- CANADIAN CANCOM/Descrambler Review
- REVIEW/ Luxor's NEW Downconverter
- TVRO On TV/ Boresight Video

COOP'S SATELLITE DIGEST

MARCH 15, 1985

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On March 31, 1985, at the STTI/SPACE Show in Las Vegas, Uniden® will unveil the most advanced, most complete line of receivers in the history of the industry. And that's far from all.

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The Distributor That Makes A Difference.

MARCH 15, 1985

EDUCATING The Consumer?

The SPACE Board of Directors will soon be meeting in Las Vegas and they will consider a hard-dollar proposal to spend perhaps as much as $500,000 in the next 12 months to 'educate' and 'tantalize' Joe Consumer with the 'word' about TVRO.

Creating an aggressive advertising or consumer awareness campaign is both expensive and dangerous. First there is the selection process; somebody has to be 'elected' from within SPACE to head up the effort. Janeil's **Bob Dushane** seems to have that spot by default at the present time. Few would deny that Dushane knows 'something' about advertising and promotion. Many would question whether his work, judged **not by his advertising** but rather **by his products,** warrants our allowing him to spearhead a sizeable expenditure such as this.

Then there is the REAL selection process; deciding which single man or company, from the advertising world, should be entrusted with **our** industry budget. Advertising, promotion, is nothing but 'ideas.' It is ink on paper, electrons on magnetic tape and lots of 'hot air.' Some of it works very well **("Where's The Beef???")** but most of it works very poorly if at all. We can't afford a campaign that works poorly if at all.

Any advertising professional can put on a real 'show' for us when he is trying to convince us that he should be entrusted with **our** budget to spend. And most of us would be dazzled and razzled by such a show. But is a **good show** what we are after? Wouldn't we be better off with an advertising and promotion firm with a good 'show **record**'; the proven ability to take on a complex advertising campaign such as this and produce results for the clients? Shouldn't we be asking "Don't tell us **what you will do** for us; tell us **what you have done** for others"? The 'first pitch' we get as a Board of Directors at SPACE should not be a 'show' trotting out all of the good ideas the advertising firms have dreamt up; those ideas, in advance of their REALLY studying and understanding our industry are virtually worthless. Rather, they should be showing us how they have taken similar, complex problems of reaching and persuading the public and done something with that problem. Track record, in advertising, means everything. Great ideas are a dime a dozen and usually won't stand the test of time.

To date we've heard plans to spend upwards of $500,000 just to create some TV commercials and print-media layouts. This is a bunch of money to hand to somebody who will use **our money** to sit and think up clever slogans or interesting 'videos.'

The first step in this program should be approving **a budget.** Then we should be going out for as many 'proposals' as possible from track-record-proven agencies and promoters who want us to spend that money with or through them. Trying to find an agency, first, **before the budget** is established, is getting the cart in front of the horse.

If we can't settle on a budget, and we can't settle on how we will fund that budget, any time spent listening to 'creative proposals' is a total waste of our time, and the creator's time. First things first, please, Mr. Dushane. This project is far too important to create the ads **and then decide** 'how we build the product.' That may have worked in the past; it should not be allowed to happen here.

CSD/2 CALENDAR — Through April 15th

Mar 19-21 C-COR Cable television seminar, Chicago. Contact Deb Cree, 800/233-2267.

Mar 26-28 Jerrold Technical Seminar, Calgary, Alberta; contact Beth Schaefer, 215/674-4800.

Mar 26 Kaul-Tronics Video Newsletter, 10 PM eastern, F4, TR22.

Mar 28 **BORESIGHT TVRO Magazine,** 9PM eastern, F4, TR20. Extensive preview of what to expect at Las Vegas SPACE/STTI Show.

Mar 31/ Apr 1, 2 **SPACE/STTI annual spring show, Las Vegas, Nevada.** Now anticipating in excess of 625 booths, 12,000 registrants, 300 operational antennas. For information contact STTI at 800/654-9276 or 405/396-2574 within Oklahoma.

Apr 2 Kaul-Tronics Video Newsletter, 10PM eastern, F4, TR22.

Apr 4 **BORESIGHT TVRO Magazine,** 9PM eastern, F4, TR20. Rush coverage of Las Vegas STTI/SPACE show.

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WITH Distributors

Brooks Satellite, Inc. (Aberdeen, N.J.) has reached an agreement with **Panasonic** under which the Japanese firm will manufacture 'private label' TVRO receiver systems for the Brooks line of 'Satellite Store' franchisees. The receiver plus actuator controller packages by Panasonic use the Panasonic block downconversion approach with an IF of 950 to 1450 MHz. Brooks also announces that **Bruce M. Jennings** has been appointed to the position of 'retail sales manager' and he will be responsible for sales training at the Brooks 'Satellite University' facility where new franchisees are trained in operating a Brooks store.

Finger Lakes Communication Co. (Inc.; 189 Clark Street, Auburn, N.Y. 13021; 315/252-3151) has been appointed as a 'master distributor' for Automation Techniques receivers, Houston Tracker drives, Maxum receivers and the Newton line of TVRO test sets. FLCC is also creating a national 'rep program' to expand the marketing thrust of its 4.8 foot Houssen dish 'Simply Satellite' program.

Popkey Electronics (P.O. Box 1431, Green Bay, Wisconsin 54305; 414/437-5445) has been appointed as a distributor for the **Panasonic** line of C band TVRO products in North America. Popkey will highlight the Panasonic C-2000 home TVRO receiver system which includes a detachable wireless remote control that also controls the antenna actuator control system.

Microdish, Inc. (225 East Main Street, Logan, Ohio 43138; 800/638-1864) reports that the firm, established in 1982, now employs 17 people at the headquarters office. Recently Microdish also opened facilities in **Bend, Oregon** and will be opening a facility in **North Carolina.** Microdish handles products from Drake, Uniden, Houston Tracker, Chaparral, Video Link, Satellite Relay, U.P. Superior Dish, Orbitron, Raydx and Southern Spun Aluminum. The hours are 8AM to 5PM six days per week.

Satellite Video Services, Inc. (RR #1, Box 85-S, Paul Saxe Rd., Catskill, New York 12414; 518/678-9581) has completed an expansion to their headquarters warehousing with a new 11,000 square foot addition. The previous 10,000 square foot facility is being remodeled for additional office space as well as new warehousing space.

WITH Receivers

Anderson Scientific, Inc. (2693 Commerce Road, Rapid City, South Dakota 57702; 605/341-3781) has a breakthrough in receiver sensitivity according to firm founder **Keith Anderson.** The firm is now routinely doing system tests using a **two foot** (24 inch diameter) antenna for C band satellites. The firm has a new 'ultra-low-threshold' receiver which will be announced shortly, making possible the smaller dish reception. Anderson cautions that even with the new receiver design, 2 foot home systems are not yet a reality and points out that his firm now routinely uses this smaller dish size for system development and alignment because the 'large' (!) 4, 5 and 6 foot antennas produce 'too much signal' for optimizing the new receivers.

AVCOM (500 Southlake Blvd., Richmond, Va. 23236; 804/794-2500) has introduced a newly designed international grade of TVRO receiver, the **COM-23T.** This new unit features dual IF bandwidths (for Intelsat half transponder and domsat full transponder reception), 'threshold peaking' controls for optimized reception, improved oscillator stability and fully tunable audio in a rack mounting package.

Another new product from AVCOM is their model **SPM-3** stereo processor unit. AVCOM describes the unit as 'economical, high performance' decoding of matrix, discrete and monaural audio signals. A pair of tunable audio demodulators tune all audio subcarrier frequencies and there is selectable L+R and L−R audio.

COM-23T International by AVCOM

NEW PRODUCTS/ SERVICES/ EVENTS

AVCOM Stereo

ANDERSON 2'?

DX Communications (10 Skylane Drive, Hawthorne, New York 10532; 914/347-4040) has recently moved to a new 12,000 square foot facility from Port Chester (NY). As a part of the expansion, DX now offers '24 hour in-and-out' turn around on repairs for company products returned by distributors or dealers for service work.

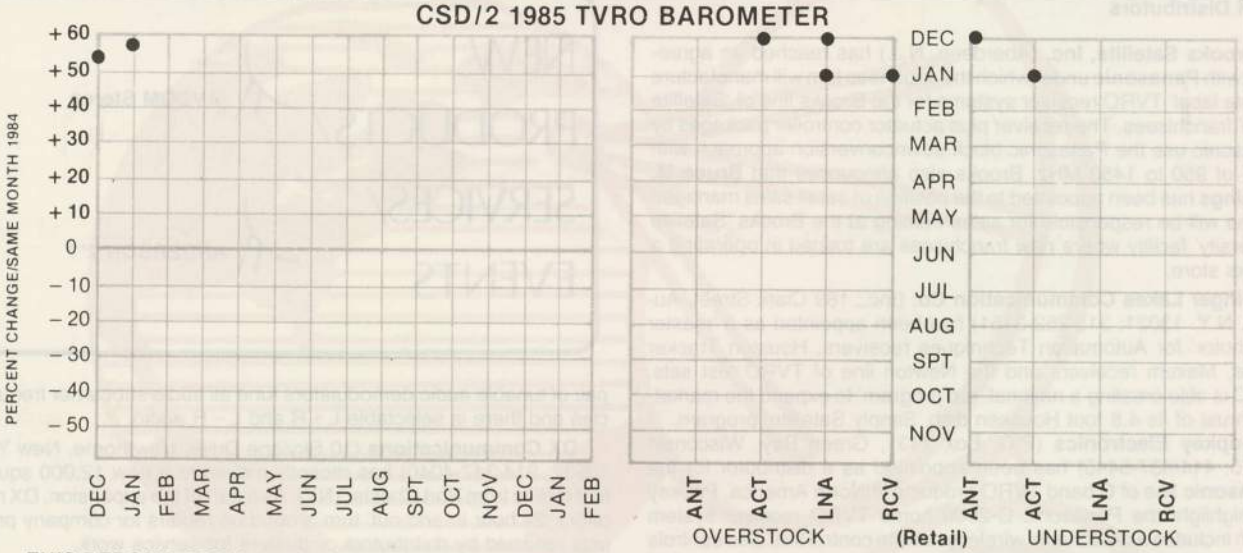
Electronic Rainbow, Inc. (6254 LaPas Trail, Indianapolis, In. 46268; 800/428-3500) may end up being one of the last **US** manufacturers of TVRO receivers left in the business. Rainbow manufactures a 'basic TVRO receiver' which they are proud to say is **'All American'.** The firm continues to offer individual receiver modules (power supply, video, 70 MHz IF, audio) as stocking replacement items to dealers and their model ERI-7500 unit goes to dealers in 1-lots for $399 and to distributors in 25 lots for $224.

LUXOR NORTH AMERICA CORP. (P.O. Box 32, Bellevue, Washington 98009; 206/451-4414) has released detailed electrical specifications for their Luxor Mark 2 and Skantic Mark One receivers. Mark II uses an IF frequency of 950-1450 MHz with a recommended input level of between −75 and −35 dBm. The IF bandwidth at the 3 dB point is 25 MHz and a Linkabit compatible output terminal is provided. The FM threshold claimed is 8 dB or better, and the polarization control is Chaparral compatible. The LNB powering voltage is +18 VDC and audio bandwidths provided are 380 kHz wide and 180 kHz narrow. RF output is on channel 3 or 4 at +7 dBmV (75 ohms).

The **Mark One** has a 70 MHz IF with recommended input level of −45 to −5 dBm. The tuning system uses a digital voltage synthesizer with a nonvolatile memory. The tuning voltage, carried on the RF line, is between 1 and 30 VDC and the LNC powering is +18 VDC. The IF bandwidth is 25 MHz and the narrow and wide audio bandwidths are identical to the Mark Two.

SKANTIC has built-in stereo, at a budget price

Lowrance Electronics, Inc. (12000 E. Skelly Drive, Tulsa, Ok. 74128; 800/331-4105) has found an enthusiastic market for their model **70XB** block downconversion receiver line in the SMATV and cable TV areas. The product, originally designed as a 'high end' home TVRO package, has recently been offered to the SMATV and CATV



THIS REPORT: CSD/2 routinely surveys approximately 300 TVRO dealers each month to determine **(1)** how business for the last complete (calendar) month compares with the **same month** in 1984; **(2)** whether four primary equipment items were in dealer **'overstock'** (i.e. **too many** in-house) or **'understock'** (i.e. supplies dangerously **low** at retail level). This serves as TVRO's "industry barometer" of equipment trends at the retail/dealer level.

trade and according to Lowrance's Mike Render the reaction has been excellent. The packages available include the 70XB C band and the 70SB Ku band systems and the Ku band systems are being exported into Europe for 'Music Box' channel reception at dance halls, pubs and clubs.

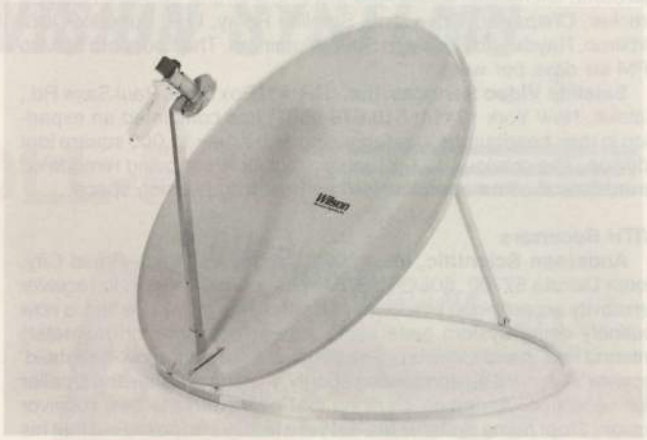
SATELLITE TECHNOLOGY SERVICES, INC. (STS/2310-12 Millpark Drive, Maryland Heights, Mo. 63043; 314/423-5560) says that in spite of the fact that their STS MBS-SR receiver 'looks' the same, it is an entirely **new receiver.** They have added the single word 'block' to the front panel but inside the entire receiver has been redesigned into a block format unit using the 950-1450 MHz BDC 'band' as the first IF while the second IF is at 134 MHz (center). The features are very similar to the 1984 model; three (selectable) stereo formats, signal strength meter, direct compatibility to the MBS-AA antenna actuator and the infrared remote control. On the rear panel, the AFC switch has been moved outside (allows switching for TI problems), and A/B switch has been built-in for switching to and from the terrestrial TV antenna, and 'pushlock' terminals for wiring rather than screws. A (miniature) phono jack has been added for the optional RCS-1 remote sensor unit. The BDC receiver uses now accepted DSO technology for thermal drift compensation.

TOKI Satellite Systems (Woodland Hills, California) is in the midst of a distributor sales incentive program which will expire on April 30th. Under the program which was structured by **John Stover,** distributor sales people handling Toki receivers are rewarded with 'points' accumulated with the sale (to dealers) of Toki units. Levels of points accumulate so that the distributor sales person can 'win' merchandise prizes as a result of his selling efforts on behalf of Toki products.

Wilson Microwave Systems, Inc. (One Sunset Way, Henderson, Nevada 89015; 800/634-6898) has begun a major advertising push for their **'Lil Wil'** five foot TVRO dish system which the firm claims can be assembled and installed with no tools or prior satellite training. The system, in addition to the five foot dish, consists of a Wilson YM 400 receiver, 85 degree LNA, feed assembly plus all cables and instructions for installation.

WITH Antennas

Aztech Antennas (P.O. Box 21, West Sand Lake, New York 12196; 518/674-2864) has announced a new 10.5 foot screen mesh antenna with an interlocking rib system supported by concentric rings to maintain the parabolic shape. The framing members are aluminum



FIVE FOOT SPUN 'Lil Wil'

and the mesh attaches with something called **Mesh-Lok**™ which allows all 14 petals to be installed without clips, screws or rivets. The antenna employs an all aluminum mount and they are powder coated (black) and come with stainless steel hardware. The firm says installation assembly time is less than one hour for the 10.5 foot surface. F/d is 0.3 and the one-carton shipping weight is 170 pounds.

Continental Satellite Systems (15450 S.E. Formour Court, Clackamas, Oregon 97015; 503/656-2774) has announced a 10.5 foot screen mesh antenna created so that installing dealers can complete assembly in under one hour's time. The new antenna uses a 'compact mount' fabricated around a heavy-gauge steel plate. The mesh is secured using a slide-in clipless system secured by a rigid metal 'edgeguard'. The antenna hardware is all stainless and the antenna is UPS shippable.

Danex Microwave, Inc. (275 Woodland Drive, Vancouver, BC V5L 3S7, Canada; 604/251-2218) will use the Las Vegas show to introduce a new product created for the urban dish market. **City-Dish**™ is available as either a six foot or seven foot antenna surface in either solid or perforated configurations. The antenna package has

PRODUCT NEWS/ continues on page 24

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TESTING CANCOM SCRAMBLED CBD SERVICE

by
Mark L. Lewis
2 Braemore Gardens
Toronto, Ontario
M6G 2C8 Canada

SCRAMBLING PREVIEW?

They've had scrambled satellite TV, **available to the consumer,** in Canada for more than a year now. How is it working? We assigned Canadian Bureau Chief **Mark Lewis** to the task of finding out. His report appears in this issue and there are several surprises; the service is good, the OAK boxes work and even with below threshold signals the pictures decode. Is scrambling, therefore, working well in Canada? Is scrambling going to work well in the USA as well? Not quite so fast, as Lewis reports in this issue. We'll have an extended update in **CSD** for April 01 as well; watch for it.

CSD received one of the first **Orion-P** decoders in early November. The unit is rather attractive in appearance with a sleek brushed aluminum package. At first we could not find any controls, with the exception of the audio level control. The decoder is foolproof. It has well-labelled input and output connectors on the back. It also came with adequate patch cables, which seem to be a rarity in the TVRO industry.

It took less than 4 minutes to hook the decoder up to our receiver and our TV set. Upon hook-up it was obvious that the decoder wasn't authorized. We placed a telephone call to CANCOM's major up-link and control site near Oka, Quebec. The gentleman who answered the telephone had a prominent French accent, but spoke excellent English. He had not been informed that we had been authorized to use the decoder. We read him the code numbers which were on a sticker on the side of the decoder. The sticker resembles that Universal Product Code which you find on most foods and canned goods. His computer database indicated that this was not an authorized decoder. After dropping a few names, and convincing him that we were doing a product review, and indeed it was the top brass at CANCOM who had authorized and sent out the unit, **he agreed** to program the computer to authorize the decoder(!).

We were instructed to place the decoder on the TCTV transponder Anik D-1 (TR14). Within moments, the decoder "crackled" and the picture went from scrambled to crystal clear. The audio popped in at the same time. We then went from transponder to transponder on Anik D-1, and each scrambled picture "popped" in. **It takes about half a second for the picture to go from scrambled to decoded.**

When you are not looking at the encoded signals, the decoder is virtually transparent. Audio and video are fed in, and are remodulated to channel 3 or 4. (There is a well hidden switch — the only switch on the decoder).

The video quality of the decoded signals was excellent. We had virtually "sparklie-free" signals to start with, nevertheless, there **appeared to be no degradation whatsoever.** We found the video quality of the Detroit TV stations to be above average in quality when decoded. During our initial tests in November we used a prototype Viewstar TVRO receiver. There was total compatibility between receiver and decoder. The decoder specifies a requirement for **unfiltered** and **unclamped** video.

In spite of this requirement, we connected the decoder to a DEXEL DXP-1002 receiver. This was one of Dexel's first Low Noise Downconverter models (LNC). We had purchased the receiver in March 1983. The specifications claim that the receiver has **filtered** video. We have had our doubts concerning the degree of filtering because we have always been able to coax the audio subcarriers out of the video output, although they **are** attenuated. We had been told that up to 30% of the receivers on the market would not be compatible with the Orion-P decoder. Chances were good (or bad depending on your point of view) that the decoder would not work with the Dexel. **We were surprised when pictures began to decode.**

Lest we mislead anyone, there was a lot of fine-tuning which we had to perform in order to convince the Orion-P decoder that it should unscramble the signals coming from the Dexel receiver. We did find a "quirk." The Dexel is notorious with reds, greens, and other **saturated colors.** It has been a source of disappointment and annoyance. It was not our imagination when the Detroit signals decoded and "looked" better than the unencoded signals processed by the Dexel on the same satellite. The saturation problems through the Orion decoder were minimized.

However the audio decoding with the Dexel receiver proved to be a problem. **The encoded audio is digitized.** It seems that the Orion-P audio decoding circuitry is less forgiving than the video circuitry. From time to time, when connected to the DEXEL receiver, the decoded audio would crackle, sputter, **and disappear** (returning to encoded mode). This was rather disconcerting, particularly during a steamy scene on **Hill Street Blues.** A great deal of fine-tuning and fiddling with the AFC control on the Dexel seemed to minimize the problem.

We then tried the Orion-P decoder with the new Electrohome E-1 receiver. **This frequency-synthesized TVRO receiver** was designed with decoders in mind. The performance on the CANCOM signals delivered pictures approached "studio quality." We did encounter some heavy microwave interference on two transponders of Anik D. **Surprisingly, the video still de-coded.** There is a surprising margin in which this decoder **will** function. Likewise if we moved the antenna so that signals fell well-below threshold, the decoder still performed. **You lose the de-coding at a signal level which is well below acceptable for unscrambled signals for most viewers.**

During our tests we moved to other satellites. At that time, On-TV was still transmitting on D-3. When we would move to D-3, and tune in On-TV, the decoder would sense the Oak Orion encoding, and "squelch," just like a police scanner radio. Not only would the distorted scrambled video disappear, (it would not pass through the receiver) but the picture went to a shade of grey, **and the decoder fell silent.** If you moved over to other (Non Orion) scrambled signals, the decoder would pass the signals (still scrambled) transparently. Apparently, this is one of the safety precautions in the decoders, to keep you from looking at other Orion signals.

We were able to "trick" the decoder. On one of the channels which transmits horseracing, the decoder "unlocked" momentarily, but after a fraction of a second, it went to a shade of grey. Incidentally, for those of us who are amateur electronics experts, the Orion-P decoder is well-sealed. They've used a type of fastener which **cannot be opened** by conventional screwdrivers.

The original decoder which was shipped out in November had a defective video circuit and had to be returned after 1 week. CANCOM confirmed that this was **not "typical,"** that the Orion-P failure rate is very low. They replaced the decoder in January, and the unit ran for over 4 weeks, 24 hours a day, without any decoding failure, and we looked at all of the satellites (including encoded transponders) without any "lock-out." The second decoder was "pre-authorized" before we received it. That meant we did not have to telephone and have it unlocked. CANCOM confirmed that once "authorized," the decoders **can be unplugged** and shipped around for **up to 2 weeks** without the need to re-authorize.

Our primary complaint concerns the documentation. It was very poorly written. For example, we were unable to find the recessed lights which indicated the "status" of the decoder, or the recessed switch to change the modulator from channel 3 to channel 4. The average consumer would probably never be able to find the lights or switch, they are so well hidden. **Why aren't they on the front panel?**

In fact in the illustration, **in the original instructions,** the lights were elsewhere on the decoder. Was this a last minute production change? In any event, **we** voiced our concerns, **and** CANCOM's own instructions are **now clearly written** and include information concerning authorization of the decoder, and the transponders where the signals can be found.

We do have a dislike concerning the **Orion-P** decoder. First, the video performance when a non-scrambled signal is "passed through" the decoder and re-modulated, is not quite up to the standard of some newer TVRO receivers. We found the modulated video from the Electrohome E-1 receiver and the Viewstar receiver to be superior to the modulated video from the Orion. The major shortcoming of the Orion decoder was its video processing of non-encoded signals which were below-threshold. **The video level of these signals would be** over**modulated thorugh the decoder.** The video level would become so "high" that the picture would go into a "negative effect." This made signals which were degraded by Terrestrial Interference very difficult to view. The consumer could of course, insert a mechanical switch between the P-decoder and the RF output of his receiver. Nevertheless, this introduces yet another level of complication into the picture.

The audio decoding system suffers from "snap, crackle and pop" when there were sparklies in the encoded signal. For example, **when we encountered terrestrial microwave interference,** the video decoded, **but** the audio had "clicks." We compared the audio to the 6.8 MHz audio subcarrier which was transmitted on the same transponder (the radio subcarrier). The 6.8 subcarrier was "clean" through our TVRO receiver. We found the "snap, crackle and pop" problem with

all the receivers which we tested, and both decoders. **This is a problem which Oak might address.**

As for the prospects of Orion become the industry "standard" decoder, that is a very remote possibility. There is no provision for scrambled stereo audio. With so many premium television services moving to stereo audio, this may lead to the downfall of the Oak Orion in competition with Videocipher. During the next few months we will watch the marketing closely, to see whether Orion grabs any more of the market share.

As for the CANCOM service, the Detroit stations and the Canadian independents are first rate. We question however the pricing and the market strategy of CANCOM.

THE CANCOM CBD Strategy

The pricing of the **CBD package is $24.95 per month,** plus federal sales tax, and provincial sales tax. But there is a "provisioning charge" of $495.00 plus tax for the decoder. Many TVRO owners have asked why they would want to buy the CANCOM service while they could get ostensibly the same service (PBS, CBS, ABC & NBC) on their TVRO's for free? **A valid question!**

Of course CANCOM offers the 24-hour Detroit stations which are full-network affiliates, and several popular Canadian independent stations. Still and all, CANCOM **won't say** just how many subscribers they attracted during the first solicitation.

In late December, the CANCOM people sent out a direct mailing to Canadian TVRO owners. CANCOM obtained a mailing list from **Orbit** Magazine. This solicitation provided a few surprises, and this time included "the terms of the offer" in full legalese. Now we would not criticize the draftsmanship of CANCOM's lawyers, however any TVRO owner should read the contract **very** carefully before signing on the dotted line.

The terms of the offer included:

A price of $859.65 for the first year, and.

This included fees of:

1) $495.00 "an initial one time decoder provisioning charge";

2) $299.40 "for the first 12 months of service."

But, there was additional provincial sales tax of 7% ($60.18) on top of the $859.65 in Ontario. If the subscriber wished to pay in quarterly installments, the price **ballooned to** $915.35 (plus $64 sales tax in Ontario); the additional cost apparently attributed to "interest" charges for the decoder.

But, if a TVRO owner was not put off by the pricing structure, he might be if he read the fine print.

CANCOM stated:

"the decoder is yours to use until such time as you discontinue the service. At that time you will return **the decoder to CANCOM"** and,

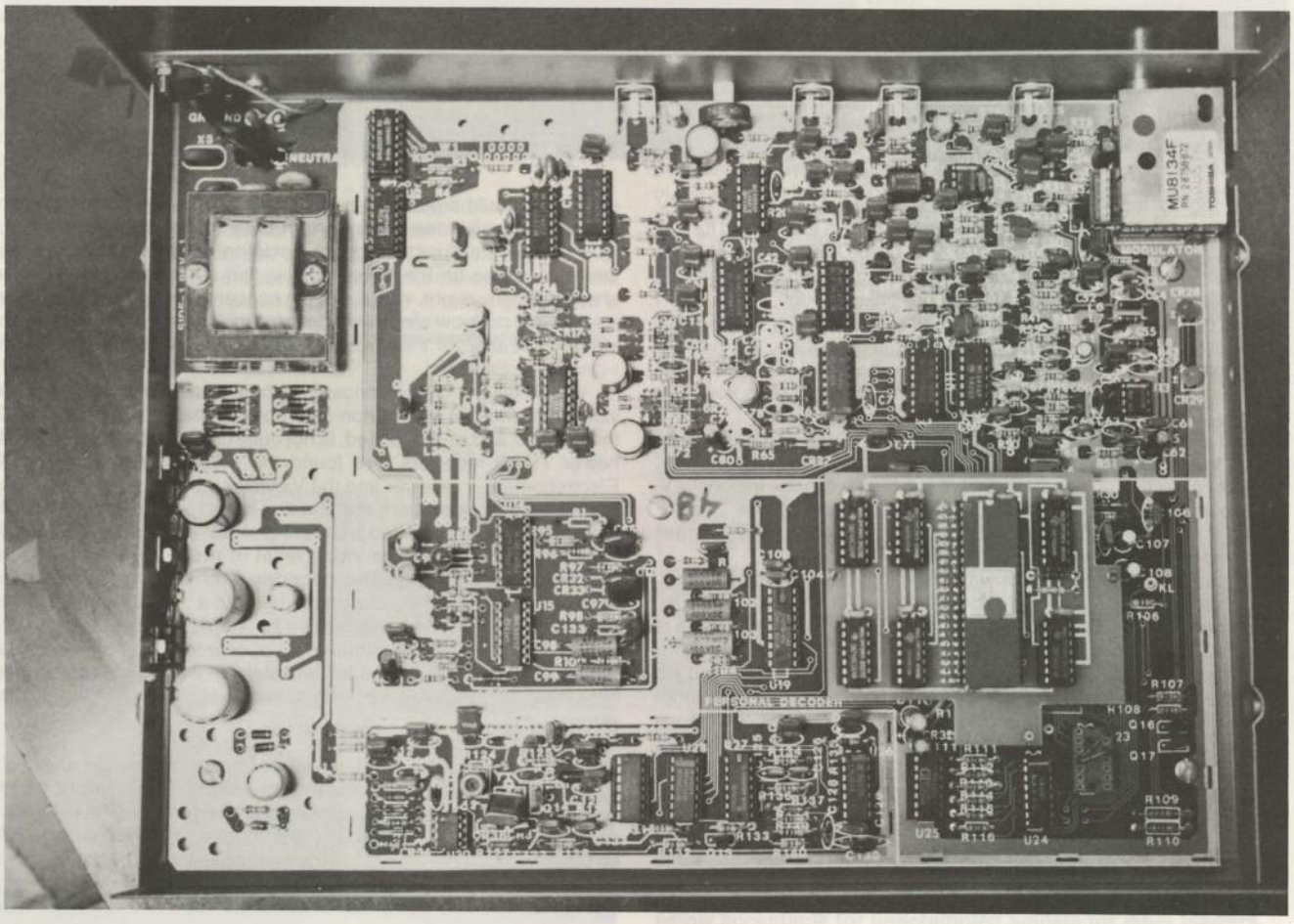
"the decoder shall remain the property of CANCOM," and again,

"(but) **the subscriber shall be responsible for all damages suffered or caused by the decoder while it is in the subscriber's possession."**

Now we would not wish to quibble with CANCOM's lawyers' legal drafting. CANCOM pays a lot of money for its legal services. But consider the following. If the cleaning woman accidentally drops the decoder and it is damaged, who pays for the repairs?

The contract states: "the subscriber shall exercise all reasonable care to maintain the decoder in good working order." What if your home is burglarized, and your insurer will not reimburse you for the decoder? From the language of the contract, you may owe CANCOM **more money.** How much money? We don't know.

But look closer at the contract. The $495.00 is merely a "provision-



The Satellite Receiver You've Been Waiting For

Introducing the newest, most advanced remote controlled satellite receiver . . . the Regency SR5000.

We started with the latest in satellite receiver technology, using two microprocessors, block down conversion, and infrared remote control. Then, we topped it off by fitting it into a compact, stylish case of true "set-top" dimensions with a large, easy to read LED display. And that's just for starters.

Two Microporcessors and More

Satellite positioning, polarity, and skew can be programmed and selected automatically. All programmed information is stored in the SR5000's permanent, non-volatile memory. What's more, the Regency receiver features a built-in SAW resonator modulator with channel 2 or 3 output, descrambler loop, signal strength meter, and composite or baseband audio and video outputs. Not to mention the remote control . . .

Full Function Remote Control

Every Regency SR5000 comes complete with a full function infrared wireless remote control that's very easy to operate. It lets you select channels (direct access or slew), select satellite positions, raise, lower, or mute the volume, and fine tune the picture. All with only 20 keys.

Block Conversion

The SR5000's advanced design employs a block down conversion system so you'll be sure to have the best possible picture year round (The Regency block system is stable within 2MHz from −30 to +60°C). And it's ideal for selling multiple receiver systems.

The Price That Packs a Punch

Now for the good news. The SR5000, with all the features we've described, lists for $699.95. So your cost will be lower than receivers like the Drake 240, the KLM VIII, or the Luxor 9550. Yet the SR5000 is backed by Regency, a company that's been around since 1947, a company that invented the transistor radio in 1954, a company with an established reputation in consumer electronics. And the company that designed and builds the SR5000 in America.

If this sounds like what you've been waiting for call us for more information or the name of the nearest Regency distributor at 1-800-428-1950.

Regency®

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ing fee." It seems that this fee is **non-refundable.** In the event you choose to discontinue the service, you not only forfeit the "provisioning fee" but you are obligated to return one decoder in good working order.

What if the decoder malfunctions and shorts out your TVRO receiver, or catches fire? **That is the subscriber's responsibility.**

There is a one year **limited** warranty. After that time, the subscriber is responsible for all repairs. The question arises: Assume that the decoder fails to work a year and a day after you paid the "provisioning charge," who pays for repairs? **Apparently you do!**

What happens if you decide to cancel the service when the decoder malfunctions? From the wording of the contract, you may be obligated to **pay** for repairs to the decoder which you **must** return to CANCOM, and you **also forfeit** the provisioning charge.

Charles Johnston, who is in charge of the DBS marketing for CANCOM confirms that they are re-examining the matter of the limited 1 year warranty. He conceded that the warranty is onerous given the "provisioning " fee, but at the present time, the terms of the contract provide a 1 year warranty.

What about the service itself? CANCOM is not liable if service is interrupted for a variety of reasons including failure of transmisson equipment. The subscription fee of $299.00 is **only for** one year, and CANCOM may provide notification of price increases. Based upon the wording of the contract, the price increases are not limited to the rate of inflation or any other factor which can be calculated. Rate increases are at the whim of CANCOM. In other words, **caveat emptor;** let the buyer beware.

One other item which we found curious. The contract states:

> **"In cabled areas CANCOM requires the co-operation of the local** cable operator. **CANCOM therefore reserves the right to refuse service until such arrangements are made."**

CANCOM confirmed that this is a business decision which they have made, to attempt to get the support of the cable industry wherever possible.

Charles Johnston explained that there may be benefits to having a nearby cable operator available to help. For example, you **may be able** to pick up your decoder from the cable operator. He **may also be able** to help with service problems related to the decoder, or with getting the "unclamped video" signal from the receiver. Having someone nearby may be a virtue with a relatively new technology.

However, the contract as it is presently written, legally makes the subscriber liable for everything including installation. Therefore, a third party (the cable operator), is being drawn into the deal, without legal contractual benefit to the subscriber.

We confirmed that CANCOM will **not require** the subscriber to work through a cable licensee if the subscriber lives just outside the "wired" area. That's fair. But Chuck Johnston confirmed that CANCOM was re-evaluating its position where a cable company was not interested in acting as the middleman to provide the CBD service. For the present time, CANCOM will put any TVRO owner "on hold" if the TVRO owner lives in a town where the cable company has not come to terms with CANCOM. In other words, **they may deny service if the cable operator is not co-operative.**

We weren't enthused with the prospect of having to deal with the cable company's staff, in view of the terms of the CANCOM contract. For example, we live in Toronto and have chosen **not to deal** with my local cable operator. One of his henchmen recently came to the door and suggested that we were "hooked up" to the cable which runs behind our house (he also implied that we were receiving cable service without paying). It is terribly hard to engender much respect for a cable company that falsely accuses you of being hooked up to their service (one would think that they could check their own service records as well as their wiring at the telephone pole). I certainly don't want the character who came to my door within 100 yards of my TVRO system. **I don't want to buy my CANCOM CBD service from this fellow either.**

To be blunt, I don't have much reason to respect the marketing or technical abilities of **this** local cable operator when it comes to satellite signals, so why should I be required to have his involvement in the acquisition of the CANCOM service? **I would prefer to work with an experienced TVRO dealer.**

I don't want to "nit-pick," but in my area, I am the only TVRO owner. I'm not sure that anyone at the local cable outlet has ever seen a home earth station, let alone a CANCOM decoder. I want CANCOM's expertise, I don't want to be the "test guinea pig" of the local cable licensee, and besides, I would be paying CANCOM close to $900.00 in the first year, for that expertise and that service.

CANCOM by virtue of its CRTC license is **not obligated** to deal with the cable industry in offering this CBD service. Charles Johnson stresses that this is **their** marketing decision and **they** will have to live by that decision. One would think that CANCOM would use the TVRO industry as their first line of local distribution. Charles Johnson is candid, since most of their revenue comes from cable companies, noting they have **elected** to give the cable companies a new and added source of revenue, **instead of more competition.**

On the other side of the coin, there are a number of competent cable operators in rural areas who **have diversified** into TVRO's. We know of at least two Canadian TVRO pioneers who run cable companies, and make **a lot of money** from TVRO sales to people living outside of their cabled areas. Sure, **they should have** a shot at this new source of revenue. But if CANCOM had a "TVRO dealer first" policy, these individuals would provide the service to consumers, regardless of their cable interests.

We questioned the pricing, **at $299.00 per year for the service,** plus the provisioning fee of $495.00. We suggested that this price is excessive, particularly when CANCOM's price to its "cable affiliates" for same signals is $8 (or less) per month (per subscriber). This is $96 (or less) per year, per cable subscriber, **versus** $299 for TVRO owners, and to add insult to injury, **the TVRO owner must provide his own equipment,** and must maintain the equipment, including the decoder. Incidentally, the $8 per month per cable subscriber is a price which is regulated by the government. But CANCOM has determined that they are not bound by the regulated pricing scheme, and can sell to consumers for **any price which they believe the market will bear.**

Again, Charles Johnson told us that this was CANCOM's marketing decision after undertaking extensive research. They believe that their pricing is correct. However in our view, if CANCOM were to charge $8.00 per month plus a small administrative fee, the pricing would be more realistic. Of course, CANCOM's pricing is predicated on a "cut" to the local TVRO or cable system. **What is fair?**

Let us assume that CANCOM collects its regulated tariff of $96 per year for each CBD subscriber. That leaves $203 per year to be split up. During the first year, there is a limited warranty on the decoder, so one might apportion part of the $203 towards warranty repairs. But in year 2, the CBD subscriber is responsible for **all** repairs, at **his** cost. Is the premium of $203 fair in the 2nd and succeeding years? You be the judge. **Remember,** if the subscriber terminates the service, he returns the Orion-P decoder, and CANCOM keeps both the decoder and the $495 "provisioning charge."

BARS And Taverns

In early January, CANCOM announced that they would sell to bars and taverns. This of course is a lucrative market for TVRO's and TV sports. **The price is $49.95 per month.** For a commercial establishment, this pricing is probably more realistic than the consumer pricing.

THE Bottom Line

The CANCOM decoder performed well. **Cleary CBD has arrived.** The package of commercial stations is first rate. Even the Canadian independent stations broadcast predominantly **first run** American programming during prime time.

Would I buy the CANCOM package under the present "terms of the offer"?

I would **not sign** the contract as it is presently drafted. I hope that they re-draft their offer, and the contract, because as it stands now, it is too one-sided and too onerous.

FINAL Words

In our view, CANCOM's biggest problem is pricing and its contract. So long as the major U.S. networks and superstations remain readily available on C-Band, very few consumers will pay the $800 (plus) premium (first year). Further, so long as there is the glimmer of hope in

Canada that HBO et al will sell a Videocipher CBD package **to Canadians,** a lot of TVRO dealers may be reticent to "push" the Orion-P system and the CANCOM package. Of course, it **is unlikely** that HBO **will sell** in Canada, and Canadian consumers may have no "legal" source of premium programming next year, aside from the CANCOM package of conventional television stations.

We suggested to Charles Johnson that a low-cost system using a small TVRO may be part of the answer. There may be thousands of individuals who would pay for clear reception from Anik-D with a package of 4 U.S. stations, **all** the Canadian networks, **plus** sports, music videos, etc. If the price were low enough, and the dish were simple enough to install (i.e. 4 foot), they might tap into the hundreds of thousands of rural inhabitants who don't want to spend a lot of money on a TVRO system. There is also a summer cottage population of several million people who want the same quality of TV service which they get in the city. If they could transport a 4' dish to and from the cottage, there could be a tremendous market out there. Of course all of this is speculative. It will be interesting to see whether a package is assembled.

TVRO ON TV/ THE BORESIGHT STORY

TELEVISION/ The Medium

There are many strange and often bizarre stories relating to the early use of satellite transmission time by rugged pioneers who wanted to 'beam a message' to some distant point. One such story, told by RCA personnel in the 1978 era, testifies to the apparent power of satellite transmission.

The time is the winter of 1976. RCA has been operating its first domestic satellite for barely a year and satellite 'time' is $1850 per hour for non-regular, occasional use. To that any user must add-in uplink time (to reach the bird through an uplink transmitter) and 'tape time,' to allow for the playback of the client's tape on an RCA video machine.

A man walks into the RCA office in downtown Manhattan. He wants to buy 60 minutes of time on Christmas eve. He asks the price and wishes to know what format the tape must be in. He is given this information and he then asks about how far in advance he should 'book time' for 11PM eastern, Christmas eve. With his answers he leaves.

One week before Christmas he returns. He hands a 3/4 inch tape to the sales person at RCA Americom and counts out nearly $2500 for the satellite time, the uplink time and the tape playback charges.

Now RCA is new enough to this business at that time that they had seen very few customers of any type come in the door and 'buy time'. But they did have a form which was to be filled out with each such 'transponder time buy'. The form started out with the name and address of the customer. It went on.

"Now, you say you want this program transmitted via satellite at 11PM on December 24th?"

The man responded yes.

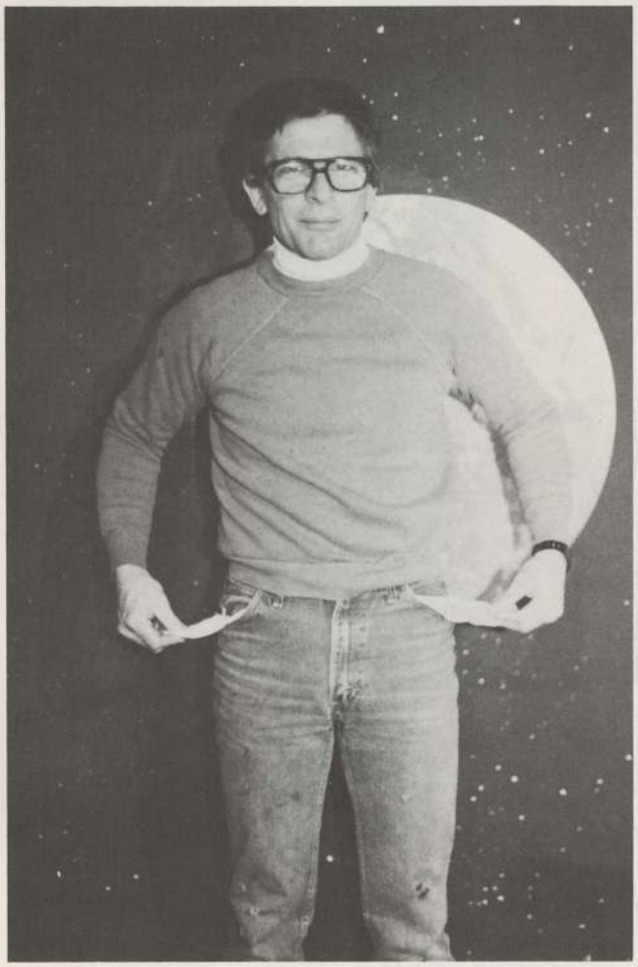
"Alright, may RCA select the satellite (they had two operating at the time) or do you wish to do that?"

The man said RCA could do that.

"OK, now, where do you wish this taped program sent to?"

The man appeared flustered, as if he did not understand the question. The RCA counter salesman repeated the question. Now the man looked even more flustered. So the RCA salesman tried to explain.

"Look, here is how this works. We take your tape and we place it on a tape machine. The tape machine turns the tape into electronic



signals which then go into a transmitter. The transmitter beams those signals to our satellite, 22,300 miles above the equator. The satellite catches the signals and turns them around; sending them back to earth. That's why I need to know **where** you want this tape transmitted to; do you have someone in Los Angeles or Dallas that you want to receive this tape?"

The customer nervously rubbed his hands together, staring intently at the diagram sketched by the RCA man. He was obviously trying to frame a question in his mind; something was bothering him. Finally he said it.

"You mean that all **of this uplink signal is caught by the satellite and it is turned around and sent back to earth;** ALL **of the signal???"**

The RCA man sensed the concept was the problem so he fell back on his engineering background to respond.

"No, actually, only a very small part of the uplink signal is caught by the satellite; **most of it goes right past the satellite and into the heavens!"**

The man beamed a wide smile. **Now he understood.** The RCA man mistook the beaming, toothy smile for acceptance of the system. He re-asked his missing question.

"SO, where do we want the message delivered to, then? How about Dallas? There are some nice people in Dallas . . ."

The man stopped smiling.

"I don't know anyone in Dallas" he said. **"I want you to deliver the taped message to GOD."**

"God???" repeated the RCA man. "As in G O D?".

"That GOD" responded the customer. **"You just told me that** most **of the uplink signal goes right by the satellite, into the heavens. That's what I hoped happened. It will go to GOD."**

The RCA man took a deep breath and slid his pencil down the form to a linewhich started off with:

'Intended recipient:

He wrote in g o d.

"Oh no" urged the customer **"that is G O D; capital letters, please!!!"** And so RCA transmitted a one hour videotape message 'to GOD' from a lonely man who wandered in off of 42nd Street, on Christmas eve in the winter of 1976. And pocketed $2500 or so in the process. And the dawning of satellite narrowcasting had begun.

RCA officials, for the record, swear this is a true story. It is almost too much of a story to be a creation of somebody's imagination.

Since that first satellite narrowcast, the world of narrowcasting via satellite has exploded over and over again. Everyone, or so it seems, wants to be on satellite television.

Shaun Kenny is one of these people. Shaun has been a TVRO equipment dealer in New Jersey for almost as long as there has been a TVRO industry. His specialty has been commercial and semi-

commercial systems, using high grade equipment (such as Scientific-Atlanta and Blonder Tongue). Shaun had a dream.

An astute student of the TVRO industry, and a very concerned dealer, Kenny was dismayed with the readily available junk equipment which dealers were being sold. Attending trade shows, his experienced eye found 'more junk than class' and he was doubly frustrated when those who made the 'junk' seemed not-to-care about whether the equipment worked properly or not.

Kenny was also an astute student of the media in the industry; he found much of it 'short on integrity' and too eager to attract advertisers to publish what he characterizes as 'honest reports on equipment failings'. He toyed with the idea of starting a magazine, 'by a dealer' and 'for dealers'. Wisely, perhaps, he also saw that there were plenty of magazines already there and many more promised. Perhaps he would have to find some different way to create a magazine; one that 'told-it like-it-is'.

A product of the television generation, Shaun Kenny had been brought up on 'the tube'. He could not remember a day in his life when there was no tube displaying the world in his living room. And so he created the concept of a television program for dealers, by a dealer; him. And **'BORESIGHT'** was conceived.

Fortunately for Shaun Kenny and the hundreds of others now into creating their own television (narrowcasting) programming, one hour of occasional use time no longer sells for $1850 (plus). In fact, it is now possible to buy an hour's time (each week, for 52 weeks, under contract) for as little as $200 per hour. It is, like all television 'time', time of day and day of week conscious; transmitting in the middle of the night (eastern) on a Sunday night/Monday morning is the cheapest way to go. Transmitting on a Friday or Saturday evening in 'prime time' is the most expensive way to go.

PROGRAM 63 SATELLITES IN 50 SECONDS!

The dealer can quickly teach the new Kent 7300 satellite and skew settings simply by plugging into his Kent 7300 showroom model and keying *learn*.

The unique new Kent 7300 Satellite Control System is the most versatile of any control system on the market today.

Easy Installation

- Autolearn™ programs all satellite and skew settings in 50 seconds.
- Uses solderless 5 wire 36 volt installation.
- Low battery, transmit, and receive lights isolate problems.
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Convenience

- Wireless remote control
- Select 63 satellites by their standard letter-digit code.
- Autoskew™ eliminates peaking antenna polarity.
- Plug in control of the Drake and Uniden receivers.
- Parental lock-out.
- Optional remote TV and antenna/descrambler control box.

Reliability

- Digital noise filtering eliminates counter resetting.
- Induced lightning & transient surge protection.
- Turbodrive™ gently starts and stops the motor with a 7 speed transmission for longer life and more accuracy.
- Current limit prevents motor burnout.
- Programmable travel limits.

For further information call 800-626-7300

KENT 7300 Satellite Control System

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Shaun's concept is to create and bring to TVRO dealers between 40 and 50 brand new one-hour programs 52 weeks a year. He'd do 52 new shows a year but admits after the first ten or so that everyone needs a rest now and again; even TVRO dealers who spend all of their 'spare time' trying to create interesting 60 minute television programs.

Kenny launched BORESIGHT with a minimal amount of fanfare. It started off being scheduled exactly opposite the CSD **'TVRO Fifth Birthday Telecast'** on Thursday evening, October 18th; an unfortunate scheduling oversight which Shaun corrected but not until after much of his advanced press material had gone into the mails. The program has stayed at the 9PM/Thursday spot on SATCOM F4, transponder 20, pretty much routinely since that time although Kenny is evaluating a different transponder on a different bird and perhaps a time slot change as well.

BORESIGHT started out as a compilation of video clips. With a four person crew, led by the every-week-more-capable **Karen J.P. Howes,** BORESIGHT has turned from a random collection of video clips in the early days to a neatly packaged, almost-slick 60 minutes that seats Howes as the chief commentator and pits various Kenny and crew people against her, feeding back to the show live (on tape) interviews and visits with TVRO dignitaries and tree-shakers coast-to-coast.

In a relatively short time span, BORESIGHT has looked deeply into a wide range of subjects; from computer store interfacing to the satellite to the practical problems of being a distributor. And from trade show coverage (Dallas STTI show) to visits with RCA uplink facilities and manufacturing houses such as Blonder Tongue.

Recently the BORESIGHT program has taken on an identity of its own; an evolutionary kind of identity which allows Howes to be the chief moderator for the various special features and taped reports and allows Kenny to do what he does best; go into the field and stir up the dust. One memorable moment aired after the Dallas show had Kenny thrusting a microphone under the nose of Janeil's **Bob Dushane** and quizzing Dushane about alleged failures of Janeil antenna backplates. The surprised Dushane convinced few viewers that he had, or was willing to share, the 'proper answer' with the viewers.

Kenny most recently has launched something called **'The Butcher Block Award';** a small segment each week devoted to identifying, on camera, products now available or once available in TVRO which for one reason or another proved 'inadequate' in routine use. The very first week of the 'award series' Kenny nominated the Intersat IQ-160 receiver **power supply** as a candidate and issued a terse warning to Intersat's David (McClaskey) over the air. "We are watching this problem, David" he said looking straight into the camera lens. McClaskey was watching too; from his bedroom. **"I felt like Kenny invaded the privacy of my bedroom and reached out of the picture tube and shook me by my neck"** remembered McClaskey.

Kenny is a scrapper who grew up fighting for everything. On screen he seems 'laid back' and sincere, often fumbling for just the right words to convey his convictions. **His lack of professional gab is an asset** because dealers identify with a man who is obviously frustrated and who shows, on camera, that he does not always believe everything he is hearing. His voice raises a half octave and goes up several decibels when he is 'insulted' by a direct response to a direct question. The person fielding his questions feels the tension rising and that comes through to the viewer as well. Kenny may well become the first 'television hero' of the TVRO industry if he can keep it up.

'Keeping it up' is an important consideration to Shaun Kenny. To date, he estimates more than $30,000 out of his dealer pockets has gone into the production of BORESIGHT. There has been virtually no trade advertising to support the effort to date. In other words, BORE-

SIGHT is losing money all the while it is building a larger and more appreciative audience.

Kenny figures that the show's dollar fortunes should begin to turn around at and during the forthcoming Las Vegas SPACE/STTI trade show. During the November Dallas trade show, BORESIGHT was everywhere videotaping the Dealer Board meeting, the Master Board meeting, interviews throughout the show and press conferences held by both SPACE and HBO. The weeks following Dallas were 'rich' in show coverge and filled with valuable insight to the workings of our new, still young industry. From the foundation of experience gained in Dallas BORESIGHT will field a far more extensive effort in Las Vegas. And after Las Vegas, returning to their home base in New Jersey, they should have enough good material captured on videotape to keep the program exciting and up to date for months to come.

Karen J.P. Howes does an excellent job of 'moderating' the program. She is also largely responsible for the final, edited product you see on the air each Thursday. Positioning herself as 'hostess', she leads you into and between individual reports as well as providing the TVRO industry's only 'live TV newscast'; a segment each week comprised of the latest news from the industry. In addition to this, Karen's own on-air posture has matured along with the show at a rapid rate; she has advanced from a quiet, meek hostess to a semi-sultry kitten whose purr is as misleading as a rattlesnake's recoil just before the strike. Between Kenny's indignation and Howes' innocence, the show has all of the essential ingredients for being a long-term and permanent part of the TVRO industry.

What is missing through all of this evolution is industry support at the OEM and distributor level. Kenny has reduced advertising rates to the point where you can acquire two advertisements on BORESIGHT for less than you can purchase a full page color ad in ANY of the industry's print media. **But price appears** not **to be the problem.**

Air time, for somebody who has a videotaped advertisement already made up, is incidental. What costs big bucks and creates big headaches is the advertisement itself. People who barely understand how to properly layout a print media ad are certainly not able to deal with the intricacies of 30 or 60 seconds of smooth running video and audio. Kenny wisely realized that he could be raking in substantial advertising bucks to help offset the drain on his own not-deep pockets if he could **somehow** get the video ads created. So he came up with a plan whereby an advertiser gets FREE, no-charge advertisement-creation in return for agreeing to use a package of advertisements on BORESIGHT over a planned period of time. And that is a start.

What is also missing is the use of video as a medium by OEMs and distributors who have a 'news' or 'product message' to tell. OEMs routinely create and issue **printed** 'press releases' often accompanied by glossy photos of new products. Has anyone ever thought to round up a local guy with a semi-pro camera and tape deck to also create a 30 or 60 second PR-oriented 'press release' for use on BORESIGHT? Apparently not, although Kenny says he is more than willing to consider such contributions for no-charge airing on BORESIGHT **if** they fit the legitimate criteria of being genuine press releases for a product or service.

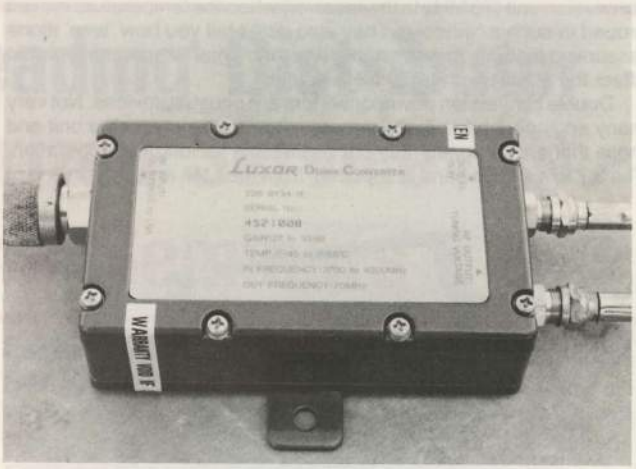
Distributors holding sales and educational seminars should be doing the same thing; bringing in a local fellow with enough smarts to get his lighting and audio 'right' and creating, even if on 1/2 inch tape, a short report on a recent sales meeting or educational seminar on actuators. Those types of tapes, fed to BORESIGHT, have a 'news value' which dealers all over the country would appreciate sharing in.

Others have tried what Shaun Kenny and crew are doing; and failed. Kenny's approach, from the 'wounded dealer' perspective, is unique and refreshing and it should catch on with dealers who are, after all, his main audience play. And in fact everyone in the industry should be 'tuning in' each week as Shaun takes his two hands and smooths out the surface on his 'butcher block' and prepares to announce a new nomination, or a new 'loser', in the controversial 'Butcher Block Award'. **It's good television because it is relevant television** and the industry is better off for the effort.

*/ BORESIGHT, Piscataway Corporate Center, Piscataway, NJ 08854; 201/562-0087. Program presently airs Thursday evenings, 9PM (eastern), Satcom F4, transponder 20.

/ KAUL-TRONICS, Inc. (Box 637, Richland Center, Wisconsin 53581; 608/746-8902 is also airing the only OEM television training series on satellite. The **'Video Newsletter' airs Tuesdays at 9PM eastern, also on TR22, Satcom F4; weekly.

ADVANCE REVIEW: LUXOR'S NEW DOWNCONVERTER



NOW We'll Report

Back in **mid**-1984 the **CSD Lab** received one of the **Luxor Model 9550** TVRO receivers and actuators for Lab test. We were not very pleased with its performance and told **Hans Giner** of our reaction. You will note that we have not published a review of the unit to date.

Luxor receivers are a legend within a legend. From their first formal showing in Atlanta, Georgia at the industry trade show held there late in 1982, to the present time, they have been one of the 'heavy weights' in the TVRO receiver world chasing people like KLM right out of the top-five receiver rating class in the process. Luxor broke their receiver with features which nobody else had at the time, just as the industry was starting to think about consumer-friendly controls and user-friendly ease of operation. Their infrared remote control was a first and their many user features were exciting to dealers who wanted something 'sexy' to sell.

We played with a Luxor at the time and didn't care for it. The receiver had serious 'stability' problems which we eventually figured out stemmed from the outdoor mounting downconverter. Since other receivers, equally complex at least in the downconversion area, were not having this degree of problem, we had to feel that Luxor could improve their performance if they tried.

Luxor's approach to the receiver system was detailed quite exten-

sively in **CSD** on December 1 and January 1 just past. We paid a trip to Sweden and visited with Luxor at their plant in Motala last fall and wrote about what we saw, learned, and our impressions of the facility and the personnel who work there. Our impressions were very positive although, as we discussed at length with Luxor engineers in Sweden at the time, we had a hard time balancing our favorable impressions with a downconverter which refused to stay on one transponder long enough to allow the user to enjoy a full length feature film.

"Wait" we were told, **"and you will be pleased with what we do".**

Well, Luxor has done 'it' and we are pleased to be able to tell you what they have done and how we measure the performance of their 'fix'.

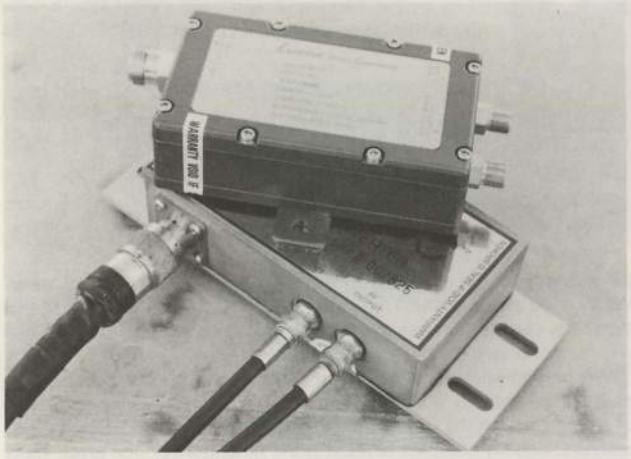
GOOD BYE USA/ Hello Japan

The Luxor C24-3 'Satellite Downconverter' was manufactured for the Swedish firm by a US microwave high-tech house; **Magnum Microwave.** The Magnum created downconverter was an attempt on Luxor's part to correct a problem that had developed early in 1984 when Luxor and their exclusive distributor (STS of Missouri) 'broke up'. Actually, Magnum **had built** the **original** downconverters for Luxor receivers but in between Magnum **and** Magnum, STS had done a downconverter of their own.

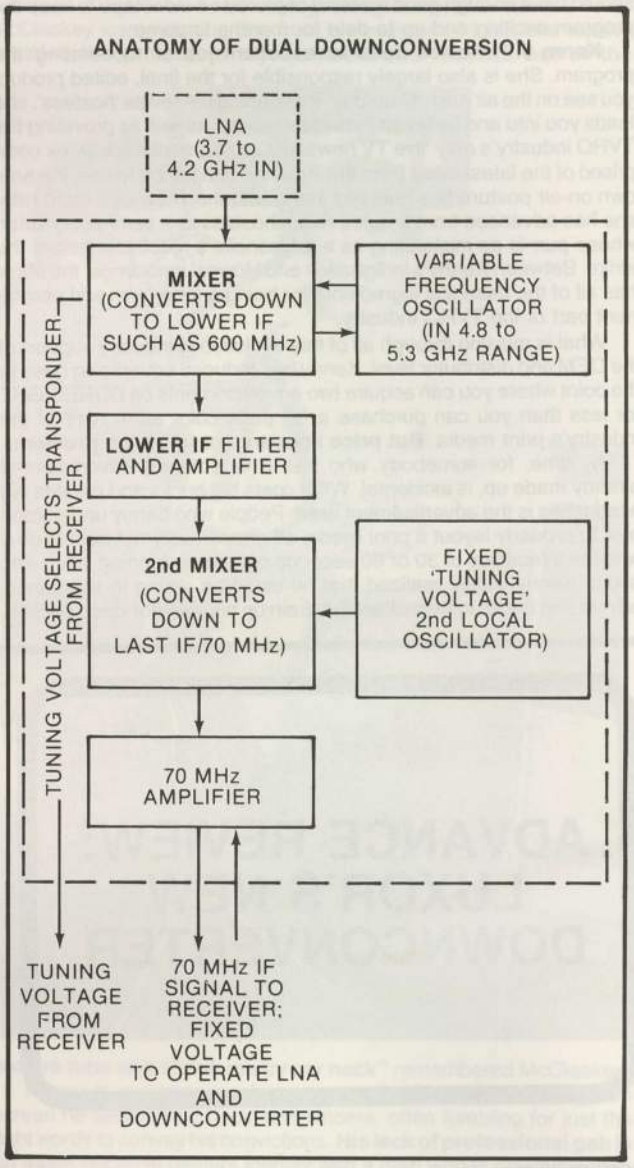
The C24-3 downconverter was touted by Magnum as a "high performance, lightweight, dual conversion downconverter with military grade, environmentally screened microwave components". We pointed this out to a downconverter engineer working for a competitive firm and he responded **"I hope they are building microwave front ends for the** Russian military **and not the US military because I'd hate to think our ICBMs were being guided by those microwave front ends".** Magnum units, to be blunt, were not always 'on target'. Magnum did an excellent job of publishing operational 'specs' for the C24-3 but those specs omitted **one** very important characteristic; frequency stability versus time or temperature. A state of the art unit might retain a frequency stability of ±2 MHz for a temperature excursion at the downconverter of −20F to +120F or so; the kind of temperatures which can reasonably be expected at a dish installed at various unfriendly locations in North America. Magnum told you the 'operational temperature range' (−31 to +149 F) but they **didn't tell you** (or specify) what happened to the output frequency in the double conversion unit (70 MHz to the receiver) when the temperature moved around in such a 'window'. They also didn't tell you how 'time' alone (assuming a stable or near stable environmental temperature) would affect the stability of the 70 MHz output.

Double conversion downconverters are unusual devices. Not very many engineers have the talents required to design such a unit and those that are designed may not be suitable for long term operation. The 3.7 to 4.2 GHz band is 'inputted' from the LNA and once inside of the unit the front end selects a particular (desired) transponder frequency because it receives 'tuning instructions' from the TVRO receiver. This tuning instruction is a tuning 'voltage' which originates at the receiver and is transmitted to the downconverter through a pair of wires or a length of coaxial cable.

This single transponder channel, located someplace between 3,700 and 4,200 MHz, is then downconverted to a new frequency such as 600 MHz. Then a new tuning voltage, **fixed within the downconverter,** changes the frequency one more time in a second 'mixer circuit' and now what was perhaps 3,720 MHz is finally 70 MHz. All of this magic takes place inside of a container that weighs around 1 pound and measures less than 3 inches wide by 6 inches long and 1.5 inches 'thick'. And all of this magic must happen just exactly the same way whether the case temperature (and therefore the circuit temperature of the downconverter) is −30 or +130 (F).



TOP OF THE HEAP/ Japanese replacement for Magnum downconverter for Luxor looks like a winner.



Inside of a microwave downconverter we have various component parts which are, essentially, 'thermatic'; that is, they respond or perform with different results when the temperature changes. Some of these parts are discrete (you can hold them, alone, in your hand or between two fingers) and some are 'etched' or found on the microwave circuit board. **They are all partially or totally 'metallic' in**

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content and you can reason with accuracy that various metals change shape and size and characteristics when the temperature changes. A piece of copper, for example, is longer (by measurement) at +120F than it is at −20 F. And each such change results in a revised operating characteristics for the circuit they are installed within.

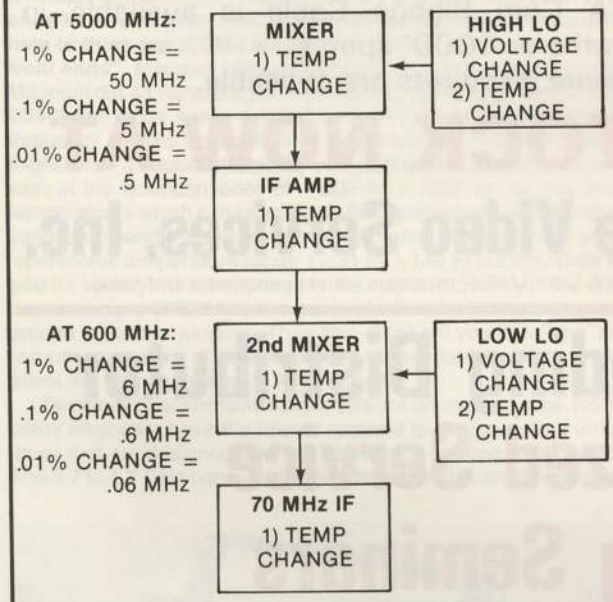
Engineers try to design around this sort of problem in several ways:

1) They build into the circuit 'temperature compensating parts'; if a piece of copper 'gets longer' at +120F, then some other part 'gets shorter' (electrically) so that the net change is close to zero for the full circuit.
2) When some particular and much-needed 'frequency' **changes** because of parts change with temperature, they build into the last unit in the line (the indoor receiver in our case) a 'frequency tracking circuit' so that if the IF 'center' moves from 70 MHz to 60 MHz, they hope they can 'pull' the wandering 70 (60) MHz signal back to 70 MHz with say an automatic frequency control (AFC) system.

All of this is pretty tricky and as anyone who has installed a receiver such as the Luxor 9550 knows, what may be OK 'today' may be the subject of a service call 'tomorrow'.

So Luxor finally took their problem to Japan.

ANATOMY OF DOWNCONVERTER INSTABILITY



IN SYSTEM, A 5 MHz CHANGE WILL STILL BE 'RECOVERABLE' WITH THE RECEIVER AFC (TI CONSIDERATIONS ASIDE) WHILE ANYTHING GREATER THAN 5 MHz MAY CAUSE RECEIVER DRIFT PROBLEMS.

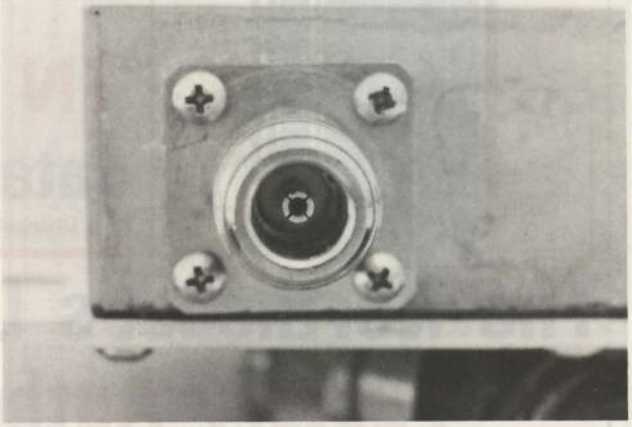
JAPANESE Built Downconverter

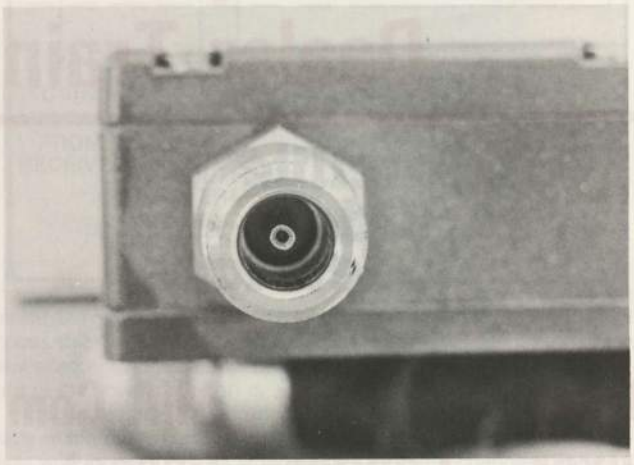
CSD received serial number 8 of the new Luxor downconverter in January. We promptly installed it, with the 9550 receiver, on a test dish and after setting up the 9550 (one more time) walked away from it for two weeks. It just sat there and played. We figured the best test we could give it was to let time pass. If this downconverter was not going to be any more stable than the Magnum built C24-3 we had received six months prior, we'd know in just a matter of days (perhaps hours).

We checked on the stability of the signal every day or so and made

appropriate written comments in a log book. At the end of two weeks we took the new **(model 2209734-11)** downconverter out of service and stuck the C24-3 back into operation. And we began a cycling test where each ran for 24 hours and we recorded and measured the frequency stability of each unit as a function of time. We show the results here in tabular form.

These observations while we are waiting for the results.





MAGNUM 4 GHz input fitting (top) **and Japanese 4 GHz input fitting** (below) **differ in design philosophy. Would moisture ingress through either? Only time will tell.**

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1) The Magnum unit is larger by about 15%.
2) The coaxial fittings used on the Magnum unit are slightly more **likely** to 'leak moist air' (thereby allowing moisture to ingress and collect inside of the downconverter which is heated and therefore 'draws' cooler air inside) than the new 'made in Japan' unit. In particular, the 3.7/4.2 GHz input fitting used on the Japanese unit is of a design which self-seals while the fitting on the C24-3 Magnum unit we received for test can 'leak' around the edges.

(We cannot speak to whether it did in fact ever leak, **only that** given the design of the fitting and the way it is mounted, **the opportunity to leak** moisture inside would be greater.)

Moisture collecting inside of a downconverter would be a short cut to death for the downconverter. Any moisture, even a thin film or a single eye-dropper drop, collecting in the wrong place inside of a downconverter, will shut it down **or at best** degrade performance.

3) The Japanese version weighs 2 ounces less.
4) The Japanese version is 'blue' while the Magnum version is between bronze and aluminum, depending upon how long it has been out-of-doors.

With the possible exception of the moisture collecting inside, **if in fact such a thing could happen,** none of these 'changes' seem significant. What about the specs internally?

Like Magnum, the Japanese version we received (remember, it was serial number **8**) had less than complete specifications. **Perhaps** that was because the unit we received **was** an 'advance unit' brought to the USA prior to the actual availability of the new unit for dealers (in quantity). However, it is decidedly more difficult to 'measure' and 'compare' specifications for a unit (any unit) when they don't tell you what the specs are supposed to be in the first place (!).

Of those specifications we did receive, we found virtually identical information for the two units. Magnum said gain should be 27 dB (we measured 28) while the Japanese version said between 27 and 32 (we measured 29 mid-band). The Magnum claimed it would operate between −35 C and +65C while the Japanese said −40C to +60 C. Nothing significant there but then the Japanese unit didn't tell us how much frequency drift we might find when the temperature moved about in this window **(either).** The Magnum said it had to 'see' an operating voltage of +18 volts (DC) which because the spec sheet did not elaborate on we always assumed meant that anything lower than +18 volts (arriving at the downconverter) would cause problems. The Japanese unit asks for between +15 to +18.9 volts DC which certainly sounds like a 'voltage window' to us. The 9550, by the way, puts out +18 volts DC so you have to be mindful of the voltage drop on the line going to the downconverter (and LNA) since you have both the current load (consumption) of the downconverter plus LNA, and, the 'IR losses' (resistance of the wire) along the cable connecting the two to consider.

And that's it.

The Japanese unit should be a total drop-in downconverter for any 9550 receiver out there (well, the current ones anyhow). You should be able to do the same thing we have done; swap one for the other and notice no ill effects for the exercise. **But,** will you notice **better** performance???

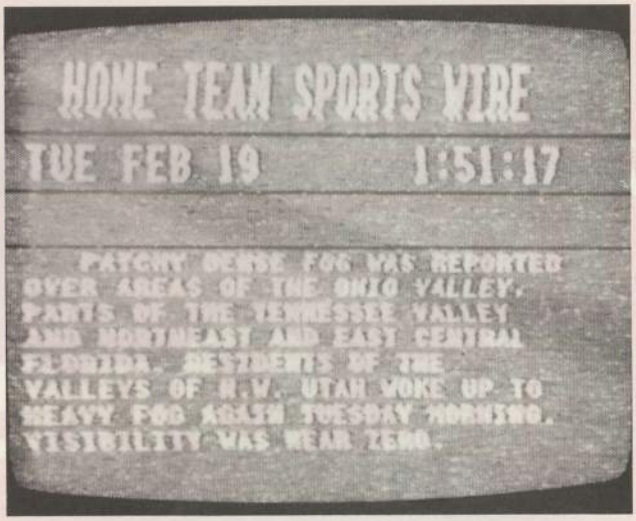
MEASUREments

In our two weeks of steady burn-in followed by 24 hour cycling, we uncovered the following:

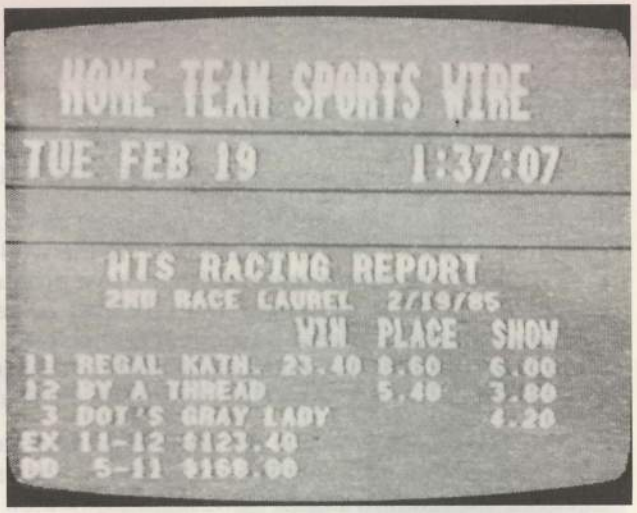
1) The C24-3 did not like being turned off for 24 hours and then turned back on again for another 24 hours. About every second time we had to do receiver set up all over again. Nothing new here; that's the problem Luxor is trying to solve!
2) The Japanese 2209734-11 went off and then came back 24 hours later without any re-tuning required. That's the improvement we were looking for.
3) Using a below-threshold signal (using above threshold signals that don't have sparklies proves very little in the downconverter performance business), we were intrigued by what appeared to be a better carrier to noise ratio with the Japanese unit. So we measured it and found that mid-band (TR12 on Galaxy 1) did, indeed, have just under 1.0 dB better carrier to noise (CNR) with the Japanese unit.

Magnum's spec sheet **claimed** an 11 dB noise figure for their C24-3. That's a good number as downconverters go; most claim numbers in the 15 dB region and 12 is considered exceptional. Therefore 11 would be considered better than exceptional.

Measuring the **actual** downconverter noise figure at the **CSD Lab** is still a bit beyond our capability and with the press of publishing deadlines there was not adequate time to cycle both (plus the 9550) back into the states for a competent lab measurement. We publish two photos here, taken closely together in time, which shows that 'yes indeed' between serial number D 007825 from Magnum and serial



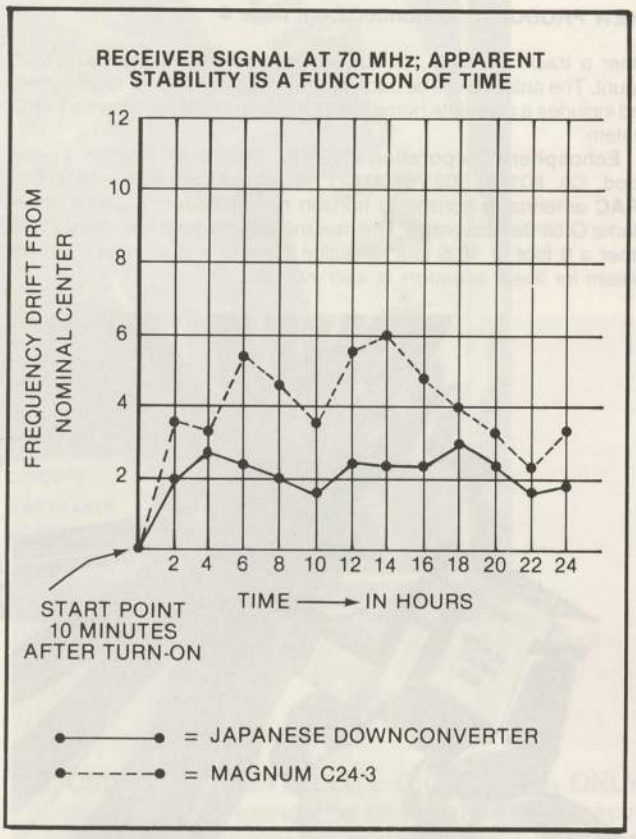
BELOW THRESHOLD picture quality with Magnum C24-3 is not as good as below threshold picture quality with Japanese unit (shown below).



number 4251008 from Japan, there is a perceptible (again, just under 1 dB apparent) difference in carrier to noise ratio on TR12. We did not repeat this measurement on transponders 1 and 24 and it may be that the Magnum unit would have been the equal of or even better than the Japanese unit (**may have been** means exactly that; no measurement so no data here). Or, it could have been even worse.

A FIX?

It is our opinion, after the tests recorded here, that Luxor **has found a 'fix'** for their instability problem with their downconverter. The new Japanese created downconverter performs better than the Magnum in sensitivity (carrier to noise as explained) and it certainly has a



considerable edge for stability.

None of this is to say nor suggest that Magnum cannot build downconverters as good as Japan. **What it does say** is simply that given the unusual design requirements of the Luxor 9550 receiver, the Japanese downconverter which you see here does perform better than the previously supplied Magnum unit. The Luxor has plenty of trick circuits inside and it may well be that it requires more out of a downconverter than other receivers with less 'tuning sophistication'.

For the dealer who has handled Luxor in the past (and stopped), or for the dealer who has been loyal to Luxor in spite of occasional (frequent, or persistent depending upon how you install the units) stability problems, or, for the dealer who has 'shied away from Luxor' in the past because of reported stability problems, **that all would seem to be a thing of the past now.** If the downconverters which Luxor will be showing in public for the first time in Las Vegas starting March 31st are identical to (or better than) the unit **CSD** received for test, Luxor is back in the top ranks once again with a product that will have users saying 'I REALLY **DO** love my Luxor!'

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ALL DURING the Las Vegas Show, Coop and Shaun will be conducting '**Boresight Dealer Dialogues**' at the Boresight Show Studios within the CSD booths. We are looking for dealers to become a part of the 3 or 4 person dialogues and be videotaped discussing some important issue before the industry today! All such sessions videotaped in the CSD booths will be considered for use on BORESIGHT (Thursdays, 9 PM eastern, F4, TR20). **Share your thoughts with thousands** of other dealers in our industry by participating!

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NEW PRODUCTS/ continued from page 6

either a tracking mount, or, for recreational vehicle use, an Az-El mount. The antenna will be packaged for 'cash and carry' retail outlets and includes a complete homeowner guide to installing a home TVRO system.

Echosphere Corporation (1925 W. Dartmouth Avenue, Englewood, Co. 80110; 303/761-4782) has introduced their new **GEO-TRAC** antenna, a horizon to horizon mount system capable of full Clarke Orbit Belt coverage. The new mount and drive is available with either a 9 foot or 10.5 foot reflective surface and an optional drive system for linear actuators is also available.

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Pico Products, Inc. (103 Commerce Blvd., Liverpool, New York 13088; 315/451-7700) plans to blow the socks off the antenna market in Las Vegas by demonstrating their newly developed offset feed 4

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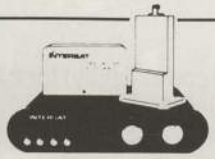

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foot by 7 foot 'rectangular parabolic section' antenna. The antenna, similar in concept to the Birdview Spoon℠ introduced in Dallas this past November, lowers the feed horn to a point 15 degrees below the lower lip of the reflective surface, thus eliminating any reflector surface blockage by the feed. The offset design claims 27 dB down first-side lobe performance (location of first sidelobe not specified), 37 dB of gain (mid-band or 4.0 GHz) and a noise temperature of 38 degrees Kelvin with a look angle of 5 degrees.

Hastings Antenna, Inc. (847 West First, Hastings, Nebraska 68901) has opened a west coast warehousing facility at **Madera, California;** just north of Fresno and in the center of the state. The new warehouse allows lowered freight prices for Hastings solid and mesh antenna products on the west coast; additional warehouses are planned for Texas, Oklahoma and Georgia.

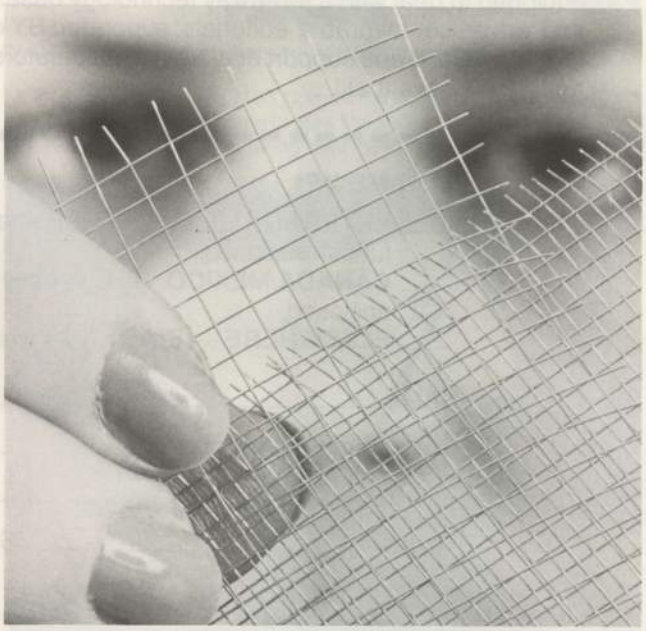
ANTENNA Related News

Burr Engineering Company (730 E. Michigan Avenue, Battle Creek, Michigan 49016; 616/965-2371) has a new antenna control and actuator system; the **SAT-TROL 10.** Using microprocessor based control circuits, the system has battery backup for memory retention, a dynamic braking system with 0.030" accuracy, an optional infrared remote control and uses a 36 volt power line to the acuator. Stroke lengths from 18 to 52 inches are available.

CZ LABS (P.O. Box 95-55 Railroad Avenue, Garnerville, New York 10923; 914/947-1554) now offers four types of direct burial cable to the TVRO installer. Cables available include single and dual runs of RG-59/U or RG-6/U plus 60 mil poly jacket protected control wires for actuator, sensor, polarization rotation and downconverter operation.

CZ also offers a new type of crimp-on type N fitting for LNA jumper to downconverter cables which mates with both RG-213 and RG-214 type cables. New fittings at CZ include a type N to type F adapter and a double-male type N right angle connector for mounting of down-converters at the LNA.

Phifer Wire Products, Inc. (P.O. Box 1700, Tuscaloosa, Alabama 35403; 800/633-5955) is now offering TVRO mesh antenna manufacturers as well as **fiberglass** antenna manufacturers a wide line of reflective aluminum material. New to the line is a lightweight aluminum mesh with reflective characteristics for either 4 or 4 **and** 12 GHz. The new material is rust resistant, and flexible to use.



PHIFER 'Meshes' with both 4 and 12 GHz

SAT-PAK Corporation (1837 N. Canal Blvd., Redmond, Oregon 97756; 503/923-0467) has announced an unconditional **one year**

guarantee on all of their LNA cable assemblies. Any cable that fails, for any reason, will be replaced from one year of the date of sale.

Sentari Communications, Inc. (P.O. Box 994, Parsons, Kansas 67357; 800/858-5577) has announced a new line of three antenna actuators; models AP 1200, 2000 and 2800. The 1200 model has east and west movement plus stall shut down protection and antenna movement direction indication. Model 2000 adds digital antenna location readout and unauthorized use lock out. Model 2800 has 56 programmable satellite positions with an alpha-numeric display readout through a hand held infrared remote control. All three controllers are mated with a 36 volt DC drive equipped with a waterproof boot and shaft wiping. To round out the package, all three units carry a full **two year warranty** and should any unit fail for any reason the manufacturer will replace it with a new unit for the two year covered period.

INDUSTRY 'Programs'

Video Newsletter, the weekly one hour program produced as a promotional tool by Kaul-tronics of Richland Center, Wisconsin has changed the time of their weekly Tuesday telecast; the program is now seen at 10PM (eastern) on transponder 22 of RCA Satcom F4. The program has been largely used in the recent past to promote company products and provide technical tips to dealers but is now being expanded to include greater all-industry participation including inserts produced by mediasts Chris Schultheiss **(Satellite TV Magazine)** and Doctor Ed Meeks **(Satellite TV Opportunities Magazine).**

EARTH STATION ASSOCIATES (19 Main Street, St. Peter, Missouri 63376; 314/278-2772) has announced a **'Memory Security Module'** which was created to eliminate 'memory loss' with the Intersat IQ-160 receiver. In a single quantity price range of $75 dealer net, the unit insures that memory loss caused by power outage or improper connection and disconnection of the IQ-160 receiver unit will be a thing of the past. The unit also expands the period of time that the IQ-160 will retain full programmed memory should there be a power outage.

GILLASPIE COMMUNICATIONS, INC. (365 San Aleso Avenue, Sunnyvale, California 94086; 408/730-2500) reports they have completed more than 1,000 hours of environmental testing on the firm's model GCI-8200 antenna controller, and the model 8300 satellite receiver. As a result of these tests, GCI will now extend their **warranty coverage** to a full 12 months. The firm packages the two units together with a suggested retail price of $750 (plus antenna and installation).

PRO BRAND INTERNATIONAL, INC. (1629 Newberry Avenue, Columbia, SC 29210; 803/732-0027) is introducing a new **stereo**

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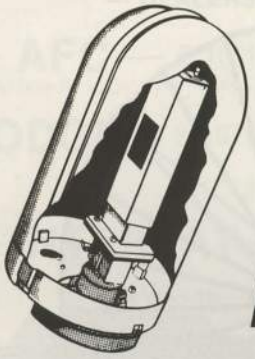

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Western U.S. customers order from Warren Supply Company of Sioux Falls, South Dakota. Call toll free 1-800-843-9924 or call 1-605-336-1830

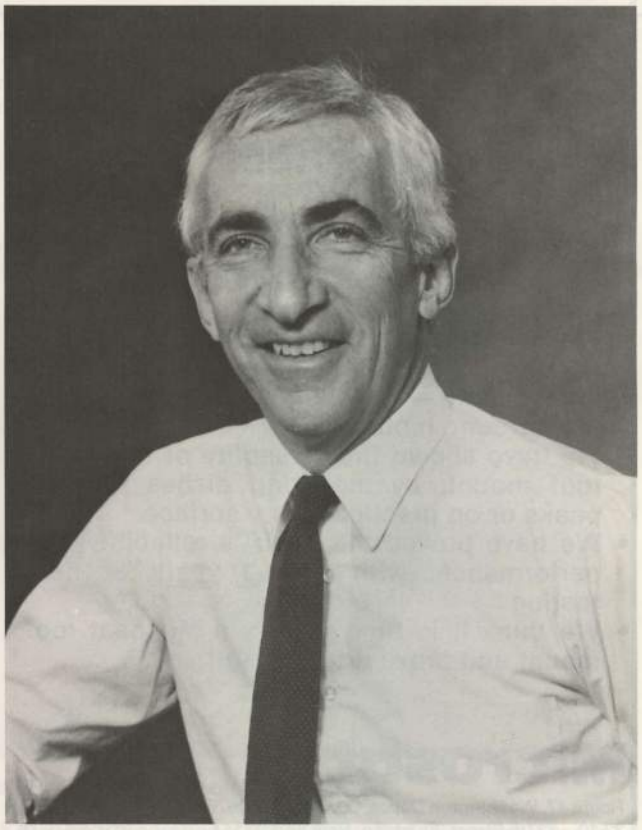
processor; model Astro Pro S-1000. The unit will accept a video output from a receiver (rather than just a subcarrier output) which makes it compatible with any TVRO receiver with baseband video output jack(s). It has a trio of stereo formats; multiplex, discrete and matrix with a 130 KHz narrow or 350 KHz wide bandwidth. There are presets for 6.2 and 6.8 MHz subcarriers and an unusual 'stereo simulator' circuit which takes mono fed signals and turns them into 'stereo sounding' signals for audio display on a stereo system. The unit is designed to drive an external audio system (500 millivolt output at 600 ohms); price is $169.

BUSINESS NEWS

AdVentures is the new enterprise of **Nancy Turpin-Sherwood,** veteran advertising and public relations executive in the TVRO industry. Setting up shop in southern Florida (AdVentures, 10281 E. Bay Harbor Drive, Suite 3C, Bay Harbor Islands, Florida 33154; 305/868-3203), Nancy will continue to handle the advertising and PR accounts for Odom Antennas and Certified Industries but will also branch out to handle other industry accounts as well.

ATECH Corporation (Suite 1525, Shelard Plaza, 600 South County Road 18, St. Louis Park, Mn. 55426; 612/593-0005) is moving into the marketing of TVRO systems through farm groups with its recent acquisition of Farmers Group Purchasing (FGP). FGP's 15,000 square foot warehouse will become the new headquarters for Atech's Satellite Systems Division and the farmers who belong to FGP (some 50,000 through 2,500 dealerships nationwide) will be offered TVRO systems. Atech is a national (over the counter) traded company under the NASDAQ symbol of FSIG.

Donald Berg of **Channel Master** has issued his annual 'forecast' of retail sales activity for the new year. Berg's forecasts have proven to be extremely accurate in recent years and for 1985 he suggests retail sales activity of 500,000 home TVRO units (see **CSD/2** for January 15, 1985 for another set of forecasts). Berg notes "With (fewer than a) million dishes in use, I feel the industry has a long ways to go before



MYSTIC Berg sees 500,000 in 1985

the market becomes saturated." Channel Master is now offering complete system packages for as low as $1,329 (dealer net) and as Berg points out there are many two or three channel off-air VHF and UHF antenna installations which cost that much and more for 'sometimes reception' in rural areas.

Birdview Communications, Inc. (8500 W. 110th Street, Overland Park, Kansas 66210; 913/451-2636) has announced record breaking third quarter earnings on record breaking gross revenues. The firm, which lost more than $1,000,00 in the same period in 1983, had earnings of $4,108,000 for the quarter ending December 31st on sales of $17,934,000. Birdview has also announced that the suggested retail pricing on their 'basic' home TVRO system is being reduced to $1995 through their 1100 member dealer network in 45 states.

X-rated **'The FUN Channel'** has made a change in its distribution system for 'FUN Channel Descramblers', appointing 'Space Age of Texas' as the new national, master distributor for the hardware pieces. The Fort Worth firm is 'inheriting' the present 300-dealer-network from the channel which reports it supplied 4,000 home descrambler units during 1984. The Fun Channel is placing considerable faith on the anti-theft provisions of Public Law 705/FCC/47 and intends to prosecute dealers and users who attempt to receive the Westar 5, transponder 24 signal **without** acquiring a proper descrambler during 1985. Full information from Bob Stienman at 817/332-7294.

LUXOR NORTH AMERICA has set its sights on capturing 15% of the home TVRO receiver market in 1985 according to firm CEO **Hans Giner.** The firm has completed restructuring its marketing operations, hand selecting distributors who are committed to service and dealer backup. Giner says the firm reorganized so as to be "more aggressive and more competitive (and) it has helped us to strenghten distributor relations and to plan movement into additional product sectors". The firm has also announced plans to import high resolution color monitors for computer and other high-res systems as well as introducing the firm's Swedish built high-end automobile speakers. Giner sees "low

'JAPAN not a threat'/Luxor's Giner

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end competition increasing greatly" during 1985 because "the so far unsuccessful 12 GHz market in Japan will force Japanese firms to compete in the USA" (with 4 GHz equipment).

Peter Gray, Managing Director for **Satellite TV Antenna Systems, Ltd.** (10 Market Square, Staines, Middlesex, United Kingdom; 0784/61234) reports successful demonstrations of the firm's 1.2 meter dish in reception tests held at the Thorn EMI headquarters in London. Gray's firm manufactures a complete 12 GHz receiving terminal including proprietary electronics designed by Steven Birkill. Using signals from ECS-1 and Intelsat V, the firm demonstrated the differences between a fixed 3.2 meter dish and their 'home' or 'SMATV' style 1.2 meter antenna and system. Gray looks for significant marketing inroads, in the UK and throughout Europe, during 1985 in the 12 GHz SMATV area.

The firm is also now the licensed distributor for the French produced 'TV 5' **Discret Decoders** in the United Kingdom. These decoders, which are to be distributed to cable firms, research organizations, and universities 'free of charge' are necessary to recover the primarily-French language programming of the TV5 service on ECS-1. Other firms will have access to the service for an annual charge equal to approximately 1200 French Francs.

URSSA/ United Retail Satellite Systems Associates, Inc. (P.O. Box 1931, Oakdale, California 95361; 209/847-5996) did announce a series of dealer seminars beginning this month. The two-day seminars are designed to provide intensive dealer-training to relatively small groups of dealers (150 to 400 people) along with a small trade exhibit limited to 25 booth spaces. URSSA has six co-sponsoring firms helping with the trade seminars and the next several dates are: March 15 (Memphis, Tn.); April 26/27 (Cincinnati, Oh.), and May 3/4 (Austin, Texas). Other locations planned in 1985/86 include Charlotte, NC (June), Albany, NY (July), Greenbay, Wi. (August), Portland, Or. (September), Colorado Springs, Co. (October), Davenport, Iowa (October), Tulsa, Oklahoma (November), Ventura, California (December), Santa Cruz, California (January 1986) and Tallahassee, Florida (February 1986). Full details from URSSA.

UNIDEN Satellite Technology, Inc. (6345 Castleway Court, Indianapolis, Indiana 46250; 800/428-6345) is well into operation with their dealer sales incentive programs for the first portion of 1985. The firm is awarding all-expense paid trips to dealers who install 25 Uniden TVRO systems (Acapulco), 50 Uniden TVRO systems (Hawaii) and 75 Uniden TVRO systems (Japan and Far East). This particular program terminated on February 25th. Uniden also recently completed a 2,000 home survey of TVRO customers and learned that 86.6% of all customers made their purchasing decisions based upon the recommendation of the salesperson selling the system.

And a new Uniden commissioned book entitled **'Down To Earth Guide To Satellite Television',** prepared by industry writer and researcher **Mark Long,** will soon be available through Uniden dealers. The 128 page book is designed to acquaint potential consumers of home TVRO with the system and how it provides virtually unlimited programming choices, and will be prominently featured at Uniden affiliated dealerships from coast to coast.

PERSONNEL News

Donald W. Fuller has been elected as Chairman of the Board of Directors for **California Amplifier.** Fuller served for 12 years as Chairman of the Board for Microdata which is presently a subsidiary of McDonald Douglas Corporation.

Robert G. Timmer has been promoted to Sales and Marketing Manager for **Draco Laboratories, Inc.** Timmer was previously a part of the 'inside sales team' for Draco. In his new position, he will implement a training program for the firm's 40 distributors nationwide.

Michael V. Balas has been appointed as General Manager for **S.T.S. South, Inc.,** a major distributor headquartered in Gainesville, Florida. Balas comes to S.T.S. South from another major (Ohio) distributor of TVRO equipment.

Shirley Ware, the administrator for NASEM (National Association of Satellite Equipment Manufacturers) and executive secretary for the SPACE/NASEM industry standards committee project has been engaged as a satellite specialist with **Industrial Cable, Inc.,** a Tulsa, Oklahoma based firm supplying cable equipment to the industry.

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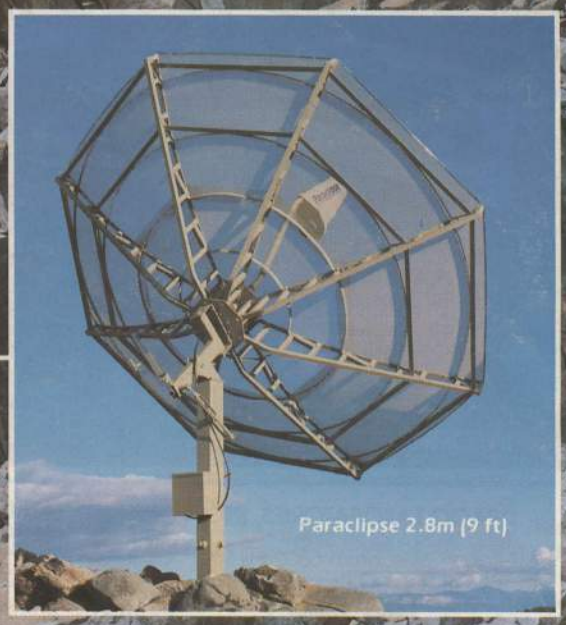

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