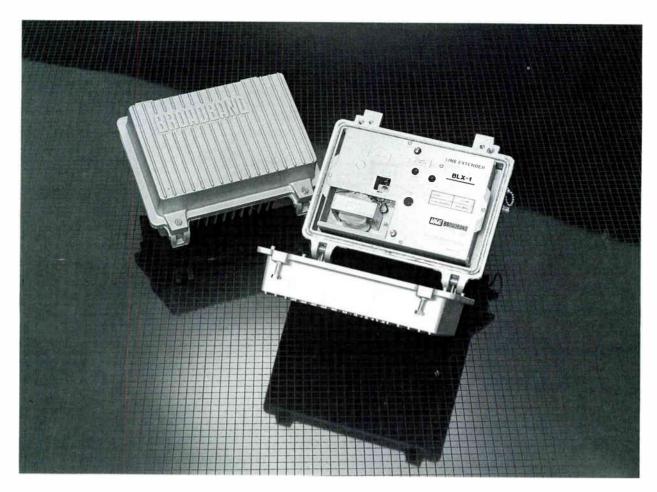
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OFFICIAL JOURNAL OF THE COMMUNITY ANTENNA TELEVISION ASSOCIATION
MARCH 1985

Stormy Issues In Washington



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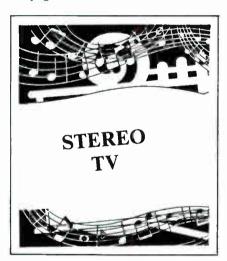


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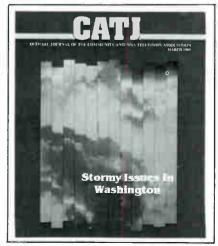
CATJ, The Official Journal for the Community Antenna Television Association is published as a service for Association Members and others providing services to the industry.



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In this month's **WASHINGTON UPDATE** you will find an enormous amount of vital material, and our cover highlights our focus on that information for cable system operators.

Cover photo by Steve Reeves

MARCH, 1985

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CATA MEMBERSHIP -

The membership of the Community Antenna Television Association is growing rapidly. We are often asked who the members of CATA are, or what the "typical" CATA member is. Those are very difficult questions to answer. To begin with, there is no such thing as a "typical" CATA member. The Association started in the mid 1970's as a reaction to the decision by some very large operators to make a deal on copyright payments in exchange for the ability to build cable systems in the major urban centers. A substantial part of the industry, and particularly those folks who were already running successful cable systems in the non-major-urban areas, felt it was unfair to require them to pay copyright in order to get the ability to build systems in the urban centers that they were not interested in building in the first place! But that is all history, and it is not necessary to argue that out again here. (The bottom line is that because in its initial stages, CATA was representing primarily "smaller" operators; that is, those were operators not interested in assuming the burden of building major urban centers. The perception has persisted that CATA members are all rural, "mom and pop" systems.) Nothing could be further from the truth today. As a matter of fact, now that there are virtually no cable operators left who really want to build the major urban areas — they have finally realized what we have been saying all along, that the urban center "cable systems" are not really the same animal as the rest of the business, and never will be — CATA membership has swelled. When CATA was formed, the founders vowed to protect the interests of the "small, independent" cable operator. And we have done that, and will continue to do so. The smallest "mom and pop" operator gets the same attention, and even more service than anyone else. But he or she is not alone. Some of the founding charter members of CATA now run corporations of their own with more than 250,000 subscribers! That can hardly be characterized as a "mom and pop" system! But is it a "small" system? Well, when you consider that there are several companies in the cable business with well over one million and, in as least two cases, two million subscribers, it would appear that MOST cable operators could be considered "small" in comparison!

The evolution of the cable industry has taken a very interesting turn, and I think CATA is ideally

placed to serve the industry because of it. Several major companies now dominate the industry with regard to size. The rest of us — from the middle sized MSO on down — are directly affected by that fact. Bulk discounts by the major cable programmers are a classic example of the difference between being "large" and "small" in this business. CATA is the only national organization actively trying to deal with that problem for the "small" operator — and that certainly includes folks with a quarter of a million subscribers!

Taken from another point of view, it really doesn't matter how big a conglomerate is because the problems of the local manager of a 5000 subscriber system (the majority of systems in the U.S. have 5000 or fewer subscribers) are the same, regardless of how big or small the company is that owns the system. The questions the local mayor or city attorney ask, the issues that come up before the city council, etc., are identical. Even the largest MSO's have recognized this and are joining CATA to assure that their local managers know the practical, day to day answers to those questions. It is far better, they have learned, to have a knowledgable and active local manager than to try to "fix" the communications problems that develop without such management only at renewal time!

Just to complete the overall outline of "CATA membership", I should also point out that when "larger" members join CATA — and by "larger" we are talking about anyone with over 13,500 subscribers at the moment — they all pay a flat fee for dues. The top category for dues at this time is \$5000.00 per company. The CATA Borad is working right now to make it clear in the Bylaws that any CATA member company, regardless of the number of individual systems owned or controlled, has one vote — and one vote only. That means that regardless of the size of the cable operator, no one can ever "take over" CATA simply because they are big. No one company can threaten the independence of the organization and the decisions made on behalf of the entire cable industry, based on threats of dropping membership and thereby putting a major hole in the budget. So when I say that CATA is the independent voice of the cable television industry, you can rest assured that we are structured in such a way that that will always be true.

What it means to be a CATA member also

WHAT IT MEANS

includes another major point — it means being involved. Simply paying dues to an organization does not satisfy the requirement that all CATA members must become involved — become politically aware and act as the best emissaries we can for the cable television industry in our cities and towns. As we have seen time and time again, what happens in the next town, or the next state, or across the nation DOES affect the perception of and the business atmosphere for cable television in your town. Working together, on the local and regional level through state and regional associations, as well as nationally through CATA and the NCTA (and we work together very well on a great many issues), is the only way the industry as a whole can win.

Finally, a critically important aspect of being a CATA member, so far as I am concerned, is the information, and interaction that takes place on the local management unit level. Again, this is crucial regardless of whether you own your own system or manage one for the largest MSO conglomerate. There is simply nothing more important than continuing to learn, and continuing to share experiences. That is what the CATA Show is all about (this year we are in Nashville, TN., June

17-19). We have a very different kind of show from the ones many of you are used to — and apparently getting tired of if we are to believe all the trade press reports. The CATA Show focuses on the practical questions of day to day cable operations, and it is desgined for the entire family. It is NOT primarily a trade show, although our friends from the supply side of the industry are certainly there too. It is also not designed just for the "bosses" to see, or be seen at parties and press conferences. At CATA '85 you will find a full program for spouses, and another one for "CATAkids" this year. We are inviting the people who actually do the work in the cable industry to come down to Nashville, meet others who do the same thing, learn from each other's experiences, and make the job and the family a closer unit all at the same time. It works! And I might point out that it works just as well for the managers of the systems owned by the big companies as it does for the individual owner. It's all part of being a CATA member. If you are a longtime member of our family, you know this already. If you are new, welcome, and I'd love to visit with you in Nashville. In any event, maybe now everyone has a better idea of what it means to me to be a CATA member, and I hope the same is true for you.

CATJ STAFF **Business and Managing Editor** Celeste Rule Nelson

Executive Assistant to the Editor Diane Howard

Contributing Editors

J. Richard Kirn Glyn Bostick Terry Owens Stephen Effros Judith Baer

Art Director/Marketing Phyllis Crumpler

Assistant Art Director

Dianna Johnson

Graphics Designer Joyce Meiki

CATJ OFFICE

4209 N.W. 23rd Suite 106 Oklahoma City, OK 73107 405/947-4717

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OFFICERS

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DISTRICT DIRECTORS

Clarence Dow (Maine) 207-496-4123

Two Michael J. Rigas (Pennsylvania) 814-274-9830

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Four John Rhinehart (Tennessee) 615-895-0842

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Eight Virgil Mehus (Minnesota) 507-864-2298

Woodrow McHargue (Missouri) Nine 816-748-3855

Jim Hays III (Kentucky) Ten 606-723-4240

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Dean Peterson (Missouri-District 9) 417-358-3002 Lee Holmes (Guam-District 6) Charles Haley (Mississippi-District 5) 601-859-2835 Richard Gessner (Ohio-District 10) 216-833-4134

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Lynn Watson, Showtime/The Movie Channel

Ernie Larson, Larson Electronics

DIRECTORS EMERITUS

Gene Edwards (Ohio) Chuck Kee (Oregon) William Risden (Kentucky)

CATA OFFICES

CATA (Washington Office) Stephen R. Effros, Executive Director 3977 Chain Bridge Rd. Fairfax, Va. 22030 (703) 691-8875

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MARCH, 1985

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PROGRAMMING = NOTES:

DISNEY CHANNEL MAGAZINE

ne of the most attractive magazines published and distributed to The Disney Channel subscribers is their program-guide, full of colorful and attractive material, highlighting their family programming schedules each month. The extras put into this book have made it a very appealing piece and one of interest to the young audience...no doubt about it, a very expensive piece to produce for its more than 1.6 million pay-TV subscribers. Advertising will soon be accepted from national firms whose philosophy and products are compatible with the traditional Disney Channel standards of programming to assist in defraying the expense involved in this monthly publication.

COALITION OPPOSING SIGNAL THEFT (C.O.S.T.) NAMES EXECUTIVE COMMITTEE, SETS AGENDA

.

Calition Opposing Signal Theft (C.O.S.T.), the industry-wide coalition of groups affected by cable and satellite signals, named a 17-member executive committee and announced its initial agenda. A key agenda item is a nationwide project to explain the new federal telecommunications legislation and its ramifications for signal theft to both the industry and the public. In addition, the committee plans to hire an executive director, establish an

office, arrange for incorporation and solicit industry funding.

Executive committee members represent a wide spectrum of companies involved in all aspects of the cable industry: programming networks, multi-system operators, equipment manufacturers, motion picture companies, local cable operators, professional sports and industry associations.

Members include Ellen Adams, Community Antenna TV Association; Robert Astarita, Cablevision Systems Development; Gil Faccio, USA Network; Robin Alan Goold, Paramount Pictures: Jack Janson. Oak Communications; William Nix, Motion Picture Association of America; Ronald Putnam, General Instrument Corporation; Michael Schooler, National Cable TV Association; David Schreff, SHOWTIME/THE MOVIE CHANNEL; Stanley Solson, Warner Bros. TV; Russell Granik, National Basketball Association; Richard Thomas, Home Box Office; David Thurm, N.Y. Times Cable; and Patricia Tomaselli, Group W Cable Inc.

In addition, Alan Bailey of Paramount Pictures will serve as Business Affairs Director, Molly Kellogg of Warner Communications Inc. will be Organizational Director, and Sandi Wildman of SHOWTIME/THE MOVIE CHANNEL will be Public Relations Director.

In conjunction with the national consumer awarness campaign, agenda items under discussion include a consumer educational pamplet, a theft of service speaker's bureau and an audio-visual resource center.

According to Stanley Solson, Vice-President Pay-TV Marketing, Warner Bros. TV, "These projects can best be initiated by a coordinated effort to all C.O.S.T. members. Because of the community interest in combatting cable theft, members will act cohesively as a national clearinghouse."

David Schreff, Director of Affiliate Marketing, SHOW-TIME/THE MOVIE CHANNEL added, "The sharing of information and the pooling of resources among companies that ordinarily are competitors is a fundamental principle and a significant breakthrough in the foundation of C.O.S.T."

C.O.S.T., which includes representatives of more than 50 organizations, is the most extensive and diverse group ever formed to deal with theft of service, estimated to cost cable operators and programmers alone more than half a billion dollars a year. Projected losses to all affected parties run much higher. The first meeting of the group took place last November 20.

SHOWTIME TO SHOW "LOST" EPISODES OF "THE HONEYMOONERS" BEGINNING WITH TWO-HOUR SPECIAL

S HOWTIME will air 52 half-hour segments of Jackie Gleason's "The Honeymooners" series, announced Peter Chernin, Executive Vice President, Programming, SHOWTIME/THE MOVIE CHANNEL Inc. Chernin

noted, "The continuing popularity of 'The Honeymooners' 30 years after these programs were first shown is astounding. We are thrilled to bring our subscribers these virtually unseen episodes of what has been called one of the truly 'classic' television shows of all time." The 52 shows will play weekly, kicking off with a twohour special during the summer of 1985.

The shows and the special will be created by Mr. Gleason and Viacom Enterprises using the recently discovered segments that previously had been kept in storage. The episodes were originally aired as part of "The Jackie Gleason Show" from 1952 to 1957 and have not been seen on television since their original live broadcast on CBS.

"This material is a real treasure," Chernin continued. "We are delighted to have Mr. Gleason helping to create the half-hour shows which will bring back these exceptional comic sketches to new fans as well as to die-hard 'Honeymooner' viewers around the country."

These rediscovered "Honeymooners" segments feature the actors and characters from the original syndicated series: Jackie Gleason as the loud-mouthed bus driver, Ralph Kramden; Audrey Meadow's as Ralph's long-suffering but loving wife, Alice; Art Carney as Ed Norton, Ralph's hapless sidekick; and Joyce Randolph as Ed's ex-burlesque queen wife, Trixie. "The Honeymooners" series, currently in syndication through Viacom Enterprises, consisted of only 39 programs from its 1955 to 1956 run on CBS.

Before production of the original series, "The Honeymooners" sketches were a featured part of the old "Cavalcade of Stars" that aired on the now-defunct Dumont Network and later were part of CBS' "The Jackie Gleason Show," which also featured the renowned June Taylor Dancers. "The Jackie Gleason Show" was frequently the highest rated show on television during its 50's run. In later years, new "Honeymooners" specials aired occasionally, but the last special was seen on television back in 1977.

Jackie Gleason was the star and chief creative force of "The Honeymooners" and "The Jackie Gleason Show." Gleason left television to star on Broadway in "Take Me Along" and to appear in such pictures as "Gigot" and "The Hustler," a performance that earned him an Academy Award nomination. He also is a composer whose compositions include the theme songs for "The Honeymooners" and "The Jackie Gleason Show."

SHOWTIME/THE MOVIE CHANNEL INC. INTRODUCES NATION-WIDE TELEMARKETING **SERVICE**

Cable Industry's First Telemarketing Service to be **Operated at Cost**

 → HOWTIME/THE MOVIE CHANNEL Inc. will make a nationwide telemarketing service available to all affiliates of the pay-television company, it was announced by Jeff Wade, Vice President, South Central Region. Previously available only in the South Central states, this unique marketing support vehicle will be operated on a non-profit basis.

The service employs a staff of over 25 telemarketing professionals who are intensely trained to conduct telephone sales campaigns, including those aimed at retention, upgrading, theft of service or other promotional activity.

"More than 30 of our affiliates have found our telemarketing service to be an extremely effective method of upgrading and retaining precious subscribers," Mr. Wade commented in making the announcement. "We work closely with the operator to tailor the appropriate timing and pitch, and we train our telemarketing reps carefully on all aspects of the operator's business, from programming to technical matters and everything in between. What makes this method even more attractive," he added, "is that we use AT&T WATS lines to keep costs down and the cable operator pays only the sum that covers our costs in conducting the campaign."

Operated out of SHOWTIME/ THE MOVIE CHANNEL's Dallas regional headquarters under the direction of Kristi Droppers, South Central Regional Marketing Manager, the service has conducted telephone sales campaigns ranging from one day to three months in length. Participating systems to date have included small independents and major metropolitan MSO-owned systems.

Las Cruces TV Cable, a division ►

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of Western Communications in Las Cruces, New Mexico has just completed its telemarketing campaign and is still filling the resulting orders. Bob Macioch, System Manager said, "We aimed our campaign at upgrading single addressable subscribers into multipay packages. We wound up with twice the number of orders we expected, achieving a 16% ratio of contracts to sales. The pay units gained doubly exceeded our proiections. We were very impressed with SHOWTIME/THE MOVIE CHANNEL's operation."

All affiliates in good standing of SHOWTIME and THE MOVIE CHANNEL are eligible to employ the services of the new Telemarketing Group. For further information, contact Kristi Droppers at 214/241-1421.

STATE-OF-THE-ART PRODUCTION STUDIOS OPEN FOR BUSINESS AT STUDIOLINE

* * * * *

S tudioline Corporation of America announced completion of its new state-of-the-art recording facility. the 6,800 square feet studio complex was built expressly for the production of Studioline Cable Stereo, the company's premium stereo entertainment package.

In making the announcement, Executive Vice President Jason M. Taylor said, "Extensive market research shows that a premium audio service — delivered in super high fidelity — will attract and hold cable subscribers. Studioline's unique Stereo-TrackTM transmission system delivers 'digital quality' stereo to subscribers. But our com-

mitment to technical excellence begins in our custom designed recording studios."

Each of Studioline's nine music services is put together under optimum technical conditions. "We built the ultimate production facility and staffed it with the very best engineering and production people around. We guarantee that the consumer will get superior stereo sound from each of Studioline's music channels," Taylor said.

The overall studio design and production plan was developed for Studioline by Howard M. Lieberman, Studioline's director of operations and engneering. "Studioline's goal is qualtiy from start to finish. My job is to organize and oversee a production facility that allows Studioline to achieve its goal," Lieberman said. "Now that we have completed the studios, I look forward to the next step — producing high quality stereo music for cable subscribers to enjoy."

Studioline's production center features five mastering rooms, three editing rooms and three voice booths. In addition, the company's 10,000 plus volume record and tape library is housed there. More than two dozen production and program support personnel will work in the new facility, which is located in suburban Washington, D.C.

Lieberman designed the studios to capture the most perfect music reproduction possible. "Music on Studioline Cable Stereo will sound real," he said. "Trumpets will sound like trumpets and a person's voice will sound like that person's voice."

In order to achieve this level of audio fidelity, Studioline's produc-

tion process includes three levels of noise reduction. Lieberman explained, "First we start with the best source material possible —digital compact discs, audiophile pressings of LPs and master tape recordings. We then transfer each selection onto a master reel using a noise reduction technique that eliminates all audible tape hiss. Finally, any remaining clicks or pops on the original recording are manually and/or electronically removed from each musical selection."

As the music is mixed, levels are matched and equalized so the sound is consistent from one piece to the next. "Studioline subscribers will never hear imperfections in the music used on our service," Lieberman noted. "No one will be tempted to jump out of their chair to adjust the tone or volume control when a different song is played, like you have to do for radio stations."

"With this new facility," Taylor added, "Studioline's production capability far surpasses that of any other provider of musical entertainment to cable subscribers. Studioline Cable Stereo will set an industry standard for excellence."

Studioline Cable Stereo is a nine-channel package of premium musical entertainment. Formats on the service include Adult Contemporary, Contemporary Hits, Urban Contemporary, Country, MOR, Classical, Jazz, Easy Listening and a Specials/Variety Channel. National launch of Studioline Cable Stereo is set for spring, 1985.

Studioline also offers a unique stereo transmission system, Stereo-TrackTM, an optional 69-channel addressable audio converter manufactured by Weston Industries, Tokyo, Japan. Audio processing equipment for the cable headend is supplied by Learning Industries, Costa Mesa, California.

Studioline's corporate and production offices are located at 11490 Commerce Park Drive, Reston, Virginia 22091 and regional marketing offices are located in Los Angeles and Kansas City.

SCTE ANNOUNCES MARCH SATELLITE TELE-SEMINAR PROGRAM

The second program in SCTE's Satellite Tele-Seminar series will be telecast on Tuesday, March 19, 1985 from 5:00 p.m. to 7:00 p.m. EST on Galaxy I, Transponder 21. The program, dealing with NTSC video signals and their measurement, was produced by Tektronics in cooperation with the SCTE Golden Gate Meeting Group.

The Tele-Seminar programs may be downlinked by any cable system and recorded for immediate and future training purposes. The series is made possible through funding from SCTE sustaining member companies and satellites transponder time donated by Home Box Office and other programmers. Since SCTE is receiving transponder time which has not been sold to other users, the exact date, time, satellite, and transponder may vary from month to month. However, the Tele-Seminars will be presented during the third week of the month, and announcements concerning topics and scheduling will be made prior to each program via the trade press.

COAXIAL COMMUNICA-TIONS REVOLUTIONIZES CABLE ADVERTISING

Columbus, Ohio, introduces a revolutionary method of cable advertising. Coaxial is the first cable system in the country to offer a continual program of discounts and values on a designated intra-cable channel.

Columbus has been chosen as a test market for Cable Saver, a service that offers the viewers large saving opportunities on a variety of goods and services. The savings obtained by cable subscribers using Cable Saver, permits them to more than recover the cost of their cable service.

Cable Saver's concept is simple. When subscribing to cable service, a membership card is issued to the viewer. The membership card allows the viewer the opportunity to take advantage of local merchants' shopping values. In return, for cost-free advertising, the merchant provides a predetermined savings on their product or service. J.C. Penney, County Seat, and 85 other merchants at over 250

Columbus locations will participate in this new ad program.

For example, a Cable Saver member can get 20% off the entire check at Arby's, 15% off all regular merchandise plus 10% off sale merchandise at the County Seat, 10% off portraits at J.C. Penney's and \$60 off any Curtis Mathis TV.

Using cable television as a vehicle to sell his products and/or service, Cable Saver offers the merchant an unlimited sales market. Members of Cable Saver are given the opportunity to save money. For both the consumer and merchant, it is a "win-win" combination. The system will function on a cable channel, providing images similar to a video game, involving animated computer graphics supported by a synchronized sound track.

According to Jeff Slutsky, president of Cable Saver, Columbus, Ohio was chosen as the first test and development market. Following a six month to one year trial period, other markets will be tested for long distance informational procedures and then the company will go national. For more information, contact Candace Collins at (312) 621-1185.

Free Catalog of CATV/Telcom Equipment and Hard-to-Find Tools

Jensen's new catalog is your source for hard-to-find precision tools and test equipment used by electronic, telecommunication, and cable TV technicians, computer service bureaus, and government agencies. This popular catalog also contains Jensen's world-famous line of more than 40 tool kits. Call or write for your free copy today.



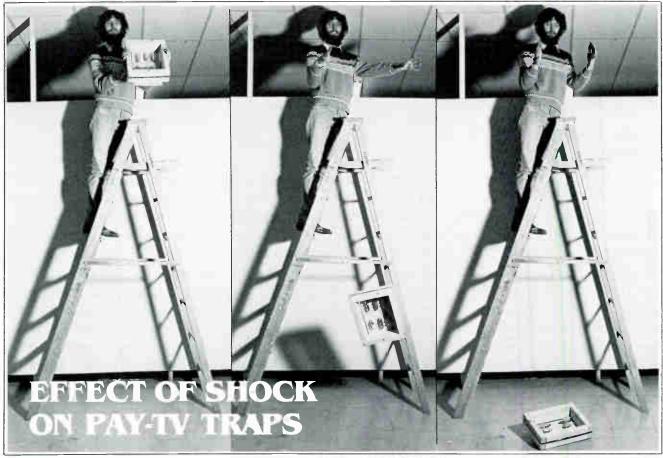
JENSEN TOOLS INC.

Dept. CJ, 7815 S. 46th St., Phoenix, Arizona 85040, (602) 968-6231

THE CABLE TECH'S FILTER COOKBOOK #23

By: Terry Owens
Glyn Bostick
MICROWAVE FILTER COMPANY, INC.





The "SHERMAN SHOCK MACHINE" in Action: Dave SHERMAN drops the trap samples on concrete floor. Samples were mounted in the open wooden fixture, clampled down to prevent connector damage.

LAST TIME

Last time (CATJ February, 1985) we gave some test data showing the effect of wet environments on a cross section of available Pay-TV video traps. We found that this ranged from nil to disaster, depending on the trap brand (we coded the brands).

THIS TIME

We test the effect of "drop shock" on these same Pay-TV traps. Results: very little change. All brands withstood shock with no noticeable change in trapping function.

TEST SPECIMENS AND PROCEDURE

We used the fixture described earlier (CATJ October, 1984): a rugged open, wooden crate with

large fuse clamps to keep the traps in place to prevent damage to connector threads. We used the SHERMAN SHOCK MACHINE — our Dave Sherman (see photos) dropped them ten TIMES onto a concrete floor from the height of 10 feet. We compared the peak of the notch (frequency MHz) before and after dropping.

RESULTS

Results are shown in **Table I.** We used a HP #8558B analyzer (with #8444A tracking generator) and HP counter #5315A to measure the notch frequency. The frequency change was negligible, and may well be masked by experimental errors in reconnecting and measurement repeatability.

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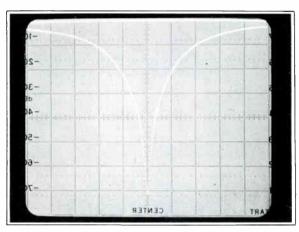
TABLE I.						
Stability of Pay-TV trap video notch frequency with "Drop Shock".						
		Notch Frequ				
Manufacturer	Channel	Reference	After Drop	(KHz)		
A	7	175.230	175.220	-10KHz		
В	3	61.242	61.261	+29 KHz		
C	5	77.215	77.235	+20 KHz		
F	7	175.253	175.266	+13 KHz		
	7	175.164	175.181	+16 KHz		

CONCLUSIONS

It seems that all current traps manufacturers have learned the trick of properly potting their circuits with resilient material to insure that circuit components return to their "factory tuned" physical positions after shock. So, for all practical purposes, this is one characteristic on which we need not compare traps, when shopping for the "best ones".

NEXT TIME

This concludes the series of trap tests, to map the quality variety which exists among current trap



Typical Spectrum analyzer trace of Channel 7 Pay-TV video trap (Horizontal 0.5 MHz/CM, Vertical 10dB/CM) Courtesy, Manufacturer I.

manufactures. Next time we'll summarize the data from all these tests and give you a set of fast, simple tests to make a good trap selection.

ACKNOWLEDGEMENTS

Thanks to Carol Ryan, Dave Skeval, Steve McIntosh, Chris Bostick and the SHERMAN SHOCK MACHINE (Dave Sherman).

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he 1985 CATA Annual Meeting and Exposition is scheduled for June 17-19 at the Opryland Hotel in Nashville, and it will be a time for America's cable television operators and their families to gather and continue the tradition of friendship and solid informational sessions presented in family-oriented facilities with entertainment, recreation and historic American culture.

CATA '85 programs will cover a wide-range of topics, including Building a Small **Town Cable System-Tips for Success: Low Cost Alternative** to Feed Forward, Signal Leakage and Aeronautical Frequency Rules, Ensuring Reliability in House Drops, **Controlling Programming** Costs (exploring cooperative buying and reviewing contracts), Making Ad Dollars Work For You, What's Ahead on **Copyright and Must Carry** Rules, Answering Questions on S.66, Franchise Fees (and what you need to know about

them), Addressability/Pay Per View (what's in it for you?), Scrambling (its technical implications), and more on training, sales campaigns and keeping subscribers happy and coming back for more.

Along with the business and technical sessions, CATA '85 will feature Jack Daniels' Day on Sunday, June 16, when convention-goers and their families will spend the day at this famous American landmark distillery and visit a Tennessee Walking Horse Farm. Monday evening, June 17, CATA will host an Old South Party at an authentic ante-bellum mansion outside Nashville complete with hoop-skirted Belles and dashing Southern Gentlemen, cool breezes and Magnolia blossoms, Hurricane lanterns and musicians. The final social gathering for CATA '85 will be a luncheon on Wednesday, featuring a special speaker of interest.

CATA '85 Spouse/Family Programs have been designed for anyone over the age of 12 with by Judith Baer Baer Enterprises, Inc.

an interest in relaxation, selfimprovement, shopping, and history. Two full-day programs are featured with additional special events on Wednesday morning, June 19. A special CATA '85 Lounge will be available for informal gatherings, and a "Departure Lounge" will be open on the last day of the meeting so that check-out will be quick and easy. The "Departure Lounge" will feature instruction on black-jack and various other "arts," to prepare for the 1986 annual meeting in Reno.

CATAKids between the ages of six and 12 will join their families for Sunday's tour and dinner on Monday night, if they're still awake after a fullday of professionally escorted children's programs, including a day at Opryland, with its rides, shows and attractions. On Tuesday, CATAKids will be chaperoned on a visit to the Alabama Space and Rocket Center in Huntsville, where they'll visit the world's largest space museum and experience the "hands-on" exhibits for tomorrow's space travelers. Next door they'll tour the laboratories and test areas of the Marshall Space Flight Center. On Wednesday morning, CATA has arranged for crafts programs and entertainment to keep the children busy until parents return from the CATA '85 luncheon, which is the concluding convention event.

Join CATA'S Tradition

ave your shopping for the opportunity to visit with representatives of the following vendors who have to date reserved exhibit space at CATA '85:

Alpha Technologies, Inc. Arts & Entertainment Network Broadband Engineering, Inc. Burnup & Sims Cable Products Group C-Cor Electronics Cablefacts Catel Telecommunications CBN Cable Network Channell Commercial Corporation ComSonics, Inc. The Disney Channel The Drop Shop, Ltd. Eagle Comtronics, Inc. Eastern Microwave, Inc. ECA/Manufacturing Division **ESPN** Group W Satellite Communications Home Box Office, Inc. Ind. Co. Cable TV, Inc. Larson Electronics

Lifetime Lindsay America M/A-Com Cable Home Group Magnavox CATV Systems, Inc., MTV Networks, Inc. Quality RF Services, Inc. Regency Cable Products Scientific-Atlanta, Inc. Showtime/The Movie Channel Southern Satellite Systems Standard Communications Corp. **Texscan Corporation** Times Fiber Communications, Inc. Triple Crown Electronics, Inc. Turner Broadcasting System United Video, Inc. USA Cable Network Wavetek Indiana, Inc. Western Towers Zenith Electronics Corporation

As in the past, CATA '85 will feature the popular Consultant's Corner and Demonstration Area in the Exhibit Hall. Light food and beverages will also be available in the exhibit area, and there are no conflicting programs going on when it's time to visit CATA '85 Exhibitors. There will be approximately 60 firms displaying their wares and services at CATA '85, and many exhibitors will continue the tradition of bringing their own families to this popular industry annual event.

Registrations material are being released March 1. Fees for **CATA Member Systems are** \$175 for operators, \$150 for Spouses and additional Adult Family Members, and \$125 for CATAKids. These advance registration rates apply until May 15. After May 15, fees are increased. Non-member firms will pay more than CATA Member rates. Registration is all-inclusive so lively crowds will be expected on Sunday's tour and at Monday night's party. CATA has arranged for special

airline programs with Republic Airline and US Air. The Opryland Hotel is looking forward to this return engagement and there are numerous new additions to the hotel complex to interest everyone attending CATA '85.

For registration information, please call the CATA Show & Meeting Management Office, 703-823-6522. They'll be happy to get the information to you. Don't miss out on this one. CATA '85 has all the components for success!

13

MARCH, 1985 CATJ

Calendar of Events

MARCH

- 3-5 Oregon Cable Communications Association Meeting Salem, Oregon
 Contact: Mike Dewey (503) 362-8838
- **4-6 Cable-Tec Expo**Sheraton Hotel, Washington, D.C.
 Contact: SCTE (215) 692-7870
- 6-8 Arkansas Cable Television Association Convention Excelsior Hotel & State House Convention Center, Little Rock, AR. Contact: (501) 224-6273
- 26-28 Alabama Cable Television Association Convention Sheraton Riverfront, Montgomery, AL. Contact: Mary Jo Martin (205) 288-1821

APRIL

- 9-11 Canadian Cable Show Metro Toronto Convention Centre, Toronto, Canada Contact: CCTA (613) 232-2631
- 16-18 Oklahoma Cable Television Association Meeting Sheraton Kensington, Tulsa Contact: Jay Allbaugh (405) 840-9552

16-18 CAST '85

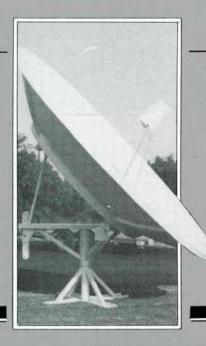
National Exhibition Centre, Birmingham, U.K. Contact: Mark Voss (713) 463-0502

MAY

- 5-7 Virginia Cable Television Association Annual Meeting Wintergreen, VA Contact: VCTA (804) 358-7060
- 6-8 Louisiana Cable Television Association Annual Convention Hilton Hotel, Lafayette, LA Contact: LCTA (504) 928-5604

JUNE

- 2-5 National Cable Television Association Annual Convention Las Vegas Convention Center, Las Vegas, NV Contact:NCTA (202)775-3550
 - 3 ACE Awards Ceremony
 Las Vegas Convention Center, Las Vegas,
 NV Contact: Susan Wilson (202) 775-3611
- 16-18 Northeast Cable Television Technical Seminar Roaring Brook Ranch Resort, Lake George, N.Y. Sponsored by New York State Commission on Cable Television Contact: Bob Levy (518) 474-1324



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17-19 CATA '85

Opryland Hotel, Nashville, TN. Contact: CATA (703) 691-8875

JULY

9-11 Cable '85

Brighton, U.K.

Contact: Online Conferences (212) 279-8890

AUGUST

4-7 CTAM Conference

Fairmont Hotel, San Francisco, CA. Contact: CTAM (404) 399-5574

25-27 Eastern Cable Show

Congress World Center, Atlanta, GA. Contact: Southern Cable Television Association (404) 252-2454

28-30 Missouri Association Show

Lodge of the Four Seasons, Lake of the Ozarks, MO. Contact: Charlie Broomfield (816) 453-3392

SEPTEMBER

15-17 South Dakota Cable Television Association Meeting Sylvan Lake Resort, Custer, SD. Contact: SDCA (605) 854-9121

18-20 Atlantic Cable Show

Atlantic City, NJ. Contact: (609) 848-1000

25-27 Great Lakes Expo

Convention Center, Indianapolis, Indiana Contact: Ohio Cable Television Association (614) 461-4014

OCTOBER

15-17 Alabama Cable Television Association Meeting State Lodge, Guntersville, AL. Contact: Mary John Martin (205) 288-1821

22-24 Mid-America CATV Show

Vista International Hotel, Kansas City, MO. Contact: Rob Marshall (913) 841-9241

27-29 Iowa Cable Television Association Convention Cedar Rapids, IA.

Contact: Jeff Barnes (515) 842-7202

DECEMBER

4-6 Western Cable Show

Convention Center, Anaheim, CA.
Contact: California Cable Television
Association (415) 428-2225



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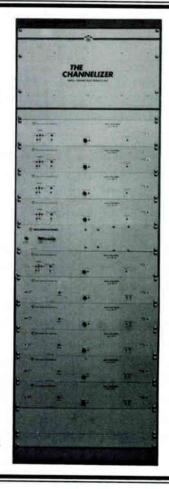
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Washington Update

Aeronautical Frequency Clearance Update and More!



Stephen R. Effros CATA'S Executive Director

AERONAUTICAL FREQUENCY CLEARANCE UPDATE

If we were to pick the subject of most concern to CATA members based on the number of telephone calls we get at the CATA office each month, the hands-down winner for this month would be the total confusion surrounding the FCC's new aeronautical frequency clearance requirements. The problem is that the FCC is so confused itself that there is simply no easy way to tell operators what might be the right thing for them to do from day to day. However, since there has been so much yelling and screaming about the

subject the Commission itself has now been forced to come out with a clarification of their proposed rules (note that they are still not officially in effect—and we have no idea right not when they will be). They have also come out with the "interim" processing procedures they will follow until such time as the final rules are established. Please consult your December issue for the explanation of the proposed rules, including the offset frequencies. Once the rules are final, CATA will be supplying CATA members a CATAbrief or a CATAform, depending on what those final rules are, to let you qualify for the use of aeronautical frequencies easily. But for right now, here is what the Commission says you must do in order to use the aeronautical frequencies.

First, you must, from now on, comply with the 12.5 or 25kHz offset frequency rules as spelled out in the December issue. The Commission is not going to process any clearance requests under the old rules, except for special circumstances, which were filed after November 30, 1984. So if you filed for a clearance after that date. and there is not a special situation involved, it is a good bet that the Commission will not process your request — you will have to refile under the interim procedures. We should also note, however, that if you have already gotten back a

Unauthorized Publication Of Communications

SEC. 705 (a). Except as authorized by chapter 119, title 18, United States Code, 173 no person receiving, assisting in receiving, transmitting or assisting in transmitting any interstate or foreign communication by wire or radio shall divulge or publish the existence, contents, substance, purport, effect, or meaning thereof, except through authorized channels of transmission or reception, (1) to any person other than the addressee, his agent, or attorney, (2) to a person employed or authorized to forward such communication to its destination, (3) to proper accounting or distributing officers of the various communicating centers over which the communication may be passed, (4) to the master of a ship under whom he is serving, (5) in response to a subpena issued by a court of competent jurisdiction, or (6) on demand of other lawful authority. No person not being authorized by the sender shall intercept any radio communication and divulge or publish the existence, contents, substance, purport, effect, or meaning of such intercepted communication to any person. No person not being entitled thereto shall receive or assist in receiving any interstate or foreign communication by radio and use such communication (or any information therein contained) for his own benefit or for the benefit of another not entitled thereto. No person having received any intercepted radio communication or having become acquainted with the contents, substance, purport, effect, or meaning of such communi-

cation (or any part thereof) knowing that such communication was intercepted, shall divulge or publish the existence, contents, substance, purport, effect, or meaning of such communication (or any part thereof) or use such communication (or any information therein contained) for his own benefit or for the benefit of another not entitled thereto. This section shall not apply to the receiving, divulging, publishing, or utilizing the contents of any radio communication which is broadcast or transmitted by amateurs or others for the use of the general public, or which relates to ships in distress.

"(b) the provisions of subsection (a) shall not apply to the interception or receipt by any individual, or the assisting (including the manufacture or sale) of such interception or receipt, of any satellite cable programming for private viewing if—

"(1) the programming involved is not encrypted;

and

"(2) (A) a marketing system is not established under which—

"(i) an agent or agents have been lawfully designated for the purpose of authorizing private viewing by individuals, and

"(ii) such authorization is available to the individual involved from the appropriate agent or

agents; or

"(B) a marketing system described in subparagraph (A) is established and the individuals receiving

such programming have obtained authorization for private viewing under that system."

(c) For purposes of this section—

(1) the term "satellite cable programming" means video programming which is transmitted via satellite and which is primarily intended for the direct receipt by cable operators for their retransmission to cable subscribers;

(2) the term "agent" with respect to any person,

includes an employee of such person;

(3) the term "encrypt," when used with respect to satellite cable programming, means to transmit such programming in a form whereby the aural and visual characteristics (or both) are modified or altered for the purpose of preventing the unuathorized receipt of such programming by persons without authorized equipment which is designed to eliminate the effects of such modifications or alteration;

(4) the term "private viewing" means the viewing for private use in an individual's dwelling unit by means of equipment, owned or operated by such individual, capable of receiving satellite cable pro-

gramming directly from a satellite; and

(5) the term "private financial gain" shall not include the gain resulting to any individual for the private use in such individual's dwelling unit of any programming for which the individual has not obtained authorization for that use.

(d)(1) Any person who willfully violates subsection (a) shall be fined not more than \$1,000 or imprisoned

for not more than six months, or both.

(2) Any person who violates subsection (a) willfully and for purposes of direct or indirect commercial advantage or private financial gain shall be fined not more than \$25,000 or imprisoned for not more than one year, or both, for the first such conviction and shall be fined not more than \$50,000 or imprisoned for not more than two years, or both, for any subsequent conviction.

(3)(A) Any person aggrieved by any violation of subsection (a) may bring a civil action in a United States district court or in any other court of

competent jurisdiction.

(B) The court may—

(i) grant temporary and final injunctions on such terms as it may deem reasonable to prevent or restrain violations of subsection (a);

(ii) award damages as described in sub-para-

graph (C); and

(iii) direct the recovery of full costs, including awarding reasonable attorneys' fees to an aggrieved party who prevails.

(C)(i) Damages awarded by any court under this section shall be computed, at the election of the aggrieved party, in accordance with either of the following subclauses:

(I) the party aggrieved may recover the actual damages suffered by him as a result of the violation and any profits of the violator that are attributable to the violation which are not taken into account in computing the actual damages; in determining the violator's profits, the party aggrieved shall be required to prove only the violator's gross revenue, and the violator shall be required to prove his deductible expenses and the elements of profit attributable to factors other than the violation; or

(II) the party aggrieved may recover an award of statutory damages for each violation involved in the action in a sum of not less than \$250 or more than

\$10,000, as the court considers just.

(ii) In any case in which the court finds that the violation was committed willfully and for purposes of direct or indirect commercial advantage or private financial gain, the court in its discretion may increase the award of the damages, whether actual or statutory, by an amount of not more than \$50,000.

(iii) In any case where the court finds that the violator was not aware and had no reason to believe that his acts constituted a violation of this section, the court in its discretion may reduce the award of

damages to a sum of not less than \$100.

(4) The importation, manufacture, sale, or distribution of equipment by any person with the intent of its use to assist in any activity prohibited by subsection (a) shall be subject to penalties and remedies under this subsection to the same extent and in the same manner as a person who has engaged in such prohibited activity.

(5) The penalties under this subsection shall be in addition to those prescribed under any other pro-

vision of this title.

(6) Nothing in this subsection shall prevent any State, or political subdivision thereof, from enacting or enforcing any laws with respect to the importation, sale, manufacture, or distribution of equipment by any person with the intent of its use to assist in the interception or receipt of radio communications prohibited by subsection (a).

(e) Nothing in this section shall affect any right, obligation, or liability under title 17, United States Code, any rule, regulation, or order thereunder, or any other applicable Federal, State, or local law.

(b) The amendments made by subsection (a) shall take effect on the effective date of this Act.

partially approved clearance and need waivers for the remainder of the frequencies you requested, those waiver requests will continue to be processed. In other words, if you filed prior to November 30, they will let you finish the process. If you had not at least started the process before that date, you now fall under the interim rules.

This information, of course, is very important to lots of operators out there who are waiting for clearances they filed that may never come! It sure can screw up your relations with your franchise authority or your bank if you have construction or subscriber count benchmarks to meet, and all of a sudden you can't add the signals you thought you were going to be able to launch by a given day because the clearance never came through! So what do you do? You must write a letter to the FCC. The letter is a notification to them of your intention to use certain frequencies, and, while it is technically not a "clearance" process anymore, you are still going to have to wait to hear from them before you use the proposed frequencies. A lot of the details required are already on the present CATAform for aeronautical frequencies, so for now you may as well fill that out. It has spaces for your system name, and the geographical center of your system, the longest radius, and so on that the Commission still wants to know about. HOWEVER, BE SURE TO PUT IN THE CORRECT OFFSET FRE-**OUENCIES. THE PRESENT** FORM DOES NOT CONTAIN THE OFFSET FREQUENCY NUMBERS, ONLY THE

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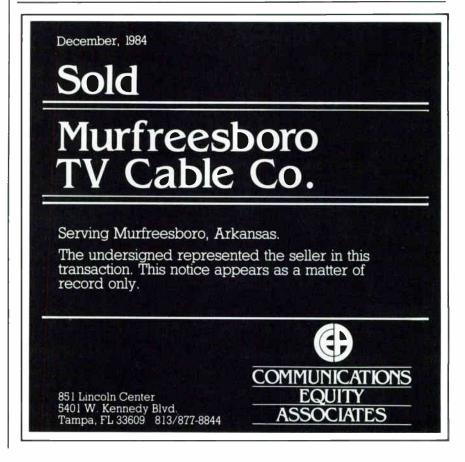
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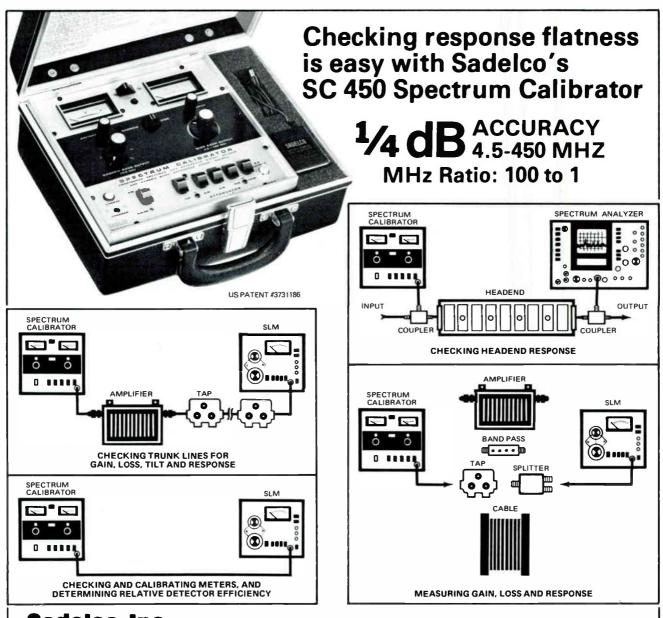
This notice appears as a matter of record only. December, 1984.



CHANNEL DESIGNATION. YOU MUST INCLUDE THE PROPERLY OFFSET NUMBERS! In addition to the information on the form, including the correct offset frequencies, you must give the Commission, in your letter, the name of a local official of the cable company they can contact, as well as the telephone number which is on the form. You

must also specify the community served. You must then state in your letter that your "Notice" of intention to use the frequencies is pursuant to the Commission's interim processing procedures released January 30th, 1985 and that you will, according to the Commission's rules, monitor your entire system at least once every three months and that you will do

so with equipment meeting the Commission's standard of detecting leaks of 20 microvolts per meter at 3 meters. If you already have "snooper" or "sniffer" type equipment installed in your service trucks and so on, you may as well specify to the Commission what that equipment is and that you not only monitor your system every three months, but that you do it



Saugico, Inc. 75 West Forest Avenue, Englewood, New Jersey 07631 201•569-3323 General representative for Europe: Catec AG Luzern/Switzerland, Habsburgerstr 22. Tel. 041-23-90-56 Telex: TELFI 78168

continuously — as most systems now do. Please note that as part of the Commission's rules you must

"If we were to pick the subject of most concern to CATA members based on the number of telephone calls we get at the CATA office each month, the hands-down winner for this month would be the total confusion surrounding the FCC's new aeronautical frequency clearance requirements."

keep logs regarding any signal leaks found, and that you have fixed those leaks. (Signal leakage logs available on CATJ insert card.) A statement to that effect should also be in your letter. Finally, along with your frequency use notification, you must state to the Commission that you will keep the use of those frequencies on your system within an error tolerance of CE+/-5kHz.

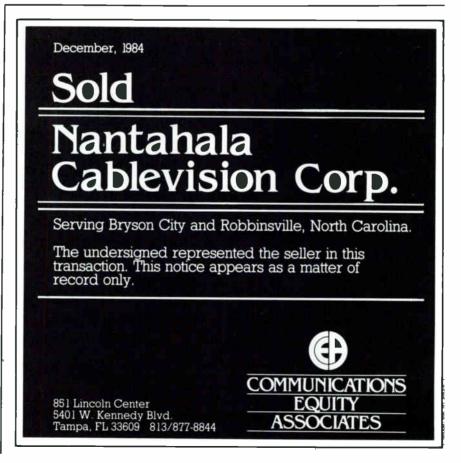
The Commission has backed off on the "cumulative leakage index" requirement, and now says that at least for the interim procedures all you have to do is say that you will do a "CLI" and submit it to them by July 30th, 1985. Of course the reason they are backing off of that one, as we pointed out in December, is that at the moment it is not entirely clear how you would even do one of those things! Further, there are some reconsideration requests pending, and it is not certain that the CLI or the "quarterly" requirement will survive at all. As has been pointed out to the Commission, if the offsetting requirement solves the problem, then why do we have to do all those tests and paperwork if the problem is solved? If it does not solve the problem, then why require the offset? One or the other may make sense, but not both!

Once you have filed your letter with the Commission giving them the frequency offset designations, the system details, and the assurance that you have been, or at the very least will from now on, at minimum once every three months monitor your entire system with appropriate equipment and take appropriate action to fix all signal leaks and can prove it, and that for now you promise you will do a "CLI" by July 30th, 1985, they will give you a telephone call — yes a call — to tell you if it is okay

to go ahead and use the frequencies or not. You may not proceed before you get the call, but the Commission is saying that they hope the telephone process will result in very speedy action. We'll just have to wait and see. That's what you have to do for now. We will keep you informed should the rules suddenly be approved (which would change your obligations again) or they are modified because of the reconsideration. For now, just file your letter, along with the information supplied and supplemented by the old CATAform, and sit by the phone!

CATA BOARD SETS COURSE ON COPYRIGHT

At its winter meeting held January 29th in San Antonio, the Board of Directors of the Com-



munity Antenna Television Association formally adopted its position on the recommended course the industry should take with regard to the copyright problem in the coming year. After reviewing many different potential options, the Board decided that two different efforts should be undertaken simultaneously. First, CATA will continue and intensify the efforts initiated last year toward a legislat-

ive solution to the "inequities" created by the current interpretation of the copyright law. This means that we will be going back to Mr. Kastenmeier and Mr. Synar in the House of Representatives to ask them to renew their efforts to pass a bill solving some of the blatant inequities currently created by the CRT and Copyright Office interpretations of the law. This would include the issues of tiering,

pro-rata, specialty stations, and the basic inequity in the bill of requiring a cable operator to pay a copyright fee even if he or she is carrying no distant signals. CATA fully expects that an "inequities" bill will be introduced in Congress this year.

A second effort to solve many of the problems that cable operators have with the present copyright law has also been approved by the Board. That effort would entail seeking some form of agreement

"First, CATA will continue and intensify the efforts initiated last year toward a legislative solution to the 'inequities' created by the current intrepretation of the copyright law. This means that we will be going back to Mr. Kastenmeier and Mr. Synar in the House of Representatives to ask them to renew their efforts to pass a bill solving some of the blatant inequities currently created by the CRT and Copyright office inter-

pretations of the law."

with the other parties involved in the copyright dispute that would allow us all to go back to Capitol Hill with an agreed-upon plan which would substitute for the current copyright law. There is no indication yet that such talks are even possible, let alone what the format of any solution might take. But the consensus of the Board was that it would not be sensible at this time for the cable industry to mount a major effort to completely overhaul the copyright law as it pertains to cable television

TERRESTRIAL INTERFERENCE.



ASTI is the first complete professional handbook on the avoidance, diagnosis and suppression of microwave terrestrial interference (TI) at TVRO earth stations. This 250 page comprehensive volume was compiled by an engineering team headed by Glyn Bostick, President of Microwave Filter Company, with valuable input from many

industry leaders such as
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without first seeing if some sort of amicable agreement can be reached. We will keep you informed, of course, of our progress on both fronts. These decisions were a direct result of a great deal of input from CATA members across the country after we asked for views on these issues several months ago. Please, continue giving us that input — it is invaluable to have your assistance in formulating a cohesive and widely understood industry point of view on where we are, and where we should be heading on the issue of copyright.!

HOW TO EXPLAIN S.66 TO YOUR FRIENDLY SMATV OPERATOR — PART I

As we have mentioned in previous issues various sections of the new cable law are so complicated that it will take many months and probably years to get all the clarifications and court rulings needed to really know what that new law says. There are some areas, however, where there is massive confusion either because of misinformation, or intentional disinformation on the part of some parties and those we intend to take on, one subject at a time in these pages. The topic for this month (and it will continue in the next issue) is theft of satellite services. The new law is very favorable for the cable television industry, and we should all put it to good use. CATA is going to show you how.

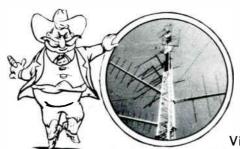
First of all, please note the full copy of the text of the new Section 705 of the Communications Act. If you have a copy of S.66 you will see that from Sec. 705(b) on, it is all part of the cable bill. What happened here was that the legisla-

tion added to a preexisting section of the law, section 605, which has been used by cable operators in successful challenges to theft of service in the past. The new law extended that section and renumbered it 705. So now you have the complete text of the new section.

What it says is this: it is now

old Section 605 because the new exception was not written into it) for AN INDIVIDUAL in his or her OWN DWELLING for their OWN USE to view the transmissions of satellite signals intended for distribution to cable television systems so long as the signals are not encoded and so long as the sender of those signals, even if legal (it was not legal under the they are not encoded, does not

NOT ONE TOWER FAILURE



Virtually anyone with a hardware store welding set and a

bunch of pipe can "claim" to be a tower manufacturer. When you specify your CATV tower, you should consider the long-term reputation of the supplier, the number of towers he has standing, and how long he has been providing service. WESTERN TOWERS has supplied hundreds of CATV towers from coast-to-coast; up to 600 feet in height. WESTERN TOWERS has been in the communications-supply business for 36 years. We guarantee all materials and workmanship.

WESTERN TOWERS is one of the largest suppliers of CATV logs in the nation. There are WESTERN logs on CATV towers today providing quality service today that were installed over 15 years ago! Our log-line-up is complete and the prices are difficult, if not downright impossible to beat.

Before you specify a new CATV tower or CATV antennas, check around. We feel certain our knowhow, reputation, and experience...and our prices...will make you a WESTERN customer for life!

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have a mechanism set up whereby people must pay or get permission to view the signal. That's the down side of the law. That means home TVRO's can legally be used to watch unscrambled programming unless the programmers set up a system to charge folks for those signals. The up side, however, is very significant. First, if there is any encoding of the signal, it is totally illegal to pick it up or descramble it without permission, and it is illegal to sell or manufacture equipment for that purpose.

DOES NOT INCLUDE "...any retransmission by so-called "private cable" or "satellite master antenna television" systems."

The fact that SMATV's, condos, bars, etc., who take signals off the satellite without permission or payment today are unquestionably violating the law, is absolutely clear. The question now becomes what do we do about it?

Well, we are not going to go into all the details here of the potential fines and penalties — you can read them yourself in the

"The fact that SMATV's, condos, bars, etc., who take signals off the satellite without permission or payment today are unquestionably violating the law is absolutely clear. The question now becomes what do we do about it?"

Also, it makes it VERY clear that any other use — such as by a SMATV operator, hotel, motel, bar, Lion's Club, hospital, nursing home, condominium, apartment house, etc., IS ILLEGAL, and there are substantial penalties, both civil and criminal, written right into the law. The ONLY legal use of the exception to the general rule that taking signals from the satellite is illegal unless you get permission and pay for those signals is for "Private Viewing", and "Private Viewing", says Congress, in the report accompanying this bill

copy of the law reprinted in this issue. For a criminal action to be started you have to go to your local, friendly Federal Attorney and point out the law, and the violator. How fast they act on that information will depend on many other variables. At the very least you many be able to get them to send a letter to the offending party pointing out the violation and the potential liability. That should get a lot of folks thinking very quickly. The second approach is to bring an action yourself as an aggrieved person under section (3) (A) of the law. Now there are some who argue that a cable operator is not an aggrieved party because the theft is actually from the programmer, not from you, so the programmer or the motion picture company would have to bring the suit, not the cable operator who has a contract with the programmer. We totally disagree. There were some comments inserted in the Federal Register under Sen. Barry Goldwater's name after the debate and passage of S.66 that suggest that reading. However Senator Goldwater was not even in Washington when those comments were submitted for the record. They were not a part of the actual debate and explanation of the bill, and they hold little, if any, weight. Further, right in the new section itself, it says that there is no intention to limit the preexisting broad interpretation of the old Section 605 which was already being used by the cable industry in suits of this kind. In a legal analysis of the bill recently published by the Matthew Bender law book company in "Cable Television Law — A Video Communications Practice Guide", and written by former FCC Chairman Charles Ferris, along with Frank Lloyd and Tom Casey of his law firm, they also conclude that an accurate reading of the law and the intent of Congress is that cable operators are considered to be included in the list of those who can bring a civil action against illegal theft of satellite signals which result in economic harm to the cable system. The bottom line here is that those folks are now clearly acting illegally, and we have the right, as well as the program suppliers and the copyright owners, to go after them.

The penalties are high, and the question of whether they are acting legally or not is almost a foregone conclusion. One way or another, whether the operator, the supplier, or the copyright holder brings the ultimate legal action (if one is necessary), their days are numbered, and the longer they refuse to stop stealing the service especially after they are put on formal notice of the illegality of their actions, the higher the civil and criminal penalties are likely to go because both are linked to the question of whether they are acting "willfully".

So now what? Well, it seems to us that a coordinated effort should be undertaken by cable operators and program suppliers. CATA has contacted most of the program suppliers about this issue, and we have been assured that cable operator affiliates will be given full cooperation. The first step is to identify what a potential violator is actually doing. Identify the programming that is being offered. If it is programming you also offer, or even if it isn't, but it is cable programming, call the affiliate representative in your area. Find out from them if the establishment has

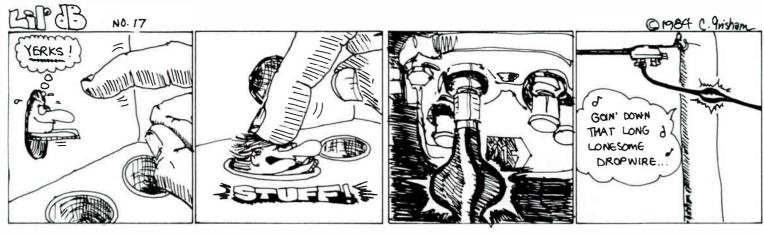
been given permission and is paying for the programming they are using. If the answer is no, then a letter should be sent to that establishment both from you and

"A second effort...would entail seeking some form of agreement with the other parties involved in the copyright dispute that would allow us all to go back to Capitol Hill with an agreed-upon plan which would substitute for the current copyright law."

the program supplier you have notified and checked with. The letter should note that you are aware of and can prove that they are offering the service, and that according to the new law — and you might enclose a copy of it for them — they are subject to fine or imprisonment for the continuation of the illegal use. Your first letter should be informational in nature and you should register it to make sure you have proof later on, if

needed, that they were put on notice of the illegality of their acts. Be sure to note right in the letter that a copy of the letter is being sent to the program services being used by the SMATV system, and then be sure that those copies get to the affiliate relations folks you talked to. If nothing happens, then the next step may have to point to the potential of your bringing legal action. In the next issue we will supply you with a sample letter you might use if they still don't believe that what they are doing is now clearly against the law. Remember, of course, that if they do have contracts to use program services, then they are acting legally. Stay tuned.

SPECIAL NOTE: One of the first cases to go to Court under the new law has just been completed. Heritage Cablevision, along with Home Box Office and ESPN, brought the suit against a Texas motel operator. The result: the judge has issued a permanent injunction against the use of the SMATV system and the three plaintiffs were awarded damages of \$40,000.00. That should prove our point. This is no joke, and it is time for cable to act!



C-COR ELECTRONICS, INC.

C-COR Electronics, Inc., will be conducting a technical seminar for CATV Technicians in Chicago March 19-21, 1985. A copy of the agenda follows.

The Seminar will be held at the Best Western Charlie Club Sports Hotel, Rt. 53 & Dundee Rd., Palatine, Illinois 60067, phone 312-934-4900.

The registration fee for the seminar is \$100 per person. Participants are encouraged to attend the full three-day session for maximum benefit, but are welcome to attend on any day provided that they join the group at either 8:30 a.m. or 1:00 p.m. and stay for the remainder of that half-day session. Please note that the \$100 fee is applicable whether attending all three days or any portion thereof. Cancellation must be made by 5:00 p.m. EST on March 12 in order to receive a refund.

All attendees must provide their own transportation, accommodations, and meals. C-COR will provide the meeting facilities, instructors, refreshments, calculators, and seminar manuals. Dress is casual. A certificate of completion will be sent to each attendee who participates for a minimum of two days.

Because of space limitations, we request that no more than three (3) personnel attend from any one system. Total participation will be limited to 50.

If you will require overnight accommodations, contact Best Western directly. When making reservations for sleeping rooms, refer to the C-COR seminar. The Best Western has extended a rate of \$42 for single and \$50 for double occupancy, plus 7% tax. The hotel also offers free airport transportation.

In addition, guests will have free use of the Best Western's multi-million dollar 24-hour indoor fitness complex, the Charlie Club. Some of its features include heated pool; tennis, racquetball courts; exercise rooms; aerobics room; track; whirlpools, steambaths, and saunas.

Send registration and registration fee to Debra Cree at C-COR. If you would prefer to make phone reservations, call her at 1-800-233-2267. Please note that C-COR WILL NOT collect registration fees at the door; payment MUST be mailed.

CATV Technical Training Seminar

DAY 1

8:00 am - 8:30 am Registration

8:30 am - 11:45 am

A. System Basics

- 1. Coaxial Cable
 - D ' .:
 - a. Description
 - b. Characteristic Impedance
 - c. Attenuation
 - d. The Decibel
 - e. DC Loop Resistance
 - f. Temperature Effects
 - g. Velocity of Propagation
 - h. Video Tape -Coaxial Cable
- 2. Passive Devices
- 3. System Amplifiers
- 4. System Design
- 5. Calculating System Power Requirements
- B. Adjustment of Amplifier Levels
- 1. Measurement of Levels
- 2. Field Strength Meter Basics

11:45 am - 1:00 pm Lunch

1:00 pm - 4:30 pm

3. Level Set Up

- 4. Equalization
- 5. Cable Simulator
- 6. Attenuation
- 7. Unity Gain
- 8. Level Control in Cable Systems
- a. Automatic Level Control
- b. ALC System Concept
- c. Types of Level Control
 - (1) Closed Loop
 - (2) TLC
 - (3) Thermal equalizers
- C. System Performance
 - 1. System Performance Calculations
 - 2. Computer Performance Calculation Print Out
 - 3. FCC System Requirements

4:30 pm - 5:00 pm Questions and Update

DAY 2

8:30 am - 11:45 am

- A. System Upgrade
 - 1. Forward Bandwidths
 - 2. Two-Way Systems
 - 3. Standby Powering

you can't abbord not to





Mail to: CATJ Magazine
Suite 106, 4209 N.W. 23rd
Okia. City, Okia. 73107

- B. System Problems
 - 1. Grounding and Sheath Currents
 - 2. Developing a Preventive Maintenance Program
 - 3. System Problems and Effects on Picture Quality
 - 4. Diagnosing Common System Faults

11:45 am - 1:00 pm Lunch

1:00 pm - 4:30 pm

- C. Theory of Operation, 500 Series
 - 1. T-500 Block Diagram
 - a. RF Chassis
 - b. Trunk Powered Housing
 - c. Power Supply Switching Regulator
 - 2. MT-500 Block Diagram
 - 3. B-507 Block Diagram
 - 4. D-500 Block Diagram
 - 5. D-500, E-500 Dual Output Baseplate Block Diagram
 - 6. E-500 Block Diagram
 - 7. BA/RA Block Diagram
- D. Understanding the Specification Sheet
 - 1. Model T-500
 - 2. Model B-507
 - 3. Model E-507
- E. Incoming Bench Testing 500 Series Amplifiers
 - 1. Trunk Station
 - 2. Bridger Amplifier
 - 3. Reverse Amplifier
 - 4. Distribution Amplifier
 - 5. Extender Amplifier
 - 6. Passives
- F. Energizing a Cable System
 - 1. Introduction
 - 2. AC Distribution Strip Set-up
 - 3. Fusing and Circuit Breakers
 - 4. AC Voltage Selection

- 5. Voltage Check for Switching Regulator Power Supply
- 6. Adjustment of Raw DC
- 7. Energizing the System

4:30 pm - 5:00 pm Questions and Update

DAY 3

8:30 am - 11:45 am

- A. Forward System Balancing Techniques
 - 1. Pilot Carrier
 - a. Modulated Carrier Level Control
 - b. TV Carrier Level Control
 - c. Pilot Carrier Set Up
 - 2. Rough Balancing
 - 3. List of Equalizers and Pads
 - 4. C-COR Approach to Final Balancing
 - 5. Problems with Final Balancing a Cable System

11:45 am - 1:00 pm Lunch

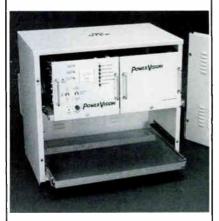
1:00 pm - 4:30 pm

- B. Reverse System Balancing Techniques
 - 1. Introduction
 - 2. System Preparation for Reverse Balancing
 - 3. Procedure for One or More Reverse Paths
 - 4. Balancing Feeder Line
 - 5. Balancing Trunk Line
 - 6. Reverse Balancing an Entire System
 - 7. Reverse Balancing Procedure for Trunk Station
 - 8. Reverse Balancing Procedure for Feeder Line
 - 9. Reverse Balancing Notes

C. SCAT Presentation

4:30 pm - 5:00 pm Ouestions and Update

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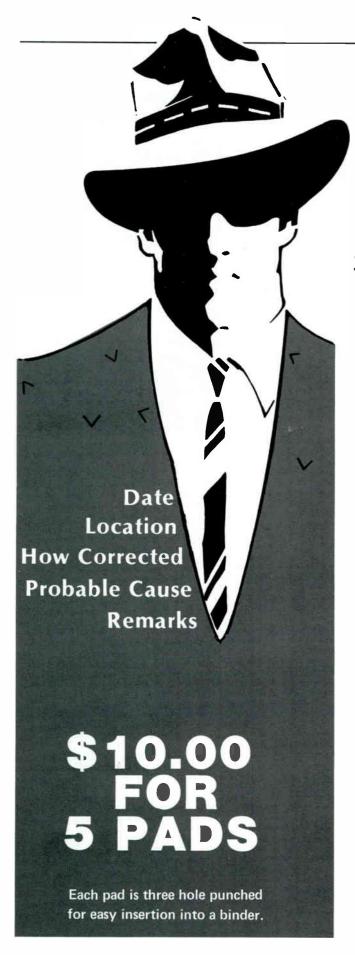
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<u>Detection and</u> Correction

SIGNAL LEAKAGE LOG

This Signal Leakage Log satisfies the requirements of the FCC Rules and Regulations, Part 76, Subpart K, Paragraph 76.610(d). Although the log is intended for recording cable television signal leakages in the Aeronautical frequency bands (108-136 MHz and 225-400 MHz), it may be used by cable system operators to record all system signal leaks and insure an effective on-going signal leakage detection and correction program.

When using this log for recording signal leakage in the Aeronautical Frequency Bands, the log sheet must remain in the file for a minimum of two years.

NAME
ADDRESS
(cannot accept P.O. Box) COMPANY
CITY
STATEZIP
QUANTITY (SETS OF 5)
AMOUNT ENCLOSED
 Check must be enclosed with order

CATJ

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* Texas Show *

WRAP-UP

espite the cold, wintry wind in San Antonio, the warmth of the Texas Show gathering brought smiles to all those in attendance; as usual, the sessions were informative and well attended, with the conversation and discussion lively and down to earth.

One of the most critical sessions was the one where CATA's Steve Effros led the discussion on the copyright fight. He brought out that the relationship between copyright and must-carry signals and pending court decisions would affect this year's cable fight for changes in the copyright liabilities. Another important factor in this is the possible alliance with television broadcasters. The questions were in-depth and many, making it very obvious that the cable operators think changes in both copyright and must-carry are imperative. This whole subject matter could have taken up the entire session schedule, as the questions kept coming and the interest was keen. (Mr. Effros keeps CATJ readers informed on these subjects in his monthly

Washington Update; see page 16.

Even though the attendance numbers were down, the vendors seemed generally pleased with the contacts made at this show and felt that some good business transactions would evolve as a result of talking with the cable operators during the show and having an opportunity to discuss their products and/or services.

You can't beat the hospitality at the Texas Show, and that was true again this year; their traditional barbecue was held on the first night and the large crowd enjoyed the food and friendship, topped off by Showtime/The Movie Channel's presentation of country/western singer Ray Stevens, for the entertainment portion. Thursday night's fare was a delightful Mexican buffet, complete with food bars scattered all over the ballroom for the finest in Mexican food, prepared as you requested. Home Box Office brought Earl Thomas Conley for the musical entertainment to top off this outstanding meal.

The Texas Cable TV
Association tended to business

and elected the following officers:

President —

Jerry Cranford, San Angelo, TX.

Vice President —

Tom Whitehead, Jr.

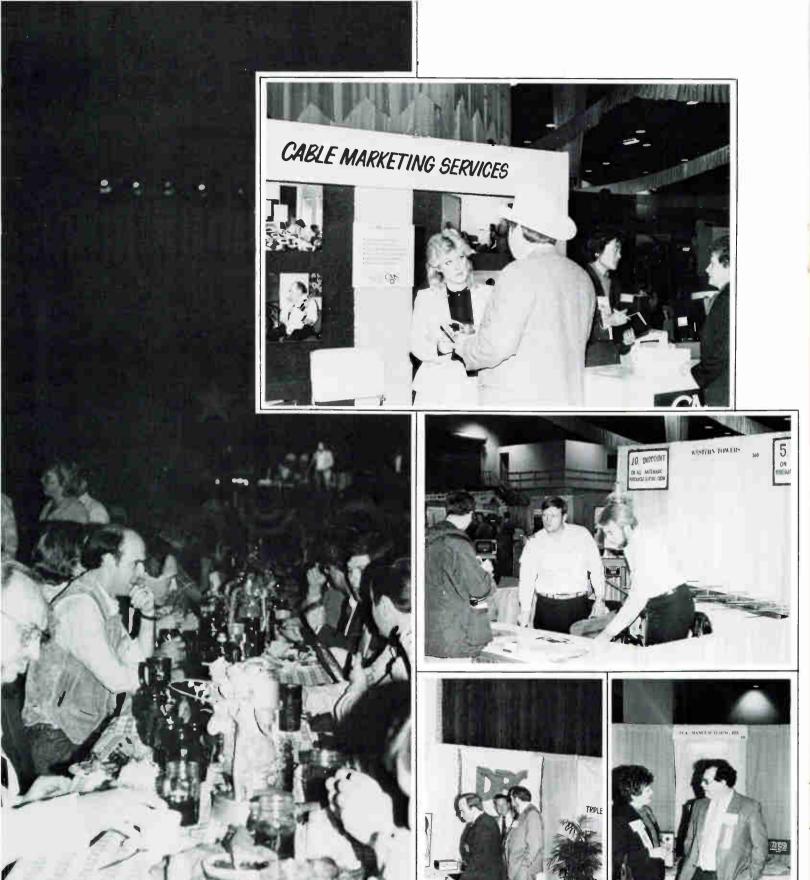
Brenham, TX.

Secretary/Treasurer —

Neil Haman, Harlingen, TX.

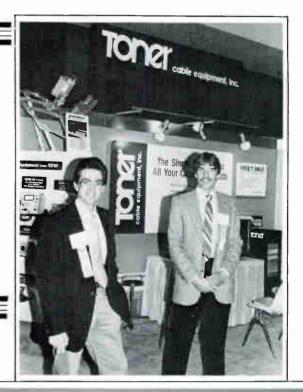
Our congratulations to these new officers and best wishes for a successful term of office.

Because of accommodating dates for the NCTA (the same situation occurred with CATA '85 being scheduled so close to these dates — if you want Opryland, you have to ask early!!), the Texas Show in 1986 will have a drastic change in schedule. You might want to mark this on your calendar for next year — May 20-23 at the San Antonio Convention Center. 1986 can surely guarantee you some warm Texas sun as you travel to San Antonio for this show — it's always a pleasure and one of the most outstanding shows in the country. Bill Arnold and his staff are to be commended for a consistently well-planned and orchestrated convention schedule. We'll be back next year!!



* Texas Show *

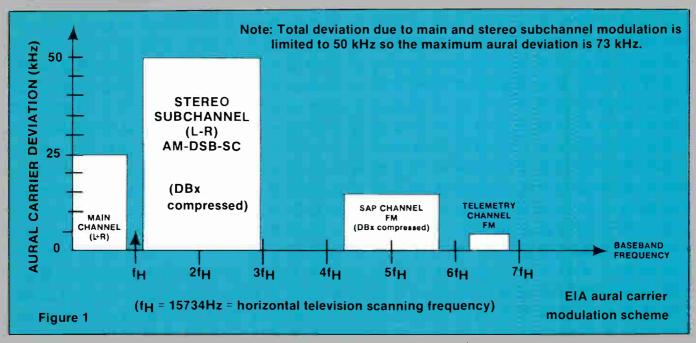
Shown here are various shots of activities at the Texas Show — from the hospitality functions to vendors' booths on the exhibit floor — you can see that the level of spirit was high and enthusiastic. Proof of another spectacular and successful Texas Show!!







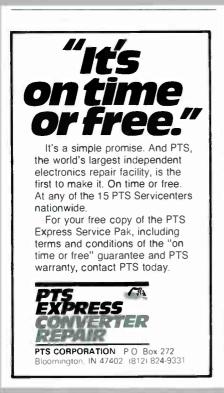


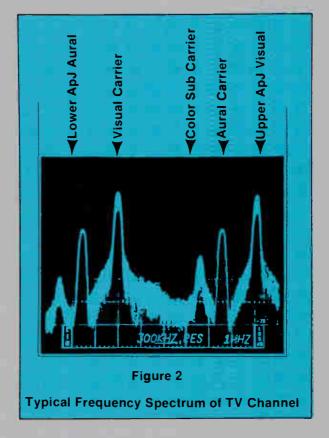


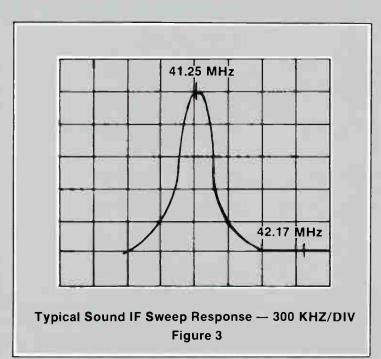
How soon will it happen? Being first in the market with stereo undoubtedly has interesting marketing advantages, but it represents a considerable dollar investment by the TV stations. Actual costs of

station implementation have been estimated at between \$60,000 and \$1 million or more. According to **Television Digest**, there are eight TV stations currently broadcasting in stereo with another seventeen

stations expected to begin broadcasting in stereo. By the end of 1985. By the end of 1986, over 100 stations are expected to be broadcasting in stereo. I would expect that the network-owned

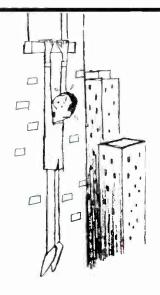






and major market stations will be the first to go stereo, followed by the smaller market and local TV stations as the base of stereo receivers grow. Stereo television receivers are currently being sold for between \$50 and \$200 more than a conparable non-stereo set. RCA, Zenith, and Sony are selling an adapter for between \$100 and \$200 that can be used to convert some sets to stereo sound.

Stereo TV sound can be a marketing opportunity for the CATV industry but it also represents some potential pitfalls and possible major capital expenditures that must be addressed by the cable operator.



HANGING ON to your old manual billing system is not very smart.

CATV 6.0 is a Billing/ Accounts Receivable System designed specifically for Cable TV operators for use on the economical TRS-80* Model 12 and multiuser Tandy 6000 under TRS-Xenix*. This system maintains subscriber accounts faster, with efficient payment verification and account updating, and provides timely management reports. All in a language YOU understand.

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MICRODYNE'S 72-CHANNEL SATELLITE VIDEO RECEIVING SYSTEM DESCRIBED IN NEW **DATA SHEET**

A new data sheet now available from Microdyne Corporation contains descriptions, photos and detailed specifications for Microdyne's video receiver/block downconverter system for all C- and Ku-band applications.

The data sheet describes how the 1100 BDC or BDC-12 block downconverters, when teamed with the 1100 DCR-12 switchselectable video receiver, provide single-receiver access to nearly all C- and Ku-band satellite transmission formats.

The 1100 DCR-12 is the only broadcast-quality 72-channel receiver with this flexibility. A unique plug-in PROM allows the receiver to be configured for all current and future satellite formats such as those used by SBS, GTE Spacenet, Anik, Westar and Galaxy satellites. The system can be updated in the field by simply plugging in a new PROM.

For a free copy of the data sheet, write to: Sales Department, Microdyne Corporation, P.O. Box 7213, Ocala, Florida 32672.

1100 BDC, BDC-12, AND 1100 DCR-12 SYSTEM

72-Channel Video Receiver and Block Downconverters for C. or Ku-Band Satellite Formats

Microdyne's 1100 BDC and BDC-12 block downconverters coupled with Microdyne's switch selectable 1100 DCR-12 72-channel satellite video receiver provide single-receiver access to nearly all C- and Ku-band satellite transmission formats.

The 1100 BDC block downconverter converts C-band 3.7-4.2 GHz signals to 270–770 MHz. It utilizes a 110 $^\circ$ K (standard) GaAs FET low noise amplifier (LNA) for an optimum signal-to-

The 1100 BDC-12 block downconverter converts Ku-band 11.7-12.2 GHz signals to 270-770 MHz. The BDC-12 includes a 3.5 dB noise figure LNA and a temperature-compensated bloc downconverter utilizing Microdyne's unique, state of the art SAW resonator. This provides unparalleled frequency stability, even under extreme temperature change.

The 270-770 MHz output permits the use of lower-cost 75-ohm cable, permitting longer cable runs between the antenna and the receiver, reducing overall system cost.

The 1100 DCR-12 video receiver provides access to C- or Ku-band satellite formats by means of its PROM-controlled frequency-synthesized tuner, and the appropriate C- or Ku-band downconverters. Each plug-in PROM can be factory-programmed to receive any combination of C- and/or Ku-band frequencies, up to 72 channels. The tuner may be updated at will with a new, factory-supplied, plug-in PROM.

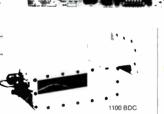
The 1100 DCR-12 also features superior FM demodulator threshold characteristics, automatic polarity switching, dual conversion for increased image rejection, rear panel FM demodulator output for use with external subcarrier equipment such as Microdyne's SCB-2, dual video outputs, and a 70 MHz IF test connector for spectrum analysis.

Features

- Downconverts C- or Ku-band to 270-770 MHz

1100 BDC-12

- 72-Channel capability
 Plug-in PROM-controlled tuner allows infinite flexibility
- Frequency synthesized tuning
- Reduces system installation costs Threshold level less than 8 dB





ANIXTER TO DISTRIBUTE PROGRESSIVE ELECTRONICS **CABLE FAULT LOCATOR**

Anixter Communications is now distributing Progressive Electronics' line of cable fault locator products, as announced by Gordon Halverson, Vice President of CATV Sales and Marketing. These products, which will be

stocked throughout Anixter's nationwide network of distribution centers, include: Model 501 Tracker, Underground Cable Locator, Inductive Coupler IC1, Model 2003 Pulser Fault Locator,

The Model 501 Underground Cable Locator is a portable, transistorized system consisting of two basic parts — the transmitter, which connects to one end of the cable to be located; and the receiver, a handheld unit to trace

the path of the same cable. Mounted on a 32" handle, it has an ON/OFF sensitivity control knob and a meter read the signal strength. The Model 501 features an easy-to-read meter and headphones for audio tracking.

The Inductive Coupler IC1 is an accessory for the 501 Tracker II. which is designed to induce a tracking tone into a subject cable or wire without embellishing metallic contact. The Inductive Antenna is used to apply a tracking tone into a cable, wire or metallic pipe by radiating a signal from the ground surface.

The Model 2003 Pulsar Fault Locator is an earth-ground cable fault-locating system capable of pinpointing high-resistance ground faults for such applications as

telephone cable and service wires, power secondaries, service and street-light wires, CATV cables, and irrigation wires. The system consists of four basic elements: a battery-powered (12V) pulse generator, receiver, battery charger, 12-volt auto cord, and ground stake. It features a rechargeable

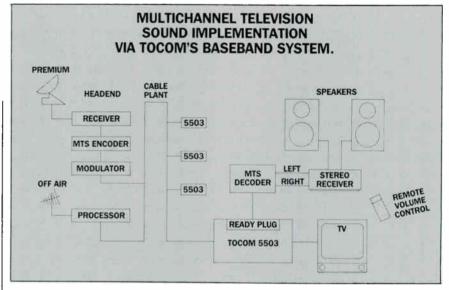
battery in pulse generator, builtin receiver battery check, meter deflection, and a unique DC pulse every 3 seconds.

For more information, contact Anixter Bros. Inc., 4711 Gold Road One Concourse Plaza, Skokie, Illinois 60076 or call (312) 677-2600.

TOCOM INTRODUCES STEREO-READY 5503 BASEBAND CONVERTER; ANNOUNCES TWO YEAR PRODUCT WARRANTY

General Instrument's **TOCOM** Division has announced the introduction of an MTS stereo compatible baseband converter (Model 5503) designed to bring stereo TV sound equal to or better than FM stereo into the homes of cable television subscribers. In addition, the Dallas-based manufacturer announced that, effective immediately, the warranty period on its 5503 converter has been extended from 12 months to two years after date of shipment.

The new stereo-ready 5503 will allow the transmission and reception of multichannel television sound on CATV systems employing the BTSC system recently endorsed by the EIA. It provides baseband video and composite audio via a built-in access plug. An optional MTS stereo decoder. the newest member of the TOCOM PLUS line of addressable products, is designed to work in conjunction with the stereo-ready 5503 baseband converter. The stereo add-on unit allows for the reception and demodulation of left and right channel stereo audio and the secondary audio program (SAP) on both scrambled and clear channels. The MTS stereo decoder outputs hook up to either



stereo compatible TVs with left and right inputs or home audio systems.

The TOCOM MTS decoder is controlled by a standard 5503 IR remote control unit, which includes volume control and audio mute, as well as other converter functions. Shipments of the stereoready 5503 converter are expected to begin in January, 1985. The optional MTS stereo decoder will be available for delivery in the third quarter of 1985.

William Flaherty, executive vice president, said the 5503 converter's high reliability prompted TOCOM's decision to extend the warranty period to two years. "This warranty reflects the continued success of the 5503 and is a guarantee to customers of its documented reliability," he said. The

5503 went into production this past year and since that time several major cable operators have installed the baseband converter into their systems. According to Flaherty, the converter has demonstrated a 99 percent reliability factor with less than a one percent failure rate since its introduction more than a year ago.

The TOCOM Division of General Instrument manufactures and markets advanced communications systems and equipment for the cable television industry. Its products include the TOCOM PLUS line, of baseband addressable systems, Cable SecurityTM systems and interactive control systems.

For more information, contact TOCOM at (214) 438-7691 or write P.O. Box 47066, Dallas, TX 75247.

Showcase

CWY COMPLETE LINE APARTMENT SECURITY BOXES

Specifications data flyers detailing a complete line of aluminized steel apartment security boxes are now available free of charge from CWY Electronics, Lafayette, Indiana. The flyers contain complete specifications and detail drawings for CWY apartment box models APB-812, APB-1212, APB-1218, and APB-1824. All CWY apartment boxes are designed for maximum security, durability, and serviceability, with fully replaceable 11-guage hasps, and hingeless cover removal system, heavy baked enamel finish, knockouts for optional cam locks, and multiple entry knockouts, variable from 7/8" to 1-3/4".

For further information, contact CWY Electronics, 405 Earl Avenue, P.O. Box 4519, Lafayette, IN 47903, or call toll-free 1-800-428-5796. (In Indiana, call 1-800-382-7526.)



APB-1212 Security Box

Constructed of heavy 16-gauge aluminized steel, shown to outlast unpainted galvanized steel at least five-to-one, the APB-1212 is designed for maximum security, durability, and serviceability. Other design features include:

- All-welded construction for strength and security.
- Fully replaceable II-gauge hasps.
- Hingeless, secure lid removal system with security stops welded inside the front cover as an additional entry deterrent.
- · Heavy baked enamel finish.
- · Knockout for optional cam lock.
- Multiple entry knockouts, variable from ¹/₈" to 1³/₄"

4

CWY Specifications

Constructed of heavy 16-gauge aluminized steel, shown to outlast unpainted galvanized steel at least five-to-one, the APB-812 is designed for maximum security, durability, and serviceability. Other design features include:

- All-welded construction for strength and security.
- Fully replaceable 11-gauge hasps.
- Hingeless, secure lid removal system with security stops welded inside the front cover as an additional entry deterrent.
- · Heavy baked enamel finish.
- · Knockout for optional cam lock.
- Multiple entry knockouts, variable from ¹/₈" to 1³/₄"
- Full interior board backing standard.



Height-12" Depth-614"

Lid Width—8"

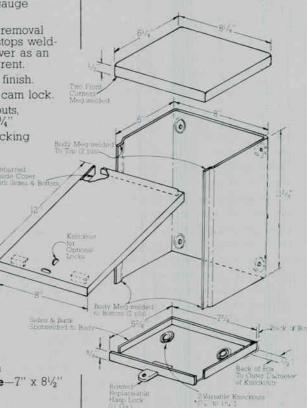
Height—12" Depth—19%2" Knockouts—2 Bottom

Mounting Board Size—7" x 81/2'

APB-812 Apartment Security Box

Construction

16-gauge aluminized steel with 4-stage washing/phosphatizing, baked vinyl wash primer, and electrostatically applied baked-on polyester enamel.



 Full interior board backing standard.

Construction

16-gauge aluminized steel with 4-stage washing/phosphatizing, baked vinyl wash primer, and electrostatically applied baked-on polyester enamel.

Dimensions

Exterior

Width—121/8" Height—12" Depth—61/4"

Lid

Width-12" Height-12" Depth-19/32"

Knockouts—3 Bottom Mounting Board Size-107/8" x 143/4"

See diagram on page 37.

APB-1212 Security Boxes ▲



APB-1218 Security Box

Constructed of heavy 16-gauge aluminized steel, shown to outlast unpainted galvanized steel at least five-to-one, the APB-1218 is designed for maximum security, durability, and serviceability. Other design features include:

- All-welded construction for strength and security.
- Fully replaceable 11-gauge hasps.
- Hingeless, secure lid removal system with security stops welded inside the front cover as an additional entry deterrent.
- · Heavy baked enamel finish.
- Knockout for optional cam lock.
- Multiple entry knockouts, variable from 1/8" to 13/4".
- Full interior board backing standard.
- Predrilled for Omni-Rack™ mounting.

Construction

16-gauge aluminized steel with 4-stage washing/phosphatizing; baked vinyl wash primer; and electrostatically applied baked-on polyester enamel.

Dimensions

Exterior

Width—121/8" Height—18" Depth—81/4"

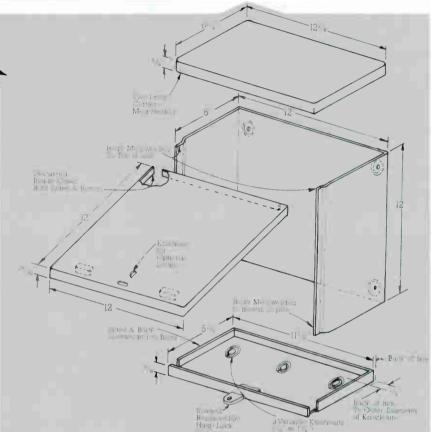
Lid

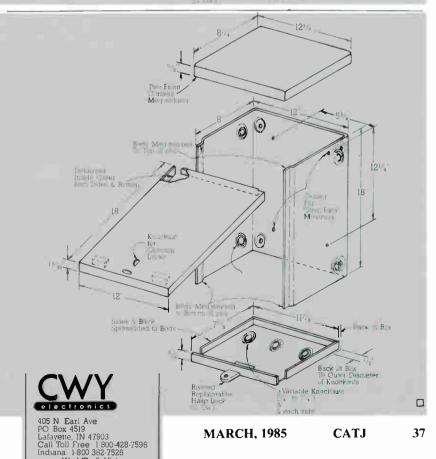
Width—12" Height—18" Depth—¹⁹/₃₂"

Knockouts-3 Bottom

Mounting Board Size—7" x $8\frac{1}{2}$ "

Mounting Panel Size—





WorldRadioHistory

Associate Roster

Note: Associates listed with * are Charter Members.

Alpha Technologies 1305 Fraser St. D-G, Bellingham, WA 98225 206—671-7703 (M9, Standby Power Supplies)

* Anixter Communications, 4711 Golf Road, Skokie, IL 60076 312—677-2600 (D1)

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The Associated Press 50 Rockfeller Plaza, New York, NY 10020 212—621-1513 (S9 Automated News SVC)

Automation Techniques, 1550 N. 105th E. Ave. Tulsa, OK 74116 918—836-2584 (M9)

Av-Tek, Inc., Inc., Box 188, Aurora, NE 68818 402—694-5201 (M8)

Blonder-Tongue Labs, Inc., 1 Jake Brown Rd.. Old Bridge, NJ 08857 201—697-4000 (M1, 2, 4, 5)

Broadband Engineering, Inc. P.O. Box 1247,

P.O. Box 1247, Jupiter, FL 33458 1-800—327-6690 (D9, M4, S9)

Budco, Inc., 4910 East Admiral Place, Tulsa, OK 74115 1-800—331-2246 (D9, Security & Identification Devices)

CATEL, 4800 Patrick Henry Dr., Santa Clara, CA 95054 408—988-7722 Capscan, Inc. P.O. Box 36, Adelphia, NJ 07710 1-800—CABLETV or 222-5388 (M1, 3, 4, 5)

CBN Cable Network, CBN Center Virginia Beach, VA 23463 804—424-7777 (S9)

Charles Greene & Assoc.

a division of AMCOM, Inc., Bldg. E, Suite 200, 5775 Peachtree-Dunwoody Rd., N.E., Atlanta, GA 30342 404—256-0228 (S9, Brokering & Consulting)

C-Cor Electronics, Inc., 60 Decibel Rd., State College, PA 16801 814—238-2461 (M1, 4, 5, S1, 2, 8)

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Cable Graphic Sciences 7095 N. Clovis Ave. Clovis, CA 93612 209—297-0508 (M9 Character Generators)

Communications Equity Associates, 851 Lincoln Center, 5401 W. Kennedy Blvd., Tampa, FL 33609 813—877-8844 (S3)

ComSonics, Inc., P.O. Box 1106, Harrisonburg, VA 22801 1-800—336-9681 (M8, 9, S8, 9)

The Disney Channel 500 S. Buena Vista Burbank, CA 91521 213—840-5080 (S4)

Ditch Witch, P.O. Box 66, Perry, OK 73077 1-800—654-6481 (M9) The Drop Shop Ltd., Inc., Box 284, Roselle, NJ 07203 1-800—526-4100 or 1-800—227-0700 (West) (D3, 4, 5, 6, 7, 8, 9, M5, 6, 7, 8, 9 Plastics)

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ESPN, ESPN Plaza, Bristol, CT 06010 203—584-8477 (S9)

Gardiner Communications Corp., 3506 Security St., Garland, TX 75042 214—348-4747 (M9, TVRO Packages, S1 2, 8)

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Home Box Office, Inc., 12750 Merit Dr. Dallas, TX 75251 214—387-8557 (S4)

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* Jerry Conn Associates, Inc., P.O. Box 444, Chambersburg, PA 17201 1-800—233-7600 1-800—692-7370 (PA) (D3, 4, 5, 6, 7, 8)

KMP Computer Services, Inc., 135 Longview Dr., Los Alamos, NM 87544 505—662-5545 (S4, 5)

Katek, Inc., 215 Wood Ave., Middlesex, NJ 08846 201—356-8940

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Larson Electronics, Inc., 311 S. Locust St.,

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Group P.O. Box 1729 Hickory, NC 28603 1-800—438-3331 (M2, 3, 7, S2)

Magnavox CATV Systems,

Inc. 100 Fairgrounds Dr., Manlius, NY 13104 315—682-9105

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Atlanta, GA 30336 1-800—241-9996 (D1)

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* Times Fiber Communications,

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Tocom, Inc.,

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* Toner Cable Equipment, Inc.,

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Triple Crown Electronics, Inc.,

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TV Watch, Inc.,

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United Press International

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USA Network

(S9)

303 East Ohio Street Time & Life Bldg. Suite 2701 Chicago, IL 60611 312—644-5413 (S9)

Viewstar, Inc.,

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Vitek Electronics

710 Narragansett Park Dr. Pawtucket, RI 02861 401—724-4400

Walsh, Walsh, Sweeney & Whitney, S.C.

P.O. Box 1269, Madison, WI 53701 608—257-1491 (S9)

Warner Amex Satellite Entertainment Corporation

1211 Avenue of the Americas, New York, NY 10036 212—944-4250 (S4)

* Wavetek Indiana

5808 Churchman, Beech Grove, IN 46107 1-800—428-4424 TWIX 810—341-3226 (M8)

Weatherscan,

Loop 132, Throckmorton Hwy., Olney, TX 76374 817—564-5688 (D9, Sony Equip. Dist., M9 Weather Channel Displays)

Western Towers

Box 2040 San Angelo, TX 76902 915—658-6539/653-5291 (M2, 9 Towers)

Zenith Radio Corp., 1000 N. Milwaukee Ave.

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