



MAY 1965

TV & Communications

1965



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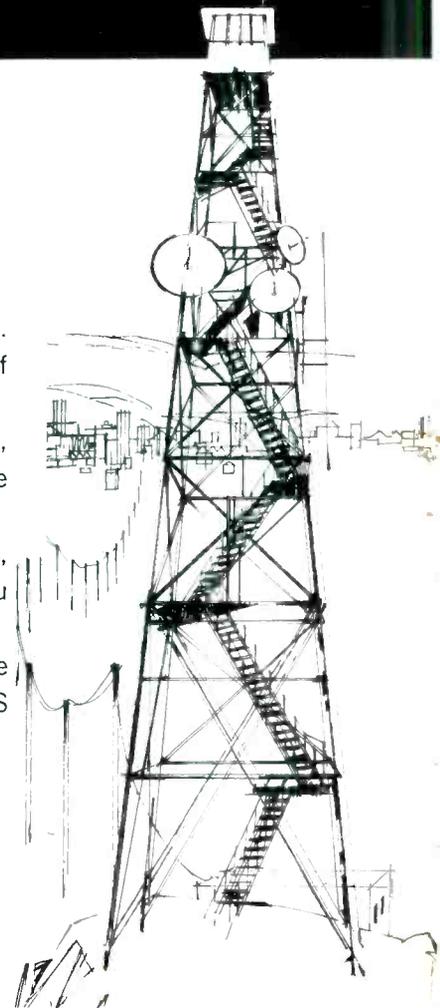
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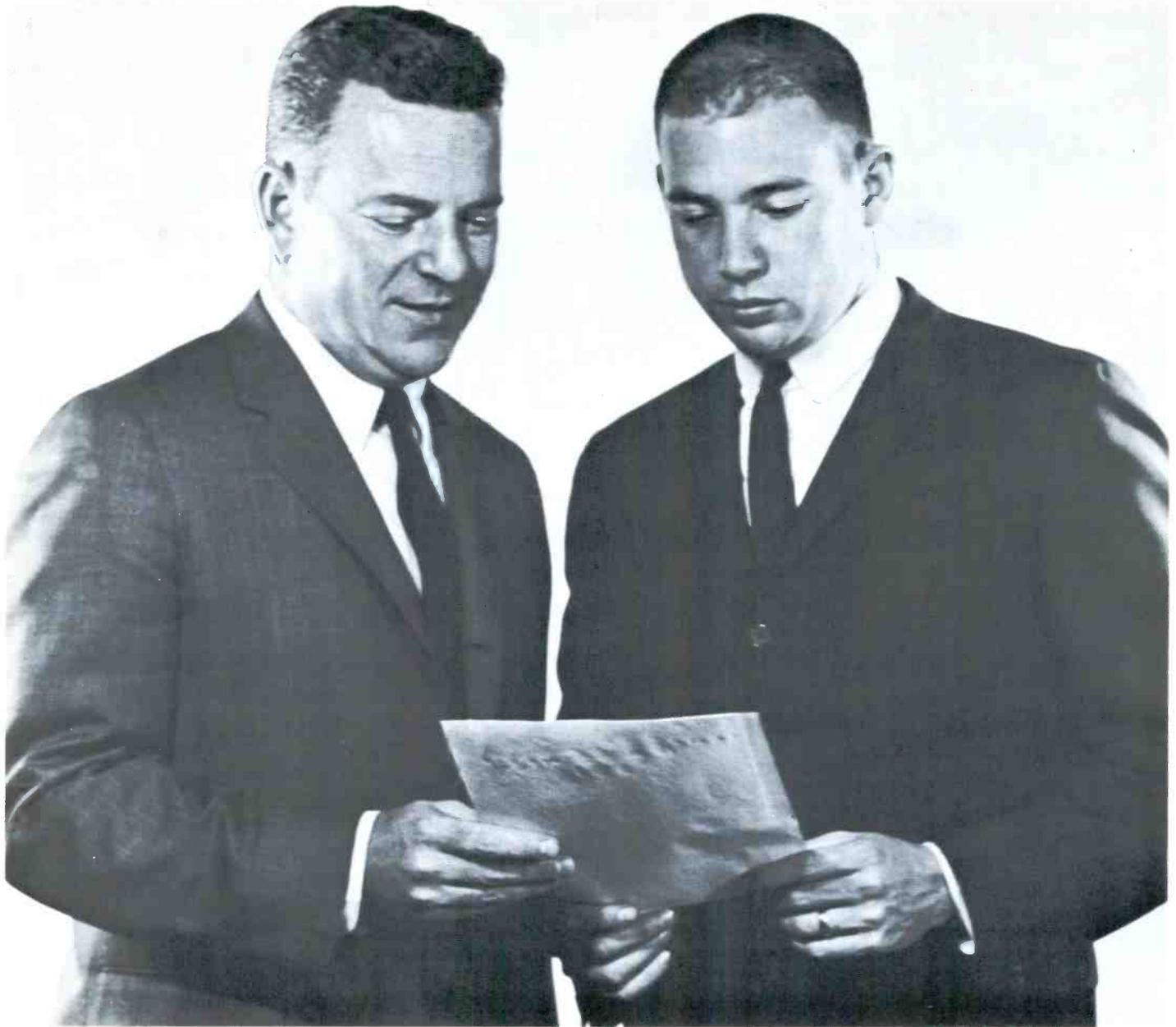


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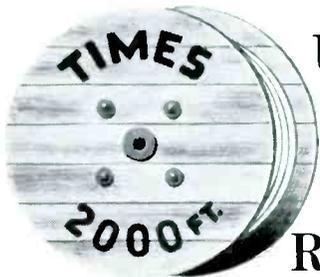
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Dallas, Texas—56-35 Yale, Room 212—214 EM 3-8054

Lewistown, Pennsylvania—17 S. Bercaus—717 248 8844

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Until April 16, 1965,
 you couldn't buy 2,000 ft. continuous
 seamless aluminum sheath CATV cable
 for love or money. Now Times is shipping it.
 Read why this revolutionary new cable
 makes every other CATV cable a compromise.

Everyone in the CATV business knew it: the longer the cable, the fewer the splices, the lower the maintenance, the better the performance...the higher the profits.

But no one did anything about it until Times, the company the industry expects to be first*, took up the challenge of longer-length cable.

The result: Times made the breakthrough with its 2,000 ft. continuous lengths of seamless aluminum CATV cable. Even more exciting, Times is shipping this cable right now!

Here's what this new 2,000 ft. cable can do for you that no other cable can:

▪ **It easily saves you 10% on installation and shipping costs.** 2,000 ft. lengths mean fewer splices—8% saved. Only 1 reel needed for 2,000 ft. of cable instead of 1 reel for each 1,000 ft.—2% saved.



▪ **It increases profit.** The fewer the splices, the less maintenance needed. Less maintenance means less labor cost and more profit.

▪ **It improves electrical performance.** Times JT-1000 cable guarantees 26 db minimum return loss—a must for minimum ghosting. Moreover, it won't let in moisture vapor that stops your signal short of the target.

And don't forget: long after so-called economy cable has been replaced (it starts deteriorating the day you install it), Times 2,000 ft. JT-1000 cable will still be a top performer, keeping pace with your system's planned potential.

Why compromise when you no longer have to...now that Times 2,000 ft. continuous lengths of seamless aluminum CATV cable

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**Times' Family of Firsts*—
 The Standards of the Industry**

First to design a long life cable specifically for CATV

First with foam dielectric cables for CATV



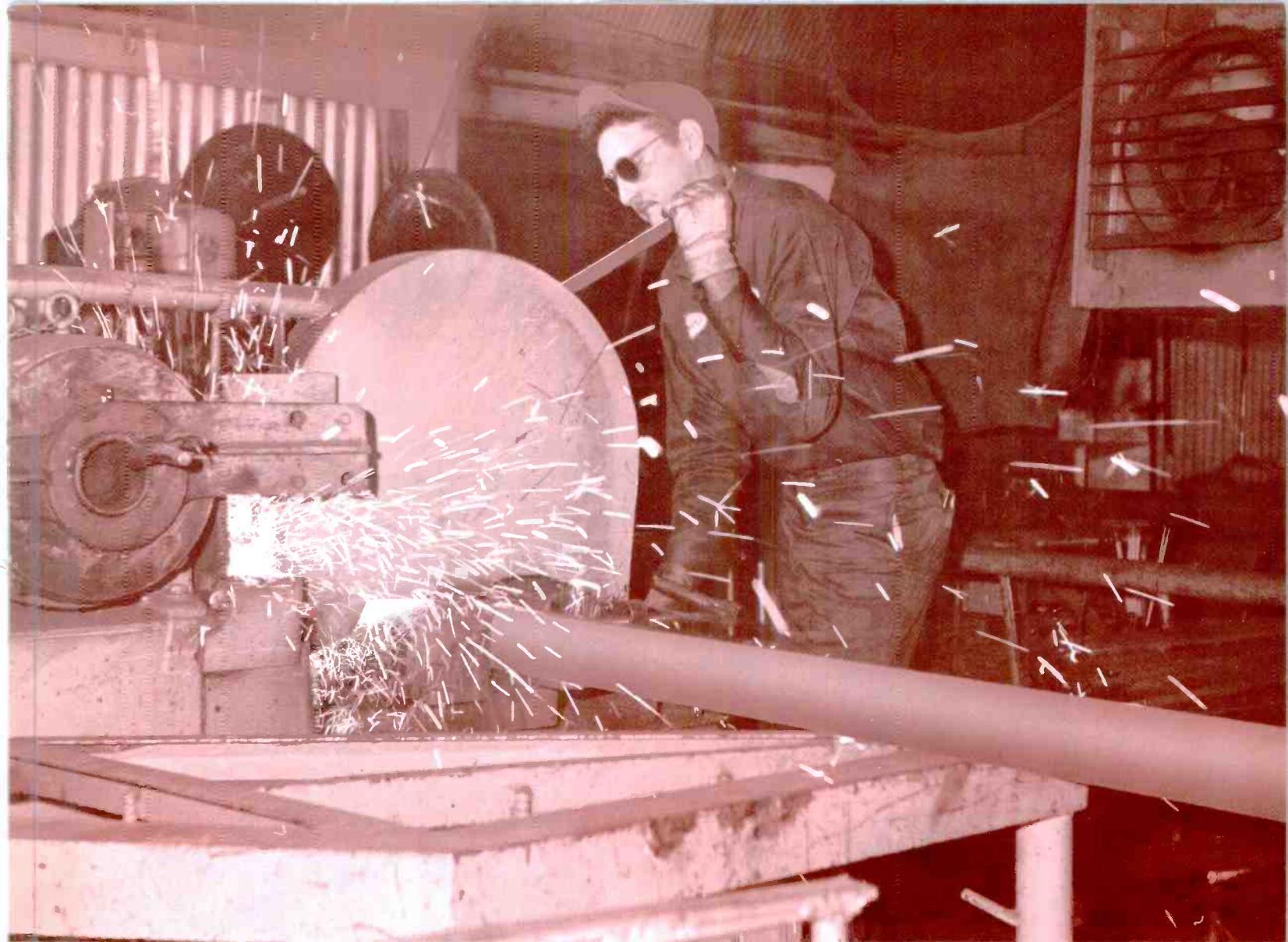
First with cable that made all-band systems economically feasible

First to make aluminum tube sheathed coaxial systems economically feasible

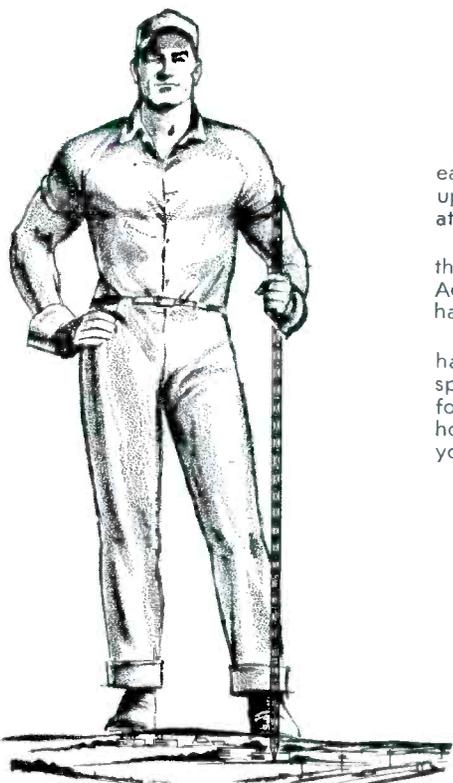
First to offer 26 db minimum return loss guarantee

First again with 2,000 ft. lengths of seamless aluminum sheath CATV cable


TIMES
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TV & COMMUNICATIONS

THE PROFESSIONAL JOURNAL OF THE CABLE TELEVISION INDUSTRY



MAY, 1965

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TABLE OF CONTENTS

Television In The U.S. Today	
Rep. Oren Harris Proposes CATV Bill	10
CATV History & Scope	
Robert L'Heureux, NCTA	18
Visit To CAS Manufacturing Company	
Staff Report on Texas Manufacturer	23
Guide to Install Aluminum Cable	
Samuel N. Blakeman, Jerrold Electronics	32
A CATV Manager	
Charles Wigutow, Ameco	37

SPECIAL SUPPLEMENT

Complete Report of FCC Action and Proceedings on CATV Proposed Rules and Microwave-served CATV Rules — PLUS — Text of Rep. Oren Harris' TV Address Before the House.

Editorial	8	Letters to the Editor	41
News Spectrum	10	Industry Calendar	41
Our Cover	13	New Product Review	42
Focus on Progress	14	Classified Advertising	43

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EXTENSION TIME
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FCC: A Portrait of Power

The FCC has claimed dominion over all CATV . . . and we don't think anyone is too surprised. Even the obvious intent to insulate broadcasters' pocketbooks through the subjugation of CATV interests was in line with our expectations. (See Special Regulatory/Legislative supplement to this issue.)

We are now hopeful that Congress will respond to the FCC's seizure of unauthorized jurisdiction by providing specific statutory control of CATV on an equitable basis, respecting the principles of free enterprise and the public benefit. We welcome, in particular, Oren Harris' desire to set straight the relationship of the FCC to the legislative branch of government. (See Special supplement.)

But even if the rights of Community Antenna operators are rescued by Congress, the present situation will have pointed out some disturbing characteristics of the Federal Communications Commission. Although interested Congressional leaders specifically asked the Commissioners to present legislative recommendations, they responded with stringent rules for microwave-fed cable systems and now assert jurisdiction over all CATV systems—whether or not interstate distribution of signals is involved. And even though CATV leaders presented suggestions aimed at a cooperative, even compromising, relationship with the broadcaster interests, the Commission presented one-sided proposals designed to shield broadcast interests at the expense of cable owners.

As Commissioner Lee Loevinger said in his dissenting statement, “. . . the Commission has already formed its opinion . . . the Commission and its staff have strong and fixed views regarding the subordinate place of CATVs in the mass communication systems, and these views are not likely to be much influenced by anything that can be presented to the Commission in the course of the inquiry.”

Just what is the function of the Federal Communications Commission? Is it to establish national policy on a matter so important as the number of television channels from which an American citizen may choose . . . to decree that three signals are “enough” and that seven choices may be too many?

And are the FCC Commissioners representing the best interests of their employers, the people of the United States, when they seek to exercise jurisdiction over the customers of a common carrier? By requiring the common carrier, as Mr. Loevinger puts it, “to act as the Commission's policeman in order to keep its license, then the Commission can regulate any business in the United States.” This regulatory concept contradicts FCC precedent, congressional intent and certain basic principles of our government.

With sincere respect to the distinguished members of the Federal Communications Commission, we would urge our legislators to more clearly define the precise role and limited powers of this regulatory agency. The rights and welfare of those who use and those who provide cable television services are in the balance; immediate action is necessary.

Stan Searle

The monotonous uniformity of our CATV cable

ROME UNIFOAM

QA -190

ROME CABLE DIVISION OF ALCOA

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

R. F. Cable Inspection Report

F.O. No. 24499

C.O. No.

OWNER

TRACE NUMBER	LENGTH	CONTINUITY		VISUAL	DIELECTRIC	CORONA LEVEL	INSULATION RESISTANCE	CAPACITANCE		ATTENUATION				V _d	RETURN LOSS	
		LINE	GND					meas	pl/ft	MCS		MCS				
										meas	/100 ft	meas	/100 ft			meas
224I2	1218	OK	OK	OK	5.04	—	OK	20150	16.5	6.7	55	10.4	8.55	81.8	26.2	33db
B023K6	1045	"	"	"	"	—	"			5.7	545	8.8	842			29db
224F3	1219	"	"	"	"	"	"			6.7	55	10.4	8.53			27db
024F4	1222	"	"	"	"	"	"			6.7	55	10.5	8.58			30db
025L11	1231	"	"	"	"	"	"			6.7	543	10.4	8.43			31db
024F10	1215	"	"	"	"	"	"	19900	16.4	6.5	535	10.3	8.48	82.3	26.3	32db
A023K6	1208	"	"	"	"	"	"			6.5	538	10.2	8.43			27db
025M2	1205	"	"	"	"	"	"			6.6	548	10.4	8.62			30db
025M5	1217	"	"	"	"	"	"			6.5	535	10.3	8.45			29db
A024I2	1205	"	"	"	"	"	"			6.5	538	10.2	8.45			29db
024F2	1195	"	"	"	"	"	"			6.6	552	10.3	8.62			29db
024F7	1205	"	"	"	"	"	"			6.5	538	10.2	8.45			29db
B024I2	1205	"	"	"	"	"	"			6.4	532	10.3	8.37			26db
024F9	1218	"	"	"	"	"	"			6.6	572	10.4	8.53			31db
024L8	1222	"	"	"	"	"	"			6.7	55	10.4	8.43			29db
022A9	1205	"	"	"	"	"	"	19400	16.1	6.4	532	10.0	8.3	83.9	26.3	30db
024D6	1205	"	"	"	"	"	"			6.5	538	10.2	8.42			33db
024I10	1208	"	"	"	"	"	"			6.5	538	10.2	8.42			29db
023B2	1208	"	"	"	"	"	"			6.4	537	10.1	8.37			30db
024I9	1200	"	"	"	"	"	"			6.5	540	10.2	8.5			29db

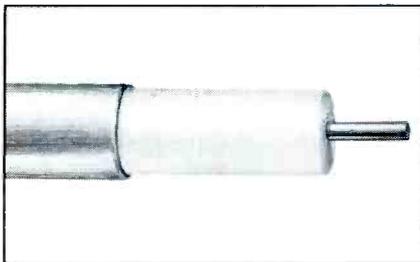
Remarks:

File Frank R. Rollon Maynard, D.A.

Inspector: *[Signature]*

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

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



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

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

For example: Look at this test sheet recording routine tests on 20 reels of 3/4" 75 ohm cable. There is nothing special about this report, as far as we are concerned. Length after length, the test data has a monotonous sameness, day after day. Look, for example, at the 220 mc attenuation column on this sheet. The lowest value measured was 0.830 db/100 ft., and the highest 0.862. The average of the 20 reels is 0.847 db/100 ft. All of the individual measurements are within ± 2% of the average. Statistical analysis of data from several hundred lengths tested tells us that no more than 2 lengths out of 1000 will exceed the average by more than 5%.

Return Loss. Notice the last column on

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

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

Get the whole story. We offer you a fact-filled folder on Rome Unifoam CATV Cable. For a copy, just call your nearest Rome/Alcoa representative or write Rome Cable Division of Alcoa, Dept. 4055, Rome, N. Y. 13440.

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Rome Cable
 DIVISION OF ALCOA

News SPECTRUM

HARRIS PROPOSES CATV BILL: CRITICIZES FCC

Representative Oren Harris (D-Ark.) has introduced a bill into the House of Representatives proposing legislation of CATV. His bill is "aimed at dealing with an important aspect of television in the United States today and, more importantly, perhaps, with the future of television in the United States."

In an address before the House, Harris severely criticized the Commission's recent rulemaking action. He noted that he had urged the Commission "repeatedly" to submit to Congress "legislative recommendations" aimed at dealing with the "problem presented by CATV systems". Instead, he said, "the Commission contends that it has statutory authority under the provisions of the Communications Act of 1934."

The legislator argued that "in my opinion," the Commission's action "is not in the best interest of the future television in the United States." He predicted that, if Congress fails to take action clarifying the situation, the courts would decide upon FCC's regulatory authority over CATV.

Expressing disappointment with the Commission, Harris pointed out that the CATV action "does not constitute an isolated instance." He related the recent Communication Satellite actions as an example.

The CATV bill, Harris contended, would give FCC authority to regulate (but not to license) CATV, however, such authority would be granted by the Congress. In addition, "such authority should be granted only after the Congress has had an opportunity to consider all aspects of the future of television," he said.

Harris summarized the points of his bill as "First. Establish a national television policy." "Second. . . . it is imperative that inter-state television communications — whether by wire or radio — be regulated." "Third. Pre-empt . . . 'those aspects of intrastate and local television communication

which may affect the accomplishment of the national television policy.'" "Fourth. Authorize the Commission to regulate CATV systems but not license them. Make clear that CATV systems shall not be deemed to be common carriers." "Fifth. . . . no CATV rules should take effect prior to . . . 90 calendar days following the date of promulgation of such rules." "Sixth. Make null and void any interim procedure." "Seventh. Authorize the Commission to secure full and complete information on CATV operations."

See the Special Supplement to this issue for the complete text of Representative Harris' address.

NCTA LAUDS HARRIS' BILL

Frederick W. Ford, speaking for the National Community Television Association, approved of the CATV bill introduced into the House by Rep. Oren Harris (D-Ark.). Ford said the question of proper treatment of cable television." He added that the bill will "bring about a sweeping re-appraisal of the priorities established to provide the best television service possible to the American public."

RULES AND RULE MAKING ON CATV SYSTEMS

The Commission has released public notices concerning that agency's jurisdiction over community antenna television (CATV) systems. The notices cover Docket Numbers 15971, 14895 and 15233. (See Cable Television Review, April 26 for a summary of the rules; Special TV & Communications Supplement to this issue incorporates the entire proceedings.)

A joint Notice of Inquiry and Notice of Proposed Rule Making in Docket 15971 was adopted on April 22, 1965. The joint Notice is divided into two parts, with comment on Part I and on one aspect of Part II due on or before June 25, 1965. Comment on the remaining portions of Part II is due on or before August 27, 1965.

In Part I, the Commission concludes that it has jurisdiction and authority over CATV and that CATV systems "are engaged in interstate

communications by wire to which the the provisions of the Communications Act are applicable Section 2(a) and 3 (a)." The Commission further concluded that its statutory powers "include authority to promulgate necessary and reasonable regulations to . . . prevent frustration of the regulatory scheme by CATV operations, whether or not they make use of microwave facilities."

"While we have initially concluded that we have jurisdiction," the Commission states, "we would carefully consider comments addressed to this aspect." They added that final Commission decision will be withheld "for an appropriate period to afford Congress an opportunity to act."

The main thrust of Part I, according to the Commission, is to gather facts and comment on pertinent policy considerations to enable the Commission to determine whether rules or legislative proposals to the Congress would be appropriate. Part II is concerned with "(1) CATV entry into major cities and the effect on the development of UHF independent stations, (2) . . . the possible need for generalized restrictions on the distance the signal of a television station may be extended beyond the station's contour by CATV, (3) whether CATV systems should be required to carry nearer stations in preference to more distant ones so as to avoid 'leap-frogging, (4) program origination or alteration . . . possible Pay TV or combined CATV-Pay TV operations.

This Notice was adopted by the Commission with Commissioners Bartley and Loevinger concurring in part and dissenting in part and issuing statements.

The second Notice covers a First Report and Order adopting special rules governing the use of microwave relay facilities to carry television signals to community antenna systems.

The rules would require a microwave-served CATV system "to carry the signals of all local television stations, without material degradation in technical quality, and to refrain from duplicating the programs of local commercial stations, either simultaneously or within 15 days before or after local broadcast."

The Commission based these requirements on "(1) . . . conclusion that a CATV system's failure or refusal to carry the signal of a local station and duplication of a local station's programming are unfair and unreasonable means of competition." "(2) . . .

conclusion that action is needed to ameliorate the adverse effects of CATV competition upon the maintenance and healthy growth of television broadcast service." "(3) . . . conclusion that across-the-board rules are the most appropriate way for it to deal with the procedural problems inherent in the subject matter before it."

These rules will apply initially only to applications filed on or after June 1, 1965. They were adopted on April 22 by the Commission with Commissioner Bartley dissenting and Commissioner Loevinger concurring in part and dissenting in part.

Both Commissioner Bartley and Loevinger issued statements dissenting to the conclusion that the Commission has present authority over CATV.

FORD REFUTES FCC JURISDICTION

Immediately following an announcement by the Commission that it was assuming jurisdiction over community antenna television, Frederick W. Ford, President, NCTA, issued a statement in opposition. He described the FCC's decision as an "unlawful effort" and accused the Commission of having a "built-in bias in favor of the *status quo*." He noted that Commissioner

Loevinger's dissenting statement clearly reveals the bias that "convinces us that the Commission does not yet have sufficient knowledge or objectivity to regulate this industry without specific congressional direction."

According to Mr. Ford, the Congress alone has the "right and duty to legislate the future of CATV." He expressed confidence that "Congress will intervene to prevent such unprecedented assumption of jurisdiction by an administrative agency."

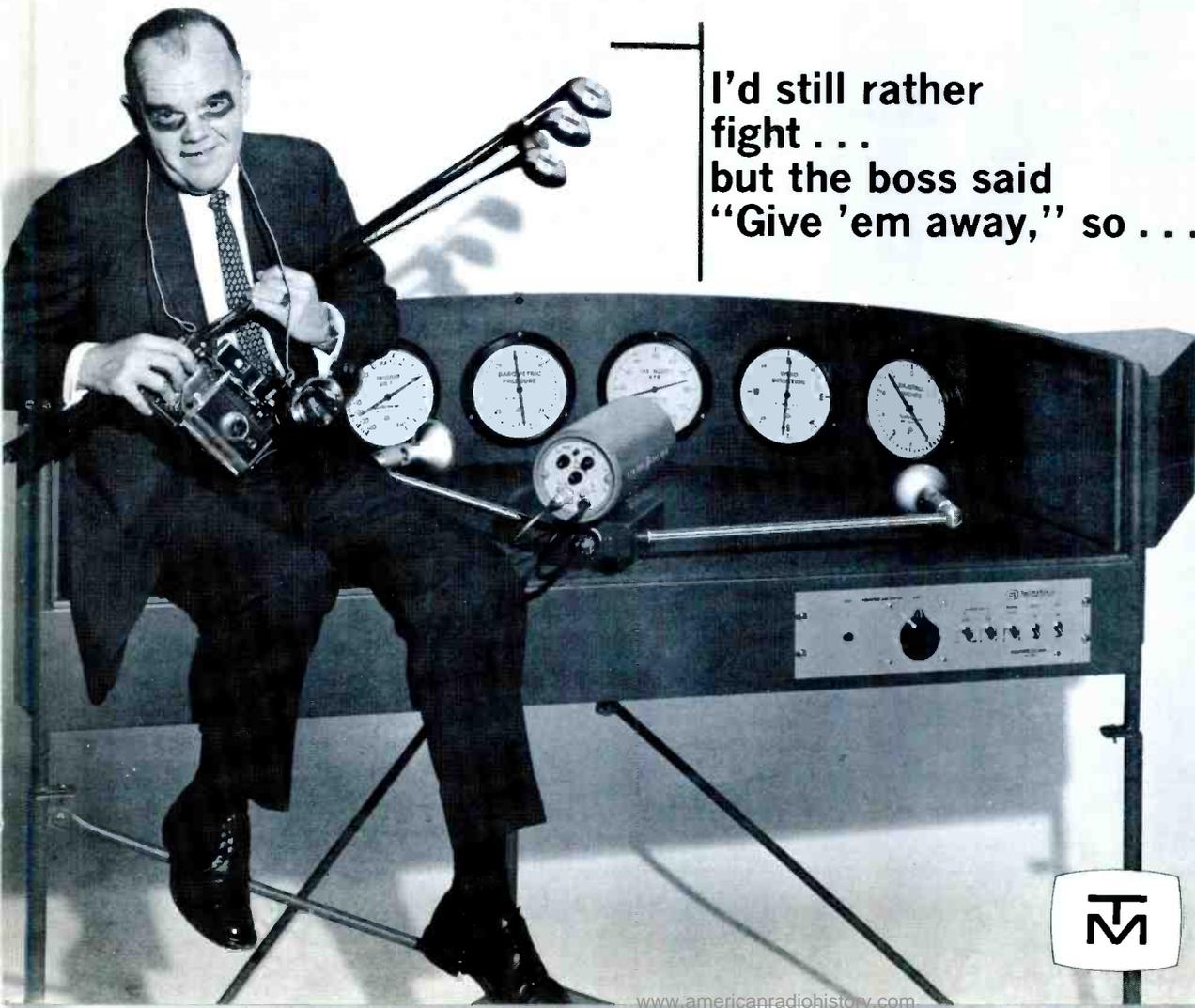
Ford predicted that Congress will hold hearings "in the near future" and adopt legislation which will "provide for the orderly development of both television broadcasting and community antenna receiving systems and in the public interest."

Concerning the matter of FCC control of microwave-served CATVs, Ford indicated that NCTA "will oppose these discriminating rules with every legal means available." He claimed that the rules are "highly unfair" and "discriminate against the public." He further charged that the Commission is "preoccupied with economic regulation of television through control of community antennas."

TELEPROMPTER OPPOSES KTVC APPLICATION FOR REVIEW

TelePrompter Transmission of Kansas, Inc. has filed comments with the Commission in opposition to applications for review by Southwest Kansas Television Company, Inc. (KTVC) and the Broadcast Bureau. The Applications for review were in reference to TelePrompter's applications for microwave license renewals and modification of construction permits in Texas and Kansas.

The filing, submitted by John P. Cole, Jr. of TelePrompter, reviewed the findings of the Examiner and Review Board. It noted that KTVC chose "to rely on Commission expertise for a finding that operation of a CATV system will have an adverse effect upon a local station." The Commission's Review Board ruled in favor of TelePrompter and placed the burden of proof on KTVC. The Examiner further concluded that no condition was warranted; the Board modified the conclusion to require TelePrompter in Liberal, Kansas to carry KTVC (the CATV system has carried KTVC since the station went on the air in 1957 and proposed to continue).



I'd still rather
fight . . .
but the boss said
"Give 'em away," so . . .

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ordered for release
between now and June 30
will include a choice of
these WEATHER CHANNEL
specials:

A matched set of four
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Ask for Ben.



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SALT LAKE CITY, UTAH 84115

"The Application of the Broadcast Bureau," TelePrompTer said, "is an amazing and alarming document." It is "overriding even its own findings" the petition stated, to place the burden of proof on TelePrompTer. Cole further charged the Bureau with "ignoring completely the record in this case" and with being "curiously committed to a conditioned grant" in spite of the Review Board's findings.

TelePrompTer concluded that, "The simple, unavoidable fact is that there is nothing in this record or within the 'expertise' of the Commission to support a determination that the public interest requires an exception to the generally applicable rule of free competition." In addition, the CATV company urged the Bureau to review its decision and to deny KTVC's applications.

PENNA PUC TO HEAR ARGUMENTS

The Pennsylvania Public Utility Commission will hear arguments in Harrisburg, Pa. May 25 on the question of its jurisdiction over community antenna television systems in the state.

The PUC recently decided to reconsider a 3-2 vote in 1964 against taking jurisdiction over the cable firms in the state. In deciding on a review of the controversial problem, the PUC said that last year's split-vote order reflected its "continued hesitancy to assert regulatory control

over the CATV industry." Experience since then, however, shows that the matter is "ripe for reappraisal," it added. The PUC majority expressed belief last year that it was up to the legislature to decree whether the commission should exercise authority.

Rep. George W. Heffner, Pottsville, urged reconsideration and reversal of the split vote on jurisdiction. A long-time advocate of legislation for PUC control over antenna system rates and service, Heffner said the 3-2 vote indicated "grave doubt which should be resolved in favor of regulation."

Heffner's position was opposed by the Pennsylvania Community Antenna Television Association, Inc., Meadville, during a 1963 inquiry by the PUC on the jurisdictional question. At that time, Heffner objected to an increase in monthly rates by a Pottsville area cable firm.

AMST PRESIDENT HITS CATV; L'HEUREUX COUNTERS

Speaking before the Federal Communications Bar Association, Jack Harris, general manager and president of the Association of Maximum Service Telecasters, claimed that "CATV is now moving aggressively to replace local broadcasting." Singled out for criticism were the "torrent of applications for local franchises" and plans to "carry big city TV signals from as far away as hundreds of miles." Harris told his audience that "such

unrestrained proliferation in CATV would make a shambles of the FCC's carefully developed system of channel allocations."

Challenging the AMST President's views was Robert D. L'Heureux, NCTA general counsel. L'Heureux stated that Harris' arguments were based completely on speculated future dangers rather than "on the history of actual damage done in the past."

NCTA CONVENTION PAGES SELECTED

In a joint announcement by NCTA Convention Chairman Bill Daniels and *TV & Communications* Editor Stan Searle, 12 young men have been named to serve as pages during the NCTA National Convention, July 18-23. The boys, who are all sons or grandsons of CATV operators, were selected on the basis of essays on the topic of "What I like about cable television and how it effects my father, or grandfather (as the case may be)."

Selected for the honorary duty are: Danny and Tim Fields, Berlin, Md.; Allan Hepburn, Fairbury, Nebr.; Jim Crosby, Del Rio, Texas; Andy Siegenthaler, Eugene, Ore.; Steve Hess, Jr., Albuquerque, N.M.; Mike Lewis, Ardmore, Okla.; Frank Morrissey, Durango, Colo.; Bryan Putnam, Lafayette, Ind.; Fred Kelly, Jr., Rawlins, Wyo.; Mark Schneider, Casper, Wyo., and Mark Hughes, Moses Lake, Wash.

The 12 boys will provide a paging service for Convention attendees. Each will be uniformed in a bright red blazer adorned by a specially designed insignia. The page program, to be inaugurated this year at the 14th Annual NCTA Convention, is sponsored by *TV & Communications Magazine* and *Cable Television Review*.

ANNUAL TEXAS CATV CONFERENCE

The Annual Texas CATV State Convention is scheduled for May 19 through May 21 in Dallas, Texas.

John Campbell, Program Chairman, reports a program of talks, exhibits and entertainment.

The Convention will feature a luncheon with NCTA National Chairman, Bruce Merrill as guest speaker.

FRANCHISE CONCEPT TESTED IN COURT

The Outlet Co. of Bristol, R.I. has brought court action to test authority of municipalities to require franchises for CATV operations. A permanent injunction against the City Council of Bristol has been sought to prevent it from granting a franchise to a

ROOM AT THE TOP

CATV SYSTEM MANAGER

Leading CATV group owner seeks experienced system manager for one of its largest communities in the Northeast USA.

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community antenna applicant without acting on submittals of two other operators. Outlet Co. operates WJAR-TV and AM and FM stations in Providence, R.I.

Outlet Company's attorney contended in Superior Court that city governments do not have specific powers not granted to them in their charters or otherwise provided for by state legislation. The Outlet Co. position that CATV is a monopoly and should be regulated by the State Public Utility Commission.

HALF OF CARTER MOUNTAIN SOLD

Bob and Betsy Magness, owners of newly formed Mountain Microwave Company have purchased 50% of the Carter Mountain Transmission Corporation. Application for the sale has been submitted to the FCC.

Carter Mountain Transmission became nationally known in the battle over the FCC's right to protect local television stations from "economic injury" caused by community antenna television systems.

Remainder of the stock is owned by Thomas W. Mitchell, Jr. and Roy E. Bliss. Transaction was for \$5,230 with an option to purchase another 25% at a later date.

SYSTEM SIGNS WITH PHONE COMPANY

An agreement to lease a phone company CATV plant has been signed by Northeast TV Cablevision, according to Lee Ehrlich, system president. Terms of the contract call for monthly fees of \$17.50 per quarter mile of cable, plus 35¢ per tapoff. \$290.00 per month is charged for head-end equipment.

Northeast Cablevision will charge subscribers \$5.00 per month with a \$19.50 hook-up fee.

CONNECTICUT PUC TO CONTROL CATV?

A public hearing was held April 7 in Hartford on house bill 3860, Rep. Harry Filer's measure designed to bring CATV under precise control of the Connecticut PUC (see March 22, 1965 Cable Television Review). □

OUR COVER

Story relating to this month's cover begins on page 23. We recently had the pleasure of visiting the CAS Manufacturing Company plant in Irving, Texas. Adam I. Farkas, R & D Engineer and Herb Jackson, Sales Engineer agreed to pose for our cover. They are shown in one of the testing sections of the new CAS manufacturing facility.

HERE'S WHY The Kaiser KLL-20 Is The Finest Low- Band Line Extender EVER MADE!



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where quality works for you today AND tomorrow now presents the KLL-20, a new, high-output ALL-SILICON transistorized Line

Extender designed for CATV systems with up to 5 channel TV and full FM band capability. Specifications include 20 db nominal gain at Channel 6, output impedance of 75 ohms, VSWR 2:1 maximum, Max. output/—57 db cross mod. (5 channels) of +40 dbmv. The rugged, hermetically-sealed aluminum housing is designed to effectively seal out moisture, whether mounted overhead, underground or underwater.

KMD Marker/Detector

Fully portable, with 20 db more gain than simple diode detectors, the KMD Marker/Detector is ideal for use in amplifier alignment, return loss measurement, and cable testing and system maintenance. \$75 net delivered.



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FOCUS

... On Progress

NEW PLANT MANAGER

Preformed Line Products Company, Cleveland, has announced the appointment of *Arthur Marquardt* as plant manager of its Cleveland production facility.



For nine years, factory manager at Cloyes Gear and Products, Inc., Marquardt has a background of broad experience in all phases of product manufacturing. He was also general foreman at Thompson Products, Inc. where he specialized in production of aircraft pistons.

A native of Parma, Ohio, Marquardt will assume responsibility for production of the company's helically formed hardware for transmission, distribution, and communications lines.

CAS HAS NEW PLANT

CAS Manufacturing Co. has moved to new facilities in Irving, Texas. CAS, pioneer in manufacture of solid state amplifiers for CATV, has moved from Mineral Wells to expand facilities and integrate operations in Dallas.



According to *John Campbell*, president of CAS, the move was prompted by increased sales, availability of supplies, and the advantages of a centralized location. The new plant, Campbell says, is evidence of the company's

capability to serve as combined manufacturer, distributor, and installer of CATV equipment and systems.

CATV COORDINATOR FOR REEVES

J. Dale Knievel has been named as CATV Coordinator for the CATV Division of *Reeves Broadcasting Corporation*. Knievel has long been active in all phases of CATV engineering, construction, and management with Community Television systems of Colorado, as General Manager of six systems with *Televents, Inc.*, with *Jerrold Electronics* in Sales and Field Engineering, and in Engineering, Purchasing, and Management with *Daniels & Associates*. Working with Mr. Knievel will be *Robert Ennist*, Reeves' Chief Engineer for CATV. *Walter Nelson*, Chief Engineer in charge of Broadcast properties will continue active in the Company's CATV activities in the Southeast where he is presently supervising the development of several franchises.

AMECO NAMES V-P

Lacy W. Goostree, Jr. has been named vice president in charge of marketing for *Ameco, Inc.*



Goostree has had 12 years marketing management experience in electronics and electro-mechanical systems. His experience includes vice president of marketing for *International Resistance Co.*, Philadelphia, Pennsylvania and manager of marketing, as well as numerous other sales and marketing positions with *General Electric Company* from 1941 to 1960.

GAMBLE AND PUCKETT PROMOTED

Byron D. Jarvis, President, National Trans-Video, Inc. of Dallas, Texas has announced the election of G. R. "Dick" Gamble as Director and Secretary of National TransVideo, Inc. In addition, Paul G. Puckett has been named Operations Manager.

Gamble will continue his duties as Vice President of Finance. He joined the Dallas, Texas based firm from *Delhi Taylor Corp.* where he was Assistant Treasurer. Puckett is former Manager of the *Johnson City, Tennessee* CATV system. He will handle adminis-

BROKERAGE FIRM ORGANIZED

Carl M. Williams of Denver, Colorado, has announced the formation of *Williams and Associates*, a new CATV brokerage and investment company. The firm will have offices initially in Denver and New York. Handling the Eastern Division will be *James M. Graves*, formerly with the brokerage firm of *Hayden, Stone & Co.* of New York.

Williams is a veteran CATV operator. He is President of *Systems Management Company* which has operated with as many as 90,000 subscribers. Both Williams and Graves are former lawyers.

KAHN FAVORS CONGRESSIONAL ACTION ON CATV

Irving B. Kahn, President, *Tele-Prompter Corp.* said federal regulation of CATV will be a stimulus to its long-range growth. "However," he said, "the Federal Communications Commission should seek regulatory authority through Congressional action rather than by attempting to assume jurisdiction as it announced . . . it intends to do."

"We do not agree that the FCC now has this authority, but we expect the regulatory position it has taken today will lead to prompt clarifying action by Congress. A positive government position on CATV undoubtedly will help to bring order to the industry's growth patterns and will encourage investment."

ANTENNAVISION CHANGES NAME

Antennavision Service Company, a Phoenix based microwave common carrier, has changed its name to *American Television Relay, Inc.* Antennavision has microwaved relay systems in the southwestern states for over ten years and was previously operated from *Ameco* in Phoenix.

NO DOUBT ABOUT IT . . .

SUMMER OR WINTER



THE TRANSISTORIZED
TRA-220D WILL
PERFORM BEST



New CAS Manufacturing Co. Plant in Dallas, Texas

THE CATV INDUSTRY

Its History, Nature and Scope

By Robert D. L'Heureux
NCTA Legal Counsel



PART I INTRODUCTION

CATV—A TELEVISION RECEPTION SERVICE IN GREAT PUBLIC DEMAND BESET BY LEGAL ASSAULTS AND FEDERAL AND STATE ATTEMPTS AT REGULATION

History and Statistics

The community antenna industry is little more than 14 years of age. Its birth and growth were stimulated by the desire of the public in rural and so-called "fringe" television reception areas to enjoy the advantages of this new and dynamic medium of mass communications. The first community antenna television (CATV) system in the country is believed to have been one installed on an experimental basis at Astoria, Oregon, in 1949. The first commercial system is thought to be the one still operating at Lansford, Pennsylvania, which celebrated its 14th anniversary in October, 1964. From this beginning the industry has grown to an excess of 1,400 commercial community antenna companies providing master antenna television reception service to approximately 1,600,000 homes, thus making possible either a first, supplementary, or improved television reception service for more than five million people.

The community antenna industry actually does not constitute a large segment of the television economy. Since there are an estimated 52 million television homes in America as of November 1964, it will be seen

that CATV actually serves only about three per cent of the television homes.

Nature of Community Antenna Operation

A community antenna television system (popularly referred to as a CATV system) is a facility utilizing a receiving antenna or antennas, connecting wire, cable or relay facilities and associated equipment, for the reception by subscribing members of the public of the signals of one or more broadcast stations. There can be no doubt that a CATV system is engaged in interstate commerce.

A community antenna is, as the term implies, a master television receiving antenna erected and designed to serve a community, or such part thereof as is practical to serve, or as may have a requirement for service. It is technically and functionally analogous to the master antenna systems installed in apartment houses and hotels to permit service to part or all of the apartments, rooms, or suites by means of a single antenna system.

Generally community antennas are found in areas where because of the interaction of topographic or geographic conditions, and technological and economic factors, reception of television signals by conventional antennas is either (1) non-existent, (2) of unsatisfactory quality, or (3) possible only with the aid of costly, tall roof-top antennas or by means of antennas placed on high elevations or other suitable locations. For example, distance from originating stations, intervening obstacles such as mountains

or high elevations, poor ground conductivity, or seasonal and other changes in atmospheric conditions can often impair or make impossible good television reception. Where such conditions prevail, a master community antenna is erected at a suitable location, usually on a mountain or other high elevation (in some places a very tall tower is erected on which the antenna is mounted), where reception of the signals of the desired stations is available in sufficient field strength to produce good quality pictures.

A coaxial cable or other type of antenna lead or run extends from the antenna to the area or community to be served¹ where connection is made with coaxial cable or other wire distribution lines, which, in turn, serve the individual subscriber "house drops." The antenna lead and distribution cable facilities are generally supported on electric power or telephone utility poles for which semi-annual rentals are paid under contract with those companies. In a few cases these facilities are placed underground or on privately owned poles. Easements and rights-of-way to use streets and alleys are generally obtained from the municipal governments. In a limited number of cases these are exclusive rights, but for the most part are not.

Describing the technical function of a community antenna system generally, the signals received from the distant stations, as well as from local stations in many instances, are received at the master antenna and

¹—In exceptional cases where longer distances are involved between the master antenna and the area to be served, a point-to-point microwave television relay service obtained from communications common carriers licensed by the Federal Communications Commission is utilized between the antennas and a specified receiving terminal in the service area. This relay is not on broadcast channels, and, therefore, cannot be received on home television receivers. From the receiving terminal of the relay system the signals enter the cable.

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As a leader in video/message microwave relay systems, Jerrold has a complete line of specialized multiplex/sub-channeling equipment for data-facsimile, telemetry, and voice-multiplex requirements; auxiliary service channel, fault reporting, baseband equipment; antennas, waveguide, and reflectors—all available as equipment or as integrated turn-key systems.

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PACIFIC MISSILE RANGE
Vandenberg Air Force Base,
California

SYLVANIA
Waltham, Massachusetts

ITT KELLOGG
Communications Division
Vandenberg Air Force Base,
California

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PURCHASING OFFICE**
Los Angeles, California

passed through amplifying equipment at that point and at appropriate locations along the antenna run and distribution trunks in order to maintain adequate signal strength for the signals to pass through the system to the television receivers in the home, and to produce acceptable or better pictures on those receivers. It should be noted that signals received via community antenna systems cannot produce a better quality picture at the home receiver on the subscriber's premises than would be produced on the same receiver if located at the master antenna site. In other words, a community antenna does not "rejuvenate" a dissipated or weak signal as popularly supposed.

The charges to the subscribers for service from a community antenna will vary among the different systems. However, it is a common practice to require a moderate initial payment at the time of connection to the system, sometimes called a connection or installation charge. In addition, a moderate monthly charge to cover operating expenses including compensation to the operator is collected from residential and business subscribers. The more current practice is to require no initial payment. Charges are never related to the programs viewed or available or to the amount of time the subscriber operates his receiver. The monthly charge is a flat charge applicable whether or not the subscriber's receiver is operated during the month. Service is almost universally furnished pursuant to contract with the individual subscribers cancellable on short notice by either party.

Community antennas are capable of receiving the signals of more than one station simultaneously. As a general rule, antenna sites are selected where the maximum number of non-duplicating and noninterfering television channels can be received in sufficient strength and quality to produce acceptable pictures. The antennas are designed and oriented, when installed, to receive the desired signals and to reject, to the extent possible, the undesired channels. This is essentially the same function as is performed when a homeowner who erects

a roof-top antenna purchases an antenna which has been designed and manufactured to give optimum reception on the channels he desires to receive and orients it on the roof-top or a tower on his premises so as to receive the desired channels and reject signals of stations which might duplicate or interfere with those he prefers.

Community antenna operators do not alter, delete, or in any manner change the broadcast intelligence on the channels which they receive; nor do they permit sponsorship of programs or sell time for commercial announcements as in the case of broadcasters. In no instance does, or can, a CATV system contract to bring particular programs to its subscribers, nor can the subscribers order from the CATV operator the reception of specific programs or channels.

The Relationship of Community Antennas to Television Broadcasting

A Community Antenna is Directly Concerned with Television Broadcasting, an Area of Governmental Control of Which There Has Been Complete Occupation by the Federal Government, and Under the Commerce Clause of the Federal Constitution, the States Are Precluded from Making Regulations with Respect to Such Systems.

It will be seen from the foregoing summary of the nature and scope of community antenna operation that, although community antennas do not originate broadcast programs or alter, change, or delete broadcast intelligence, such operations, nevertheless, are closely allied with television broadcasting and are a vital adjunct of such service, extending television broadcast reception to "fringe" reception areas. The community antenna has become an important instrumentality, as has more recently the low-power television repeater stations authorized under Rules and Regulations of the Federal Communications Commission,² for achieving the goals of the Commission of providing a truly nationwide television service.

Not only is CATV closely allied to television broadcasting as an instrumentality in securing widespread television coverage, there is a sometimes

critical technical relationship between community antennas and television broadcasting. Since the signals of the stations received on community antennas are conducted throughout the antenna systems on the same radio frequency bands (channels) as are allocated by the Federal Communications Commission for television broadcast operation, electrical interference can be caused by the channels on the cable radiating outside the confines of the cable into the same or adjacent channels which are being received directly off-the-air by television receiver owners not utilizing the services of the community antenna.³ In order to minimize such interference and permit compatible operation of CATV systems with direct off-the-air reception where such is also available, the Commission has promulgated specific Rules and Regulations applicable to community antenna television systems to limit such "incidental radiation." Thus, by Order adopted July 11, 1956, in FCC Docket No. 9288, effective August 20, 1956, the Commission adopted Subpart D of Part 15 of its Rules and Regulations applicable to "Incidental and Restricted Radiation Devices," entitled "Community Antenna Television Systems." In this subpart, the Commission (1) established certain engineering standards prescribing the limits of incidental radiation applicable for community antenna systems, (2) required community antennas to be so constructed and operated as to meet these standards, (3) required community antennas to be prepared to demonstrate compliance with the Regulations, and (4) prescribed the time within which such compliance must be affected.⁴

The close interrelationship between television broadcasting and community antennas cannot reasonably be denied. The fact that community antennas often operate in the same communities as television broadcast stations or low-power television "translator," "repeater," or "satellite" stations licensed by the Federal Communications Commission, resulted in a formal investigation by the Commission into that relationship in Docket No. 12443, which was descrip-

2—21 F.R. 3680, 25 F.R. 7317, 1 RR 54.141.

3—Thus, not properly controlled, channel 4 on the cable facility could interfere with direct reception of channel 3 or 4, if such were available in adequate strength for direct reception.

4—See Second Report and Order of the Commission in Docket No. 9288, released July 11, 1956, 21 F.R. 5366, 13 RR 1546a; rules at 1 RR 65:21.

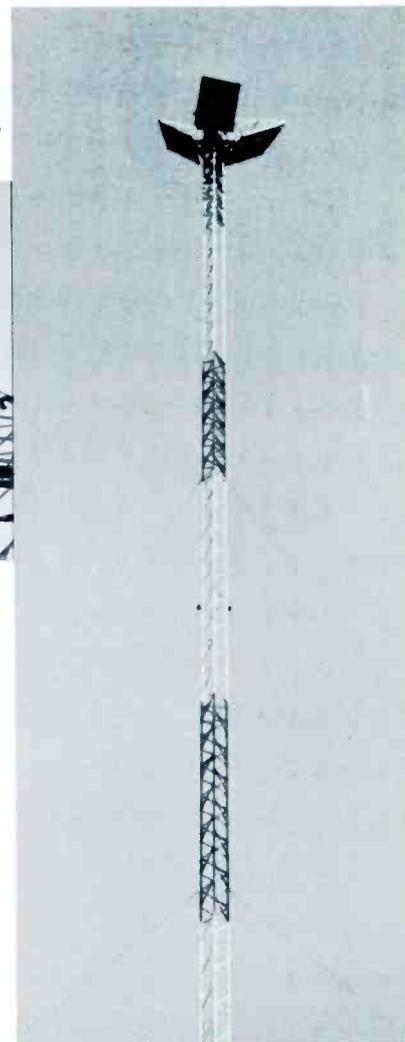
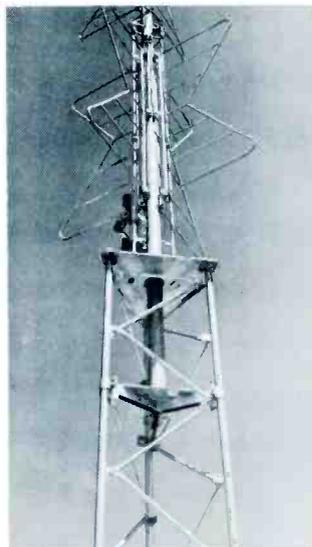
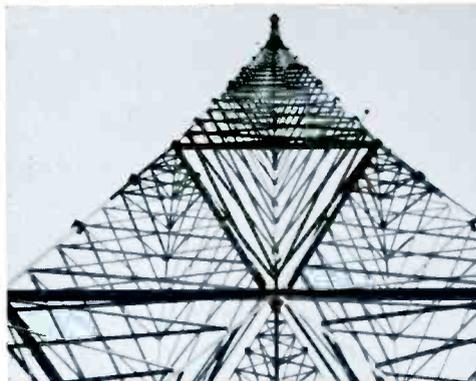
tively captioned, *In the Matter of Inquiry into the Impact of Community Antenna Systems, TV Translators, TV "Satellite" Stations, and TV "Repeaters" on the Orderly Development of Broadcasting.* Out of that investigation came legislative recommendations to the United States Congress to govern the relationship between these various instrumentalities of television broadcasting. See Report and Order of the Commission in Docket No. 12443, adopted April 13, 1959, 26 FCC 403, 18 RR 1573. Among these recommendations, although none has yet been enacted into legislation, are: (1) that a community antenna be required to get permission from television stations to receive their signals, (2) that the Commission have authority to adopt Rules and Regulations designed to prevent community antenna systems which operate in the same community as a local station from receiving programs from distant stations which are scheduled to be broadcast on the local station, (3) that upon request of television stations operating in the same community as a community antenna, the latter be required to receive the signals of the local station, and (4) that restrictions in the Communications Act against licensing of "repeaters" or "boosters" which had been constructed without authorization of the Commission be removed.

The wisdom of these recommendations may well be debated, and has been at length before a Subcommittee of the Committee on Interstate and Foreign Commerce of the United States Senate,⁵ as well as in the United States Senate.⁶ Their significance is that they show interrelationship between CATV and television broadcasting, and, as will be subsequently discussed, the utter impracticability of state regulation in this field which of necessity must be, and, in fact, has been, reserved to the Federal Government. □

5—See S. Rept. 923, 86th Cong., 1st Sess., accompanying S. 2653, a Bill providing for the licensing by the Federal Communications Commission of community antenna systems, Hearings before the Communications Subcommittee of the Committee on Interstate and Foreign Commerce, 86th Cong., 1st Sess., VHF Booster and Community Antenna Legislation, Part 1, June 30, 1960; Part 2, Oct. 27, 1960.

6—Cong. Record, Vol. 106, No. 90, p. 9674; No. 91, p. 9765.

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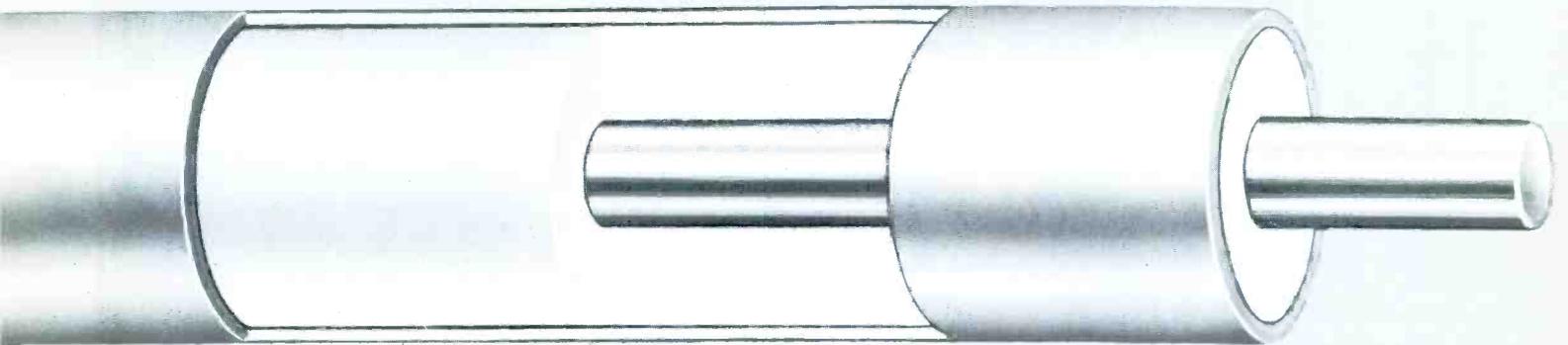
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■ Now, the availability of 75 ohm Foamflex coaxial cable in four diameters — .412", 1/2", 3/4" and 1 5/8" — fills the needs of all-band CATV systems for rugged, high-performance cable in all required sizes. Foamflex, the original foam polyethylene dielectric cable, offers unequalled low loss for superior operation in community antenna and closed circuit television. Foamflex has a proven record in demanding applications in telemetry, missile guidance and microwave in addition to CATV.

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

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

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

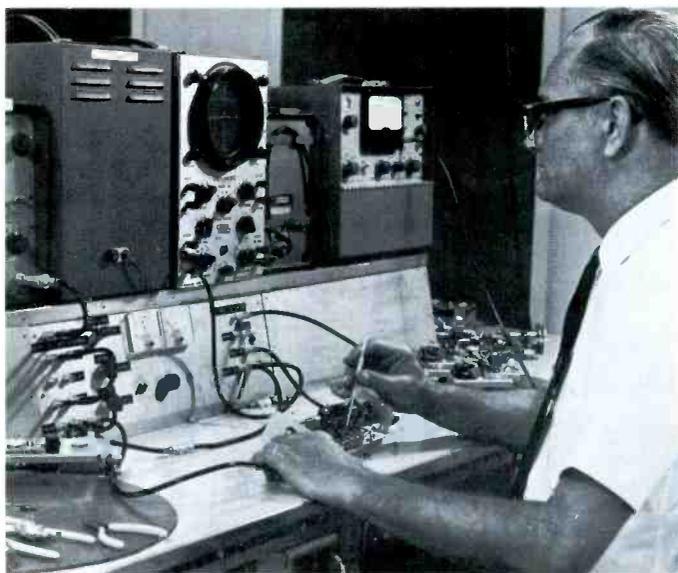
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A Texas Visit



Don Horrom tunes amplifier in CAS test department.

When CAS Manufacturing Co. recently moved its plant from Mineral Wells to Dallas, Texas, one of the reasons cited was the accessibility of the new location. Our recent visit to the CAS facility certainly proved this point. We touched down at Love Field in Dallas after a pleasant VFR flight of just a little over one hour. From there it was less than ten minutes by automobile to the new CAS plant in suburban Irving, Texas.

Topping a hill on the freeway we sighted the brand new CAS building, set against a pleasant background of rural greenery. The site seemed strikingly appropriate for a pioneer manufacturer in the youthful, progressionist CATV industry. On hand to extend a big, friendly "Texas-style" welcome was John Campbell, owner and president of the company. He introduced us to Preston Spradlin, plant manager, who took us on a tour of the executive offices and manufacturing facility. Preston, we learned, is a knowledgeable veteran of many years in electronics manufacturing and has played a substantial role in the organization and implementation of the new, expanded CAS operation.



John Campbell, young owner of a young company.

As usual, Bill Medlin, sales manager, was traveling around the country in pursuit of equipment sales and turn-

Staff Report on

CAS Mfg. Co.



key construction jobs. However, Herb Jackson, sales engineer, gave us a briefing on the company's current activities. Having layed out a large number of systems, some ranging up to three hundred miles in size, Herb is well qualified for his job as specialist in the supervision of turnkey construction.

A COLORFUL BEGINNING

After getting well acquainted with the "new" CAS operation, we sat back and talked about old times, including the company's history, with John Campbell. Like a lot of CATV operators and manufacturers, John has come a long way in a few short years. And, although there have been some rough spots in the road, his journey to success has been marked by consistency and initiative. Campbell got his start in CATV back in 1951, after reading about



Preston Spradlin (1) assists Wanda Brumley and Lucille Downing in CAS office.

community antenna television in an electronics magazine. The article described the Lansford, Pa. system, supplying John with all the inspiration necessary to cause him to launch his own cable system. In May, 1951 he obtained the franchise for a system in Mineral Wells. But, according to John, "nobody thought the system would work, so I couldn't borrow any money." He sold his car, equity in his home, and borrowed some money from his brother to scrape up \$1,000 to launch the CATV system. \$100 hookup fees provided the additional capital necessary to expand

Let's talk about **DESIGN OBJECTIVES...** and a **MISSION ACCOMPLISHED**

In February 1957, SKL began investigating the application of transistors to CATV and established the following design objectives.

1. A transistorized trunk-line amplifier with performance parameters at least as good as the best tubed, wide band, distributed amplifier available — the SKL Model 212 (later Model 222A).
2. Maximum economies from cable powering, low maintenance and, hopefully, long life.
3. Minimum obsolescence, recognizing the more rapidly changing art in transistor design as compared with vacuum tube design.
4. A transistorized system which would achieve the commercial advantages of solid state equipment, without giving up in quality more than it offered in cost savings.

It was our policy to accomplish the transition from tubes to transistors methodically; to discover

and reject unacceptable products and specifications in the laboratory and not to burden customers with field experimentation. We have not yielded to commercial pressures or to expediency; we have held rigidly to our original design objectives.

Mission accomplished.

Here is the first of a series of announcements which will continue through August. We plan to describe the individual components of the new SKL wide band transistorized CATV network which is —

1. designed to satisfy the major requirements of both operators and technicians;
2. equal in quality to the best tubed equipment now available;
3. competitive price-wise.

The SKL network consists of the following components.

Model 265	Transistor Trunk Amplifier With Temperator*
Model 262	Distribution Amplifier
Model 263	Line Extension Amplifier
Model 284	Power Supply
Model 891-896	Multividers for Cable Powered Lines
Model 222A	Automation Station*

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

NOW—SKL Sets A New Standard in Wide Band Transistorized CATV Performance

The new Model 265 Transistor Trunk Amplifier with Temperator is a key component of the SKL network. It is the equivalent of the 222A Amplifier

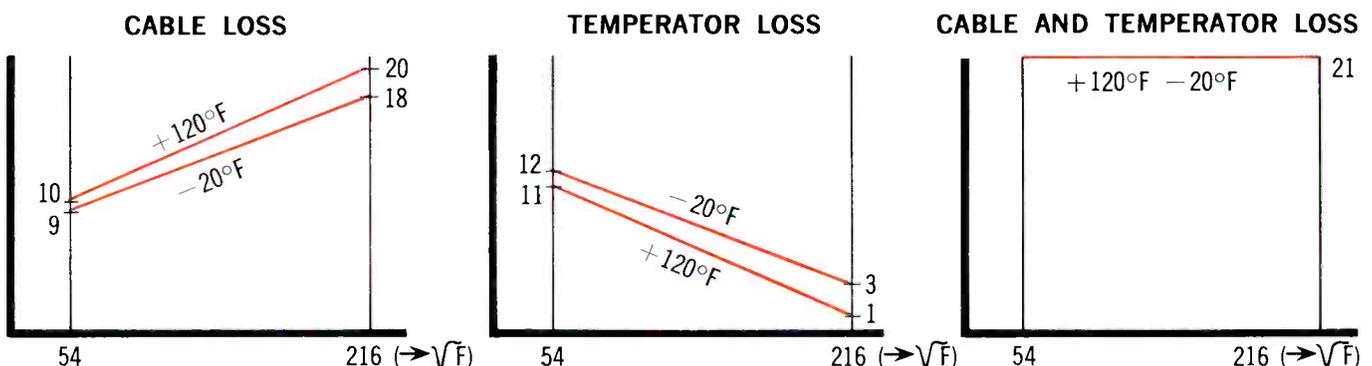
(the admitted CATV industry standard) at fixed gain. It meets the SKL design objectives listed on the opposite page.

Features of the SKL Model 265 Amplifier

- Full wide band
- Low noise and distortion
- Two thirds more cascability than other transistorized wide band amplifiers
- Permits longer trunk lines and larger networks from one head end
- Response flat across the full pass band
- Every amplifier station is fully cable compensated
- Gain and slope control are manual. They are limited to that amount required to provide layout flexibility, without introducing the distortion that characteristically accompanies solid state manual and automatic gain control over wide range
- Line level and equalization are automatically maintained by the SKL Temperator, a passive device preceding each amplifier and housed integrally with it which absorbs upwards of 85% of all automatic level and slope control requirements
- True AC powered, *not* AC-DC. An isolation transformer eliminates all direct current from the line
- Housing is an aluminum die-casting, moisture-proof, vinyl painted
- Mounting is as the situation requires including strand, pole, and manhole mounts
- Component quality, mechanical layout, and workmanship are of high SKL quality
- Electrical performance meets highest SKL trunk line standards

The SKL Temperator housed with the Model 265, is an entirely new concept. It is a passive, thermal-attenuator equalizer, similar in principle to the well known thermatic equalizer now widely used in the CATV industry.

The graphs below illustrate its function:



Look to SKL for exciting new CATV concepts and products.



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Tommy Moore, Inc. — Big State Engineering, Inc.
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the system and “one street at a time” he wired Mineral Wells. In September of 1951 service was started, using Blonder-Tongue and TACO strip amplifiers designed for apartment house master antenna use. John used surplus steel jacketed RG 11/U cable along with some English coax—the only thing available because of the Korean war.

MANUFACTURING BEGINS

“A tremendously hard time,” was experienced in “keeping our picture over three or four miles of line,” according to Campbell. But, “continual experimenting with amplifiers and other equipment” finally got the system working. It was difficult to find equipment that would function consistently and Campbell found that he could build certain items better and for less money than their purchase price. In 1954 he designed a tube-type amplifier, the C2-6 broadband unit, to deliver all low band channels.



Photo shows one corner of CAS Mfg. Co. huge assembly area. Girls are (l to r) Jo Ann Peters, Marge Simpson, Edith Self and Marrie Shelton.

After placing a quantity of the units in service in his own system, Campbell began manufacturing the amplifiers for national distribution. It was admittedly a small operation involving “just a few people” but from 1955 until 1958 CAS Manufacturing Co. steadily produced and sold the C2-6 amplifiers.

FIRST SOLID STATE

Then, in 1958, Campbell designed a low band transistorized amplifier. Known as the TR Series, these amplifiers were perfected and placed in use in the Mineral Wells system. Soon 90% of the old tube-type amplifiers had been replaced with the new solid state units and Campbell’s system became one of the first in the country to rely extensively on transistorized amplifiers.

AUSTIN CATV STARTED

In February 1963, Campbell, Tom Creighton a Mineral Wells Attorney and several associates obtained the franchise for a CATV system in Austin, Texas, thereby launching a chapter in his life which substantially affected and advanced the capability of CAS Manufacturing Co. In June of 1963 construction started on the 298 mile Austin system. The increased demand for CAS amplifiers and equipment for the Austin project placed a considerable burden on the Mineral Wells manufacturing plant to meet regular customers’ orders. But the Austin system was far better known for its political overtones than for the equipment it required, or even the nearly 3,000 customers signed up in less than a year. Nationwide publicity was focused on the conflict which developed between TV Cable of Austin, owned by Campbell, and Capitol Cable Co. in which the Johnson’s Texas Broadcasting Corp. held an option to buy

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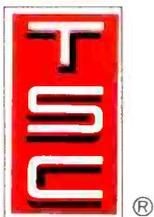
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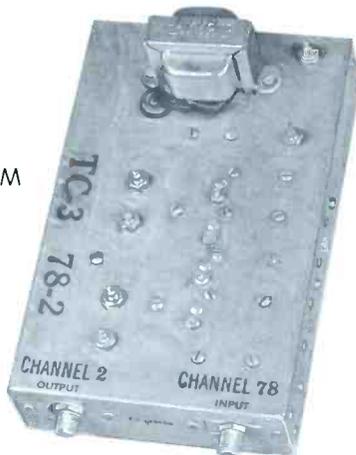
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The TC-3 Converter is designed for CATV head ends. To convert any single UHF channel to a single VHF channel. Includes a UHF preamplifier for outstanding noise figure and a VHF IF amplifier for good gain.

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Single Channel, 6 MC/S Band Width
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Specially Selected Transistors.

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a half interest. "Fearless John," as he became known claimed that his system was being subjected to unfair competition from the competitive CATV system with its receiving antennas mounted atop the LBJ Company's broadcast antenna. The Campbell system brought in signals by microwave and utilized a secondary microwave system for intracity distribution. The adventure came to an end rather abruptly for Campbell when circumstances developed that precipitated the sale of his CATV interests in Austin to Capitol Cable.

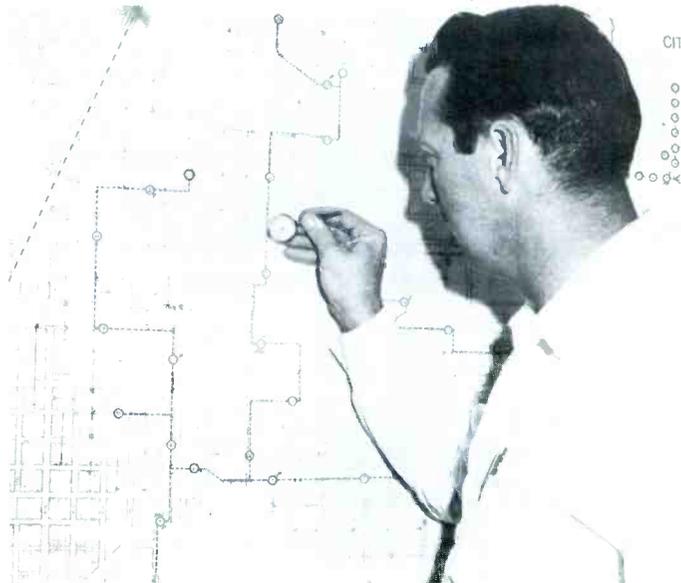
Although John says he was not anxious to terminate his activities in Austin, the net result of the venture was to rapidly expand the CAS manufacturing capability and then to free both facilities and personnel for an expanded national marketing program when the Campbell system interests were sold.

EXPANSION, NEW PERSONNEL

Among recent developments, perhaps the most significant is the move into the new, larger Dallas location with its complete manufacturing plant as well as expanded research and development laboratories. Secondly, key personnel acquisitions have been made and Preston Spradlin reports that the production staff is being expanded weekly. Adam I. Farkas, Research and Development Engineer, is the most recent addition to the engineering department. His credits include a staff position in the research department of Columbia University. He studied at Columbia, City College of New York, The PCB (Sor Bonne) in Paris, France, and the State Lyceum in Hungary. Before joining CAS, Farkas was associated with Rayflex Corp., Dallas, Trancitron Electronic Corp. and Blonder-Tongue.

A stepped-up program of quality control is under the supervision of Don Horrom, quality control supervisor. According to Campbell, the greatly increased plant size of many systems now being built has made rigid quality surveillance a matter of increasing importance in amplifier production.

Development of solid state technology, coupled with the consistent availability of high-frequency silicon transistors, has subsequently resulted in the design of all-band amplifiers by CAS to meet precise criteria of temperature



C. H. (Herb) Jackson measures mileage of newest CAS turnkey job.



Plastoid, and only Plastoid, has beat the problems of seamless aluminum sheathing for CATV cables. We did it by welding. Sounds easy, but the tech-

nique took years to perfect. And it will probably be years before anyone else can master the science. The secret is radio frequency welding. But, of course, there's more.

By welding, Plastoid cable-making starts with precision rolled strips. This means cable walls will be uniform in thickness. They are curved up and around the polyethylene foam core, then seam-welded by beams of ultra-high frequency radiation. The process is so fast that the core never heats; yet the seam is firm—stronger in fact than the parent metal. And concentricity is assured; basic metal structure remains strong and flexible. Not so with seam-

less cable where the swedging—or drawing-out—distorts cable shape, and weakens metal structure; where you'll find thin spots with the thick, fissures that will leak radiation, let moisture in to play havoc with your dielectric.

When you look for cable that will last and protect your CATV investment, look to Plastoid for the last word in strength. Look also for a choice of sizes, jacketed and unjacketed. Three-quarter inch cable for your head-end, half-inch for trunks and feeders. Get sweep-tested reels in the length that you need. Take our word that the "specs" are unsurpassed, or get in touch with PLASTOID, 42-61 24th Street, L.I.C., N.Y. 11101, ST 6-6200.

**Who
went to UHF welding
to bring you aluminum sheath
co-ax that is stronger and
more flexible than seamless?**



Don Horrom and Preston Spradlin visually check cable jacks.

stability, according to Campbell. Current CAS amplifiers, such as the TRA220D utilize newly available transistors characterized by large signal handling capabilities, general ruggedness and the capability for extremely precise temperature compensation. During our visit CAS technicians demonstrated another new development which has advanced the state of the transistor art. A new patented heat sink developed by CAS engineers allows significantly higher power output without affecting transistor reliability or characteristics. Some other noteworthy developments, still in the early production stages, include a new universal compact housing to accommodate extenders, splitters, and in-line taps. Housings are hermetically sealed and are die-cast to assure uniformity and perfect fit of weatherproof cover.

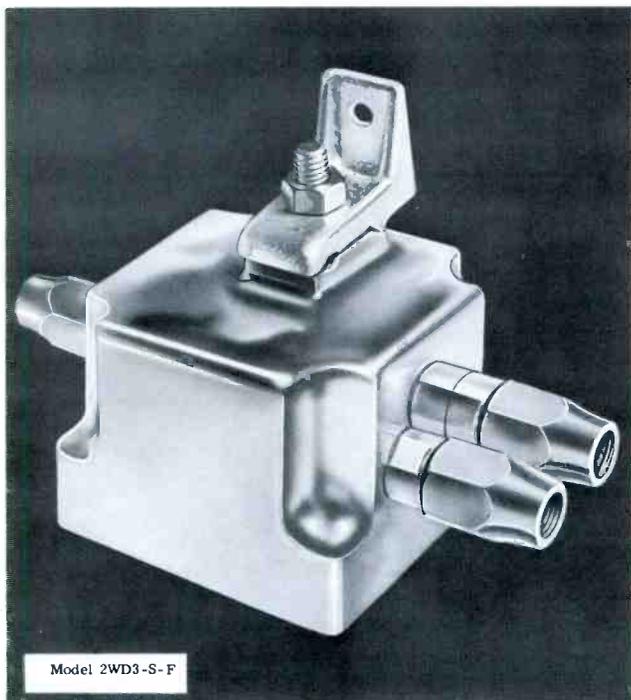
All current CAS equipment demonstrates an important concept; that any piece of CATV equipment is pole line

equipment and should be housed and mounted as such. All units are weather proof, individually housed and ready for simple strand or pole mounting.

TURNKEY SERVICES

Noting that CAS now offers complete turnkey engineering and construction services to operators, Campbell emphasized that layouts for hundreds of miles of CATV plant are currently being handled by the engineering department. "Steady growth" over the coming years, based upon the "growing interest of the nation's viewers in more television entertainment" will result in increasing demand for well engineered transistorized equipment, according to Campbell. "The extension of CATV into two and three station markets will foster substantial opportunities for experienced operators. In addition the rebuilding of many CATV systems and the conversion to new solid state gear is resulting in a considerably increased demand for our advanced equipment," Campbell asserted.

Fortifying this optimistic view, John Campbell has announced plans for enlarging the CAS nationwide sales program supported by an adequately designed public relations and advertising program. A key point in the accomplishment of these goals has been the move to Dallas, where the firm can tap an established reservoir of highly skilled professionals. Inasmuch as the quality of goods and services delivered by any company depends largely upon the qualifications of the firm's personnel, we predict that CAS Manufacturing Co. will enjoy an expanding growth and acceptance in the CATV industry. The underlying theme at CAS Mfg. Co. seems to be one of confidently building quality equipment for a strong, growing industry. □



Model 2WD3-S-F

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WITH EPOXY ENCAPSULATED CIRCUIT

Trunk Line Couplers are precision units for splitting a trunk line into two trunks, or combining two trunk lines into a single trunk. Here's a new trunk line coupler by Craftsman - designed and built to the most rigid CATV specifications.

Precision engineered, CAPABLE OF FEEDING LOADS OF 0.0 to 8.0 AMPERES... and... it's the only one with an EPOXY ENCAPSULATED CIRCUIT for weatherproofing.

SPECIFICATIONS

VSWR, 75 ohms, Input & Outputs. 1.2 Max.
 THRU LOSS ± .25 db. 3.25 db
 OUTPUT BALANCE. 0.25 db Max.
 FREQUENCY RESPONSE, 18-220MC. ± 0.25 db Max.
 ISOLATION between outputs, 18-220MC. 26 db Min.
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Plastoid, and only Plastoid, treats aluminum sheaths with respect and welds to avoid metal torture. Aluminum is a versatile metal, but it gives when extruded and drawn in the making of seamless

cable. Thin spots appear, or bulky overlaps. Cable walls distort, disturbing dielectric concentricity, making splices difficult. And the crystallized grain structure of the aluminum in seamless cable means it is less flexible, more vulnerable to breakage and the formation of fissures that mean radiation loss and moisture accumulation.

Plastoid makes cable with precision rolled strip, carefully controlled and inspected for uniform thickness. The strip is then curved around its poly-foam core and welded as it passes rapidly through radio frequency beams. In just an instant, a seam is created that is stronger than the parent aluminum. ASTM flare tests prove this cable stronger than

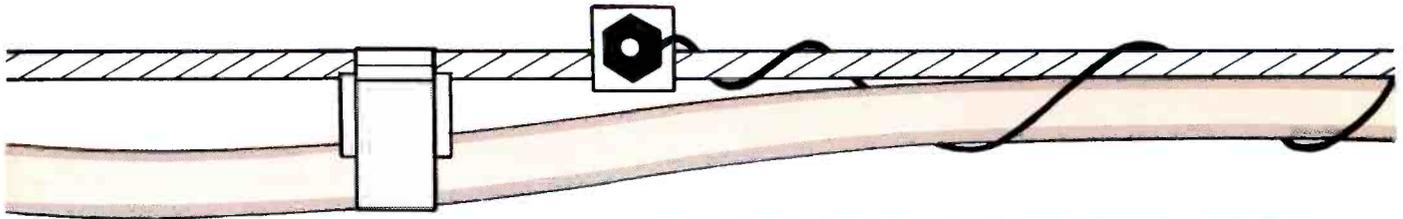
seamless. And why not? The process is the same as used in making high-pressure boiler tubes, hydraulic lines, and helicopter rotor shafts.

When you look for cable that will last and protect your CATV investment, look to Plastoid for the last word in strength. We weld the aluminum to save its strength for the time that you will need it. As you look for strength, look for length, too. Plastoid's unique UHF welding process allows us to make mile long spans for spicy splicing savings if you are laying long lines.

For more details, write, wire or call PLASTOID CORP., 42-61 24th Street, Long Island City, N.Y. 11101, ST 6-6200.

**Who
abolished metal torture
to bring you an aluminum
sheath co-ax that is
better than seamless?**

INSTALLATION TECHNIQUES



FOR ALUMINUM COAXIAL CABLE

By SAMUEL N. BLAKEMAN
Jerrold Electronics, Philadelphia, Pa.

Aluminum solid-sheath coaxial cables are rapidly becoming a standard for trunk and feeder line construction in the CATV industry. There are two major reasons for the popularity of these semi-flexible cables. One is that they are completely waterproof, and the other is that they have electrical characteristics which reflect the latest advances in the cable construction art. Of course, proper installation is a prerequisite if full advantage is to be taken of the capabilities of these cables. And the only real basis for

sheath particularly useful in sharpening their teeth to the extent that the cable developed holes. Fortunately, the jacketed cable was not to their taste.

Pre-Installation Requirements

Before installing aluminum solid-sheath cable make certain that these requirements have already been complied with.

1. The proper type of messenger strand has been properly installed.
 - a. For un-jacketed aluminum cable: The messenger strand *must* be

the minimum number of cable splices, and the minimum amount of cable cutting.

INSTALLATION PROCEDURES

Handling Cable-Reel

Avoid damaging either the cable or the reel.

- a. Do not drop cable-reel from truck or platform.
- b. Do not roll cable-reel over rough ground or uneven surfaces. Carry it carefully.
- c. Do not make any sharp bends in the cable or permit it to kink.
- d. Do not allow the loose end of cable to drag on the ground or to lay on the ground where a vehicle might roll over it.
- e. Do not pry against the cables with a bar or plank or use a pointed tool to lift or position the cable.

Reel-Cart or Trailer

A reel-cart or trailer is recommended for the transportation of the cable.

Reel-Brake

A brake (either purchased or improvised) must be provided to insure that the reel may never run free and that sufficient tension to straighten the cable may be maintained while the cable is being paid out. Do not permit tension on cable to exceed the maximum limits (see Table II) to prevent possible cable distortion.

Cable Type	Maximum Tension (70° F)
JT-1412	275 lbs.
JT-1500	350 lbs.
JT-1750	700 lbs.

TABLE II

Note: If temperature **increases**, decrease maximum tension 25 lbs. for every ten degrees of increase. If temper-

MODEL	TYPE*	OUTER DIAM.	CENTER COND. DIAM.	DC RES. OHMS PER M FT.	M FEET PER REEL	REEL WEIGHT LBS.	CABLE LBS. PER M FT.
JT-1412	SS J	.412	.075	2.00	1	25	75
JT-1500J	SS J	.480	.075	2.00	1	25	95
JT-1500	SS J	.500	.098	1.30	1	35	95
JT-1500J	SS JJ	.580	.098	1.30	1	35	125
JT-1750	SS J	.750	.146	0.60	1	112	168
JT-1750J	SS JJ	.850	.146	0.60	1	112	218

SS J—Aluminum jacket is also the shield.
 SS/JJ—Additional xelon outer jacket.

TABLE I

proper aluminum cable installation techniques is sufficient field experience in their installation.

Hundreds of miles of aluminum solid-sheath cables have been installed by Jerrold Electronics' construction crews in recently-built CATV systems. The particular cables installed were JT-1000 series cables (see Table I) manufactured by Times Wire and Cable Company of Wallingford, Connecticut.

In normal installations, the aluminum sheath of these cables served as both shield and outer jacket. In some special locations, polyethylene-jacketed versions of these cables were used. These included areas where the atmosphere contained a high percentage of salt or other chemical pollutants and, strangely enough, an area infested with a particular breed of squirrels. These squirrels found the aluminum

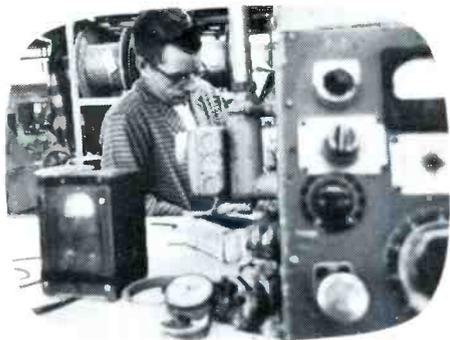
either a galvanized steel type or an aluminum-coated steel type.

b. For polyethylene-jacketed aluminum cable: The messenger strand may be either a galvanized steel type, an aluminum-coated steel type, or a copper-coated steel type.

2. All aluminum cable has been swept at the site.

Note: While most reputable manufacturers pre-sweep their cable at the factory, it is important to insure that no damage has been incurred in transit and that all electrical requirements for the particular site have been met.

3. The lay-out of the job has been carefully studied so that the most advantageous method of installation is used i.e. the starting location(s) has (have) been selected so that the maximum footage of cable can be installed with the least repositioning of equipment,



Plastoid, and only Plastoid, makes UHF-welded aluminum sheath cable. It's stronger than seamless. We've proved this by ASTM flare tests, flattening tests, special hydrostatic tests. It doesn't burst at fluid pressures well over 1,000 lbs. per sq. inch, and by "well over" we mean up to 2,000 lbs. But since pressure tests are only a guide to

Plastoid's prodigious strength, we don't ordinarily make much of them. It's our pattern of continuous production-line testing that will pay off to you as Plastoid aluminum sheathing protects the electrical properties that become more and more critical as CATV systems move into color programming.

Every inch of Plastoid cable is tested many times over before it reaches you. First—the rolled aluminum strip that makes up the sheath is measured for precision and uniformity. Then, it is curved around the cellular polyethylene dielectric. The sheath is joined by UHF beams that make a weld, virtually invisible, but stronger than the parent metal itself. And there are more tests. Non-destructive tests.

As the cable moves rapidly down the line, a highly sophisticated eddy current tester detects the slightest variation in

wall thickness. Out go cable sections that might give way under stress. Out go your worries about the lasting quality of your CATV system or the quality of your color TV signals. But do we leave it at that? No. Every reel is sweep-tested before it leaves our plant.

So...when you look for aluminum sheath, look to Plastoid for the cable that is stronger and more flexible than seamless, the cable that is tested and retested to assure a pattern of fantastic reliability.

For complete details on sizes, specifications and special prices, please contact

PLASTOID

 CORPORATION

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**Who
developed a fantastic
test pattern to protect
color programs on your
aluminum sheath co-ax?**

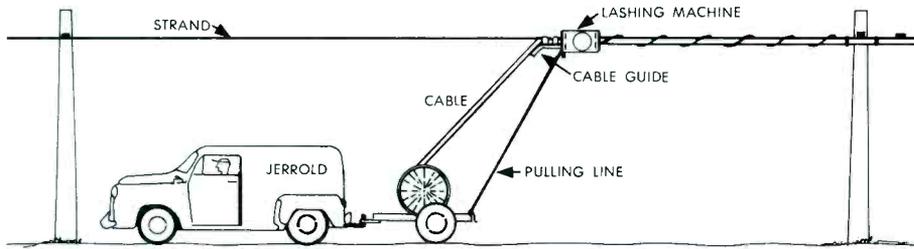


FIGURE 1—MOVING REEL METHOD

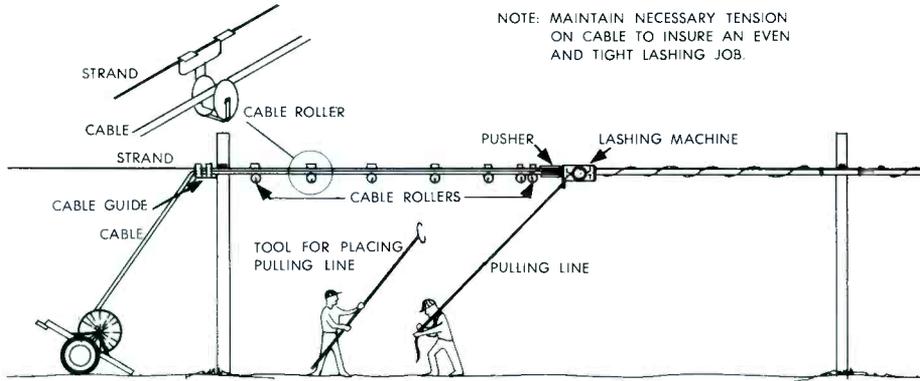


FIGURE 2—STATIONARY REEL METHOD

ature **decreases**, increase maximum tension by the same factor.

Mounting Cable-Reel on Reel-Cart

Mount cable-reel on the reel-cart so that the loose end of the cable is at the *top* of the reel. Set brake on the reel before pulling cart to desired location.

Lashing Wire

It is recommended that stainless steel lashing wire .045" in diameter, be used for aluminum cable installations.

Choosing Method of Installation

The terrain will dictate the choice of installation method. If a clear path exists along which the reel-cart may be towed by a vehicle and there are no obstructions (branches, guy wires, etc.) which would prevent raising the cable to the messenger strand, the moving reel method will be used. Wherever these conditions do not exist, the stationary reel method is used.

The essential difference between these two methods is that in the moving reel method (see Fig. 1) a vehicle tows the reel-cart to pay out the cable and simultaneously tows a pull-type lashing machine to lash the cable to the messenger strand; whereas in the stationary reel method (see Fig. 2) the cable is pulled from the reel on a stationary reel-cart (or reel jacks

LASHED CABLE SUPPORTS WITH PROPER SIZE OF SPACERS TO PLACE CABLE IN LONG SMOOTH CURVE AND TO OBTAIN MINIMUM OF 1/2" SPACE BETWEEN CABLE AND SUSPENSION CLAMP.

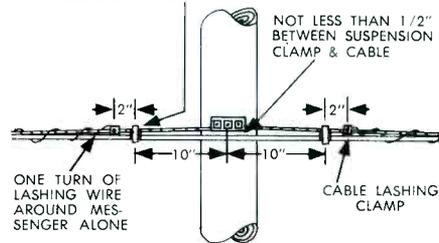


FIGURE 3—POLE SUPPORT PLACEMENT FOR STRAIGHT LINE POLES

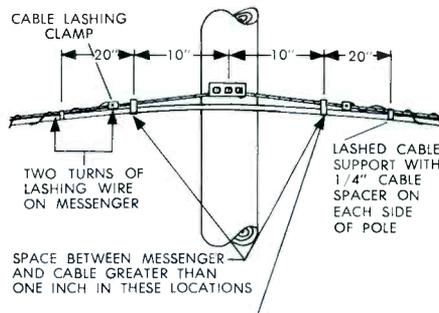


FIGURE 4—POLE SUPPORT PLACEMENT FOR ANGLE POLES

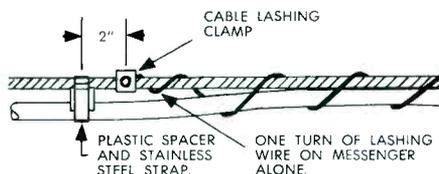


FIGURE 5—METHOD OF SUPPORTING CABLE

if no cart is available) and laid in position before being lashed to the messenger strand.

Installing and Lashing the Cable Set-up

a. **Moving Reel Method:** The reel-cart is hitched to a vehicle. A Kellm grip is attached to the loose end of the cable and a pulling line attached to the *top* of the reel and hauled up to the starting point. The lashing machine is placed on the messenger strand with a cable guide (shoe) in front of it. The cable is laid in the cable guide and lashing machine and the covers of both are closed. The loose end of the cable is secured by the lineman so that when the truck moves forward the cable cannot be pulled through the lashings. A towing line is run between the lashing machine and the reel cart and secured to the cart.

b. **Stationary Reel Method:** The reel-cart is taken to the desired location and parked. Blocks are placed under wheels. A Kellm grip is attached to the loose end of the cable and a pulling line attached to the grip. A cable guide (shoe) is placed on the messenger strand and cable rollers are placed at suitable intervals (usually 30 to 40 feet apart, except at pole locations) or at other points where the line is interrupted. The cable is pulled from the *top* of the reel and hauled up to the starting point.

Pulling the Cable

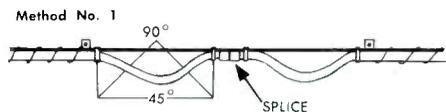
a. **Moving Reel Method:** The vehicle is now driven forward until the first pole location is reached. At this point, cable supports are installed and the cable guide and lashing machine are moved to the other side of the pole.

b. **Stationary Reel Method:** The cable is placed in the cable guide and pulled thence along the cable rollers until all of the cable is in position under the messenger strand.

Lashing Hints

The tension on the lashing wire should be from 18 to 25 lbs. for 1412 and 1500 cables and from 35 to 40 lbs. for 1750 cables. The pitch of the lashing wire may be from 10" to 15" but must be constant for any section of cable of the same size.

WARNING: DO NOT PERMIT LOOSENING OF LASHING WIRE DURING LASHING OPERATION.



FOR JT-1412
JT-1500
JT-1750

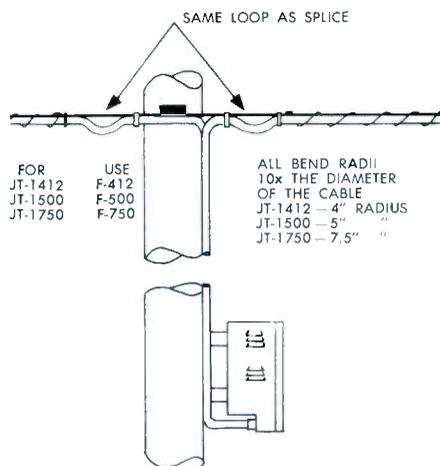
USE SC-412
SC-500
SC-750

ALL BEND RADII
10x THE DIAMETER
OF THE CABLE
JT-1412 - 4" RADIUS
JT-1500 - 5" "
JT-1750 - 7.5" "

Method No. 2—Use only where No. 1 would cause problems



FIGURE 6—METHODS OF PROVIDING SLACK FOR EXPANSION AND CONTRACTION OF CABLE

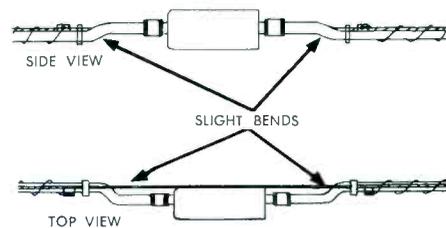


FOR JT-1412
JT-1500
JT-1750

USE F-412
F-500
F-750

ALL BEND RADII
10x THE DIAMETER
OF THE CABLE
JT-1412 - 4" RADIUS
JT-1500 - 5" "
JT-1750 - 7.5" "

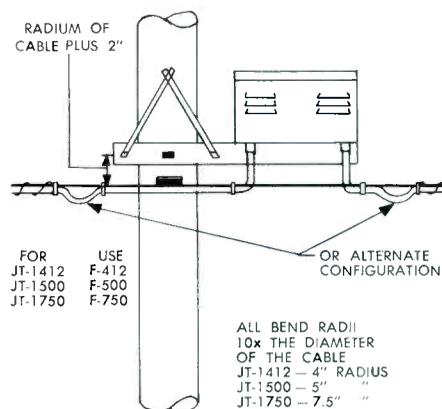
FIGURE 8—VERTICAL POLE MOUNT



ALL BEND RADII
10x THE DIAMETER
OF THE CABLE
JT-1412 - 4" RADIUS
JT-1500 - 5" "
JT-1750 - 7.5" "

USE FOR
F-412 JT-1412 } WF-71
F-500 JT-1500 }
F-750 JT-1750 }

FIGURE 9—CONNECTION TO TOM-2



FOR JT-1412
JT-1500
JT-1750

USE F-412
F-500
F-750

ALL BEND RADII
10x THE DIAMETER
OF THE CABLE
JT-1412 - 4" RADIUS
JT-1500 - 5" "
JT-1750 - 7.5" "

FIGURE 7—HORIZONTAL CROSSARM MOUNTS

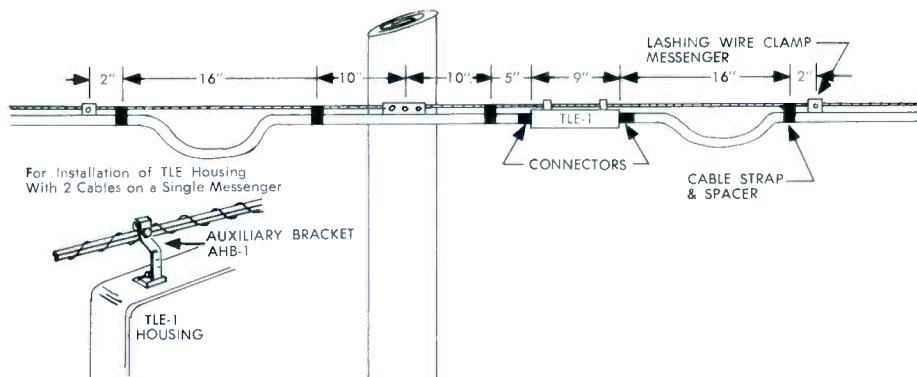


FIGURE 10—INSTALLATION OF TLE HOUSING

Lashing the Cable

a. Moving Reel Method: The lashing operation is performed simultaneously with the pulling of the cable.

b. Stationary Reel Method: The lashing operation is performed after the cable has been pulled into place. The cable is lashed to the messenger strand in the same manner as with the moving reel method except that a pusher is placed ahead of the lashing machine to push the cable rollers towards the next pole where, having served their purpose, they will be removed by the lineman. The lashing machine is pulled by a man on the ground rather than by a vehicle.

Cable Supports

The preferred method (see Figures 3 and 4) of supporting the cable at poles is to terminate the lashing wire at each side of the pole with a lashing wire clamp, and fasten the cable on each side of the pole with a lashed cable support that has a stainless steel band and a plastic spacer. The cable support should not be over 10 inches from the suspension clamp bolt and should provide 1/2 inch space between the cable and the suspension clamp.

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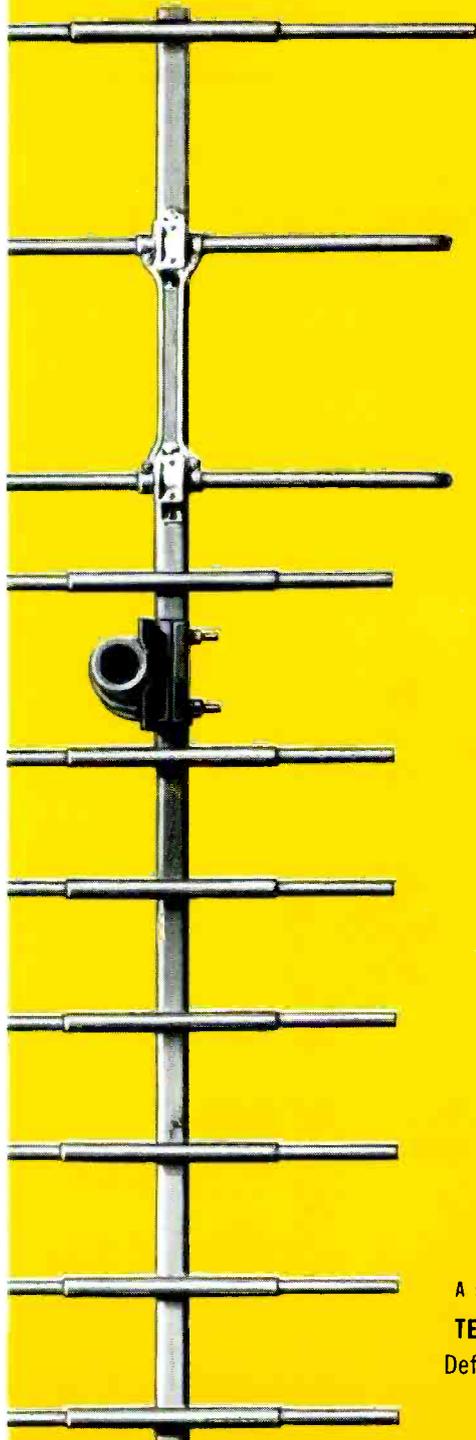
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CATV



Quality CATV must start with a high performance antenna. Literally thousands of field installations have proven that TACO Ruggedized Yagis eliminate the high expense associated with repair or replacement of less durable antennas. These significant cost-savings make TACO CATV Yagis your best dollar buy.

HERE'S WHY

- High strength aluminum alloy
- Heli-arc welded construction
- Internal baluns
- Vibration Dampeners
- Foam-filled coaxial feed terminal boxes
- Heavy duty square crossarms

These PLUS FEATURES add up to reliability you can count on under all environmental conditions.

TACO CATV Antennas feature low VSWR and unexcelled front-to-back ratios. A wide choice of performance characteristics is available through 5, 8, or 10 element models, plus the extended capabilities made possible by a broad line of screen reflectors.

Write today for complete technical data.



A subsidiary of THE JERROLD CORPORATION
TECHNICAL APPLIANCE CORPORATION
Defense & Industrial Products Division
SHERBURNE, N. Y.

(Lead spacers should not be used because galvanic action may result from the contact of the lead and aluminum.)

As a further precaution to protect the cable at the pole it is suggested that a six-inch plastic cable guard be placed over the cable at any point where the cable might rub on the pole or the suspension clamp. At locations of cable splices, amplifier locations, electronic in-line accessories, and termination points, place cable supports as shown in Figure 5.

Bend Radius (pulling cable)

When pulling cable around bends the minimum radius must not be less than the diameter of the shipping reel.

Bend Radii (completely installed)

These bend radii (according to the size of cable installed) are given in Table III.

Type of Cable	Minimum Installed Bend Radii
JT-1412	4"
JT-1500	5"
JT-1750	7 1/2"

TABLE III

Expansion Loops

Since the thermal expansion of the copper center conductor and the aluminum sheath are not the same, an expansion loop is required at all splices and inter-connection of amplifiers and in-line accessories. This expansion loop is recommended even where a short run of cable is involved since it serves three purposes.

- a. It provides for cable expansion and contraction.
- b. It effectively anchors the inner and outer conductors to one another thereby preventing relative motion between them.
- c. It relieves the axial stress on the interconnection.

The recommended configurations for various expansion loops are illustrated in Figures 6 through 10.

If the aluminum cable installation techniques presented in this article are carefully studied and properly applied, the installation will give years of excellent service. While the installation of aluminum cables may be slightly more difficult than the installation of the familiar flexible cables, their use will provide a greater efficiency in signal transportation and an unparalleled economy of maintenance. □

A CATV MANAGER IS:

ENGINEER,
BUSINESS MANAGER,
SALESMAN,
CIVIC LEADER,
TECHNICIAN,
PROMOTER,
LAWYER,
.....

By CHARLES WIGUTOW
Ameco, Inc.

The CATV manager is not a baby sitter for the cable company. Preserving the system's status is not enough, even when things are going well. His primary obligation is to make the system grow profitably by getting more subscribers and keeping them satisfied. With this goes an efficiently controlled and enlightened operation.

The manager is first, a salesman. Other management virtues can follow. Administration (record keeping) is a necessary tail to the main body. However, the manager must incorporate all these qualities in his one person with emphasis on productive public relations.

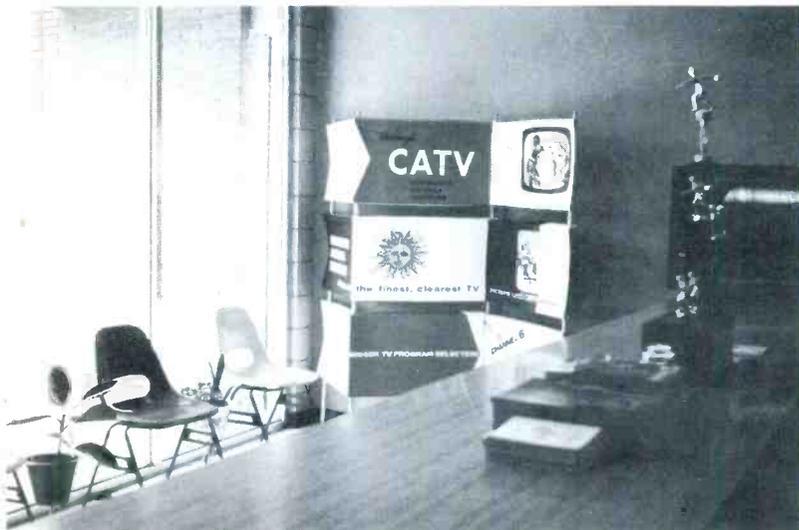
Somehow the other needs must be worked into his job without clogging his main function. The system manager who can always be found in his office may not quite

work program incorporates an item or personality applicable to the local scene. Here is the basis of a news story that should hit the local press).

Active in Civic Affairs

He can propose a radio club to the school science department and present the club with used or outmoded equipment. (Such items are often thrown away.) Offer to give an illustrated talk to the science class on the workings of a cable system. Perhaps the system's chief technician can be a leader of a teen age Electronics Club. What else could lead to more favorable notice in the paper?

Why not investigate the number of subscribers taking TV college courses with or without credit? The manager should say something publicly about it. Talks to service and



System manager should maintain an attractive reception area for visitors.

be the ideal manager he thinks he is. His exercising constant personal control may be depriving another person the opportunity to exhibit initiative. Sharp watch of the work flow is necessary, but the processes should be organized so that they go on efficiently whether he is present or not.

Restlessness should come naturally. Questions should keep popping in his mind, "What can I do now?" Newspaper items, stray bits of conversation should stimulate him as a spark would fire dry wood shavings (e.g., a net-



A well-run, organized office area reflects character of manager.

civic clubs are in order. Television occupies an important place in the lives of people. If the cable system has something of interest that ties locally to television, it will get attention.

Have high winds battered the town? Managers should immediately follow with announcements describing cable television as the "peace of mind" way to receive television pictures.

He can do more. Anticipate TV programs of impor-

tance. Try to dig up advance notices and supply these to the newspaper editor. The newspaper is constantly sifting, from a mass of news and obvious publicity pieces, material that will make good reading. System managers can direct them to items of interest to their readers and to subscribers of the system.

Don't overlook radio stations. They, too, must keep the listener's attention. The fact of life, even to a radio station, is that during prime evening hours, television has an almost exclusive hold on just about everybody. Smart radio station operators cannot ignore the place of television in the lives of their audiences. A daily program about television presented over radio, whether paid, or not has shown itself to be a profitable venture. Similarly a newspaper column concerning television has shown itself to be a good will builder.

Promote Services

Holidays: Christmas, Easter, George Washington's Birthday, St. Valentine's Day, etc. can be the keys to special offers. The manager should be dreaming up promotion ideas all the time. Should the system hit on stagnant days in its growth pattern, he can try direct mail; giving the present subscribers an incentive to bring newcomers to the cable.

This does no more than touch the range of activities open to the "restless" manager. There are many other areas of community betterment to which his services can be contributed. It is unthinkable for a manager not to be a member of the Chamber of Commerce and civic clubs. Many are the benefits he and the company will reap from active participation in such activities.

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 . . . For CATV People"



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 Seattle, Washington



Building exterior and grounds should be well kept. The manager can delegate these duties but must insist on results.

Knock on Doors

How well does the CATV manager know his subscribers? Knocking on doors should never be beneath his dignity. He should make personal calls to investigate service complaints; the degrees of subscriber satisfaction; what the pictures are like as they get into the home. He should personally find out why people are not cable subscribers. What do they say about the cable? Nothing can quite equal this method of learning community attitudes towards cable television.

The man who can say at the door, "How do you do, I'm the manager of the cable television company," has an almost magic path to vital and useful feedback. The average system manager is a highly regarded person in town. If he isn't, somebody has erred seriously in the creation of public attitudes.

An Organization Man

The manager has the additional human relations job of maintaining, at an optimum level, employee morale and efficiency within his own organization. No employee can be supervised all the time. The willingness to do the right thing must come voluntarily and from within. The manager who can foster a sense of responsibility by giving trust and appreciation as needed will have a force working on his side beyond measurement in hours or effort. It's wise to invest management faith in the building of employees' self confidence and responsibility, even if some mistakes occur along the way.

Mature . . . With Courage

If the manager is responsible to a group ownership, he has still another set of relations to live with. Often he must act sensibly on his own while waiting for the home office to come through with a decision.

Good business judgment arising out of maturity and experience will usually dictate the correct response. But the man in charge needs guts. He is of little value if he is simply a passive order follower. He needs the courage to cope with emergencies, plus the guts to speak up when he thinks a high level directive is out of line with the best interests of the local operation. The foresight of an able

Performance Unmatched by Any Other CATV Cable!

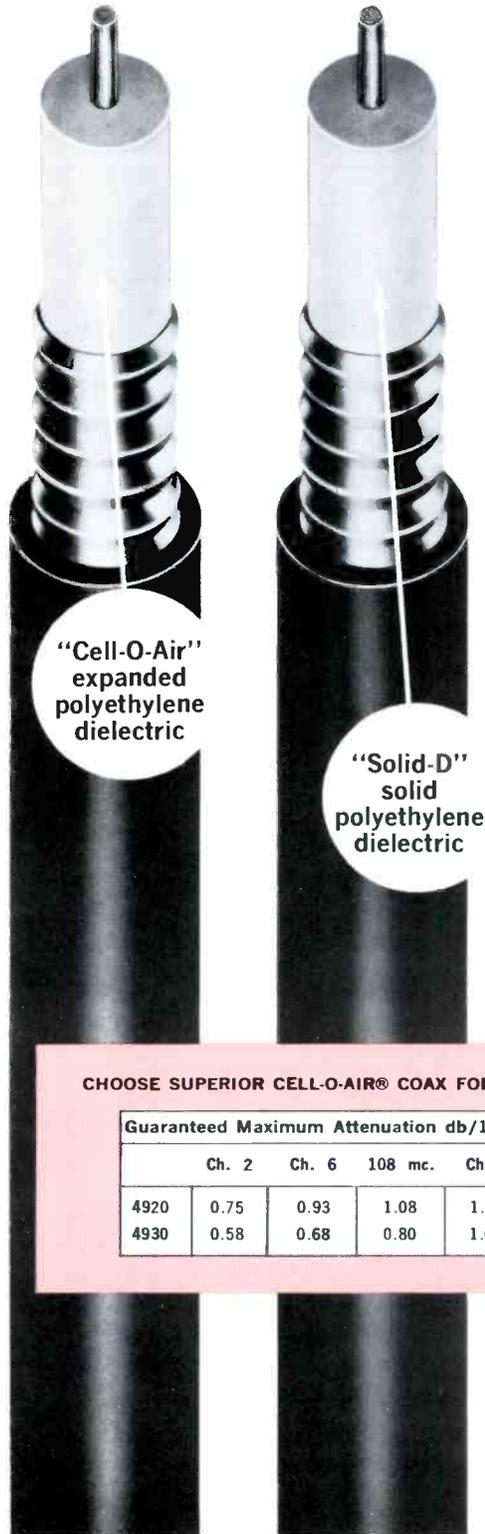
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- Full spectrum capability

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Guaranteed Maximum Attenuation db/100' at 68° F					
	Ch. 2	Ch. 6	108 mc.	Ch. 7	Ch. 13
4920	0.75	0.93	1.08	1.41	1.57
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Guaranteed Maximum Attenuation db/100' at 68° F					
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6020	0.74	0.91	1.05	1.38	1.55
6030	0.56	0.67	0.79	1.05	1.19

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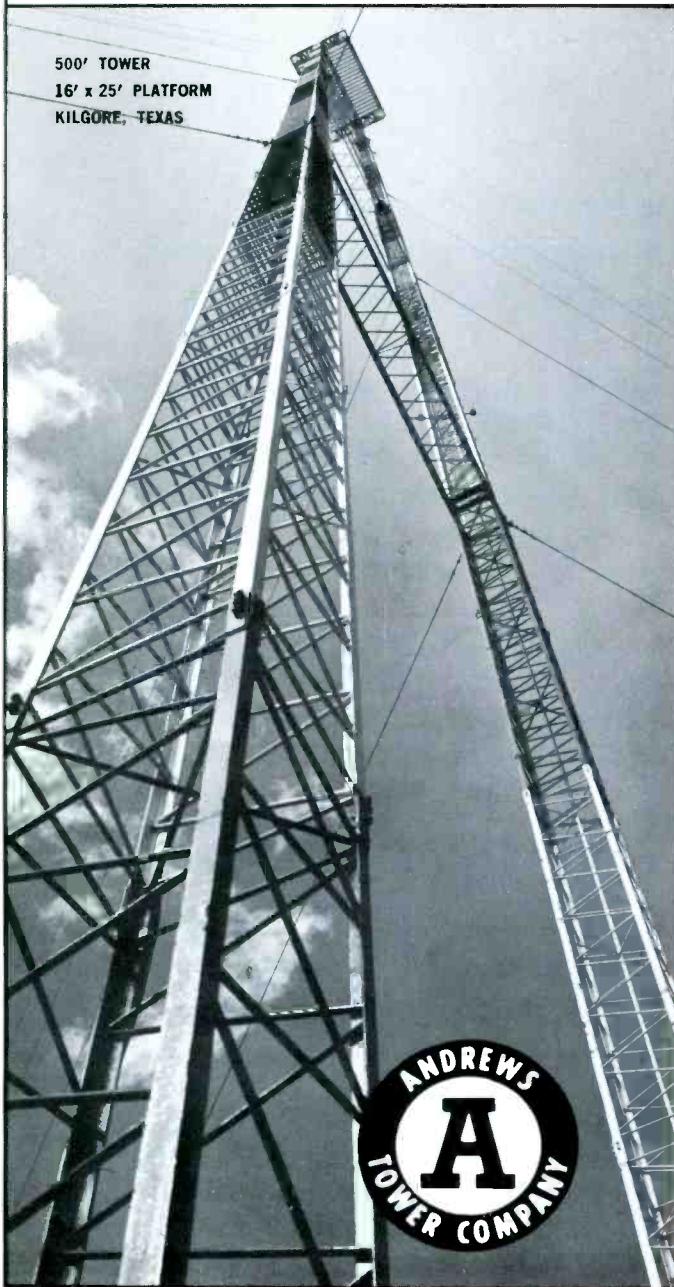
Andrews has the experience and know how to take complete care of any tower need. At Andrews SIMPLICITY in design means SIMPLICITY in erection . . . this give you more tower for less money. Before installation, your tower is completely assembled and tested. In this way, your tower can be built to be installed in any location your system calls for. Write or call today for free descriptive literature.

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man on the spot who isn't habituated to being a "yes man" is good protection for distant ownership.

Withal, the manager must understand that a direction seemingly contrary to his good judgment may come from an overall company plan. And, he may not even be aware of the part his system is to play in that plan.

The manager who communicates to ownership cannot afford to be sloppy with scheduled or significant information. Centralized management has a job to do. The better the central office does its job (which rests on complete and timely reports), the better it can supply helpful direction to the local branch.

Alert To Internal Problems

There also comes a time in the manager's life when he applies discipline, and even the unpleasant task of firing. Money and stock are sacred to business well-being. There usually is only one answer for someone caught tampering with either. Immediate dismissal. Erosion of stock and embezzlement endanger the existence of otherwise sound businesses.

Besides internal considerations, money that is not properly credited to a customer's account results in a subscriber's suspicion of the integrity of the whole organization. And this distrust can spread fast in a community. Efforts to collect legitimate moneys due can be thwarted, in addition to cancelling out of conscientious efforts to build good will.

Control is required, with safeguards built into the procedures of working and record keeping. Still employees must genuinely feel that they are allowed initiative and responsibility.

Summing up without going into the specialized details for implementing these requirements, the man who runs a cable system should have: a sense of public relations; be a diplomat and human relations expert; be a good business man and a disciplinarian when the occasion calls for it. He should understand and apply controls; know the mean-have an awareness of the technical processes. He must have ing and substance of his business; that is, television, and integrity, maturity and be a thorough worker.

Does it sound impossible to find all these qualities in one person? Maybe yes, but there are many CATV system managers who are fulfilling these requirements. □

LETTERS

Dear Mr. Searle:

I reviewed your April 12 issue of "Cable Television Review" and there is one misquote on page 5. The first paragraph is correct; however, the second is not correct wherein you state "existing agreements with community antenna systems will not be renewed according to General of Ohio spokesman."

I am not certain whether there was a misunderstanding when Mr. Berlan read you our policy; however, it is "those companies presently using pole contact agreements in specific exchanges will be allowed to continue under this method of operation." I believe the misinterpretation probably came from the following sentence: "They will not be allowed any new agreements of this type." What we mean is those companies presently under pole contact agreements will

be allowed to continue. We will not execute any new pole contact agreements for other exchanges or cities where this same company might make such a request.

To sum it up very briefly, if you have pole contact agreement now, you stay with it. If you have any new city or town in which we operate, we will not permit pole contacts.

Jack Boyd
Marketing & Sales Director
General Telephone Co.
Marion, Ohio

Dear Stan:

I have read with interest Mr. Burwer's article *Transistors for Wide Band Amplifiers*. (TV & Communications, April 1965)

It appears that he is very knowledgeable on the subject, but I would like to differ on especially three points.

1. *Transistors vs Tubes and Distortion* - We are now using a silicon transistor in a line and distribution amplifier that can produce output capabilities equivalent to the 12BY7 and 6AU5 tubes.
2. *Noise* - We now have in service

13 amplifiers cascaded with a name figure of better than 50 db.

3. *Gain Control* - Yes, it is difficult, but it can be done.

I can only draw the conclusion that Mr. Burwer is a little behind the state of the Art.

John G. Campbell
CAS Manufacturing Co.
Irving, Texas

CALENDAR

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

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

May 16-18—**West Virginia & Mid Atlantic Association** meeting. Spring sessions to be held in Athens, Ohio. Robert L'Heureux is guest speaker.



HARRIS INTRODUCES CATV LEGISLATION; CRITICIZES FCC'S "UNFORTUNATE APPROACH"

On April 28 Rep. Oren Harris (D-Ark.) introduced a bill aimed at remedying the FCC's "unfortunate approach" to CATV. Once again, CABLE TELEVISION REVIEW readers had the facts on the following Monday morning.

QUICK!

On Friday, April 23, the FCC announced its assumption of broad powers over CATV. On the following Monday morning, less than 72 hours later, CABLE TELEVISION REVIEW subscribers were reading about the FCC action. On April 28, Rep. Oren Harris introduced a bill aimed at remedying the FCC's "unfortunate approach" to CATV. Once again, CABLE TELEVISION REVIEW readers had the facts on the following Monday morning.

As a CABLE TELEVISION REVIEW subscriber you will receive all CATV news, up-to-date and complete each week . . . including franchise activity, system construction and personnel changes. Special attention is devoted to broadcaster and telephone involvement in cable television. If you have a financial interest in cable television you cannot afford to be without the industry's accepted weekly news source, CABLE TELEVISION REVIEW. One Year, \$50 - 13 Issues, \$15

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CABLE TELEVISION REVIEW • Dept. H • P. O. Box 63992 • Oklahoma City, Oklahoma

PRODUCT REVIEW

KAISER MARKER/DETECTOR FOR CATV

Kaiser's KMD Marker/Detector is a portable unit that provides about 20 db more gain than simple diode detectors. Provision is included for insertion of an external marker if desired. A crystal controlled oscillator provides convenient markers in the TV and FM band. The two-transistor device is designed for amplifier alignment, return loss measurement, and cable testing and system maintenance.



KMD features VSWR of better than 1.1:1; 20 db gain (over Simple Diode Detector); impedance is 75 ohms, and connectors are "F" type.

Net price is \$75 from Kaiser Aerospace & Electronics, P.O. Box 9098, Phoenix, Arizona 85020.

SOLID STATE BRIDGING AMPLIFIER FROM ENTRON

A fully transistorized, remotely powered outdoor bridging amplifier is available from Entron. The unit covers the low through high VHF band, including FM and intermediate bands, according to Edward P. Whitney, Vice President.



Known as model B-1, the new Entron unit features 20 db gain to four distribution line outputs and is designed for strand mounting. It is also weather and atmosphere protected by a cast aluminum housing. Remotely powered through the coaxial cable, it is available with electronically regulated power supply circuits for 28 volts or 60 volts. From the trunkline, the remote power voltage

can be fed to any or all distribution outlets to feed remotely powered extender amplifiers. Each distribution outlet is individually fused.

The new Entron bridging amplifier also features a built-in directional coupler which serves to tap signals off the trunkline with minimum interference to the line's signal. Its amplifier section may be removed without interrupting the trunkline. Other features include variable gain and tilt controls.

Model B-1 is available with a variety of connectors, including UHF and aluminum flare types for 0.412", 1/2" and 3/4" cable. Write **Entron, Inc., 2141 Industrial Parkway, Silver Spring, Maryland 20904** for details.

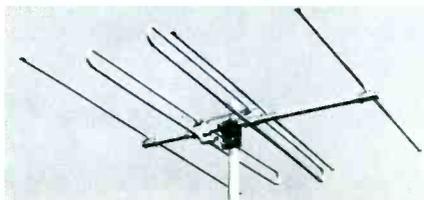
NEW LINE EXTENDER

"The Bullet" has just been introduced by **Viking, 830 Monroe Street, Hoboken, New Jersey**. The unit is Model No. 562, a 9 db transistorized broad-band line extender. It is designed as a high-performance, broad-band transistor amplifier with almost every feature of its big brothers according to Viking. Its matched input and output, low noise figure, flat response, high input capability and flexible power feed make it ideally suitable for any amplification where its 9 db gain is required. The versatility of "The Bullet" includes use as short end-of-run extender, after pressure-tap amplifier for extra long drops, as gain equalizer for long distribution leg systems and as antenna-mounted amplifier.

The No. 562 is built in a completely weather-proof, water-sealed case which can be opened for adjustment of power feed.

TACO OFFERS Y-51-6

TACO has introduced the Y-51-6 yagi featuring 1 1/4" square crossarm, 5/8" diameter elements, and 3/4" reinforcing



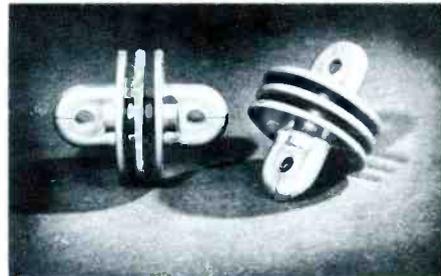
sleeves where the elements are attached.

The Y-51-6 has direct coaxial connection to either 50 or 75 ohm coax with matching accomplished through a re-entrant type internal balun. VSWR is 1.4:1 and remains relatively flat across the entire band. Power rating is 700 watts. Nominal gain is 8.0 db over an isotropic source.

For further information write for the TACO catalog of Ruggedized Yagi antennas. Contact **Technical Appliance Corporation, Defense and Industrial Products Division, Sherburne, New York**

PLASTIC INSULATORS

Model HQ-2 Insulators are offered by Budwig. According to the manufacturer, plastic insulators "combine high tensile strength and extreme resistance to weather and temperature changes, while providing excellent insulating properties."

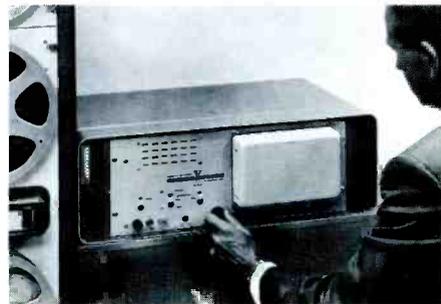


The insulators have reinforced rib structure surrounding the tie points. They measure 2" x 1 1/2".

Details about the insulators, list priced at 99c a pair, are available from **Budwig Manufacturing Co., P.O. Box 97, Ramona, Calif.**

TIME ANNOUNCER

The Magnasync "Chronavoice" signal/voice/visual time announcer provides an exact time source that can be injected on tape at one-minute intervals for actual time recordings. Built-in loudspeaker provides local, audible time announcements. Visual readout and audio are based on standard Military 24 hour time. Audio and visual warnings are activated in event of power failure.



Available for 115v or 230v, 50-60 cycle single phase. Output is 600 ohms, 0 dbm. Will feed up to 10 multi-channel recorders. All circuitry is solid state. Life

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expectancy of 10 years continuous operation. Price: \$1,750.00. Rack mount or cabinet enclosure.

Literature available on request from R. S. Dickinson, **Magnasync Corporation, 5547 Satsuma Avenue, North Hollywood, California 91601.**

NEW WIRELESS TV CAMERA

The new Fernseh wireless TV camera is being distributed in the United States by Video-Medical Electronics, Inc.

Among the features of this wireless TV camera is the ability to sync lock vertically and horizontally to the master sync generator.

The complete Fernseh portable TV camera weighs only 26 pounds and has a battery life of 4 hours.

Video-Medical Electronics, Inc. is located at **Time & Life Building, Rockefeller Center in New York City, N.Y.**

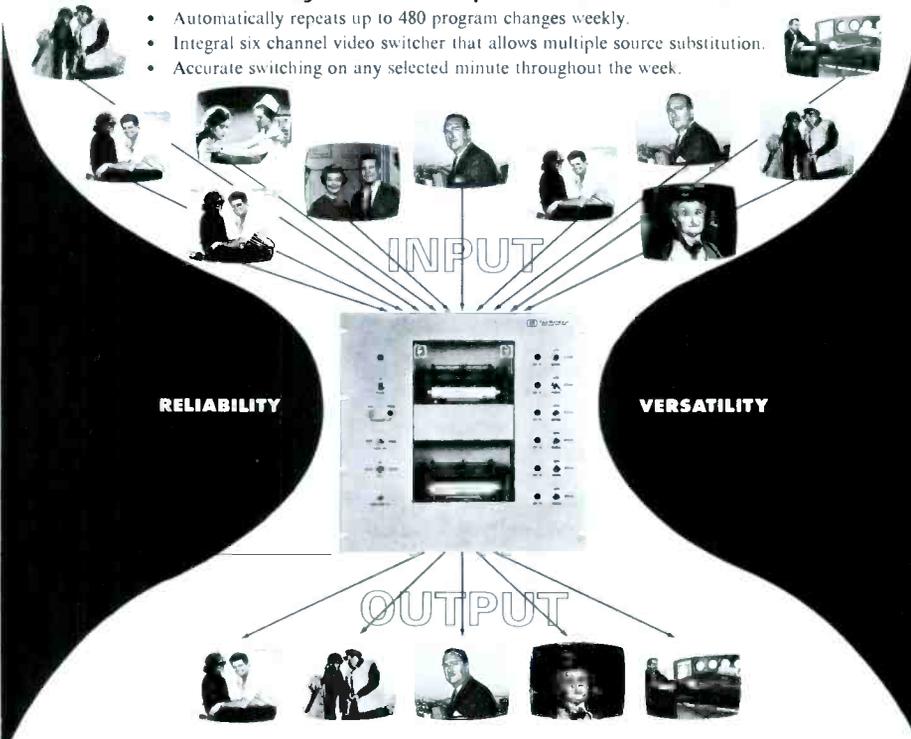


Complete details on the Fernseh wireless TV camera are available by writing at the above address. □

NON DUPLICATION SWITCHER

This New Pre-Programmed switcher provides these exclusive features:

- Automatically repeats up to 480 program changes weekly.
- Integral six channel video switcher that allows multiple source substitution.
- Accurate switching on any selected minute throughout the week.



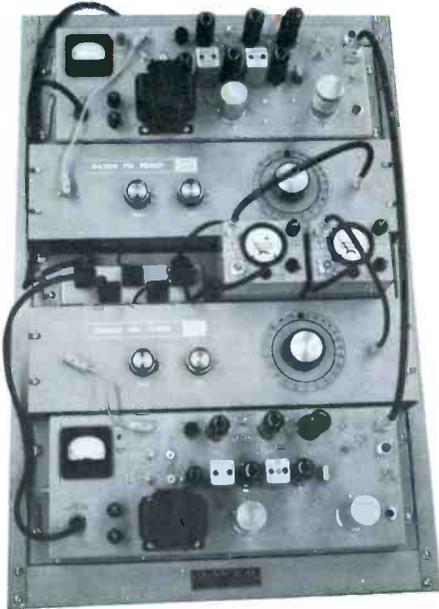
The **TELEMATION Model TMP-204 Switcher** is primarily designed for use by CATV Systems in non-duplication of local TV stations. It is also useful in other applications requiring complex pre-determined switching schedules. It represents the third generation of switchers from the company that has had more experience than any other in this field.

- The only switcher designed to switch at one-minute intervals throughout a seven-day week.
- The only switcher with adequate capacity and flexibility for CATV use.
- The only switcher with integral video switcher (RF switching optional).
- The *Only* switcher tailored to the CATV industry's requirements.



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DAVCO NOW OFFERS TWO COMPLETE MUSIC SYSTEMS



MODEL FMRT-2 TWO CHANNEL FM SYSTEMS

This pre-wired package delivers two "off-the-air" FM channels. System includes two variable FM tuners which can be crystal controlled on any FM frequency (88-108 mc). Provision is made for adding multiplex adapter. Constant output is provided by use of two Entron FMT-1100 FM transmitters.

The unit contains rack mounted remote power supplies for antenna pre-amps (DRPB-FM) along with a multiple AC outlet.

Price, complete \$897.00

MODEL MC-1100 MUSIC CHANNEL

Complete unit is assembled and wired — ready to plug into your system. Operates automatically and needs no attention. Pre-recorded tape service is available. The MC-1100 provides FM music on any of 26 channels.

Automatic tape deck, pre-amplifier, and FM transmitter is furnished in closed cabinet.



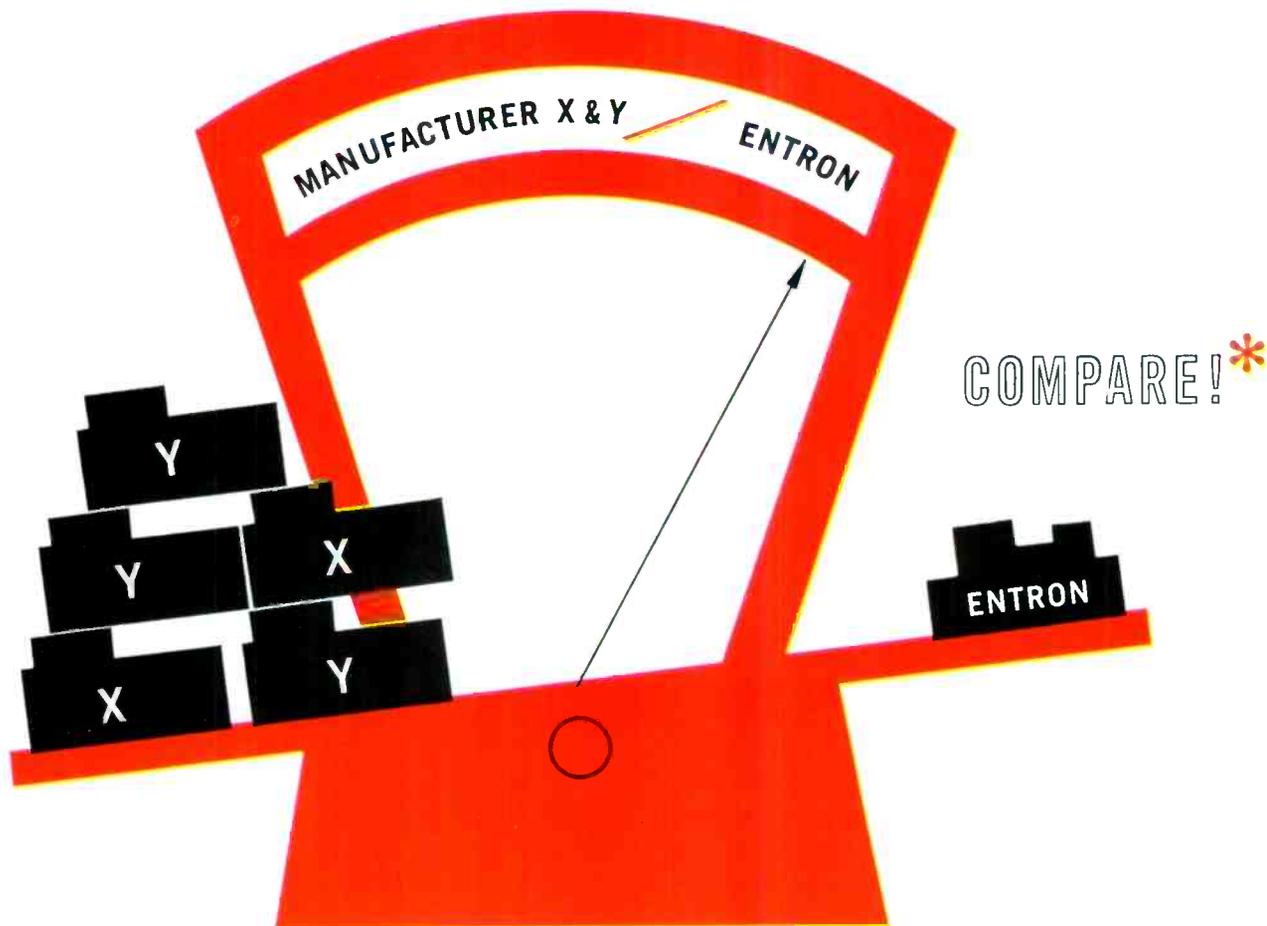
Complete as shown \$868.00

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DAVCO ELECTRONICS CORPORATION

— IN CATV SINCE 1949 —

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MORE SYSTEM WITH FEWER AMPLIFIERS

TRIM initial cost--CUT maintenance costs with Entron's combination high level tube and solid state CATV systems

**(from our files of competitive bids)*

CASE 1 —A 25 STRAND MILE SYSTEM (1/2" & 412 ALUMINUM CABLE):

MANUFACTURER X

32 Trunkline/BRIDGING AMPLIFIERS
 14 Bridging Amplifiers
 82 Line Extenders
 2 LEVEL CONTROL Amplifiers

130 total cost \$22,000

ENTRON

9 Trunkline Amplifiers
 24 Bridging Amplifiers
 17 Solid State Extenders
 0 (none required)

50 total cost \$14,000

CASE 2 —A 30 STRAND MILE SYSTEM (1/2" & 412 ALUMINUM CABLE):

MANUFACTURER Y

153 units
\$23,500

ENTRON

47 units
\$13,500

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

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