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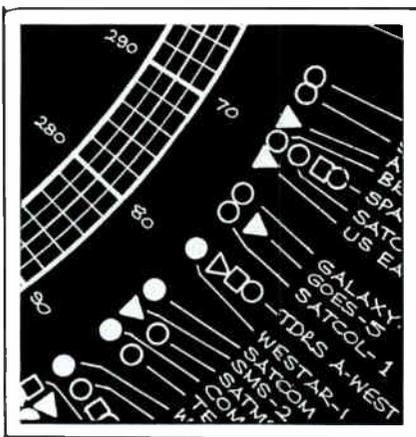
OFFICIAL JOURNAL OF THE COMMUNITY ANTENNA TELEVISION ASSOCIATION
NOVEMBER 1982



Western Show-1982

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

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DOLLARS, DOLLARS, DOLLARS...and all the bites that come out of your dollars! This cover represents the dollar investment focus of the articles contained this month on upgrading your system, as well as computer accounting efficiency.



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CBS CABLE — THE REALITY OF THE BOTTOM LINE

CBS cable will soon no longer exist. That is a grievous loss. There is no question that the CBS Cable venture into the arts was one of the finest examples of quality programming ever to grace the television sets of the country. It was, as has been noted in this space before, a “class act”. As a matter of fact, everything to do with CBS Cable was classy. They did everything with a certain elan that will be missed. The sales pitch, the presentations, the convention booths — everything was well done, and everything cost a lot of money — that was one of the problems. But to suggest that the amount of money spent on a lavish dinner at a convention was their downfall would be to ignore the facts.

By the time CBS Cable was officially pronounced terminally ill, it had amassed over \$30 million dollars in debt. Much of that went for the purchase of programming and program rights that will ultimately be resold. We are now seeing arguments in the press that CBS misspent their money, that they should not have tried to buy established “name” productions, but rather should have sought out new (cheaper) talent. Other critics, while lamenting the failure of CBS Cable, criticize them for seeking advertiser support rather than going the “pay” route. It seems to us that all of these criticisms are misplaced. To be sure, 20/20 hindsight is easy. We don’t subscribe to any of these theories as to why the CBS venture went down — including the one that says the entire thing was just a toy for Bill Paley, and as soon as he resigned, it was doomed. We fear there is an easier answer: **overexpectation.**

CATA has focused on this subject for a long time, and we will continue to issue warnings to both the industry and those who criticize and regulate us. The failure of CBS Cable, and, we suspect, of several more programmers in the foreseeable future as well as the inability of cable operators to meet some of the promises and projections they have made in the larger cities, is all due to an unrealistic view of **what in fact the cable industry is today.** Just look at the facts.

CBS Cable executives say they had to begin closing their doors eleven months after they started operations because advertising support was simply not sufficient to meet the costs incurred. That should have come as no surprise. CBS Cable was

not yet in front of enough homes to make it worthwhile for advertisers to pay top dollar for the upscale audience CBS would have ultimately delivered. There is a relatively simple reason for that: cable television systems are still facing severe limitations on the number of available channels that they have to use for so-called “narrowcast” programming. It is still true that a majority of cable systems in the United States have less than 20 channel capacity — indeed, a majority have 12 channels or less. Yet there are over 35 different satellite programming services either already available or announced.

Cable television operators are not anti-intellectual. They are not in favor of just mass audience programming — they want to serve all segments of their community. But inherent technical limitations, such as 12 channel capacity and legal limitations, such as the must carry rules and access channel rules in many communities, have put us all in the position of not being able to support programming that we would love to carry.

It should make for interesting conversation in the future to ask local video advocates whether they are willing to take part of the responsibility for the loss of CBS Cable’s quality programming. They, after all, required us to hold channels aside for access. Those are the channels, in some cases, that would have been used to carry CBS Cable. Had CBS Cable been carried in a lot more communities than it was at the time of its demise, maybe there would have been a large enough audience to justify major advertiser support. But it didn’t happen that way — so we have the access channels and the must carry channels, and we have lost a major effort at bringing cultural programming to the people.

Of course that is not the only analysis that needs to be done. It is also true that cable operators and cable subscribers have shown a clear preference, by their viewing habits, for such things as an all-sports channel like ESPN over the programming that CBS Cable was offering. Is anyone to be faulted for that? We do not think so — it is what is, whether the critics like it or not. Ironically, even the all-sports format is not making money yet, and we wonder, even with its apparent success at getting on existing systems how long such a program format can afford to continue to lose money.

The bottom line it seems to us, on all this, is that most folks, even those who are willing to spend

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millions of dollars like CBS did, are still deluding themselves about the cable television business. This is true of the folks spending the money as well as the regulators demanding that the money be spent. Cable has grown well. It is now in 33 percent of all television homes in the United States. But that is not enough to justify very expensive narrow-casting — **not yet**. And even with that 33 percent penetration, less than half of that consists of systems with more than 12 channel capacity. What could the people at CBS have been thinking of? Did they really think that they could get sufficient penetration to justify high advertising rates in less than a year? Isn't that simply unrealistic? We think so. We should also point out that it is unrealistic to believe that the cable industry should build a "state of the art" transmission system, including two-way, interactive, addressable institutional loops when we

have yet to determine where the income will come from to pay for such things.

Let's get realistic. CBS Cable died because the people who put the original business plan together were unrealistic as to what cable could deliver and when. They may have read about all the franchise activity in the major markets (after all, 75% of all viewing homes are in the top 20 television markets), but they forgot that that activity, at the moment, is still on paper in most cases — the systems have yet to be built. In short, they were **over-sold on expectation** and reality has caught up with them before the promise of cable can perform. We have lost a valuable program source. Let's not lose more. It is our job to tell our regulators, our suppliers, and ourselves the accurate story about cable television: **we have a bright future, but it dims every time we oversell or overpromise what we are.**

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Orlando, Florida

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1. TITLE OF PUBLICATION Community Antenna Television Journal (CATJ)	A. PUBLICATION NO.	2. DATE OF FILING 9-21-82
3. FREQUENCY OF ISSUE monthly	A. NO. OF ISSUES PUBLISHED ANNUALLY 12	B. ANNUAL SUBSCRIPTION PRICE \$14.00-\$18.00
4. COMPLETE MAILING ADDRESS OF KNOWN OFFICE OF PUBLICATION (Street, City, County, State and ZIP Code) (Not printers) 4209 N. W. 23rd, Suite 106, Oklahoma City, Okla. 73107		
5. COMPLETE MAILING ADDRESS OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHERS (Not printers) 4209 N. W. 23rd, Suite 106, Oklahoma City, Okla. 73107		
6. FULL NAMES AND COMPLETE MAILING ADDRESS OF PUBLISHER, EDITOR, AND MANAGING EDITOR (This item MUST NOT be blank)		
PUBLISHER (Name and Complete Mailing Address) G. H. Dodson, 4209 N. W. 23rd, Suite 106, Oklahoma City, Okla. 73107		
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FULL NAME COMPLETE MAILING ADDRESS		
Television Publications, Inc. (TPI) 4209 N. W. 23rd, Suite 106, Okla. City, Ok. 73107		
STOCKHOLDERS: G. H. Dodson P. O. Box 24, Sayre, Ok. 73662 Celeste Rule 2601 S. Sycamore, Okla City, Ok.		
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A. TOTAL NO. COPIES (Net Press Run)	4716	4600
B. PAID CIRCULATION 1. SALES THROUGH DEALERS AND CARRIERS, STREET VENDORS AND COUNTER SALES 2. MAIL SUBSCRIPTION	3628	2779
C. TOTAL PAID CIRCULATION (Sum of 10B1 and 10B2)	3628	2779
D. FREE DISTRIBUTION BY MAIL, CARRIER OR OTHER MEANS SAMPLES, COMPLIMENTARY, AND OTHER FREE COPIES	573	1406
E. TOTAL DISTRIBUTION (Sum of C and D)	4201	4188
F. COPIES NOT DISTRIBUTED 1. OFFICE USE, LEFT OVER, UNACCOUNTED, SPOILED AFTER PRINTING 2. RETURN FROM NEWS AGENTS	515	412
G. TOTAL (Sum of E, F1 and 2 - should equal net press run shown in A)	4716	4600
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The Community Antenna Television Journal (CATJ) — ISSN-0194-5963 — is published monthly by Television Publications, Inc., 4209 N.W. 23rd, Suite 106, Okla. City, OK 73107. Subscription price: \$18.00 per year, \$22.00 per year Canada, Mexico, and foreign is \$25.00 per year. Second class postage paid at Oklahoma City.

POSTMASTER: Send address changes to 4209 N.W. 23rd, Oklahoma City, OK. 73107.

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Financial Optimization of Channel Capacity

Abstract: *From a purely financial point of view, the best number of channels in a given cable system is that which yields the highest return on investment. While regulation, local requirements and marketing common-sense may supercede financial considerations, these non-financial factors cannot improve on the mathematics of optimum return.*



By: Chris Flor
Assistant Vice President
Heller-Oak Communications Finance
Corporation

Profit is an Objective

If you use numbers to help make a decision, you must specify a numerical objective. One such objective is profit, or more precisely, return on investment. This return on investment is expressed as a percentage, and can be viewed as a rate of interest. This rate of interest is what you would have to invest money at in a money market fund or some other financial instrument to get back the same amount of cash over time as you get from an investment in improving your cable plant.

From a financial perspective, these opportunities would be equal:

1. A money market fund promising a 12 percent annual return, or
2. A cable plant rebuild likely to return 12 percent annually.

Both return 12 percent annual before tax considerations and (presumably) are equally low-risk.

Environment for Added Channels

Channel capacity is a real issue in the majority of cable systems operating today. A quick review of program services indicates a host of offerings:

- 25 Basic Services available
- 9 Pay Services available
- 36 New Services ready for launch
- 4 (or more) local off-air channels
- 2 (or more) origination/classified channels
- 76 viable commercial channel alternatives

(continued)

good programming than a 12-channel system can carry. Technically, one can go directly to 54 (or 108) channels, via a rebuild. The cost will require five or more pay services per subscriber to pay back the investment in two years. If the system is an independent, small-town operation, there are more modest alternatives:

1. Upgrade channel capacity by modifying electronics from 240/260 MHz to 300 MHz, without re-spacing amplifiers. Works in certain cases where the right original equipment was properly spaced. Capacity can move to 21 to 35 channels and plant can last five to 10 years, depending in the quali-

ty of the distribution network at the time of modification. Cost: \$300 to \$500 per mile.

2. Upgrade channel capacity by replacing electronics and some rebuild of plant. Capacity can move to 35 channels at 300 MHz and last five to 10 years. Cost: \$3000 to \$5000 per mile.
3. Rebuild entire facility, to 54 channels at 400 MHz, for \$15,000 to \$20,000 per mile.

Choosing an alternative will not be solely a financial decision, but finance is a good place to start. Remember, the "best" alternative is that yielding the highest return on invested capital. The investment is in plant and any needed headend improvement; the return is the cash

flow from additional subscribers. The objective is to obtain the greatest cash flow from the least investment.

Before we look at some hypothetical numbers, consider the following logical set of alternatives:

1. Do nothing — leave channel capacity where it is today.
2. Improve offerings without adding channel capacity.
3. Add a couple of channels and fill with top-rated product.
4. Add nine to 23 channels and fill with top-rated and specialty product.
5. Add 23 channels and fill with

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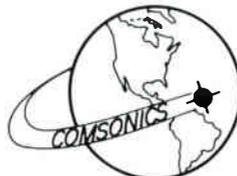
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Each of these alternatives represents increased investment, and each promises higher cash flow. But return on investment may not steadily increase with each new service, as we shall now examine.

vices. Rather than accept the numerical results presented here, the operator would do well to re-work the exercise with more meaningful data from his or her system.

The assumptions used in the following example tend to reflect industry experience:

1. The current system has 40 miles of trunk and carries 12 channels at 240 to 260 MHz.

ected by adding channels and services.

5. The original build cost of \$250,000 10 years ago, has not seen much subsequent investment and has delivered \$3,000 of monthly cash flow on the average (before interest and taxes) ever since.

The rebuild options can be laid out as follows:

	1	2	3	4	5	6
	Do Nothing	No Re-build but Change Offerings	Modify Electronics and Add 3 Channels	Replace Electronics and Add 9 Channels	Replace & Rebuild Parts Adding 23 Channels	Complete Rebuild, Adding 42 Channels
Channel Capacity	12	12	15	21	35	54
New Services	—	2	3	9	23	42
Subscribers:						
Basic Service @ \$7.00	1000	900	1100	1400	1500	1600
Expanded Basic @ \$5.00	—	—	200	500	600	700
Pay I @ \$8.50	400	400	400	400	400	500
Pay II @ \$17.00	—	50	100	200	200	200
Pay III @ \$26.50	—	—	—	—	75	100
Text/Shopping @ \$5.00	—	—	—	—	—	200
Security @ \$20.00	—	—	—	—	—	200
Monthly Revenues	\$10,400	\$10,550	\$13,800	\$19,100	\$22,300	\$30,000
Program Costs	1,800	2,250	2,700	3,600	4,700	7,750
Operating Costs	5,600	5,600	5,600	5,600	5,600	5,600
Cash Flow per Month	3,000	2,700	5,500	9,900	12,000	16,650
Growth over Present	-0-	(300)	2,500	6,900	9,000	13,650
Plant Miles Rebuilt	—	—	40	40	40	40
Cost per Mile of Plant	—	—	500	4,000	5,000	20,000
Plant Investment	—	—	20,000	160,000	200,000	800,000
Headend Investment	—	—	7,000	20,000	65,000	120,000
Growth in Investment	—	—	27,000	180,000	265,000	920,000
Return on Investment	N/A	N/A	111%	45%	39%	12%
Months to Payback	—	—	11	26	29	67

Return on Investment

Return on investment is the rate at which cash is generated by dollars employed. The numbers are easy enough to figure out. How the assumptions behind the numbers are worked out, however, is far from easy. Forecasting subscriber acceptance requires an in-depth knowledge of the subscribers, their alternatives, and their enthusiasm for added ser-

2. The current headend receives all three available local off-air signals and takes seven basic and two pay services off Satcom III R.
3. 1000 subscribers currently take the basic package of 11 channels, and 400 take a pay channel (one or the other).
4. Operating expenses (except for program service fees) are unaf-

Option 1: Do Nothing

No new cash flow results, and no new investments is required.

Option 2: No Rebuild, but Change Offerings

A second pay tier is introduced by bringing in a third pay signal and offering it in combination with one of

(continued)

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the existing pay services. The new pay service attracts 50 new subscribers (or 100 new billings), but a basic service was dropped to make room and that caused 100 disconnects (none, fortunately, taking pay). No plant investment is made, but cash flow drops due to changes in service that upset more than attract.

Option 3: Modify and Add Three Channels

No existing services need be dropped here, no is much investment needed. Plant changes cost \$20,000 (40 miles at \$500/mile) and adding three channels at the headend costs \$7,000. The added channels, two basic and one pay, create 100 new basic subscribers, all of whom take the expanded basic as well, and another 100 basic subscribers come from existing customers. Pay subscription increases by 100 homes, each adding two services in Pay II tier. Cash flow increases by 83 percent, to \$5,500 monthly. The \$27,000 plant investment is paid off in 11 months and new cash flow generates 111 percent annual pre-tax return on investment. This is better than passbook rates.

Option 4: Replace Electronics and Add Nine Channels

This option really builds up the expanded basic package. 400 new homes are added to basic, and 500 expanded basics come on board. Together, they represent over a 75 percent lift in basics — hypothetically. Pay tiering is no different from Option 3, but more people are subscribers so more pay subs show up — theoretically. Cash flow more than triples, from \$3000 monthly to \$9,900. The \$6,900 increase pays off the \$180,000 plant investment in 26 months and returns a respectable 45 percent on investment before taxes annually.

Option 5: Replace and Rebuild in Parts, Adding 23 Channels

This option creates a genuine 35-channel system. Basic acceptance, with 31 channels to view, is 75 percent of homes passed. Pay acceptance, in terms of number of

(continued)

A Proposed Study on the Profitability of Various Alternative Quality and Cable Pricing Strategies

by
Dr. Phil Jacobs
University of South Carolina
and
Dr. Snowden E. Bunch
Memphis State University

Managerial economics is a tool used to evaluate a number of different policies or strategies which companies can undertake. One set of policies which are amenable to evaluation are pricing policies. Among the questions which managerial economics can address in this area are:

- a. Is there a relationship between the basic price that you charge and the number of homes subscribing;
- b. Does the quality of your basic service influence how many subscribers sign up;
- c. Does the number of pay movie services you have in your system affect the number of homes subscribing;
- d. Does the price you charge for additional services affect monthly subscriptions for these services;
- e. Is there a pricing threshold over which your typical subscriber will not pay more regardless of how good the additional services are?

With this information, one can estimate the gross revenues of alternative quality and pricing strategies in order to determine the profitability of these various strategies. Managerial economics can therefore be used as a management tool to estimate appropriate management strategies in these areas.

The authors propose such a study for the cable industry. In order for such a study to be carried out, data from many cable companies is needed. Without appropriate data there is no way for us to draw these comparisons. We are therefore asking readers of CATJ to fill out the attached form and return it to CATJ. Individual responses will be regarded as confidential and will not be disclosed. When we receive this data, our intentions are to analyze the data and publish the results in a forthcoming issue of CATJ.

For this proposed study to be a success, we need a very good response from CATJ readers. We believe that an analysis of pricing strategies would benefit small cable operators. It would help you in better positioning yourself with regard to your market. This analysis would give you information from an independent source about such matters as whether adding another pay service will bring additional profits. So please fill out the attached questionnaire and return it to

CATJ
4209 N.W. 23rd, Suite 106
Oklahoma City, Okla. 73107



****CATJ Study Questionnaire****

Please supply all of data requested below:

1. Zip code: _____

2. Number of Homes Passed: _____

3. Number of Homes Served: _____

4. Please list the channels (i.e., WOR, CNN, etc.) offered in your basic service package:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

5. What is the monthly charge for basic service? _____

6. How many outlets receive basic service? _____

7. Please list any pay service (i.e., HBO, SHOWTIME, CINEMAX, etc.), number of subscribers, and monthly charge for each pay service offered on your system:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Complete and return to:

CATA
4209 N.W. 23rd, Suite 106
Oklahoma City, Oklahoma 73107

Checking out a system was never easier, or more precise. The 1880 System Analyzer uses a powerful microprocessor to take the place of all the controls and adjustments of previous instruments.

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now at your fingertips. What's not at your fingertips are the extra knobs, tedious adjustments, and time-consuming calculations.

In their place are some amazing extra features. Like Split-Screen—so you can view a single channel and the entire spectrum at the same time. Zoom—which lets you zero in on any part of the display. And Keyboard Parameter Entry—a remarkably simple way to set the center frequency and frequency span.

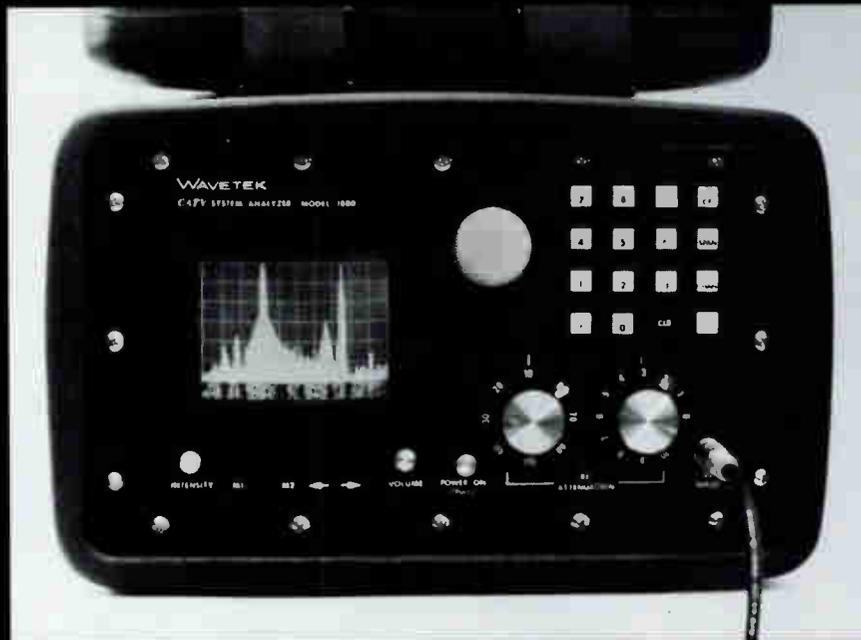
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separate channels subscribed to, is nearly 70 percent. Cash flow of \$12,000 monthly pays off the \$265,000 plant investment (including a second TVRO) in 29 months and returns 39 percent annually before taxes. Options 4 and 5 are in-

channels (45 percent return), or perhaps 23 channels (39 percent return), but does not justify adding 42 channels (12 percent return). All options pay off, but why pass up a chance to get a 40 percent-plus return in order to get a 12 percent?

	Option					
	1	2	3	4	5	6
New Channels — Basic	—	[1]	2	8	21	37
— Pay	—	1	1	1	2	5
New Subscribers — Basic	—	[100]	100	400	500	600
— Pay	—	100	200	400	625	800
New Subscribers per added channel	—	[100]	50	50	23	16
	—	100	200	400	312	140
New Cash Flow/Month	—	\$(300)	\$ 2,500	\$ 6,900	\$ 9,000	\$ 13,650
Cash Flow per new EBU (Equivalent Billing Unit)	—	\$ 6.00	\$ 12.50	\$ 11.50	\$ 11.08	\$ 14.37
New Plant Investment	\$-0-	\$-0-	\$27,000	\$180,000	\$265,000	\$920,000
New Plant per new EBU	\$-0-	\$-0-	\$135.00	\$300.00	\$326.15	\$968.42

tentionally similar in terms of profitability, to illustrate the problem of diminishing returns as channel offerings proliferate.

Option 6: Complete Rebuild, to Add 42 Channels

Here is the ultimate: 54 channels, 400 MHz, two-way, text shopping, security — the works. Basic penetration reaches 80 percent, pay goes to 75 percent, cash flow runs \$16,650 per month. The cost of doing all this is high as well; \$920,000 is invested in plant and headend. Now the small size of the system starts to limit opportunity for return. The investment takes 67 months to pay back through cash flow, and returns 12 percent annually. You can do as well with a money market CD.

Marginal Performance

More is not simply better all the time. Each new service, each new subscriber, has a marginal (at the edge) added value to the system. Just as you stop extending plant when housing densities drop below, say, 40 homes per mile, so you should also stop adding channels when returns on investment starts heading downward. The hypothetical case above justifies adding 3 channels (111 percent return), or 9

Clearly, not all new subscribers are created equal. As far as new subs per added channel, Option 4 is best, with 50 basic and 400 pays per channel added to the system. For cash flow per new EBU (where a pay subscriber is counted as 1/2 a basic sub to get equivalent billing units), Option 6 is the leader. Investment per new EBU is most efficient, however, in Option 3. Which option to choose is finally, however, determined by return on investment, from a financial viewpoint, coupled with the system's commitments under its franchise and the likelihood of competition.

Your Decision

The financial analysis above is not tricky. To get return on investment, ask your local bank officer to do an internal rate of return calculation using monthly cash flows and investment over a 10-year period. You can do payback with a pencil, however, which provides a fairly good idea of how your proposed rebuild will perform financially. Just divide investment by monthly increased cash flow. The trick is in getting the assumptions right. Try some numbers out, and see for yourself where the financial optimum channel capacity for your system lies. □

mn Your Column Your Column Your C

More on Signal Tracing

I read with interest the item on locating interference in October's column. I recall a similar case I had a short time ago. When we located it, it turned out to be a defective TV set. The audio of whatever channel was being watched was broadcast right on the color carrier of Channel 4. It took some doing to convince the owner that his set was the problem.

When we finally got the Montgomery Ward repairman out, he said this was real common on that particular model that had been built by Hoffman. One of the bypass capacitors in the audio output had opened, and this set turned into a low power transmitter. He said that the interference could show up at any frequency. If you have a problem like this, don't overlook this possibility as there are still a lot of these old goats around.

When locating interference with a dipole, rather than looking for the strongest signal, I find it is best to use the null position. The maximum reading is about 20 degrees wide and the null is only two or three degrees wide. Use this method to triangulate your problem area. Turn the antenna to the strongest reading, then turn it approximately 90 degrees and



locate the minimum or complete absence of signal. Note the direction. Then move a short distance in a direction perpendicular to the line determined by the null. Repeat the readings to determine another line. Where the lines intersect will be the general area of interference. Keep working toward the source in this manner and you can quickly locate it.

When tracing noise from power lines this way, you can often narrow the source down to the area on the pole and sometimes even the actual piece of defective hardware. All this from a safe distance of 50 to 60 feet.

Temporary 412 Splice

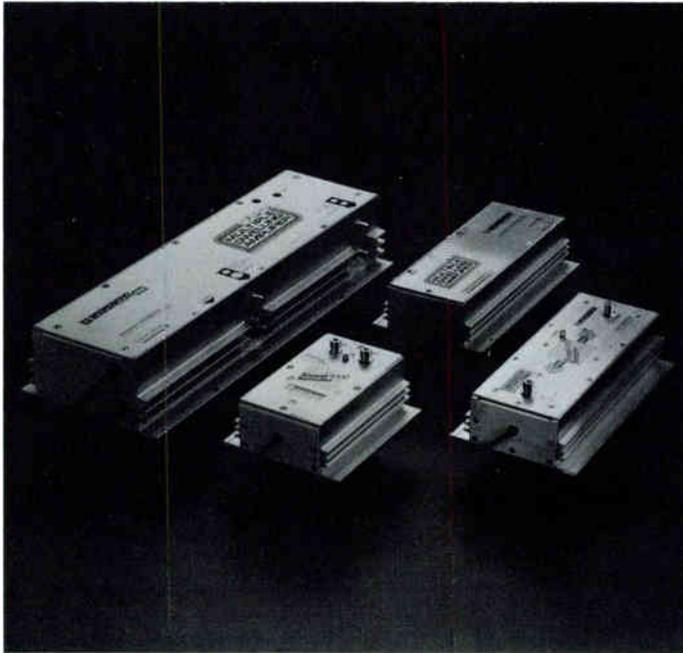
You're working on an outage caused by storm or accident. It's already six o'clock, the rain is running down the back of your neck, you discover you have just used the last 412 splice from your truck and the supply is back at the shop, five miles away. What do you do? I know there are several ways to make a temporary splice, but most are disastrous as far as signal integrity and radiation are concerned.

A quickly made, moderately good splice can be made by using two F81's and a short jumper. Simply trim the end of the cables, leaving the center conductors extending out about a sixteenth of an inch. Use the coring tool to remove a little dielectric, then force an F81 over the center conductor and screw it into the outer conductor with a wrench. It will cut fine threads on the inside of the aluminum and make a very tight connection. Connect the cables prepared this way with the jumper and tape it over tightly to keep water out until you can replace it the next day.

If you use a very short jumper, this makes a quick, tight splice that will carry three to four amps of power. □

... An exchange of ideas and suggestions from you cable operators!! Got an idea or suggestion? Send it in!! Got a problem? Submit it too and perhaps we can get a solution for you! It's yours — use it!

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Signal Stretcher™ — One-Way

Model	Gain	Bandwidth	Output Capability*
Super Multiple Dwelling Amplifier			
SMDA-300	20 to 40 dB	50-300 MHz	+49/44 dBmV
SMDA-440	20 to 40 dB	50-440 MHz	+47/42 dBmV
Reverse Amplifier	10 to 30 dB	5-32 MHz	+50 dBmV
Multiple Dwelling Amplifier			
MDA-300-30-T	30 dB	50-300 MHz	+49/44 dBmV
MDA-440-30-T	30 dB	50-440 MHz	+47/42 dBmV
Signal Stretcher™ - Two-Way			
SS-300-15-T-2W	15 dB (flat)	50-300 MHz	+45/40 dBmV
SS-440-14-T-2W	14 dB (sloped)	50-440 MHz	+41/36 dBmV
Reverse Amplifier	0 dB	5-32 MHz	N/A
Signal Stretcher™ - One-Way			
SS-300-15-T	15 dB (flat)	50-300 MHz	+45/40 dBmV
SS-440-14-T	14 dB (sloped)	50-440 MHz	+41/36 dBmV

*Output specified at -60 dB CTB @ 54-channel loading for 440 MHz units and 35-channel loading for 300 MHz units.

We now offer you a complete line of one- and two-way apartment and house-drop amplifiers to fill all your requirements for home, apartment, condominium, hotel and motel distribution systems.

Super Multiple Dwelling Amplifier (SMDA):

New! Topping off our product line, the SMDA is super-flexible to meet your changing apartment distribution needs. Easily convertible to two-way operation, it features a variety of gains up to 40 dB at 300, 440 MHz bandwidths.

Controls include gain and slope as well as plug-in pads and equalizers. Powering is also flexible with 120-volt line and 30/60-volt cable power options.

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Because of their high output capability, Signal Stretchers™ may also be used to feed small apartment buildings of ten to fifteen units.

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 * UPDATE SUMMARY REPORT *
 * FOR FRANCHISE CODE AB *
 *
 * Oct 2, 1982 *

RECORD DATE: 11/01/82

PAYMENT DATE: Oct 2, 1982

**** PAY TIER PAYMENTS ****												
Pay Tiers:	A	B	C	D	E	F	G	H	I	J	K	L
Amount:	64,131.20	4,510.80	0.00	0.00	3,132.50	260.00	12,892.80	0.00	0.00	0.00	0.00	0.00
Pay Tiers:	M	N	O	P	Q	R	S	T	U	V	W	X
Amount	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**** ACCOUNT TOTALS ****					
NUMBER EXAMINED	PRORATED CHARGES	DEBITS	SPECIAL CREDITS	BULK CHARGES	PAY TIERS
4,000	7,680.00	195.00	37.25	5,125.00	84,927.30
NUMBER UPDATED	CURRENT CHARGES	PAST DUE	PREPAID	FRANCHISE TAX	AMOUNT UPDATED
4,000	97,890.05	3,124.00	5,010.00	3,180.72	109,204.77

FIGURE 1

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The Weather Scan III comes complete with Sony AVC-1400 camera with separate mesh vidicon and 2:1 interlace sync. Includes Time, Temperature, Barometric Pressure, Wind Velocity, Wind Direction, plus four card holders. Compact cabinet is just 28" wide, 23" deep and 14" high. For complete information call or write.



Weather Scan, Inc.

An R.H. Tyler Enterprise

Loop 132 and Throckmorton Hwy. Olney, Texas 76374 Ph. 817-564-5688

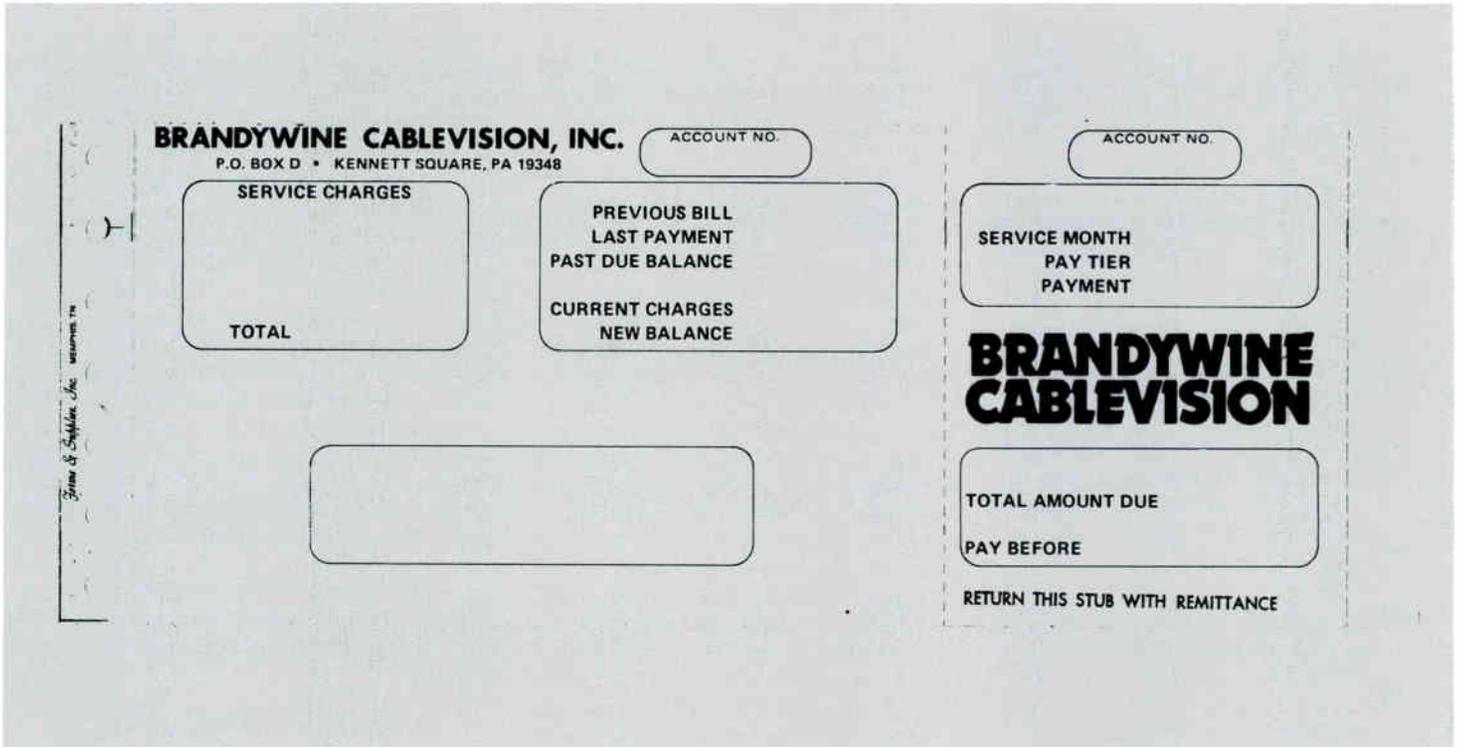


FIGURE 2

(continued)

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VALUE

When you consider exactly what you are getting for your money, CATV 2.0/4.0 and TRS-80 microcomputer systems represent a lot of value for the dollar spent. Compare fees charged by service bureaus with the cost of an in-house CATV 2.0/4.0 system. Service bureaus fees are based on monthly activity; the amount increases with each subscriber billed, as payments are credited, as new customers are added, as old customers are dropped, etc. The information produced is either a few days old or available by computer terminal. The in-house expense, on the other hand, is based on supplies, office labor, and the purchase price of the system. These expenses should be vary significantly with monthly activity. Additionally, a wealth of other business and accounting software can be purchased for TRS-80 microcomputers in the \$200 to \$500 range. General ledger, accounts payable, inventory, payroll, and word processing could be easily and inexpensively added to an in-house system. In the final

analysis, the CATV 2.0/4.0 system is a versatile and cost effective option for the small system operator.

TAX SAVINGS

Under the new tax laws, there are considerable advantages to buying a CATV 2.0/4.0 system. The Economic Recovery Tax Act of 1981 established the accelerated cost recovery system (ACRS) for asset depreciation. CATV 2.0/4.0 systems, both hardware and software, would be considered five years property. They would be eligible for 150% declining balance depreciation with a switch to straight line and for a 10% investment tax credit. Alternatively, the system would qualify as sec. 179 property and be eligible for direct expensing. The maximum amount eligible for this treatment is \$5,000 through 1983, \$7,500 through 1985, and \$10,000 from 1986 onward. An investment tax credit is not allowed with respect to the amount expensed. The tax savings from either approach should decrease the cost of using an in-house system and shorten the system's payback

period.

OPERATION EASE

Menus and data entry prompts are engineered to guide the user through the system. Each menu is a short list of tasks performed by a part of the system. Particular tasks are selected by entering one-letter codes shown in a task menu. These codes are the first letters of task names and are highlighted when displayed, i.e., "[E]dit" for edit. CATV 2.0/4.0's master menu provides access to each major function performed within the system. Each major function also has a menu providing access to the task it performs. Within a particular task, clear statements like "Ready for subscriber name" are used to prompt data entries. Menus and prompts make it easy for the first time user to learn the system and greatly reduce the amount of time required for converting to this in-house computerized system.

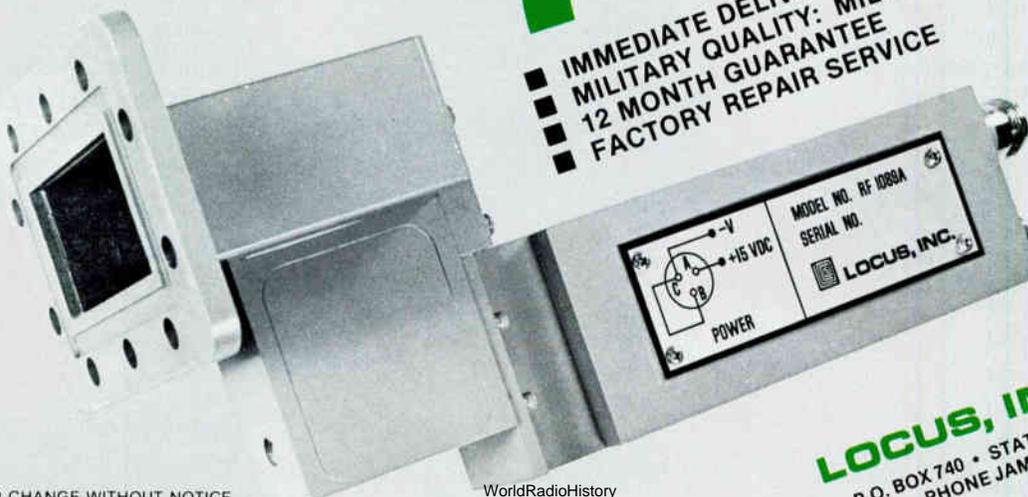
PROCEDURES

CATV 2.0/4.0 contains six major program modules and several

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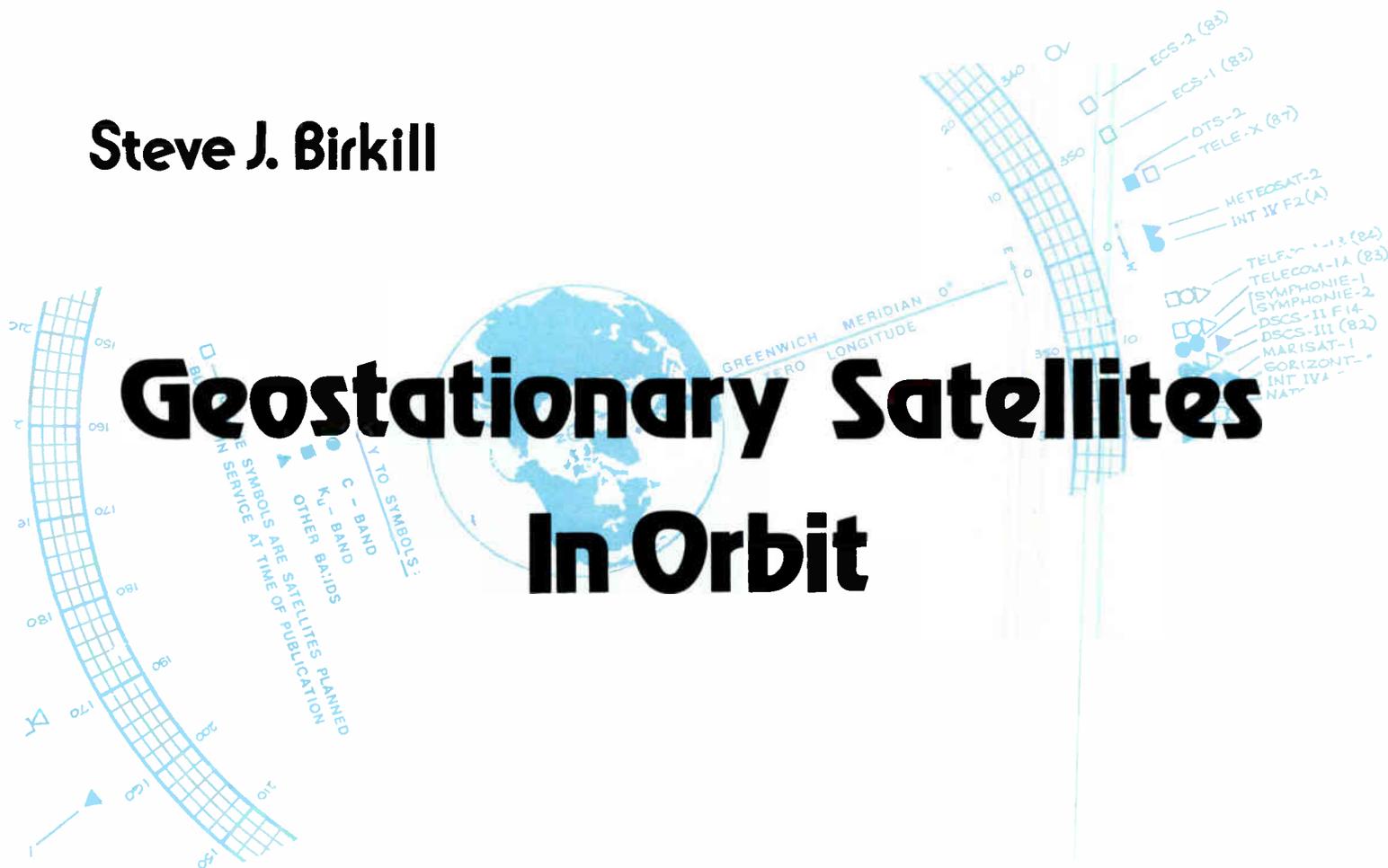


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WorldRadioHistory

Steve J. Birkill



This year's orbital chart appears on page 23 and shows the situation as it stood in September this year. A number of changes have affected the chart over the past twelve months, and a complete revision has been made to clarify the presentation.

Between 60 and 143°W, broadly the domestic arc for North and South America, newcomers include Satcom F4, SBS-2, Westar IV and V, Fleetsatcom 5, and of course Satcom F3R. Shortly to enter service are the first Anik D and C satellites, the third SBS and another RCA Satcom, F5, to be F1's replacement for service to Alaska from 143°W.

Relocations within this arc are Westar I, with Westar II and Anik A-1 having been retired from service. There has been some shuffling of orbital assignments for the proposed South American domestics as plans crystallize for the mid-80s, and the Anik C launch sequence has

been revised. This may in fact change again. I have excluded the slots claimed by DBS applicants this time, pending the outcome of the Regional Administrative Radio Conference (RARC) next June.

In the Intelsat global system, two more Intelsat V craft are now operating, giving a total of four serving primary and reserve slots in the Atlantic and Indian Ocean regions. The Atlantic reserve at 27.5°W has taken on the domestic TV lease services of Argentina, Morocco, Colombia and Peru. Intelsat IVA satellites serve the bulk of operational Atlantic and Indian Ocean locations, after the Intelsat V primaries, and these have remained unchanged over the period. The seven Intelsat IV birds, all remaining serviceable to a greater or lesser extent, have undergone a series of maneuvers to make the best use of their potential. F7 has taken over the Mexican lease service at 53°W, replacing F3 with

its limited north/south stationkeeping (inclination now 1.2 degrees compared to F7's 0.4 degrees) as reported here in September. F3 is now surplus, and drifting slowly eastwards.

It has been rumored that F7 service to Mexico is on hemispheric beam. Don't believe it — the Intelsat IV satellites have only two types of beam pattern: global, at about 22 dBW saturated beam-edge, and steerable east and west spot beams of 4.5 degrees half-power beamwidth, beam-edge EIRP being in the region of 34 dBW as saturation. Each spot beam is accessible to four transponders — for the vast spot these are Intelsat channels 1, 3, 5 and 7, corresponding approximately to Satcom channels 1, 5, 9 and 14. It has not yet been confirmed whether the Mexican services use half or full transponder video, or a combination. Half transponder TV is typically 7 dB lower in EIRP

than saturated full transponder, but we have no reports from Mexico itself and with some uncertainty about boresight aiming, hence footprint levels towards the USA, plus the possibility of these old transponders having lost some of their potency, the few reports I have are still inconclusive.

Hemispheric beams, incidentally, were introduced with the Intelsat IVA series, to enable frequency reuse on eight channels by spatial isolation between east and west hemispheric beams. Intelsat V satellites exploit the same technique but have re-used again with zone beams of left-hand circular polarization on the downlink.

Other Intelsat\IV moves include a shuffling of the Pacific Ocean Region. F4 and F5 have for some months been drifting eastwards, F4 apparently bound for the 1°W inter-region slot to take over from poor old F2 with its 4 degree inclination, and perhaps to provide US Armed Forces service to Europe and the Middle East by 1983. F2 will then be the first Intelsat IV to be declared dead and removed from geostationary orbit by a final burst from its thrusters. F5 it seems is also bound for oblivion, leaving F8 as the Pacific Primary with F1 as its backup. An Intelsat IVA is promised for the Pacific region when handover to the new Intelsat V pair is completed over the Indian Ocean.

On the Russian scene the only significant change has been the activation of the Statsionar-6 slot at 90°E, by relocation of the spare Atlantic Gorizont (4 or 2). Gorizonts are retained at 14°W and 53°E, Radugas at 35°E and 85°E and an Ekran at 99°E. An experimental telecommunications satellite, Kosmos 1366, has recently been placed in geostationary orbit over 80°E, apparently to test hardware for a new satellite series. This may be the long-awaited Luch or Loutch Ku-Band system, or may be something new. I have deleted the unoccupied Statsionar slots (including Loutch, Gals and Volna) from the chart this time as it seems unlikely they will be filled according to the original Soviet plan. They may have been superseded by more advanced



PHOTO 1: Mexican TV via spot-beam lease on Intelsat IV F7 at 53°W. Photo courtesy of Mark Long, The Book Publishing Company.

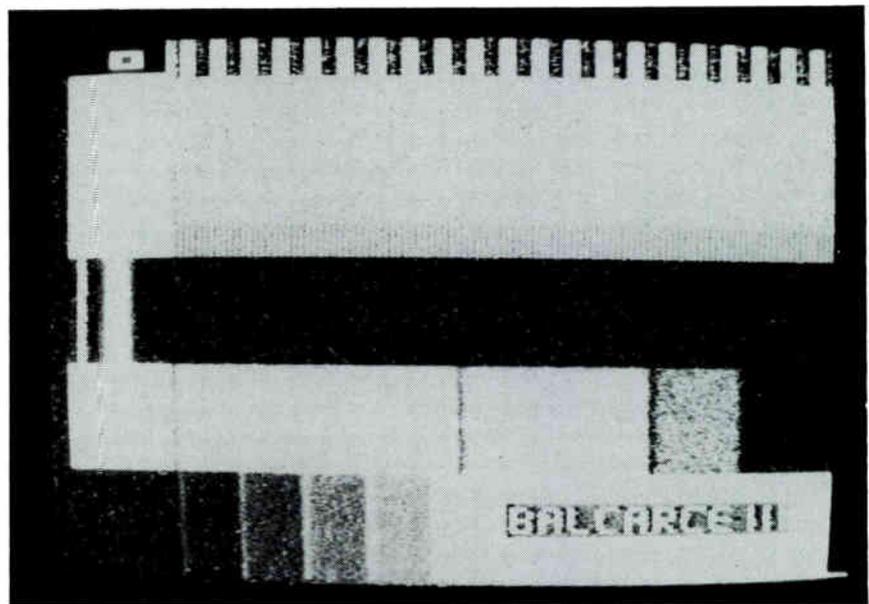
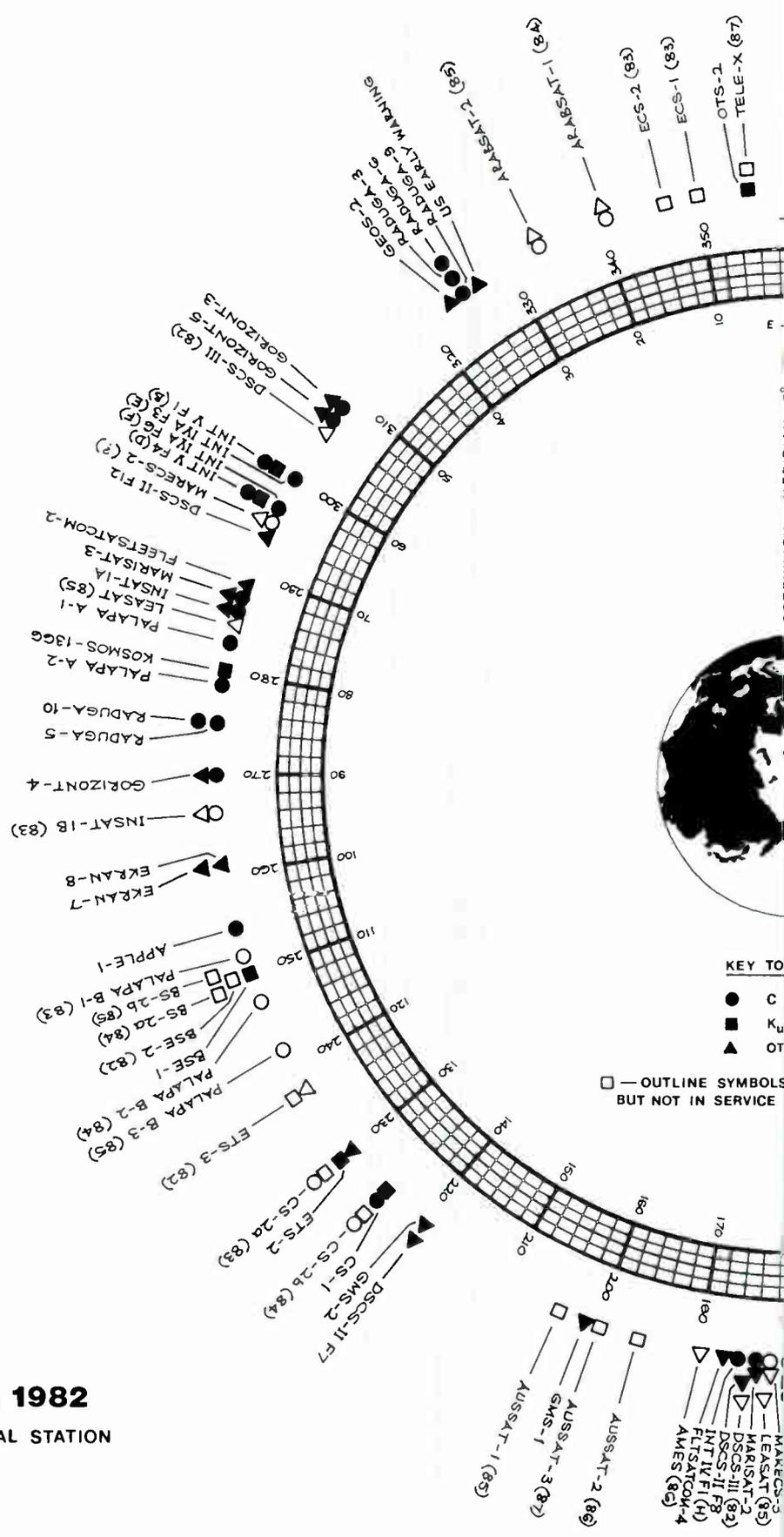


PHOTO 2: Argentine TV via global beam lease on Intelsat V F2 at 27.5°W, received Sheffield, England.

(continued)



G.E.O. SATELLITES, 1982

BY FREQUENCY BAND AND ORBITAL STATION

(Not to scale)

© S J Birkill 1982

systems.

Europe's Orbital Test Satellite has been moved westward to 5°E to make way for ECS-1, the first operational European Communications Satellite, at 10°E. Launch of the latter has already been delayed due to problems with static-induced switching transients on the similar Marecs-1, already in operation over 26°W as part of the Inmarsat mari-

time network. Further delay seems inevitable, and will affect all European programs and others with Ariane reservations, following the failure of the French launch vehicle in September. That event caused the loss of the second Marecs bird, as well as Sirio-2, an Italian satellite with a non-communications payload, designed to use the bits left over from the Sirio-1 Ku-Band pro-

ject of 1977.

In the Asian region the significant newcomer was India's national satellite Insat-1A. Built by Ford Aerospace, the bird was successfully positioned at 74°E but considerable problems were encountered with deployment of the solar array and the C-Band antenna reflector, on which all communications missions depended. As well as a twelve-transponder C-Band domestic communications payload, Insat carries earth imaging and data relay equipment, plus a community DBS package downlinking two television channels in S-Band (2.5 GHz). The antenna eventually released after repeated firings of the spacecraft's attitude control and maneuvering thrusters, and all systems were subsequently declared to be operating satisfactorily. It is thought that the heavy fuel consumption during the efforts to free the antenna might have shortened Insat's life to as little as one year, but as I write it is rumored that total depletion has occurred on a vital vector, resulting in loss of control of the spacecraft. If this proves to be the case then India will be anxious to bring forward the launch date of the Insat-1B bird, presently scheduled for July 1983.

China's STW satellites are excluded as they have now been postponed indefinitely — the People's Republic recently conducted a two-month test involving Intelsat relay of TV programs from Peking to ten remote stations, plus two-way message traffic among the stations. This may lead to a longer term lease of Intelsat Indian Ocean capacity.

Indonesia's overloaded domestic system will increase its capacity by 24 transponders during 1983, when the first Palapa B satellite is launched. This is similar in design to the latest Westars, and will serve the ASEAN (Association of South-East Asian Nations) group.

Three slots have been allocated to the Australian National (Ausat) system, over the western Pacific. The first of these is expected to be activated during 1985, with a multiple beam Hughes satellite equipped for low power fixed-service downlinks and medium power DBS downlinks in the 12 GHz band. Off-



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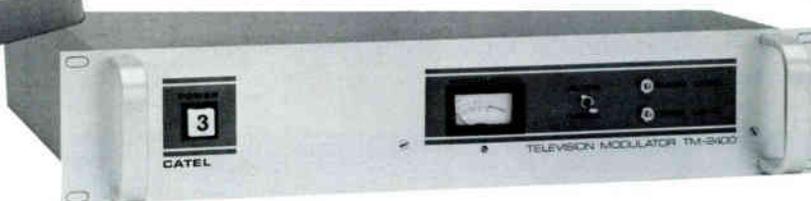
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shore islands, including Papua New Guinea, will be served in addition to the mainland. The Intelsat spot beam (4 GHz) outback service is expected to continue at least until

then.

All these international services, plus European DBS, American 'early entry' or 'interim' DBS, and

worldwide reception possibilities are discussed in detail in my new book, now available from STTI, P.O. Box G, Arcadia, OK 73007, (405) 396-2574.

As the chart reveals, the geosynchronous orbit is densely populated in places, and I have had to 'stack' satellite symbols for clarity. This is not in any way a comment on their orbital characteristics — any satellite whose orbit is near-geostationary must remain some 22,300 miles above the Earth's surface, in (or close to) the equatorial plane. A future article will discuss the effects of orbital inclination. The 'junkyard' is more extensive still, as the earliest geosynchronous satellites were just allowed to drift once their stationkeeping fuel was exhausted, and even now they wander through the geostationary belt under the influences of earth gravity (which is not constant with longitude due to the earth's triaxiality) and the pull of the sun and moon, perturbing the orbit. At this altitude, high above atmospheric drag, orbital lifetimes are measured in millions of years, so the collision hazard posed by a large drifting satellite is significant. In recent years every attempt has been made to 'kick' spent satellites into higher or lower orbits before total depletion of fuel, but there remain numerous slow-drifting hulks up there, including the shells of certain launch vehicle final stages, in particular the Soviet ones which themselves end up in near-geostationary orbit.

So the map of active birds is only part of the total picture. We can reassure ourselves about the probability of a collision by considering the fact that one degree of longitude corresponds to some 750 km (470 miles) separation at geosynchronous altitude, and that a drifting object will in general be a slightly higher or lower orbit than a stationary one (dependent on direction of drift) — overtaking is allowed. An unstabilized spacecraft will most probably have an orbital inclination of one degree or more, reducing collision risk away from the two 'nodes' per day when it crosses the equatorial plane. And at least they all go round in the same direction!

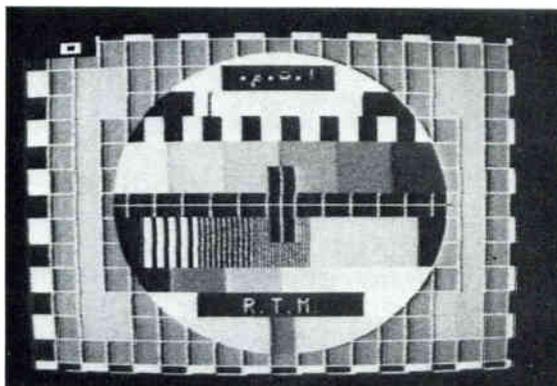


PHOTO 3: Moroccan TV via eastern hemispheric beam lease on Intelsat V F2 at 27.5°W.



PHOTO 4: Saudi Arabia TV via eastern hemispheric beam lease on Intelsat IVA F2 at 21.5°W.



PHOTO 5: British company Satellite Television PLC transmits two hours per evening, with commercials, to European cable TV outlets via the OTS spot beam at 11.64 GHz, using the Oak 'Orion' encryption system in its CCIR PAL variant.



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Be Alert to Equipment Thefts

Again, it has been reported by some CATA members and CATJ readers that theft of cable equipment is continuing to be a problem. In today's inflated economy, thefts of this nature constitute a serious threat to the financial stability of cable systems throughout the country, and a serious approach to avoid these thefts should be instituted by cable operators —**NOW!**

The reports that we have had on stolen equipment include everything from head end equipment to LNA's to installer's equipment. One parking lot was broken into and their trucks were stripped of handtools, drills, pole climbing equipment, ex-

tension cords, ohm meters, mechanic's tools, etc. to the tune of over \$6,000. — just for these usual installers' items.

What can be done about? Assume extra security measures for your facilities and equipment. We have heard of several different methods — siren type alarms on buildings and storage areas, careful marking of equipment, fenced areas having guard dogs during the after-hours . . .

As far as insurance goes, it is imperative that cable operators keep a **current complete itemized inventory with serial number**. It would also be a wise idea to copy invoices for equipment purchases and attach to the inventory, cutting down on your

search time should you experience loss or theft of any equipment. Photographic support of equipment is also a suggested means to include in your equipment inventory. For those pieces of equipment without serial numbers, there are methods that can be used to specifically mark these, and there again, photographs would also be helpful. Unless you have been in a theft or damage situation, you may not realize just how picky some of these items can be, but one thing is sure, you can't have **too** much information should the occasion arise for verification of purchase and value.

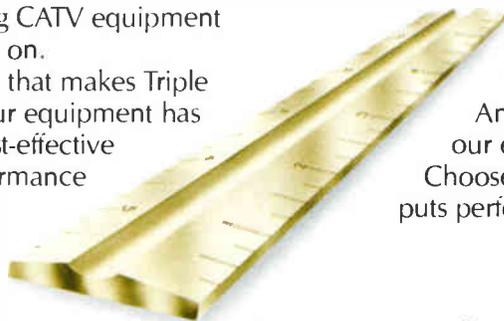
The bottom line on protection of equipment is **TO BE EXTRA SECURITY CONSCIOUS ABOUT ALL OF YOUR FACILITIES AND EQUIPMENT . . . AND KEEP COMPLETE RECORDS.**

Should any of the CATJ readers experience any thefts or come across equipment suspected to be stolen, we would be happy to have that information to print so that we can assist the cable industry in putting a halt to theft losses. □

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The Eastern Show

BIGGER

The Eastern Cable Television Trade Show and Convention just keeps growing and growing. According to Convention and Show Management Company, Inc. of Atlanta, the organization that handles the Eastern Show for the Southern Cable Television Association, the total attendance was between 6200 and 6300. This is a considerable increase from the 3800 attendees in 1981.

The show center was at the Georgia World Conference Center where a record 269 exhibitors were listed as displaying their wares in the 246,000 square foot exhibit hall. Besides the exhibit hall where SCTA members and other cable operators could see the latest and best in cable hardware and programming, there were nine management and eleven technical sessions scheduled to keep them informed and up-to-date on what is happening in both of these areas.

Tom Wheeler, President of the NCTA, officiated at the official ribbon cutting opening ceremony on September 9th. "I salute the work of the Southern Cable Association which has taken this trade show from an idea to a great reality," he said. Mr. Wheeler also urged the cable operators to travel to Washington on September 14th to show strong support to their legislators for Senator Goldwater's Cable Deregulation Bill, S.2172.

The Management Sessions saw CATA's Executive Director, Steve Effros, moderating a panel on "Competitive Services", where the panelists represented a wide variety of businesses involved in MDS, SMATV, DBS, STV, as well as electronic interactive services that AT&T may offer. Regulatory imbalance between cable and its competitors is of primary concern to cable operators who feel they are be-

ing unfairly hampered in this area. Steve told the group that if cable operators are doing anything other than rebroadcasting television signals, AT&T is going to be a competitor . . . **anything** being the information services industry. The real competition to cable would come from satellite master antenna television systems.

John Raines, representative for the national trade group for SMATV ops, disagreed with Steve's opinion, stating that SMATV was trying to make its own place within the industry, and therefore would help wire the country!

Other management sessions included "Direct Selling" where marketing support and direct sales make a remarketing campaign successful with training programs for sales reps, and "Positioning Cable in the Advertising Marketplace" by selling the advertiser on the concept that cable television offers everything that magazines, radio, newspapers, and television do in one neat package. "Program Guide Alternatives", "Federal/State Legislation", "Affiliate Advertising & Co-Op Programs for Basic Services", and "Packaging vs. Tiering" were the others. In "Packaging vs. Tiering", Jerry Maglio, Daniels and Associates Executive Vice President of Programming and Marketing, urged operators to return to the basic package ideas for cable service. He accused operators of "trying to take ten dollar bites out of the consumer apple", where packaging program tiers at discount rates would be more palatable and attractive to the subscribers resulting in increased penetration and higher revenues. The panel agreed that package tiering must be tailored to the individual community.

On the technical side, data technology was the main topic with pre-

sentation on addressability, business data communications, security systems, and status monitoring. Other areas covered included "Broadband RF Systems 450MHZ", "FCC/FAA Update", "Feed Forward Amplifiers", "Automatic Testing", and "SCTE Update," and "Fiber Optics".

Prior to the official opening of the Eastern, several activities drew early arrivals. CTAM's Track Day

Haimowitz Ha



An attractive and extensive exhibit floor

THAN EVER

focused on the non-subscriber — those who refuse to pay for cable television. Also, Paul Kagan's seminar on Cable TV Security addressed the problems that must be solved in home security systems if this area of the industries potentially profitable future is to survive. Prominent among the problem areas was the near 98 percent false alarm rate which must be reduced to acceptable levels to keep police, fire,

and emergency agencies willing to respond to calls. Other problem areas included the high cost of installation making marketing of security systems a difficult task, and the continuing battle over whether cable systems should be given common carrier status.

On the lighter side, attendees flocked to the numerous hospitality suites located in the convention hotels. Charter bus transportation was provided by SCTS between the World Congress Center, the Omni, the Peachtree Plaza, and the Atlanta Hilton to make it easy for everyone to get from place to place. Home Box Office held a Carnival on Thursday night offering side-show games of Ring the Bear, Ball Roll, and Pitch Ball for stuffed animals, hats, and other prizes. Merlin the Magician and a youthful rock band provided entertainment along with sumptuous snacks and libations.

Pulitzer Prize winning columnist Art Buckwald was the keynote speaker at the annual SCTA luncheon on September 10th. The event that was **Standing Room Only** was the annual banquet that featured the ageless king of comedy, Bob Hope. Seating for this event was in short supply by early Thursday morning and the fabulous Mr. Hope proved to be as great as the audiences expectations. Bob is universal toward the targets of his humor, picking on political figures such as presidents Carter, Ford, and Reagan. There is no question that the audience was thrilled by Mr. Hope's dialogue and songs as he received several standing ovations. The finale brought about the presentation of a birthday cake to Home Box Office, co-sponsors with SCTA for Mr. Hope's appearance, celebrating their 10th birthday. When asked to help blow out the candles Bob quipped, "For the same amount of money?"

In general, the Eastern Show can only be described as **BIG**, almost on a par with the Western. The usual comments were overheard, "not enough operators", "too much exhibit time," "more of a trade show than convention", "shouldn't have exhibits open at the same time as meetings". However, many of the exhibitors claimed to have done well, particularly those with head-end equipment. Some of the exhibits such as the Air Force Recruiting Booth and the one that was selling health and exercise equipment, seemed to be strangely out of place at a cable show. As for the complaints — well, you get them at every convention. Perhaps the exhibit hours were a bit too long — seven hours at a crack is tough on those who only have small displays with one or two people. Attendance seemed to be good on Thursday and Friday, with a lot more one-day badges in evidence than prior years, and the drawings for vacation trips for two to Little Dix Bay, Jamaica, and Tahiti surely helped with attendance.

The announcement that Group W Satellite Communications and Walt Disney Productions had dissolved their partnership created a stir among cable operators who have plans to carry the Disney Channel, but assurances were given that the launch would go as scheduled with Group W in charge of sales and marketing. It is fortunate, perhaps, that no announcement was made of the collapse of CBS's ARTS channel at the show, sure to be a cause of concern with those operators who provide this cultural programming for a fair sized segment of their subscribers.

All-in-all, it was an impressive convention, and if it continues to grow next year as it did this year, look out National — here comes Eastern. □

imowitz Haim



Notice that the title is on a subject different than what we projected in last month's article???? While our plan was to illustrate a **bandsplitter** in this month's presentation, we had a request for a simple design for the **shunt trap** and the appeal indicated there was a real need for that information; hence, we are deviating from the game plan, but feel this shunt trap instruction will be equally helpful and useful to you in your lab. Look for the bandsplitter information next month!

General Purpose Shunt Trap

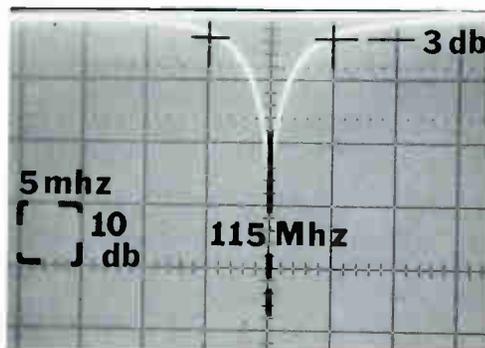
CABLE TECH'S

Figure 1

Design of 75 ohm Shunt Traps

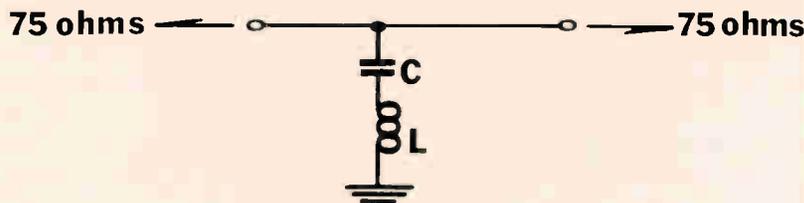
F_0 = Notch Frequency (MHz)
 A_0 = Notch Loss (db)
 BW = 3 db Bandwidth (MHz)
 T = No. of coil turns

- (a) $L = 6/BW(\text{MHz}) = \mu\text{h}$
- (b) $C = (159.15/F_0)^2 / (BW/6)$
- (c) $BW(\text{final}) = 6C(F_0/159.15)^2$
- (d) $A_0 \cong 20 \log_{10}[(BW \times Q_L)/F_0]$
- (e) $Q_L \cong 280(L/T) \sqrt{F_0}$



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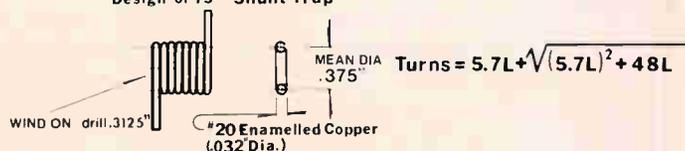


Applications: The simple shunt trap fills the bill when you need a quickie carrier suppressor with a 3 db Bandwidth of about 6 MHz or more. It can be put together with standard ceramic disk capacitors and a hand wound coil.



Figure 3 Picture of Completed Shunt Trap

Figure 2
 Design of 75 ohm Shunt Trap





COOKBOOK

by: Glyn Bostick
Jean Dickinson
Microwave Filter Company, Inc.

Design:

- (1.) Choose F_0 (Mhz) - center frequency.
- (2.) Estimate C from equation (b) then finalize C by choosing a standard value from the table (or 2 standard values in parallel).
- (3.) Finalize BW by using equation (C).
- (4.) Compute inductance value using equation (a) and calculate turns from Figure 2.

Alignment: Sweep insertion loss and stretch the coil to place the notch at F_0 . If the coil wants to be squeezed and you can't make F_0 add $\frac{1}{2}$ a turn.

Design Example: We want to notch out an undesired carrier at 115 MHz (F_0). Our nearest frequency in service is 108 MHz (FM) so our 3 db Band width must be less than 14 Mhz. Let's make it 10 MHz for safety.

- (1.) $F_0 = 115$ MHz and BW is 10 MHz.
- (2.) From equation (b) $C = 3.192$ pfd approximately. We chose a standard value of 3.3 pfd from the table.
- (3.) Final BW from equation (c) is 10.33 MHz.
- (4.) From equation (a) $L = .581$ uh. From figure 2 calculated $T = 9.5$.

We found we had to stretch the coil too much for comfort and progressively reduced turns and ended up with $T = 8$.

Figure 1 shows a spectrum sweep of the final trap. Note that notch depth is 26.5 db. Per equation (e) and (d) of figure 1 we would have expected 25.8 db.

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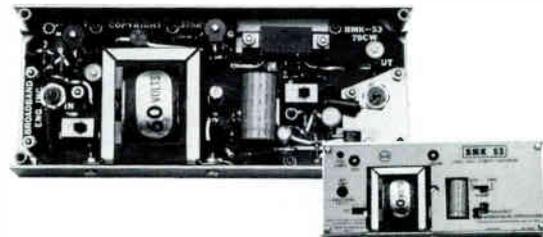
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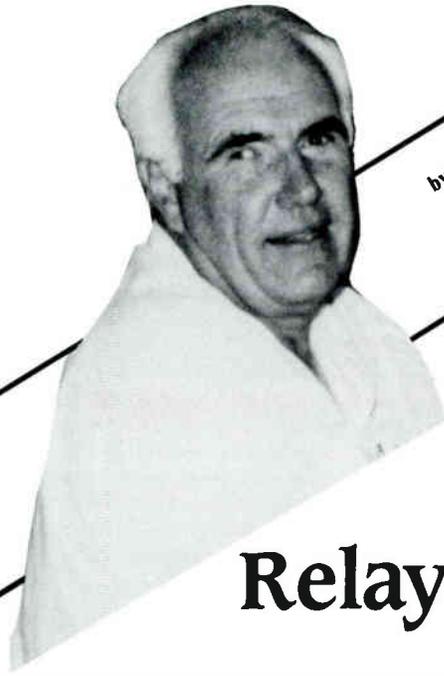
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Amateur Radio Relay League Convention Discusses Signal Leakage

The Western Region of the A.R.R.L. held its convention in Santa Cruz, California on October 9, 1982. One of the well attended meetings was on **interference to amateurs caused by signal leakage of CATV systems**. I had the honor of being asked to be on the panel discussion for this session.

The moderator was Robert O. Smith NA6T from Fort Bragg, California. The panel members were Christopher Imlay, Legal Counsel for the A.R.R.L.; George Sears, Engineering Director of Gill Cable, San Jose, California; Pete Petrovich, Manager of Engineering for Viacom; Joe Van Loan, Vice President in charge of Engineering, Viacom Cable, and myself, representing CATA and my own systems.

According to Mr. Smith, he had been having trouble with his local cable company on a personal level for over two and a half years and on a League Level for almost two years experiencing all kinds of problems and confrontations, including "threats over the back fence."

It is just such full speed ahead, to

heck with the natives, attitude that has precipitated the current situation with the A.R.R.L. After all, they were **there first** and have the **legal right** to use those frequencies **without interference from leaky cable systems and hassles from disgruntled cable subscribers that are bothered by signal ingress from ham's transmitters**.

Most of the meeting was in a conciliatory mood with those of us on the panel all agreeing that we wanted our industry to police itself with the FCC as a backup for those recalcitrant operators that did not comply with the FCC standards. We all agreed that, the allowable leakage limits aside, **any amount that caused interruptions of communications** by the Hams was **too much** and must be remedied by one method or another. George Sears was applauded when he said that Gill Cable had voluntarily removed signals from channels E and K. He said that they keep the system leakage within FCC limits, but that accidents, squirrels, and weather inevitably caused problems, and, since they have extra channel capacity at this time, they

elected not to use these two channels.

It was pointed out that, with all the must carry channels and extra services, the cable industry could not afford to lose several channels as long as the signals could be contained inside the cable. It was also agreed by the Hams that an occasional squelch break on their receivers did not constitute an interruption in communications.

All the panelists agreed that the way for the Ham to approach an interference problem was first to contact the local cable manager. If he did not get satisfaction, then he should contact the interference clearing house at the NCTA. If he did not have the information on this, he should contact the League and they would pass the information on. We all agreed that the appropriate association would bring peer pressure to bear on a noncooperative member. I pointed out that CATA represented many of the smaller operators, some of whom may not have the expertise or the necessary equipment to constantly monitor their systems. As agreed at

the last board meeting, CATA, through the engineering office, would offer technical assistance to CATA members requesting help. The panelists all agreed that if non-cooperative operators did not respond to peer pressure, we would gladly pass the information on to the FCC with the recommendation that they "pull the plug."

The only sour note in the whole discussion occurred near the end of the meeting. A representative of a major MSO (who shall remain nameless at this time) had written objections to the A.R.R.L.'s filings with the FCC. When these comments were read by Mr. Imlay, there were boo's from both the audience and the panel. This person stated that the amateurs had two choices if they experienced interference from the cable. First, since their antennas were very directional, all they had to do was point them in another direction to eliminate the problem. He did not suggest how to communicate with the desired person this way. I guess he figures that Hams should be desirous of communicating only in directions convenient to the cable company. Second, since the Ham operator's equipment is tuneable, he suggested they could move to another frequency. He apparently doesn't care that the Ham frequencies are even more congested than the TV bands.

With "FRIENDS" like this running around loose, the cable industry doesn't need any enemies.

With this the meeting adjourned.

If an amateur radio operator complains to you about interference from your cable, please **do not ignore him or, worse yet, tell him to "get lost."** He will be only following the advice of his association about clearing up a problem. He may even be doing you a favor, and you will correct a problem before it becomes serious.

If the two of you, working together, cannot locate the source, help is as near as your phone. If the interference turns out to be other than cable caused, you will have made a good friend.

Editor's Note: as Mr. Sheldon expressed, CATA members are offered the opportunity to seek help in

this regard from the Engineering Office. For the CATJ readers who are non-CATA members, this one item might offer the merit of CATA membership and return those dues dollars. If you'd like membership information, contact the Oklahoma City office for a brochure. □



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ATTN: Board of Directors

Gentlemen:

I recently attended the advanced training seminar in Phoenix, Arizona and would like to acknowledge the entire staff of CATA, especially Ralph and Patti Haimowitz, for a job well done. It was obvious that a tremendous amount of effort, planning and devotion went into the presentation of the subjects covered. Cable television has gone from pressure taps to bandwidth beyond belief in a very short period of time, and more often than not, the technicians have failed to upgrade their skills and education to keep pace with the advances in technology. Seminars of the type given by CATA serve to bridge the large gap between the advancements in technology and the people who are charged with its implementation and operation.

At first glance the cost of attending such a school might explain why out of all the cable operators in Arizona, only two, maybe three, were in attendance. If the cost of educating our technicians is too much to afford, consider the cost of their ignorance in light of F.C.C.'s stepped up monitoring of cable systems in the areas of technical performance and signal leakage. The technicians won't be paying the fines!

It is my hope and suggestion that this seminar not only continue, but expand to cover other topics of a technical nature i.e., (Head end practices, Digital formats relating to cable) just to name a few.

Once again I want to thank the entire staff of CATA for providing an excellent learning experience in an area that for too long has gone without any continuing education and yet is so important for the continued growth of the cable television industry.

Sincerely,
Michael Castoro
Systems Engineer
MEHL CABLE SYSTEMS, INC.

Attention: Ms. Celeste Rule,
Managing Editor

Dear Celeste,

What a pleasant surprise I received when I turned to page #6 in the August, 1982 issue of CATJ!! "A Tribute to Kerwin McMahon and Thirty Years in Cable TV", was really something that I never expected but warmly accept in all humbleness.

Thirty Years in Cable TV seems like only yesterday's beginning of our industry. It was a "yester-year" when the industry was comprised of approximately 90% independent Cable T.V. Operators who truly pioneered our industry on "shoe-string" construction budgets. Technology was at its infancy and the future was a conglomerate of dreams of things to come. How those dreams have materialized!

CATA and CATJ hold a very special place of close relationship with both myself and RMS Electronics, Inc. It is your Association that is the focal point of the Independent Cable TV Operator and his/her identity within the industry. Our company (RMS) originated from a small beginning and a great deal of our success was the result of a friendly reception and encourage-

ment by the Independent Cable TV Operators. They lived up to their Association's goal "to assist in the perpetuation of independent business operations in the United States". For their assistance we will always be most grateful.

I extend to you and all the members of CATA, my sincere thanks for allowing me to be part of your industry for the past thirty years. The friendships that have indured, far exceed any measurements of monetary or professional success I may have accomplished. These friendships are the "Pot-O-Gold" that we all strive to find. How fortunate I have been!!

Very truly yours,
RMS ELECTRONICS, INC.
Kerwin F. McMahon
Senior Vice President

Dear CATJ:

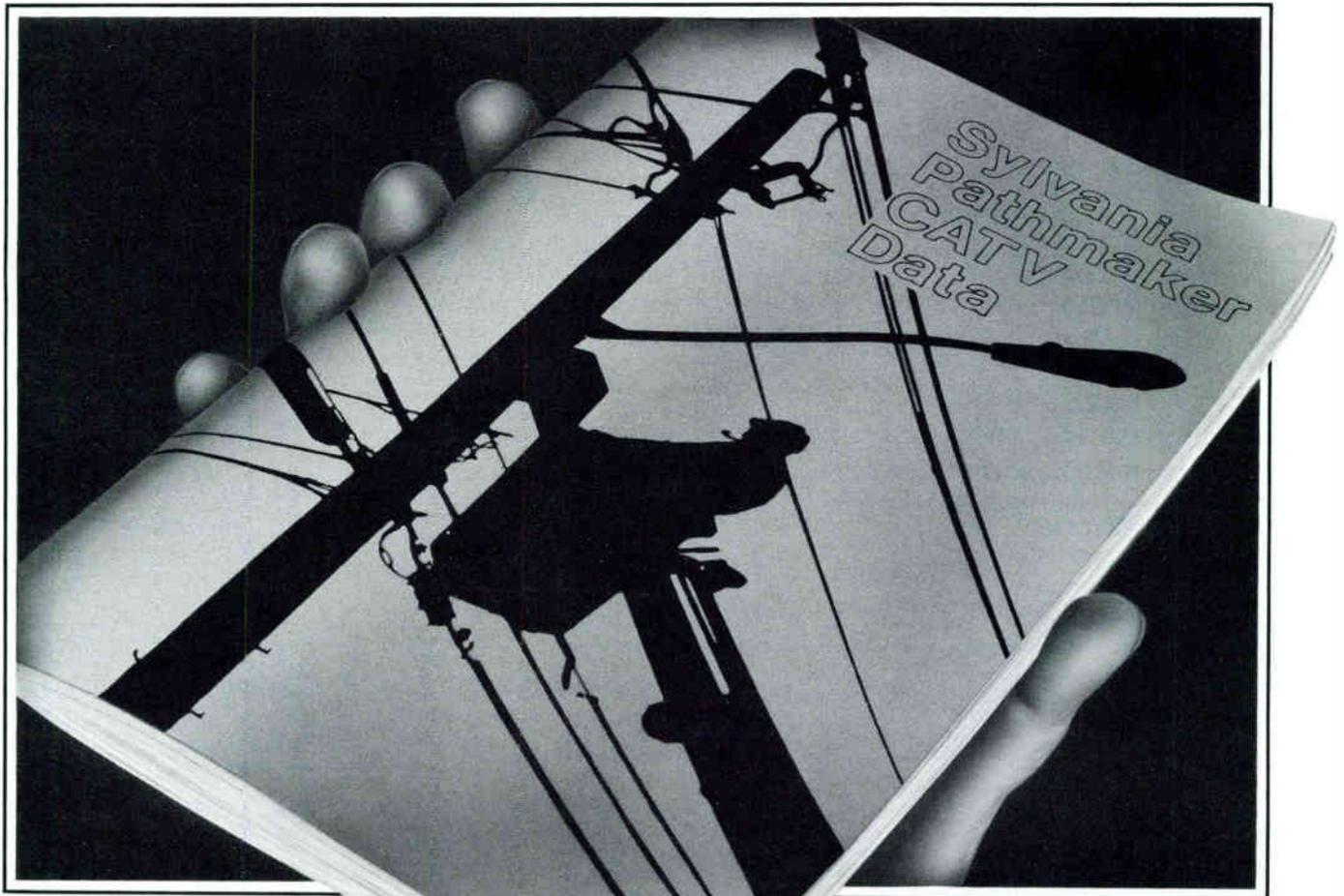
I recently attended the advanced technical training seminar in Phoenix. I wish to compliment CATA and Mr. Haimowitz for the quality of this seminar.

Like many of the cable personnel working in the industry, I started as an installer and worked up through the ranks. Many times the only resource for questions I had was the knowledge of superiors. The companies which I have worked for had very little, if any, training programs. These were usually taught by the senior tech or engineer whose past experience was the primary base for the training session. The only trouble was you learned bad information as well as good.

Mr. Haimowitz in his session did not want us to take his word for anything, he would prove any point he made. This proved very helpful,

(continued)

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especially to one who was "gun shy".

I believe there is a great need for these type of seminars and again wish to thank CATA and Mr. Haimowitz for presenting them.

Sincerely,
Eugene Koppen
Manager
Copper Basin Cable
Kearny, Arizona

Dear Celeste.

A few days ago I had a pleasant chat with Herb Fisher, a long time acquaintance. Herb is an old time television systems man and has been in the MATV business for years. He is doing some SMATV work also. He is one of the best technicians around and is a pretty sharp guy who generally knows what he is talking about. He has some interesting thoughts on cable TV and I wanted to pass them on to my fellow cable operators. Even if you don't agree with him, I think what he had to say is worth our thinking about.

In summation, he said that cable TV in major markets has serious problems and will be as dead as the Dodo within ten years. He cites the coming of DBS, multichannel MDS, low power drop ins, plus high quality MATV and SMATV for apartments and condominiums as being major competition for cable television. However, the main problems are being caused by the cable operators themselves.

First, they are trying to make subscribers pay for dozens of channels they don't want to watch, thereby alienating a large percentage of potential subscribers. (Cities requiring 54 to 108 and more channels, please take note; but that is another story for another day.) However, he says, "The main problem is the quality of the pictures being supplied." In his words, they are "plain crap." He said, "These people with large screen TVs and recorders can't even use some of the pictures off the cable." Unfortunately he is right. I have viewed pictures on several of the major

systems in the San Francisco Bay Area and some of them are pretty awful. For these reasons, Herb said, the competing services will win out.

Of course he is talking about the major market CATV, but maybe those in smaller markets should take note. Maybe we should do better marketing (marketing is determining what and under what conditions people will buy; selling is getting them to buy it when it is available) and see if our subscribers really want all these extra channels we are considering. If not, maybe we would do better spending available funds to replace a few pieces of headend gear or update a few line amps, or whatever is needed to improve picture quality. **It can never be too good.**

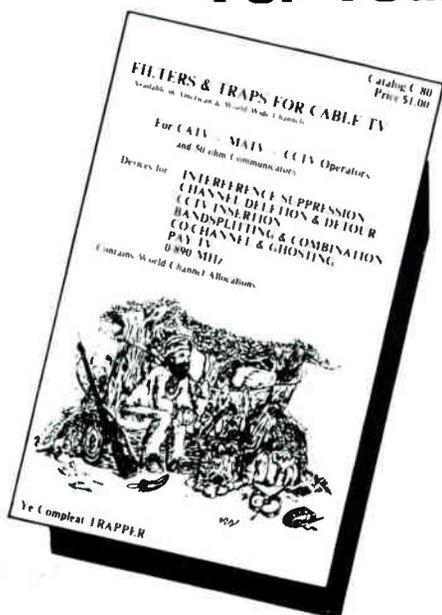
Sincerely,
Wayne Sheldon

Editor's Note:

Very interesting thoughts indeed! What comments do you readers have? □

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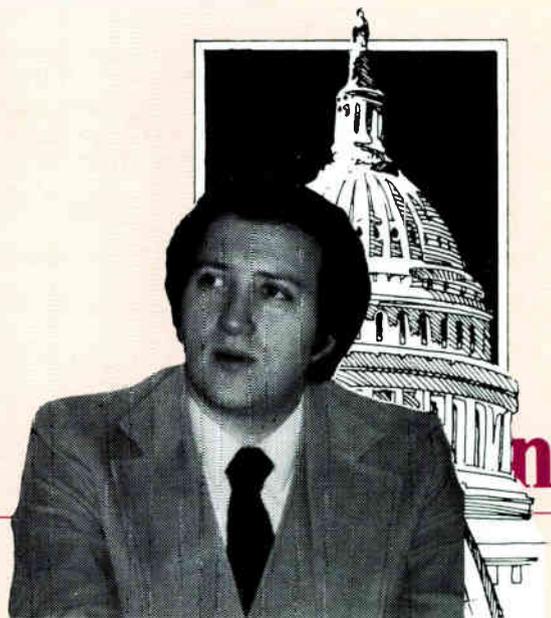
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te Washington Update



Steve Effros
Executive Director, CATA

THE COPYRIGHT FIGHT MAY FINALLY BE OVER!!!

Yes, it's true. Just about everyone has now agreed on a new copyright law and there is even a possibility that it will be adopted by Congress this year! We know this may all sound strange, but if you will stick with us through this explanation we think you will agree that we may finally be able to put the entire mess behind us and get on with the business of operating cable television systems!

Here is what has happened; as you know, the "Copyright Compromise" (or "Son of Compromise, or "Grandson of Compromise"), better known as HR 5949 was stuck in the House Telecommunications Subcommittee all summer long. The sticking point was primarily the "must carry" rules, as they related to the religious broadcasters. You will remember that through a lot of yelling and screaming we got some significant relaxations of the must carry rules in the proposed legislation. The main point was that if a television

station did not get at least a 1 percent viewing share of non cable homes, or a 2 percent share of cable homes in the area the station was supposed to be serving, then the cable system would not have to carry that station. This primarily affects the larger city systems that are forced to carry all sorts of "specialty stations". Two groups were not particularly happy; the public broadcasting stations, and the religious broadcasters.

As is unfortunately typical in cases like this, one of the two groups got its grievances corrected by Cong. Kastenmeier before the bill ever got through the Judiciary Committee. The public broadcasters did their homework and came up with a proposal that results in at least two, and sometimes three "local" educational stations being guaranteed of carriage, regardless of viewership, so long as they do not totally duplicate programs. The religious broadcasters.

(continued)

on the other hand, did not get their act together until the bill was through most of the deliberative process — then they relied on religious pressure tactics to demand that they be satisfied or they would kill the whole bill. That is where things stood for most of the summer. In essence, the religious broadcasters were demanding “must carry” status regardless of how many people actually wanted to watch their programming. They were not willing to give up anything for that right.

Finally, through the efforts of the staff of Tim Wirth’s subcommittee, a compromise was fashioned in the past few weeks. It required the carriage of the religious broadcasters (there are about 23 stations around the country, primarily in major markets, that fit in that category) but gave a major concession to the cable industry on duplicating network signals in return. The broadcasters who were a party to the negotiations agreed that cable systems with less than 36 channel capacity should not have to carry any more than two duplicating network signals of the same network. Further, they agreed that those systems should not be required to carry duplicating network signals that were more than 55 miles from the system. These are two major concessions. And that is not all. If a system is required to carry a “non commercial broadcaster (read religious) he then has the

right to delete a duplicating network signal for each religious broadcaster he carries. Not bad.

The benefits for cable, however, did not stop there. Another provision was added that said that if a cable operator finds and corrects filing errors at the Copyright Office he cannot then be sued for those erroneous filings. This solves the problem that was first brought to light in a law suit filed by the MPAA against a cable operator in the Washington, D.C. area. The operator had made some errors, had corrected them, and one day later was sued. Unfortunately this legislation will not help that particular operator — he has just been forced to settle the case out of court and it is costing him more than \$60,000.00! So once again we gained a significant benefit in the process of this latest bargaining.

Of course the main reason CATA finally decided to go along with this proposed legislation in the first place was that it also contains a provision that assures the continued ability of Eastern Microwave, United Video and Southern Satellite Systems to deliver distant independent television signals via satellite. That ability was severely threatened by the decision in the “EMI” case which said that the carriers should be liable for copyright infringement. That case is still on ap-



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peal, however it did not seem prudent to us to leave that decision up to the vagaries of the Court when we had a chance to clear up the law itself. Needless to say, that provision remained in the final compromise.

One provision that was added that did not benefit the cable operators has to do with non-duplication protection in the smaller markets. This whole thing was pushed by Cong. Tom Tauke (R-Iowa) in order to protect a local network station. The amendment says that in any television market with 35,000 or fewer homes, the cable operator MAY (not must) provide nonduplication protection against any other network stations that are being imported that do not have nonduplication requirements now. Should the operator not give the protection that station can go to the FCC and try to get it required, but they must make an economic showing of why. That is a very tough thing to do. In practical effect, the amendment applies to about 21 of the smaller television markets. Once the bill is finally passed we will publish lists of not only those markets but also the television stations that are considered "non-entertainment" channels under the rules. As with the FCC's 1972 rules, the list of markets is frozen and cannot be added to.

Having gone through all that, you can see that there was a lot of give-and-take going on. There were several other points that were negotiated, and, of course the basic agreement which includes the partial reinstatement of the syndicated exclusivity rules in return for a guaranteed continuation of the compulsory license. In sum, the bill is now so complicated that it takes a lawyer to figure it out (thus the sub-name; lawyers relief act of 1982), and it gives something to almost everyone — that's what compromise is all about, and that's why it has a good chance of being adopted by Congress.

As usual, there is always a glitch. In this case it is the sports interests. They are still trying to get a more comprehensive sports blackout on cable. The present bill doesn't give it to them — it simply codifies the present FCC sports blackout rules, and adds a little for the NCAA (which now has its own problems). In this case the sports folks have little chance of winning. They tried in the Copyright Subcommittee and couldn't get the votes. They tried again in the full Judiciary Committee, and again in the Communications Subcommittees and the full Commerce Committee. The argument in favor of protecting the poor sports owners simply doesn't go very far. But one thing you have to admit: they are persistent! At this point they have one firm rule in their favor; it is easier to kill a bill than to get one passed. And that is about the only threat they have left. It is all but certain that the bill would be killed if the sports folks got their amendment added.

What they have been able to do is stall the bill in the Senate. Of course the bill was adopted in the

House with just a little over a week to go in the Congressional session (both Houses planned to adjourn on Oct. 1 for the elections). That means that there would have had to be some very fancy footwork to get the bill through the Senate in that time. This is particularly so since there is no companion Copyright Bill on the Senate side. Without going into all the details of the parliamentary maneuvers involved, suffice it to say that everyone would have had to agree to the plan, and just one Senator could stop it. Well, the sports folks were able to get one Senator to stop it — Sen. Kasten of Wisconsin. But even he is apparently not interested in killing the bill, only in paying off a sports IOU. So the fact that the bill will probably have to go through committee instead of directly to the floor does not doom it. It simply means we will have to wait for the already announced "lame duck" session before we can press forward with the bill. At this point it looks good. We do not believe the sports folks will be any more successful in the Senate forcing their amendments on the bill than they were in the House. The key at this point is for all of us to let our Senators know that we want the Cable Copyright bill to be adopted WITHOUT CHANGE! Any changes now would doom the bill since once the amendment game starts, it never ends. So please, contact your Senators while they are home for the elections — tell them that you now support the Copyright bill. It may not be great — and sure, we would all love it if we could get rid of copyright completely. But that is simply not politically realistic. This is about the best we can get, and we may as well take it rather than engage in the whole war again next year over whether the compulsory license should be eliminated or not.

One final word on all of this. CATA has long maintained that one of our major problems with the copyright bill was that it dealt with the "must carry" rules. We said then, and we still believe that those rules are illegal and that they would be thrown out by the Courts. They are a taking of our property without compensation. They are a violation of our First Amendment rights. We firmly believe they would be declared null and void. In a speech to the Florida Cable Television Association, CATA's Executive Director, Steve Effros announced several months ago that we were considering filing just such a suit if the copyright bill did not pass. Just recently Tom Wheeler of the NCTA said the same thing on behalf of his association. We still believe the Must Carry rules are wrong. We are also realistic, however. If we have to take such a case, and assuming we win, there would be little question that those who depend on the Must Carry rules would be in Congress seeking and getting relief almost instantly. That relief would either take the form of legislated "must carry" rules, or an elimination of the com-

(continued)

pulsory license. In the long run, we are all now better off getting the present legislation adopted.

COPYRIGHT ROYALTY TRIBUNAL ABOUT TO ACT

Just because we may be done with copyright legislation for a while (assuming we get the bill adopted), do you think that means we won't have to hassle with copyright? Of course we will! As we have warned you now for close to two years, the copyright law, both old and new, say the CRT can adjust the rates for any new signals that were added by cable systems because the FCC eliminated its distant signal and syndicated exclusivity rules. The Tribunal has been holding hearings for the past several months on just how much of an increase there should be. There is little question that an increase will be voted — the only question is how much. In final arguments the MPAA and friends asked for 5% of gross subscriber revenue for each additional signal! That's incredible! We do not think that will be the outcome, particularly since the major proponent of increasing the rates on the Tribunal has just resigned. We will have to wait and see how much those signals are now going to cost us. The decision should come down soon, and then it will probably be appealed by someone!

WHAT IF

There is never an end to the speculation about what would have happened if this or that had taken place, regarding regulations or legislation instead of what actually took place. For instance, what if the EMI case had not happened? It is safe to say that CATA would not have agreed to the compromise legislation. We finally agreed because there appears to be a severe threat that satellite-distributed independent programming would be forced off the satellite due to court decisions. Now we acknowledge that we think those court decisions are wrong, and will be corrected on appeal, but should we take that risk? We decided not to, and to go along with the compromise so long as it protected the signals that we know are of paramount importance to CATA members.

Here's another one: What if the cable industry had actually done what CATA urged close to a year ago — that is, organize our subscribers and use the incredibly potent political tool we have? As you all know, we called on the industry to do just that. Very few operators indicated a willingness to take that step — so it was put on the "back burner" as a strategy that could be used, but only if the industry was willing to actually foot the bill to do the organizing. Well, now we can get some idea of what might have happened IF . . . It seems there is a cable operator up in Massachusetts with about 30,000 subscribers. He imports five distant independent television stations and he used to have to comply with the syndicated exclusivity rules, so he knows all about them, and

all about the problems they cause. He decided to do something about the fact that H.R. 5949 was going to a quick vote in the Senate. He blacked out his independent programming and put a message on the screen warning his subscribers that that is what they will see if the bill (which keeps the same number in the Senate) is adopted. He urged all his viewers to contact their Senators! Suffice it to say they did. Senator Kennedy, who is on the Judiciary Committee, which along with the Commerce Committee will be considering the bill in the lame duck session, is now calling for hearings! Now that's power from the people! What if all operators had heeded CATA's call last year?

CRT RATE ADJUSTMENT FOR INFLATION SUSTAINED

With only one change, (in our favor) because of a calculation error, the CRT's decision of last year on inflation adjustments has now been sustained by the Courts. That means that the higher figures for the three payment categories will now officially be in effect. It will be interesting to see how we all straighten that filing mess out! One thing is for sure — be very careful about filing your returns, particularly if you are in the highest category (when DSE's count). The Motion Picture Association is starting an aggressive campaign against the middle and larger sized operators. The law suits can be very expensive!

S 2172 — FRANCHISE RENEWALS — SOME SERIOUS QUESTIONS

The press has been full of reports about the all-out war that has been waged on Capitol Hill between the cable industry and the National League of Cities over S. 2172. Things got so hectic that at one point the NCTA even sponsored a "rally" on the steps of the Capitol with cable operators holding signs showing their support for S. 2172. The whole thing got a little out of hand. The National League was sending material to its members that was not the model of accuracy regarding the provisions of the bill, and the NCTA was taking such a hard line that for a time the two sides were not even willing to sit down in the same room!

Why all the heat? Well, the main reason is that we seem to be a genuine impasse over what to do about the franchise and relicense wars. The proposed legislation, of course, would have solved the problem from the cable operator's point of view, but it was so broadly written that the cities saw a total elimination of their powers under the bill. As it turns out, and as we said when all this started, S. 2172 had very little chance of even getting through the Senate this session, let alone the House. Yes, there is still one parliamentary slight of hand that could get it through both Houses in the lame duck session, but that is unlikely.

The truth is that both sides have enough power, as usual, to stop legislation, and neither has

enough power to get legislation adopted without help. So here we are, with a war that nobody wants over a bill that nobody thinks will be adopted as is! Why?

We all have our own strategies for doing things on Capitol Hill. CATA has always taken the position that it is silly to fight a war if we can get everyone to reach an agreement over dealing with the principal problems. So, with that in mind, CATA's Executive Director, Steve Effros, sat down with the Chief lobbyist for the National League of Cities several weeks ago to see if some accommodation could be reached. He walked away from the meeting encouraged enough to seek more talks. Now the NCTA has announced that it is willing to talk too. If we can get all the parties to sit down and really deal with the problems then maybe we can get somewhere.

They are not easy problems. From the cable operator's point of view the problem is well known — the cable operator who has spent 15 or more years building a system is now faced with being forced out of business because some other company simply promises too much. The city has no way of knowing if those promises will become realities, but they sure do look good on paper! Then there is always the "mayor's brother-in-law" problem. We don't need to explain that one any farther. From the city side, they look, for instance, at the "renewal expectancy" provision of S. 2172 and they say Hey, what about the operator who has provided minimal service, who has a poor reputation in the community, but since he has been operating for the past 15 years on a one-page permit would technically qualify for a guaranteed renewal under the Goldwater proposal) Now we must admit that there are some "bad apples" in the cable industry, and the cities do have a point on that one. Of course our answer is simply to go out for bids and see if someone else will compete — the marketplace should take care of the problem. Unfortunately, so far that has not been the case, and the city folks will not be satisfied with that answer.

It is CATA's view that we should sit down and seriously discuss these issues. We have the possibility of jointly bringing something to Congress that will help both sides, and especially the cable subscriber. In the meantime we are taking the position that polarizing the battle — creating hard and fast lines of combat, will serve no one. We started the dialogue and we want to make sure it continues. The best way that can happen is for all of you to sit down with your local officials and explain what the yelling and screaming is all about. At the very least you will develop a good working relationship with your local officials, if you have not already. At the most maybe you will come up with some good ideas that you can pass along to us!

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THE FCC CABLE BUREAU IS NO LONGER

The elimination of the Cable Bureau, as a bureau, has been in the works for a long time. It has finally happened. The Cable Bureau, as well as the Broadcast Bureau, and parts of other bureaus are now going to be a part of the new "Mass Media Bureau". It will be headed by the former Chief of the Broadcast Bureau with the Cable Division still headed by Bill Johnson, the present chief of the Cable Bureau. Is all this good or bad? Well, a few years ago it would have been bad since the cable industry was so heavily regulated by the FCC and we needed a point of direct contact in the Commission which knew something about cable television! Now, however, since we are almost completely deregulated (the FCC financial forms are the next thing to go), it doesn't look like the loss of the bureau will cause much harm. It is the clearest indication yet of an end of an era. Just 10 years ago the famed 1972 Cable Rules ended the so-called "cable freeze" at the FCC. In 1982 the Cable Bureau becomes as much of a relic as those rules now are. To both we say a fond farewell.

SOME FCC COMMISSIONERS ARE GOING TOO!

Along with the demise of the Cable Bureau, the Commission itself is going to look a little different. Congress has adopted a law that will cut out the jobs of two Commissioners. The FCC will be comprised of five Commissioners in the future instead of the current seven. The main reason for all this is a political fight that we have mentioned before — the attempt by some members of the Senate to force an FCC candidate on the administration, rather than accepting the President's man. Well the fight finally ended with what looks like an agreement to take the President's nominee, Steve Sharp (the current General Counsel) in exchange for cutting the Commission from seven to five. The result will be that Sharp will probably be named to the Commission, but will wind up serving less than a year! Stranger things have happened in Washington, but not much!

CABLE PROGRAMMERS — DON'T BLINK, YOU MIGHT MISS ONE!

Well, last month we had a whole article about the new cable programming options that were popping up all over the place. This month several of them have already popped! By now it is old news that CBS Cable is closing its doors. It is too bad. CBS put on some of the finest programming we have ever seen. Take a look at the CATAorial in next month's CATJ for more on that particular situation.

They, however, were not the only ones to feel the pressure of overexpectation in the cable programming business. The proposed deal between Warner's Movie Channel and the motion picture

companies fell apart — the deal is not going through. And the year-old joint effort by Disney and Group W also fell apart. Disney says they are going to do it by themselves.

Meanwhile, the National Geographic says that it is planning a mini-pay service and Penthouse Magazine is going to start production on a limited basis of programming that will obviously compete with the newly named Playboy Channel. Stay tuned, next month we are sure things will change again!

CALL CATA OFFICE IMMEDIATELY IF YOU GET NEW REQUESTS FOR "MUST CARRY"

The emphasis in that headline is IMMEDIATELY! It seems that a lot of operators have forgotten that there is an automatic waiver procedure at the FCC for not having to carry new "must carry" signals if your system is already full. Actually, you can get the waiver for any reason, at least until the Commission formally acts — BUT YOU MUST FILE WITHIN 15 DAYS OF GETTING THE REQUEST FOR CARRIAGE!!!! Rather than spell out all the details here, if the situation comes up for you, be sure to call the Washington Office immediately. Time does indeed make the difference in this case!

THERE'S MORE TO SELLING THAN THE MONEY

It's no secret that many smaller cable system operators are selling their systems to larger operators. Everyone familiar with CATA has been asking us how that will impact on us since the trend became obvious in the past two years. Those were the years of the selling spree. Prices of up to \$1250 per subscriber have been documented, and the price was probably higher than that at one point. But not any more.

To begin with, we ought to expand on the idea that a subscriber sold for \$1250. That is not really accurate. What happened was that a cable system which was relatively new, with modern equipment, and just getting into pay programming, in a community with strong indications of growth sold. The selling price was of course based on future expectancy as well as the number of subscribers generating immediate cash flow. Thus, for those operators (and we have heard from quite a few) who thought that any system could sell for that type of price, a rude awakening was in store.

Now that is even more true. The bubble, while it hasn't actually burst, has certainly deflated some as the economy has gotten rougher. "Per subscriber" sales prices have dropped — but once again, that is all in relation to the overall growth potential of the system.

Much to the surprise of many, CATA does not see the purchase of many systems as a threat. Indeed, we see it as an opportunity. While it is true that CATA's base is the small, independent cable television operator (whether that operator has one or two or ten systems), that does not mean that we

should only be of interest to those operators. After all, even the largest MSO is really a grouping of small systems. Yes, it is true that some of those large operators are also now in the business of trying to supply service in the large urban areas, but that does not negate the fact that they are also small system operators. As a matter of fact some of the largest MSO's are now members of CATA. Over a year ago we instituted a "Corporate Membership" program that allows large systems and MSO's to join CATA at a fixed rate of \$5000.00 per year. In becoming a Corporate Member an MSO gets all the benefits of being able to distribute the CATA newsletter and all the other material we generate to all his systems but the MSO is restricted to one vote. By limiting the dues and restricting the voting power of the MSO's we have assured that the association will not be "taken over" by the big operators, but at the same time we have offered them the operator to operator common sense information that is sometimes lacking in big companies.

Among the many reasons that some of the MSO's have said motivated them to join CATA are the following: that even though we sometimes disagree among ourselves, there is a benefit to having more than one voice in Washington representing cable television. That even though we don't represent the interests of operators seeking urban areas (that is done very well by the NCTA), even the biggest operators have systems outside the urban areas and those systems, whoever they are owned by, need representation too. And most important, from our standpoint, is that some MSO's are beginning to realize that one of the most important things they can do is maintain good lines of communications in the communities in which they operate. That can't be done if the local manager is kept in the dark about what is happening in the industry. CATA provides the translation to the local operator. Some of the MSO's have told us that they are specifically joining so that their local managers can learn to speak to the local city officials on a one-to-one basis. That is about the best way we can think of to assure renewal. Of course, some of the big MSO's have simply joined to support CATA. Whatever the reason, we thank them for their support.

What has all this to do with buying and selling systems? Well, a lot, actually. From the very informal indications we get from our membership it is interesting to note that it is not the biggest MSO's who are doing most of the buying. It is a middle-sized group that has recently gained prominence. There are a lot of newspaper groups, for instance, actively buying cable systems. Two telephone companies are also in acquisition stages. A lot of them have joined CATA because they realize that their interests, too are not really represented by those focusing on the large urban markets, the

(continued)

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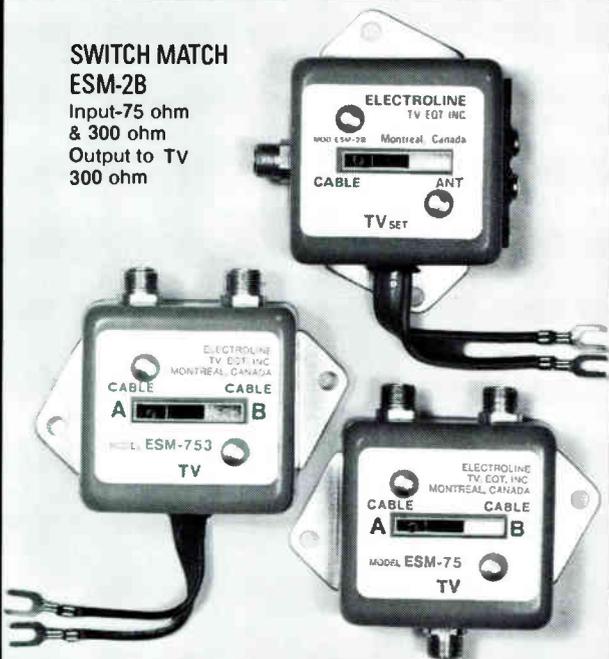
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markets that get all the publicity. Hence they realize the value of supporting CATA.

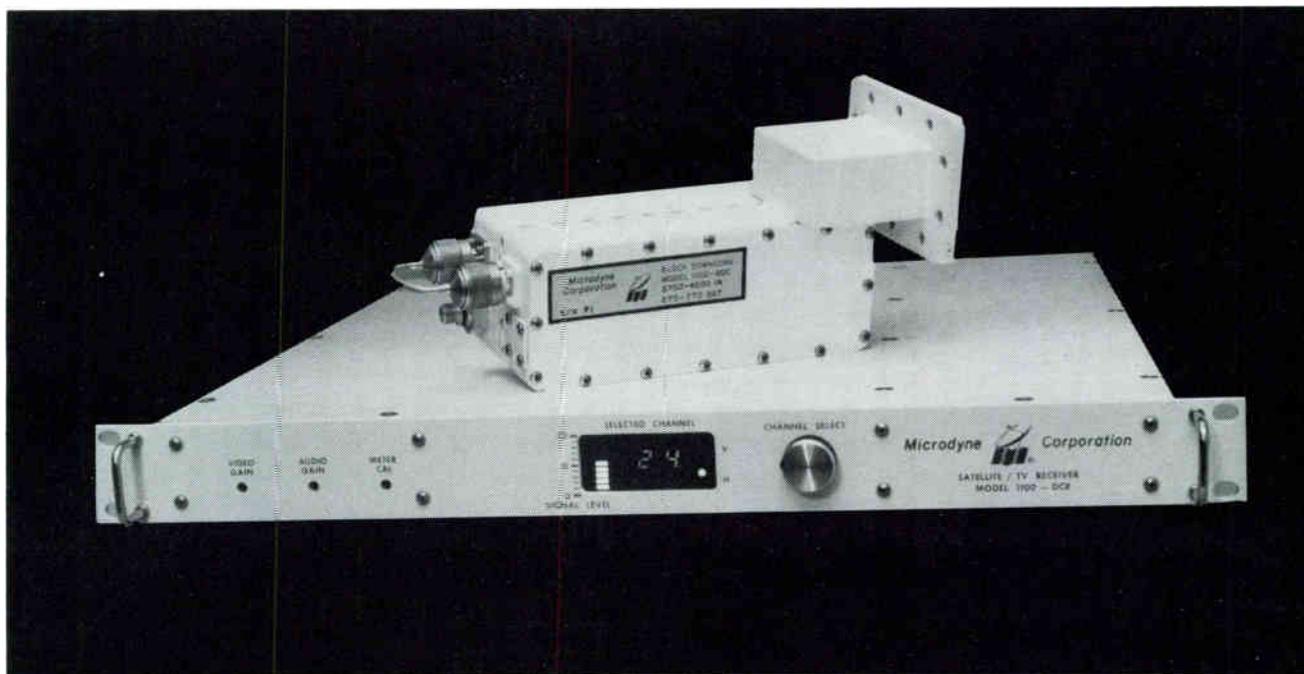
We are, indeed, a part of a "food chain." The independent, small operators are the only ones who know how to start the process in smaller localities without the overhead of the big companies. They develop the market and then, as it grows they are bought out by the bigger operator who, we presume, hopes that someday he will "cash in" by being bought by the big boys. We do not see any threat to that process by the current state of buying and selling activity.

There is also a "new breed" of buyer appearing on the market — the "joint venture" capitalist. The folks at Daniels, and Jones Intercable are two of the classic examples, but there are some new ones on the scene also, and they have a definite appeal. One type of joint venture puts a pool of money together and then buys a group of systems which are operated on a joint basis with the investors getting their money out of the profits and the valuation upon sale of the systems. This is the traditional route.

A newer, more creative (to our way of thinking) route is to have joint ventures based on each individual cable purchase. The advantage of this approach is that the seller, who if he is a traditional operator also lives in the community, can be assured that the system will be maintained and improved because the investors have a direct interest in assuring that that particular system works. There can be no "bleeding" of one system to pay for another since each system is a separate deal.

Note that we are not saying that most, or even many purchasers of systems "bleed" the newly acquired property. But it has been known to happen. CATA has long maintained that we are always concerned with assuring the best quality service to the American subscribing public. We know that our members share that view. We also know that many of our members live in the communities that they serve and want to make sure that when they sell, if they sell, for whatever reason, the service they have built up in the community, and their good name, does not suffer. It is for this reason that we would urge all operators, if they are considering selling, to consider more than just the selling price. Consider also the guarantee you may be able to get based either on the folks you sell to, or the method by which you sell the system, for assuring the continuing quality of the system.

Of course we are not advocating that anyone sell his or her system. But many operators have called to discuss the reality of either deciding that now is the time to sell, or that the pressure of refranchising is going to force them to find new capital, or new partners. Whatever your decision we urge you to protect your subscribers in the process. If you're interested in more information about all this just call the Washington Office. □



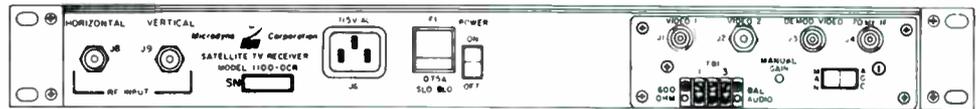
Microdyne Develops Block Downconverter/ Receiving System

Looking to Microdyne for a continuation of their innovative engineering and design of satellite receiving systems, their new **1100 BDC/DCR System** has been developed for the purpose of cutting costs and space limitations. It practically eliminates limits on the distance from the antenna to head end station, and as the system grows, it costs less to deliver satellite programming.

Microdyn's **1100 BDC/DCR System** is therefore presented as the newest in equipment cost effective and highly flexible to provide satellite programming to your subscribers. The configuration of the **1100 BDC/1100 DCR** helps overcome the distance constraints normally found when long cable runs are necessary.

The system's block down-

converter (BDC) utilizes a 100°K GaAsFET low noise amplifier for an optimum signal-to-noise ratio for the system. Frequencies and impedances have been selected so CATV-type cables with F-type fittings and connectors can be used for maximum cost savings in the interconnection between the antenna, 1100 BDC, and the receiver location. The downconverter receiver does



not require expensive rack adapters and is compatible with most downconverters which output at 270-770 MHz.

Microdyne's 1100 DCR downconverter receiver provides a double conversion tuner designed for maximum image rejection, best possible noise figure, and high temperature range stability. It is designed for easy addition of internal trap filters at IF of 70 MHz when terrestrial microwave interference is high. Polarization selection is accomplished by solid state technologies. The IF demodulator offers patented threshold extension circuitry and interfaces with external subcarrier, demodulator systems. The DCR receiver surpasses industry standards for threshold and video performance.

Anticipated deliveries on the 1100 BDC/DCR were to begin mid-October; the list price of the 1100 BDC is \$1,450.00 and the 1100 DCR is \$1,790.00.

For more information, contact MICRODYNE CORPORATION, P.O. Box 7213, Silver Springs Shores Industrial Park, Ocala, Florida 32672 or call (904) 687-4633.

With this new system, the two most significant advantages to remember are: **the flexibility of site selection and the reduced cost as channel capacity is increased.**

1100 DCR SPECIFICATIONS

Dual conversion, 24 channel operation

SYNTHESIZER

Stability $\pm 0.001\%$ from 0° to 50°C
one part in 10^6 per three months

TUNER

Input Frequency 270-770 MHz
Input Impedance 75 OHMs
RF Bandwidth 40 MHz: nominal at 1 dB
Output Frequency 70 MHz

IF DEMODULATOR

IF Frequency 70 MHz
IF Bandwidth 30 MHz
IF Rejection 80 dB
AGC Range 45 dB
Demodulator Type FM
Demodulator Linearity Linear to within $\pm 1\%$ over ± 18 MHz
Video S/N vs C/N Threshold occurs at < 8.0 dB C/N ratio.

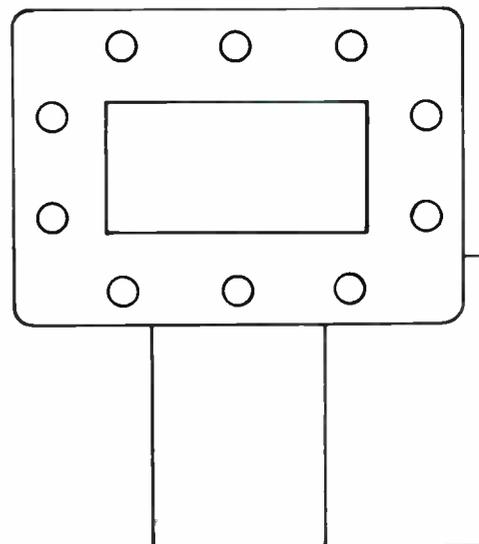
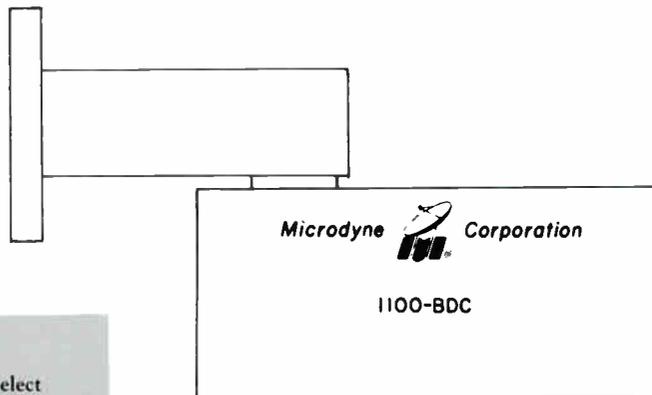
VIDEO PERFORMANCE

Operating Parameters Format System fv Maximum 525/60 M
4.25 MHz
Deviation Range 5.0 to 13.0 MHz peak at de-emphasis crossover frequency
Video Output
Freq. Response 10 Hz to 4.25 MHz, + 0.5 dB
Impedance 75 OHMs
Level 1 volt peak-to-peak
Level Adjustment ± 0.5 V continuous (front panel)
De-emphasis 525 lines per CCIR Rec. 405.1
Polarity Black to white transitions positive going. Polarity changeable — jumpers or option remote
Clamping > 40 dB for 30 Hz Triangular dispersion waveform

METERING AND CONTROLS

Rear Panel:

Power On/Off
AGC/MGC Selects either AGC or manual gain mode
Manual Gain Control Adjusts manual gain level (45 dB range)
Accessory Connector Provides power for 1100 BDC
FM Demod output For use with external subcarrier; demodulator systems
IF Output 70 MHz
Two Video output jacks 1 Type BNC, 1 Type F



Front Panel:

Channel Select	24 Position coded rotary select switch
Channel Selected	LED display indicates selected channel.
V/H	LEDs to indicate polarization (vertical or horizontal).
Signal Level	10 Segment LED to indicate signal level.
Audio Gain	Adjust audio output level OV to 6.8V peak-to-peak (+ 10 dBm).
Video Gain	Adjust video output level to $1 \pm 0.5V$.
Meter Calibration	Calibration control of 10 segment LED signal strength indicator.

ENVIRONMENTAL

Temperature	Operating: 0° to 50°C Storage: - 60° to 60°C
Atmospheric Pressure	Operating: to 10,000 feet Storage: to 50,000 feet
Mechanical Dimensions	1 1/4"H x 19"W x 18"D

Weight	12 pounds
Power Consumption	Approximately 40 watts

NON-LINEAR DISTORTION

Differential Gain	$\pm 2\%$ maximum, 10% to 90% APL
-------------------	-----------------------------------

Differential Phase	Less than $\pm 1^\circ$, 10% to 90% APL
2T Pulse Distortion	Less than 2%

LINEAR DISTORTION

Line Time Distortion	Less than $\pm 1.5\%$
Field Time Distortion	Less than $\pm 1.5\%$

AUDIO OUTPUTS

Subcarrier Frequency	6.8 MHz standard
Frequency Response	20 Hz to 15 KHz ± 0.5 dB
De-emphasis	75 usec time constant
Output Level	Continuously adjustable, OV to 6.8V peak-to-peak (+ 10 dBm)

Impedance	600 OHMs balanced
Harmonic Distortion	1% Maximum

OPTIONS

De-emphasis	PAL 625 lines and other de-emphasis filters available.
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Additional Audio Subcarriers

An external Model SCB-1 subcarrier demodulator is available to provide up to four separate audio subcarriers covering the range from 4.5 to 7.5 MHz (See SCB-1 brochure).

Other IF Bandwidths	17.5, 20, 25, 36 and 40 MHz in place of standard 30 MHz
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Non-Standard Audio Subcarrier	Available from 4.5 to 7.5 MHz in place of standard 6.8 MHz
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1100 BDC SPECIFICATIONS

Frequency Range	3.7-4.2 GHz
LNA Temperature	110°K (standard) *
Input Level	- 75 dBm to - 95 dBm per channel
Input Return Loss	20 dB minimum
Conversion Gain	54 dB ± 3 dB*
IF Frequency Band	270-770 MHz
IF Output Impedance	75 OHM
Temperature	- 40°C to 70°C operating range
Input Connector	CPR229G Flanged
Output Connector	Type F
Supply Voltage	+15V to +24V
Power Requirements	350 mA maximum at +15 to 24V
Weather proofing	Provided

OPTIONS:

- *A. 100°K LNA
- *B. 80°K LNA
- *C. Gain increase — options are available

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92nd Fl.,
New York, NY 10048
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(M9 Security Equipment)

Alpha Technologies,
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Bellingham, WA 98225
206-671-7703
(M9, Standby Power
Supplies)

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

Amplica, Inc.,
950 Lawrence Dr.,
Newbury Park, CA 91320
805-498-9671
(M4)

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

* **Anixter-Purzan, Inc.,**
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Skokie, IL 60076
312-677-2600
(D1)

Apple/Store,
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Beaver Dam, WI 53916
414-885-6249

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

Automation Techniques,
1846 N. 106th E. Ave.,
Tulsa, OK 74116
918-836-2584
(M9)

Avantek, Inc.,
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Milpitas, CA 95035
408-946-3080
(M8, 9 TVRO
Components)

BEI
P.O. Box 937,
Olathe, KS 66061
800-255-6226
(M9 Character
Generators)

**Ben Hughes
Communications**
P.O. Box AS,
Old Saybrook, CT 06475
203-388-3559
(M6, M9)

Blonder-Tongue Labs, Inc.,
1 Jake Brown Rd.,
Old Bridge, NJ 08857
201-679-4000
(M1, 2, 4, 5)

**Broadband Engineering,
Inc.,**
P.O. Box 1247,
Jupiter, FL 33458
1-800-327-6690
(D9, replacement parts)

Budco, Inc.,
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Tulsa, OK 74115
1-800-331-2246
(D9, Security &
Identification Devices)

CATEL,
4800 Patrick Henry Dr.,
Santa Clara, CA 95054
415-969-9400

* **C-COR Electronics, Inc.,**
60 Decibel Rd.,
State College, PA 16801
814-238-2461
(M1, M4, M5, S1, S2, S8)

CBS Cable,
1211 Avenue of the
Americas, 2nd Floor,
New York, NY 10019
1-800-528-3341
(S4)

CCS Hatfield/CATV Div.,
5707 W. Buckeye Rd.,
Phoenix, AZ 85063
201-272-3850
(M3)

CWY Electronics,
405 N. Earl Ave.,
Lafayette, IN 74904
1-800-428-7596
(M9, D1)

CableBus Systems,
7869 S.W.
Nimbus Avenue,
Beaverton, OR 97005
503-543-3329
(M1)

Cable Health Network,
2840 Mt. Wilkinson Pkwy.
Atlanta, GA 30339
404-436-0886
(S4)

Cable-Text Instruments,
705 Avenue K, Suite #4
Plano, TX 75074
214-422-2554
(M9 Generators)

Century III Electronics, Inc.
3880 E. Eagle Drive,
Anaheim, CA 92807
630-3714
(M1, M3, M4, M5, M7, M8,
S1, S2, S8)

Capscan, Inc.,
P.O. Box 36,
Adelphia, NJ 07710
1-800-CABLETV or
222-5388
(M1, M3, M4, M5)

Channel Master,
Ellenville, NY 12428
914-647-5000
(M2, 3, 4, 5, 6, 7)

**Collins Commercial
Telecommunications,**
MP-402-101,
Dallas, TX 75207
214-690-5954
(M9, Microwave)

Comm/Scope Company,
Rt. 1, Box 199A,
Catawba, NC 28609
1-800-438-3331
(M3)

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

**Computer Video
Systems, Inc.,**
3678 W. 2105 S. Unit 2,
Salt Lake City, UT 84120
1-800-453-8822
(M9)

COMSEARCH INC.,
11503 Sunrise Valley
Drive,
Reston, VA 22091
703-620-6300
(S8, S9, Earth station
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coordination)

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1-800-336-9681
(M8, M9, S8, S9)

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1821 University Ave.,
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612-645-9153
(D1, S1, S8)

Ditch Witch,
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Perry, OK 73077
1-800-654-6481
(M9)

The Drop Shop Ltd., Inc.,
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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)

Durnell Engineering Inc.,
Hwy 4 So.
Emmetsburg, IA 50536
712-852-2611
(M9)

Eagle Com-Tronics, Inc.,
4562 Waterhouse Rd.,
Clay, NY 13041
1-800-448-7474
(M9 Pay TV Delivery
Systems & Products)

**Eales Comm. &
Antenna Serv.,**
2904 N.W. 23rd,
Oklahoma City, OK 73107
405-946-3788
(D1, 2, 3, 4, 5, 6, 7,
S1, 2, S7, 8)

Distributors	Manufacturers	Service Firms
D1—Full CATV equipment line	M1—Full CATV equipment line	S1—CATV contracting
D2—CATV antennas	M2—CATV antennas	S2—CATV construction
D3—CATV cable	M3—CATV cable	S3—CATV financing
D4—CATV amplifiers	M4—CATV amplifiers	S4—CATV software
D5—CATV passives	M5—CATV passives	S5—CATV billing services
D6—CATV hardware	M6—CATV hardware	S6—CATV publishing
D7—CATV connectors	M7—CATV connectors	S7—CATV drop installation
D8—CATV test equipment	M8—CATV test equipment	S8—CATV engineering
D9—Other	M9—Other	S9—Other

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Note: Associates listed with * are Charter Members.

Eastern Microwave, Inc.,
3 Northern Concourse,
P.O. Box 4872,
Syracuse, NY 13221
315—455-5955
(S4)

**Electroline TV
Equipment, Inc.,**
8750-8th Ave.,
St. Michel,
Montreal, Canada
H1Z 2W4
514—725-2471
(M4, 5, 7, 9, D7, 9)

**Electron Consulting
Associates,**
Box 2029,
Grove, OK 74344
918—786-5349
(M2, D1, S1, 8)

Elephant Industries,
P.O. Box 3949
N. Ft. Myers, FL 33903
813—995-7383
(M9)

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

**The Entertainment
Channel,**
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Americas,
New York, NY 10036
212—930-4900
(S4)

**Ferguson Communications
Corp.,**
P.O. Drawer 1599,
Henderson, TX 75652
214—854-2405
(S1, 2, 7, 8, 9)

**Franey & Parr of Texas,
Inc.,** (Formerly Doherty &
Co.),
One Turtle Creek Village,
Suite 524,
Dallas, TX
214—528-4820
(S9, Insurance)

GTE Sylvania,
10841 Pellicano Dr.,
El Paso, TX 79935
1-800—351-2345
(D7, M4, M5, M6, S4, S8)

**Gardiner Communications
Corp.,**
3506 Security St.,
Garland, TX 75042
214—348-4747
(M9 TVRO Packages, S1,
S2, S8)

General Cable Corp.,
1 Woodbridge Center,
P.O. Box 700
Woodbridge, NJ 07095
1-800—526-4385
(M3)

Gilbert Engineering Co.,
P.O. Box 23189,
Phoenix, AZ 85063
1-800—528-5567 or
602—245-1050

**Group W Satellite
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41 Harbor Plaza Dr.,
P.O. Box 10210,
Stamford, CT 06904
203—965-6219
(S4)

H & R Communications,
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Pocahontas, AK 72455
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P.O. Box 1700,
Melbourne, FL 32901
305—724-3401
(M2, M9, S2)

**Heller-Oak
Communications,**
105 W. Adams St.,
Chicago, IL 60603
1-800—621-2139 * 7600
(S3)

Home Box Office, Inc.,
7839 Churchwill Way,
Suite 133, Box 63,
Dallas, TX 75251
214—387-8557
(S4)

* **Hughes Microwave
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213—517-6233
(M9)

* **Jerry Conn Associates,
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Chambersburg, PA 17201
1-800—233-7600
1-800—692-7370 (PA)
(D3, D4, D5, D6, D7, D8)

**KMP Computer
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Los Alamos, NM 87544
505—662-5545
(S4, 5)

Karnath Corporation,
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Plano, TX 75075
214—422-7981 or 7055
(S1, 2, 8, 9)

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

**Klungness Electronic
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1-800—338-9292
1-800—682-7140 (Mich)
(D1, D8, S2, S8)

LRC Electronics, Inc.,
901 South Ave.,
Horseheads, NY 14845
607—739-3844
(M7)

Larson Electronics,
311 S. Locust St.,
Denton, TX 76201
817—387-0002
(M9 Standby Power)

Lemco Tool Corporation,
Box 330A,
Cogan Station, PA 17728
1-800—233-8713
(M8, 9 Tools)

**Lindsay Specialty
Products, Ltd.,**
50 Mary Street West,
Lindsay,
Ontario, Canada K9V 4S7
705—324-2196
(M1, 2, 4, 5, 7, 9)

Magnavox CATV Division,
100 Fairgrounds Drive,
Manlius, NY 13104
1-800—448-5171 or
1-800—522-7464 (N.Y.)
(D4, 5, 7, M4, 5, 6, 7, S3, 8)

**McCullough Satellite
Equipment,**
Route 5, Box 97,
Salem, AR 72576
501—895-3167
(M2, 9, D3, 4, 6, 7)

Microdyne Corporation,
471 Oak Road,
Ocala, FL 32672
904—687-4633
(M9 Satellite TV
Receivers)

**Microwave Associates
Communications Co.,**
777 S. Central Expwy.,
Suite 1G,
Richardson, TX 75080
214—234-3522
(M9 Microwave Radio
Systems)

* **Microwave Filter Co.,**
6743 Kinne St., Box 103,
E. Syracuse, NY 10357
1-800—448-1666
(M5 Bandpass Filter)

Midwest Corp.,
One Sperti Dr.,
Edgewood, KY 41017
1-800—624-3845
(D1, 2, 3, 4, 5, 6, 7, 8)

Modern Cable Programs,
5000 Park St. N.,
St. Petersburg, FL 33709
(S4)

**Mullen Communications
Construction Co., Inc.,**
P.O. Box 1387A,
Green Bay, WI 54305
414—468-4649
(S2)

NCS
2255-E Wyandotte Rd.,
Willow Grove, PA 19090
1-800—523-2342
1-800—492-2032 (PA)
(D1, 2, S8, 9 repair
service)

Distributors	Manufacturers	Service Firms
D1—Full CATV equipment line	M1—Full CATV equipment line	S1—CATV contracting
D2—CATV antennas	M2—CATV antennas	S2—CATV construction
D3—CATV cable	M3—CATV cable	S3—CATV financing
D4—CATV amplifiers	M4—CATV amplifiers	S4—CATV software
D5—CATV passives	M5—CATV passives	S5—CATV billing services
D6—CATV hardware	M6—CATV hardware	S6—CATV publishing
D7—CATV connectors	M7—CATV connectors	S7—CATV drop installation
D8—CATV test equipment	M8—CATV test equipment	S8—CATV engineering
D9—Other	M9—Other	S9—Other

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Note: Associates listed with * are Charter Members.

North Supply Company,
10951 Lakeview Ave.,
Lenexa, KS 66219
1-800—255-6458
1-800—332-1073 (Kansas)
(D1, 2, 3, 4, 5, 6, 7, 8)

Oak Industries, Inc.,
Crystal Lake, IL 60014
815—459-5000
(M1, M9 Converters, S3)

Octagon Scientific, Inc.,
476 E. Brighton Ave.,
Syracuse, NY 13210
315—476-0660
(M9)

**Power and Telephone
Supply Company, Inc.,**
530 Interchange Drive
N.W.,
Atlanta, GA 30336
1-800—241-9996
(D1)

Prodelin, Inc.,
1350 Duane Avenue,
Santa Clara, CA 95050
408—244-4720
(M2, M3, M7, S2)

Pyramid Industries, Inc.,
P.O. Box 23169,
Phoenix, AZ 85063
1-800—528-4529
(M7, 8)

RMS Electronics,
50 Antin Place,
Bronx, NY 10462
1-800—223-8312
1-800—221-8857 (Poleline)
(M4, M5, M6, M7, M9)

Reuters,
1212 Avenue of the
Americas., 16th Floor,
New York, NY 10036
212—730-2715
(D9)

Rockwell International,
M.S. 402-101,
Dallas, TX 75207
214—996-5954
(M9, Microwave/Satellite)

**S.A.L. Communications,
Inc.,**
P.O. Box 794,
Melville, NY 11747
1-800—645-9062
(D1)

Sadelco, Inc.,
75 West Forest Ave.,
Englewood, NJ 07631
201—569-3323
(M8)

Scientific Atlanta, Inc.,
3845 Pleasantdale Rd.,
Atlanta, GA 30340
404—449-2000
(M1, M2, M4, M8, S1, S2,
S3, S8)

Shafer Associates, Inc.,
9501 Briar Glen Way,
Gaithersburg, MD 20760
301—869-4477
(S9, consultant)

**Showtime Entertainment,
Inc.,**
1633 Broadway,
New York, NY 10019
212—708-1600
(S4)

**Southern Satellite
Systems, Inc.,**
P.O. Box 45684,
Tulsa, OK 74145
918—481-0881
(S9)

TVC Supply Co., Inc.,
1746 E. Chocolate Ave.,
Hershey, PA 17033
717—533-4982
(D1, 2, 3, 4, 5, 6, 7, 8)

Teledac, Inc.,
1575 Taschereau Blvd.,
Longueuil,
Quebec, Canada J4K 2X8
514—651-3716
(M9 Character
Generators)

Tele-Wire Supply Corp.,
122 Cutter Mill Rd.,
Great Neck, NY 11021
1-800—325-4868
(D1, 2, 3, 5, 6, 7, 8, 9)

* **Texscan Corp.,**
2446 N. Shadeland Ave.,
Indianapolis, IN 46219
1-800—528-4066
(M8 Bandpass Filters)

* **Theta-Com CATV,**
2960 Grand Avenue,
Phoenix, AZ 85061
602—252-5021
(M1, M4, M5, M7, M8)

* **Times Fiber
Communications,**
358 Hall Avenue,
Wallingford, CT 06492
1-800—243-6904
(M3)

Tocom, Inc.,
P.O. Box 47066,
Dallas, TX 75247
214—438-7691
(M1, M4, M5, Converters)

* **Toner Cable
Equipment, Inc.,**
969 Horsham Rd.,
Horsham, PA 19044
1-800—523-5947
In Penna. 1-800—492-2512
also 1-800—523-5947 (PA)
(D2, D3, D4, D5, D6, D7)

**Triple Crown
Electronics, Inc.,**
4560 Fieldgate Dr.,
Mississauga, Ontario,
Canada L4W 3W6
416—629-1111
Telex 06-960-456
(M4, M8)

**Turner Broadcasting
System,**
1050 Techwood Dr.,
Atlanta, GA 30318
404—898-8500

Tyton Corp.,
P.O. Box 23055,
Milwaukee, WI 53223
414—355-1130
(M6, 7)

USA Network,
208 Harristown Rd.,
Glen Rock, NJ
201—445-8550
(S4)

United Press International,
220 East 42nd St.,
New York, NY 10017
212—682-0400
(S9 Automated News
Svc.)

U.S. Tower,
P.O. Box 1438,
Miami, OK 74354
918—540-1574
(M2, M9)

United Video, Inc.,
3801 South Sheridan Rd.,
Tulsa, OK 74145
1-800—331-4806
(S9)

Video Data Systems,
40 Oser Avenue,
Hauppauge, NY 11787
516—231-4400
(M9)

Viewstar, Inc.,
705 Progress Ave.,
Unite 53,
Scarborough,
Ontario, Canada M1H 2X1
416—439-3170
(M9 Cable Converter)

Vitek Electronics, Inc.,
4 Gladys Court,
Edison, NJ 08817
201—287-3200

**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 Communication
Service,**
Box 347,
San Angelo, TX 76901
915—655-6262/653-3363
(M2, Towers)

Winegard Company,
3000 Kirkwood Street,
Burlington, IA 52601
1-800—523-2529
(M1, M2, M3, M4, M5, M7)

□

Case Associate Showcase Associate Show

NEW 24-HOUR HOT LINE AT OAK

Oak Communications has announced that a 24-hour hot line has been installed and is in service to give Oak cable systems instant access to service personnel in any emergency.

The phone line is staffed by Oak field service personnel in Crystal Lake during regular business hours. Field engineers are summoned by an answering service at other times, explains Norman Zachrel, Oak's director of field services.

"The hot line makes it easy for an operator to reach us and for us to respond immediately," says Zachrel. "Problems don't operate on a time clock, and neither do we. We know that down time costs money. The sooner we can get an Oak engineer on the scene, the sooner a system can get back to normal."

System managers using Oak equipment have been supplied the hot line number, Zachrel says, and shouldn't hesitate to use it if the situation warrants it.

If you are using Oak equipment and could use this number, contact your Oak representative.

GILBERT ENGINEERING INTRODUCES NEW CABLEFLEX CONNECTOR

Gilbert Engineering of Glendale, Arizona, is proud to introduce the newest addition to its connector line: Integral Sleeve Connectors for use with Scientific Atlanta's CableFlex. Gilbert's **NEW** CableFlex connectors are available in various sizes, both in pin and splice types and are available from stock. Gilbert Engineering developed their **NEW** CableFlex connectors in conjunction with Scientific Atlanta Phoenix Coax Division to fit the needs of system operators.

For pricing and delivery information, call or write: Gilbert Engineering, P.O. Box 23189, Phoenix, Arizona 85063-3189; TOLL FREE call: (800) 528-5567.

TURNER BROADCASTING INSTALLS NEW SATELLITE UPLINK

Turner Broadcasting System, Inc. (TBS) has built a new permanent satellite uplink facility at company headquarters in Atlanta. The new uplink will beam the CNN, CNN Headline News and CNN Radio signals directly from TBS to RCA's Satcom 3-R satellite.

"In the past, we've had more trouble getting our signal 20 miles to our uplink in Douglasville than in getting it 22,300 miles up to the satellite," said TBS Vice President of Engineering Gene Wright. "In addition, we expect fewer power outages that would affect transmission with our new facility, since we will now be serviced by Georgia Power, which provides electricity to the city of Atlanta."

In the past, TBS' satellite garden was composed of 6 receiving dishes. Now, with the proliferation of satellite-delivered cable services, one of TBS' 7-meter dishes has been transformer into a pre-programmed scanning dish, and TBS' 11-meter dish has become the new satellite uplink for the three Turner Broadcasting 24-hour news services. The new uplink will use Varian high-powered amplifiers and Scientific Atlanta antenna and exciters.

"We felt it was our best interests to control our signal delivery to a greater extent," said TBS President R.E. "Ted" Turner. "So we built our own uplink facility to better service our millions of viewers across the nation and around the world."

NEW PROTECTIVE CARRYING CASE FOR SADELCO'S HAND-HELD SADELETTE SIGNAL LEVEL METER

Sadelco, Inc., has announced that it is now offering an optional protective carrying case for its new hand-held Sadelette Signal Level Meter. The carrying case provides protection for the hand-held Sadelette Signal Level Meter and convenience with its easy flip open cover, which exposes the meters LED



Bar Graph dB read-out, allowing the installer to operate the meter in the carrying case.

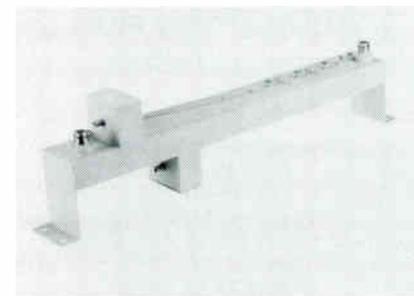
The carrying case walls are foam-filled and is finished in a rich leatherette design. To accommodate the installer, a D-ring is provided so that the meter may be hung from the belt. The manufacturer's suggested list price is \$24.95.

For additional information contact: Sadelco, Inc., 75 West Forest Avenue, Englewood, New Jersey 07631, 201-569-3323.

Single Transponder Filter Removes Severe Terrestrial Interference

The model #4127 filter allows reception of a single transponder signal even when encountering severe terrestrial interference.

The combination bandpass filter and double notch filter assembly is inserted in either the coax line between the LNA and downconverter (4127C) or, in very severe interference cases, between the feedhorn and the LNA (4127W) using WR-229 waveguide flanges. A 3-pole single channel bandpass filter, cut to



customer specified frequency, and two microwave notches ± 10 MHz from the transponder center frequency work together to exclude interfering terrestrial carriers in the 3700-4200 MHz band.

The #4127C has type N connectors and passes DC power. The #4127W has WR-229 waveguide flanges. (No DC power passing is required.)

Price is \$545 for the #4127C and \$520 for the #4127W. Delivery is one week. For more information, contact Emily Bostick, Microwave Filter Co., Inc., 6743 Kinne St., Easy Syracuse, NY 13057. US toll-free 1-800-448-1666 (collect 315-437-3953 in NYS/CAN/HI/AK).

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FOR SALE

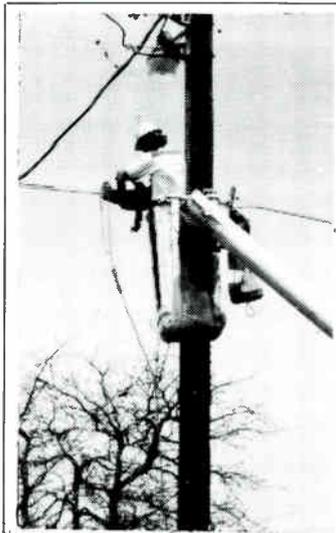
FOR SALE

CABLE TV SYSTEM 850 Subs. 290 Pay \$125 K Gross Sales, 12 Channel, 35 Mi From Eugene, OR \$700 K 200 K down. Owner will Finance. 503-836-2307

FOR SALE

Jerold Starline Twenty Equipment; Modules: SAM, SMM, SEM; SCD Chasis, assorted feeder makers, SLE-20A and SLE-20B line extenders. (1) One SSE-200A Scrambler. SRD-a outdoor descrambler, SD-a indoor descramblers and SC control units.

Call: Lawton Cablevision, 811 'D' Ave., Lawton, OK 73501 (405) 353-2250 Herman Holland.



ATTENTION! SYSTEM MANAGERS — TECHNICIANS NEEDED

Excellent opportunity for system managers and technicians for our systems in Colorado, Texas, and Oklahoma. Need qualified personnel for these Southwestern locations; good working conditions and opportunity for the right people who want to work and stay actively involved in the cable business. These systems have good equipment to work with and offer excellent situations to grow in the cable business. If interested, send resume to the box number indicated below.

Box 71080
c/o CATJ
4209 N.W. 23rd
Suite 106
Okla. City, OK 73107

TECHNICAL OPPORTUNITIES

BLONDER TONGUE SETS

TECHNICAL SEMINARS

December 8 & 9, 1982

Blonder-Tongue MATV/CATV/TVRO Seminar

Phoenix, Arizona

Contact: Chuck Fitzer (415) 449-0547

January 25-27, 1983

Blonder-Tongue MATV/CATV/TVRO Seminar

Atlanta, Georgia

Contact: Tom Adams (919) 272-6838
or Gloria Rothfuss (201) 679-4000.

WANTED

Used Sweep Generator working or not. Also used H.E. & line equip. Call 918-786-5131.

WANTED

Telecommunications company seeking Inside Sales Person with a heavy background in telephone sales. Hard working, self-starter, good telephone presence a must. Reply to: P.O. Box 80393 Los Angeles, CA 90009 Attn: Sales Manager.

Expanding manufacturer of SMATV and Telecommunications equipment seeking Field Sales Engineers. Challenging position for sales persons with electrical background. Travel involved. Include salary requirements. Reply to: P.O. Box 80393 Los Angeles, CA 90009 Attn: Sales Manager.

Operations Managers needed in the SMATV/MATV and Telecommunications industry to manage facilities of 12-14 employees and warehouses with approximately 20,000 to 35,000 sq. ft. Reply to: P.O. Box 80393 Los Angeles, CA 90009 Attn: Communications Division.

Expanding manufacturer of SMATV/ Telecommunications Equipment looking for a National Sales Manager to organize and establish a sales force throughout the country. A challenging position for the self-starter. Candidate should have a four-year college degree, experience in the telecommunications industry, with a proven track record. References required. Salary commensurate with experience. Reply to: P.O. Box 80393 Los Angeles, CA 90009 Attn: Communications Division.

CATJ classified advertising is offered as a service by CATA for its membership.

ANY member of CATA may advertise in the CATJ classified section FREE of CHARGE (limit of 50 words per issue — 3 issues per year.)

CATA offers three types of memberships:

- 1.) Systems — paying regular monthly dues based on number of system subscribers.
- 2.) Associate Members — pay an annual fee.
- 3.) Individual Members — pay an annual fee.

NON MEMBERS may also use the Classified section at the rate of 50 cents per word with a minimum charge of \$20.00. Add \$2.00 for blind-box. Non-members should include full payment with the ad insertion.

Deadlines for all Classified Advertising is the 1st of the month for the following month's issue.

Address all Classified material to: CATJ, Suite 106, 4209 N.W. 23rd, Oklahoma City, Okla. 73107.

ADD UNLIMITED PAY CHANNELS TO YOUR SYSTEM WITHOUT LOSING YOUR INVESTMENT IN CONVERTERS.

Now, That's The Ticket!



If you're like most cable systems, you've spent almost \$225,000 on converters. Don't throw away that investment! With Eagle's Descrambler, you can add 15 tiers of service and unlimited channels to your system using your present converter.

Write Your Own Ticket!

Whether you're adding one pay channel, 15 pay channels, or 15 tiers of service with 120 channels, Eagle's Descrambler can handle it all. Select only what you need. In the future, channels can be added to the headend scrambler with our simple plug-in module. The headend unit integrates with all manufacturer's modulators and processors and is compatible with all Standard/HRC/ICC configurations.

The Best Show In Town

Eagle's Descrambler is compatible with all single channel output converters and is factory tuned for channel 2, 3, or 4. The descrambler

has no information on the audio making it ideal for AML transmission.

Private Audiences Only

There are no subscriber controls with Eagle's Descrambler and our unique sync suppression scrambling insures maximum security. In addition, we've developed a tamper-proof identification matrix to eliminate concerns about theft of service.

Future Attraction

Addressability? It's coming. Eagle's Descrambler will be ready for addressability when you are ... and the descrambler will be perfectly compatible with our addressable unit. Across the board, we're working to protect your investment.

Add pay channels ... maximize your converter investment ... prepare for addressability ... Eagle's 15 Tier Descrambler. Now, That's The Ticket!



OFFICE ADDRESS: 4562 Waterhouse Road, Clay, N.Y. 13041 (315) 622-3402
 MAIL ADDRESS: P.O. Box 2457, Syracuse, N.Y. 13220
 IN CANADA: Desklin Sales • Montreal • Toronto • Vancouver (416) 495-1412
 77D Steelcase Road West, Markham, Ontario L3R2M4

CALL TOLL FREE TO ORDER 800-448-7474
WorldRadioHistory

