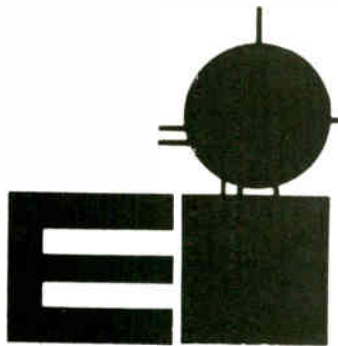


April 1984

World Radio History  
c/o 9464 E. Golden West  
Tucson, AZ 85710

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# COMMON POINT®

A MONTHLY NEWSLETTER FOR BROADCASTERS

50 cents  
per copy

800-558-0222 Distributed by Electronic Industries Inc., 19 E. Irving, Oshkosh, WI 54901 414-235-8930



## 62nd Annual Convention and International Exposition - Las Vegas Convention Center April 29 - May 2, 1984

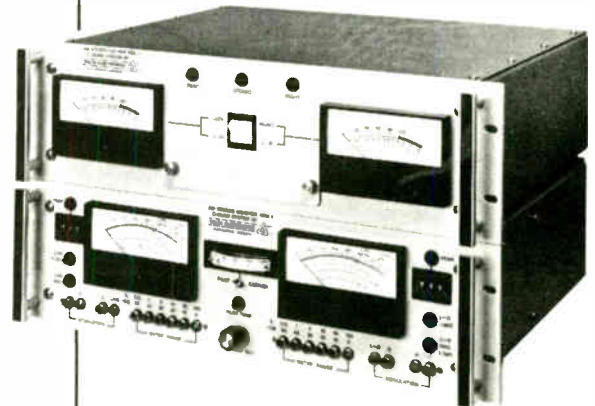
Passing the 500 mark early in February and increasing daily, the number of broadcast equipment manufacturers and distributors with exhibits should approach the 600 mark before opening day of the 62nd Annual NAB Convention at Las Vegas on April 29th, covering more than 285,000 square feet. Following an election year theme "You've got what it takes" . . . thousands of brochures have been sent to all NAB members on how to become involved promoting local communities activities in the upcoming election season. Further, since stations can now sponsor candidate debates, stations will be provided with a "Debate Model" spelling out basics of staging, negotiating, pitfalls. . . the works. The NAB, as in years past, are pulling out all the stops to make this year's convention more interesting than ever with some 37 different sessions including - Living with Dereg - New Manager Crash Course - Computers in Sales - Management - Traffic and Billing Program - Emergency - Radio Allocation Changes (Daytime 80-90 - Class IV's) - SCA's--AM Stereo Chapter II - Making Money and Cable Radio - Marketing Your Subcarrier - Contests and Promotion.

### NEW AM STEREO EXCITER FROM DELTA ELECTRONICS

Delta Electronics, Inc. introduces the ASE-1 AM Stereo Exciter and ASM-1 AM Stereo Modulation Monitor: FCC type-accepted C-Quam System transmission equipment for the AM Stereo broadcast market.



LAS VEGAS HILTON TOWER BEHIND CONVENTION ENTRANCE



C-Quam is the Compatible Quadrature Amplitude Modulation system developed by Motorola, Inc. C-Quam is the system of choice for more than 70 U.S. stations plus additional Canadian stations. Users range from kilowatt day-timers to fulltime

(cont. on page 13)



## RS SERIES—AUDIO ROUTING SWITCHERS

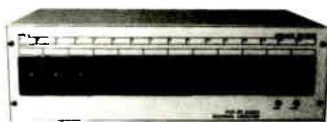
Switching systems of up to 64 stereo inputs x 32 stereo outputs can be easily configured from standard plug-in RS family components. Ask for a factory quote.

### MODELS

#### 100RS—

**\$1500**

- ★ 16 in by 12 outputs mono
- ★ 8 in by 12 outputs stereo
- ★ Control-by twelve 16 position thumbwheels. One per output
- ★ Size - 5¼" x 19" rack mount
- ★ Expandable - more outputs only, no additional inputs
- ★ Remote control - 4 bit binary



#### 1100A-RS

**\$995**

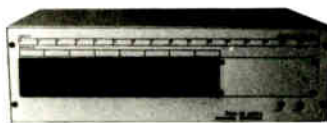
- ★ 16 in by 4 outputs stereo
- ★ Control-by four 16 position binary thumbwheels. One per output
- ★ Size - 5¼ x 9" rack mount
- ★ Expandable - yes, in and out
- ★ Remote control - 4 bit binary plus enable



#### 1100B-RS

**\$1695**

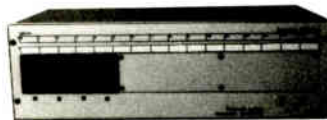
- ★ 16 in by 6 outputs stereo
- ★ Control - by eight 16 position thumbwheels. One per output.
- ★ Size - 5¼" x 19" rack mount
- ★ Expandable - yes, in and out
- ★ Remote control - 4 bit binary plus enable



#### 2100A-RS

**\$1695**

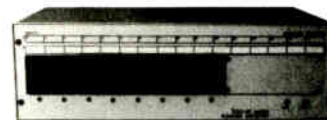
- ★ 32 in by 4 outputs stereo
- ★ Control - by four 16 position thumbwheels and four A/B select switches. One each per output
- ★ Size - 5¼" x 19" rack mount
- ★ Expandable - yes, in and out
- ★ Remote control - 4 bit binary plus enable.



#### 2100B-RS

**\$3495**

- ★ 32 in by 6 outputs stereo
- ★ Control - by eight 16 position thumbwheels and eight A/B select switches. One each per output.
- ★ Size - 10½" x 19" rack mount
- ★ Remote control - 4 bit binary plus enable.



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## Editor's Notebook

Looking back over the past few months, the controversy over which AM stereo system to use is still boiling. Each week some stations decide which route to go, but the number still waiting for whatever reason, still totals in the thousands. At the rate they are making their move, it could be four or five years before any real victor is declared in the stereo race.

**Just a reminder ...** Articles by engineers recommending specific brands is their opinion and not necessarily those of Common Point. Space for these articles is provided to encourage discussion between our readers and for that reason only.

**Radar for radio ...** Interest is picking



Ye Olde Editor

up rapidly as the weather gets warmer and the spring storms get more intense. Stations are finding the official weather warning system is not always as fast as it could be. If you plan

to attend the NAB this year, take a few minutes and stop by Booth 641. See what a Si Tex Radar could do for you.

**Docket 80-90 FM ...** Looking over the list of assignments makes me wonder what the FCC is up to. Some of the towns who will now have frequency available couldn't support a volunteer fire department, let alone a radio station of their own. Maybe the FCC will need a program to support those stations. We have ADC for kids. Why not ADR for small radio stations.

\*\*\*\*\*

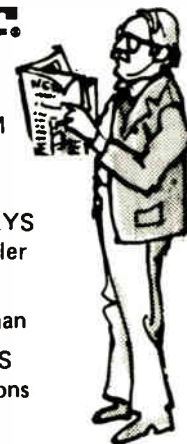
## COMMON POINT READINGS

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by John Shepler

Page 8 CROSSTALK  
by Ed Duellman

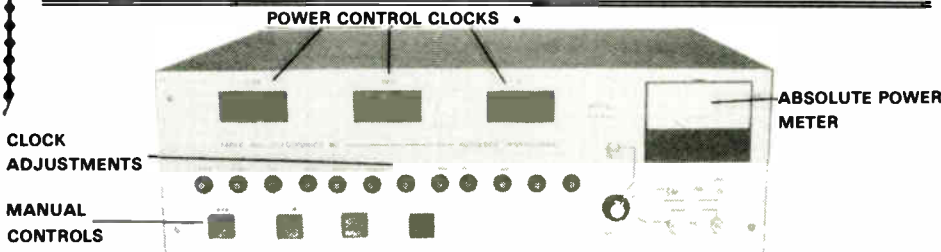
Page 15 POSTSCRIPTS  
by Mark Persons



# The Eagle Hill PSA Adapter



- Normal Transmitter Readings  
- No Internal Changes Needed
- Normal Monitor Readings  
Plus FCC Required Readings  
for Absolute Power
- Operate With Authorized  
Power As Low As One Watt
- FCC Authorized And Field  
Proven For Over A Year
- Adds Up To 150 Hours  
"Prime" Time Each Year



PSA-1	Capable of three level power control with completely automatic clock control. Clocks have to be adjusted monthly for local sunrise - local sunset per station. License Power Control up to 1,000 watts . . . . .	\$3,995.
PSA-2	Same as PSA-1 except controls are set up to work push button or through station Remote Control System . . . . .	\$2,995.
PSA-3	Single manual cutback to power levels below that available on transmitter. Can be set up to work through Remote Control System . . . . .	\$1,695.
PSA-5	For stations with power up to 5 KW . . . . .	\$4,495.

The Eagle Hill PSA Adaptor has two time clocks for pre-sunrise and daytime power but is designed for a third clock for post-sunset power which can be added if approved by the Federal Communications Commission.

**EAGLE HILL ELECTRONICS, INC.**

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## Letters to the Editor



As Chief Engineer of a Class II, AM Broadcasting Facility, in the Midwest, I have been following the ups and downs of the Canadian Agreement since March of 1983. Like other broadcasters, I called the FCC religiously to inquire about the possible date for the PSRA and the PSSA.

In March I was told it would be signed in late June. In late June, it would be signed in late July. In late July, it would be signed in August and in August, it would be signed and announcements made following an FCC meeting September 9, 1983. On the evening of September 8, 1983, a 24-hour prayer vigil was posted at the owner's home (and we're not even a religious format), to no avail.

The skies were darkening earlier and earlier, yet the FCC kept saying, "keep you ear to the rail!" My ear rusted to that rail through October ("it'll be signed by the time-change in November), November, and December. We ordered one of the PSA Adaptors and then waited for that.

We were finally granted the PSSA and told to "hold it and wait" but the adaptor didn't, so we weren't exactly holding our breath. Our major concern was the PSRA for the mornings, being on the Western edge of the Eastern Time Zone. Our January sign on was 8:15 a.m. in a community that is basically early morning oriented. We were given the use of the PSSA in late December, but no adaptor, so we waited. The PSA Adaptor arrived in early January, but our sign off was 5:45 p.m. and installing it would only give us 15-minutes, so we waited for our 6:00 a.m. PSRA (ear still to the rail).

Imagine my surprise and delight when I was rewarded for all this "ear to the rail stuff" by reading that the Canadians had signed the agreement! Without hesitation I called the FCC again to find out about our PSRA. Well, alas, there seems to be no end! It would seem we would have the PSRA were it not for the DAYTIME BROADCASTERS ASSOCIATION which filed an appeal of the power assignments of the PSSAs. This appeal, I was told, has the commissioners tied up so severely that they cannot start the computations for the

(cont. on page 13)

# series 3000

## FEATURES:

- Silent Cool Operation
- Low Voltage Air Damped Solenoid
- Direct Drive Hysteresis Synchronous Motor
- Unique Phase Lok IV Head Bracket Assembly
- High Memory Pressure Foller
- Gold to Gold Contacts
- Modern Integrated Circuits

### **The Most Dependable Cart Machine You Can Buy!**

Behind every Series 3000 machine there is over 24 years of continuous cartridge machine manufacturing experience - longer than any other company in the world! During this time, Broadcast Electronics has produced more than 35,000 tape cartridge machines. Rigid quality control standards and a long record of reliability have earned the Series 3000 machines world wide user acceptance.

### **Reliability Plus**

Series 3000 cartridge machines provide the kind of reliability broadcasters need. Starting with the highest quality components available, Broadcast Electronics has done everything possible to insure these machines perform, today, tomorrow and in the years ahead.

The durability of the 3000 Series design has been demonstrated in life cycle testing programs which have repeatedly cycled this machine through two million operations during which the Series 3000 machine performed without failure.

### **Cool, Quiet Operation**

A low voltage solenoid design allows very cool operation. Some models draw as little as 45 watts. This low power consumption makes a major contribution to the long term reliability of the 3000 Series over competitive models. Additional reliability is achieved by the use of solid state components for audio switching and all other internal control functions. The 3000 Series machines run quietly too, thanks also to the solenoid design.

### **Superb Design**

The up-to-date electronic design of the Series 3000 makes extensive use of reliable integrated circuits. High quality Dialco switches and long life heads are used exclusively.

Every major assembly in the machine can be removed and/or replaced without unsoldering a single wire. Modular PC board design, plug-in IC's and high-reliability single-turn potentiometers further simplify serviceability.

**800-558-0222**

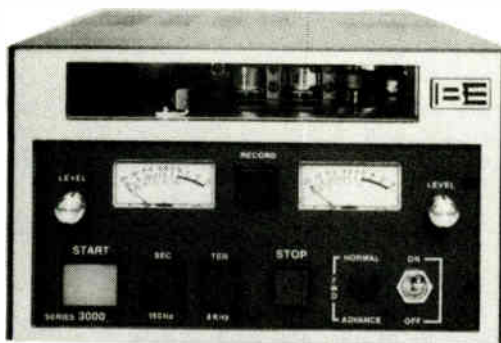
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# Space Saving Designs For All Size Cartridges

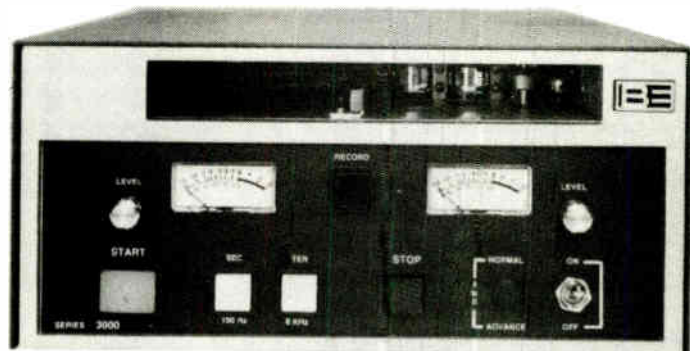
## Model 3100 Slim Line

For use with NAB A and AA cartridges. Available in mono and stereo playback models. Three units can mount side-by-side in a 19-inch rack shelf.



## Model 3200 Compact

For use with NAB A, AA and B, BB size cartridges. Available in mono or stereo record/playback only models. Two Model 3200 units can mount side-by-side in a 19-inch rack shelf.



## Model 3300 Compact

For use with all NAB standard size cartridges. Available in mono, stereo, record/playback, and playback only models. A single 3300 model can be mounted side-by-side with a single model 3100 in a 19-inch rack shelf.



## Model 3400 Rack Mount

The Model 3400 comes standard as a rack mount unit with no shelf or filler panels necessary. The 3400 has all the features of the standard 3000 Series cartridge machine and handles all size cartridges.

## Delay Machines-Models 3200 RP/DL, 3300 RP/DL, 3400 RP/DL

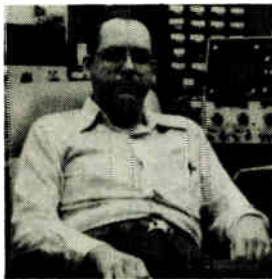
In addition to providing normal playback and record functions, delay units allow the use of the machine whenever a delay might be required. From a six second delay (for live talk show editing) to a 30-minute network programming delay, these machines can handle any length delay required. The time span of the delay is determined by the length of the tape in the cartridge.



**RIES INCORPORATED**  
OSHKOSH, WI 54901

414-235-8930

## MEMO FROM METZ



by  
David L. Metz

### RFI ELIMINATION HINTS - - Part One

This is a problem that co-located stations have. Studios and transmitters were not intended to be in the same building or at least that's what I've felt on a really frustrating day. But with enough ferrite beads and bypass capacitors, I've turned most of the station "radios" back into studio equipment. There are two ways to tackle RFI. One is to shield the equipment and keep all the RF outside of it. The other is to treat just the active component in the unit that is demodulating your RF, both have their place.

For example, last year I built a high gain distribution amplifier. It proved to be a pretty good FM radio. I remounted it in an all metal box and filtered each lead passing into the chassis with a .001 coaxial bypass capacitor. The reactance of these capacitors is so low that they look almost like a dead short to RF. They gave me a completely RFI free amp. I use Tusonix type 2404-000-X5U0-102P. They cost about 70¢ each. These have a short wire lead passing through a ceramic body with a metal shell. The shell has a small shoulder and is tinned. I have had no problems press fitting them into aluminum cabinets. On the outside of the cabinets they are terminated to barrier terminal strips with type 3/4W lugs. The appearance of termination is very professional.

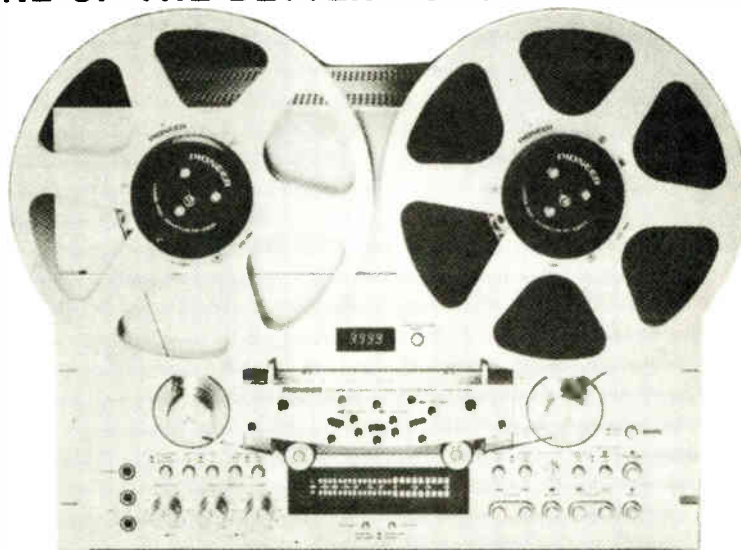
If the equipment with the RFI problem is in a non-shielded enclosure, you have to do your suppression right at the device that's doing the demodulation. Just finding the offending device can be a serious problem. I've found that using a test lead as an antenna works well. I probe about in the circuitry till I find the "hot spot" where the increased RF injection increases the units RFI problem.

(cont. on page 13)

# THE PIONEER RT-909

- LIVE ASSIST
- CONTROL ROOM
- PRODUCTION ROOM
- AUTOMATION

## ONE OF THE BETTER BUYS IN BROADCAST



- CLOSED LOOP DUAL CAPSTAN TAPE TRANSPORT (3¼ & 7½ IPS)
- FREQUENCY RESPONSE 20 - 30 KHZ AT 7½ IPS
- DISTORTION NO MORE THAN 1%
- FLUORESCENT DISPLAY LEVEL METER WITH PEAK/AVERAGE SWITCH (-30 DB TO -8 DB)
- INDEPENDENT LEFT/RIGHT RECORDING MODE SWITCH
- OUTPUT LEVEL CONTROL
- PITCH CONTROL (±6%) IN PLAYBACK MODE
- "LITE-TOUCH" ELECTRONIC TRANSPORT SWITCHES
- TAPE HEADS—NORMALLY 4 TRACK—EASILY CONVERTIBLE TO 2 TRACK WITH TOUGH NORTRONIC HEADS
- CONVERTED TO 1/2 TRACK RECORD/PLAYBACK SINGLE DIRECTION FOR PRODUCTION ROOM — INCLUDING LONG LASTING NORTRONIC HEADS AND BALANCED OUTPUTS . . . \$1295.00
- FOR 1-7/8 AND 3-3/4 IPS ADD \$65.00
- CONVERTED TO 1/2 TRACK PLAYBACK ONLY FOR AUTOMATION SYSTEM . . . \$875.00

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# Shepler Says.



by John Q. Shepler  
Technical Consultant

## TROUBLESHOOTING WITH HEADPHONES

Your most valuable piece of test equipment is one you seldom think about. It's your keen sense of hearing that can detect and analyze audio signals with far more sophistication than most electronic test equipment. Why not put this fabulous instrument to better use for routine problem solving.

For audio processing and PA work, you probably depend heavily on what your ears tell you is right. However, for fixing cart machines and amplifier modules, we're inclined to substitute oscilloscopes and other instruments. Then it becomes a matter of interpreting scope patterns and meter readings to determine which part of the circuit is faulty.

Sometimes, just listening to a piece of equipment will tell you if the problem is frequency response, hum, clipping, or high frequency noise. You can bridge suspected capacitors or wiggle connections, and tell immediately if the problem is being solved.

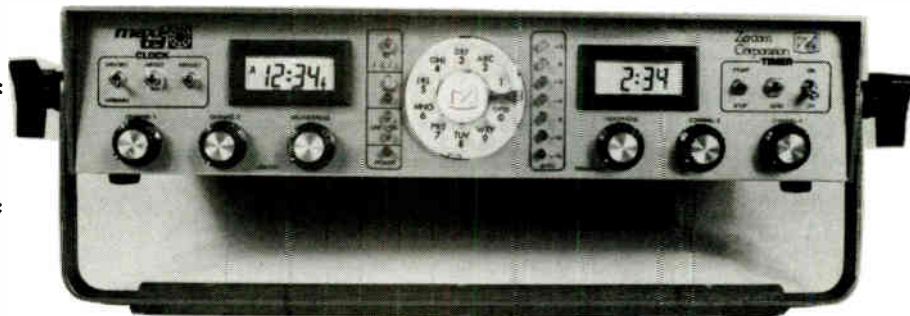
A pair of headphones are often all that is needed to poke around in audio circuits. The newer lightweight phones are ideal for this. I like to use a pair of Sennheiser 414's since they have excellent quality, are easy to wear for long hours, and have a high impedance of around 2,000 ohms each. Other open-air type phones, including some of the miniature versions, should also be ideal for this application. The impedance is important because you don't want to load the circuits being investigated.

You can build a simple test rig using a stereo headphone jack and alligator clip leads. Such an arrangement is shown in the accompanying diagram. It's best to include a series capacitor of 1 to 10 MFD non-polar at 100 volts or higher, to block any DC. This is for safety and to keep from upsetting the bias of the circuits.

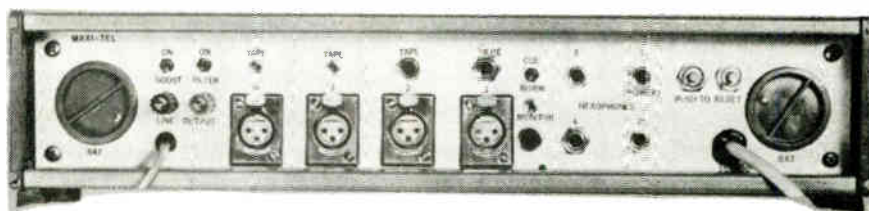
(cont. on page 13)

# NOW IS THE TIME TO TRADE UP TO

**maxi-  
tel.**  **by  
zercom**



- Up to four microphones to allow you to accommodate every situation.
- Up to four tape inputs, both miniature and standard jacks to fit any tape system that you may want to use in the field.
- A monitor input so you can monitor off air along with your program output.
- Built in telephone complete with a dial that works with your standard headphone and microphones.
- Record output so you can tape any event for future use or feed a PA system.
- A Hi/low boost function to compensate for those long phone lines.
- A super sharp notch filter to prevent spurious crowd noises from disconnecting you when you are on a long distance line.
- A cue circuit for both tape and microphone.



**maxi-  
tel.**  **by zercom  
CORPORATION**

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# Crosstalk...

by ED  
DUELLMAN



I had planned on answering some mail, talk a little on computers, and just April foolishness...solar powered night lite? Well, that went down the chute when I saw a notice that came over the National Weather Service wire. This notice was issued out of the Milwaukee, WI office, but I suspect that this will show up nation wide.

Here is the scoop on what's happening. The phone company is going to jack the rates of data service out of site. In the notice I have, the cost of a current loop teleprinter line will raise to \$195 to \$273 PER MONTH! Talk about reach out and touch someone. Hey Ma Bell; who is running that company, Jessie James? N.W.S. at the present time is using a current loop circuit in most states, so if you subscribe to that service plan on paying through the nose. N.W.S. plans on upgrading their system to a 300 baud frequency shift keyed tone service that requires a voice grade line. That type service is proposed to increase to \$140 to \$190 per month. These costs will vary depending on city and state, and mind you that this price is for the line between the subscriber and the phone company central office. This price does not include the cost of a leased terminal either. These rate increases are scheduled to go in effect on April 3, 1984, so by the time you read this we all may be getting the royal shaft from the phone company unless some court action prevents this rate increase.

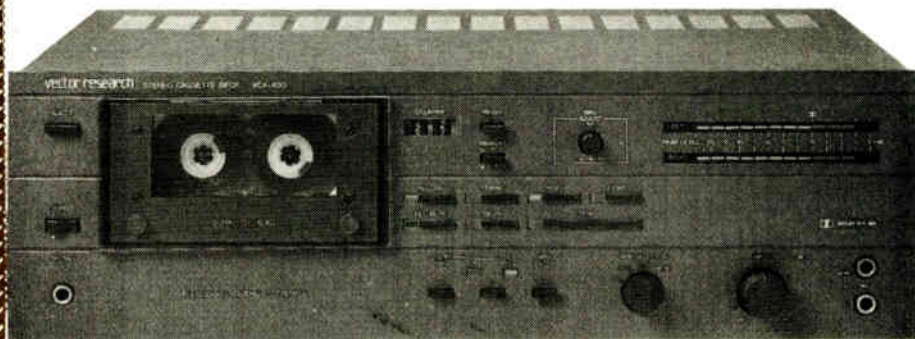
We can thank our good old Uncle Sam for this one. Prior to the A.T. & T. breakup the weather wire circuits were under the control of the local phone company and the intrastate circuits were regulated by the Public Service Commission. The intrastate circuits were paid for by the N.W.S. and we paid the local charges, which

(cont. on page 11)

## vector research

**THE CASSETTE DECK  
YOU'VE BEEN WAITING FOR!**

- **SOLENOID-CONTROLLED  
TRANSPORT**
- **RACK MOUNT**
- **REMOTE CONTROL**



STANDARD UNIT \$350.00

RACK MOUNT \$35.00

REMOTE CONTROL \$85.00

It's great news from Vector Research — the VCX-400. More than just a basic performer, this cassette deck offers outstanding reproduction quality with a host of convenience and control features that just aren't supposed to be on a deck with this kind of price tag. State-of-the-art technology, quality construction and human-engineering make the VCX-400 a standout performer.

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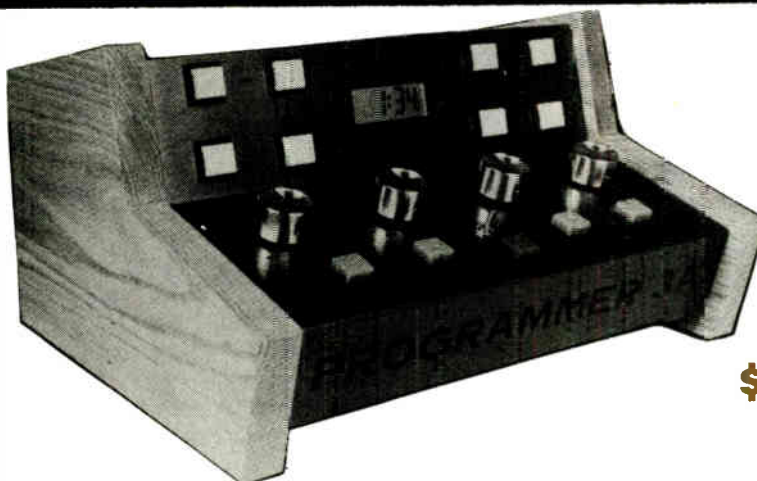


# LIVE ASSIST...THE BEST OF TWO WORLDS

Manufactured By:

**M. W. PERSONS AND ASSOCIATES**

**Use reel to reel music tapes in a live radio format with the Programmer 3A Live Assist Controller.**



**\$890<sup>00</sup>**

The Programmer 3A is the latest in a series of highly successful "Live Assist" radio music programming aids. The Programmer 3A allows stations to take advantage of music formats which have been recorded on reel to reel tape for automation systems. Up to four reel to reel tape decks can be controlled by the Programmer 3A.

**Audio:** New conductive plastic stereo level controls resistively sum audio from each source. Optoisolators silently gate audio on and off for each source as it is used. Outputs can be wired mono or stereo directly to program and cue buses of a studio console eliminating the need for additional console inputs.

**Memory:** A memory circuit allows the operator to select the music deck he will play next by touching the "next play" button for that deck. That button and the "common next play" button will light. [See center bottom button in photograph.] The system then stands ready. When the operator has finished running his commercials, weather, etc., he pushes the common play button and the selected deck starts. He does not have to remember which deck is next, the Programmer 3A does it for him.

**Auto:** The auto "One-Step" switch allows the Programmer 3A to segue to the next preset deck automatically.

**Timer:** The minutes/seconds timer resets to zero and starts counting up each time a deck is started. This allows the announcer to talk over an instrumental intro on a song right up to the vocal portion.

**Logic:** White lights tell the operator which deck is playing and amber lights tell the operator when a 25Hz cue tone is coming across during the last second of a song. The operator can start speaking with confidence when he sees the amber light knowing, for certain, that the song is ending.

***THE PROGRAMMER 3A...FOR THE BEST OF TWO WORLDS***

*Distributed by*

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# marantz®

## PMD-200 PORTABLE TWO-SPEED CASSETTE RECORDER

Two Speeds 1 7/8 and 15/16 IPS

- One Touch Record
- Cue and Review
- PA/Play Mix
- Vari-Speed Pitch Control
- Record Level/Battery Strength Meter
- Auto/Manual/Limiter Record Level
- 4-Way Powering
- Volume and Tone Control
- Dual Flywheel Design
- Auxiliary Input
- External Speaker Output
- Line Out
- External Microphone Input
- Built-in Electret Condenser Microphone
- Total Mechanism Shutoff
- Impact Resistant Lexan™ Case



**\$149.95**

## PMD-220 DELUXE PORTABLE TWO-SPEED CASSETTE RECORDER

Two Speeds 1 7/8 IPS and 15/16 IPS

- One Touch Record
- Memory Rewind and Replay
- Cue and Review
- Separate Tape Bias and Equalization Switch
- Vari-Speed Pitch Control
- Ambient Noise Control
- Record Level/Battery Strength Meter
- Auto/Manual/Limiter Record Level
- 4-Way Power
- Tape Monitor
- Dual Flywheel Mechanism
- Total Mechanism Shutoff
- Automatic Mic/Line Switching
- Volume and Tone Control
- Built-in Electret Condenser Microphone
- Tape Counter
- Headphone Jack
- External Speaker Jack
- External Telephone Pickup Jack
- Impact Resistant Lexan™ Case



**\$189.95**

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## TALKBACK

**ILLINOIS** ... Good Pub. . . always a race to see who gets to read it first.  
**KANSAS** ... Lot of truth in Shepler article. Tough to find any level staff member to hang around transmitter sites separated by 10 miles in the wee hours of 2:00 to 4:00 a.m.

**GEORGIA** ... Enjoyed Metz article on Audi Cord S Series Cart machines. Hope that he will do articles on other machines in the Audi Cord line and how they compare.

**NEBRASKA** ... Please include my name on address. I never get this magazine until days after it has sat on someone else's desk.

**Oregon** ... How about some tips on getting remote lines across LATAS out losing your sanity. Since the Ma Bell break-up things are a real mess.

**Oklahoma** ... Having returned to broadcasting after 10 years, I need the practical advice. Campus broadcasting is fun but it doesn't pay anything. Keep up Ham info . . . WB4UHI/5.

**ILLINOIS** ... We installed Philly-stran guys to replace electrically lousy metal guys, but failed to have vibration dampners installed on them. The tower shakes like an electric razor. The guys are great but by all means install the dampners.

**NORTH DAKOTA** ... Appreciated Shepler's article Safety Reminders. It's too easy to forget how dangerous transmitters can be.

**TENN.** ... Memo from Metz very helpful. Good abundance in everything but antennas. Always wondered what I'd do if one of them fell.

**TEXAS** ... Enjoy Ed Duellmans Cross Talk being a Ham for 27 years...WB5HFV.

**ALASKA** ... Don't fully agree with Baumgartner. He kind of put the lie to his own comments about Kahn when he rather casually mentioned that the receiver manufacturers need to get their act together.

BLANK-IT

The multi-format magnetic tape eraser



**\$49.95**

# LET YOUR WEATHER RADAR PAY FOR ITSELF!

WHEN SEASONAL WEATHER BRINGS STORMS TO YOUR AREA,  
FULL COLOR WEATHER RADAR WILL MAKE YOU THE WEATHER CENTER FOR YOUR AREA



## SI-TEX

WEATHER RADAR

### FEATURES:

- Variable gain controls adjusts receiver sensitivity for maximum discrimination and clarity.
- Push-button range selectors -- 1/2 mile to 64 miles with LED range indicators. Range calibration rings automatically adjust to selected range.
- Main function selector for: radar off, radar standby, radar on with antenna rotating and anti-clutter rain (FTC) on to reduce rain return.
- Variable intensity control adjusts brightness of picture.
- Warns when severe weather approaches.
- Electronic bearing marker (EBM) LED readout showing direction of storm center in relation to station.
- General coverage area displayed in blue.
- Distant and local light rain show on display in green color.
- As storm area intensifies, color changes from blue to yellow.
- Major storm cells on SI-TEX radar indicated in red.

\$7,995.00\*

\*Subject to change

THERE WILL BE NO MORE READING THE LOCAL WEATHER FORECAST — WITH SI-TEX WEATHER RADAR YOU CAN GIVE THE FORECAST.

A REAL MONEY MAKER AND AVAILABLE WITH NO MAJOR CASH INVESTMENT — THE SI-TEX WEATHER RADAR IS AVAILABLE FOR AS LITTLE AS \$210.00 PER MONTH ON A LEASE/PURCHASE PLAN WITH ONLY \$420.00 DOWNPAYMENT.

Booth # 641

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CROSSTALK  
(cont. from page 8)

in my case is about \$5.00. Seems now that the local circuits come under the control of A.T. & T. and they have a new tariff rate that is the one scheduled to get into effect April 3. This leads me to believe that the N.W.S. is not the only one to get jacked up. This can also include your news service unless you are getting that from your own satellite terminal in your back yard. If your news service comes say from an earth station at the news paper office across town you could pay the high rate for the line to your station. You know, I don't understand why the government has to stick its nose into private industry, it can't handle running itself without going into the red so far that the only light at the end of the tunnel is a train. Seems the only thing the A.T. & T. breakup did is cost the consumer a lot more money.

One thing that I would like to know is how come it is more expensive to provide a voice grade line to carry data. This same line if used in voice

service is less expensive. Now this does not make any sense to me at all. If you were to get technical about this and look at what we are sending on a voice grade line with a response from 300 to 3000 HZ. In data at say 300 baud (about 30 characters per second) we are shifting between two tones well within the limits of the line we have. Now if we talk on this same line we are probably sending one of the most complex waveforms that could be sent on that line. So why the hell charge more money for the simpler transmission of data. If I were to use a phone line for two way data at 9600 baud, then I could understand the higher rate. I have read that in some states that home computer users with a telephone modem are being charged a higher rate to use their home phone line for data communication. Here again it is the same line, no changes, just a plain old phone line, but if you tell the phone company that you are using your computer on that line up goes the rate. Pretty soon they will charge extra if you speak more than one language on your phone. With phone rates going up and some ser-

vice quality going down, the phone company is putting itself out of the market. Ma Bell, you can be replaced!

Two months in a row, boy the old soap box is getting a workout. Things like the above just plain and simple tick me off. I don't mind paying for something, but if I want to get robbed I'll go take a walk in New York's Central Park some dark night.

\*\*\*\*\*



MODEL 400 **\$75.00**  
MAGNETIC TAPE ERASER

Common Point/April 1984  
Page 11

**OTARI**

# Model 5050 B-II 1/4" Two Channel Recorder



- Transformerless balanced inputs and outputs with XL type connectors.
- Line output switch selectable for +4 dBm or -10 dBV level.
- Mic input has switch selectable 20 dB pad and mute.
- Mic/Line mixing on each channel.
- Headphone monitor output.
- Lighted VU meters with L.E.D. peak indication.
- 3 speeds switch selectable in 15/7.5 ips or 7.5/3.75 ips speed pairs.
- Record reference level switch selectable (185, 250, 320 nWb/m.)

- Equalization switch selectable (NAB, IEC).
- Reel Size switch selectable (5"-7", 10.5") EIA or NAB.
- Low frequency reproduce eq. adjustable.
- Fourth head switch selectable for 1/4 track stereo playback.
- Plug-in head assembly with hinged cover for easy access.
- Front panel record setup adjustments
- Integral splicing block.
- Built-in test oscillator (1 kHz, 10 kHz).

- Microprocessor-controlled HRS/MINS/SECS real-time counter with L.E.D. display.
  - Dump Edit and Cue (lifter defeat) modes.
  - D.C. capstan motor, servo controlled.
  - Variable speed control ( $\pm 7\%$ ) usable in record and play.
  - Memory stop switch selectable to stop tape when rewinding past 0:00:00.
- The 5050 B-II Recorders are covered by a one year parts and six months labor limited warranty. Heads, pinch-roller, fuses and lamps have a 90 day parts warranty.

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You will find that certain I.C.s are prone to RFI. A prime example is the LM381. Like most linear I.C.s, the RF must be kept from the output stages, not the inputs. Small disk ceramic capacitors work well if the printed circuit board has an extensive ground plane. The leads of the capacitor must be as short as possible. The old rule is, "if you can see them, they're too long"!

Use the smallest value of capacitor that you can. .1,000PF caps work fine, but if you have to use several of them, you may affect the high frequency response of the equipment you are trying to suppress. Start out with low values such as a 120,270,470 PF range and work your way up.

Be sure to proof the equipment after you have suppressed the RFI. Several times I have had to redo my bypassing after I found frequency response and distortion problems.

If you find that the RF is entering the equipment through the line cord, first try wrapping the cord in a coil. This acts both as a RF choke and it reduces the cord's ability to act as an antenna. If this doesn't work, install a professional chassis mount line filter such as Sprague series JX5400.

\*\*\*\*\*

PSRA powers. I'm told this may be done sometime in February, maybe.

The PSA Adaptor is installed (and works perfectly) but now it's February and we sign off at 6:16 p.m. so it really has no use. Following treatment for rust damage, my ear is back to the rail and I am (like so many others) waiting and waiting and waiting. And just think: we have all of this to go through again with Mexico!

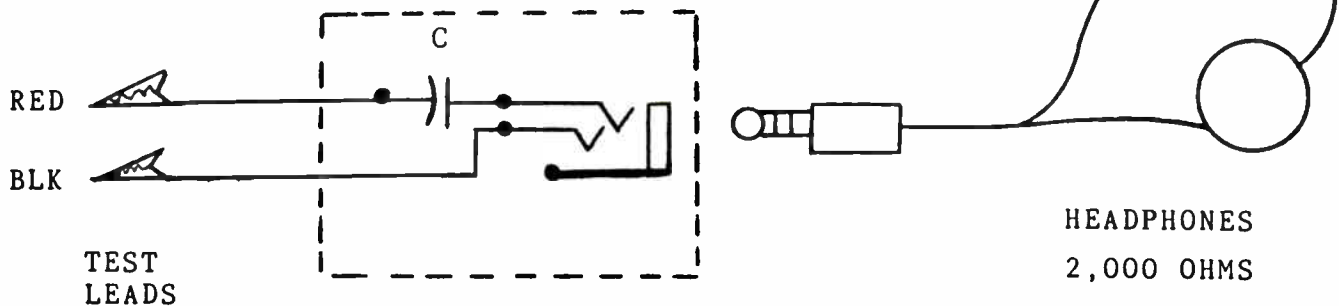
Sincerely,  
Jerry W. Johnston  
Chief Engineer

Since most broadcast equipment operates between 0 and  $\pm 8$  dBm, the levels are just right. If the audio is too loud, you can add series resistance to pad it down. For low level circuits, you can use your distortion meter as a booster or build a small IC amplifier to carry around.

Headphones have their limitations. In a transmitter room, it's hard to hear anything above the blower noise, even with phones that seal tight to your ears. Even so, a good set of "cans" are essential for tracing signals through control boards and patch panels. They are also useful for monitoring the test tapes used to align cart machines and reel recorders.

Another handy aid is a small speaker amplifier that will do many of the same functions as headphones, without the cord. Try hooking one of these up to the output of your distortion meter to determine whether high distortion readings are the result of hum, noise, or actual waveform distortion.

C = 1-10 uF @ 100 V MIN, NON-POLAR



**A SIMPLE TEST ADAPTOR FOR STEREO HEADPHONES**

network flagships. These stations report enthusiastic response from listeners using multimode and full C-Quam stereo receivers as well as typical monophonic receivers. The key is compatibility without compromise. All listeners, stereo and mono, receive a clear signal with low distortion. Delta's twenty-year

leadership in the field of broadcast instrumentation solidly backs this technological advance.

The proliferation of receivers from FMs Delco Electronics, Inc., MacIntosh Labs, Sherwood Electronics, Chrysler Corporation, Concord Electronics, Samsung Electronics and others not yet announced, is creating a sizeable

C-Quam audience. With the outstanding performance of this equipment, you can be sure that the audience will stay tuned to your Delta C-Quam AM Stereo transmission system.

\*\*\*\*\*

# Subchannel Control System

Featuring  
**COMPLETE PROCESSING AND GENERATOR.  
MAIN CHANNEL INTERFERENCE PROTECTION.  
MAXIMUM SCA QUALITY AND COVERAGE.**



CRL has painstakingly developed an integrated system of audio processor, pre-emphasis, non-overshooting low pass filters, low distortion crystal controlled frequency modulated oscillator, DC coupled data input port. The audio processor section is a multiband limiter that incorporates a 150 microsecond pre-emphasis curve, (Other curves available) and an additional set of filters to tailor the low frequency and high frequency response of the audio to improve the clarity on the typical small SCA receiver/speaker systems. CRL's patented low pass filter provides non-overshooting filter protection to protect the FM signal from interference from the SCA channel. Measurements indicate that interference to mainchannel programming is typically greater than 70 db down.

**THE SCA 2 SYSTEM IS AVAILABLE FOR A FREE TWO WEEK TRIAL**

From Circuit Research Labs, Inc.



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# PERSONS' POST SCRIPTS

by Mark Persons

## "SMALL TOWN RADIO"

Radio stations in big cities may have money to work with, but employees there may miss out on the feeling of accomplishment that many small town broadcasters get. A case in point is KEYL Radio in Long Prairie, Minnesota, population 3550. The owner, manager, salesman, announcer, newsman, sportsman, and engineer is Eldon Stielstra. Well, there are other people on the staff, but he does some of each job every week.

Eldon recently told me a story about a problem he was having with the station's main studio console. The console is a Gates Gateway. Some of you may remember that the Gatesway uses tubes (those ancient evacuated devices used for keeping the equipment warm). The power supply has one large tube that does more than its share of keeping the equipment warm. The socket under this tube is soldered onto a printed circuit board. This is one of the first examples of PC uses and it worked quite well. However, over the years, the solder connections between the tube socket and the PC board foil deteriorated because of the tube's heat. This caused the power supply to fail on occasion. All it took to get it going again was just wiggling the tube a little. Being a very busy man, Eldon didn't have much time to make permanent repairs.

One Friday night he was announcing a basketball game at the high school gym in town. Sure enough, the console failed during the game and the station had no audio at all. Eldon knew the part time announcer on duty didn't know what to do, so he ran out of the gym, jumped in his truck, drove three blocks to the studio, wiggled the tube, drove back to the gym, and resumed his sportscaster job. He claims only three minutes of game time was lost. No one in Chicago can tell me they get a greater sense of accomplishment than

Eldon got that night in Long Prairie, Minnesota.

Things are changing in Long Prairie though. Eldon is in the process of constructing new studios and will replace the Gatesway with a new console using integrated circuits (a quantum leap). He has a new satellite dish and has plans to go AM Stereo later this year. His new studios will be in a beautifully renovated photographer's home and office dating back to 1928. One of the studios will be large enough to have a band perform live or be recorded for later airing. Who says people in small towns don't have fun? Eldon is actually living the "good life" after living in big cities for years, part of that time as a recording studio engineer. Good luck Eldon Stielstra!

Speaking of Am Stereo, I recently purchased a Sony SRF-A100 AM Stereo Receiver. The purchase also included stereo headsets because the radio's two speakers are only 5¼ inches apart. Listening at night is the most fun now that so many of the high power AM stations have gone stereo. There is a bandwidth switch on the receiver which works quite well. In the "normal" position it makes the radio sound much like any other AM receiver. The "wide" position broadens the IF to make the radio sound like FM. It's really a pleasure to listen to almost any AM station now in mono or stereo.

The SRF-A100 is only the first of many AM Stereo receivers that will help revive AM listenership. Sansui's AM Stereo home component tuner is just starting to be delivered now. Sony has an AM Stereo Walkman now as well.

\*\*\*\*\*

## SALES FORCE WORKHORSE THE C-202LP

Portable Cassette Recorder with 1-7/8" Standard Play & 5/16" Long Play Speed



Just \$98<sup>00</sup>

### FEATURES:

- One-Touch Record
- Total Mechanism Shut-off (TMS)
- Locking Pause Control
- Automatic-Manual-Limiter Record Switch
- Servo Controlled Motor
- Vari-Speed Control
- Record/Battery Meter
- 3-Way Powering
- Cue and Review
- Tone Control
- Built-in Condenser Microphone
- Automatic Record Level (ARL)
- Operate in any position

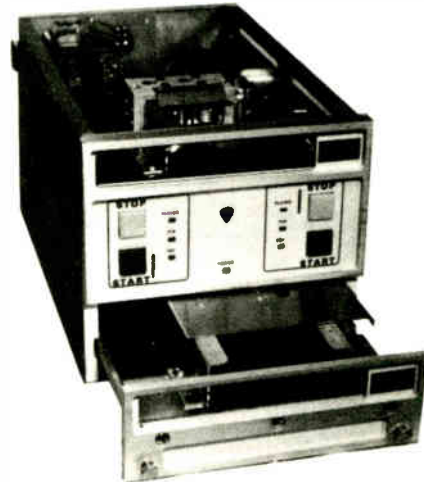
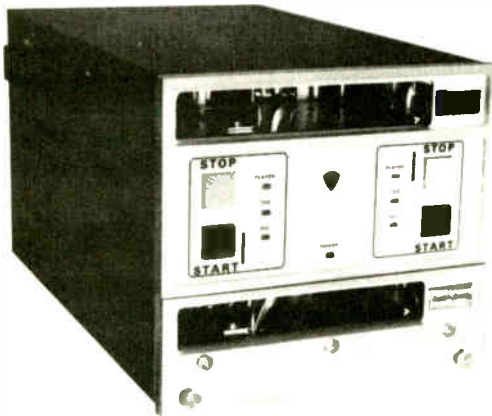
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# TWIN DECKS-TDS SERIES REPRODUCER

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- TOP PER DECK COST AND QUALITY.
- ATTRACTIVE AND DURABLE DESIGN.
- CONVENIENT SIZE AND OPERATION.
- EASY TO CLEAN AND MAINTAIN.

## A NEW DESIGN APPROACH TO MULTI-DECK CART, REPRODUCERS



We called it Twin Deck because the performance from one slot to the other is truly capable of the duplicate result—something that has long been difficult to achieve with extended shaft multi-deck machines of the past. The reason the TDS differs—it's simple, we used the other end of the motor to drive a second slide-in deck assembly!!

The premium A.C. Hysteresis Synchronous Motor used by Audi-Cord for several years is so low in heat and escape field that the addition of the double-ended shaft was a natural practicality. With this design, the lower deck can easily be positioned and adjusted to duplicate the results of the upper traditional deck. We even designed a side azimuth adjust head mount to facilitate running adjustment of phase and azimuth.—This makes for a true “Twin Deck” operation!

Model TDS-1 Monophonic, 3 NAB Tones are standard . . . . . **\$1499.00**

Model TDS-6 Stereophonic, 3 NAB Tones are standard . . . . . **\$1679.00**  
(230 Volt A.C. and 50 Hz Models are available)



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