, run it again. You can do that, the broadcaster cannot.

### Program Efforts Should Produce Some Income Right from the Start

Right from the very first you should try to carry advertising with your origination even if it is only a few credits at the end of the program. Your local merchants would love to advertise on television but can't afford the thousand or so dollars a minute the commercial broadcaster charges.

Whatever you do, don't let the advertiser dictate the kind of program you produce. That's what's wrong with network television. Instead, go out and seek local advertisers suitable for the type of program you're doing. Obviously, you wouldn't put ads on frilly women's wear in a program on cave exploring.

Don't be afraid to charge advertisers for your effort. That's how you'll recoup your costs of production. The advertisers are used to paying stiff fees to the newspaper and local radio station. Your message will carry more impact because it is visual and it is moving. The going rate among those cable systems already advertising seems to be about \$6 per minute. I think this is too low. It may be the quality of their origination was so poor they felt they couldn't charge more.

There is no good reason why an advertiser shouldn't be willing to pay \$40 per minute, if his ad is carried by an originated program with strong local appeal. After all, if you can offer him an audience of 3,500 subscribers, that's more than some small magazines have.

A final word of advice. I would not recommend beginning to originate in color. Unless you have been blessed with a highly skilled staff you will have enough to do dealing with scripts, lighting, production, audio control, personnel, and video . . . without trying to keep the color correct. For one thing, you're sitting on the cable adjacent to a network channel using hundreds of thousands of dollars worth of color equipment and you'll suffer by comparison.

Also, if you will stick to black and white origination in the beginning, you'll avoid having to watch the color temperature of your lighting, keeping a harmonious balance between the clothing of the performers and the background, and trying to keep all your equipment color balanced. Once you're an old hand at origination, the addition of color will spark up your productions and give greater advertiser appeal.

So why are you waiting? April's on its way. So originate! 

**EDITOR'S NOTE:** What is your opinion? Do you agree or disagree? Are you concerned about something in the CATV industry? Send your comments to: Editor, TV Communications, 1900 West Yale, Englewood, Colorado 80110.

## HELICAL SCAN VTR PROCESSOR SYSTEM

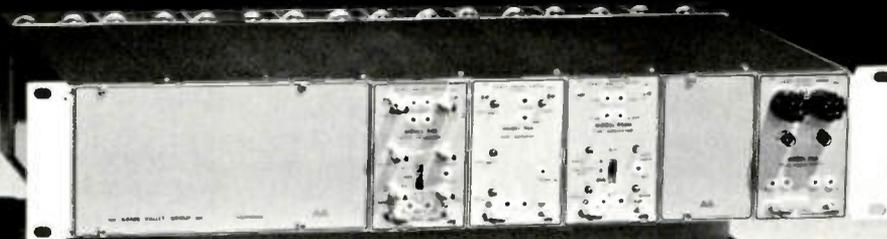
940H PROCESSING SYSTEMS RELIABLY REPLACE ALL SYNC AND BLANKING PULSES MISSING DURING THE PERIOD OF THE HELICAL SCAN (SLANT TRACK) VTR DROPOUT. BY INSERTING STANDARD PULSES INTO THE VIDEO SIGNAL, DUBS TO OTHER HELICAL SCAN OR QUADRUPLEX MACHINES CAN BE MADE. IN ADDITION, SYNCHRONIZING PULSES AVAILABLE FROM THE 950H SYNC GENERATOR CAN BE USED TO DRIVE CAMERAS AND SPECIAL EFFECTS SYSTEMS FOR TITLE INSERTION, ETC.

FOUR SYSTEMS ARE AVAILABLE, ONE FOR MONOCHROME AND THREE FOR COLOR. MODEL 940H-4 COLOR SYSTEM EMPLOYS A MODEL 955 COLOR LOCK AND COUNTER TO PROVIDE THE USER WITH A COMPLETE COLOR SYNC GENERATOR SYSTEM WHEN PROCESSING IS NOT REQUIRED.

ALL MODELS EMPLOY THE SAME TYPE MOUNTING FRAME. THE MONOCHROME VERSION (940H-1) CAN BE CONVERTED TO COLOR AT ANY TIME BY INSERTION OF A 955, 962, OR 966 MODULE.

MODEL 940H-1 . . . . .	\$1,390
(Monochrome)	
MODEL 940H-2 . . . . .	\$1,590
(Color w/Burst Amplifier)	
MODEL 940H-3 . . . . .	\$1,830
(Color w/Color Lock)	
MODEL 940H-4 . . . . .	\$2,065
(Color w/Complete Color Sync Gen)	
AGC OPTION (MODEL 906)	
FOR ANY SYSTEM	\$500

GVG PROCESSORS CARRY A TWO YEAR WARRANTY AND ARE AVAILABLE ON A 30-DAY TRIAL.



THE GRASS VALLEY GROUP, INC. 

FOR ADDITIONAL INFORMATION, CONTACT GRAVCO SALES, INC.

6515 Sunset B.vd.  
LOS ANGELES, CALIF.  
(213) 462-6618

Station Plaza East  
GREAT NECK, N.Y.  
(516) 487-1311

1312 West Northwest Highway  
ARLINGTON HEIGHTS, ILL.  
(312) 394-1344

2626 Mockingbird Lane  
DALLAS, TEXAS  
(214) 352-2475

1644 Tullie Circle, N.E.  
ATLANTA, GEORGIA  
(404) 634-0521

# Advertising Sales: Cashing In on Origination

Here's help for the cable operator who wishes to establish an advertising rate card and sell his way out of local origination losses. Third in a series of four articles.

*By Gene G. Cook  
Manager of Sales/Programming  
General Electric Cablevision*

In the past, two issues of *TVC* we have discussed programming concepts for the typical cablecaster. This month let's delve into the most difficult and challenging aspect of local origination . . . advertising sales.

By now you have analyzed your community, decided upon a daily/weekly program format and should be prepared to sally forth down Main Street to offer your wares to the local merchants. And this, dear friend, is where we come face-to-face with the realities of life.

In spite of professed interest shown by various merchants and dealers as you prepare for cablecasting . . . will they sign on the dotted line when the time comes? The only way to find out is to go in, sell him and ask for the order. To do that you need a rate card.

## Structuring a Rate Card

The key to any rate card is simplicity. Round out your spot prices to half or whole dollars. Keep it short and easy to understand. I have seen rate cards that required a Doctorate in mathematics from M.I.T. to decipher.

First, total up your operating

costs for each month, divide this by the number of programmed hours per month, and you will have a reasonably accurate hourly cost.

Most cablecasters already in existence appear to be operating in a range of \$50.00 to \$75.00 per hour. Hopefully, we can all continue to program for several more years under \$100.00 per hour.

Next check your competition. What are the advertising rates of the local newspaper and radio station? If there is a TV station in your city, you'll want to know what they charge. The radio station will probably be your main competitor. His or their rate cards will have the most meaning for you. Use their rate card as a guideline for structure and advertising plans.

What can you charge per spot announcement? The answer is quite simple. What will the local sponsors realistically pay? My guess would be that you'll be able to charge more than the local radio station but less than the daily newspaper or TV station.

Cablecasters are presently charging, and getting, anywhere from five dollars to fifty dollars per 60-second spot, more in some

cases. The average rate seems to fall within a range of \$7 to \$15 per spot.

Let's assume that your operating costs are \$65 per hour. In each hour you can comfortably handle at least ten 60-second spots or ten positions. Obviously, you must sell all ten positions at \$6.50 each to break even. But do not assume that you will sell all available positions. Sales amounting to 60% of availabilities is more realistic. In that case, you will require \$10.85 per position just to break even.

If that price per 60-second spot is too high in your town, perhaps \$7.50 is more realistic and obtainable. If this be true, your 60% penetration will bring you \$45.00 per hour, and you have just lost 20 bucks. Don't despair; this is only an exercise in a conservative approach to the subject. Sports and other specials will bring a much higher price and compensate for the possible loss.

As mentioned in previous articles, few, if any, cablecasters can expect to break even the first year. Remember one thing, when you consistently sell a large percentage of your daily availabilities . . . raise the rates!

While discussing cablecasting rates with various operators, I

have heard a few state that they cannot possibly afford to sell a commercial for less than \$20 or \$25. If you can obtain that much, or more, good for you! But, what do you do if the local merchants really can't and won't pay more than \$12 per spot? I suggest you adjust your rates to the \$12 average and then sell as much as you can wherever you can.

Trim the fat from your program schedule. Drop shows that are not pulling . . . combine others into a magazine format. Do as many sports and other specials as possible. These can be sold at premium rates. Better to be three-fourths sold at \$12 per spot than one-tenth sold at \$20 per spot. During the first year, it is not how much are you going to make, but how little are you going to lose.

### Create Some Ad "Packages"

One of the best ways to satisfy local sponsors and make it easy on yourself is to sell package plans on long term contracts. Such weekly plans have various names, but they all accomplish one thing: local sponsor satisfaction.

Here's an example: One 60-second spot and one 20-second spot every day (5 days) or every other day on a *rotating* basis within your basic program block. The sponsor receives the benefit of having his commercials rotated throughout the days and weeks, thus giving him more "impressions" to more people. He also has a realistic advertising plan for a flat rate each week. Most local sponsors prefer this method.

Often one will say to you, "I can afford \$50 per week, what can you do for me?" There are benefits for you too . . . simplified billing, ease of scheduling, etc. You also avoid the age-old problem of having your best shows (such as, news and sports reports) fully sold and the rest of your daily schedule unsponsored.

Try to stay away from selling one spot, one or two days a week at a guaranteed time . . . usually adjacent to the news. A few sponsors can tie up your best time periods this way and the rest of your schedule goes begging. Unless you receive a high premium rate

for those guaranteed times, it may not be worth it.

### Sports and Specials Sell

Live or taped sports and other community specials such as parades, festivals, grand openings, fairs, election results, etc., will command a much higher price. You should be able to obtain at least double your operating costs for programs of this nature.

For sports, especially football and basketball, sell the entire schedule to four or six sponsors (non-conflicting). Plan your schedule early; then offer each sponsor an open and close billboard (credit line or sponsor identification), short audio mentions and forty or sixty second spots on a rotating basis within each game.

Have the sponsors share the cost of a weekly newspaper ad promoting the game with their names listed, of course. Then sell the pre-game and post-game shows plus the adjacent spots. If you don't make a profit on that, you never will.

Before attempting to sell any sponsor, analyze his business. Many advertising salesmen have been turned down because they failed to understand the local merchant's needs and objectives. Don't ever walk in and say — "Would you like to buy *some* advertising?" *Be specific*; have several ideas ready to discuss.

Tie the idea into his store and his customers. Utilize the seasons of the year, etc. Have a sample commercial outlined for him that was created especially for his business. Use visual aids . . . after all, you're in a visual business.

If you are uncertain about his needs and wants, have a conversation with him; don't try to sell, just ask questions and listen. Return a few days later with a specific idea and plan. If you do, you'll greatly increase your sales.

You are not going to be a winner with all advertisers. If the sponsor is unhappy due to lack of results, consult with him about it. Don't ignore the problem. Make every effort to help him obtain advertising results. Change the copy; change his spots to another

time segment or show.

Once a local merchant cancels because of poor results and a feeling of being ignored, you have lost his advertising dollars for several years. This can be especially damaging to you in small or medium size towns where many merchants gather together at social clubs.

### Who Will Do the Selling?

The size of your system and the size of your community will determine your need for advertising salesmen. In most systems the manager and program director share this responsibility. This manner of handling sales seems rather common, especially in smaller systems.

You might enhance your sales efforts by hiring a part-time salesman or saleswoman. The right school teacher or housewife will do a good job for you. They can easily add to their regular income through a "commission only" arrangement.

Radio stations normally pay 15% commission on collective sales. Television will graduate the scale from 5% up to 7½ to 10% on time sales. Do not pay commission on commercial or production costs.

If you plan to hire a full-time salesman, the usual arrangement is to guarantee a weekly draw against commissions or a salary plus commissions. Sales commissions paid by cablecasters will probably be in the 7 to 12% range. I suggest that you structure the commission so that the more the salesman sells, the higher his commission. Example: 7% on the first \$250; 8% on the next \$250; 9% on the next \$250; 10% on the next \$750, etc., etc. What you pay a salesman will of course depend on the economic factors in your community. During the first year, it may be necessary to pay a high commission, but if your salesman is a good one . . . hang on to him!

### Know Your "Product"

In any selling endeavor, the most important tool is product knowledge. In your case, the



# MONTEREY PENINSULA TELEVISION

(Division of Alarm Corporation)

2455 Henderson Way — Monterey, California 93940  
Telephone: (Area Code 408) 373-4171

## ANNOUNCEMENTS

### LOCAL RATE CARD #1 EFFECTIVE JANUARY 1, 1971



	PRIME CLASS AA 5:59 PM TO 11:00 PM				CLASS A SIGN ON TO 5:59 PM			
	60	30	20	10	60	30	20	10
1-99	Fixed 37.50 Preempt 32.50 ROS .....	32.50 30.00 .....	30.00 27.50 .....	19.00 16.50 .....	18.50 16.50 15.00	16.00 14.50 13.00	15.00 13.50 12.00	9.25 8.25 7.50
100-199	Fixed 35.50 Preempt 30.50 ROS .....	30.50 28.00 .....	28.00 25.50 .....	17.50 15.00 .....	18.00 16.00 14.50	15.50 14.00 12.50	14.50 13.00 11.50	9.00 8.00 7.25
200-299	Fixed 33.50 Preempt 28.50 ROS .....	28.50 26.00 .....	26.00 23.50 .....	16.50 14.00 .....	17.50 15.50 14.00	15.00 13.50 12.00	14.00 12.50 11.00	8.75 7.75 7.00
Over 300	Fixed 32.00 Preempt 27.00 ROS .....	27.00 24.50 .....	24.50 22.00 .....	15.50 13.50 .....	17.00 15.00 13.50	14.50 13.00 11.50	13.50 12.00 10.50	8.50 7.50 6.75

Rates on request for triple AAA special events programming including sports, election returns, parades, and other spectacles.

## PROGRAMS

### LOCAL PROGRAM RATES



	Hour	1/2 Hour	15 Min.	10 Min.	5 Min.
6:00 - 11:00 PM					
1	200.00	120.00	80.00	70.00	60.00
26	190.00	114.00	76.00	66.50	57.00
52	180.00	108.00	72.00	63.00	54.00
104	170.00	102.00	68.00	59.50	51.00
156	160.00	96.00	64.00	56.00	48.00
260	150.00	90.00	60.00	52.50	45.00
SIGN ON - 6:00 PM					
1	120.00	72.00	48.00	42.00	36.00
26	114.00	68.50	45.50	40.00	34.50
52	108.00	65.00	43.00	38.00	32.50
104	102.00	61.50	40.50	36.00	30.50
156	96.00	57.50	38.00	33.50	28.50
260	90.00	54.00	36.00	31.50	27.00

### Weather Channel Rates

Rates for 8 hours per day between the hours of 8 A.M. and 12 Midnight.

	(Except when Cablecasting)
1 day	\$ 20.00
2 days	\$ 40.00
3 days	\$ 55.00
4 days	\$ 70.00
5 days	\$ 85.00
6 days	\$100.00
*1 week contract	\$105.00

(Plus \$15.00 per day thereafter.)

\*Discount is applicable to any time used within a contracted period not to exceed 3 months.  
Prices do not include production of slides or posters.

## SAMPLE RATE CARD

### Weekly Local Rates

### NO. 1 EFFECTIVE APRIL 1, 1971

	1 X	3 X	5 X	10 X	20 X
60 sec.	\$15.00	\$10.00	\$8.50	\$7.50	\$6.00
30 sec.	10.00	8.50	7.00	6.00	5.00
10 sec.	7.50	6.00	5.00	4.50	4.00

Merchants Plan I: One 60 sec. announcement and one 30 sec. announcement each day, Monday through Friday — rotated within basic daily program schedule.  
Flat rate — \$65.00 per wk.  
(Minimum contract 8 weeks)

Merchants Plan II: One 60 sec. announcement and one 30 sec. announcement three days per week — rotated within basic daily program schedule.  
Flat Rate — \$47.50 per wk.  
(Minimum contract 8 weeks)

10/10 Plan: Ten 10 sec. announcements each week . . . minimum contract 10 weeks. \$38.50 per wk.

Discounts: 26-week contracts receive 5% discount.  
52-week contracts receive 10% discount.

Sports and other specials . . . Rates on request.

Production charges (film, slides, art work, rehearsal time) . . . . . At Cost.

Directly above is an example of a simplified rate card (prepared by the author). At the top is a reproduction of the rate card used by the cable system in Monterey, California. That system surveyed a sample group of subscribers to determine viewing habits, buying power, etc. . . . and uses the findings as a sales tool. Another sample rate card is shown on page 49 of October 1970 TVC.

product is ultimately not programs, but people . . . your viewers. Know who they are, what they are, and where they are.

Know your strong points. Why should the prospective sponsor buy advertising on your system? Many reasons.

You offer the complete advertising or message media . . . sight and sound. Your system is programming specifically to the very people who are the local merchants' customers. You offer a rifle, not a shotgun.

There is a certain intimacy created in local origination that brings trust and believability to your sponsor's messages. You are offering an advertising service that is unavailable anywhere else in town . . . and when done properly, cannot be equalled in effectiveness. Add to all of this the right price, and you have a signed contract.

Only two factors can possibly be considered drawbacks: (1) amateurism in your early production efforts and (2) lack of a large enough audience to be truly effective. Both obstacles can be overcome.

Every cablecaster will go through a period of trial and error in local production. Mistakes and badly directed shows are bound to happen. Have your people practice with the equipment as much as possible.

Tape record different types of shows using all available visuals. You can do this in the evening, or perhaps early morning. Run these tapes back just as you would in a classroom.

Discuss the errors and how they can be corrected. Over a few short weeks your ability to produce, direct and switch a local show should greatly improve.

Obtaining a large enough share of your available audience will require interesting, meaningful local programs, and a good deal of promotion. You are not only going to sell advertising, but you must also advertise to let people know what you have to offer.

Your own cable channel is the most economical way to do this. But, I would plan on using newspaper and direct mail. You have a tremendous advantage over other

mass media in your town. You have the name and address of every viewer.

Monthly program schedules can be mimeographed and bulk mailed to every subscriber, or you can insert them in your cable bill. Many cablecasters are now doing this and selling small printed ads within the program schedule. They are paying for the cost of printing and mailing and most are showing a profit for their effort.

## Regional & National Ads

So far, we have emphasized local sales; let's take a look at regional and national advertising.

Regional accounts usually include beers, soft drinks, meat packers, car dealers, tire companies, bakeries, gas and electric companies, etc. Agencies in a large city within your area will handle these various accounts. These agencies usually buy time only within that region, not on a national scale.

The regional accounts are going to show much more interest in cablecasting than the large national accounts. In past months there has been a great deal of talk about the interest and money being allocated to cablecasters by the national advertisers. My personal opinion is that we are all in for a long, long wait before the national accounts begin spending appreciable dollars in cable.

Yes, there is interest and some experimentation, but that is the agency's job. They must know what new forms of mass communication are developing and how it can benefit their accounts.

No national agency or advertiser is going to become really interested until we can prove demographics and a reasonable share of the audience. Most agencies are interested in numbers, and if you don't have the numbers, you won't make a sale.

At present, it is not economically feasible for national or regional agencies to buy time on a cable system. There is no way that an agency can justify the manpower and expense required to contact, analyze, purchase time, process paper, and then pay individual cable systems for time.

### CHANNEL 5

● LIVE PROGRAMS

Digest of rate card

Hour	30 Min.	15 Min.
Class A — 8 a. m. to 7 p. m. daily		
\$100.00	\$55.00	\$30.00

● LIVE, PRIME TIME PROGRAMS

Digest of rate card

Hour	30 Min.	15 Min.
Class AA — 7 p. m. to midnight		
\$115.00	\$62.00	\$37.00

● REMOTE PROGRAMS

Digest of rate card

Hour	30 Min.	15 Min.
Class AA — 7 p. m. to midnight		
\$175.00	\$95.00	

(Above are time charges only. Talent and special

### CABLEVISION BINGO

#### Channel 5

Sponsorship rates per week:

Less than 13 week period	\$27.50
13 week period	\$25.00
26 week period	\$22.50
52 week period	\$20.00

Cost of Gift Certificates ..... \$5.00  
(One gift certificate to each bingo winner; average four winners daily.)

Cost of 500 Bingo cards ..... \$1.00  
(The viewer must pick up Bingo cards at advertiser's place of business.)

Gift certificates exchanged for advertiser's merchandise.

### Advertising Contract



210 W. Otterman Street, Greensburg

\_\_\_\_\_, 19\_\_\_\_

The undersigned agrees to purchase Television advertising time from WHJB Cablevision as follows:

\_\_\_\_\_ minutes time each week for a period

\_\_\_\_\_ weeks from \_\_\_\_\_ 19\_\_\_\_

to \_\_\_\_\_ 19\_\_\_\_ and to pay for the same at the rate as specified on current rate card

WHJB Cablevision reserves the right to edit or reject any Cablevision advertising.

\_\_\_\_\_  
Name of firm

\_\_\_\_\_  
Address

by \_\_\_\_\_  
Advertiser's signature

\_\_\_\_\_  
WHJB Cablevision representative

### Video Shopper

#### CHANNEL 4

Time And Weather Station

24 hours a day viewing . . . 750 exposures

Rate for 1 card insertion ..... \$8.00\* daily

Rate for each additional card ..... \$6.00\*\* daily

Programming consists of Time, Weather, Public Affairs announcements, FM music and Advertiser's message.

#### Community Bulletin Board

#### CHANNEL 11

24 hours a day viewing . . . 180 exposures

Rate for 1 card insertion ..... \$12.00\* weekly

Rate for each additional card ..... \$10.00\*\* weekly

(Cablevision bonus: 7 days for price of 5)

\* Special art work at cost (\$3.00 per hour).

\*\* Special photographs at cost (\$2.00 each).

Mon. thru Fri.: 12 Noon or Evening

News, only ..... \$12.00 per day

Sports, only ..... \$10.00 per day

Weather, only ..... \$ 6.00 per day

★

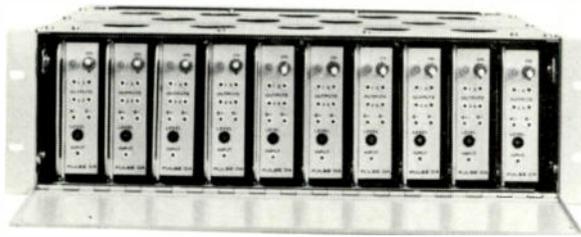
Special Package

Entire Noon or Evening Program

\$25.00

Above are three pages of a six-page (panel) rate card, and a special sheet with Bingo sponsorship rates, used by the 9,200-subscriber cable system in Westmoreland County, Pennsylvania. One full-time salesman is employed. A tear-off contract is part of the card. A duplicate of the contract stays with the card and is given to the advertiser. Rates are higher than local radio and newspaper rates.

# We'll fill your distribution needs



## STANDING UP



## or lying down

Integral power supplies and solid-state plug-in modules mean these Cohu distribution amplifiers—9800 Series—assure system reliability and provide full flexibility.

You can order any combination of SDA, VDA or PDA circuit modules for easy insertion into a vertical— $5\frac{3}{4}$ "—or horizontal— $1\frac{3}{4}$ "—frame. Each front panel has an on/off switch with indicator and quick access test points.

The subcarrier distribution amplifier amplifies and distributes the 3.58 MHz subcarrier. Amplitude is adjustable; fine and coarse phase adjustments from  $0^\circ$  to  $360^\circ$  range continuously adjustable over  $90^\circ$  range in four switch selected quadrants.

Cohu's video distribution amplifier can handle monochrome, color, composite and non-composite signals with optional sync-adding capability. Video gain is adjustable from +10dB to -1dB.

The pulse distribution amplifier regenerates and distributes horizontal, vertical, blanking and sync pulses for monochrome or color studios. Output level is adjustable from 3.5 to 4.5 volts with an output delay of less than 60 nanoseconds.

For full details contact your nearest Cohu representative  
or call Cohu's TV product line manager in San Diego.

See us at the NAB Show, Booth Number 325, Chicago Hilton Hotel

## SUBCARRIER, VIDEO & PULSE distribution amplifiers from

**COHU**  
ELECTRONICS, INC.  
SAN DIEGO DIVISION

BOX 623  
SAN DIEGO, CALIFORNIA 92112  
PHONE 714-277-6700  
TWX 910-335-1244

### Cooperate for Group Sales

Cablecasters must join together and organize their own regions. Gather together all of the cablecasters within your area. If there are only a few, then expand it to include the entire state or section of the state.

Next, find a station representative who is now calling on the regional and national agencies. He in turn will help you form a group rate card. Now, when the "rep" talks to an agency, he has some real strength: You can offer demographics and share of audience in large enough volume to mean something. The agency is happy because they can buy "local" advertising with one rate card and one billing.

I hope every cablecaster will give serious thought to organizing a regional association for sales. After all, if you have a system with 6,000 subscribers and can prove that you consistently have 10% of the audience, that is still only 600 TV homes; if you could prove 20%, you would still only have 1,200 TV homes... hardly enough to get an agency time buyer excited. In fact, they just might laugh in your face. So, join together. Then those numbers begin to mean something.

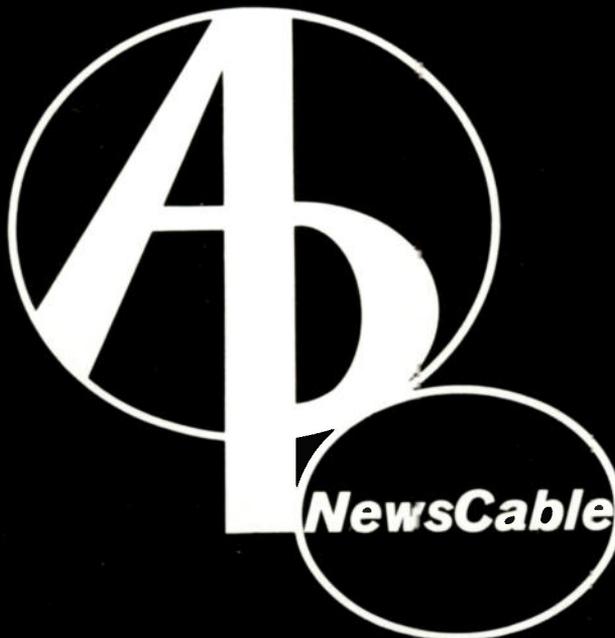
Selling advertising on your cable system will probably be the most difficult portion of your local origination endeavors. The first year it will be an up-hill battle. Don't expect to sell an account and then forget about him. All of your sponsors will require weekly service, change of copy and from time to time, reselling. It is a real challenge, but one that will be extremely worthwhile. 

EDITOR'S NOTE: Mr. Cook will conclude his four-part series on CATV local origination next month. That article will cover the production of local commercials, will discuss additional ways to generate revenue from cablecasting facilities, and will include a summation of cablecasters' experiences. Reader comments are welcomed.

"There are  
only two forces  
that can carry light  
to all corners  
of the globe

—the sun in the heavens and  
The Associated Press  
down here"

—Mark Twain.



# AP DOES IT

Starting with little more than a camera aimed at our teletype, the first and only continuing news service for CATV was originated by the only *complete* news service for CATV, The Associated Press. As a result, AP now serves more CATV systems than all other news related organizations combined.

And we're still growing, almost as fast as you are and that's almost as fast as we can add improvements.

For example, as this ad goes to press, we're in our fourth generation of equipment and the changes keep coming, as we keep adding to the quality and sophistication of our CATV news delivery.

Today, we even have a new name: AP NewsCable, symbolized by two joined discs representing "the sun in the heaven and The AP down here" based on Mark Twain's tribute to AP scope and size, and to remind you of AP's long tradition of reliability.

But the name itself, "NewsCable", comes from a more specific AP value related directly to CATV—a new computerized AP news wire, created exclusively for CATV.

We call it AP NewsCable, a good name, we think, for the one cable TV news service which does it all—the *complete* news service for CATV.

## **AND ONLY AP NEWSCABLE DOES IT ALL FOR CATV!**

The complete news service with fully automated reports from the world, nation and your state... plus sports, financial news and features 24 hours a day, 7 days a week.

A faster, cleaner, more readable display, via a special computerized wire used exclusively for CATV.

The most economical and versatile screen-splitter to give you more local input flexibility. A supplemental teletype hook-up that provides 80,000 words of daily news copy for your local live newscasts.

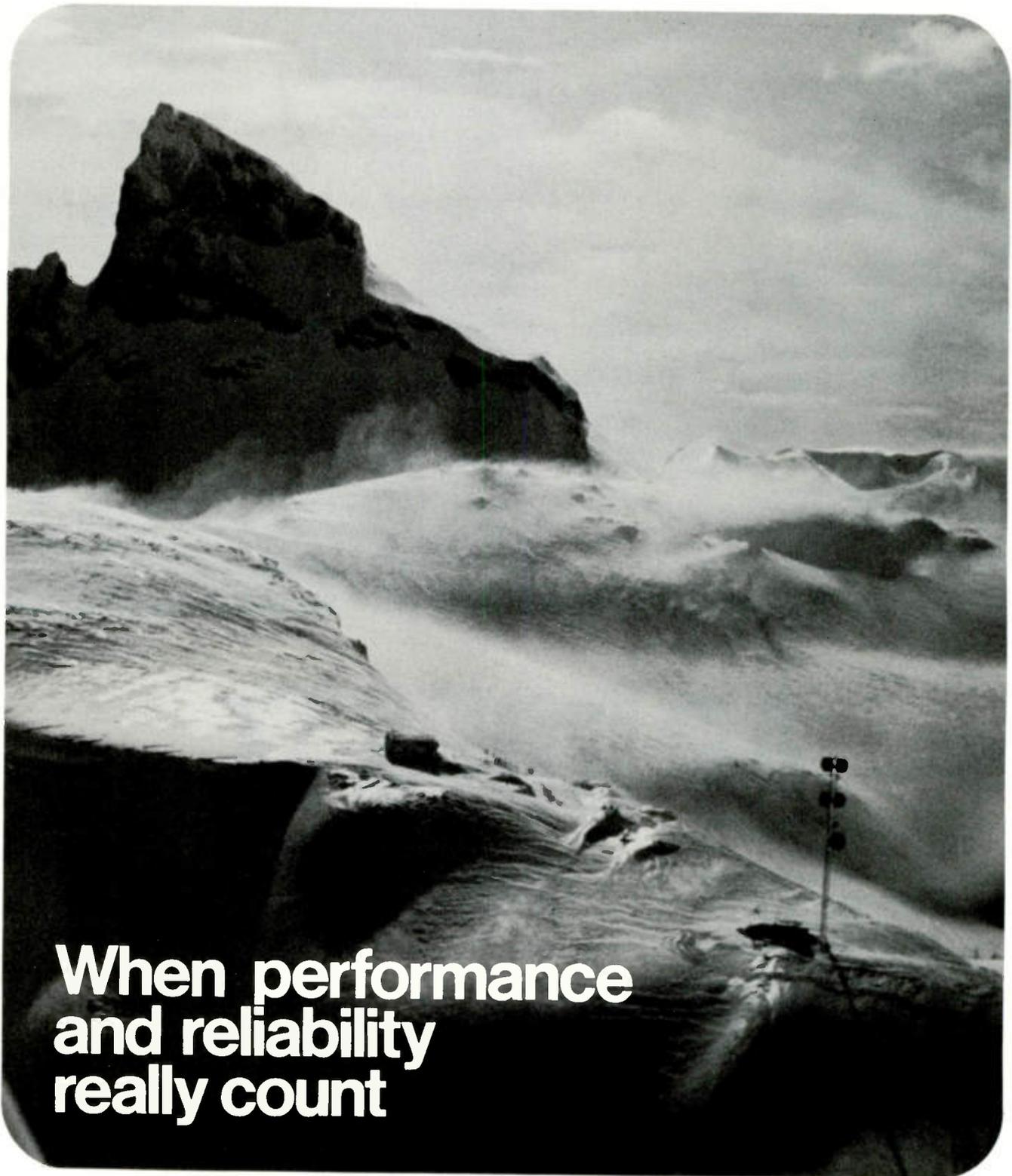
PhotoColor, a colorslide news picture service to add lively, timely, graphic interest to your locally originated newscasts.

Nationwide maintenance and service by AP's own, on-the-scene technical staff working within your own state.

A complete financial news service including daily stock quotations.

For all that AP NewsCable can do for you, please call Bob Sundy  
(212) 262-4014 or write AP NewsCable, 50 Rockefeller Plaza, New York 10020.



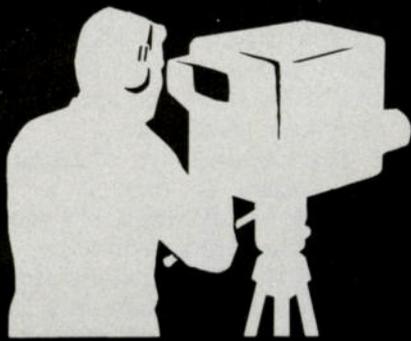


**When performance  
and reliability  
really count**

**...depend on the world's most experienced  
independent supplier of turnkey  
microwave systems.**



COMMUNICATION / COMPUTATION / CONTROL



# STUDIO Technology

A special monthly section devoted to TV programming operations in small studios

## The Right Test Equipment For Your Origination System

Part two of a two-part review of the test gear a cable operator should have to keep his studio and control room operating at peak performance.

By Jack A. Rickel  
*Communications Consultant*

Last month, in the first installment of this article, we discussed measurement of intermediate of output signals, using the oscilloscope and vectorscope. Also included was a discussion of equipment and methods for testing geometric linearity, and the use of test charts for measuring resolution.

### The Multiburst Generator

An electronic resolution pattern is produced by a multiburst

generator. During each horizontal line scan, the generator produces a reference white pulse and, in sequence, short bursts, at six different frequencies from 0.5 MHz to 4.2 MHz. The highest frequency, 4.2 MHz, is the upper limit of the video spectrum by FCC broadcast standards and corresponds to about 350 lines.

On a picture monitor the pattern appears as a vertical white line at the left and six sets of vertical black and white lines which are finer and closer together in each set from left to right. This

permits a visual check of the resolution of a monitor or equipment back to a camera. Video preamplifiers in cameras often have specific points at which such a test signal may be injected.

An oscilloscope or waveform monitor can be used with a multiburst signal to measure response. The level of each frequency burst is the same, and this differs from cable sweep testing in that only discrete frequencies are used.

The gray scale on a test chart shows how well a camera can produce its full range of contrast.

Is your  
**CATV**  
SYSTEM  
draggin'  
and out  
of  
sorts



WHAT IT NEEDS  
IS A GOOD SHOT  
IN THE ARM.

**Southern  
Telephone  
Supply Co.**

DISTRIBUTORS

GILBERT, SIGMA, JOSLYN,  
PREFORMED PRODUCTS,  
DOLPHIN, 3-M, DIAMOND,  
SUPERIOR, PHELPS-  
DODGE, U.S. STEEL,  
SOUTHWIRE, GENERAL  
MACHINE, O. F. KINSEL.



**SOUTHERN TELEPHONE  
SUPPLY COMPANY**

P. O. Box 80375 □ Atlanta, Georgia 30341

(404) 457-5512

The scale is in ten steps from black to white and a properly adjusted camera and monitor should show all ten distinctly. This contrast range, by the way, is far less than photographic film can record, and neither has the range of the human eye.

On a waveform monitor or scope, the gray scale is seen as a series of steps of increasing or decreasing voltage. In fact, the electronic equivalent is called a stair-step generator because of the appearance of the waveform.

On a picture monitor, this generator pattern looks like a full screen gray scale, all the steps or graduations of which should be distinguishable with contrast and brightness controls properly adjusted. These controls correspond respectively to gain and pedestal (or set-up) controls on a camera and these terms can be used interchangeably. The gray scale reproduced by a camera is also affected by iris, beam, and target adjustments.

Since the apparent contrast and brightness of a picture monitor are affected by room lighting and viewing conditions, a stairstep generator provides a convenient standard. The steps are evenly spaced so gain linearity (differential gain) can be checked. This is more important in color where the color subcarrier is superimposed on the video signal and may suffer compression as the video level varies.

The effect may be observed by using a modulated stairstep which has a superimposed high frequency carrier. A waveform monitor with a differential gain switch then strips away the stair-step component and displays only the carrier; any variations in gain are easily seen. A vectorscope allows the additional measurement of any carrier phase shift that might be caused by varying video levels.

Thus far we have considered three important test signals: cross-hatch, multiburst and stairstep. Each is available on test charts and from electronic generators. The more common composite charts have the equivalents in circles, resolution wedges and gray scales. Test charts are available on heavy

paper and large glass slides for use with a light-box in the studio and on 2 x 2 slides for slide and film chain testing. A good set of charts and slides costs far less than one electronic generator.

The disadvantage of using only test charts is that it is often difficult to tell whether a problem is in the camera or some other part of the system. Generators, on the other hand, are not cheap, costing in range of \$500-\$1,000 for the relatively simple ones mentioned above. In some cases a generator can be purchased as an accessory plug-in cord to a camera or sync generator, which reduces the cost by eliminating cabinet and power supply.

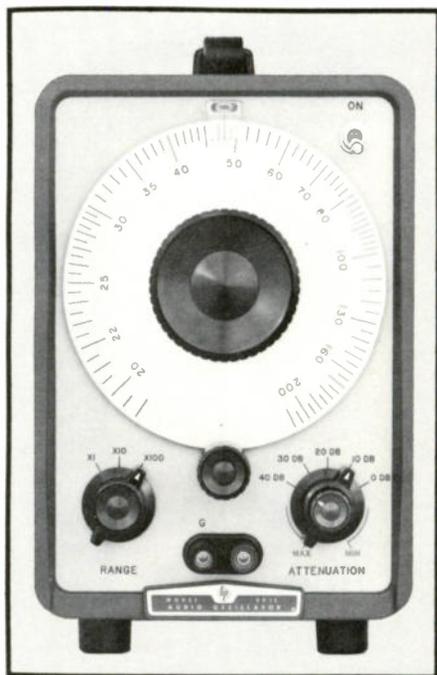
There are inexpensive generators designed for TV set repair. These usually have bar-dot-cross-hatch, color bars, and a stairstep. Output is composite video (picture and sync) both straight and on RF tunable over several TV channels.

Unfortunately their usefulness is rather restricted for several reasons. They cannot be locked to an external sync signal so the crosshatch cannot be superimposed with a ball or crosshatch pattern from a camera. Testing a video tape recorder may be impractical because the generator sync is non-standard, acceptable to receivers but not the more critical requirements of many vtr's.

### Testing Audio Quality

It is an unfortunate circumstance that the complexities of video often overshadow audio to the neglect of the latter. Listener fatigue is a very real thing, brought on by unconscious straining to listen to sound which is muffled, distorted, or has a high level of hum, noise or other spurious content. This problem is only made worse by the generally poor quality of most TV set sound systems, usually on a par with small transistor radios.

The most useful piece of audio test equipment is a variable frequency signal generator. The range should cover from 20 Hz to 20 KHz. Output level should be conveniently adjustable in range



The Hewlett-Packard 201C audio frequency test generator.

of microphone level (around 1 millivolt) and line level (0.5 to 10 volts).

These units which cover 0 to 10 volts in one range require external attenuation for testing micro-

phone preamplifiers and are relatively inconvenient for testing at line level because of difficulty in making precise settings. Output impedance should be low, preferably around 50 ohms but no higher than 600 ohms.

Some inexpensive generators are available for under \$100, which come close to meeting the above requirements. With most of these it would probably be necessary to make simple voltage dividers or pads to reduce the output and impedance to convenient levels.

The generator can be useful in other areas beside testing. A steady tone is useful in adjusting the audio level of a modulator. It is also useful in balancing the VU meter of an audio mixer against the VU meter of a vtr or audio recorder. Most larger studios have such a "cue tone" input normally connected to a mixer input. Before every recording (or broadcast) they check the comparative readings of VU meters on mixers and recorders (or transmitters).

In recording, it is good practice



The Heathkit IG-72 audio generator.

to precede each program with perhaps half a minute of test chart and "zero level" tone. This gives the playback technician standard references for setting his levels. It can also give a visual and spoken identification of the program which follows, comparable to the slate used in film making.

### Signal Level and Waveform

The two primary readings in audio testing are signal level and waveform. Accurate readings of level are needed to measure gain, frequency response, and signal-to-



## DID YOU KNOW

R.H. Tyler can now satisfy all your origination needs?

**The complete Sony Color System** is now available from R.H. Tyler Company

- DXC-5000 Camera
- EV-320 VTR
- CLB-1B Color Adapter
- Camera Control Unit
- Sync Generator

Call us for full information!  
1405, 15th St., Wellington, Texas, (806) 447-5841

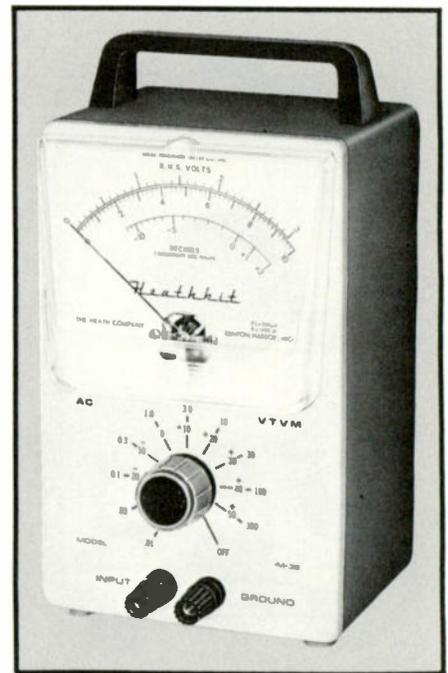
Supplies for all your origination needs



noise ratio. Comparison of input and output waveform is not the most accurate means of measuring distortion but is the easiest.

For level readings, an audio voltmeter, either vacuum tube or FET, is recommended. Although a general purpose meter can be used, an audio meter has much greater sensitivity, flat frequency response, and is calibrated over its entire range in decibels as well as volts. There is at least one such meter, made by Heath, which meets all these requirements yet costs less than \$60 assembled.

Audio distortion can be measured with a low distortion audio generator and a distortion meter. A pure tone is fed into an amplifier or recorder. The distortion meter is connected to the output and includes a very sharp notch filter which can be tuned to remove the input tone only. Everything left is measured quantitatively as the sum of harmonics, hum and noise. Hum and noise can be measured by removing the tone and subtracting their level to give a reading of harmonic distortion only.



The Heathkit IM-38 audio voltmeter.

film to tape,  
tape to tape,  
tape to film,  
film to tape,  
tape to tape,  
tape to film,  
film to tape,  
tape to tape,  
tape to film,  
film to tape,  
tape to tape

Whichever way you want to go, Video Tran makes it easy.

Like the economy of originating audio-visual material on inexpensive video tape and playing it back on readily available 16mm motion picture projectors.

Using our newly developed 3M Company Electron Beam Recording equipment, we can transfer television images directly to 16mm film. And our 1000-line resolution far exceeds present kinescope capabilities. Video Tran makes the ultimate in 1/2", 1" helical or 2" quad transfers easy.

We can help you, whichever way you want to go. Give us a call, collect. We're conveniently located right here in the Midwest.

Video Tran, Inc.  
3200 Westlake Ave.  
Glenview, Ill. 60025  
(312) 729-5540

**Video Tran makes it easy.**

As a rough rule of thumb, however, distortion becomes noticeable to the ear at about the same level that waveform distortion can be seen on an oscilloscope display. Moreover, the scope does not need to be tuned to remove the original tone. The display gives a good clue to the cause of distortion, such as an overload clipping. A general purpose oscilloscope such as used for video testing will serve quite well, although a video waveform monitor will not.

Hopefully, the system operator already has a good volt-ohm-milliammeter or vacuum-tube or FET voltmeter on hand. This is a must. Having an extra one just for origination gear is the best idea. Another inexpensive but useful item is a transistor checker which actually measures beta as well as leakage. The nominal gain of a given transistor type has a wide range while some critical video circuits call for specific gain and will not work properly with a "good" transistor of a different gain.

At a minimum, a good VOM, triggered sweep oscilloscope, and a composite test chart give the technician a fighting chance. As origination facilities grow, or more money becomes available, more test charts and slides, test generators, and so on can be added. 

# MITSUMI'S CATV RECEIVING EQUIPMENT

# CATV

## MATCHING UNITS



MB-4375



MB-5375

## DISTRIBUTORS



MS-2103



MS-1803



MS-1703



MS-1903



MS-1303A

## SERIES UNITS



MW TYPE

## BRANCHING UNITS



MD-1912



MD-1812



MD-1312

## BANDPASS FILTERS



MF-1007



MF-2001 (FM USE)

## FIXED ATTENUATORS



MT-75-3

## LINE BLOCK



ML-1101

**Mitsumi Electric Co., Ltd., a specialized electronic component manufacturer which claims Japan's most modern production plants, has developed "CATV receiving equipment" by mobilizing its total engineering capacity.**

The "Mitsumi CATV Receiving Equipment," which promises clear and sharp images and beautiful video pictures, both in areas of poor reception and in home viewing, are manufactured under outstanding design and processing techniques, scrupulous quality control, strict product inspection and with the use of streamlined and the latest production facilities that are available at Mitsumi—the specialized electronic component manufacturer. They are, of course, superb in reliability, performance and durability. They are products of international quality level that will offer every satisfaction to both domestic and overseas users. Mitsumi CATV Receiving Equipment that

satisfies the most severe specifications, claims a large number of features including:

- flat frequency characteristics
- wide band
- high separation
- low insertion loss
- extremely low unmatching attenuation
- miniature size and
- long service life

The electronic component manufacturer of international reputation, Mitsumi Electric Company, confidently recommends this "Mitsumi CATV Receiving Equipment."



# MITSUMI

MITSUMI ELECTRIC CO., LTD.

Main office 1056 Koadachi Komae-shi Tokyo Japan  
Tel (03) 489 5333

Europe office Marienstrasse 12 Düsseldorf W Germany  
Tel 352701

MITSUMI ELECTRONICS CORPORATION

11 Broadway New York 4, N.Y. 10004 U.S.A.  
Tel (212) 425-3085

MITSUMI COMPANY, LTD.

302 Cheong Hing Building 72 Nathan Road Kowloon Hong Kong  
Tel 669245

## MAIN PRODUCTS

★ Polyvaricon ★ Trimmer Capacitor ★ IF Transformer  
★ Various Coil ★ Ceramic Filter ★ UHF TV Tuner ★ VHF TV Tuner ★ FM Tuner ★ Push button Tuner ★ Micro Motor  
★ Synchronous Motor ★ Trimming Potentiometer ★ CdS Photoconductive-Cell ★ Hybrid IC ★ Magnetic Head  
★ Switch ★ Connector ★ Socket ★ Fuse Holder ★ Terminal ★ CATV Component ★ ETC.

Spotmaster

## Cartridge Tape Supermarket!

Here's a one-stop shopping center for the most and best in broadcast quality cartridge tape equipment—a SPOTMASTER supermarket of variety and value.

Just check the boxes and send us this advertisement with your letterhead. We'll speed complete information to you by return mail.



### Single-Cartridge Equipment

Record-play & play-back models, compact & rack-mounted

Ten/70 Record-Play

- The incomparable Ten/70
- The classic 500C
- The economical 400 (from \$415)
- Stereo models
- Delayed programming models



### Multiple-Cartridge Equipment

- Five-Spot (5-cartridge deck)
- Ten-Spot (10-cartridge deck)

Versatile Five-Spot

### Cartridge Tape Accessories

- Tape cartridge winder
- Calibrated tape timer



Tape Cartridge Racks

- Remote controllers
- Cartridge racks (wall, floor & table top models)
- Degaussers (head demagnetizers & cartridge erasers)

- Telephone answering accessory
- Replacement tape heads
- Adjustable head brackets
- Head cleaning fluid
- Alignment tape
- Bulk tape (lubricated, heavy duty)



- Tape tags
- Cartridges, all sizes, any length tape (or empty), no minimum order, lowest prices

Cartridges: All Sizes

The nation's leader in cartridge tape technology can fill your every need, quickly and economically. That's how we became the leader. Write:

**BROADCAST ELECTRONICS, INC.**

A Filmways Company

8810 Brookville Rd., Silver Spring, Md. 20910  
(301) 588-4983

## Studio Notebook

answers to program problems



By Ken Lawson

**QUESTION:** What are the relative advantages of videotape and film for cablecasting?

**ANSWER:** This is the fourth and final column in this series. The costs of film for locally-produced programming must be considered in comparing videotape and film.

The advantages of mobility and less manpower in the field must be weighed against the cost of film. You will use 36 feet of film per minute. A standard news film with magnetic sound track is Kodak Ektachrome EF 7242 which requires only a single tungsten "light gun" for indoor work, and it costs less than \$.08 per foot. If you get five minutes of usable film per day for six days, or 30 minutes, and edit out another 15 minutes, your 45 minute weekly film cost will be about \$130. Add processing costs of \$.06 per foot and your total film cost is \$230 per week.

The economics of whether or not you do your own in-house film processing for daily news material depends on how much film you use annually. For example, for approximately \$10,000-12,000 you can install your own color film processor. Processing 45 minutes weekly, or 85,000 feet annually would cost \$.02 per foot in chemicals for the processor plus \$.03 per foot for equipment amortized over 5 years, or \$.05 per foot for chemicals and equipment.

A processor such as the Bell and Howell "FILMO petite," for

example, processes film at 8 feet per minute and requires 27 minutes from the time the last frame is drawn in until it exists from the processor dry and ready to use.

A good "silent," spring-action 16mm film camera with adequate lenses costs about \$300. A "single system" sound-on-film camera costs \$4,000.

A Canadian experiment recently concluded that less expensive "Super 8" millimeter film was acceptable for CATV use.

Although currently available film (such as the SO 105... a Super 8 Kodak film comparable to the EF 7242) will do a good job of recording the pictures, the related equipment has not been developed to the point where reliable Super 8 work should be considered.

Geoff Williamson (10351 Oakdale Avenue, Chatsworth, Calif. 91311) has modified a Minolta camera to use Super 8. He will unveil it later this month at the NAB Convention. The unit will have a good lens and be a complete single system sound operation... and do a good job... but it will also be priced well above current Super 8 cameras. Playback is another problem that is yet to be solved adequately.

Super 8 film that comes in a cartridge (like the SO 105) runs about \$.0525 or \$.05¼ per foot. Processing runs about the same as 16mm film. My observations are that 16mm has a noticeably better quality on television. Look for many improvements in Super 8 technology in the next eighteen months.

fv

ANACONDA HEADEND  
OF RIVERSIDE CABLE COMPANY  
AT HEMET, CALIFORNIA

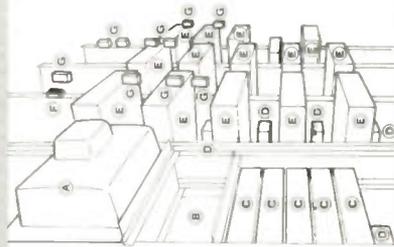
## HOW TO BUILD A BETTER HEADEND:

1. Select a supplier with proven CATV know-how and a reputation for meeting commitments.
2. Rely on the judgment of experts — men with years of experience in designing headend installations and solving reception problems.
3. Be certain the supplier is straightforward in business dealings and takes full responsibility for results.
4. Specify proven, up-to-date equipment.
5. Demand professional workmanship (the installation shown was designed and built by Anaconda field engineers).

AT YOUR SERVICE  
COAST TO COAST

**ANACONDA ELECTRONICS**  
A DIVISION OF ANACONDA WIRE AND CABLE COMPANY  
305 N. MULLER ST., ANAHEIM, CALIFORNIA 92803 • 714/635-0150

A Color Monitor  
B Signal Level Meter  
C 8710 FM Governor  
D 8910 Bandpass Filter  
E 8700 TV Governor  
F 8816 Splitter  
G HP and LP Filters  
H 8900 Modulator



**ANACONDA**



## Introducing Hippy and Hoppy

Fill your Easter basket with orders by offering customers their choice of a boy or girl Hippy Bunny with new hook-ups ordered before Easter.

American MyriAd's complete

### Easter Promotion Kit

Basic Kit includes:

- 2 Dz. 20" Hippy Bunnies  
(12 boys and 12 girls)
- Ad Mats • Streamers
- Radio Copy • Idea File
- Color TV Promo Slide

**Complete Basic Kit . . . \$74.50\***

Additional dolls \$37.25 per doz.  
(Dozens packed 6 boys, 6 girls)

Send the coupon to order or call Bill Hies or Joe Braido collect for more details. (215) 434-9531.

Please send:

EASTER PROMOTION KIT, as described above. Price—\$74.50.  
 \_\_\_ Doz. additional dolls @ \$37.25 per doz.  
 Payment enclosed     Bill us.

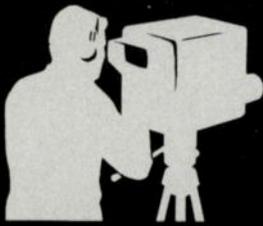
Company name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Ordered by \_\_\_\_\_

\*All prices f.o.b. Allentown, Pa.  
Deduct 5% for payment with order.

Mail orders to

**American MyriAd Corp.**  
240 N. 9th St.  
Allentown, Pa. 18102

Now building a complete range of promotion products and services for CATV.



# STUDIO

## Equipment

A special monthly section devoted to TV programming operations in small studios

## Sparta Audio Console Features Flexibility

Sparta Electronic Corporation will feature a fully functioning audio control center in its booth at the NAB Convention later this month (28-31). The firm offers a complete line of audio equipment. Two of Sparta's audio control consoles will have particular appeal to CATV operators.

The A-16R is a new dual channel, fifteen-input audio console. Designed with CATV in mind, its independent VU meters permit simultaneous program airing and production work. It sells for \$995.

Spare controls, a removable front panel and spare terminals are provided for custom needs. It uses 8 3/4" of standard rack space. A walnut-finished cabinet is optional.

The A-20B is a dual channel, twenty-two-input audio console. It features eight mixers, three



The A-20B twenty-two-input console.

selected outputs plus monitor, cue and audition. This \$1,295 unit includes an eight-watt monitor amp and separate cue amp.

It is self-contained in a heavy cast housing with a tough, textured vinyl finish. Three muting relays and two talk-back systems are part of the flexibility offered by the unit.

For further information on these and other audio products from Sparta, write to 5851 Florin-Perkins Road, Sacramento, Calif. 95828 or call (916) 383-5353. 



This is Sparta's model A-16R dual channel audio console.

## All you need is a film crew of one.

Local origination is easier than you think. When you think film.

Today you can go anywhere with a light, easy-to-operate camera, a power pack, and a few rolls of film. In fact, film equipment is so portable that one person can act as a complete film crew.

Cost? Prices for 16 mm cameras start under \$500. With no hidden costs like technical servicing or expensive repairs. You can start with a silent camera, and add narration after shooting. This one camera can be used for local news, commercials, and short features in black-and-white or color.

Want to know more about the possibilities of film? Talk to the people who know film best. All it takes is a call to Kodak.

### **EASTMAN KODAK COMPANY**

Atlanta: 404/351-6510; Chicago: 312/654-5300; Dallas: 214/351-3221.  
Hollywood: 213/464-6131; New York: 212/262-7100; San Francisco: 415/776-6055.



# 4 OUT OF 5 AIN'T BAD

FOR THE SIXTH YEAR  
WRITERS AND PUBLISHERS  
AFFILIATED WITH BMI  
THE WORLD'S LARGEST  
PERFORMING RIGHTS ORGANIZATION  
HAVE WON MORE  
THAN 80%  
OF ALL MUSIC TRADE PAPER CHART POSITIONS



**BMI**

All the worlds of music for all of today's audiences. Broadcast Music, Inc.

# Cablecasting by Teens Advances the War on Poverty

Starting as an experiment in the development of marketable skills for teenagers, this project is an excellent example of another way cable systems can provide community service.

*By Kenneth Ryan, Director  
Community Action Council  
Passaic County, New Jersey*

Twelve "disadvantaged" teenagers, two college students working part-time, three thousand dollars worth of videotape equipment and a cable TV system are beginning to have a significant impact on the suburban community of Ringwood, New Jersey.

New technology allows man to attack old problems in new ways. For the most part, the War on Poverty is presently being fought with old weapons, ignoring this new technology... this new opportunity. Cable TV is a television system which has exciting possibilities for the War on Poverty.

"Corps TV" is the name of the project that began in August, 1970. The project grew from a need to provide work sites for teenagers of low income families, under the Department of Labor's Neighborhood Youth Corps Program. The Community Action Council is a non-profit, com-

munity-based corporation which sponsors all anti-poverty programs in the area. After consulting with both the Ringwood TV Cable Corporation and the Department of Labor, the Council received project approval.

Prior to Corps TV, the local channel of Ringwood TV Cable had only been used to carry messages on a rotating drum.

After seven months of cablecasting, Corps TV has fulfilled a number of objectives. The project has provided indigent teenagers with unique and highly marketable skills. Corps TV has served as an ideal public relations tool of the Community Action Council.

Via the local CATV system, Corps TV has also provided a community information service. Prior to last Fall's elections, for example, Corps TV originated five hours of programming on the local candidates and issues. These programs included a one-hour debate

between the mayoral candidates, two hours of a public hearing on the main issue of the election, and highlights of Candidates' Night.

Personnel include two crews of six teenagers and one supervisor. The Neighborhood Youth Corps



*Three Corps TV teenagers wrap up production of a program they have developed for the cable system in Ringwood, N. J. The project is helping them develop marketable skills while giving a voice to community service efforts.*

OUR  
**MONEY**  
helped  
put  
the  
**ABLE**  
in  
**CABLE**

*What can we do for you?*

If we financed CATV when it was only a dream, won't we say "yes" to your financing needs? Whether you require \$100,000 . . . \$1,000,000 or much more, we'll be glad to lend you both the funds and . . . the knowledge we've acquired from 10 years of having provided the "money to make money" to more than 20% of the CATV systems in the country. Phone collect today: Ask for Gail Oldfather, Ed Zukerman or Jim Ackerman.

**THE MONEYVISION COMPANY**



**COMMUNICATIONS FINANCE DIVISION**

108 East Washington Street • Indianapolis, Indiana 46204  
AREA CODE 317, 638-1331

**STUDIO**  
Technology

enrollees are paid \$1.45 per hour and work twenty hours a week. Space is provided gratis from a community church.

The equipment consists of a portable, battery-operated video recorder, a non-portable VTR, one camera, one monitor and two microphones. This nominal system is extremely flexible and editing between the two VTR's is adequate.

The teenagers are involved in all aspects of programming: planning, graphics, audio, camera work and editing. The local CATV staff have provided technical assistance in these areas.

In addition to covering the elections, Corps TV has originated tapes on the Ambulance Corps, Ringwood Parade and Festival Day, and three local football games.

Notifying subscribers of programs and a shortage of tape have been the main problems encountered by the project. Even with a message on the local channel, a notice in the paper and posters in the shopping center, many subscribers were not aware of the programs. Direct mail announcements or use of another channel as a "local origination guide" are possible solutions to this problem.

With a tape stock of only ten hours, the project has been forced to erase many of its programs. Plans are now being developed to have the town fathers and community organizations (Jaycees, Chamber of Commerce, Rotary) purchase tape. Additional tape will allow the project to begin building an indigenous information bank in the community.

Some conclusions can be drawn from this experiment. Local origination need not be confined to the studio and the professionals. Community organizations, youth groups, a cross section of the community (especially the poor) should have access to the CATV system.

The CATV system can provide training courses to community groups on the techniques of origination. Local origination by broad-based groups can enlarge the capacity of a community to communicate about and guide its development.

**TV2**



they call the "shirt sleeve series" of instruction in television production. At a price of \$100 per person/per day, they have a basic workshop, an intermediate workshop and an advanced workshop. Each runs one day and is offered in New York City. The basic session concentrates on single-camera operations and electronic editing. The next such sessions will be March 30 and April 29. The next intermediate session (covering multiple-camera production and related equipment) is April 14. An advanced session will be held on April 15. For further information contact Douglas Gratton, 123 E. 54th Street, N.Y., N.Y. (212) 486-9052.

## FCC Reviewing Exclusivity Agreements

The FCC staff is currently working on possible rulemakings that would either eliminate or reduce the length of time VHF-TV stations could tie up programs. The aim of this move is to open up audience-building programs for use by CATV systems and UHF stations. Industry reaction has been solicited. Cablecasters would be wise to support such a move.

### Farewell to Monitel

Monitel, "a 24-hour information service" designed to provide cable systems with basic programming, has exited after a six-system test program. It seems the program did not go as hoped. As cable operators have been noticing, CATV programming appears to entice numerous hopeful suppliers . . . but the casualty rate has been high.

### A Network for CATV?

Most cablemen recently received a printed presentation from Southern-Western Cablevision Network . . . an enterprise established by David Hunt, ex-vice president of Warner Brothers Television. Hunt and associates hope to unite hundreds of cable systems in a videotape and film network for programming and advertising. The firm offers four channels of programs, advertising sales representation on a regional and national basis and equipment and technical assistance. If you decide to join, take note of the fact that you designate Hunt's group as your *exclusive* national and regional sales rep! The network idea has merit . . . if handled properly.

For the benefit of those who did not receive one of Hunt's presentations, he offers "\$2½

billion in entertainment product" in post-1950 films . . . "another \$1½ billion worth of entertainment" in syndicated TV programs . . . "a full library of complete major NCAA sporting events" . . . ethnic programming, children's programs, "special programs" and "a complete package of graphic materials designed especially for use by CATV systems."

### Workshops for Video Tape Users

Gratton Associates Ltd. and Rombex Productions Corporation have joined together to offer what

### NCTA Programming Seminar

Speaking of workshops, the editors of *TVC* recommend that cablecasters mark April 21-23 as a time to be in Chicago at the Palmer House. That is when NCTA will host another seminar on programming. It is expected to go far beyond last year's similar event.

TVC

## LOCAL ORIGINATION MADE EASY



Run the program down the line while doing production work. The new A-16R dual channel audio console has five mixers handling three inputs each. The fifteen inputs have push-button selectors. A removable front panel is provided for custom needs. The A-16R uses only 8¾" standard rack space or comes with handsome custom cabinet as an option.

Learn how much more this console can do for you. \$995.



### SPARTA ELECTRONIC CORPORATION

5851 FLORIN-PERKINS ROAD, SACRAMENTO, CALIFORNIA 95828 (916) 383-5353

14616 SOUTHLAWN LANE, ROCKVILLE, MARYLAND 20850 (301) 424-2920

A DIVISION OF COMPUTER EQUIPMENT CORPORATION



# CARS MICROWAVE FOR CABLE TELEVISION

*Scientific-Atlanta's BUSI-LINK Microwave Relay System is designed for cable television. This reliable, inexpensive system transmits single or multi-channel video and audio television signals over 25 miles or more. BUSI-LINK is ideal for remote pick-ups, studio to head-end links, and multi-channel head-end to head-end applications. For more information call Bob Holman, Scientific-Atlanta, Inc., Atlanta, Georgia 30345, Telephone: (404) 938-2930.*

**Scientific-Atlanta**

March 1971

*TV Communications*

# *CATV Technician*



Ray Devereaux, Chief Technician at the LVO-owned Santa Fe, New Mexico cable system is studying an aerial photo of the service area (50 miles of plant). Staff photo.

# How to Plan For Studio Lighting

This two-part article shows how to determine the power needs, select the right equipment and plan the layout for your studio lighting. Part 1.

## ABOUT THE AUTHOR



James L. Moody is the assistant manager of sales administration at Berkey-ColorTran. He holds a BA in Science and Theatre from Southern Illinois University and a Master of Fine Arts (Theatrical Production/Lighting) from the University of California at Los Angeles. He has been responsible for the planning and installation of more than 80 TV lighting power distribution systems.

Lighting has traditionally been the orphan of the engineering department. Generally budgets do not permit the hiring of a full time lighting director, so an engineer or electrician, neither of whom have been trained in lighting techniques or standards gets the job.

When a new studio is planned this lack of lighting knowledge is usually blamed for errors and omissions in the lighting power requirements. Once the studio is in operation it is too costly, both in money and lost air time, to make major changes.

Attempts at correction usually fall short of really improving things...and fail to cure the original problem. Advantage should be taken of the specialists available from manufacturers and lighting consulting firms to assist in planning during the early stages.

There is no mystery to good planning. Just having an engineering staff appreciative of the need for good lighting, even when they are not experts in the field, is an

aid in arriving at a workable facility.

The three major areas to consider are *power required*, *control equipment*, and *distribution equipment layout*.

## Calculating Power Needs

First, the studio dimensions are required. If the size of the studio is still in question, the best approach is careful consideration of production schedules, and performance requirements. Everyone wants studios where anything may be done, but common sense and budget limitations soon settle the question.

Experience has shown that cable studios are generally 15' by 20' with a few 20' by 30' in size. Larger cablecasting studios are rare.

Commercial broadcast facilities generally utilize their space and equipment efficiently. A small studio of 20' by 30' which is used for news, weather broadcasts, and

interview shows is common. The station may have two studios in which case, the larger studio averages between 30' by 40' to 40' by 60' in size. This is the bread and butter studio where commercials and production shows are telecast.

For illustration a studio 20' by 30' with a 16' ceiling will be used. The studio contains 600 square feet, but not all of this space is production area. Space will also be taken for storage of equipment, props, draperies, etc. About 80% can be considered the net production area.<sup>1</sup> (See references at end of article.) This is 480 square feet but is rounded out to 500 square feet to simplify the calculations.

Power requirements for studio lighting are based on footcandle levels desired. Although the I.E.S. Handbook states that acceptable pictures may be obtained at levels of 20 to 500 footcandles, the standard is 350 fc for color and 125 fc for monochrome production.<sup>2</sup>

The efficiency of fixtures is very low. The 3200 degree Kelvin lamp used in colorcasting has an efficiency of 19 to 22 lumens per watt. The same lamp inside a fixture which has some degree of control of beam pattern and shape will reduce this efficiency to around 5 lumens per watt.

Fixtures specifically designed for tungsten-halogen lamps, and especially those of the lensless design, are more efficient. Using 5 lumens per watt for planning purposes, the footcandle level desired is divided by five to arrive at the watts per square foot of production area required:

$$350 \div 5 = 70 \text{ (watts per square foot)}$$

$$\begin{array}{l} 70 \text{ watts per sq. ft.} \\ \times 500 \text{ sq. ft. of production area} \\ \hline 35,000 \text{ watts of power or 290 amps} \\ \text{total} \end{array}$$

The 290 amps is compared to the sizes of main circuit breakers commercially available and the properly sized breaker selected for the input power service. If a cyclorama is installed as part of the lighting equipment, separate power calculations are made and the two figures equal the total power required. Computing the



cyclorama power is covered later in this article.

The most economical form of power is 120/208 volt 3 phase 4 wire service. Power is stated in amps per phase. 300 amps is divided by three to arrive at 100 amps per phase. This is commonly used service and would pose no unusual problems to the supplying electric company.

If 3 phase service is not available, a 150 amp single phase 3 wire (120/240 volt) service will suffice. Single phase service will not cost more per kilowatt hour than 3 phase service in most areas. The savings is in material and installation.<sup>3</sup> It should be kept in mind that large studios and theatres generally require power well beyond that practical for single phase services.

In larger studios the total calculated power requirement is generally lowered on the theory that not all the production area would be lighted at any one time. A demand figure of 75% to 80% of full load is commonly used. But for studios under 1,200 square feet, the power should not be decreased.

It is better to have extra power now than to reach a point when it's required and not available. Power costs are based on a monthly minimum plus Kilowatt hours over that minimum.<sup>4</sup> This is a very inexpensive investment.

## The Cyclorama

The use of a cyclorama in the smallest studio is the most flexible backdrop available and is desirable

from a production standpoint.

As previously mentioned, separate power must be calculated for the cyclorama. This should be made on the basis of the height and length of the cyclorama. As a rule of thumb, a two circuit cyclorama strip requires 1,000 watts per foot per color.

That is to say, a ten foot cyclorama, illuminated by a two circuit 10 light strip, would require 5,000 watts per circuit for a total of 41.5 amps per circuit. A large cyclorama could easily draw more power than that of the total production area.<sup>5</sup> This is the reason for keeping cyclorama power requirements separate. Power allocated here should not be counted on for the production lighting.

### Power Control Equipment

The three general methods of power control are: the breaker panel, cross connect panel, and dimming system. Each has its own advantages and disadvantages. Upgrading from one to another

can be done successfully, but there are pitfalls and costs to consider.

The least costly method is the breaker panel (Figure 1). Here a group of single pole magnetic breakers are used to protect each circuit (outlet) used for lighting. The use of breakers is required to provide protection from electrical failures which could cause fire or shock.

Non-magnetic or thermally activated breakers rely on a temperature rise to trip. Because circuits may be loaded to capacity, thermally activated breakers tend to heat one another and might accidentally trip.

Magnetic breakers are not sensitive to heat, but operate as a result of overloading or direct shorts. Therefore, fully magnetic breakers are a must for safety as well as operational characteristics.

The basic disadvantage of the breaker panel is inflexibility. Either the circuit is off or on. To have three or more circuits come on at once is not physically practical. Access may be limited

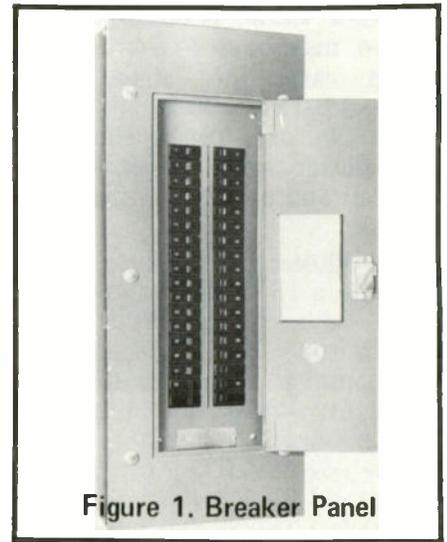


Figure 1. Breaker Panel

because most panels are usually located away from the production area. The breaker panel has the advantage of low initial cost.

Cross connect panels, generally called patch panels (Figures 2 and 3 are examples) can be installed as an intermediate step between the breaker panel and a full dimmer system. The patch panel is one part of the three basic components needed for a lighting control

## DELTA'S GOOD COMPANIONS

### For professional installations

During installation and maintenance of your system, they will save you time . . . and time is money.

#### FST-4 FIELD STRENGTH METER

All silicon solid state . . . 54-250 MHz in one continuous range . . . Vernier drive optional extra . . . Separate and continuous audio and video monitoring . . . Highly sensitive 200  $\mu$ A meter movement . . . 5  $\mu$ V to 3 Volt input capability . . . Powered by 120 VAC or self-contained 9 Volt batteries.



#### FSM/C-4 FIELD STRENGTH METER CALIBRATOR

All solid state . . . Lightweight, portable . . . Will calibrate any field strength meter . . . Use as a marker generator to align amplifiers and passive networks . . . Signal source for amplifier gain test or dynamic "ringing" of distribution lines . . . Range 54-250 MHz continuous . . . Output level 6mV . . . Accuracy of output  $\pm 1$  dB.

### RUGGED — DEPENDABLE — ACCURATE FULL YEAR FREE WARRANTY

Service facilities in the U. S. A. Write for full specifications

#### REPRESENTATIVES:

EASTERN USA  
JERRY CONN & ASSOCIATES INC.,  
1070 S COLOBROOK AVE.,  
CHAMBERSBURG, PA., 17201  
(717) 263-8258

B C AND ALBERTA, CANADA  
A L WHITEHEAD LTO.,  
P O BOX 25,  
WEST VANCOUVER, B.C.  
(604) 922-2210



**DELTA ELECTRONICS LTD.**  
70 RONSON DRIVE • REXDALE • ONTARIO  
(416) 241-3556 TWX 610 492-2707



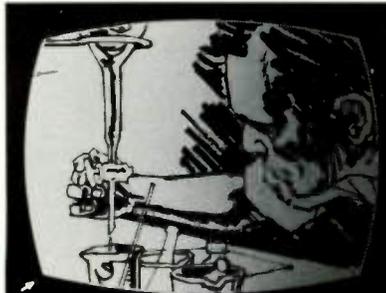
This is the 1st time you'll see an underground tap like our new 2600. It solves all the problems you can imagine in underground systems; It gives you 5-300 MHz response, corrosion proof case, foam potting, sealant sleeves on all connectors, color coding, thru or bottom entry and much more.

# craftsman

**ELECTRONIC PRODUCTS INCORPORATED**

Write or call collect, for free literature • 133 West Seneca St., Manlius, N. Y. 13104 • Area Code 315 682-9105

A **Magnavox** Company



FADES



WIPES



KEYS



MATTES



INVERSIONS

... and dozens of combinations limited only by your own imagination.

# If you go into TV with a Model T Budget Viscount Video can still give you Cadillac production capability

We know how it is: you want big production capability on a modest budget. You want a switcher with all the resources of a professional studio, yet at a price you can afford. We understand. At Viscount Video, we've concentrated almost entirely on bringing modern broadcast technology to smaller system operators. Switchers are compact and self-contained taking advantage of the latest advances in linear and digital circuit technology. VVS Routing Systems are equally sophisticated. Fact is—VVS router equipment was specified in the U.S. Manned Orbital Laboratory.

Whether you're starting from scratch or modernizing your present installation, see what a Viscount distributor can offer you. He'll show you how a Viscount switcher can give you flawless professional productions at a surprisingly low cost. For the name of your nearby distributor, write or call the nearest VVS representative below:

**EXCLUSIVE:** *The Viscount "Iso-Switch" (patent pending) is the only solid state, hybrid, integrated video crosspoint in use in such equipment. It has high input impedance, wide band-width and exceptionally low crosstalk. These unique switches are incorporated in all VVS units.*



**VISCOUNT VIDEO SYSTEMS LTD.**

105 East 69 Ave., Vancouver, B.C.  
(604) 327-9446 Cable: VISCVAN

Eastern Region: 107 Penny Lane, Michigan City, Ind., 46360 (219) 872-2211  
Western Region: 6815 Bristol Drive, Berkeley, Ca., 94705 (415) 549-3608  
Southern Region: 3286B Covington Drive, Decatur, Ga., 30032 (404) 284-4102  
(Dealerships established in Europe and the Far East)

system. If a simple breaker panel is installed initially, the time will come when a lighting control system will be purchased and the breaker panel will be discarded.

If the initial installation is a patch panel, the only thing that

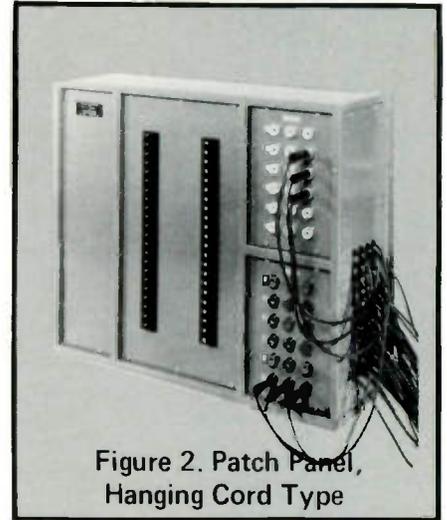


Figure 2. Patch Panel, Hanging Cord Type

must be done when installing the dimming system is the re-routing of prime power to the dimmer bank, connection of dimmer bank to patch panel and connection to control console. Financially, this represents a greater initial investment than the breaker panel, but

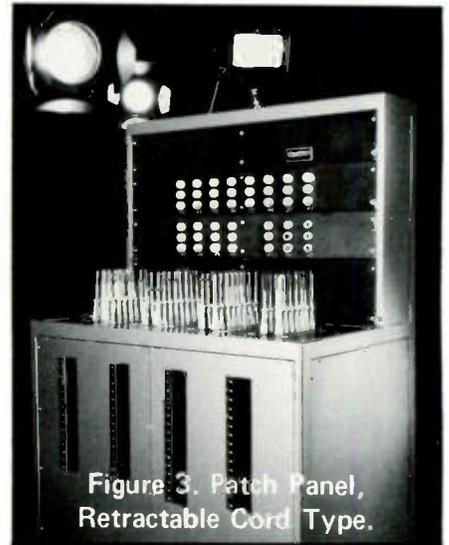
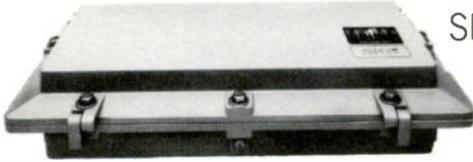


Figure 3. Patch Panel, Retractable Cord Type.

it provides a flexibility not possible with the breaker panel.

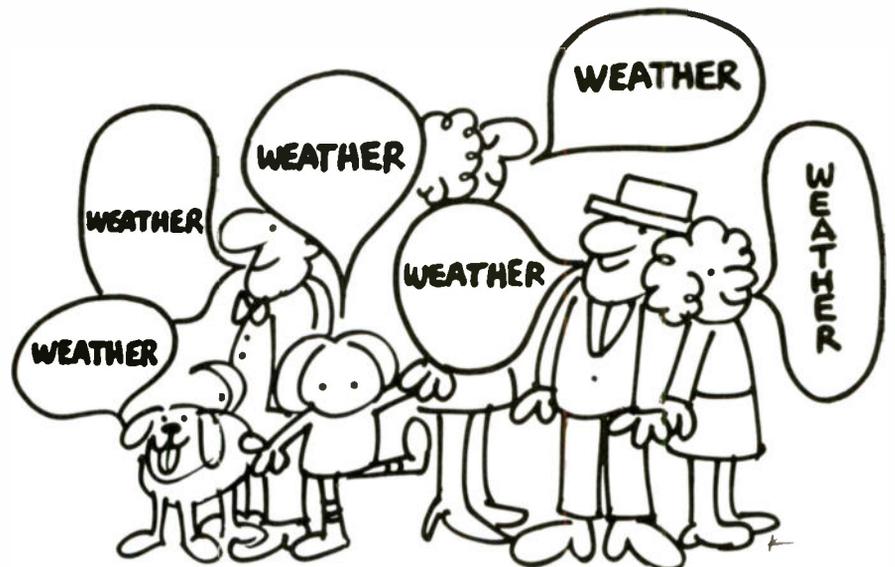
The patch panel is a more sophisticated breaker panel. For safety there is a single pole magnetic breaker in series with every circuit in the studio. But there is a break in the circuit

# Everyone in CATV talks about the weather, but only an SKL system does something about it.



SKL/7027K and SKL/7037K amplifiers do things like: eliminate seasonal adjustment, reduce maintenance costs and improve year-round picture quality. Dual-pilot linear controls automatically stabilize level and slope, hold output levels constant over a temperature range of  $-40^{\circ}$  to  $+140^{\circ}$ F. Whether you're updating or installing a new CATV system, let SKL set the standards for all-season operation. For complete information write, Spencer-Kennedy Laboratories, Inc., 2 Lowell Avenue, Winchester, Massachusetts 01890.

**SKL**



# un- inter- rupt- ed ser- vice

That's what we have in mind when we make our cable from the best materials available.

When we fabricate it in the nation's most modern, best-equipped plant under the most rigid standards of quality.

When we deliver it in our own trucks to assure you of PCD — Perfect Condition Delivery.

**ALL WE MAKE  
IS CABLE.  
THAT'S WHY  
WE MAKE IT BETTER.**



OFFICES AND WIRE MILL  
LOCATED AT:  
3500 South 30th Street  
Phoenix, Arizona 85040  
Telephone (602) 268-0289

between the incoming power and the studio loads. This is accomplished via a male and female plug.

The outlet or load side is terminated in a male single pole pin plug which represents a load in the studio distribution system. The neutral is connected to a buss bar in the patch panel, which is in turn connected to the neutral in the dimmer bank.

The option is now provided for random assignment of loads to power groups. These groupings permit pre-setting a production's lighting and then switching to another set-up by operating main breakers in series with the power groups. These group master breakers protect the female receptacles which are arranged in groups as required. When the dimmer rack is installed these female receptacle groups represent the power from each dimmer.

By placing all of the circuits used for a standard set-up in one or two of these groups it is a simple matter of throwing one or two switches to turn on all of the lighting. No trying to remember that circuits 3, 5, 7, etc. are used — or was it 4? Basically this forms a crude memory system.

A main breaker is usually provided near this patch panel for protection, but it is not normally installed in the panel itself. When the dimming system is added this main breaker will be moved to a location in or near the rack.

## Remote Controlled Lighting

A variation on the patch panel places mercury relays in the panel for remote control of loads (Figure 4 is an example). The system shown has individual protective breakers for each load and group master breakers protecting each relay and female group.

A small control unit with 25' of cable is provided for remote control of group power. The system was designed specifically with cablecasting in mind. It also allows for later expansion to a full dimmer system.

Lighting control systems can be simple or complex, depending on your requirements. Any of the control system manufacturers will

be happy to explain why they feel they have the ultimate in dimmer and control system design. The key to a good system is flexibility, but not so complicated as to make it un-workable on a day to day basis.

## Selecting the Dimmers

Configuration of the lighting control system is accomplished first by determining the size and

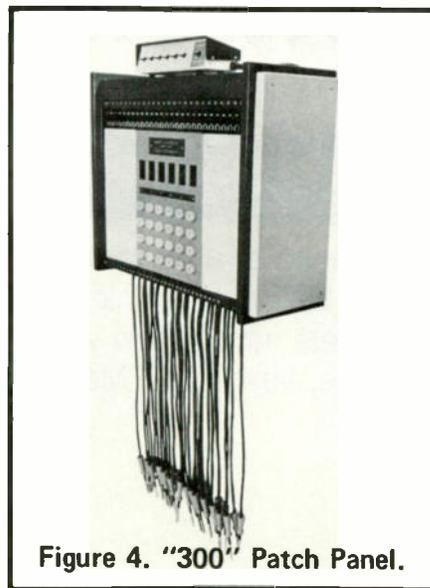


Figure 4. "300" Patch Panel.

quantity of dimmers required. There is a trend to use 12KW dimmers on the theory that any size loads can be assigned to them and complete interchangeability is possible, whereas this is not possible when mixing 3, 6 and 12KW dimmers.<sup>6</sup>

In theory it is a good plan. However, the fault is with the state of the electronic dimmer. Some 12KW dimmers do not control small loads uniformly. Chosting and flickering are typical problems. The real consideration is whether the normal load on each dimmer warrants the size.

In studios under 1,200 square feet, 3 & 6KW dimmers may be used except when dealing with a large cyclorama. When a cyclorama is involved, a large power draw is required and 12KW dimmers are usually justified.

It is best to make a decision on 3 or 6KW dimmers for the production based on the physical size of the productions planned. Will there be times when more than

three 1,000 watt lamps will be used on a single dimmer? The quantity of dimmers can next be calculated by taking the power requirement (300 amps for this example) and dividing it by 25 amps (3KW), 50 amps (6KW), or 100 amps (12KW). Our answer is 12-3KW dimmers, 6-6KW dimmers or 3-12KW dimmers.

The 3012KW dimmers would be discarded on the basis of insufficient flexibility. The choice is between the 12-3KW or 6-6KW dimmer configurations.

The twelve dimmers provide great flexibility. However, the size of the studio (500 square feet) does not justify this much control. The cost of 12-3KW dimmers, associated rack, and control console would also be out of proportion to the rest of the lighting system.

In order to finish this problem, cyclorama power must be considered. Circuitry and power for the cyclorama must be calculated. A studio with a 20' long by 12' high cyclorama requires one row

of cyclorama strip lights for proper illumination. The lights are divided into a two circuit arrangement. The power draw is 83 amps per circuit with 10 lamps per circuit. Thus, one 12KW dimmer is required for each circuit.

Total power requirement is calculated as follows: 300 amps for the production area and 200 amps for cyclorama power for a total of 500 amps required for the total studio lighting power.

If at all possible, a separate transformer should be installed for lighting power. This would isolate audio and video power from lighting power which cause voltage drops and RFI in the line.

The other method of controlling power other than by dimmer is a non-dim circuit. Essentially it is a circuit controlled by a mercury relay in the dimmer rack which is low voltage controlled from the control console.

Even though we have dimmers, a small quantity of these devices are useful, inexpensive and necessary for special power applica-

tions. For example, SCR dimmers will not provide proper motor power control and may damage them.

Next month, part II of this article will review the power distribution layout, the location requirements for the control equipment, and will discuss the components of the distribution system. TVG

#### REFERENCES—Part I

1. Charles J. Neenan, "Television Lighting and the Conversion from Monochrome to Color," *Illuminating Engineering*, 61:515, August 1966.
2. I.E.S. Lighting Handbook, 4th ed., *Illuminating Engineering Society*, New York, 1966, 24:26-27.
3. Los Angeles Department of Water and Power.
4. Op. Cit.
5. James L. Moody, *Designing and Lighting the Cyclorama*, *Broadcast Management/Engineering*, August 1970, P. 28-31.
6. Neenan, Op. Cit., P. 521.

**Stahl's new HIGH MOUNT**  
**... gives you more load space.**

**Still handles all tough**  
**aerial ladder jobs.**



Series 300

- Up to 155 cu. ft. of space for equipment, tools.
- Safe, economical . . . easy to operate.  Electric hydraulic ladder elevation.  Finger-tip manual rotation 360°.
- Three lengths: 26', 30', 32'.  Choice of AT&T cage or tri-plane platform.

Write for free literature & prices or call your Stahl dealer under 'Truck Bodies.'



**Stahl**

METAL PRODUCTS DIV. The Scott & Fetzer Co.  
4750 W. 160, Cleveland, Ohio 44135



**CATV**  
system managers

Announcing a new computerized service for CATV that insures rapid and accurate recovery of accounts receivable.

Simple to operate — nothing complex — nothing technical, this service gives you improved cash flow, better customer relations, more efficient management — also, all of the information you need to fully develop your market area.

Gain all the advantages of automated data processing without investment in equipment and overhead. For more information call or write today.

Another service for better management from . . .

**GTE DATA SERVICES**  
INCORPORATED

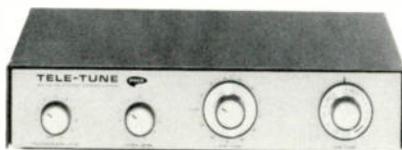
5422 Bay Center Drive, Tampa, Fla. 33609  
A part of General Telephone & Electronics  
Telephone: (813) 877-8021

# PRODUCT REVIEW

NEW COMPONENTS FOR CABLE TELEVISION SYSTEMS

## LOW-COST DEMODULATOR AVAILABLE FOR CATV

Dynair Electronics, Inc., has developed a new solid-state, off-the-air demodulator called the RX-3A Tele-Tune. The demodulator is designed for professional applications which require performance in excess of standard TV receivers. The Tele-Tune will receive all

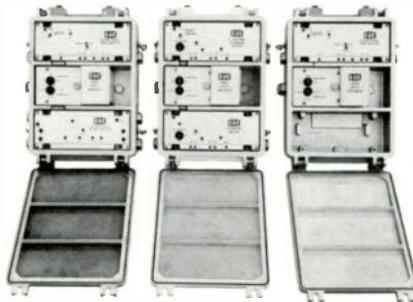


standard VHF and UHF television channels. Tuning is accomplished with the latest state-of-the-art production tuners, assuring good sensitivity and signal-to-noise ratio. The unit has a 75-ohm VHF input and a 300-ohm UHF input. It provides a 75-ohm video output and either a 600-ohm audio output or audio from an internal speaker, and has excellent overall operating characteristics, providing quality performance with either color or monochrome signals. The unit is housed in a metal case, with matching light-green front

panel and dark-green cover. Rubber feet are provided to allow the unit to be used on a shelf or desk top. Optional mounting brackets, which attach with two screws on each side of the case, allow the unit to be mounted in a standard 19-inch rack. The Tele-Tune is priced at \$550 and is available from Dynair Electronics, Inc., 6360 Federal Boulevard, San Diego, Calif. 92114.

## BI-DIRECTIONAL CAPABILITY ADDED TO EIE AMPLIFIERS

EIE's complete line of in-system two-way, solid state, wideband amplifiers is designed to extend bi-directional options of existing installations or new construction for new services such as studio to head-end or local origination. All modular, the equipment includes trunk, trunk bridger, distribution and multi-set amplifiers that can be used in single or dual cable systems or in a combination installation with use of the 24 channel, in-system converter. The bi-directional capabilities are from 10 to



30 MHz. All models are contained in a heavy-duty RFI shielded housing designed to accommodate future modular adjustments and changeouts. Hermetically sealed, the units meet all weather and environmental conditions. Other features include surge and lightning protection, built-in taps, sealed entry connectors, and tilt compensated gain. Contact Electronic Industrial Engineering, Inc., 7355 Fulton Avenue, North Hollywood, Calif.

## NEW CABLE FAULT FINDER FOR CATV

Craftsman's new Model 107 Coaxial Cable Fault Finder is said to be the first

economical Time Domain Reflectometer (TDR) available to the CATV industry. The economies realized with the 107 are attributed to its being used with any type of oscilloscope found in CATV systems. The Fault Finder, operating on the TDR principle, sends a fast rise time pulse down the cable under test (up to 2500 ft. of .412) the pulse is in turn reflected back and displayed on an oscilloscope. The return pulse will pinpoint the location of cable faults to within plus or minus 2%



accuracy and whether the fault is an open or shorted circuit and either capacitive or inductive mismatches. The unit is available from Craftsman Electronic Products, Inc., 133 W. Seneca St., Manlius, N.Y. 13104.

## COLORTRAN ANNOUNCES MINI-PRO GO KIT

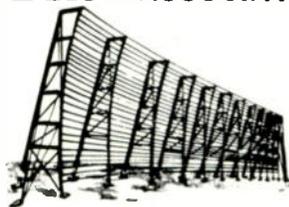
A lightweight, rugged, professional quality lightning kit has been announced by ColorTran, called the Mini-Pro Go Kit. This kit is designed for use with 30 volt battery power or 120, or 220 volts, the Go Kit includes three sturdy Mini-Pro heads, which are fast focusing and produce a smooth field of



light without hot spots. These Mini-Pro heads are coupled with ColorTran's new PRO Stand, designed to allow the legs to expand from a conventional 31 inch

**BTA**

**BEAVER TELEVISION ASSOCIATES**

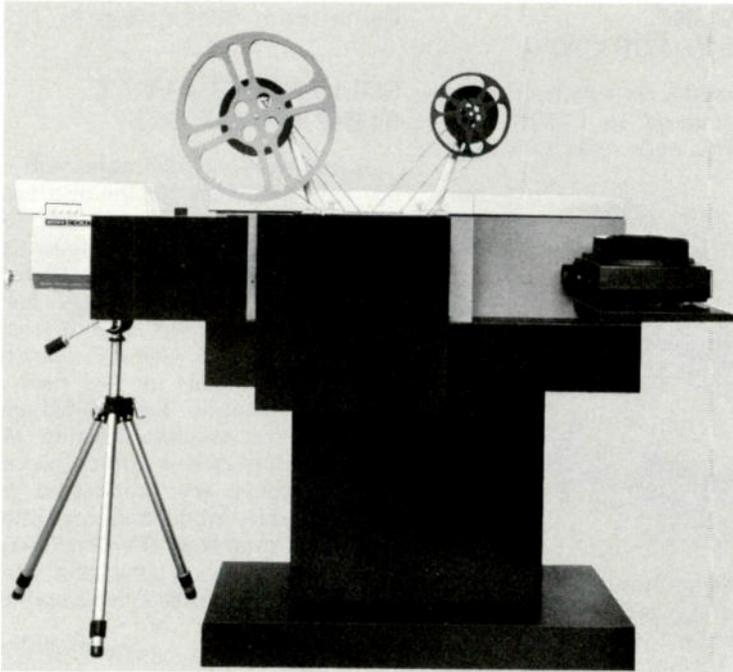


**Parabolic Antennas  
Beaver Log Antennas  
A Complete Line of  
Passive Devices**

Write for Details:

**BEAVER TELEVISION ASSOCIATES**  
95 NORFINCH DRIVE  
DOWNSVIEW, ONT. CANADA  
TELEPHONE 416-635-0320

## **MEDIA-PLEX™** Film/Graphics System



Non-critical system. Color or monochrome camera can be rolled up or removed without realignment.

Three-projector inputs plus graphics input (live stage).

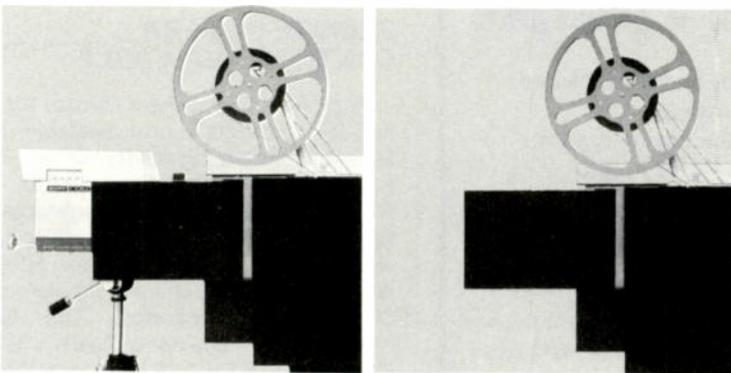
Operable by non-technical personnel.

High resolution, Professional quality output. Modestly priced.

Proprietary optical design permits combination of up to three projector inputs and one graphics input (live stage). Light level control provides switching, fading, dissolving, or superimposition of inputs. Slides or films can be titled through control of light levels and use of graphics or live stage.

The Media-Plex will accept any combination of 16mm, Super 8 or slide projectors as modified by AV Systems, so that additional projector functions may be added any time after original purchase. The system is simple and has no moving parts, hence it is extremely reliable. A rack-mountable remote control panel can be located up to 100 ft. from the system. Use of this panel permits an untrained operator to originate continuous film and graphics programming unaided.

The Media-Plex system will accept monochrome or color cameras without modification.



### **AV Systems Inc.**

44 Railroad Avenue  
Glen Head, New York 11545  
Telephone (516) 671-8010



base to an ultra-stable 46 inch base. The Mini-Pro Go Kit, complete with 3 Mini-Pro heads, 3 Pro Stands, and a host of accessories, weighs only 29 lbs., and is briefcase size. The kit is priced at \$342, and is available from Berkey-ColorTran, Inc., 1015 Chestnut St., Burbank, Calif. 91502.

## ELECTRONIC TITLING GENERATOR ANNOUNCED

TeleMation's new Electronic Titling Generator, Model TCG-225, allows almost instantaneous preparation of printed graphic materials. Since the titling generator itself is the video source, no television camera is required to pick up the prepared information. Characters may be mixed, supered, keyed or wiped in the same manner as any other video source. Thus, titling generator output can supplant use of super slides or cards, as well as provide news flashes, credits and titles and other support information. The TCG-225 produces one or two lines of 25 characters each. Character generator electronics are activated by a keyboard similar to that of a typewriter. Besides containing alphanumeric symbols, the keyboard controls every function of the system. Full editing capabilities permit erasure of a single letter, a word, or all material on the "page." Both lines can be displayed in the static mode, or one line can be made to crawl horizontally at a rate adjustable from two to 20 characters per second. Information can be prepared in advance and stored on paper tape or on a disc memory, or it may be entered as program video while being typed. Price of the TCG-225 is

\$2,995. The TKB-207 Keyboard is \$795. Additional information is available from TeleMation, Inc., 2275 S.W. Temple, Salt Lake City, Utah 84115.

## C-COR HAS UHF CONVERTERS FOR CATV

A UHF Converter for antenna site use has been announced by C-COR Electronics, Inc. This unit is said to have all



the state-of-the-art features available at this time. The high performance unit is the only standard product available today with a balanced Schottky barrier diode mixer and crystal controlled local oscillator with the crystal in an oven. The balanced mixer does not generate many of the spurious outputs associated with single-ended type mixers which results in inherently cleaner signals. The oven housed crystal allows the unit to meet frequency stability requirements of the proposed FCC technical regulations and the Canadian Broadcast Procedure 23. A low noise UHF preamplifier is available on one of the models. The UHF converters provide conversion of a

single UHF channel to a VHF channel specified by order. The price of the unit Model CVR-P (with UHF preamplifier) is \$1,110. The price of the Model CVR (without UHF preamplifier) is \$970. Contact C-COR Electronics, Inc., 60 Decibel Road, State College, Pa. 16801.

## SOLID-STATE 4-VOLT STRIP AMPLIFIERS

A new series of solid-state, high voltage strip amplifiers for the distribution of TV and FM signals has been announced by Jerrold Electronics Corp. These units feature a full 4-volt output. Designated THPM, each single-channel unit with a bandwidth of 6 MHz is for semi-adjacent TV channel operation. Models are available for low, high, and FM band operation. Each THPM amplifier unit has separate 75-ohm input terminals for various source pick-ups, while outputs are loop-mixed with 75-ohm cable. While the total gain of the AGC controlled TV amplifiers is greater than 55 dB, the gain of the manual gain controlled FM amplifier is

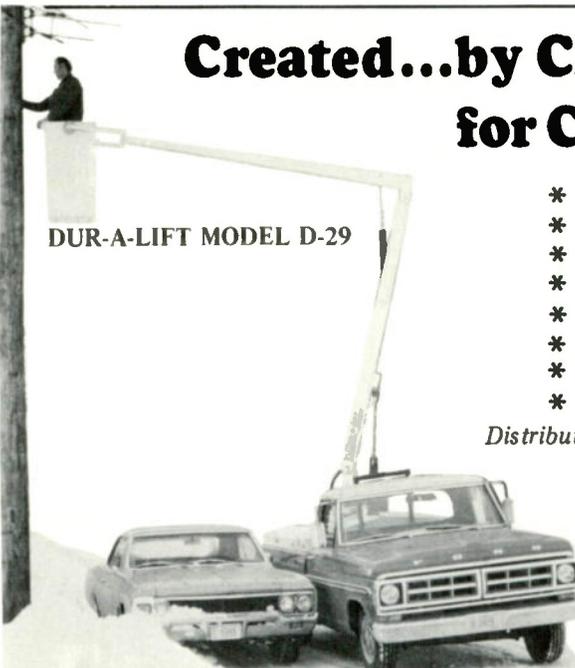


above 45 dB. The wall or rack mounting units have output capability of 4V (+72 dBmV), with a level control to adjust between 1V and 4V. For good skirt selectivity, greater than 30 dB at the next non-adjacent channel edge, amplifiers have triple-tuned input and double-tuned output band pass filters. The strip amplifiers have self-contained power supplies, and are ruggedly built for long service and minimum maintenance. Contact Jerrold Electronics Corporation, 401 Walnut St., Philadelphia, Pa. 19105.

## REMOTE CAMERA CONTROL AVAILABLE

A new remote camera control for use in CATV studios is now available from Diamond Power Specialty Corp., P.O. Box 415, Lancaster, Ohio 43130. The CR-1 camera control produces a composite video signal in full compliance with EIA specification RS-170 when driven by Diamond Power's new STA-1 sync generator. The CR-1 operates with Diamond Power's ST-1, ST-2, ST-4, STV-1, STV-2 and STV-4 closed-circuit television cameras. The CR-1 gives remote control of beam, target and electrical focus and contains video processing circuits for polarity reversal, gamma correction, phaseless adjustable aperture correction, peak white clipper and blanking reinsertion.

**Created...by CATV people  
for CATV people**



**DUR-A-LIFT MODEL D-29**

- \* Mount on ½ ton pickup
- \* No outriggers
- \* 300 lbs. bucket capacity
- \* 29' working height
- \* 9½' over the side
- \* 360 degrees rotation
- \* Tool tray in bucket
- \* Full control at bucket

*Distributors in most major cities, some territories still open.*

**DUR-A-LIFT**  
Durnell Engineering, Inc.  
2214 Main Street  
Emmetsburg, Iowa  
50536

# How to get *GOOD RECEPTION*

Standardize on *PREFORMED* for your CATV system

Protect your customers from service failures with : 1. **Lashing Rods**. Easy on the cable; easy to apply. 2. **Telegrip**. Takes the squeeze off RG 59/U coaxial wire at tap, pole, and house drop; yet holds full RBS. 3. **False Dead-Ends**. Eliminate need to cut the strand; permit continuous stringing. 4. **GUY-GRIP® Dead-Ends**. Easiest, safest, lowest cost method of dead-ending strand on down guys and messenger. 5. **Safety Guy Wire Dispenser**. Eliminates runaway coils of strand; makes coil payout a one-man job. 6. **Teletap Connector**. Easy, low-cost way to make a dead-end on coaxial wire without using a span clamp. 7. **Plastic Guy Guard**. Full-circle protection. No sharp edges; no rusting; no nuts or bolts. Comes in three colors. 8. **Strand Splices**. Make quick, safe

strand splices without tools. Spinner rides smoothly over splice. 9. **Figure 8 Dead-Ends**. Inexpensive trouble-free dead-end, for use on Figure 8 coaxial messenger. 10. **Preformed Stainless Steel Dead-Ends**. Custom design dead-end for use with foam type RG 59/U coaxial wire.

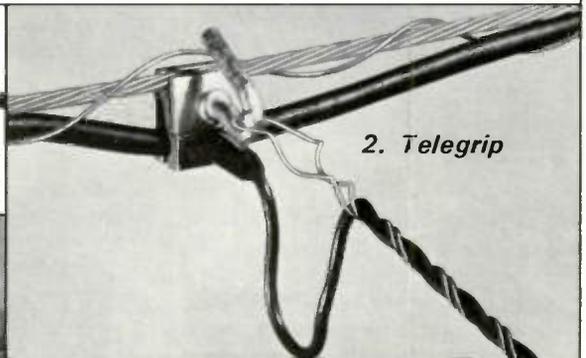
Write for CATV FOLIO of product information : **PREFORMED LINE PRODUCTS COMPANY**, 5349 St. Clair Avenue, Cleveland, Ohio 44103.

## *PREFORMED*

1. *Lashing Rods*



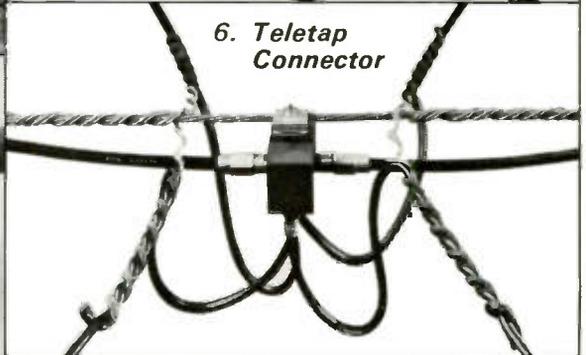
2. *Telegrip*



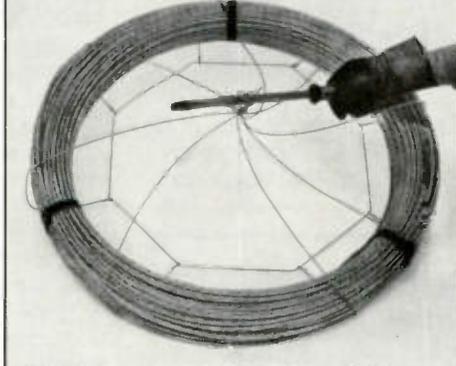
3. *False Dead-Ends*



6. *Teletap Connector*



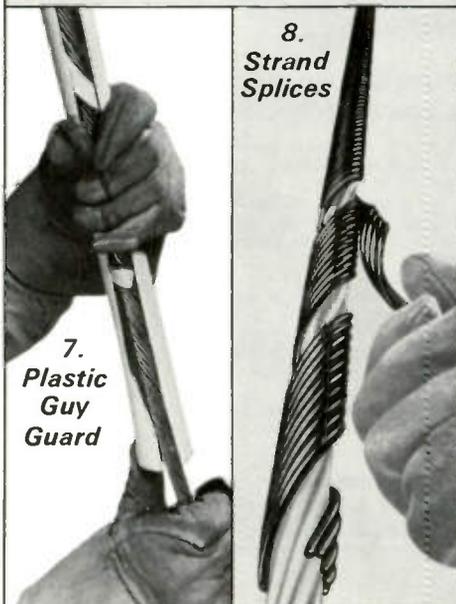
5. *Safety Guy Wire Dispenser*



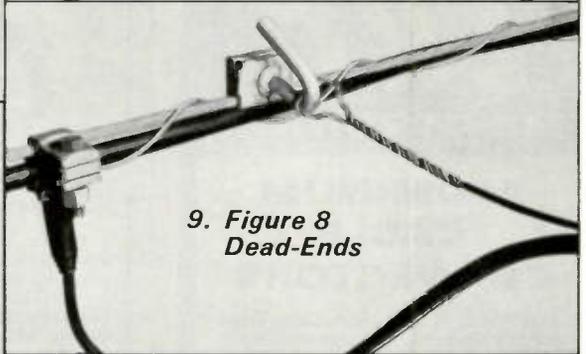
4. *GUY-GRIP® Dead-Ends*



8. *Strand Splices*



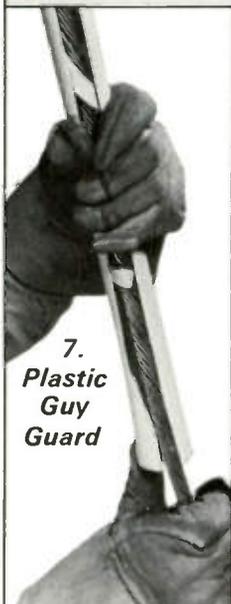
9. *Figure 8 Dead-Ends*



10. *Preformed Stainless Steel Dead-Ends*



7. *Plastic Guy Guard*



Keyed clamp circuit reduces hum and tilt and provides stable black level. Horizontal and vertical drives to the cameras have adjustable delays for proper signal timing in up to 2,000 ft. of cable. There are outlets for intercom hook-up, tally lights and a meter for adjusting sync, setup and video levels. A front panel switch is used for selection of input or output levels.

## KAY HAS NEW AUTOMATIC NOISE FIGURE METER

A new low-cost, automatic noise measuring set from Kay Elemetrics features a 75 ohm, 10 to 250 MHz



tuned amplifier input and a 75 ohm, 10 to 1000 MHz full range noise head. The cost of this solid state unit is kept low by its emphasis on the below 1000 MHz range. The center-tuned, wide range input is particularly useful for testing of broad amplifiers. It will measure the noise spectrum at mid-range for simplified, overall checks or can be used for noise measurements at specific bands (channels) all over the range. The tuned input amplifier is about 5 MHz wide at centers from 10 to 170 MHz and about 10 MHz wide at centers from 170 to 250 MHz. Response at 270 MHz is less than 3 dB down. It is continuously

variable in twelve overlapping frequency bands. The broad-band, 75 ohm noise head covers its 10 to 1000 MHz range with flat, 6 dB excess noise output at a VSWR of better than 1.2 to 1. It is used as automatic reference for a 0 to 20 dB noise figure meter scale with expanded readability in the 1 to 12 dB region. The unit can be ordered with either an "N" or "F" connector and may be used for manual measurements, as well as automatic. A direct-reading panel meter provides noise figure readings over a range of 0 to 20 dB for the 6 dB automatic reference; 3 to 30 dB for gas tube and solid state sources. As an alternate, no-cost option, the input IF can be ordered preset to TV channel frequencies. The noise meter is priced at \$840, and is available from Kay Elemetrics Corp., 12 Maple Avenue, Pine Brook, N.J. 07058.

## NEW VIEWFINDER CAMERA FROM RIKER

A new Riker Video 9" viewfinder camera designated Model TVF-9/14, is



complete with an 8507A vidicon. It is compensated to provide 100% amplitude response at 500 TV lines, with

limiting resolution in excess of 900 lines. The TVF-9/14, with its 100% amplitude response, insures that second generation video tapes will not be muddy and that pictures will remain crisp throughout a CATV system, according to Riker. The TVF-9/14 is compact and light, weighing only 34 pounds: can be handled on a "cam link" head, and is suitable for field use as well as studio operation. The 9" viewfinder monitor provides 600 line resolution, showing the scene in far greater detail than ordinary low resolution monitors. The camera is completely self-contained; no separate camera control unit is required but a local/remote switch is provided to facilitate remote control. Options include full EIA RS-170 sync, a side zoom control, crystal controlled RF output, and a wide choice of vidicon and Plumbicon (R) pickup tubes. Built-in AGC, which keeps contrast levels stable through a wide range of scene brightness changes, permits simplified Plumbicon operation. Top and rear tally lights, plus intercom jacks are standard features. The TVF-9/14 lists for \$2575, and is available from Riker Corporation, 142 Central Avenue, Clark, N.J.

## CUNNINGHAM HAS NEW DIRECTIONAL TAPS

Cunningham Corporation, 10 Carriage Street, Honeoye Falls, New York 14472, announces a five year warranty against destructive corrosion on their AB1000 series directional taps. The unique tap body construction of wrought 6061-T6 aluminum, coupled with compatible aluminum and stainless steel fittings make it totally weather-proof.

This extended warranty is believed, by the manufacturer, to be the only one of its kind in the industry.

These taps are available in configurations for aerial, pedestal or underground mounting and for single or dual plant construction. Flat taps with frequency response from 4 MHz to 300 MHz and tilted taps with response characteristics designed to match feeder and drop cable losses are available.

## NEW PPT VEHICLES TACKLE ALL TERRAIN

One of the most widely accepted and used all season vehicles in Canada for just plain hard work is the claim of the PasseParTout (PPT). This dual full track vehicle with its heavy all steel single unit welded body is designed for industrial applications such as checking TV cables. The PPT is built by Valcartier Industries of Courcellette, Quebec. It is distributed in the United States by Bennett Inc., 15 Erie Drive, Natick, Massachusetts. 

# LRC

## ELECTRONICS

### ALUMINUM CABLE CONNECTORS

LRC Precision Aluminum Cable Connectors feature . . . captive ferrules . . . O Rings . . . positive stop assembly . . . and fewer assembly parts. We also manufacture a complete line of F series. Complete facilities provide maximum service for both standard items and custom engineered requirements.

LRC Electronics, Inc.



901 South Avenue  
Horseheads, New York 14845  
Phone 607-739-3844



### This Machine and One Monitor Gives You Six Monitors

If you have 2-6 television cameras in your closed-circuit surveillance system — you only need one monitor!

The TSA 7-1 Automatic Video Sequential Switcher will feed, in sequence, the output of up to six cameras through one monitor.

Set the viewing time for each camera from 2 to 10 seconds. You'll get sharp camera change-over with no flicker or distortion. Push the "stop" button to hold one scene as long as you desire. Then release to continue the normal viewing sequence.

The 701 gives you the capability of six television monitors at less than 1/6 the cost

Order direct from:  
INTERMARC S.A. P.O. Box 5093  
Tokyo International Japan

# INDEX OF DISPLAY ADVERTISERS

Aberdeen Company	20	Electronic Industrial Engineering, Inc.	29
ABTO	27	Fisher Research Labs, Inc.	43
AEL Communications Corp.	21	Fort Worth Tower Company, Inc.	42
Ameco, Inc.	22	Gower Corporation (The)	8
American Myriad	76	Gravco Sales, Inc.	59-60, 61
Anaconda Electronics	75	Great Plains National ITV Library	46
Anixter-Pruzan	7	GT&E Data Services, Inc.	91
Arrow Fastener	51	HTV Systems, Inc.	48
Associated Press (The)	67	Himco, Inc.	46
AV Systems, Inc.	93	Independent Television Corporation	36
Barnard & Associates (J. C.)	17	Intermarc S. A.	96
Beaver Television Associates	92	International Video Corporation	38-39
Berkey Colortran	18	Jerrold Electronics Corporation	C-2
Broadcast Electronics, Inc.	74	Kaiser CATV Corporation	31
Broadcast Music, Inc.	16, 78	Lenkurt Electric Company, Inc.	4-5
Buckeye Telephone & Supply	47	Lindsay Specialty Products, Ltd.	37
CAS Manufacturing Company	41	LRC Electronics	96
Cascade Electronics, Ltd.	19	Mitsumi Electric Co., Ltd.	73
CATV Equipment Directory	40	Preformed Line Products Company	95
CATV Systems Directory	50	Sadelco, Inc.	56
CBS Labs	55	Scientific-Atlanta, Inc.	82
C-COR Electronics, Inc.	52	Sod-Master (Federal Industries)	28
Cohu Electronics, Inc.	66	Southern Telephone Supply	70
Collins Radio Company	68	Sparta Electronics Corporation	81
		Spencer-Kennedy Labs Inc.	89
		Stahl Metal Products, Inc.	91
		Stan Socia Corporation	58
		Sylvania Electric Components	57
		Systems Wire & Cable, Inc.	90
		Tektronix, Inc.	15
		TeleMation, Inc.	3
		Tri-Ex Tower	51
		Tyler Company (R. H.)	71
		Utility Tower Company	9
		Videotran, Inc.	72
		View-All TV Products	12
		Vikoa, Inc.	102
		Viscount Video Corporation	88
		Western Community TV Construction Corp.	30
Comm/Scope Corporation	10-11		
Concise Instrument Design Ltd.	54		
Craftsman Electronic Products, Inc.	87		
Cunningham Corporation	100		
Delta Electronics, Ltd.	86		
Diversified CATV Services, Inc.	35		
Durnell Engineering Inc.	94		
Dynair Electronics, Inc.	101		
Dynasciences Corporation	49		
Eastman Kodak Co.	77		
Economy Finance Company	80		

Collins Radio Company, due to publication error, was omitted from December and January index listings. The Pete Collins Co. ran in its place. The editor extends apologies.

## TV Communications ADVERTISING DATA

1900 WEST YALE • ENGLEWOOD, COLORADO 80110 • PHONE 303/761-3770

TV Communications is published by Communications Publishing Corp., publishers of CATV Weekly, the CATV Directory of Equipment, Services & Manufacturers, the CATV Systems Directory Map Service, the NCTA Convention Daily, and CATV Product Showcase.

### PRESIDENT

Robert A. Searle

### VICE PRES. — SALES

Robert Titsch

### VICE PRES. — PUBLICATIONS

B. Milton Bryan

### VICE PRES. — BUSINESS OPERATIONS

Buford S. Marsh

### For Information About: ADVERTISING SPACE

Contact Robert Titsch, Phil Cook or Sid Black. They will assist you with specialized market and media information including space rates and deadlines.

### PRODUCTION & CREATIVE SERVICES

Contact Traffic Supervisor Carol Falconer for full information on production requirements, copy modifications, or creative services.

### MARKETING SERVICES

Contact Marketing Services Manager Phil Cook. Phil will assist you with full information on reprint and direct mail programs designed to supplement your total marketing effort.

## Literature

Tab Books, Blue Ridge Summit, Pa. 17214, offers a number of books of interest to cable operators. Newest volume of interest to cablecasters is **Guidelines for News Reporters** (no. 516), a \$9.95 hardbound book by Sol Robinson, dealing with journalism for the electronic media. The 192 pages cover style, technique, libel and slander, special terminology and solutions for the problems newsmen encounter.

Tab also offers **CATV System Management and Operation**, a 256-page book by Robert B. Cooper, Jr., selling for \$12.95. The CATV technician will be interested in another recent Tab release, **How to Use Vectorscope-Oscilloscopes & Sweep-Signal Generators** (no. 550), by Stan Prentiss. The 256-page work sells for \$7.95 hardbound or \$4.95 paperbound.

Howard W. Sams & Co., Inc., 4300 West 62nd Street, Indianapolis, Ind. 46268, is another source of good reading for the people of CATV. Beginning technicians will be interested in such works as **ABC's of Integrated Circuits**, 96 pages by Rufus P. Turner. This elementary introduction to ICs sells for \$2.95 (\$3.75 in Canada). Another Sams publication of interest to the technician is **Transistor TV Servicing Made Easy** by Jack Darr, \$4.95 (\$5.95 in Canada).

The cablecaster will be interested in Sams **Closed-Circuit Television Production Techniques** by Larry G. Goodwin and Thomas Koehring. Although the book was written primarily for educational and industrial applications of TV, it is a good primer for anyone who works with a small TV studio. The 192-page paperback is a good buy at \$4.95 (\$5.95 in Canada).

Hailed as the first book covering the complete field of videocassettes, Martin Roberts & Associates, Inc., P.O. Box 5128J, Beverly Hills, Calif. 90210, is now offering **Videocassettes, The Systems, The Market, The Future**. The large 154-page (spiral-bound) book sells for \$12.50 and is available by mail only. Purchasers of the book are promised three quarterly supplements during 1971.

Those advanced CATV technicians and engineers who seek to expand their knowledge through reading a diversity of technical papers will find the **Dictionary of Telecommunications** a useful reference book. The Philosophical Library, Inc., 15 E. 40th Street, New York, N.Y. 10016, offers the small 200-page work for \$15.00. It is compiled by R.A. Bones and printed in Great Britain.

Hastings House (Communication Arts Books), 10 E. 40th Street, New York, N.Y. 10016, offers a 260-page book for those who aspire to direct films or use film for television programming. This particular volume **The Work of the Film Director**, by A.J. Reynertson (\$13.50 hardbound and \$7.60 paperbound) is not likely to interest many CATV people; but the larger cablecaster should be aware of its availability. The same publisher also offers other related books including: **The Technique of Film Editing** and **The Technique of Documentary Film Production**. 

## THE CATV

# CLASSIFIEDS

TV Communications Reply Address: 1900 West Yale, Englewood, Colo. 80110

Rate for classifieds is 25 cents per word for advertising obviously of a non-commercial nature. Add \$1.00 for Box Number and reply service, per issue. Advance payment is required; minimum order is \$10.00. Classified rate to commercial advertisers is \$30.00 per column inch (2-1/4" col.). Deadline for all classifieds is 1st of preceding month.

### FOR SALE—BUCKET TRUCK

Hallline ladder on 1970 Dodge chassis with Powers-American body. Slightly used. New cost was \$11,600. Price negotiable. Full description on request. Write box T271-1.

### FOR SALE

Used Dynair TV Modulators:

TX 4A Ch 4 Solid State with 4.5 Audio Modulator.

TX 4A Ch 13 Solid State with Aural Separator.

TX 1B Ch 3 Tube Type with 4.5 Audio Modulator.

All units 1 yr. old and with a fresh factory check out.

Cost \$900 New. Will sell for \$500 each.

Marcus CATV  
1805 Pierce Avenue  
Marinette, Wisc. 54143  
715-735-6111

### FCC NEWS RELEASES

Receive daily copies of all FCC news releases and keep abreast of developments in this rapidly changing industry. Vital to TV and radio station managers, CATV managers, anyone affected by FCC decisions. Write: WASHINGTON INFORMATION GROUP, 1825 Connecticut Ave., NW, Suite 428, Washington, D. C. 20009.

### VAS

Video Activated Switch. Senses presence of video with sync. Performs unmanned program switch. Dual programming on single channel.

A. L. Ham  
P. O. Box 314  
Waterman, Ill. 60556

### INTERESTED?

CATV Franchise — 1000 immediate potential, no percentage fee, 19 years left. Unbuilt system for Montana town 15 freeway miles adjacent to 2 major city local signals plus 5 imported. Holders will negotiate sale. Reply TV Communications, Dept. T271-2.

### SYSTEM FOR SALE

4 small systems covering 13 miles — having 950 subs with a potential of 2000. Best offer — Write to: TV Communications, Box T171-3.

### FOR SALE

50% off list price, excellent condition, 2 mounted Uniplex Units each consisting Graflex No. 930 TV 16 mm projector and GPL camera No. 700 with new vidicons, Reply

Social Dynamics Corporation  
527 Lexington Ave./N.Y., N.Y. 10017  
Phone 212-753-5017

### USED EQUIPMENT

Fully equipped, B & W:

(1) 1967 GMC Handivan (original cost \$24,856), lease fee \$534.40 per month, after April 1975, \$745.68 annually.

(2) 1968 GMC Handivan (original cost \$32,960), lease fee \$692.16 per month, after March 1975, \$640.12 annually.

Leghorn Corporation, 3301 14th Street West, Bradenton, Florida 33505, Telephone (813) 746-2117.

### WANTED

5 Used Jerrold Trunk Amp SCA-213  
5 Used Jerrold Distribution Amp SDA-4  
3 Used Jerrold AGC-213  
5 Used Jerrold Power Supply CPS-4

Contact:

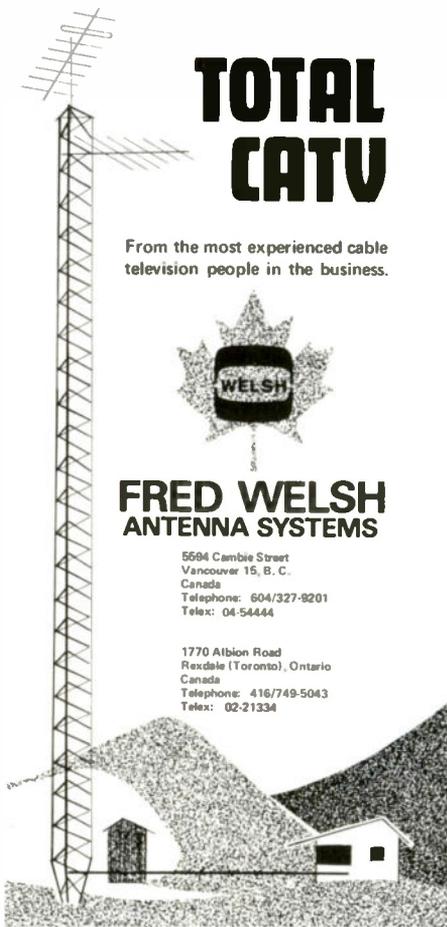
Warner Newcomb, K.B.C. Corp.  
P. O. Box 1150  
Killeen, Texas 76541

### POSITION WANTED

CATV Manager/Technician. Experienced in all facets of CATV — From construction to origination. Will relocate anywhere. Available immediately. Reply TVC, Box T271-3.

### JANSKY & BAILEY BROADCAST-TELEVISION DEPARTMENT

Atlantic Research Corporation  
Division of The Susquehanna Corporation  
1812 K Street N.W.  
Washington, D.C. 20006  
Phone: 202/296-6400



# TOTAL CATV

From the most experienced cable television people in the business.



## FRED WELSH ANTENNA SYSTEMS

5594 Cambie Street  
Vancouver 15, B. C.  
Canada  
Telephone: 604/327-8201  
Telex: 04-54444

1770 Albion Road  
Rexdale (Toronto), Ontario  
Canada  
Telephone: 416/749-5043  
Telex: 02-21334

### CABLE INSTALLATION AND MAINTENANCE

Just turning on a new area? Have a surge of new customers to attach to your cable system but don't have enough experienced personnel to handle cable maintenance and do installations, too. Call us. All work guaranteed to customer's satisfaction.

**C.P.S. CABLEVISION, INC.**  
P.O. Box 336, Coalport, Pa. 16627  
814/672-8733

## B-RO ANTENNA HEAD-END ENGINEERING

Computerized TV Reception Studies \* Signal Surveys \* Turnkey Construction \* H.E. Final Testing \* Consultation

Box 2175 • PRINCETON, N.J.  
(609) 452-2440



**REVERSE SPIRAL**  
TM PAT

For CATV 59/U Drop Wire

**WESTAY COMPANY**  
P. O. Box 573 - Cupertino, Calif. 95014

# Calendar

## MARCH

**28-30—Pacific Northwest Cable Television Association** meeting will be held at the Rodeway Inn, Boise, Idaho. For information contact Ken Walker, Box 47, Twin Falls, Idaho.

**28-31—National Association of Broadcasters** 49th annual convention at the Conrad Hilton Hotel, Chicago, Ill. For more information contact NAB at 1771 N. Street, N.W., Washington, D.C. 20036 (202) 293-3500.

## APRIL

**4-6—Southern CATV Association** annual convention at the Sheraton-Peabody Hotel in Memphis, Tenn. For more information, contact Alvin D. Wood, SCATVA sec-treas., P.O. Box 888, Dyersburg, Tenn. 38024 (901) 258-4174.

**7-9—Texas CATV Association** annual convention at the Marriott Motor Hotel in Dallas, Texas. For more information contact John Mankin Sr., executive secretary, 222 N. Broadway, Tyler, Texas 75701 (214) 592-8251.

**12-13—New England Cable Television Association** annual meeting at the Sheraton Wayfarer in Bedford, New Hampshire. For more information contact Bill Kenny, NECTA executive director, P.O. Box 321, Tilton, N.H. 03276 (603) 286-4473.

**13-15—Kentucky CATV Association** meeting at the Continental Inn, Lexington, Ky. For more information contact Howard Norrell, president, 323 Ann Street, Frankfort, Ky. 40601 (502) 227-7969.

**21-23—NCTA Programming Seminar** at the Palmer House Hotel in Chicago. For further information contact the NCTA PR office.

**21-23—Ohio CATV Association** meeting at the Sheraton Columbus Hotel, Columbus, Ohio. For more information contact Jack P. Rubins, convention chairman, 196 S. Main Street, Marion, Ohio 43302 (614) 383-6781.

**26—Beginning on this date, the Canadian Radio-Television Commission** will hold a public hearing which will deal with proposed CATV policies and regulations for Canadian cable operators. The hearings will be at the Centennial Centre, Ottawa, Ontario.

**27-29—North Central CATV Association** spring conference at the Park Motor Inn, Madison, Wisc. For further information contact Bernie Mainville, sec-treas., P. O. Box 706, Iron Mountain, Mich. 49801 (906) 774-2404.

## MAY

**4-6—Pennsylvania Community Antenna Television Association** Spring meeting will be held at the Marriot Hotel in Philadelphia, Pa. For more information, contact John Rigas, PCATA president, P.O. Box 472, Coudersport, Pa. 16915 (814) 274-9631.

## JULY

**6-9—National Cable Television Association Annual Convention** at the Sheraton Park Hotel and the Shoreham Hotel in Washington, D.C. For more information, contact NCTA (202) 466-8111.

### WANTED TO BUY

Used sub channel equipment  
Up Converters  
Down Converters  
Sub channel line amplifiers  
Need to know card and cost

Write or call:

Edward Dunn  
713 W. Main  
Smethport, Pa. 16749  
814/887-5781 after 5:00 p.m.  
814/887-5388

# REPRINTS

... of articles and advertisements can be an effective method of promoting your services and products.

write to:

**TV Communications**  
1900 West Yale  
Englewood, Colo. 80110

## Still Available!

NCTA's new book entitled "Introduction to CATV", is still available at \$9.95 per copy (marked down from its original price of \$14.95). This book is designed to give a complete picture of the total CATV industry to the non-technical person.

Its 105 pages contain:

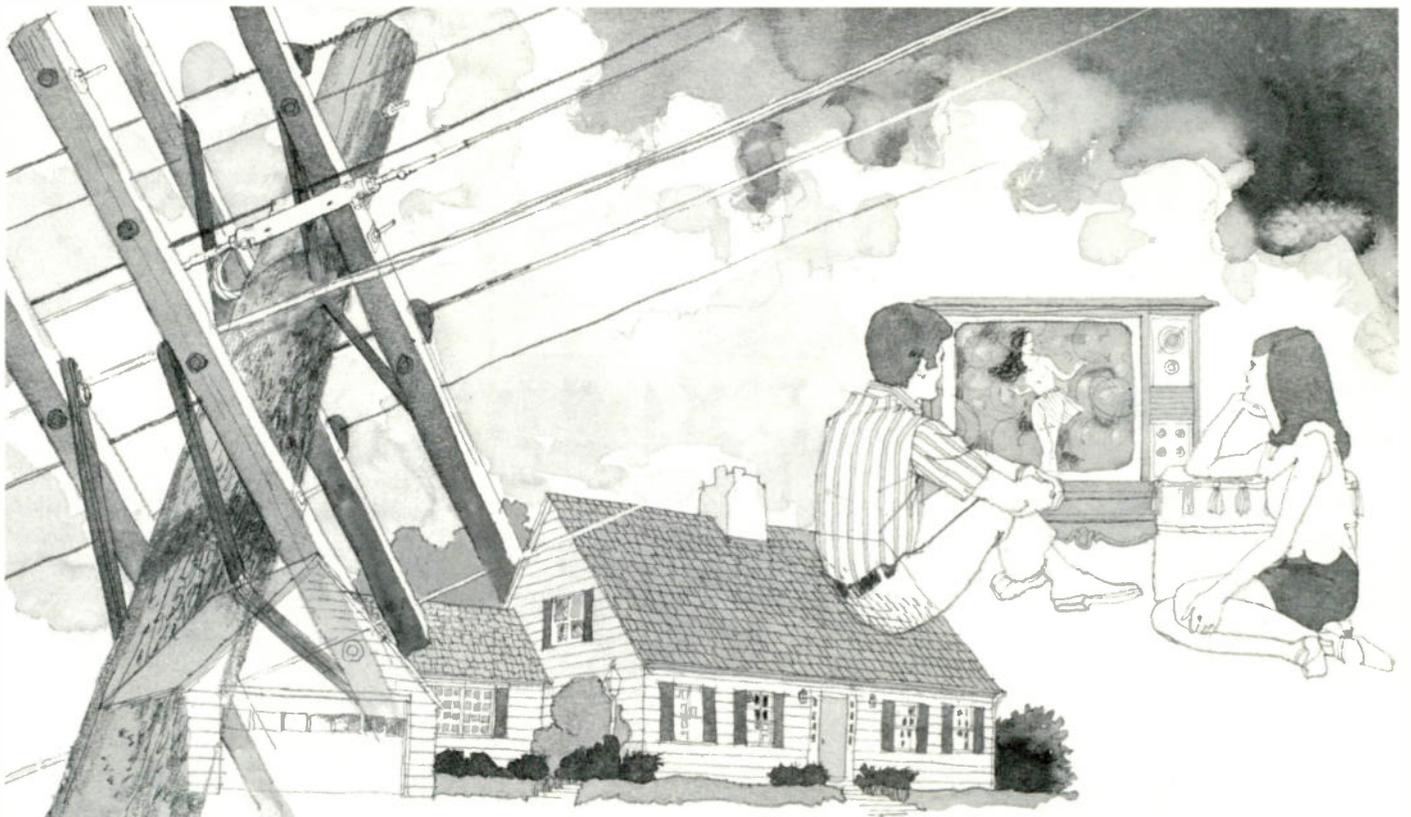
- History and development of CATV
- Future prospects of the Industry
- Complete description of each component from antennas and headend to connection at the subscriber's set all described in layman's terms.

It is excellent in explaining the concepts of CATV to:

- The new employee
- The clerical or non-technical employee
- The City Official, banker, or other professional person
- The manager of a multiple-subscriber installation, hospital, apartment house, hotel or rest home

Write today for your copy and send your check or money order to:

**National Cable Television Institute**  
3022 Northwest Expressway, Dept. TV3  
Oklahoma City, Oklahoma 73112



## Aqua CATV distribution components Available for immediate delivery

That's right. We said IMMEDIATE DELIVERY. Because the complete Aqua line of CATV devices is now being manufactured and stocked by Cunningham Corporation . . . for over 16 years a leader in the design and manufacture of audio-video switching devices. It was only a matter of time before Cunningham entered the fast growing CATV field . . . because these products dovetail so beautifully with our own line of switching products. And we couldn't have picked a better line than Aqua . . . a line that has been proven

reliable in applications from coast-to-coast.

The full range of these superior CATV products which are now in stock and ready for immediate shipment—includes:

- **Splitters (2-way and 4-way)**
- **Outdoor Directional Taps**
- **Outdoor Dual Taps**
- **FM Taps**
- **Off-air Rejection Transformers**
- **Matching Transformers**

And we've made certain that every Aqua device meets Cunningham's strict requirements for design excellence, quality and built-in

reliability. A look at the new Cunningham/Aqua CATV Equipment Catalog will give you some idea of what we mean. Send for your free copy today. Then let us prove to you that we mean it when we say "IMMEDIATE DELIVERY."

Cunningham Corporation,  
10 Carriage Street  
Honeoye Falls, New York 14472

# Cunningham Corporation



SUBSIDIARY OF GLEASON WORKS

# You enabled us to decrease prices in the midst of inflation. (Thanks.)

That's right. Effective March 1, many of DYN AIR's 200 television products have been reduced substantially in price. Not because labor costs are down . . . they're up. And not because of reduced parts costs either . . . they've skyrocketed!

How did we do it? Well, increased efficiency and marked decreases in overhead have helped. So have tightly controlled computerized cost accounting methods. But the primary key to reduced prices has been you.

Your faith in DYN AIR has been substantiated by a solid increase in our sales, particularly in certain product areas. Since manufacturing costs are directly related to quantity, this has enabled us to decrease our price to you.

It works both ways though, and we were also forced to raise a few prices. Not much . . . just enough to allow a fair profit in the face of drastically increased parts costs. Only a few items are affected, with the increases being very moderate.

We have refused to play the inflationary game of blanket price increases. We have also refused to price an item based upon what the market will bear. We look carefully at costs on each particular product and establish a price which is compatible with normal profit considerations. Our continued growth, even during the past year when so many corporations failed, is indicative of your agreement with our philosophy of high quality products at competitive prices.

Request a copy of DYN AIR's new price list today. We think you'll like what you see.

TYPICAL PRICE REDUCTIONS		
PRODUCT	OLD PRICE	NEW PRICE
MINI-3 Video Switcher, 3-input	\$ 65	\$ 55
MINI-6 Video Switcher, 6-input	85	70
MINI-DAV Video Distribution Amplifier	255	200
MINI-DAP Pulse Distribution Amplifier	255	200
DA-30C Video Distribution Amplifier	325	275
DA-60C Video Distribution Amplifier	425	375
PD-81C Pulse Distribution Amplifier	425	375
DA-1060C Video Distribution Amplifier	180	150
DA-1064C Video Distribution Amplifier	250	200
PD-1041C Pulse Distribution Amplifier	185	150



## DYN AIR Electronics, Inc.

6360 Federal Blvd., San Diego, Calif. 92114  
Telephone (714) 582-9211

Please send me a copy of your new price list and short-form catalog.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

# 40 EXPANDED RANGE



## FUTURA 300 INTEGRATED CIRCUIT

### LINE EXTENDER AMPLIFIER SERIES

#### FOR CABLE COMMUNICATIONS SYSTEMS

- **Hybrid Integrated Circuit** - Maximum reliability, with push-pull output for lower second order distortion.
- **Expanded Range** - 40 to 300 MHz to carry the Super High Band Channels (individual amplifiers).
- **New Channels** - The expanded channel capacity you need (right off your distribution lines) to present the varied programming that will please your subscribers and attract new ones.
- Full specifications and prices for Vikoa Futura 300 Amplifier Series, including integrated circuit line extender amplifiers and a complete line of expanded range passive equipment, available on request.

**vikoa** technically, the One



CALL COLLECT: • Hoboken, New Jersey (201) 656-2020 • New York, New York (212) 943-5793 • Denver, Colorado (303) 777-2696 • Seattle (Bellevue), Washington (206) 454-1446 • Dallas (Garland), Texas (214) 276-1181 • Los Angeles (Torrance), California (213) 371-7543 • Atlanta (Lithonia), Georgia (404) 482-2981 • Available in Canada from Vikoa of Canada Limited, 8340 Mayrand St., Montreal, 308, Quebec (514) 341-7440 • Available in Belgium, Luxembourg, The Netherlands and Switzerland from A.C.E.C., BP 8, Charleroi, Belgium International Telephone: 07/36. 20. 20, Telex: 51.318 • Available in Central America and South America, and the Caribbean from Caribe Export-Import Co., P.O. Box 2435, Bayamon, Puerto Rico 00620.