

STATUS OF STATISTICS

An analysis, as of the 10th of this month, of the current pricing and inventory status trends in the TVRO industry. Users of this data are warned that CJR 'samples' key OEMs and distributors on the 10th of each month to determine trends and averages. Dealers will find this data useful in planning their own purchasing schedules for the coming 30 day period.

CURRENT PRICING/LNAs

For 100 degree LNAs, 50 dB gain, CWO terms, 3 lot purchase.

- 1) Lowest price reported: _____ **\$295**
- 2) Highest price recorded: _____ **\$329**
- 3) Average price recorded: _____ **\$299**

CURRENT SHIPMENT/LNAs

- 1) Greatest decline reported: _____ **-20%**
- 2) Greatest increase reported: _____ **+20%**
- 3) Average 30 day change: _____ **-08%**

CURRENT PRICING/ANTENNAS

- 1) Percentage reporting price declines _____ **20%**
- 2) Percentage reporting price advances _____ **0%**
- 3) Average 30 day change: _____ **-20%**

CURRENT SHIPMENTS/ANTENNAS

- 1) Greatest decline reported: _____ **None**
- 2) Greatest advance reported: _____ **+27%**
- 3) Average 30 day change: _____ **+18%**

CURRENT PRICING/RECEIVERS

- 1) Percentage reporting price declines: _____ **None**
- 2) Percentage reporting price advances: _____ **20%**
- 3) Average 30 day change: _____ **+11%**

CURRENT SHIPMENTS/RECEIVERS

- 1) Greatest decline reported: _____ **-10%**
- 2) Greatest advance reported: _____ **+08%**
- 3) Average 30 day change: _____ **+04%**

EARLY WARNING (Next 30 days)

- 1) Equipment shortages predicted: _____ **100° LNAs**
- 2) Equipment surplus predicted: _____ **None**
- 3) Biggest downward price move: _____ **None**
- 4) Biggest upward price move: _____ **None**

In surveying individual OEMs and distributors for the 'raw data' that goes into the above monthly summary, CJR pledges complete anonymity to its 'sources'. Dealers are asked NOT to contact CJR for information on 'lowest pricing' or 'greatest declines' referenced here; our pledge to sources is unbreakable! Many issues of CJR do, however, contain 'insert flier' sheets from OEMs and distributors announcing (as in advertising) current marketing specials.

DECEMBER 1983



MID MONTH MEMO

DISTRIBUTION. One of the key elements in the equipment flow chain has become the equipment distributor. The 'Ten Big Distributors' aside, there are numerous medium sized distributors who account for a surprising amount of equipment mobility each month. With new off-shore products coming into the marketplace very rapidly during 1984 (see CSD for January), the existing distribution system will be taxed and challenged repeatedly. We take a dual-sided look at the existing distribution chain this month to lay the ground work for a better understanding of the problems facing the 'middle men' of our industry during 1984.

LAWSUITS. A TVRO dealer in Wichita, Kansas has been hauled into court by the local cable operator charged with violating a wide range of federal laws and statutes. At the root of the problem is the competition home TVROs have offered to Kansas cable operators.

CABLE. The Federal Communications Commission has ruled that individual states, such as New Jersey, may **not** create rules and regulations to oversee MATV/SMATV operations on private property. With state regulations 'pre-empted,' the growth potential of private cable systems seems bright indeed.

Cooper
James
Report

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**NEW PRODUCTS/
SERVICES
APPOINTMENTS**

LAWSUIT Settled

A lawsuit brought by R.L. Drake Company against Channel Master Satellite systems has been settled out of court. Drake had alleged that Channel Master was violating copyrights owned by R.L. Drake by producing a product in Taiwan and importing that product into the U.S. satellite market. Channel Master denied the charges and as of 1 December Channel Master has replaced the controversial model 6128A receiver with a pair of new units; the 6129 and 6130 receivers. Drake has dropped the claims against Channel Master and the lawsuit.

ANTENNAS/Accessories

CHANNEL MASTER (Ellenville, N.Y. 12428; 914/647-5000) has introduced a new 8', non-motorized TVRO (system) at a competitive price: \$2195 suggested retail. The dish portion is fiberglass, the 24 channel receiver has push button tuning with automatic polarity switching, LED digital channel display, center tune and signal level metering, channel scan and a built-in modulator. The system is de-

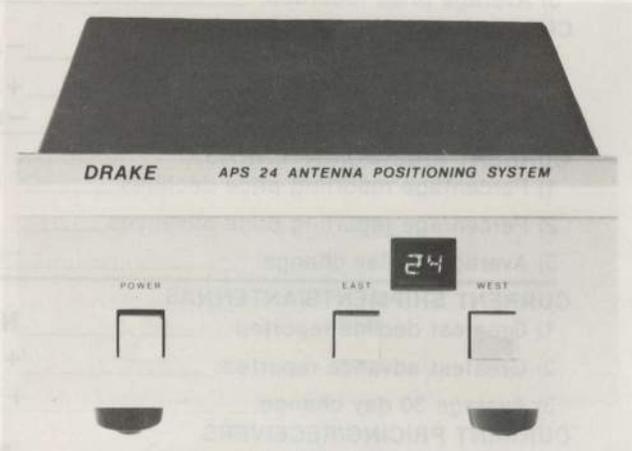


CHANNEL MASTER'S new 8 foot antenna system.

signed to withstand winds to 100 mph.

REGENCY ELECTRONICS, INC. (7707 Records St., Indianapolis, In. 46226; 317/545-4281) is now producing a single piece 90 inch dish using computer design techniques. The SA 9000 dish has an optimized feedhorn design (.3 f/D) with a single post mount and (single) jack screw adjustment for orbital arc tracking.

R.L. DRAKE CO. (540 Richard St., Miamisburg, Oh. 45342) announces the APS24 antenna positioner system to move the satellite dish from one location to another. The unit features a digital readout of the antenna's position and has a suggested retail price of \$499.



DRAKE'S new APS 24 antenna positioner control box.

RECEIVERS/Accessories

LOWRANCE ELECTRONICS, INC. (12000 E. Skelly Drive, Tulsa, Ok. 74128) has announced a new design approach to TVRO receivers called 'System 70.' The new modular designed units have detent tuning, polarization control switching, built in modulator, scan tuning and wide / narrow audio bandwidth. Model 70X is the 'standard' unit while the 70S is a stereo version with decoders for both matrix and discrete stereo sound tuning. Both models have a full one year warranty. Low threshold performance with cable runs of up to 1,000 feet is featured.



LOWRANCE'S new System 70 series TVRO receiver.

NEW PRODUCTS/ continued on page 15

NOTICE TO READERS

CJR is provided without charge to Dealer Members of **SPACE**, the national trade association for the home TVRO industry in the United States. This contribution to **SPACE** is made by **CJR Limited** in the recognition that a strong national dealer base is essential to the continued maturity of the TVRO industry. **CJR** is published as the mid-month companion to **CSD** (Coop's Satellite Digest) and is available to non-members of **SPACE** for a nominal subscription fee; see fine print at bottom of page one, this issue.

Original Equipment Manufacturers (OEMs) are encouraged to submit new product releases as well as news of personnel appointments and changes to **CJR** Assistant Editor **Carol Graba** (CJR, P.O. Box 100858, Fort Lauderdale, Fl. 33310) for consideration and publication here. OEMs, distributors and others who wish to 'reach' the mid-month TVRO dealer marketplace are encouraged to talk with **CJR's** Ms. Graba concerning advertising programs available in **CJR** (telephone 305/771-0505 weekdays between 9 AM and 4 PM eastern time).

DISTRIBUTOR PROFILE: FROM SNOW MOBILES TO TVROs

FROM SNOWMOBILES to Home Terminals

One of the more growth prone areas of the home TVRO terminal industry during the past 12 months has been the distributor level of selling. The industry began as a one-step selling process; the original equipment manufacturer sold directly to the end user. AVCOM, International Crystal (ICM) and others began in this manner.

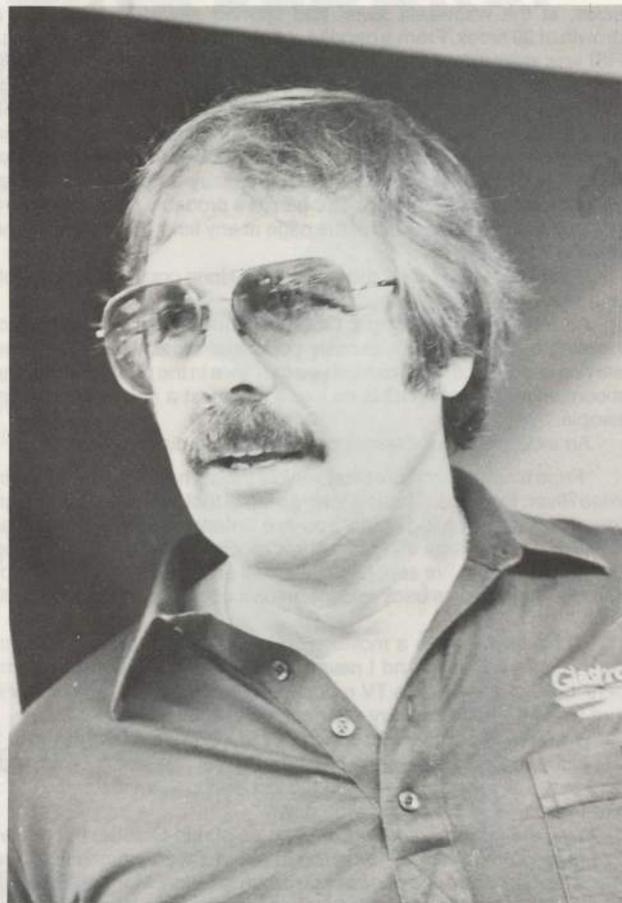
Then installing dealers came into the picture; buying equipment from the OEMs and packaging the various parts (antenna, LNA, receiver, modulator and cables) into complete, installed, systems. The dealers brought the expertise of installation to the marketplace, allowing home users who did not have the ability or inclination to install their own to still have the advantages of a TVRO system. The marketplace stayed in the 'two-step mode' (OEM to dealer to user) for about a year and those early dealers will tell you that it was not always a fun period. You bought a receiver in Oklahoma, an antenna from Alabama, a modulator from Nebraska, an LNA from California and hoped you could round up the special cables and connectors wherever they might be available. This was obviously not the most efficient system for equipment re-distribution and so along came the first equipment distributors; firms that initially offered 'in-stock' delivery of all of the parts and pieces required for a complete installation. That eliminated the burden of shopping nationwide for the required parts, but it presented new problems. Now the installing dealer found a middle man between himself and the original equipment creators, and as the industry's volume grew it became more and more difficult for the dealer to get his technical and installation questions properly answered. It also created a direct service or replacement problem; when something did not work, as it came out of the box, or quit working after a short initial operational interval, the dealer was forced to deal with the distributor rather than the OEM for repair or replacement assistance. **It didn't always work;** the dealer often found the distributor less than enthusiastic about backing up the equipment sold.

More recently, the full service distributor has come into the marketplace. He offers more than a ready stock of hardware; he augments this with formal training, in-house repair ability, selling aids, advertising and promotion assistance, and even assistance in finding dealer financing for both 'flooring' and consumer selling. This leads us to one of the newer firms in this field, **RSI/Recreational Sports & Imports, Inc.** (2436 North Woodruff Ave., Idaho Falls, Idaho; 208/523-5721). The firm President is **Gary Olsen**, a man with more than twenty years of distributor experience in a variety of 'unusual product' areas.

Olsen's TVRO business began because an old school chum, Doug Dehnert of United Satellite Systems, insisted that Gary try out a satellite system.

"Doug and I were not only old school mates, but some years ago when Doug was with Artic Enterprises, he used to bring me out outdoor recreation vehicles to try out." Artic was a large manufacturer and importer of things like Snow Mobiles. Olsen recalls he was reluctant about his first TVRO.

"In those days, some three years ago, a TVRO cost nearly \$9,000. I thought this was going to be an expensive 'toy,' but I trusted Doug's judgement and pretty soon not one but three 12 foot terminals



GARY OLSEN/ President of Recreational Sports & Imports, Inc., Idaho Falls, Idaho. "We have seen the business 'explode' in 12 months."

arrived on my doorstep.

"What am I supposed to do with the other two? I asked Dehnert."

"Sell them, for enough money, so you can keep your own for 'free,' was the response.

Olsen did just that but even though he found the product 'fantastic' and a real attention getter, his business instincts told him the system was not going to be a big marketplace item. "Frankly, I 'played' with being a dealer, at first, because there are always a few people who will and can afford to buy something 'neat' like this, regardless of price." One year ago, **this October? "We did \$24,000 in TVRO sales,"** remembers Olsen. Not exactly big time for Olsen's firm that had climbed as high as \$8,000,000 in annual sales with outdoor recreation vehicles, including motorcycles.

"Then one day we traveled to Montana to take in a seminar put on by **AV Electronics**. There I was shocked to see a complete system being promoted for \$1995. That did it. I knew from our experience with outdoor vehicles, spas and so on that there was a magic price barrier being broken here. Your market for terminals at \$2,000 each was infinitely larger than terminals at say \$5,000 each. The time was ripe; **now it would happen!**"

Olsen had been following the growing TVRO industry, but not as closely as he now admits he should have been. "When I saw what AV was offering, I instantly knew that we were 8 months behind. I had a feeling that about 8 months after **this** point in time, there **might** be a terminal offered for \$2000 retail. AV Electronics did it first in our part of the country, and I instantly decided that I had 8 months of catch up to do if we were going to be a **real** distributor."

In the next 8 months **RSI** devoted full time and attention to the

TVRO marketplace. By September of 1983 the firm's monthly gross sales, at the wholesale level, had spurted ahead to \$700,000; a growth of 29 times. From a handful of dealers who were also 'playing,' RSI was over the 130 dealer mark by this past October.

"Our bankers are in shock," grins Olsen. "When the outdoor recreation vehicle business was very good, we had climbed up to \$8 million in annual sales. Then as the slump in the economy set in and people were less inclined to lay down \$2,000 for a snow mobile or \$3,000 for a trail bike, we watched in dismay as our annual sales slipped down to \$2.7 million. The bankers probably figured we were going to slide off the bottom of the page at any time. Then along came the TVRO boom."

Is the boom real? Or is this just a Hula Hoop craze that will top off and slowly go away?

It is totally real according to Olsen. "I cannot speak to the validity of needing a TVRO in more densely populated areas where television service is available. But I can tell you that here in the northwest and the mountain states, a TVRO is no toy; it is almost a necessity for rural people."

An example, from Olsen's early days as a distributor.

"From the outdoor recreation vehicle days, I had a former dealer in Wise River, Montana. This is a town so small that both sides of the sign have the same wording on it; 'You Are Entering Wise River, Montana.' We did the same thing to a snow mobile dealer there that Doug Dehnert did to us. We sent him a terminal and told him to install it for himself. And this was back when terminals cost far more than \$2,000 each."

"I haven't been to a movie in six years,' the fellow protested to me," recalls Olsen. "And I never watch TV either." Olsen remembers looking at the man's TV reception. "I wouldn't watch TV either if that was all I got! One very poor channel, filled with snow."

The fellow fell in love with with the TVRO. "He would call me up at 1 AM in the morning. 'Switch to transponder 13!', he would command, 'and see Gallagher!'. He wanted to start selling them instantly. I told him to wait, until the price came down."

Well, the price did come down and as of mid-October the dealer had moved more than 50 terminals in about seven months time. He was a rancher and once per week he drove to Dillon, Montana to act as auctioneer at a cattle yard. "The guy was a natural; he knew everyone, he believed in the product, and he was extremely enthusiastic."

What type of person makes a successful dealer?

"The individual, not the facility," believes Olsen. "Not everyone in the distribution business believes this, of course. Some of those around us believe that you have to limit your distribution to established consumer electronic centers; places that sell TVs and stereo units. I believe that you have to find a person like our man in Wise River who is so excited about the product that he infects everyone he talks with. Some of our dealers operate glass shops, one fellow operates a 'Rock And Satellite TV Store!'"

"The TVRO dealer, the successful one, evolves. We have sales people on the road who are always interested in opening up a new dealership for us. That's the name of our game. But my people have strict instructions not to 'go looking' for people; don't try to 'talk' somebody into being a TVRO dealer. Let them talk you into being able to handle your line of equipment; make them prove to you they have the interest and enthusiasm to make a go of the business."

What about the facility?

"We have tried to avoid the on-the-road type of selling operator; the guy who travels from town to town hauling a trailer load of dishes peddling them off of his truck. I insist that our dealers get support from us. That means they get a thorough schooling in how a TVRO works, how it installs, how to trouble shoot it if there are problems. Then we make sure they understand how you create sales leads, what you do with a lead to qualify the person, how you make a presentation and close the sale."

The typical TVRO dealer is not a sophisticated person; he may not yet be a professional either. But our own internal goal is to at least turn him into a professional seller and installer even if we can't make him sophisticated in the process.

"We want our dealers to have a base of operations; a shop, with a fully manned telephone. We want them to know how to help get their

customer financing, if required. We provide both training and assistance in helping the dealers get local bank or consumer financing support. We also help the dealer get his own credit house in order so he can stock equipment; a floor-planning arrangement. You have to do all of these things because the marketplace now demands that you do more than simply receive equipment in one door, stamp it, and ship it out the next door. That era is all over for the industry."

Olsen remembers his own days as an early dealer. And he recalls receiving receivers and antennas and hardware which didn't work when they came out of the box, or worked for a short period of time. "We would call the factory and they would say, 'talk to the distributor you bought it from.' So we'd call the distributor and he'd tell us, in effect, 'don't call us unless you want to order another unit. Don't bug us with your service problems.' I knew that was wrong, that the industry was not going to grow if that type of attitude prevailed. You were not going to hand a person with no technical education a \$4,000 pile of microwave hardware and then turn him loose and not offer to help him over the rough spots. The world was simply not ready for that."

If the \$2,000 price barrier played an important part in Olsen's approach to the industry, one might suspect he is into 'selling low ball systems.'

"Not at all," he retorts. "I have a very finely honed view of the importance of say a \$1995 or even \$1495 retail priced package. First of all, I instruct all of our people to be completely honest in describing such a system to a potential buyer. We must never overrate the system, we must never tell people it is something that it is not. But we do use it to get people into dealer shops."

Is that not playing the price leader game?

"Of course it is. Look, price leader merchandising is not illegal nor is it dishonest. Every retail market in the world does it. Your grocery store runs specials each week to get you to shop there. Your auto

OLSEN — 'You don't go into a new car showroom and get a lecture on crank shafts.'

dealer advertises stripped down versions of a car. The appliance dealer offers a 19 inch color TV for \$249.50. Price leader advertising, merchandising, is not immoral or illegal. What you do with the customer after they get into the store . . . that is where the problems begin.

"You have to get people's attention. That's why you advertise. That's why you engage in marketing programs. A low priced system does get people's attention. Now that you have his attention, you have to hold that attention. You do this, or at least we do this, by totally avoiding the intricate details of satellite powers or the Clarke Orbit belt or what have you. People could care less about that; they want to know and see the results, not how you get there. How many people walk into a new car agency and get a full pitch on crank shafts? Nobody. What they get is a pitch on how smooth the car runs, where it will get you, and the price. That's it. I make sure our dealers understand the satellites and the Clarke Orbit belt, just because they don't want to appear ignorant when that one in twenty customers asks them a question about it. But we avoid all of that information and as quickly as possible we help the potential customer put their own hands on the system controls. We get them tuning in the transponders, the audio and so on. We do this on the system that is priced low; we want them to see and touch and use that system."

"Pretty soon the salesman says, 'However, look over here. Try this out.' He directs their hand at a 'dish mover.' The customer wants to know what that does."

"For a few more dollars, you can move the dish from inside, in your easy chair. You can change satellites and get many new channels; here, try it!."

"That makes a smooth transition; it gets the customer from the low ball priced system to a slightly higher priced system. Naturally they want to know how much more money. You tell them and they chew on that for awhile. Now that you have them sold on the concept, and they

Channel Master... the industry's leading supplier of home earth stations wants to give you a better look.

Video satellites may orbit on the edge of the great unknown, but when you consider investing in satellite reception, you better know exactly what you're getting. That includes equipment, service and your supplier's reputation.

Channel Master has been in the TV reception business since 1949. We've been repeatedly recognized by both trade and consumer publications for the outstanding quality and performance of our products.

If you'd like to take a better look at us and our satellite products, write or call us. You'll receive a complete Channel Master information package. You'll also get the names of Channel Master distributors who service your area.



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Please check one: Consumer Dealer

are comfortable with the idea and have played with the controls themselves, you slide into stereo tuning and hand held remotes for the receiver. And that leads to the next higher priced package, naturally, and without resentment.

"The customer will stop at the level where he is no longer comfortable. You don't have to ask anything except 'would you like to see this' or 'would you like to try this?'. The customer finds his own level of stopping and you respect that. And that is what we teach our dealers."

What if a person **really does want** the manually operated, low ball priced system?

"No problem. We sell alot of them. To a rancher in Montana with one or two regular channels of TV, an 8 foot dish locked up on F3R offers 21 more channels than he is now getting. To that person a \$1995 system seems like a tremendous improvement for not that much money. Besides, we make **sure** the customer has been exposed to the better systems and if they make the lower-level pricing decision on their own, we don't fight it. Every customer knows what price level they can handle, initially, and we accept that. Our job is to explain, carefully and patiently, all of the options available to them and what those options will cost."

OLSEN On Distribution Patterns

"They are getting better. When we first got into the business, the OEMs were selling to distributors, to dealers and to end users. It was tough being a dealer when the same equipment you were trying to sell was also being sold to any consumer who happened to have the telephone number of the OEM.

"That is better now, but with some OEMs there are still problems. Back door selling, or selling 'off the dock' to anyone with the money is a sure way to destroy the distribution network for a product. The manufacturer has to keep in mind that if he depends upon distributors to take a share of his product, or all of his product, **he must support them**. If the OEM won't stand behind the distributor, fully, the OEM won't have a distributor. It is just that simple. If the distributor fails, or drops a product, then the dealers also suffer. We all have a stake in how the distribution system works."

How serious is in-fighting between distributors?

"Not nearly as bad as it once was. Everyone was trying to be a 'national' distributor, shipping coast to coast and border to border. There were no 'territories,' in actual fact nor respected. What has happened is that distributors, such as ourselves, have found that we cannot do a good job of providing equipment AND service to people half way across the United States. The **sales** were simple enough; make them and ship the equipment. But then when there are delivery or equipment problems, those problems magnify by the distances involved. We started late as a distributor, and we have tried to avoid servicing anyone outside of our immediate area.

"There is some exchange of equipment between distributors, in the same area. But not nearly as much as there may have been a year or two ago. When I am out of 100 degree LNAs, chances are the other distributors around me are also. Or will be within days. We try to maintain a good, cordial relationship with other distributors around us however because the door swings both ways; we may have something they need today. Tomorrow, they will have something we need."

How does the present evolution of the TVRO industry, and its distributing patterns, compare with some of the product lines you have carried for a longer period of time?

"Everyone has to learn the same general things in the same way; by first hand experience. I remember when the Snowmobiles first came out; one of the primary suppliers tried to turn each of their motorcycle shops into a Snowmobile dealer. It fell flat on its face. The Snowmobile units sat on showroom floors or in warehouses. The pipe line filled up the first year and then stopped. Very few of the motorcycle shops really understood or cared about the type of person who was a potential customer for a Snowmobile. Since the shop owners didn't 'dig' the Snowmobiles and what they did, the products spent the entire first season just taking up space. By the second season, they had it sorted out. They found people who liked the Snowmobile concept and made their dealers. The same thing has proven to be true with TVRO systems. **To sell one, you have to like them**. You have to appreciate what they do, and how much they can do for a user. If the seller thinks



"The dealer must come to recognize that service is the most important thing he has to sell."

of it as just a 'fancy TV antenna system' they will never be successful in selling them."

What about the fall equipment crunch? What has that done to you?

"Remember that a year ago we were barely in the business. This is **our** first fall, but we anticipated a large increase in sales. In spite of that, we were out of product to deliver by the end of September; everything we had been promised by the OEMs for October was pre-sold, before we got to October.

"I would have liked to have had more equipment to move. But that obviously was not going to happen so we have used the no-new-sales period to refine how we do things. I am particularly interested in increasing consumer awareness of TVRO. I want to try to educate the consumers before they come to our dealer's stores and by doing this I believe we can greatly increase the traffic to our dealers. I also want to be sure that the dealers have the total in-store appearance of being in a retail, high-tech business. To do this we are developing point-of-sale materials; brochures, posters, counter top cards and so on. I want our dealers to be able to have their stores 'say something' about what they do. A TV set or two, a couple of small boxes and a control or two sitting on a table is not effective merchandising. A customer should walk into one of our dealer's shops and immediately **know** he has entered 'another world'; a place where all of the world is at his fingertips. I feel we have to get all of our present dealers up to a professional level before we go out and spend time and money increasing our dealer network.

"A dealer ought to be selling no fewer than 3 to 4 complete systems per week. If he is not, and he is working at it full time, there should only be one valid reason why he is not. That reason? That the marketplace is simply too small. Any other reason is not valid. If he is not getting enough sales leads, we want to help him get more leads. If he is getting enough leads, but he is not closing enough sales, we want to find out why. Either his technique needs more polish or he needs to have a better way to get them financed."

Let's talk about financing. Isn't it tough to get local financing for a TVRO system?

"Very tough. The only people who get financing to buy a TVRO are those people who have sufficient collateral to justify the loan. Now that's pretty basic about anything, but in this case the TVRO **itself** has **no loan value**. To borrow \$3,000 for a TVRO, the borrower has to have something more than \$3,000 in equity, in say his home, which he is willing to put on the line until the TVRO is paid for. That's not a good situation.

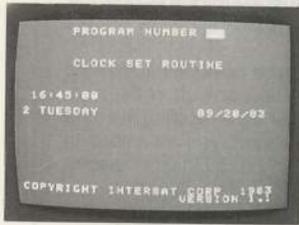
"I like what I read and see about the SFPC plan. That can only help the dealer. I am not sure that initially it will cause the number of sales to increase, at least not dramatically. But what I believe it will do is increase the average cash value of a sale. Now a person can be moved 'upward' to say a \$3,000 system from a \$2,000 system because he can finance some or all of the purchase.

"This will call for increased professionalism on the part of the TVRO seller. The guy selling is going to have to understand some-

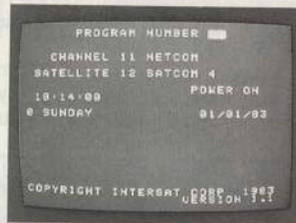
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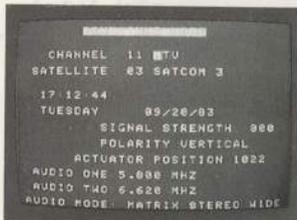
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Power Off



Parental Lockout



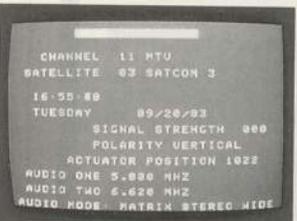
Channel #, Satellite,
Day, Date, Time



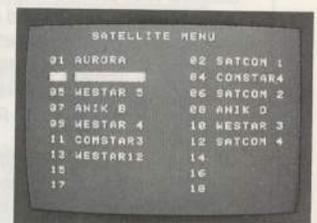
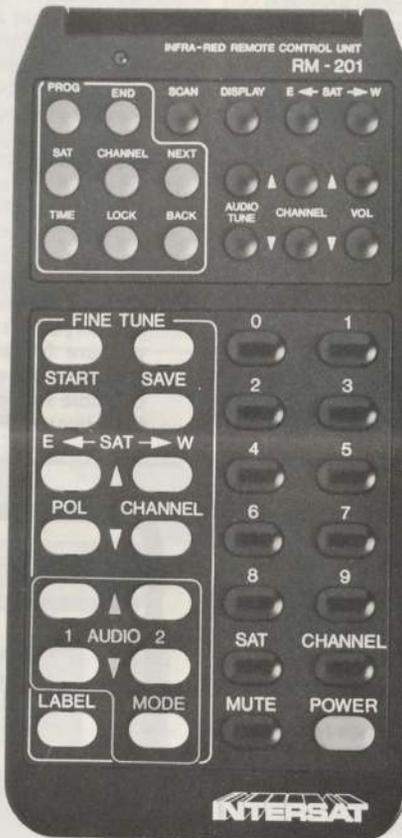
Label Change, Satellite
Location, Fine Tunes Audio



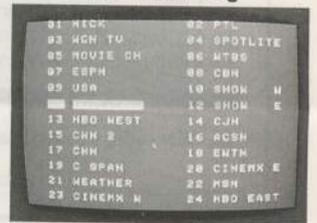
Stores All Changes
In Program



8 Modes of Audio/Tunable
12 Watts Stereo



Available Satellites
for Viewing



Available Channels
On Each Satellite



Alerts You To Antenna
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thing about human nature. You will be in a position to help people figure out their monthly budgets, to see if they can handle a monthly payment. There is a technique to do this properly and it will demand that we all develop our professional attitudes.

"There is a technique we have used, on a limited basis where we could get financing for our dealer's customer's; we draw the attention of the consumer to what cable costs in a major, say Idaho, urban market. The monthly numbers for cable service here, if the subscriber takes all of the services available, run to as high as \$64 a month. Now we can take that \$64 a month and say to prospects, 'Here is what you could get for \$64 a month,' and list all of the cable services. Then we can say, 'NOW, look at what we can give you for \$64 a month!', and list all of the satellite TV services. The monthly payment program will be a very useful tool. And that 72 months? That's tremendous!

"Anything that gives the dealer more tools to work with has got to be good for the industry. We recently started providing our dealers with printed hand out literature; sheets that are customized with the dealer name and address and telephone number on them. In small towns, getting sheets printed can be a problem. We do that for them because it increases their professional image, and ultimately makes more sales for the dealer."

What is the biggest problem, right now, in the consumer area of TVROs?

"No question; **education.** Can you imagine how this industry would grow if people **knew** about what we have to offer? If you start off fresh with a person who has seen one, or read about one, it takes no less than 15 minutes to get that person up to speed where he understands what you are saying. The very first time you try this with a casually interested person, they walk off thinking they have been listening to science fiction. If this industry could get together and pool its resources to launch an intensive educational campaign, we'd grow by a factor of ten the first year we did that. There would be no stopping

OLSEN — 'Anything that gives the dealer more tools to work with has to be good for the industry.'

us!

"The average sales person can't do it. He can't do it properly because his own training hasn't been adequate. So we have to start with better training for our own people. Imagine putting together a well thought out, well planned televised program that takes the people of the industry through a simple explanation of a system, what it does and what it offers. Now put that on satellite and reach hundreds or thousands of dealers all at one time. **If we could teach our own people how to make a proper presentation,** then we'd have all of those missionaries out there to spread the word.

"There is so much we have **not** done, the suggestions far outnumber our ability to perform. I hope that in our next growth phase we approach the consumer education process with some professional help. That would help the industry tremendously.

WHAT ABOUT Starter Systems?

"The low ball or \$1995 'starter system' gets you 'in the door.' It allows you to talk about the advantages of satellite TV to a potential customer without having him shut you out of his mind. When you **start off** at \$2995 or \$3995 you immediately turn off a high percentage of the people; even many of those who can afford a better system.

"The starter system gets you 'into a person's mind' so you can keep his or her full attention while you build the story and create the consumer's awareness of what a system can do for them.

"With our approach to hands-on operation, making the potential user actually operate the system and tune in the channels, you also let them find out for themselves that the starter systems are usually more difficult to operate. Certainly there is a substantial difference between push-button tuning with automatic fine tuning, and rocking a small tuning knob back and forth to find the best picture. So in a sense, **a low end system helps you sell up** in the process of allowing the customer to operate it. First they operate a \$1995 system, then they operate a

\$2995 system. Invariably they will say something like, 'I think the picture is better on this one' (indicating the better system), and then say something like, 'This one certainly operates easier.' That's kind of having the best of salesmanship. **The equipment** does the selling; the salesman is simply a 'guide' to the customer, helping him or her on their first 'space voyage'."

But what about the profit margin? Is the dealer being fair to himself when he trims the price on any system, low-end or high end?

"If you end up making a one hundred dollar bill after all of the time and trouble of putting a system in someone's yard, you are cheating yourself. The first time you have to make a service call to that customer, you find yourself realizing that even that \$100 is now gone.

"If you don't maintain a fair profit, you cannot afford to treat the customer properly after the sale.

"We tell the dealer to 'be professional'; sell yourself and sell your service. Attach a value, in the customer's mind, to having you available for service, as a back up when something goes wrong. We want our dealers to be stable, permanent parts of their communities. And without a reasonable profit? He cannot be either stable or permanent. Nobody is served by cutting margins so close that dealers come and go from the business.

"The other edge of this is that if you give the customer good service, because you feel you owe it to the customer, the customer will stay happy with the system he bought from you. And every happy customer becomes a salesman for you. We feel that every system that goes in potentially can sell as many as four additional systems for the dealer. A happy customer is going to infect other people with 'satellite fever' and the more enthusiastic the customer is, the more likely that he will bring you more customers.

"When you set out to give people the cheapest possible price, you are forced by circumstances to also give them the cheapest possible equipment backed up by the cheapest possible service and warranty policy. You cannot build a long term business by following that philosophy."

DISTRIBUTOR SURVEY (Fall '83)

The September CJR went to the front lines to find what was working and what wasn't at the dealer level. The results were interesting, and sometimes surprising. Each level in the distribution chain has its own challenges, opportunities, and its own set of problems. This month we surveyed major distributors of TVRO equipment, again finding their viewpoint somewhat different than one might have predicted. The following represents the results of those interviews. We have followed somewhat of the same format as the dealer survey, asking the same questions of all those interviewed, giving plenty of time for additional comments and views, and omitting names in order to stimulate open communication and frank and candid comments. This is what we found.

HOW HAS THE ROLE OF EQUIPMENT DISTRIBUTOR CHANGED IN THE PAST YEAR, IN THE TVRO FIELD?

Virtually all the distributors felt that the role of the large distributor has undergone major changes in the past year. Once upon a time all



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you needed to be a major distributor was some venture capital, something you could loosely call a warehouse, a phone line or two, and an ad in CSD. Product was scarce, and the demand was great, and you didn't have to be a marketing genius to meet the need. This is self evident by the number of 'distributors' who have come and gone. Unfortunately some of those who have 'gone' didn't do the industry or a large percent of their customers a great service. Those who have remained are generally those who have approached the market in a businesslike fashion, understanding those nasty details of life such as net profit, customer service, reliability, and many more. "Dealers are much more sophisticated today than ever before." "Product is now in good supply and dealers have much more latitude to pick and choose their distributors, and they do, based many times more on the integrity and reliability of the distributor than on product lines or price. Dealers with some experience have learned the lesson well that there is more to becoming successful in this business than finding the cheapest equipment available, and selling it at the lowest price. Some have learned some hard lessons at the school of hard knocks relative to buying below standard equipment and selling it so low that there is no profit to cover failures, service calls and other problems. They are picking their products much more carefully now, and being just as selective with their suppliers." Distributors are finding that they must not only offer a good product line, but also provide dealer (and sometimes end user) support to claim their share of the market. Asked what type of 'dealer support' dealers were expecting (and getting more than in the past) those surveyed mentioned service information backup by telephone, installation and service training (by more than a few) and close contact with their dealers when there are problems with equipment, supply shortages, etc. Overall, we found that dealers are seeking out 'full service distributors,' and those who are finding success are meeting this need.

IS THE DISTRIBUTION BUSINESS MATURING OR IS IT STILL PRETTY MUCH A BOOTSTRAP BUSINESS?

A quick look at the volume of equipment being moved monthly and the number of dollars involved will tell you that more than a few of the major distributors have left the 'bootstrap' stage far behind. This volume (and those dollars) have both forced and allowed them to offer the full service mentioned above to their customers. All surveyed responded that equipment distribution today is indeed big business, and no arena for the faint hearted or the undercapitalized.

THERE HAS BEEN A RECENT TREND, REGENCY IS AN EXAMPLE, FOR A NEW OEM IN THE INDUSTRY TO ALIGN WITH PERHAPS EIGHT TO A DOZEN KEY DISTRIBUTORS BEFORE BRINGING THE PRODUCT TO THE OPEN MARKET. IS THIS A GOOD CONCEPT FOR THE INDUSTRY?

Now Margaret, you never get everyone to agree on everything, but this is one area that most of those surveyed think that this is not just a good idea, but a **fantastic** one. A very small percentage felt that all products should be put on the open market and allow the product to find its own niche, most did not. Most echoed the sentiments that throwing a product up for grabs, and allowing every Tom, Dick, and Harry to buy it for distribution does the end user and the industry as a whole no favor. "When there is totally open distribution, to all callers, without requirements as to minimum purchases, customer service and training, supply backup, and other considerations, the door is thrown open for those 'fast buck artists' to jump in and low ball equipment to the end user, without providing the services the customer deserves. All control over pricing levels (to allow the overhead expenses of a full service distributor/dealer) is lost, and those who are unqualified (or underequipped) to properly market and install the equipment muddy the water for those who are." The great majority of those surveyed are convinced that when distribution is limited to those willing to commit to volume purchasing, and those maintaining organizations to fully service the dealers, the industry and the customers are better served. "Those doing it right, and receiving fair market value to cover the overhead to support their full service operation are not faced with competition of those 'hit and run' operations." CJR found no instance of attempts to fix prices or gouge their customers, but those major distributors offering substantial dealer backup can now compete with those who do not. With a limited number of qualified distributors, the OEM, dealer, and the end user are better served, according to the

distributors surveyed.

HOW CLOSELY DO YOU MAINTAIN CONTACT WITH OTHER DISTRIBUTORS IN THE FIELD?

(Do distributors generally cooperate in moving warehoused merchandise around or is it a situation that when one distributor gets low in one product area, such as LNA's, that distributor is stuck without inventory until the OEM can ship his product?) Here you might be somewhat surprised. In the midst of egos, company pride, and stiff competition between the various distributors, CJR found that most maintain close contact with many (if not most) of the other distributors, especially those handling many of the same product lines. Do they really 'share' product with another distributor . . . yes they do, on occasion. CJR found most distributors to be very professional businessmen (and businesswomen too, let's not forget real pros like Candy and Sally among others) and their respect and kinship with others of like ethics and professionalism overrides their competitive spirit. If they are able to meet their shipping commitments and provide needed equipment for a fellow distributor without hurting their operation, they usually do so.

IS THE TVRO INDUSTRY DISTRIBUTORSHIP BUSINESS HEALTHY TODAY?

IN A WORD . . . **YES**. 100% of those surveyed said that all distributors operating in an ethical and professional manner has all he can do to maintain his supply and fill his orders, and service his customers. All reported gains (most of them very substantial) with no end in sight.

MOST ELECTRONIC HARDWARE IS DISTRIBUTED THROUGH FIRMS THAT HANDLE EVERYTHING FROM TV SETS TO RAW PARTS. THE SATELLITE INDUSTRY DISTRIBUTOR LARGELY OPERATES OUTSIDE OF THAT CIRCLE AND THERE ARE THOSE WHO FEEL THAT ULTIMATELY THE SATELLITE DISTRIBUTOR, HANDLING ONLY TVRO HARDWARE WILL BECOME EXTINCT. DO YOU SEE THAT HAPPENING?

This was a tougher question for most of those surveyed. Frankly most have all they can do at present to meet the demand for the product lines in stock, and there hasn't been unusual amounts of time to dwell on this area. Many of the distributors have broadened their lines substantially during the past twelve months, but although the lines consist of many products, most are directly or indirectly related to the TVRO field. Some are now (and some have been) offering related equipment (projection TV, VCR's, standard televisions, monitors, stereo equipment, etc.) but the majority distribute primarily TVRO components only. Some feel that for the foreseeable future TVRO's will still be a highly technical product, with the dealer requiring a specialized distributor of TVRO equipment to back him up. "Although you can go to many areas and see the local electronic dealer or TV retailer offering TVRO equipment, these operations have never been a real factor in the total sales picture. TVRO's remain a specialized field, and those, both at the dealer level as well as the distributorship level, who focus on this field are moving the vast numbers of systems. I don't see that changing." "TVRO's are not clock radios that you can take home and plug in, and dealers in this sophisticated equipment will continue to have a need for a specialized distributor to provide the equipment, and the backup needed." The question is always there that the day will come when 'majors' in consumer electronics will move in, but due to the nature of the equipment, most don't see that happening in the near future.

DISTRIBUTORS HAVE BEEN CRITICIZED BECAUSE DEALERS FEEL THAT VIRTUALLY ANYONE WHO WALKS IN OR CALLS IN IS GIVEN PRICING EITHER IDENTICAL TO OR VERY CLOSE TO THOSE PRICES PAID BY LEGITIMATE INSTALLING DEALERS. IS THIS A PROBLEM? IF SO, HOW IS IT (OR CAN IT BE) WORKED OUT TO THE SATISFACTION OF THE INSTALLING DEALERS?

None of those surveyed felt that this was an ethical practice, and of course none of them would admit to doing it, at least on the surface. Most responded that it can be somewhat difficult at times to verify just who is a 'qualified' dealer and who isn't. Few distributors are going to have the time or resources to research the business history of every prospective buyer, and all of course are in business to move their product. It doesn't take much these days to have a few letterheads or business cards printed, and anyone can be a 'high roller' over the

telephone. Requiring all dealers (especially those in their 'start up' mode) to buy in quantity is impractical in many cases, and there are not too many other ways to screen them. After talking at length with those surveyed, CJR is convinced that the great majority of the major distributors simply are not interested in these 'one time' buyers, and do not wish to risk the good relations with their dealers by resorting to this practice. Those surveyed responded that various methods are being utilized to screen out these 'non dealers' by requesting a business license, tax number or some other evidence of an actual business. Most distributors feel that this is a minor problem, and is overstated in most cases, and that there will never be a complete solution. All were quick to say that in the isolated case when it happens, and it is brought to their attention by one of the bonafide dealers, it is not repeated. Those surveyed also indicated that this problem is more prevalent among those quasi-distributors and dealer-distributors than among the ranks of the full service major distributor.

HOW DOES YOUR BUSINESS VOLUME COMPARE WITH ONE YEAR AGO THIS MONTH?

All of those surveyed reported that their business has grown by leaps and bounds during the past year. Remember that CJR surveyed, for the most part major distributors, and those who have been around for a while. The largest gain reported was 520% (from a relatively new distributor) and the lowest was a whopping 230%, with an average of over 300% overall. With the prices dropping at a rapid rate over the last 12 months, CJR wanted to ascertain whether this increase was in volume (the number of systems sold) only, or in actual monetary increase. No hesitation here, all reported that they were increasing dollar volume in the percentages quoted. One mentioned a new warehouse facility in the 52,000 square foot range, in addition to their previous facilities, and others mentioned equally impressive operations. There is no question that the industry, and TVRO distribution in particular has become big business, and continues this growth pattern.

WHAT COMPONENT OF THE HOME TVRO SYSTEM GIVES YOU THE MOST PROBLEMS AT THE DISTRIBUTOR LEVEL?

The responses here varied greatly from those given by those on the dealer level. Dealers were queried as to the problems related to installation, servicing, failure, turnaround time for replacement for equipment that had failed in the field, etc. Distributors, due to the fact that most failed equipment is returned to the OEM, face more problems with supply shortages. Mentioned most were LNA's. Although in good supply during the relatively moderate sales months of the summer, distributors are again scrambling for shipments of LNA's to meet their commitments as sales soar during the peak season. Those distributors that get into the chain when equipment fails and has to be serviced or replaced followed the same pattern as CJR found when surveying dealers, namely motor drive systems, with LNA's coming in second.

WHICH COMPONENT GIVES YOU THE LEAST PROBLEMS?

The responses here are fairly predictable, and were virtually unanimous among those surveyed . . . Receivers led the pack followed closely by the reflector (dish). Receivers have arrived at a point where they are quite reliable, and seldom fail, and are in good supply. That is not to say that there are not good receivers, and better receivers, only that they do what they are expected to do at their level, in most cases, with little attention. Back to the fact that distributors are usually speaking in terms of supply when they speak of problems, the size and weight of the receivers allow ease of shipping and warehousing, and the numbers needed are predictable, and in good supply in most cases. Many are now buying dishes in numbers allowing them to bring them in by the truckload (many times their own truck, or one owned by the OEM) and this makes their life simpler. Many distributors have handled their particular lines of these basic components for some time now, and their procedures and supply lines have become established with the glitches being worked out long ago.

WAREHOUSING OF ANTENNAS HAS ALWAYS BEEN A PROBLEM. ARE YOU IN BETTER SHAPE TODAY THAN A YEAR AGO FOR WAREHOUSING?

Again the responses were positive among the majority. Those responding in the negative tied the problem (of today compared to last

year) to unprecedented growth. Prosperity, growth, and the dollars that come with it has allowed many to build/buy/lease more space than in the past to allow purchasing in quantities that keeps them competitive, and gives them supply depth for their dealers. When questioned as to the OEM cooperation in the areas of better/smaller packaging, units that lend themselves to more efficient handling with less damage and problems we received mixed responses. Some have done very well to streamline and standardize their crating, most have not. Many distributors feel that packaging is still a problem with too many of otherwise fine products. Mentioned most were not small packages that make for easy handling, but rather strength in packaging, that stands up to the rigors of the distribution process, and arrives at the final destination intact. Most would invite more engineering energy and thought to be given to this problem. Mentioned also was the fact that dishes themselves (in this day of petalized and lightweight mesh dishes) are easier to store and ship than in previous years. While the dish will always be the largest and most unwieldy package to handle, most major distributors have the space and equipment to make them up to the task. Better packaging to keep things intact when the truck driver takes over is more of a problem.

WHEN SOMEBODY COMES ALONG WITH A NEW PRODUCT, A FIRM THAT IS NOT A VETERAN IN THE BUSINESS PARTICULARLY, HOW DO YOU EVALUATE THAT PRODUCT?

Again, prosperity and growth has changed the way most large distributors go about things. Once upon a time you pounced upon most anything you could get out of the supply line; not today. Most distributors are quite comfortable with their current product line, and while always wanting to stay at the forefront and constantly peer into their crystal ball looking for that next 'winner,' it's now big business and they look before they leap, several times, because for them it's usually a leap of some dimensions, and that first step can be a costly one. If you think that most distributors today grab the newest and cheapest you haven't been looking closely as of late. Big numbers bring big dollars . . . or big problems when things go wrong. It's one thing to sell a few units of the newest whiz bang, but when it only whizzes for a short time then goes bang all at once, and the distributor has several hundred (or several thousand) in the field that becomes a headache that even Excedrin won't cure. Respondents to the survey at the major distributor level say they now have the means and resources to look at new products very closely, field and bench tests, they consider marketing approaches, packaging, shipping requirements, and many other factors. "We are at the point that having extensive testing by independent outside sources, as well as in-house staff is no longer a luxury, before committing the resources necessary to field a new product. It is more cost effective to find the flaws up front by far." Not all distributors can handle this type of extensive testing, but their volume now demands careful consideration of any new unit, and they are employing more sophistication in their evaluation, and playing hardball with would be OEM's.

WHAT RECOMMENDATIONS WOULD YOU MAKE TO SOMEBODY WHO WANTS TO GET INTO THE DISTRIBUTION CHAIN WITH A NEW PRODUCT?

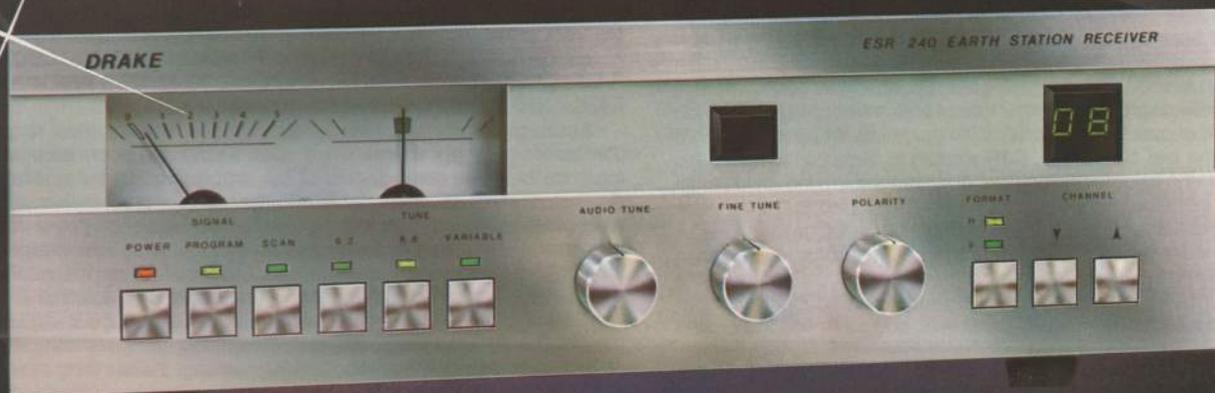
Several differing responses were received here. By far the runaway leader has to be the suggestion to utilize limited distribution as discussed previously. Virtually all the major distributors surveyed consider this the method to allow proper distribution of quality components, allowing orderly distribution through the chain, with fair profit at each step, without distributors and dealers having to compete with 'lowball' pricing from those offering little or no service or customer satisfaction, with the lack of the facilities and resources to properly represent the product. Many also commented on the new OEM bringing the new component to market with independent or documented test results and specifications relating to the product's capabilities. Most new products arrive with only the PR department's optimistic claims as to "THE BEST" and "THE NEW STATE OF THE ART" (how many times have you read that). "A larger percentage of the budget needs to be devoted to R&D with published results that can be evaluated by those in the distribution chain."

WHAT IS THE BIGGEST PROBLEM THAT YOU HAVE WITH DEALERS?

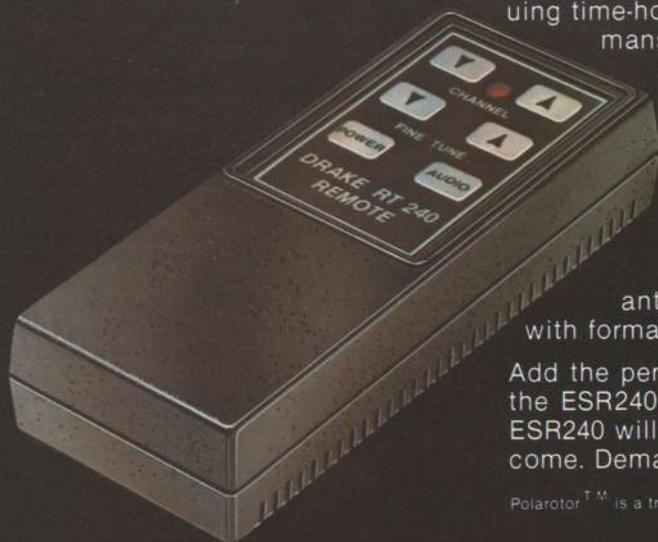
Responses here fell into the following categories: Lack of technical

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knowledge, lack of the capital to allow more orderly purchasing (needing it yesterday because he sold it last week), lack of sales training, and the improper use of noncompatible components. Distributors consistently report that as many as 70-80% of the components returned needing repair or replacement are not due to equipment failure, but to either improper installation ("he smoked another one") or misguided trouble shooting leading to the return of the wrong component. Many distributors (perhaps out of self defense) are initiating programs for technical and sales training for their dealers.

WHAT COULD DEALERS DO, OR BE AWARE OF TO HELP RESOLVE THE PROBLEMS?

Short concise answers here . . . read the instructions, follow the steps in sequence, communicate with your supplier before trying your latest 'step saving' idea, read the updates published by the OEM's and distributors relating to product changes and modifications ("some dealers evidently are convinced that reading is a more serious sin than adultery and not as much fun") and be sure that the component that is returned for repair is the one that is broken.

WHEN EQUIPMENT IN DEALER HANDS QUILTS, WHAT IS YOUR INVOLVEMENT IN GETTING THE UNIT REPAIRED OR REPLACED?

All distributors surveyed reported that they always get in the process when needed (many times it is not necessary), and added that if the dealer has the proper documentation of the purchase of the equipment that direct-to-the-OEM return is the fastest and simplest method of realizing a fast turnaround.

DO YOU ROUTINELY PROVIDE BACK UP EQUIPMENT WHEN A DEALER HAS A FAILURE?

Yes and No. Some do, others don't under any circumstances. Most responding reported that this is a real problem (the 'loaner' is no longer new and cannot be sold as such) and feel that it is part of the dealer's business to maintain enough stock to cover his problems

while awaiting repair or replacement. Most admitted although, that they bend the rules and perform this service for the regular volume dealers.

WHAT STEPS DO YOU FEEL THE INDUSTRY CAN OR SHOULD TAKE TO MAKE THE AVERAGE MAN IN THE STREET MORE AWARE OF TVRO AND WHAT WE HAVE TO OFFER?

The majority responding called for more national advertising to the consumer **by the OEM**. "The wise OEM will devote more of the advertising budget toward directing the consumer's attention to his product, thereby increasing his sales." Others feel that dealers should redirect their marketing strategy toward reaching a higher percentage of their marketplace by more creative use of the media and local promotions. Distributors seem to feel that the marketing job belongs to the OEM ("it's his product") and the dealer ("it's his business") and that the role of the distributor is that of supplying quality product and providing technical support for those products.

Distributors are not the most interesting people to talk to, they are just too busy these days to spend much time talking about it, there always seems to be fourteen phones ringing, and the UPS truck is backing up to the door. Some have attended to detail, and chosen products very carefully, employed sound business principles, and have seen their business grow beyond all predictions. Others have not, and many have not prospered. Without question, one of the most important decisions the budding dealer will make is in his selection of his distributor(s). Some are saying the day of the 'national distributor' is on the way out, that in the coming days we will see regional distributors prevail, offering service, backup, and close communication and cooperation along with their products. Meanwhile, the demand for those products continues to grow at a quickening pace, keeping distributors puffing to keep up with the myriad of new product and needs of their respective dealers. On a clear day you might even see Charlie Ergen pitching in and loading trucks in a three piece suit.

UNDERSTANDING BASIC CATV SYSTEMS

UNDERSTANDING The System

CATV, or, 'Cable Television.' A method of distributing, via coaxial cable, one or more television channels of information, education and entertainment in a 'secure' mode, so that only those television receivers which have authorization to be connected to the 'system' and receiving the 'programs' may do so.

CATV actually stands for 'Community Antenna Television' because when this technology first evolved in the late 1940's such a system was used on a community by community basis to bring television reception to homes located in areas where direct, roof-top-antenna reception was not possible. The one, singular, antenna was erected for shared use by the entire 'community' and therein is the derivation of the 'community antenna' concept.

It was in the early 1960's that the 'community antenna' concept of the system grew into a more sophisticated and complex system and 'community antenna' was dropped in favor of 'cable.' The cable, an essential **ingredient** to the system's operation, seemed like a more 'neutral' description of what the system did since many of the program

channels being offered to the homes passed by the cable system were not received from the 'community antenna' at all. Rather, they were programs brought to the home viewers via microwave relay, from local studios or ultimately from video tape and film sources. Years later satellite delivered programming would also be added to the 'mix.'

The basis for cable is improved reception. Throughout the world, television programming is transmitted via relatively short wavelength transmitters; **VHF** (or very high frequency) and **UHF** (ultra high frequency) waves to be precise. It has been a physical limitation of such wavelengths from the dawning of their first use that they seldom pass through or beyond obstacles. Hills, trees, buildings are but three of the more or less 'solid' objects which block the transmission of such wavelengths.

This leads to something called 'line of sight' or more simply put, the requirement that if a home is to receive a high quality, stable, and reliable television picture from a VHF or UHF transmitter, the receiving antenna erected at the home must have a 'clean and clear view' of the transmitting antenna. Television transmitting antennas are typically installed atop tall towers, or on hills and mountains to provide them with the greatest 'reach' and best 'line of sight' transmission to the maximum number of homes.

However, people do build homes and towns **behind** ranges of hills or deep in canyons or behind 60 story skyscrapers and all of these 'obstacles' act as a shield to prevent quality reception of the transmitted signals. And that brings us to the cable TV system **operator**.

If the transmitting antenna is 'blocked' by one or more obstacles, for the home viewers, then the most obvious answer is to find a location as near to the blocked region as possible where a 'clean, clear' view of the transmitting antenna is possible. That is where you will erect your own receiving antenna and as a cable television system operator, you will then proceed to connect each of the homes in the blocked region to the single, master, 'community' antenna.

THE SYSTEM Component Parts

There are three basic parts to the cable television system:

- 1) The receiving **antenna(s)**,
- 2) The coaxial **cable** which will connect that receiving antenna(s)

to the individual homes, and,

- 3) The signal **amplifiers** which will maintain the level or strength of the signals on the coaxial cable as those signals travel from the master antenna receiving 'station' to the individual homes.

In the very earliest of CATV systems, a single coaxial cable line was installed from the master antenna and run to the homes. As the cable passed by each home a 'splice' was made in the cable, in the form of the letter 'T,' with the signal coming from the antenna entering the 'T' at the upper left leg on the 'T' and passing on to the next home using the upper right leg of the 'T.' A second cable, run from the master cable into the home and to the TV set, made up the longer leg of the 'T.' It worked, but not very well. The element missing was something called 'isolation.'

Each time a home receiver was connected to the master cable an electrical 'imbalance' was added to the system. As a practical matter, when one home turned on its receiver the level of signal reaching all other homes on the system dropped. Or went away entirely. Or, bad 'ghosting' (multiple images on the screen) appeared. To resolve this early problem, a technique was developed using a device called a 'tap.' The tap's purpose in life was to 'isolate' each of the homes connected to the master cable so that use of one receiver connected to the line did not mess up reception for the other homes connected to the system.

However, this was not the total answer because as CATV grew in areas where there were many-many homes per block, it became apparent that as you installed dozens of 'tap' devices on the same line, in close proximity to one another, you were right back where you were in the earlier days with straight 'T branch' line splicing; the taps interacted with one another and those homes located closest to the master antenna received relatively good reception while those homes located towards the 'ends' of the system received much poorer reception.

The first solution to this problem was the development of the 'trunk' and 'feeder' system. The signal(s) from the antenna were carried **into town** and throughout the town using a 'master' cable called a trunk. The trunk was **never** used for **direct** connection to a home; rather it was kept 'pure' as a means of carrying the best possible quality signal(s) from the antenna to **areas** within the town. Then at locations of every few blocks or so, a special type of signal amplifier called a 'bridger' was installed. The bridger was like an oversized letter 'T' except that rather than having **one** single output line it might have two or four output lines. These lines were amplified in the bridger station and then they became the coaxial cable 'sub-system' which would wander up and down the streets and alleyways making it possible for the individual homes to 'plug in' to the service. The concept behind the bridger was that it would provide both amplification and 'isolation' to the signals and by separating the 'feeder lines' that fed signal to the homes, only small segments of a community (such as a few blocks) would be directly connected to the antenna through the same equipment. This was a gigantic step forward for cable technology because it resolved the problems associated with too many homes connected to the same lines at the same time.

The earliest CATV systems brought to subscribers no more than three channels at a time. Typically, these would be stations found on the cable dial on VHF channels 2, 4 and 5, or, 2, 4 and 6. Early cable operators found that if you went to the subscriber's receiver with stations on **every** dial position (2, 3, 4, 5 and 6 for example), you created an almost impossible situation for the TV receivers. **Between** the master antenna **and** the individual homes, there were many opportunities for one channel (such as 3) to become weaker or stronger than those nearby to it (such as 2 and 4). The strong one would 'override' the weaker ones, at the home receivers **and** at each amplifying station, and pretty soon as the signals went further and further **from** the antenna only the strong signals survived. This problem was caused by two factors:

- 1) The television receivers were not of a high quality in that era and they lacked 'selectivity'; the ability to separate for clear viewing weak stations located in a dial position next door to a strong signal.
- 2) The amplification equipment in use by the cable operator lacked an effective 'AGC,' or, automatic gain control system.

AGC is a circuit that insures that the signal **leaving** an amplifier station stays constant or stable when the signal coming **into** the station varies up and down in signal level.

By 'spacing' stations on non-adjacent channels, the TV set portion of the problem was largely resolved. The amplifier stations, however, still ran 'hot' when signal levels climbed upwards, or 'cold' when signal levels faded.

At about the same time an effective AGC system was being developed, the technology of cable line amplifiers was improving so that cable systems could carry on cable not only the 'low band' channels between 2 and 6, but also the 'high band' channels between 7 and 13. A companion improvement in coaxial cable manufacturing techniques was also taking place. Let's see what all of this was about.

Coaxial cable has a loss factor; for every foot of cable the signal travels through, there is a calculable amount of degradation or loss in the signal strength. This loss is sensitive to the operating frequency or wavelength of the signals being transmitted. The higher the frequency of the signals, the greater the loss of the cable. A signal on TV channel 13, for example, can weaken at nearly twice the rate as a TV signal at channel 4. To compensate for this factor, better quality cables had to be developed. And, the design of the amplifier stations became more rigid.

Remember that the object of a cable system is to deliver to subscribers signals which are clear in quality and clean of interference. Having clear, clean pictures at the master antenna receiving station site is of no ultimate value if the cable system designer 'loses' that clear quality on the way to the home.

And since the higher band (channel 7 to 13) signals were being made weaker by their passage through the cable at a rate nearly twice as rapid as the lower band channels (2 through 6), it was this factor which held back the expansion of the early systems beyond the basic 'low band **only**' amplifier stations. The first 'all band' cable system amplifiers appeared at about the time that the now familiar aluminum jacketed coaxial cable became available. Prior to that time, the cable available to wire up a community was a slightly larger version of the RG-59/U cables we are all familiar with; RG-6 or RG-11 or some similar type of oversized 'drop' cable. The losses in the flexible 6 or 11 type cables was high when compared to the losses of the solid aluminum sheathed cables, and since cable loss is one of the problems associated with a cable system, the appearance of lower loss (aluminum sheathed) cables, **and**, amplifiers capable of useful performance on the high band (channels 7 to 13) channels happened coincidentally. With this development came the first '7 channel' CATV systems; typically using channels 2, 4, 6, 7, 9, 11 and 13.

As you might guess, in spite of improvements in equipment design, there were still 'AGC' problems with the amplifiers since we were still not using the fully available spectrum (**all** channels from 2 to 13). It had been found that if the cable operator could maintain very precise levels on each channel, that even low quality television receivers would perform with reasonable quality pictures when immediately adjacent channels were not used on the system. But the precise control of individual channel levels required very good AGC systems to insure that individual channels did not wander around (up or down) in signal strength levels anyplace in the system.

At this point in time (1961-62) virtually all of the CATV amplifier station equipment was built using 'tubes.' You remember tubes; they were those oversized 'bottles' of glass filled with filaments and screens and plates that glowed in the dark when power was applied. Tubes had one interesting characteristic of their own. They worked at a certain level of performance when they came out of the box, new, and then they began to deteriorate. With an amplifier station that used tubes the cable operator could make certain adjustments to force the early version AGC systems 'track' the signal level changes. But those adjustments were only good for that particular day or time of day since changes in air temperature, voltage changes within the amplifier stations and a myriad of other uncontrollable factors would affect the performance of the AGC system during the next 24 hours or days or weeks. With dozens or hundreds of cable system amplifiers spread all over a community, the only way to insure that the quality of pictures people received at 6 PM was the same quality they received at 6 AM or 12 noon was to go around and adjust every one of the amplifier

stations several times each day. That was totally impractical, of course. So as long as that design limitation persisted, the cable operator avoided using adjacent channels (2, 3, 4) since he knew that if he did the up and down signal levels on the cable line would alternately degrade first one channel and then another in the cable viewer homes.

The basics of CATV systems will continue in the January 1984 issue of **CJR**.

NEW PRODUCTS/ continued from page 2

R.L. DRAKE CO. (540 Richard St., Miamisburg, Oh.; 513/866-2421) is now shipping their new model ESR24 infrared controlled remote operated receiver. The unit includes scan tuning, digital LED display, 'touch memory' switching with LED indicators, fixed and variable audio subcarrier tuning, a crystal controlled modulator and connections for Polarotor I switching. Automatic switching between 'local' TV reception and satellite TV reception is also included. Suggested list price is \$895.00.



DRAKE'S new ESR240 receiver with remote control.

DRAKE has also announced a new model VS35 Video Selector system which allows the user to perform switching between satellite TV reception, conventional TV reception, cable TV service, home VCR units, home computers or video games. Multiple outputs allow use of up to a pair of television receivers and a VCR unit. The suggested list price is \$165.00.

SATELLITE TECHNOLOGY SERVICES, INC. (2310-12 Millpark Drive, St. Louis, Mo.) recently renewed its supply agreement with Sweden's Luxor AB manufacturer. Luxor's line of TVRO receivers were initially introduced to the North American marketplace by STS at the fall of 1982 STTI trade show. The new contract allows STS to work independently of Luxor in the creation of other TVRO products, such as down converters. STS recently completed design work on a dual-conversion down converter unit and expects to make application for patents for the unit shortly.

DISTRIBUTION

GENERAL INSTRUMENTS has opened a new divisional sales headquarters in Tucson, Arizona. During the formal opening of the sales office, GI conducted a four day sales training seminar dealing with the firm's TVRO systems package.

GI has also announced the selection of Singer Products Company, Inc. for the overseas distribution of the Jerrold and Taco/Jerrold product lines. Singer has been marketing American electronic products overseas for more than 45 years.

LADY J of Midvale, Utah has moved into a new, expanded facility (6864 South Cottonwood St., Suite 1, Midvale, Ut. 84047; 801/566-5532). In addition to the major product lines including Dexcel, Ampli-ca, MTI, KLM and Sat-Tec, the distribution firm has announced their own line of TVRO antennas called the 'Space Angel.' From the new facility, Lady J now offers an engineer-staffed technical HOTLINE for nationwide assistance to dealers; any dealers, whether they purchase from Lady J or not. The special number for the technical assistance is

801-255-4471 (dealers calling must pay for the calls).

MICRODYNE CORPORATION of Ocala, Florida has announced the appointment of Tele-Wire Supply Company (East Farmingdale, New York) as a stocking distributor for the Microdyne line of TVRO equipment. Tele-Wire also operates branch warehouse and office facilities in Pennsylvania, Florida, Texas, Illinois and California.

PROMOTIONAL

Egan & Associates and the National Satellite Cable Association have announced a series of four 2-1/2 day seminars for SMATV/private cable system entrepreneurs through 1984. Five half-day sessions dealing with marketing, engineering, contracts, local law, communication law and methods of funding are included. Dates and locations planned are **January 23/25** (Monterey, Ca.), **April 23-25** (Chicago, Il.), **July 23-25** (Washington, DC) and **October 22-24** (New Orleans, La.). For information, call 904/237-6106.

Egan & Associates has also announced a new package of services to assist the SMATV/Private Cable Operator in 'launching' the marketing of a new system. Included are special four color brochures, four color program preview hand-outs, and door hanger announcements to advise residents of a cabled area that service is now available. For information, contact Larry Hannon at 904/237-6106.

NASDA, the National Association of Satellite Dealers of America, has moved into an expanded 1200 square foot facility in Salt Lake City. The new facility is equipped with an industry 'library,' research center and training facility for dealers from throughout all of North America. A run down of NASDA activities is available from 801/566-5603.

NETCOM has sub-let transponder 1X (2) on Westar V to The University Network, effective this past November 1st. The University Network hopes to be a television arm of the Faith Center Church in Glendale, California offering national and international training and seminars via the transponder.

TRANSPONDER TV GUIDE is yet (another) satellite programming guide offering a monthly listing of all programming carried on SATCOM 3 and 4, Westar 4 and 5, Comstar 3 and 4 and Galaxy 1 satellites. The publication accepts no 'wholesale priced' advertising and is intended to assist the TVRO dealer in making sales. Dealers can subscribe in any quantity for \$20 per year. Information from 715 Washington St., Ayden, NC 28513; 919/746-3589.

BUSINESS Reports

Birdview Satellite Communications of Olathe, Kansas has decided to postpone indefinitely the sale of an additional \$5,000,000 in company securities in the public market following another upbeat quarterly earnings report. Birdview had gross sales of \$6,008,779 and a net profit of \$507,735 (equivalent to \$0.07 per outstanding share) for the quarter ending September 30th. Birdview currently sells its systems through more than 600 dealers in 39 states.

BIZ NET, the American Business Network, continues to expand its private video conference network. They are now offering firms the opportunity to be 'Biz Net Conference Associates,' acting as a local coordinator and seller of Biz Net conference activities. For full information, call 202/463-5808.

California Amplifier recently offered 1,000,000 shares of 'common stock' and thus became the most recent industry entry into the 'public sector' market from our industry. The funds generated, approximately \$12,000,000, are being used to expand the firm's operations.

CALENDAR/ Through January 31st

JAN 16/18: Low Power Television conference, Disneyland Hotel, Anaheim, Cal. (call 203/852-0500).

JAN 23/25: NSCA/Egan Associates SMATV-Private Cable workshop in Monterey, California (call Larry Hannon at 904/237-6106).

JAN 24/26: MATV/CATV/LPTV/TVRO/SMATV Technical seminar hosted by Blonder Tongue Labs, Inc. at Holiday Inn Airport, South Hotel in Atlanta (call Betty Karas at 201/679-4000).

JAN 26/27: Terrestrial Interference Seminar sponsored by Microwave Filter Company in (E) Syracuse, New York (call Bill Bostick at 315/437-3953).

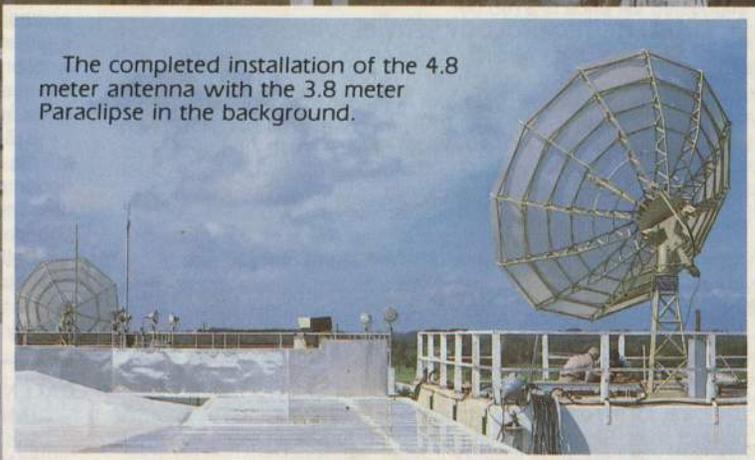
KENNEDY SPACE CENTER



The Paraclipse 4.8 meter satellite antenna was installed atop NASA's Central Instrumentation Facility, at the Kennedy Space Center, November 1983. Shown here during the installation of the mesh.



NASA engineers watch Paradigm chief engineer Frank Casten (plaid shirt) and Paradigm engineer Gene Campbell fine tune the 4.8 meter with a spectrum analyzer.



The completed installation of the 4.8 meter antenna with the 3.8 meter Paraclipse in the background.

Mark Fator photographer

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Paraclipse

HIGH PERFORMANCE
SATELLITE TELEVISION SYSTEM

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