



**Voices and Music
Make Your Sound
See Page 34**

EAS Challenges States

by Lynn Meadows

WASHINGTON Despite a last-minute request from the National Association of Broadcasters, the Federal Communications Commission did not budge from its Jan. 1 deadline for installation of Emergency Alert System (EAS) equipment in radio and television stations.

The deadline found emergency planners across the country in various states of preparedness. Many states had already begun a "shakedown" period to test their new EAS plans and iron out the kinks. Others had yet to finish writing their plans.

No excuses

Whether their state plan was finished or not, broadcasters had to meet the deadline. On Dec. 18, 1996, Henry Baumann, executive vice president and general counsel for the NAB, requested a period of at least 90 days of non-enforcement of the EAS equipment purchase/installation mandate.

"Stations in many parts of the country are just now being informed of the nature of the state/local plan, and only now may be obtaining the information necessary to govern the plan-based purchase of EAS gear," Baumann wrote 13 days before the deadline.

The FCC responded without committing to such a window, but said that if stations ordered equipment in good faith and had a copy of a purchase order, they need not worry about not being in compliance on Jan. 1.

According to FCC Director of Emergency Communications Frank Lucia, as of mid-December, 32 plans had been submitted, beginning with one from

Wisconsin. Nine of those plans were for regions within a state. Lucia said his office was telling broadcasters in states without finalized plans to use the old Emergency Broadcast System (EBS) plan for their EAS assignments until their new state plans were finished.

In the final days before the deadline, EAS equipment distributors reported that

See STATES, page 12 ▶

radio.sys

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See page 22.



NRSC Nearing End of HSDS Lab Tests

by Bob Rusk

WASHINGTON The new year finally brings to an end the laboratory evaluations of the three systems vying to become the voluntary high speed data subcarrier standard. Meanwhile, the National Radio Systems Committee plans a field test to complement those evaluations.

At press time, the NRSC — which is jointly sponsored by the National Association of Broadcasters (NAB) and Electronic Industries Association (EIA) — was completing lab work on the proposals from Digital DJ, Mitre and Seiko Telecommunications. The NRSC expected results of those system-specific tests to be in the hands of the proponents by mid-January.

"Each proponent will review their own data and then comment to other test managers," said David Layer, a senior engineer with the NAB Science and Technology Department. "The goal is to identify

See HSDS, page 11 ▶

NAB Hikes Booth Fees for Exhibitors at '97 Convention

by Lynn Meadows

WASHINGTON The National Association of Broadcasters is charging exhibitors an extra \$2 per square foot for convention floor exhibit space at NAB '97. The news has rankled many exhibitors.

The new price per square foot is \$27 for NAB members and \$33 for non-members. The most recent increase was last year, when the NAB upped its price per square foot by one dollar. The NAB cited show growth as the main reason for the increase.

The show definitely is growing. In 1995 the NAB sold 550,180 square feet of exhibitor space. In 1996, adding two halls in the Sands Expo Center, the NAB sold 648,965 square feet. By late December, still 16 weeks away from NAB '97, the NAB had already sold 709,862 square feet and was planning to use all the halls in the Sands except one for exhibitors.

Although the cost to exhibit has gone

up since 1995, the cost to attend the spring show has not changed. Members attending NAB '97 will still pay \$335 for early registration and \$435 for regular registration just as they did at NAB '95.

We firmly believe that it is a fair price for what we offer.

— NAB spokeswoman
Patti McNeil

Non-members pay \$635 and \$735, respectively.

A fair price?

"We firmly believe that it is a fair price for what we offer," said NAB

See NAB, page 8 ▶

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NEWSWATCH

FCC Extends RF Deadline

WASHINGTON The Federal Communications Commission's (FCC) holiday gift to radio stations was an extension of the deadline for compliance with its RF (radio frequency) radiation standards. The deadline for compliance has been extended from Jan. 1 to Sept. 1.

The move by the commission came after appeals from the National Association of Broadcasters (NAB) and other entities that applicants would need additional time to determine whether or not they would comply with the requirements, which govern the effects of RF electromagnetic fields created by FCC-

regulated transmitters on the environment. The commission noted that an extension of the transition period would permit applicants to review a revised information bulletin and make the necessary measurements or calculations to determine whether or not they are in compliance with the regulations.

RTNDA President Resigns

WASHINGTON Radio Television News Director Association (RTNDA) President David Bartlett has resigned over disagreements with the board regarding the management of the organi-

At a board meeting here last month, Bartlett reportedly stepped down after an option on his contract that would have extended his tenure as president through the year 2000 was passed over by the board. Contrary to earlier media reports, the board did not vote on the option.

RTNDA chairman Mike Cavender said that Bartlett and the board disagreed on "some fundamental issues related to personnel and the amount of operational control over the foundation and its staff as well as the association and its staff." Cavender felt that the board wanted to be involved in operational decisions at a level with which Bartlett was not comfortable.

"This was never an issue of the association's prominence in the industry or David's ability to bring out the issues that are important," said Cavender.

Bartlett was released from the remaining year of his contract and was given six months' severance pay. At press time the RTNDA was accepting applications for a new president.

FCC Approves Westinghouse/Infinity Merger

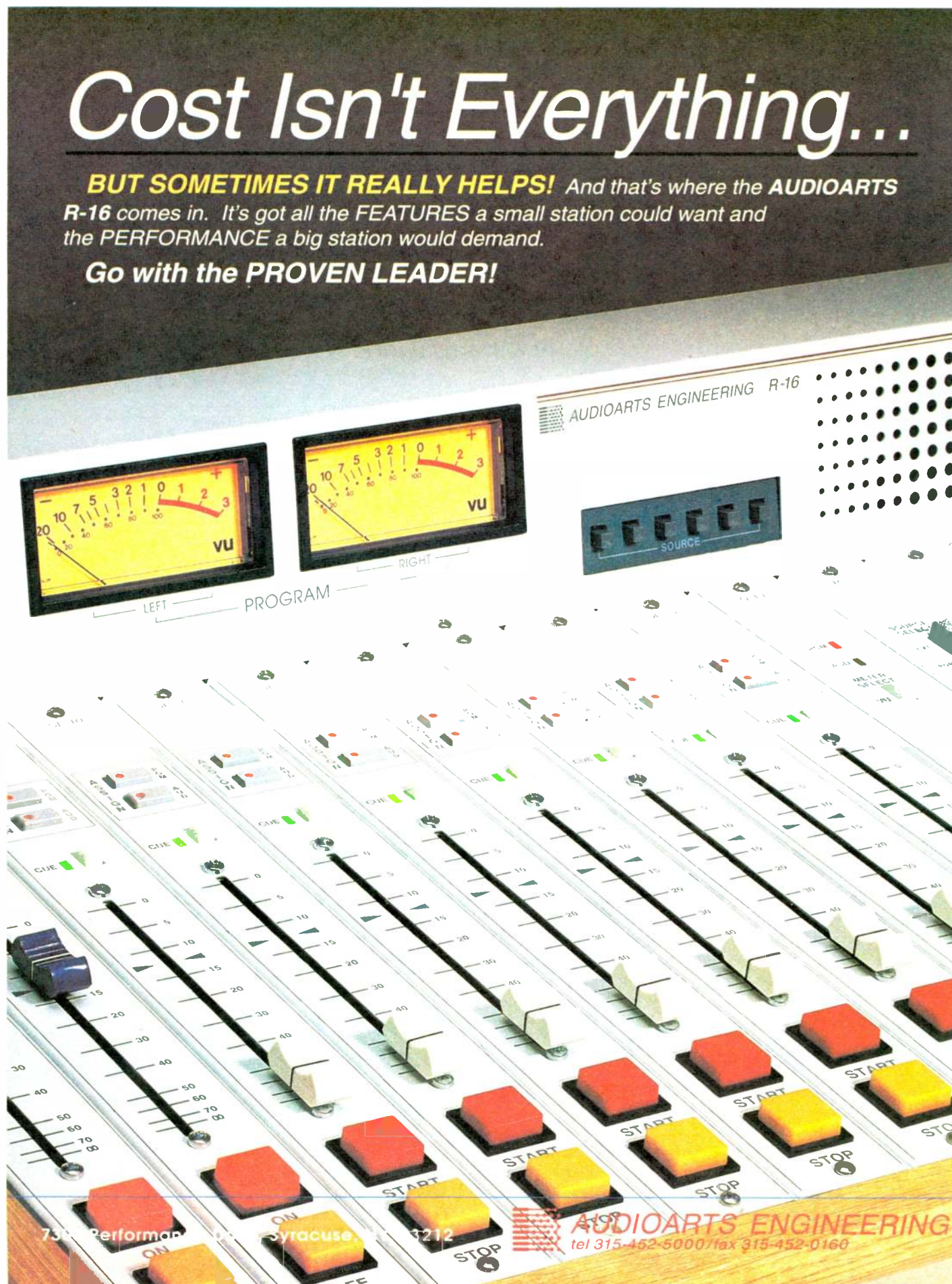
NEW YORK On the heels of shareholders' approval of the deal, the Federal Communications Commission blessed the merger of Westinghouse/CBS and Infinity last month. That merger has created the industry's largest conglomerate, with 79 stations and over \$1 billion in

See NEWSWATCH, page 3 ►

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FCC May Enter Liquor Battle

Meanwhile, Study Suggests Liquor Companies Have a Lot to Spend on Radio Advertising

by Bob Rusk

WASHINGTON The chairman of the Federal Communications Commission waited until the day after Christmas to give broadcasters a present that they did not want: a threat of government intervention if radio and TV stations refuse to "Just Say No" to hard liquor advertising.

In releasing his 1997 agenda for the commission, FCC Chairman Reed Hundt stated, "Some have raised the question of whether the commission has the expertise to evaluate the public interest repercussions of the introduction of these advertisements."

Hundt's agenda includes responding to the request from Congress and numerous states for an inquiry into the broadcast advertising of liquor ads. It was not immediately clear, however, what action the commission might take. One possibility is to begin a notice of inquiry, which would start the decision making process.

Nine states — Hawaii, Iowa, Kansas, Maryland, Minnesota, Michigan, North Dakota, Rhode Island and Vermont — have joined Alaska in its Petition for Rulemaking filed with the FCC, requesting that a regulation be adopted that would ban the advertising of distilled liquor on radio and television.

In a letter to the FCC, former Surgeon General C. Everett Koop gave his full support to the petition. In a subsequent

interview with *RW*, Koop went one step further: condemning beer commercials.

"To all of the First Amendment people who worry about free speech," said Koop, "free speech does not guarantee illegal statements, nor does it guarantee untruthful statements. A great many beer



Former Surgeon General C. Everett Koop supports the Alaska Petition

ads are geared to people who are under drinking age and that's illegal. A great many beer ads indicate a kind of lifestyle that improves rather than one that is jeopardized, and that is untruthful."

Koop said it follows that hard liquor ads would give the same "illegal and untruthful" impressions. "If it isn't

intentional it would certainly be serendipitous," said Koop.

The House Telecommunications Subcommittee also will take up the issue in 1997. Speaking at a Practicing Law Institute conference in December, Rep. Billy Tauzin (R-La.) said hearings will be held early in 1997. He said they would focus on three issues: a definition of First Amendment protection of advertisers; whether it's fair to regulate one part of the industry (distilled spirits) and not the other (beer and wine); and whether advertisers should be allowed to target demographic groups that cannot legally consume liquor.

That point is at the center of the Alaska petition, which states, "Advertising of distilled spirits on television and radio will inevitably increase the use of this potent drug among the nation's young people. Alaska calls for rapid action by the (FCC) in order to maintain the status quo and provide a balance between the industry's need for increased profits and the states' needs to protect their vulnerable populations from harm."

The bottom line

A recent Interop Research study projects that hard liquor companies would likely spend between 4 and 16 percent of their annual ad dollars on radio. In 1995, that would have amounted to between \$9 million and \$36 million.

These figures assume that hard liquor ad buys would mimic those of beer and wine advertisers. By comparison, according to the Interop study, the beer industry spent 4 percent of its \$737 million advertising budget on radio in 1995, or nearly \$30 million. The wine industry allocated 16 percent of its \$68 million ad budget in 1995 to radio, or about \$11 million.

With the government turning up the heat on hard liquor advertising, radio will most certainly face an uphill battle in its effort to keep collecting beer and wine revenue. As previously reported (*RW*, Dec. 11, 1996), some observers say the investigation could lead to a last call for all alcoholic beverage commercials.

FTC Subpoenas Stroh, Seagram

NEW YORK Seagram and Stroh Brewery, which have been subpoenaed by the Federal Trade Commission (FTC) and are now the subject of a government inquiry into their advertising practices, have no plans to cut back on their broadcast ad campaigns.

"We are currently evaluating the inquiry and have every intention of responding to it, insuring that our advertising is completely appropriate," said Seagram spokesperson Bevin Gove. Seagram continues to air radio spots for its Capucello and Lime Twisted Gin drinks. The company has been at the forefront of the controversy since it began defying the Distilled Spirits Council of the United States (DISCUS) voluntary ban on hard liquor advertising last June. DISCUS lifted the ban in November.

At Stroh, meanwhile, the FTC subpoena was issued to investigate ads for Schlitz Malt Liquor that aired between June 1996 and December 1996 — specifically the scheduling, placement and rotation of those spots. A source told *RW* that the FTC contacted Stroh in July, after a government official and his daughter were watching a program on MTV and saw a commercial for a Stroh product that aired at an "inappropriate time."

"Stroh does not market its products to individuals under 21 (years old)," said Stroh spokesperson Lacey Logan. "We market our beers to people of legal age, both in the content and placement of the commercials. We do not believe the Stroh matter would have escalated to this level if it had not been for the decision by the distillers to lift their voluntary ban on distilled spirits advertising."

—by Bob Rusk

NEWSWATCH

► **NEWSWATCH**, continued from page 2
revenue. The FCC approved the transfer of the licenses of the Infinity stations to Westinghouse by an unanimous vote. This comes a month after the Department of Justice gave its approval. The commission's radio/television cross-ownership rule, which is currently under review, was temporarily waived. Infinity President and CEO Mel Karmazin will be at the helm of the new combined CBS Radio Group, and will also be appointed to the recently formed Office of the Chairman. Karmazin said, "The radio industry is poised to expand its seven-percent share of the advertising market, and we intend to lead that expansion."

Radio and TV Revenue Growth Slows

NEW YORK Radio and television revenue growth slowed in 1995, according to a recent communications industry report. According to findings released by Veronis, Suhler & Associates, broadcasters made nearly \$25 billion in revenue in 1995, an 8.8 percent increase from 1994. Overall growth for 1993-1995 was higher than for the previous three-year period.

The report attributes the lag in growth to a historical pattern whereby spending is boosted in even-numbered years due to political and/or Olympic advertising. The revenue gains seen in 1995 were attributed in part to regula-

tory changes.

Margin gains were also reported and partially ascribed to operating efficiencies achieved through acquisitions.

The report also ranks the top 50 communications companies according to 1995 revenue. Of those companies, Westinghouse boasted the highest growth over the period 1991-1995, a 52.6 percent compound annual rate, due to its acquisition of CBS. Other companies in the top 50 included Viacom, fourth with \$8.4 billion in revenue, and Capital Cities/ABC, fifth with \$6.9 billion in revenue.

Radio Engineering Achievement To Be Honored

WASHINGTON The technical side of the industry will be honored at NAB '97, when the Radio Engineering Achievement Awards are handed out. The award goes to an individual for his or her outstanding contributions to the broadcast industry, including inventions, development of new techniques, dissemination of technical knowledge and literature, leadership in broadcasting affairs or other contributions.

The winners will be selected by the Executive Committee of the NAB, which will emphasize recent achievements of the nominees. In 1991 the committee began honoring the radio and television industries with separate awards.

Congress and President May Relax Gains Tax

by Lynn Meadows

WASHINGTON Republicans in the 105th Congress are determined to cut capital gains taxes during this session. The radio industry has heard this tease before, most notably when Republicans swept into Congress in 1994.

Broker Richard Blackburn of Blackburn & Company Inc. said that in the winter of 1995, some radio station sales agreements were actually made contingent on anticipated capital gains tax cuts.

"It was a big issue, then it became a non-issue," said Blackburn. He said the escalating prices that followed the Telecommunications Act overcame many sellers' objections.

This session may be different. Bill Archer, R-Texas, chairman of the House Ways and Means Committee, proposed

cutting the capital gains tax in half during the last session, but President Clinton was not interested.

James Wilcox, Archer's press secretary, said there is "more of a spirit of cooperation to get things done" this year. He cited as one example the bipartisan effort late last session to pass the welfare reform law.

Wilcox said Republicans are willing to work with the president if he is willing to work with them, and he noted that Treasury Secretary Robert Rubin "left the door open on capital gains" when he was interviewed on one of the Sunday talk shows in December.

Like income taxes, capital gains taxes are graduated. Businesses can pay up to 35 percent on capital gains, while the maximum rate for individuals is 28 percent. Last session, Archer proposed

See TAX, page 10 ►

World of Radio Looks Brighter

WASHINGTON I want to start off this time with one big fat apology to Telos Systems. In my last column, I was a tad over-eager in my assessment of the readiness of its Windows-based software for talk shows.

It is still in the developmental stages. I would, however, like to thank all you fine folks who did call Telos upon reading that item — you really made my day. Thank you for reading my column and proving that RW works!



In an effort to serve you, the reader, even better, we've updated the look of the newspaper (as I am sure you all

noticed) with the first issue of the year. Drop me a line and let me know what you think. Aside from the front page logo, my favorite is the new logo for *Workbench*.

And yes, that is a plumber's wrench in the logo: much to Al Peterson's dismay, I insisted that it remain — I know how many engineers out there have done their share of plumber-like repairs at their respective stations. Being a broadcast engineer doesn't always get you out of unstopping the bathroom sink!

In any case, I also thought you might get a kick out of seeing the progress RW has made since 1991 (when I first arrived here). I hope you like the new look, and I hope you like the quick little trip down memory lane. ...

A quick note from the Pavek Museum. If you act very quickly, you too can purchase one of 500 tickets for a Jan. 28 raffle of a 1996 Road King Harley Davidson motorcycle. It is valued at nearly \$20,000 with a two-year waiting list. The cost of a ticket? \$100. The raffle will benefit the Museum and only those 500 tickets will be sold. Call Steve Raymer at (612) 926-8198.

You don't have to be present to win.

The Washington Chapter of the American Women in Radio and Television will welcome the newly elected first-term members of the 105th Congress at a gala reception on Wednesday, Feb. 12 in the U.S. House of Representatives.

The biennial salute has been held since 1967 as each new Congress has convened.

Both local and national media figures, as well as professionals from the communications, legal, advertising and political arenas will be in attendance, including officials from the Federal Communications Commission,

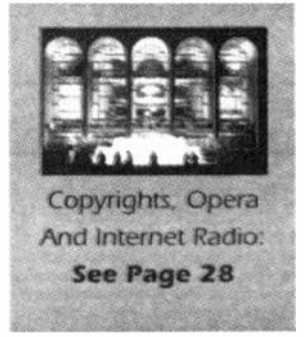
other regulatory agencies involved in the telecommunications world, and the Administration.

This year's mistress of ceremonies has not been announced yet, but past mistresses of ceremonies have included Leslie Stahl, Cokie Roberts, Maria Shriver and Kathleen Sullivan.

If you have any questions you'd like me to grill the first-term members of Congress with, drop me a line or send me an e-mail at 74103.2435@compuserve.com.

Well, that is it for now.

Radio World



Copyrights, Opera
And Internet Radio:
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Vol 21, No 1

Radio's Best Read Newspaper

January 8, 1997

NAB Waits While IBOC Readied

Radio World

Special Issue:
Our Exclusive Top
Stories of the Year

Vol 18, No 26

Radio's Best Read Newspaper

December 28, 1994

Eureka-147 Wins Nod; In-Band Not Out Yet



Solid State Logic's DiskTrack System is the subject of this month's *Workbench*.

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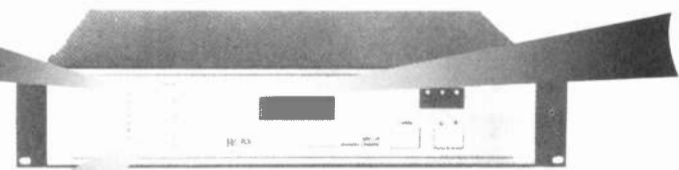
Vol 18, No 24

Radio's Best Read Newspaper

December 25, 1991

New York Parties with WKDM

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GUEST COMMENTARY

EAS Is Little More Than Excuse for Fine

by Tom Taggart

ATHENS, Ohio Enough already on the hype for EAS. The issue is *not* one of "public safety and ... charter to serve the public." The issue is one of preserving government jobs and creating new methods of legal extortion for those free loaders at the FCC. The bottom line on EAS is: Buy this piece of junk or some bureaucrat will hit you with a punitive fine for defying their will.

Let's be realistic. The EBS system is a Cold War relic, a descendant of CONELRAD, which had every station switch to 640 or 1240 kHz so enemy bombers would be unable to home in on American

cities. Quaint when you can buy a Sony GPS with 10-meter accuracy two blocks from the university in downtown Vienna (a great New Year's gift for the folks back in Tehran). The two-tone EBS "attention signal" was never more than a device to un-mute a radio so a board operator could copy down the emergency message. The technology was probably more complicated than necessary, and some of the units need constant attention or the encoder and decoder would not speak to each other.

One weak link in any emergency notification system is in how long it takes to get the information on the air. The other is getting the public to pay attention to the message. After 20 years of "This is a Test" and 22 seconds of hum, everyone realized that the public was tuning out the message. Note that out here in the real world (that excludes Washington), most television stations pulse a 1,000 cycle tone (or other sounder) to get your attention when they run an emergency crawl across the screen. So the NAB proposed to shorten the tone.

Perpetual bureaucracy

With the end of the Cold War and all those Russian missiles on their way to the scrap heap, there really does not seem to be any need for a system to give the president a direct link to every radio and TV station. There certainly is no real need (except, perhaps, in city states like Rhode Island) for a parallel system for the state governor. After all, the president can get on CNN any time of day with a phone call. And I've yet to hear anything important said by the governor of West Virginia. Besides, over the 20 years the two-tone system has been in existence, 99 percent of the EBS messages have been for weather-related disaster messages.

The EBS bureaucracy at the commission should have also been scrapped. A bureaucracy, however, exists to perpetuate its existence. The NAB request gave them and the propeller-head contingent in our business license to go off the deep end. Consider these points:

1) The present EBS tone at least conveys some information to the public, that is, that a message will follow they may find important. It breaks the rhythm of the programming. The brief screech of the header code sounds exactly like static — it will either be ignored, or cause the radio to be turned off. The public are going to buy decoders? Don't joke.

2) The EAS system can automatically break into the program line to relay certain messages. There is a valid concern here. As far as I know, in our market of some 15 stations only my FM and the primary relay (an AM-FM/FM combination) are manned 24 hours a day. This is a nice idea, but this is only required for the

Poised For Leadership

The CBS Radio Group, now a combined entity comprised of the former CBS, Group W Radio and Infinity Broadcasting stations, represents the culmination of a process that began in the fall of 1995, when Westinghouse first announced it would be purchasing CBS.

On the heels of shareholders' approval of the deal, the Federal Communications Commission blessed the merger of Westinghouse/CBS and Infinity late last month. That merger has created the industry's largest conglomerate, with 79 stations and more than \$1 billion in revenue.

The FCC approved the transfer of the licenses of the Infinity stations to Westinghouse by a unanimous vote. This comes a month after the Department of Justice gave its approval.

Prepare to rethink the way radio is sold.

This important deal by these huge corporations actually reinforces one big radio truth: radio remains a strong, robust industry capable of healthy returns on investment.

Radio has not merely survived; it has thrived for more than 75 years, shaking off challenges from television, cable and digital satellite TV ... even MTV's threat that video would "Kill the Radio Star." Radio has consistently ridden the waves of change and today continues to enjoy the lion's share of media consumption; this kind of long-term success naturally attracts those looking for a piece of the action.

We believe that this does not mean your fortune will come from giant broadcast corporations looking to acquire your station. Radio's greatest success stories have been written by entrepreneurs: those who take the risks, stay on the edge of the business, brace for coming changes and make adjustments to profit from those changes.

The CBS Radio Group will be steered by such a man, Mel Karmazin. In his words, "The radio industry is poised to expand its seven-percent share of the advertising market, and we intend to lead that expansion." One can glean the possibilities for the new, improved radio business.

And they are looking endless.

— RW

national message (and only if your station isn't manned — read the rules!). Our primary hires a lot of part-timers we wouldn't touch. I am not going to assume that they would always sent the right code, and I am certainly not going to run the program line through this box.

3) The EAS system can send a series of short messages to targeted counties. So what? So the weekend operator at our primary relay, after fumbling for 10 minutes, finally figures out how to send out "WSW" (Winter Storm Warning) for our county. He must then get on-mic and tell the audience what all the screeching was about. However, by that time, my crew already is on air with the complete story, direct from NWS, that they wrote down off our \$39.95 Radio Shack weather radio. The Fargo plan (detailed in your Dec. 11, 1996 issue) puts NWS weather radio in as a second source in everyone's decoder. I need to spend close to \$2,000 to have hard copies of severe thunderstorm warnings?

4) All that the EAS system can do by itself is send a brief message. Our West Virginia state plan (which makes less sense than the 1975 Parkersburg plan) provides for all these cryptic codes such as "IPW" (industrial plant warning). We would still have to listen to the primary to see who, what and where.

Keep the fax

During the Ohio River floods last spring our dedicated fax line was buzzing with reports from the local sheriffs and the state patrol; they had detailed information on what was open, what was closed and who needed to evacuate. We have had for many years a local plan for use by the chemical plants, and we even

maintain a back-up county communications system at our combined studio-transmitter site in case an accident forces an evacuation from downtown. This nearly happened several years ago when a chemical tanker caught fire near the courthouse. Yes, we have an EAS on order, since early November (delivery, I am now told, the second week in January). But the money is better spent on maintaining that fax line.

However, now we have a "voluntary/mandatory state plan" put together by the big Charleston-Huntington mega-owners. Except for a tax repeal, nothing happens in Charleston that requires immediate notice to our listeners. But we get a lot of our weather from the west — that's Ohio; and there are a lot of chemical plants on the Ohio side of the river. We can't get a clear signal off the primary station (too close to our frequency); the next choice is a Class IV AM (but the manufacturer says it is pointless to use AM as even the slightest burst of static destroys the header code). Luckily we can hear their class A. But the second channel goes to a Wheeling station since the last time I looked water flows downhill, and that is where the river floods first. Will we depend on this system? No.

So let's stop the hype about this turkey system. The only reason to buy is to avoid a fine. If you can fix it yourself, buy the cheapest; if you can't, buy from someone on time so that you have some leverage. But please, spare us the articles on how this is a solution for world peace and greater share points.

■ ■ ■

Tom Taggart is an attorney in Athens, Ohio, and part owner of WVVW(AM)/WRRR-FM in St. Marys, W.Va.

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telephone: (703) 998-7600
editorial fax: (703) 820-3245

Lucia Cobo ext. 115 Editor in Chief
Paul J. McLane ext. 117 Managing Editor
Alan Peterson ext. 135 Technical Editor
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Contributors: Lynn Meadows, Frank Beacham, Alan Haber, Bob Rusk, Lee Harris, Dee McVicker, Ty Ford, Sharon Rae, James Careless (Canada)



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Next Issue of Radio World
February 5, 1997

Report Sees Healthy Future for Radio

by Alan Haber

WASHINGTON The latest edition of the McCann-Erickson Worldwide "Insider's Report" suggests that radio is holding its own in the world of advertising.

According to the December 1996 document, written by Robert J. Coen, senior vice president and director of forecasting for McCann-Erickson, local radio was third among expenditures of all advertisers in 1996 behind local television and newspapers, at just over \$9.5 billion. By contrast, local television came in second behind local newspapers at \$10.8 billion.

The report's 1997 outlook for national advertising projects an increase of 5 percent for radio over 1996, to \$2.7 billion, versus only a 4 percent bump for the same period for spot TV.

"National advertising in the major consumer media," according to the report, "is now projected for an increase of 10.1 percent" in 1996, "with close to double-digit gains for most broadcast media. The Summer Olympics and extraordinary political spending have fueled much greater buyer demand and higher prices for broadcast media time than a year ago."

The report projects that advertising in the United States in 1996 would reach \$173.2 billion, a gain of 7.6 percent over 1995. In 1996, "for the third year in a

row, the advertising recovery continued in the U.S., aided by extra advertising demand due to the Summer Olympics and the extraordinary political activity."

What factors will affect advertising in 1997? It is important to note, according to the report, that in 1997 "there will be no extra Olympic stimulus and U.S. political ad demand will decline significantly."

Additionally, as the report points out, "For the last three years U.S. advertising has been growing faster than the economy, and there are reasons to expect some moderation in ad growth relative to economic growth in 1997. On the other hand there are also reasons to expect that U.S. advertising can again outpace or at least match nominal U.S. Gross Domestic Product growth again in 1997."

The outlook for U.S. advertising in 1997 "is for good growth considering the post-election/Olympics year circumstances," as stated in the report. "The business climate will be generally favorable for advertising. Many marketers will continue to restructure and downsize but more will shift away from promotional tactics to heavier advertising-supported consumer persuasion efforts for their best brands."

The 1997 forecast is for a "gain of 5.6 percent in U.S. advertising to \$182.9 billion."

BUSINESS DIGEST

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SFX Broadcasting acquires Richmond stations: SFX Broadcasting Inc. acquired two Richmond, Va., radio stations, WVGO(FM) and WLEE(FM), for \$14.5 million.

The second stage of the transaction involves the acquisition of Richmond stations WKHK(FM) and WBZU(FM) from ABS Communications. It is expected to close in the second quarter of 1997.

Ken Brown, president of ABS Communications, will join SFX to manage the Richmond stations.

SFX will own and operate or provide services to 78 radio stations in 23 markets when the transactions are complete.

Chancellor Soon to Close on OmniAmerica: Chancellor Broadcasting Co. expects to close in early 1997 on its previously announced acquisition of eight Florida stations from OmniAmerica, pending FCC approval.

Among the seven FM and one AM stations are WXXL(FM), WJHM(FM) and WOMX(FM) serving Orlando, Fla. Upon completion of this transaction, Chancellor, which already owns WOCL(FM), will own and operate four FMs in that market.

Chancellor has 53 stations in 15 markets, including New York, Los Angeles and San Francisco.

CBC Closes Foothill Deal: Children's Broadcasting Corp. closed on a \$16.5 million loan with Los

Angeles-based Foothill Capital Corp. The loan will provide CBC with working capital and cash for the acquisition of more radio stations to grow the Radio AAHS distribution system.

Children's Broadcasting Corp.'s Radio AAHS is a radio programming mix of music, news, stories and games produced for children age 12 and under and their parents.

Radio AAHS is broadcast via satellite from its flagship station WWTC(AM) in Minneapolis and is available to approximately 40 percent of the country.

New Parent Company for Mark IV Audio: Mark IV Industries Inc. has entered into an agreement to sell Mark IV Audio, its 10-company professional audio division, to an affiliate of Greenwich Street Capital Partners, a New York-based private equity fund.

Mark IV Audio's management has agreed to stay onboard.

Discussions between the two companies have included plans for major investment in improved manufacturing capability, increased expenditures for new product development and new marketing.

Mark IV Audio manufactures and markets wired and wireless microphones, mixing consoles, signal processors, amplifiers, and loudspeakers under the Altec Lansing, DDA, Dynacord, Electro-Sound, Electro-Voice, Gauss, Klark Teknik, Midas, University Sound and Vega brands.



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Chief Engineer
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"We replaced six expensive German condenser microphones in favor of the RE27N/D. What a great sound!"



Marv Collins
Chief Engineer
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NAB Floor Costs More

► NAB, continued from page 1
spokeswoman Patti McNeill, who said the increase is necessary to keep up with inflation and the costs of running the growing show. McNeill said higher attendance increases the cost of basic services like added shuttle buses and increased security. NAB staffers said the association also increased its promotion of the show this year, which added more expense.

"Compared to other shows, you'll find we're very competitive," McNeill said.

Another large show held in Las Vegas is the Winter Consumer Electronics Show (CES), which ended earlier this month. A spokesperson for the Electronic

Industries Association (EIA), which hosts the Winter CES show, said the association charged \$25 per square foot for exhibitors who paid in advance and \$26 per square foot for everyone else. In 1996, 97,000 people attended the Winter CES.

The EIA also hosts a spring CES in Atlanta in conjunction with COMDEX. At that show, largely because of the COMDEX connection, the charge is \$45 per square foot. Over 100,000 people attended the spring CES last year.

Jim Wood, president and chief engineer of Inovonics, said he winces every time any price increases, but added: "It's a necessary thing to do," of exhibiting at

the show. While he said the show is a good one, Woods said he felt it is getting a bit diluted and that he was not sure if the NAB has business in the multimedia

smaller part of it.

Woods said he would like to see some sort of accounting as to where the money goes.

"I think that the NAB has allowed their spring show to become totally out of control," agreed one long-time exhibitor who requested anonymity. In its attempt to include so many new technologies, he said, the NAB has made the show more difficult for both attendees and exhibitors. He said the solution is for the NAB to serve its members by providing the most appropriate show for

them rather than serving them by trying to generate the most money.

The spring show has changed a lot in the last two years with the expansion to the Sands and the inclusion of an Internet pavilion. The association is adding a "SAT" (Satellite and Telecommunications) pavilion this year and another Internet Theater at the Sands. McNeill said a second audio hall will be added in the Sands for radio/audio companies that do not fit in the LVCC.

The theme for NAB '97 is "Setting the Pace of Convergence." Accordingly, the NAB web site promotes the convention as a "must-attend event" for radio and television broadcasters, video/film production professionals and design/graphic arts professionals.

The growth does not please everyone.

Industry veteran Dave Burns said, "The radio audience and the television audience are about at saturation. The only real growth has been for our non-interlace friends."

He said broadcast manufacturers are paying for a bigger show while broadcasters are represented as a significantly smaller and smaller percentage of the show attendees.

"We're all in this together. As broadcasters, the association and manufacturers, we can't afford to let the world's greatest broadcast show devolve into a COMDEX Jr.," said Burns.

Lynn Distler of Comrex said she questioned the financial need for the increase in price per square foot. Comrex typically uses between 400 and 600 square feet at the spring show. Distler suggested that with its expansion to the Sands, the NAB has more square feet to support increased costs.

Everything in the show has grown concomitantly, said Distler, who said things do not necessarily have to be more expensive.

She said consumers are buying more powerful computers for less and more powerful broadcast equipment for less and wondered why the NAB could not do the same.

"Because they hold a shotgun for our heads, they have no reason to seek efficiencies," said the anonymous exhibitor. He said the NAB should learn a lesson from its own constituent radio stations, who have to focus on keeping costs low rather than allow uncontrolled growth to turn into uncontrolled expenses.

McNeill responded that the NAB is always concerned about offering a valuable product to its exhibitors. She said after the exhibitors were informed of the increase at NAB '96, the association did not receive a single letter of complaint. In last year's survey of NAB '96 exhibitors, McNeill said, 90 percent reported that the show met or exceeded their expectations.

Distler suggested that with its expansion to the Sands, the NAB has more square feet to support increased costs.

arena. As the show grows, he said, his company, which usually leases 400 square feet, is getting to be a smaller and

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World Radio History

Gains Tax Cut

► TAX, continued from page 3 cutting the individual capital gains tax in half and reducing the maximum capital gains tax for a business from 35 to 28 percent.

Wilcox could not elaborate on what capital gains tax cuts Archer will propose this session. He did say that Archer wants gains from inflation taken into account when the tax is calculated.

Clinton seems to be willing to talk about capital gains this year. In December, the Associated Press reported that the president's soon-to-be-released bud-

get will include a capital gains tax cut on the first \$500,000 in capital gains profits earned on the sale of a home.

Working around the tax

The radio industry has found different ways to avoid capital gains taxes temporarily. Many large radio group sales are actually "stock swaps" instead of asset sales. In one of the biggest deals of 1996, for instance, Westinghouse/CBS offered Infinity Corp. 1.71 shares of its stock for each share of Infinity share-

holders, like its president and chief executive officer Mel Karmazin, could defer their capital gains tax hit until after they sell their Westinghouse/CBS stock.

A stock sale is not as advantageous to the buyer as is an asset sale, said Mark Fratrik, vice president and economist for the National Association of Broadcasters. An asset sale gives the buyer a stepped-up basis for the assets to depreciate on his or her taxes. Buyers are not likely to be willing to pay as much for stock as they would be for assets, said Fratrik.

Most station swaps are primarily done for strategic reasons involved in local consolidation.

However, if an owner chooses to sell a station outright and pay the resulting capital gains tax, he or she will have less leverage when it comes to buying a new station in a new market.

C-Corporation owners take an especially hard hit from capital gains taxes. When a C-Corporation is sold, the corporation pays a capital gains tax of up to 35 percent. Then individual shareholders pay a capital gains tax of up to 28 percent on the remaining proceeds.

If the government lowers corporate and personal capital gains taxes, said Fratrik, C-Corporation owners will still be taxed twice but just not as much.



Rep. Bill Archer, chairman of the House Ways and Means Committee

S-Corporations and limited partnerships will also win under a capital gains tax cut, said Fratrik. The individual owners of such companies get all the profits and pay all the taxes. Owners of S-Corporations and limited partnerships who want to sell their stations could keep more of the proceeds with a capital gains tax cut.

Pittsburgh-based media broker Ray Rosenblum said the tax cut would be great for owners who are ready to retire. Asked if anyone was waiting for the tax cut before they sold, Rosenblum said "Some are: not everybody, but some."

The other side

At the other end of the scale, even the large public companies like Clear Channel could benefit from a capital gains tax cut. Knowing that a gain realized from the sale of stock will not be taxed as much, Fratrik said, investors may be willing to pay more for their stock.

Steven Pruett, senior vice president of the New York-based investment bankers Communications Equity Associates, said that next to emotional attachment, an anticipated tax loss is the leading factor that keeps people from selling their radio stations.

Pruett called capital gains tax cuts "the last piece of the puzzle." If markets stay strong, interest rates remain low and rumors about relaxed cross-ownership restrictions come true, Pruett said some 50 radio groups and 40 to 50 television groups are "probably sellers" after a capital gains tax cut. Most of those are privately owned, mid-sized groups, said Pruett.

Blackburn said the 80 or so companies that would have sold under the lower tax rate already sold because of higher prices spurred by the Telecommunications Act.

If someone has a limited partnership that they set up four years ago, Blackburn said, they were a good candidate to sell in 1996. In the smaller markets, said Blackburn, a capital gains tax cut would make more difference in terms of the number of deals.

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12:15:38P
 Air 3:27
 KTFM Contest Winner Promo
 Q: Super Stars and Super Cars
 :01/0:23/C PRO DA0105 12:15:47
 Bob Stevens/Gail Lightfoot

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Start F2 San Antonio Traffic Report
 Q: & the Outer Belt
 :00/0:30/C TRF DA2608 12:18:40

Start F3 World's Easiest Contest
 Q: I Know the Answer!
 :00/0:18/C PRO TO2214 12:22:42

Start F4 Burger King \$2 Breakfast
 Q: I Love This Place!
 :00/1:00/C CM DA1103 12:23:43

Start F5 K-Mart Photo Finishing
 Q: Across from Eastland.
 :01/1:00/C COM DA4310 12:24:01

Start F6 Jingle
 Q: Q-102.
 :00/0:06/C JIN DA1037 12:25:01

Hot keys: Delete, Jingles & Spots, Music Library, Auto, Jingles, Applause, Sweepers, Bumpers, Weather, News Open, News Close, Rimshots, Morning Jnl, Oldies Jingle, Legal ID, Animal Noises, Top 8 at 8, Crowd Boos, Happy B'day, More Events, Cont'st Theme, Crowd Cheer, Weather Service, Options.

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 Air 0:11
 Doc Vertical Promo
 Q: Cheers!
 :00/0:23/C PRO DA0105 12:21:47
 Thursday Morning Only

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Standard For HSDS?

► HSDS, continued from page 1

any potential areas of disagreement between the test crew and proponent, then to try and resolve any disagreements."

HSDS technology will allow radio stations to utilize their subcarriers to offer listeners a plethora of services. Individual stations could potentially earn millions of dollars annually by fully implementing the technology, which offers on-demand, fee-based services such as up-the-minute news, commuter traffic information, financial reports and sports scores.

Lab data will not be made public until the test crew and proponents resolve any differences, which is likely to be in late January or early February. Even before the results are known, however, there is a sense of urgency to move on to the next test, which will be done at the same lab in Cleveland where previous testing has taken place.

"The system will be challenged sufficiently, allowing us to get the work done faster and for less money," said Layer. While none of the companies has yet submitted a signed contract for this portion of the project, Layer said, "there are good indications that we will have participation by all three proponents."

Choosing a standard

Layer acknowledged that it "would seem like the logical conclusion" to ultimately choose a single HSDS standard, but added, "It's not a done deal that we will end up with a single proponent. It has never been stated by the NRSC that the only possible outcome other than no standard at all is a standard based on a single system."

"It may be hard to pick a single system because they may all perform well and meet the need. It may be hard to come up with reasons to pick one over the others."

"This is a possibility, not because of any foreknowledge I have of the data," said Layer, "but I am looking at what has been happening in the ITU (International Telecommunication Union)." The ITU

has endorsed the Digital DJ system, based on the DARC technology (Data Radio Channel) developed by the NHK in Japan.



Three HSDS Receivers From Digital DJ

"There was a footnote to the effect that there were other systems in development that may be suitable for high speed subcarrier transmissions," said Layer. "Right now there is a process underway within the ITU to revise the original recommendation, whereby three systems would be recommended by the ITU."

With the potential for the broadcast industry to make a lot of money, Layer said he doesn't think it will be easy to pick a single system. "Everybody thinks their system is the best," he said.

The NAB is conducting its own survey to find out how many radio stations are utilizing subcarriers. A similar study in 1993 found that 28.9 percent of the FM radio stations that responded were leasing one or more subcarriers.

Results of the new NAB survey are expected in early spring. They are expected to show additional information, including the number of stations using subcarrier space for internal needs. Heavy usage of the 67 kHz subcarrier could spell a problem for HSDS deployment.

"It would be difficult for any new technology to get a toehold in the industry," said Michael Rau, co-chairman of the NRSC's High Speed FM Subcarrier Subcommittee. "There wouldn't be that many available subcarriers to implement it on."

Rau is also president of the Radio Data Group, a company that could benefit

from HSDS technology. Like others throughout the industry who have watched and waited as HSDS development has crept along in the last few years, Rau is optimistic that it will soon be up and running.

"Radio Data Group would definitely be interested in deploying the output technology from the NRSC process, developing systems for data broadcasting," he said. "I'm hoping that it will happen sometime in 1997."

Arbitron Studies

Language and Geography

by Matt Spangler

NEW YORK Two recent studies by ratings giant Arbitron address concerns and questions its customers have had about its methods and standards.

Arbitron released the results of its Summer 1996 Spanish Language Question test in November. This study is the latest in a series that the company began after receiving numerous requests from its customers to report sample composition according to language preference. The ultimate goal of the summer study was to develop audience estimates so that language could be considered as much a demographic as age, sex or ethnic origin.

The ratings company came under fire after Spanish-language station KLVE(FM) in Los Angeles inexplicably shot to number one in the Fall 1995 survey. A task force of general managers in the area complained that Arbitron did not

See ARBITRON, page 13 ►

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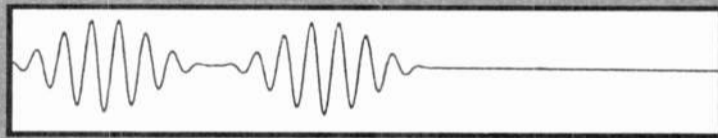
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States Face Many Challenges

► STATES, continued from page 1
sales were "brisk."

Scott Beeler, sales manager for Harris Corp., said the company had plenty of EAS boxes in stock and was working its five-person shipping crew six to seven days a week to meet demand.

A station ordering an EAS box from Broadcast Supply Worldwide on Dec. 20, 1996, according to Patrick Medved, vice president of sales, could still expect to have it by Christmas.

Harris offered to fax stations a copy of their EAS orders in case there were any problems with UPS or FedEx delivery schedules. The FCC maintained that those broadcasters who did not have their equipment by Jan. 1 would not be penalized if they could prove they had placed the order in a timely fashion.

Enhancing the bottom line

Most broadcasters did purchase their equipment by the deadline day. Given the public interest and safety surrounding the new system, most seemed willing to pay the money required to purchase equipment even if they never saw a return on their investment.

Those actively involved in the planning process, however, have begun to see benefits no one anticipated. Clay Freinwald is the chief engineer for Entercom Seattle and co-chairman of the Washington State Emergency Communications Committee (SECC). He recommended that all stations in the state monitor four sources: the National Weather Service (NWS), the primary station for national alerts, the state radio network and local radio networks. He said that the EAS will enhance bottom lines.

"Think of EAS as being four radio networks," said Freinwald. One Seattle group, for instance, recently asked if it could install EAS equipment in its news car in order to catch bulletins as they came. "Headline services" is how Freinwald described them.

In Memphis, Tenn., Steve Terry is general manager and chief engineer of WYPL(FM) and the EAS project coordinator for ECAMS Inc. (Emergency Communications Auxiliary of the Mid-South). ECAMS is a not-for-profit corporation that helped put together the Tennessee state plan and integrate it with surrounding states.

Terry said WYPL, a public station, has had its EAS equipment on-line for about three months. Eager to be "the station to turn to" for weather information, WYPL promoted its box as part of its "storm scan" system, promising to air all alerts received from the NWS.

Beeler said that some stations were even getting sponsors for the emergency alerts. By buying 10 seconds of additional memory, broadcasters could save a message that would play after the alert: "This tornado warning was brought to you by Jerry's Chevrolet."

Get with the plan

Lucia said his office is studying all plans submitted to make sure they have solid EAS monitoring structures. While some were elaborate, he said, others were simply enough to fulfill EAS requirements for now.

"It's going to take some time," he said. States whose plans were ready on Jan. 1 had already put in their time. Bill

Glasser, the chairman of the Ohio SECC and director of engineering at WHBC-AM-FM in Canton, said his state started planning a couple of years ago by getting commitments from each of the primary stations in local areas.

Many stations in Ohio have been assigned to monitor three sources, he said, including the two primary stations and the NWS. The Ohio plan includes inter-area monitoring in order to transfer emergency alerts out of one area into another. If a small station activates the system, the information will be accessible to larger markets nearby.

Glasser said a lot of local emergency management officials in Ohio were buying their own EAS equipment. His committee promised help with installing the equipment to localities that buy it.

In addition to its state plan, the Ohio SECC is also writing specific plans for the 12 local areas in the state. In California, Stan Harter, executive director of the SECC and the assistant chief to the Office of Emergency Services in California, took a different approach. The 25 local areas in that state must submit their plans and the state plan "will be the sum of its parts."

The sheer size of California, equal to six or seven smaller states, makes a bottom-up approach more manageable. Harter, one of the founders of the EBS, is determined to make the plan easy to use and easy to change. He said every local area will have six or seven procedures that fit on one or two pages apiece. Each station, NWS office and local government official will have a page of EAS instructions and another with local authenticator codes. One change will mean changing only one sheet of paper.

For EAS planners, man-made obstacles were often more challenging than state terrain. In Tennessee, Paul Luke,

president of ECAMS Inc. and a photographer for WMC-TV, said one of the major problems was the massive amount of ownership and management changes that have taken place in the last six months.

The Tennessee plan is using RBDS with its EAS system, as recommended by the FCC. One day, a station would agree to participate in the RBDS program. The next day the new chief engineer would say "no."

Harter, who has also encountered "about-faces" because of management changes, said the planning process would have been much smoother three or four years ago. "Exaggerating only slightly," Harter said he would reach an agreement

on EAS with a manager one morning only to see that person replaced by the afternoon.

Mountains and open spaces are another major challenge for EAS planners. For some states, an effective EBS was impossible because isolated stations could not receive another station.

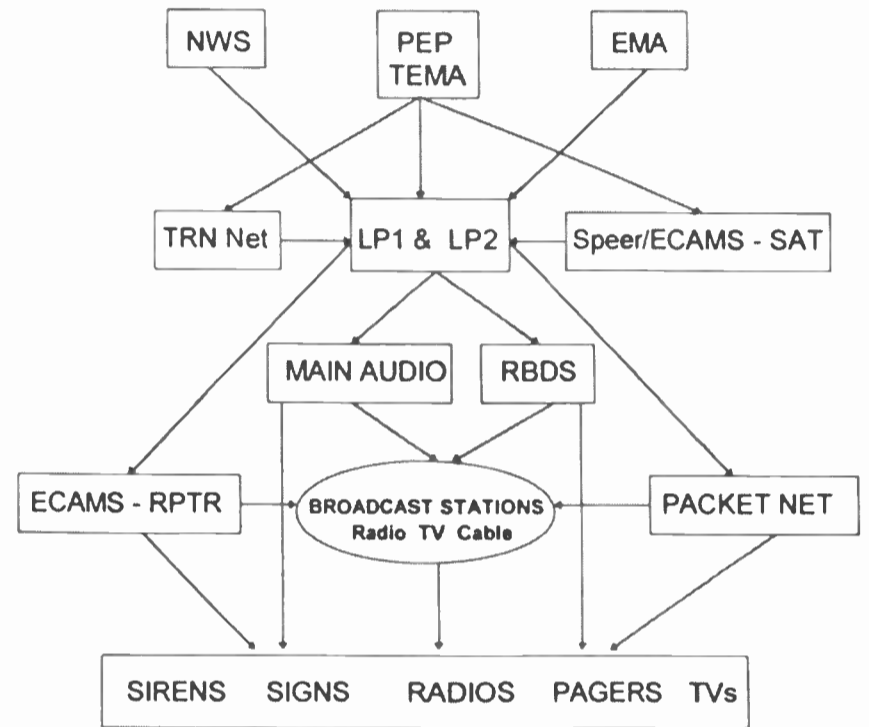
Multilayer plan

The state of Tennessee never did have an FCC-approved EBS. Whit Adamson, executive vice president of the Tennessee Association of Broadcasters, described the physical challenges of the long narrow state: Almost every major city is a border town and stations in the southeastern corner are isolated by mountainous terrain.

With the help of the Tennessee Emergency Management Agency and

See STATES, page 13 ►

Figure 1. A sample signal path from Tennessee's EAS plan, as designed by ECAMS.



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► STATES, continued from page 12
ECAMS, however, the state was one of the first to submit its EAS plan. To reach the stations isolated by mountains, Tennessee will use the Tennessee Radio Network's satellite system. ECAMS and TEMA have also established relay repeaters to get the alert signal out.

The state has what Terry called "a multilayer plan" (see Figure 1). The first layer is the broadcast layer and the second is the RBDS layer.

A third "packet data layer" will confirm whether an alert was received. The fourth layer will use amateur FM repeater systems to deliver alerts to anyone who wants to hear them with scanners or other equipment.

The four layers will take a while to implement. Luke said he would be "ecstatic" if they were able to implement it all in two years. For now, planners are delighted simply to have an FCC-approved emergency plan.

"You can be sure we're real proud to be one of the first states to be approved," Luke said.

National warning system

Washington was another state that submitted its plan early. The mountains that divide the state between east and west could have been a major obstacle to relaying nationally activated alerts throughout the state.

The FCC never told the states, Freinwald said, that they would have to decide how to get nationally activated alerts circulated around a state.

Washington decided to do what it has done for 20 years: use the State Patrol Microwave System. This system uses VHF transmitters on the mountaintops to

spread the signal to the eastern and western sides of the state.

The Emergency Operation Center (EOC) for the state has an EAS encoder and will use the State Patrol system when it needs to reach the whole state. The EOC will monitor KIRO(AM) Seattle, the primary entry point for a national alert. If a national emergency comes in, the center will distribute the message across the entire state. Freinwald said a delegation from Washington state planned to visit Washington, D.C., this year to discuss the national warning system with its congressional representatives. One of the delegation's ideas is to incorporate National Public

Radio for the transfer of national alerts.

The FCC does not specify how areas should handle local emergencies. Working under the assumption that no one would be at any station to take a phone call, the Washington plan establishes completely automated local relay networks (LRN). Local offices like 911 dispatch offices or departments of emergency services will have EAS encoders to transmit on the LRN to all stations simultaneously.

In addition to national, state and weather information, primary stations will be required to monitor the LRNs within their coverage areas.

Washington planners, like those in other states, expect the EAS will be a hit with local emergency officials. Freinwald said the plan cautions local officials against overusing the system.

Likewise, Harter said the California plan encourages emergency alert activators to limit their messages to 45 seconds. They hope those requests will make the EAS both invaluable and more appealing to broadcasters.

In the final days before the deadline, EAS equipment distributors reported that sales were 'brisk.'

New Arbitron Studies

► ARBITRON, continued from page 11
account for language preference when it surveyed Hispanics, and hence did not reach the Hispanics that listen to their stations. Los Angeles subscribers then asked Arbitron to perform further language enumeration tests that would at the very least ascertain the proportion of Spanish-speaking versus English-speaking Hispanics.

Three tests that Arbitron performed prior to the Summer 1996 one showed that the company was reaching a good distribution of Hispanics by language. However, asking language preference questions both at placement and in the diary inexplicably correlated with substantial increases in Hispanic station listenership.

Arbitron's Vice President of Communications Thom Mocarsky said "good programming" accounts for the increase in Hispanic station listenership.

"This is a bona fide reflection of real changes and real trends in the audience in L.A.," Mocarsky said.

Universe standards

The latest findings report that by asking a language preference question only one time – either at placement or in the diary – language preference information can be obtained without affecting listening estimates.

For that matter, asking a language question is not designed to be a measure of listening estimates. The latest study also asserts that including language questions in the survey is a marketplace issue, not a question of research quality. The question will be there in order to supplement marketing information on respondents – no different from asking, "How much do you work outside the home?"

Arbitron plans to turn to outside assistance in preparing language preference universe estimates. "Nobody is generat-

ing language preference estimates now, at least in any consistent, universally accepted fashion," Mocarsky asserted. The company is talking with the Advertising Research Foundation about arriving at an industry standard for generating universe estimates.

Mocarsky said that if the universe estimate remains consistent from survey to survey, then this will demonstrate the consistency of the Hispanic sample composition.

When a show of hands was asked for, most people in the audience for the presentation of the survey results, which included most of the Los Angeles general managers, showed their approval of the implementation of the language preference questions in the survey.

Arbitron is also conducting a survey to clarify its geography standards for its customers, and to modify those standards if deemed necessary.

"I think what we'll hear out of this is to articulate the standards in more detail so that people will understand exactly how we define the metro," Mocarsky said. An example of one of the questions Arbitron gets asked on standards is clarification of the breakpoint in commuting. The company hopes that its customers will understand its standards in greater detail as a result of this study.

At press time, preliminary results for the study were arriving, and Arbitron hoped to present findings by mid-January.

Pioneer Novik Dies

by Jacqueline Conciatore

NEW YORK Morris S. Novik, who directed New York City radio station WNYC-FM during its heyday under Mayor Fiorello La Guardia, died Nov. 10 in New York's St. Vincent Hospital. Novik died after suffering injuries in a fall. He was 92.

The public broadcasting pioneer is credited with improving WNYC by increasing its presentation of classical music, and airing arts and educational programs that featured New York students and artists. These included live concert performances by musicians who had fled the Holocaust.

It was also under Novik's eight-year tenure that the city heard WNYC's most famous event: Mayor La Guardia reading the funny papers over the air during a 1945 newspaper strike.

Credited with coining the term "public broadcasting," Novik was a founder of the National Association of Educational Broadcasters, critical to the formation of the public broadcasting service.

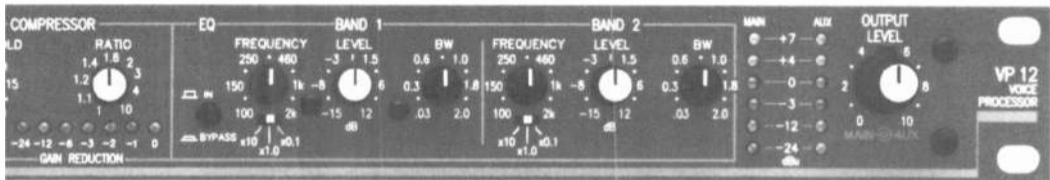
Novik was "certainly one of the pioneers of public broadcasting," said historian and journalist Henry Morgenthau. "He was in touch with the powers in Washington."

Novik's wife, Many, died in 1993.

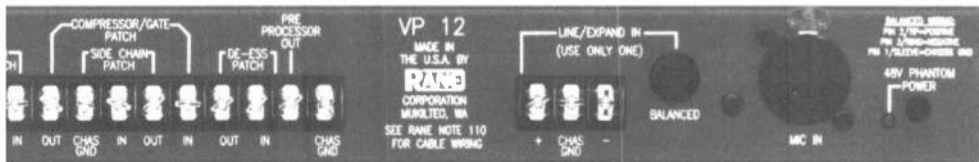
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P U R I T Y B Y D E S I G N

Make Money on Tower Space

Troy Conner

Part II

Leasing your tower space carries pitfalls and perils. In the Dec. 25, 1996, issue, we began a discussion about how you can profit from your vertical real estate.

Marketing tower space: The types and range of potential tower tenants within a given market are often surprising. Find a detailed map, pinpoint the tower location and then draw some concentric rings at five-mile increments out to about 30 miles. In terms of marketing your tower, keep in mind that most of the communications systems needing tower lease space are fairly short range.

Study the population densities on your map; look specifically for growth communities and traffic corridors. The ultimate question: What does my tower have to offer a potential lessee?

Existing infrastructure: Think about the existing infrastructure and the many communications systems already in place in any community. The overall volume of wireless communications is staggering.

Unfortunately, most of these systems are a bit inconspicuous; however, they are not invisible. Many state, county and local public agencies consolidate their antennas at a few common tower sites. Most of these older systems offer adequate coverage, but many could stand additional repeater sites.

Potential tenants

Tower tenants: A list of potential tenants divides itself naturally into public or private groups.

Possible private or commercial clients include cellular and paging companies, taxi and limousine services, couriers and delivery services, trucking companies, oil distributors, GMRS (general mobile radio service) or business band repeaters, data transmission systems, ITFS, MDS and MMDS (wireless cable TV). Given close analysis, each market will offer its own list.

Don't immediately rule out working with your existing market competitors and/or new licensees. New licenses and smaller FMs could gain a stand-by tower and greater coverage by moving their primary transmission to a nearby taller tower. Some of your competitors might need to fill a hole in their coverage or add a back-up antenna for emergencies.

Selling Uncle Sam: The list of potential customers among public agencies also is fairly broad. This group is patently more "invisible" because we don't actually or

directly use these systems.

Unlike cell phones and pagers, public communications systems don't spring to our minds. But public use probably accounts for far more volume on the airwaves than does private use.

Public communications systems that represent potential customers include law enforcement (of all levels); local utilities, including power, water and sewer; fire departments; hospitals and ambulances; emergency management; search and rescue groups; forestry agencies; local and regional airports; public transit systems; school boards (buses); weather stations; departments of transportation; marine and ports authorities; and so on. Think federal, state and local.

Other issues

Potential RF interference, electrical needs and licensing are areas you must not overlook. For the most part, these are out of my realm of expertise.

A good consulting communications engineer, well-versed in applications, allocations and frequency studies, is invaluable in developing your relationship with potential tower tenants. A lawyer is essential when it gets right down to creating a legally binding lease agreement.

Some remarkable software packages and databases offer the savvy station owner or engineer a tremendous amount of information, including FCC licensees and applicants, signal mapping with topography and demographics.

I am constantly overwhelmed by the power of a PC and today's ever-evolving and improving software.

Contract negotiation: Once you have snared a potential tenant, the fun has only begun. Develop a rapport; a goodly amount of information must be exchanged before entering into a lease agreement. Remember what I said in the beginning: Lease arrangements evolve over time, so be patient.

Let us first focus on the information that you, the potential lessor, must be able to provide. The customer will need to know the geographic coordinates of the tower and accurate AMSL (above mean sea level) elevations available for lease to coordinate their licensing efforts. If you already recently "registered" your tower officially with the FCC, you will have this information handy.

Structurally speaking: Next is the information for the structural engineer that you need from a possible tower lessee. You must determine the exact loading the lessee proposes to add to your structure. Specifically, you need antenna weight and wind loading data.

Preferable are manufacturer and exact model numbers.

Also important are the number and size of transmission lines to be utilized. The lessor also needs to know the broadcast frequency(s) and wattage intended.

Often initially overlooked is the associated antenna mounting hardware. An antenna mounting bracket can range anywhere from as little as 30 pounds to several tons or more.

In many cases, the mounting hardware must be engineered for the tower during a structural analysis. Once the hardware has been designed, it can be sent to a steel fabricator and then on to a galvanizer.

Income potential: Market price for existing tower space ranges from more than fair to fairly unbelievable. Bear in mind that airspace is limited and growing more and more valuable. Also, even a small, 200-foot tower can easily cost \$30,000 and in some cases take years to get permitted and approved for construction. In some markets, new tower construction simply is impossible. You, on the other hand, are selling instant access to elevation.

In terms of income, each tower and market are unique. Potentially, income can range from



\$100 to \$200 a month for a single tenant in a smaller market, up to \$2,000 or \$3,000 per month per tenant in larger, more desirable markets. The cost of a new tower, zoning restrictions and the availability of land often provide the leverage you need to demand higher rental rates.

Some time ago, I inspected a 300-foot self-supporter in New Jersey. It held an unbelievable 120-plus tenant antennas and reportedly generated its owner roughly a million dollars a year.

Interestingly, this man held no broadcast licenses and owned the tower purely as a source of rental income. Unfortunately, most markets are not quite as financially viable as this gentleman's site overlooking New York City.

Reasonable rates: Remember, the lessee is looking for a reasonable monthly rate given the importance or income of a given communications system.

A lessee will also probably want a fixed rate for five years and pre-prescribed 10- and 15-year rate increases given a long term commitment. Tower access can become a troublesome issue if not agreed to in writing.

Reserve the right to approve the timing of work, the choice of tower crew and other details that can ultimately affect the health of your structure.

To be successful, network, communicate, be creative and be patient. We are surrounded by a tremendous amount of wireless communication.

Many of us seldom think much about it. Frequently, the operators of these systems seek to improve them or expand coverage in a cost-effective manner.

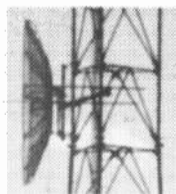
The existing infrastructure may be difficult to penetrate but rewards make it worth the perseverance. Along with the new wireless technologies being introduced almost daily, the financial future for some owners of vertical real estate is bright.

...

Troy Conner is the owner of Tower Maintenance Specialists. Reach him by phone at (704) 837-3526 or via fax at (704) 837-1015.

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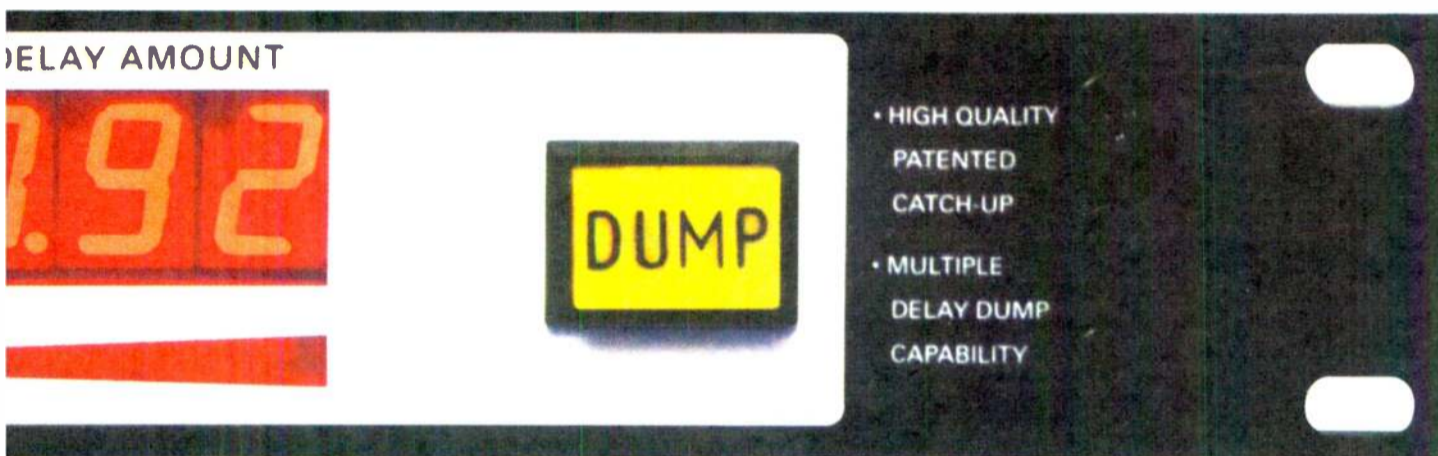
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And, because you may not be using that analog console forever, the BD500 is also the only broadcast delay that's digital-

ready with optional AES/EBU digital audio inputs and outputs. It's stereo, of course. A convenient new "sneeze" button allows the talent to sneeze, cough, etc. without being heard on air, and without dead air. All front panel switches (except configure) and all status indicators can be remotied (both RS-232 and dry contacts are provided.) Plus, only the BD500 gives talent both a digital readout of delay time and a "quick read" LED bar graph that shows "you're safe" at a glance.

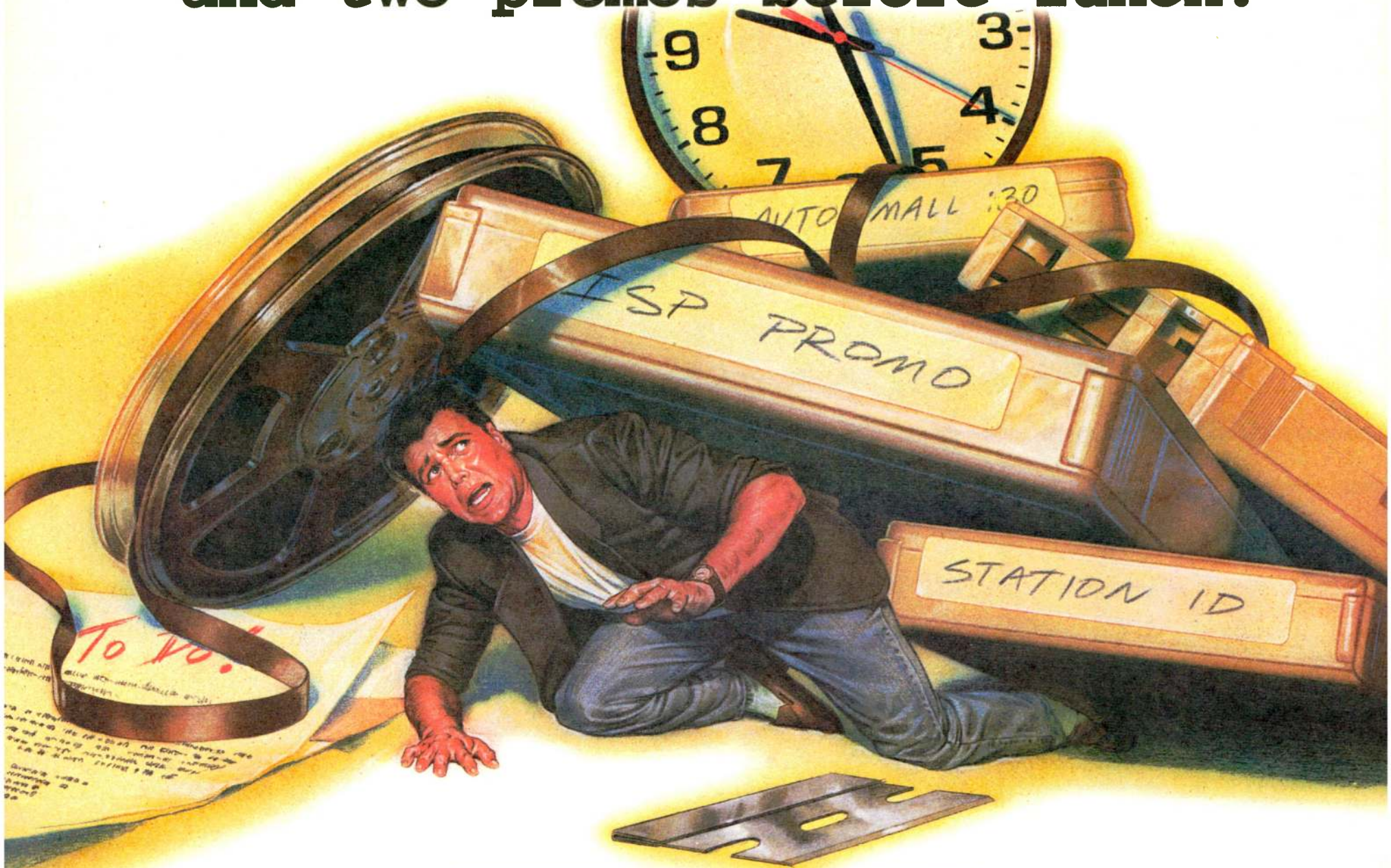
For all these features and quality, you'd expect top-of-the-line pricing. But surprise! The BD500 costs thousands less. It's the best value ever in a broadcast talk show delay. Exactly what you'd expect from the people who invented digital broadcast delays in the first place. Call your distributor, Eventide direct, or check it out on the Web at <http://www.eventide.com>



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 World Radio History

Radio Hopefuls Come to Miami

Alan Haber

The Radio Broadcasting Program at the Miami Lakes Technical Education Center in Miami Lakes, Fla., trains people 16 years and older to work in the radio



The Miami Lakes Technical Education Center Campus

industry. Students must be out of high school and have at least a sixth-grade level of proficiency in reading and math. Interest in the program has come from as far away as the Caribbean; 30 percent to 40 percent of students come from nearby

Broward County.

The instructor, John Lovell, a former student of the 25-year-old program, took over about two years ago from Robert "Bob" Gaynor, who started the program and stayed with it for about 25 years. In

addition to a variety of non-radio experience, including teaching for the Dade Marine Institute, Lovell spent time at various Miami radio stations, including AM stations WSBH, WQAM and WMRZ. The year-long Radio Broadcasting Program is divided into three trimesters; 20 students are enrolled at a time, learning entry level skills. A community advisory board, composed of community

broadcasters, makes recommendations about the program.

Students broadcast a live, hour-long new adult contemporary jazz show weekdays on WLRN-FM, the 100 kW public station owned by Dade County Public

Schools (a second hour-long show is sent from the program studios to WLRN, where it is recorded onto Digital Audio Tape and played back from 11 p.m. to midnight). Each show contains two newscasts.

Students, who enter the program from a waiting list, work hard to learn about radio. The program is affordable: \$221 per trimester, for a total of \$663, plus about \$150 in materials.

"We are a 960-hour program, but we are competency based, which means that if a student excels and really busts (his or her) butt and can meet all of the competencies and the state guidelines for our program in 850 hours, (he or she) can graduate," said Lovell.

"At the same time, a student who sits and doesn't work very hard and is here 1,000 hours will not graduate until (he or she) can meet all the competency requirements."

Although students usually don't do their first on-air show until near the end of their first trimester or the beginning of their second trimester,

they move along through the program at their own pace. "We try to get people who are capable," said Lovell. "If they're capable of doing news on their third day in the program, they do news (on their) third day."

The program offers students hands-on experience in nine studios, which cover monaural and stereo production, and two, four- and eight-track production. Instructors tell it like it is

"There aren't that many jobs," said Lovell. "You have to be dedicated and

you have to be good. ... So we tell 'em what the truth is up front, that it's tough to get a job." In order to further prepare students for "the real world," role playing is carried out to see how students will do in real-life interview situations.

A slate of student operation directors assists in training newer students. "We find that if you have a student train another student at a less-skilled level," said Lovell, "that their training is enhanced by having to be able to explain how things work."

When students leave the program, their résumés reflect that they held certain positions, such as student music or news director, on WLRN. Students also leave with a demo tape "that's usually a live aircheck, rather than something that was created in a production studio," said Lovell. The program has a 96 percent job placement rate.



Ray Cullen uses a Korg 8-track digital audio workstation.

PIONEER PROFILES

Women Did Much More Than Listen

Barry Mishkind

When we talk about the pioneer broadcasters, some names immediately come to mind: Marconi, DeForest, Fessenden, Alexanderson. These men pioneered the new technology that led to broadcasting as we know it.

On the other hand, how many of these names are familiar to you? Names like Zimmerman, Randall, Waller, Brainard, Virgin, Kitchell. They belong to women who were instrumental in the early days of broadcasting.

Last November, Alma Kitchell Yoder died at the age of 103. Although she didn't invent transmitters or receivers, nor construct an early station, her contributions and those of other women were important to the development of radio.

Kitchell began her career in 1917, with her voice transmitted by the Amateur Radio Corps of America experimental station near the New York harbor. The station, run by a special branch of the Army, was set up to train female radio operators, freeing men for World War combat.

Dubbed the "Golden Voice," Kitchell was active in the 1920s and '30s mostly as a singer. However, in 1938 she became the hostess for one of the first talk shows on radio, "Let's Talk It Over," interviewing prominent women including Eleanor Roosevelt.

The following year, Kitchell participated in another first, when she sang in the first televised opera, "The Pirates of Penzance." Her final year in

broadcasting was 1947-48, when she pioneered the televised cooking show with the "Kelvinator Kitchen." She retired after more than 30 years on the air.

Another pioneering woman was the "Original Radio Girl," Vaughn DeLeath, a contralto said to have performed for DeForest for his experimental broadcasts. DeLeath later served as program director for WDT in New York in 1923. And we shouldn't forget Sybil Herrold (FW, Nov. 15, 1995), who provided much of the programming for her husband's station run as part of his radio school.

Not on my station!

The position of program director was created in the early days of broadcasting, primarily as a "safety net." The program director was usually a singer tasked to schedule the performers, and in fact had the responsibility of performing if anyone failed to show.

Bertha Brainard began her radio career as a theater critic. "Broadcasting Broadway" ran at 9 p.m. on Newark's WJZ radio, one of the first stations in the country. Because the first announcers were discouraged from using their real names, Brainard was "ABN" (Announcer Brainard Newark). Her knowledge of theater and stars of the stage, plus her pleasant delivery, earned her a large number of fans.

When WJZ moved its studios to

See MISHKIND, page 18 ▶

The Best Excuse for Shameless Self-Promotion

This little money generator, on its own phone line, promotes your station at the end of local current time and temperature announcements — you promote it along with an advertising package. What a great stretch of your advertising dollars! Selling the ad space to a local business with a broad based clientele fills the demographic gaps your station might be missing and creates a new income source. It comes complete with everything you need to get started and is expandable as its popularity grows.

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Original Radio 'Girls' Paved an Early Path

► MISHKIND, continued from page 17
New York, Brainard was hired to book the talent. Eventually she was named program manager, the only female manager of a major market station as late as 1926. Among the programs she created was the "WJZ Women's Hour" hosted by Mrs. Julian Heath, offering a mixture of household hints, recipes and discussions about politics and current events.

In 1928, Brainard was named program manager for the NBC Radio Network, a position she held for years.

Nevertheless, broadcasting was not an easy road for women. In 1924, Bertha Brainard's own boss wrote an article in Radio Broadcast magazine saying that

women do not belong on the air! When asked about Brainard, he replied that she was "a theater critic," not an announcer, and that if it were left up to him, she wouldn't be on the air either.

Although the times were conservative in tone, not all station managers felt that way. Bamberger's WOR hired Jessie E. Koewing, known on air as JEK. After performing for WOR on Easter, 1922, and announcing her own selections, she found herself the recipient of a large amount of fan-mail. The station kept inviting her back, and gradually she took on the role of program manager.

In January 1927, Boston Department Store owner John Shepard was the first to

have a station with an all-female air staff.

Over in Chicago, another pioneering broadcaster was beginning a career in the 1920s. She managed not only to endure, but move up in the predominantly male industry. On the scene on April 13, 1922, when WGU (predecessor to WMAQ) took to the air, was "Miss Judith Waller" — a name destined to be synonymous with the Daily News station for many years to come. The NBC house organ states that, even though WGU was shut down for five months to get a better transmission system, Waller was a believer in the coming importance of radio.

Over the years Waller rose to vice-

president of NBC in Chicago, and even authored a textbook, "Radio, The Fifth Estate," which was in use at schools well into the 1950s.

Another educator was Mary Texanna Loomis, possibly the first woman to run her own engineering college, which she did in the early 1920s. She was a cousin of radio pioneer Maholn Loomis.

Female owners

Only a few female names appear among station owners of the 1920s.

A few, such as Mary Costigan in Flagstaff, Ariz., or Aimee Sempel McPherson in Los Angeles, did run their own stations. Costigan's station was designed to promote the Orpheum Theatre she ran after her brother's death. McPherson's KFSG was famous, but always for the right reasons. McPherson, a tempestuous leader of her Four Square Gospel Church, was often in trouble with the authorities because she considered government authorization an inconvenience.

It turns out the first station in the United States to be owned and operated by a woman was a more "normal," if not long-lived, station. WIAE Vinton, Iowa, was licensed to Marie Zimmerman on July 21, 1922. Marie and her husband Robert, a city electrician, built and operated a small, 50-watt station on 833 kHz. WIAE operated for just under a year.

During that time, the station programmed regularly, on the air Tuesday, Thursday, and Saturday evenings with musical programs and some news. On Wednesday nights, WIAE had guest speakers and a band concert; on some Sunday afternoons, it offered a concert.

WIAE disappeared from the airwaves in late spring 1923. With radio advertising not widespread at that time, the Zimmermans apparently were like many other small owners of early radio stations: they simply ran out of money. Operation was expensive; by early 1923, hours were cut back, and finally, the owners returned the license to the DOC. Marie did not work in radio again.

Female engineers

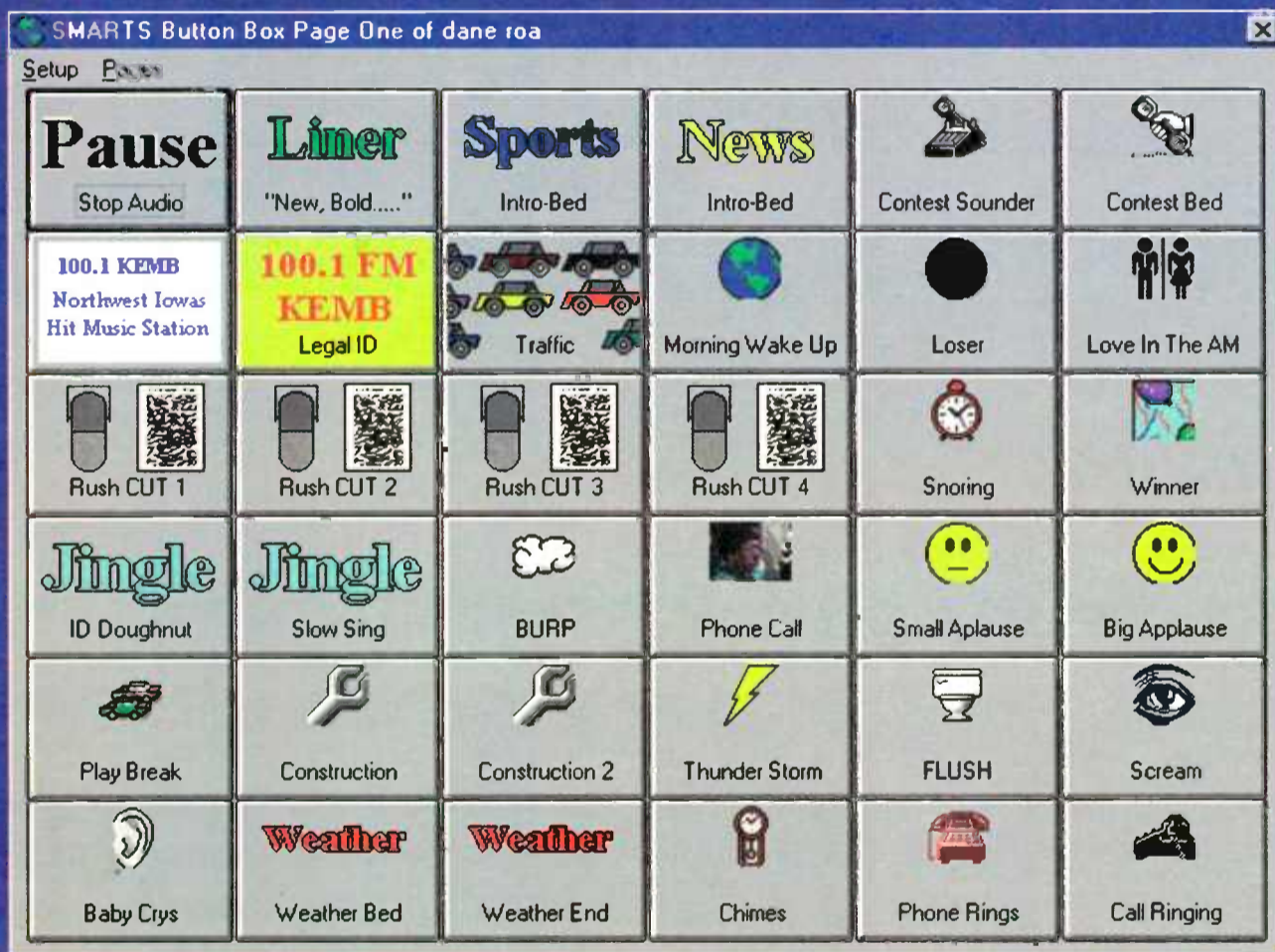
Yes, women were engineers, too. We mentioned Eunice Randall in this space a few months ago, in connection with AMRAD station WGI/WARC. She was one of many women talented in the technical field. Not only did she broadcast programs, but she helped design and build some of the equipment for WGI.

Other early women of note include Elizabeth Kelsey, a well-known radio design engineer at Zenith in the early '40s. She was involved with FM development and wrote "Reference Guide to Ultra High Frequencies." Violet Kemety was a design and operating engineer at WEFM, the first FM station in the Midwest.

The author extends thanks to the "Research Group" at Broadcast Net for helping dig out additional facts about early women in broadcasting. Of special help was Donna Halper, professor at Emerson College, who is working on a book on this subject.

Call Barry Mishkind at (520) 296-3797. He invites e-mail to barry@broadcast.net. You can find his home page at <http://www.broadcast.net/~barry/>

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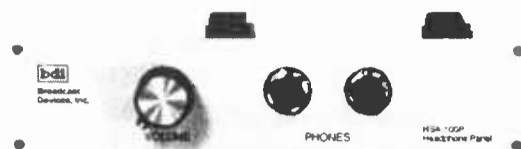


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♦ Also available: printers, weather radios, antennas for weather radios, crystal controlled synthesized FM digitally tuned radios, remote signboards, cables for interconnection, character generators.

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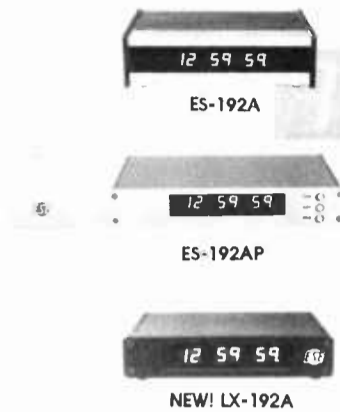
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TERMINATING LIQUID/AIR LOADS

(84000/85000 series) available to cover CW power ranges of up to 10,000 Watts over a frequency range of DC to 2.4 GHz. All models are available with optional thermal overload switches to interface with the user's interlock or warning circuit.



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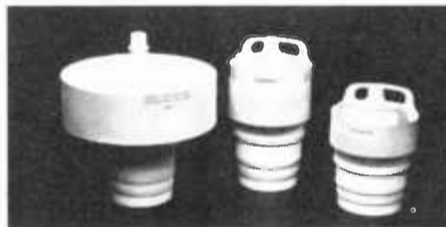


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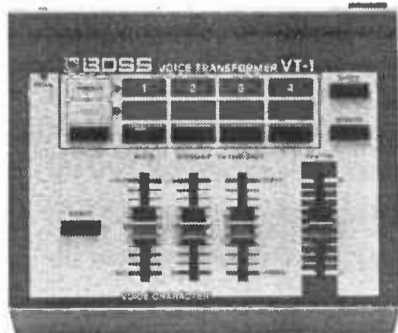
AUDIO TECHNOLOGIES INCORPORATED

READER SERVICE NO. 65



For 36 years

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Need a change of voice?

Roland introduces the BOSS VT-1 Voice Transformer, which does exactly what it says. The VT-1 gives you total control over everything you can do with your voice. Because you finally have independent control over pitch and formant. The VT-1 also offers high-quality digital stereo reverb because it's virtually essential for voice processing. Apart from being the ultimate DJ effects unit, the VT-1 can benefit any application related to voice.

PERFECT FOR ANY APPLICATIONS FEATURING VOICE.

Extremely useful for DJs, the VT-1 lets you configure User Patches with completely different voice characters and rapidly switch between them to take on different roles. The Robot button is perfect for use as a vocoder that doesn't need a keyboard, so you can use it for DJing techno and dance music programs. The VT-1 is an ideal tool for broadcasting applications as well as for video narrations.

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MARKETPLACE

Recently Introduced Products for the Radio Broadcast Professional

A New Electronic Workbench

Interactive Image Technologies offers an updated version of its Electronic Workbench simulation software (RW, Jan. 8, page 17). EWB v5.0 is written in 32-bit code for Windows, and is up to 10 times faster than the previous release. It is now a powerful Spice 3F5-based software tool that simulates the behavior of mixed-signal (analog-digital) circuits.

It comes bundled with six analysis and more than 4,000 device models, and integrates schematic editing, virtual test instruments, and precise graphical display of measurements. DOS is no longer supported.

A version called Electronics Workbench EDA increases the device models to 8,000 and includes parameter and temperature sweeps, pole zero, transfer function, and DC and AC sensitivity.

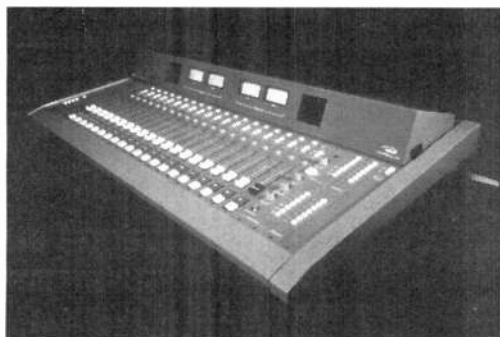
Call Interactive Image Technologies at (800) 263-5552 for more information, or circle Reader Service 87.

AirWave Console

Pacific Research & Engineering (PR&E) rolled out AirWave, its first on-air broadcast console targeted specifically for medium to smaller markets.

The design uses welded steel construction that renders structural strength and stability for long-term usage. In addition, the steel mainframe completely encloses the electronics, providing shielding from radio frequency interference.

AirWave comes as a mainframe with



the number of channels to be determined by the customer. Low profile, it is designed for tabletop or inset mounting. Accessory blank panel positions give operators console customization advantages.

For more information from PR&E, contact the company in California at (619) 438-3911; fax: (619) 438-9277; or circle Reader 88.

RDL Meets Requirements

Radio Design Labs announced that the ACM-2 AM noise monitor now meets requirements for UL-approved equipment installations. The ACM-2 is an accurate and cost-effective way to measure synchronous AM noise in FM transmission systems.

This tool ensures proper tuning for maximum bandwidth. Improper tuning can mean limited bandwidth that affects listeners receivers.

For more information from Radio Design Labs, contact the company in California at (800) 281-2683; fax: (805) 684-5415; or circle Reader Service 110.

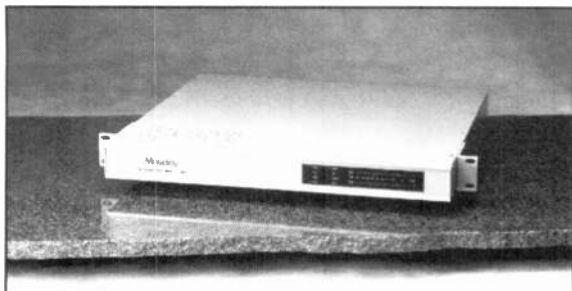


Starlink STL/TSL

Moseley Associates Inc. introduced the Starlink 9003 T1 STL/TSL, an all-digital, open-architecture modular system for transmitting CD-quality audio over T1-E1 lines.

The Starlink 9003T1 mainframe can house eight application-specific personality modules that allow the user to easily configure appropriate STL/TSL systems.

Features include: 16-bit linear audio



and choice of ISO/MPEG Layer II or apt-X coding, AES/EBU and analog inputs, built-in sample rate converter and Intelligent Mux with drop and insert; expansion slots for voice and data cards.

For more information from Moseley, contact the company in California at (805) 968-9621; fax: (805) 685-9638; or circle Reader Service 105.

Waves AudioTrack for Sound Forge

Sonic Foundry Inc. introduces the Waves AudioTrack Plug-In for Sound Forge 4.0. The audio processors are combined in a single piece of software, simplifying the mastering process by running equalization, compression/expansion and gating on a file in a single pass.

The equalizer allows users to change the spectral balance (frequency) with the frequency response graph or by entering precise numeric data. The compressor and expander can be used to adjust the levels in a sound file, resulting in greater dynamic control. While the gate removes unwanted noises in a sound file, it can also be used to generate creative effects, such as gated drums or reverbs.

For more information from Sonic Foundry, contact the company in Wisconsin at (608) 256-3133; fax: (608) 256-7300; WWW address: <http://www.sfoundation.com>; or circle Reader Service 80.

Crane Song Digital Signal Processor

This Harmonically Enhanced Digital Device (HEDD), is engineered to be musically transparent while providing the capability of generating tube/analog sounds in the digital domain.

Applications include: CD preparation, work station input and output, DAT

machine A/D and D/A converter replacement and effects generation (warming or changing sounds in the digital domain.)

Features include: high-quality 20-bit A/D and D/A converters, adjustable triode and pentode sounds, digital I/O, AES and

S/PDIF, 24-bit processing and more. HEDD has transformerless balanced analog inputs and outputs, and uses separate power transformers and supplies for the analog and digital sections. The unit is one rack space tall and operates from 115 V and 230 V mains.

For more information from Crane Song, contact the company in Wisconsin at (715) 398-3627; fax: (715) 398-3279; or circle Reader Service 81.

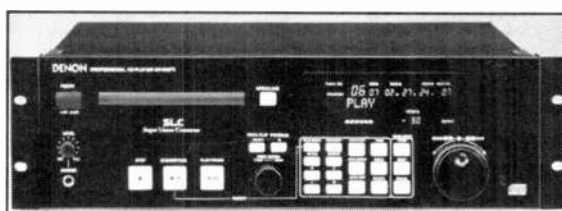
Denon DN-C680 Professional CD Player

The new CD player from Denon was designed for everything from broadcast studio to post-production to DJ use.

Housed in a 3U black aluminum chassis, the DN-C680 has a large jog dial and shuttle wheel.

The jog dial moves through a CD frame-by-frame or can be adjusted to move in 10-frame (approx. one-eighths-second) increments.

For recording, an auto space feature



makes it possible to insert a silent space of approximately four seconds between

tracks. Features include: AES/EBU XLR outputs, bar graph visual display indicating the playback points on the track being played, auto cue and EOM display.

For more information from Denon, contact the company in New Jersey at (201) 575-7810; or circle Reader Service 86.

HitDrive Music Service Debuts

Halland Broadcast Services Inc. announced the debut of HitPick and HitDrive. They allow broadcasters to create a custom music format and have it instantly pre-loaded on a computer hard drive or optical disk.

With HitPick, custom music formats can be quickly generated at no charge from Halland. The software contains a database of Halland's 4,000-plus song inventory. All formats include oldies, '70s gold, AC, CHR, classic rock and hit country. The broadcaster scrolls through the inventory and "checks off" all songs needed for the station's playlist.

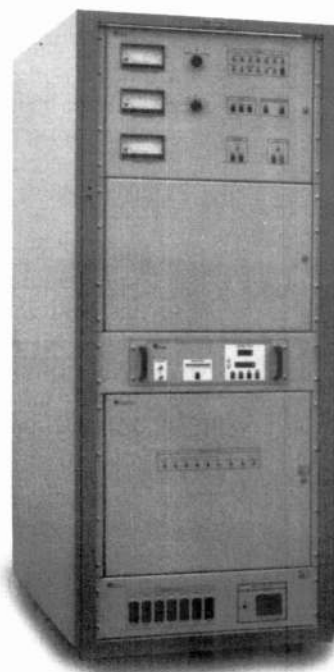
Then the HitPick floppy disk is returned to Halland, where the songs are loaded onto the broadcaster's hard drive.

For more information from Halland Broadcast Services, contact the company in California at (818) 963-6300;

fax: (818) 963-2070; or circle Reader Service 104.

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FROM 4kW to 10kW
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Circle (49) On Reader Service Card

UPS: Integral to Modern Stations

T. Carter Ross

Broadcasters know all about the importance of protecting broadcasting equipment. A multitude of products diffuse lightning strikes before they damage an antenna or transmitter, condition power to keep transmitters operating under VSWR conditions and so forth.

But as programming and on-air studio functions move from traditional to computer-assisted or computer-automated operation, broadcasters are obliged to pay the same level of attention to protecting the computer systems — and the data that they carry — from electrical damage or blackouts.

Most computer suppliers stress the necessity for a surge suppressor, a filter that helps keep the mains power supply from overloading a computer or other office equipment.

Every workstation in the radio station — from the digital audio editor in the production suite to the traffic manager's computer in the back office to the main on-air playback system to the file server

terms of missed commercials and lost listeners.

A number of companies offer a solution to this problem, albeit not one designed specifically for radio: uninterruptible power supplies (UPS).

UPSes are commonly used by banks, data processing centers and other business that, like radio stations, must access and protect vital data stored on

data. The right system can even keep computers running safely until backup power can be activated.

Three main types of UPSes are available: off-line, line-interactive and on-line.

In an off-line UPS, the computer is powered from the mains supply without any power conversion by the UPS. In the case of a failure or drop in power, the UPS compensates by drawing on its batteries.

A line-interactive UPS operates in a similar manner, but a microprocessor monitors and responds to changes in voltage.

A voltage compensation circuit helps the line-interactive UPS ensure steady power in the event of extended decrease in electrical current.

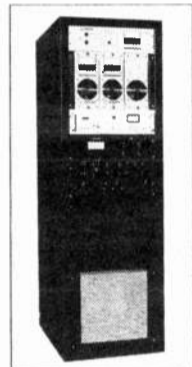
On-line UPSes are the most sophisticated, drawing on their batteries only in the event of a power failure.

An on-line UPS fully equalizes current from the mains supply by transforming the AC to DC and then back to AC, which reduces the effect of electrical disturbances that could damage a computer.

Many systems also offer management software for a variety of operating systems.

This software can monitor a UPS and, depending upon the situation, automatically close files and programs to ensure data stability.

Problem:



I have a duopoly. I need back-up transmitters for my stations:

Solution:

Don't buy two transmitters-- buy ONE!

Our Legend Series, Solid State, FM transmitters are Frequency Agile and Broadband. Your engineer can instantly tune one to any frequency!

We've designed the Legend Series to ensure long transistors life with "wind tunnel" cooling & brute force power supplies.

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Two or more stations;
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Circle (9) On Reader Service Card

A mere 10 years ago, most people would hardly have

been able to conceive that computers would play as vital a role as they do now in many radio stations. Stations rely on computers to do an array of tasks, as do other businesses. At radio stations those tasks are more specialized, including automatic playback of music overnight, assisting hosts in running talk shows, and helping the sales office track commercials. Every department, from engineering to news, from traffic to advertising, relies on computers.

radio.sys



But adding a computer — a repository for much of the data needed to keep a station running smoothly — is not like installing a new console or CD player. Radio demands special consideration to redundancy

and backup systems.

In this issue, **RW** takes a look at uninterruptible power supply (UPS) systems, which can make the difference in keeping a station running smoothly in some emergency situations.

radio.sys is RW's occasional look at the rapidly-evolving state of computer-based technology for radio broadcasting.

that connects them all — should be protected with a surge suppressor.

But a surge suppressor cannot keep a computer running for the few moments it takes a generator to take over during a blackout.

If the on-air computer that plays commercials, music, station identifications and other program items crashes because of a sudden cessation or fluctuation of the electrical current, you might find yourself with a transmitter running, and little else.

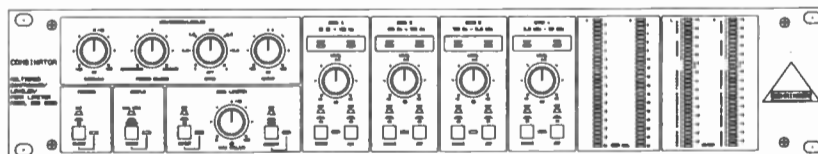
Reconstructing a damaged hard disk takes time and can be quite costly in

computers. In essence, a UPS is a battery. It is installed between the mains power supply and the computer or other piece of equipment. In the event of a mains failure or power fluctuation, the batteries in the UPS provide a steady level of electricity to the equipment.

Stability of data

How long a UPS will power equipment depends on the capacity of the batteries and the demands of the equipment; however, a UPS generally will power a system long enough for programs to be exited safely, ensuring the stability of

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World Radio History

Ups and Downs of The UPS

W.C. Spenn

The computer and phone equipment are down.

While others technicians examine the Local Area Network (LAN) file server, I go to investigate why most of the power backup failed during a power outage. Working at an unfamiliar site makes problem solving even more stressful.

Normal operation

The uninterruptible power supply (UPS) on the file server is checked first. All the status lights indicate that it is operating normally. Dust and dirt, which can greatly reduce UPS efficiency, are not the problem.

Using a 100 W incandescent light bulb as a nominal load, I pull the UPS power plug from the wall. The expected solid-state multivibrator whine starts immediately and the light continues to glow. However, before I can think, the UPS shuts down and the bulb turns dark.

After turning off the main UPS power switch, I remove the cover. My multimeter shows much less than the nominal 48 V DC required from the four sealed 12 V lead acid batteries in series. I think I have found the problem: The date of manufacture of the batteries is more than three years ago. A two-year replacement is the standard recommendation. With new batteries installed and charged, the UPS tests

See UPS, page 24 ▶

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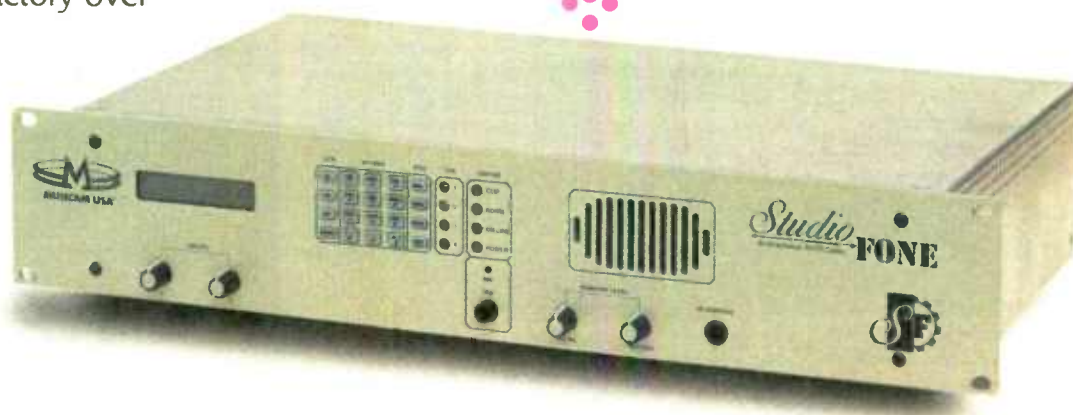
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Circle (10) On Reader Service Card

World Radio History

The UPS Has Its Ups, Downs

► UPS, continued from page 22
fine. Now, I am ready to investigate more power problems.

I am puzzled when the next UPS unit passes all its tests. Even at its regular operating position, the unit functions normally.

Where do I look now? Cable tracing reveals a laser printer power cable plugged into the back of the computer. The printer alone requires more than three times the power the UPS can provide. The quick fix is to connect the printer directly to the normal AC power through a surge protector. It is up to the site owners to decide if they want to ensure laser printer operation with a

higher wattage UPS.

The next UPS I encounter, a somewhat older unit, has a blown fuse. I replace the fuse with another of the same rating. When power is applied to the unit, the UPS cycles normally and the fuse holds. After three minutes on the test load, I decide that the fuse blew due to a power glitch.

However, my logic fails when I return the UPS to its original location. Every time I attempt to power the computer with auxiliary power from the UPS, the fuse blows. I try another UPS. It functions fine, and the failing UPS works fine on an identical workstation. My temporary solution is to leave things swapped

and to tackle other pressing problems.

The unique smell of burned electronics soon reaches my nose from a nonfunctioning fax machine. Because no other phone equipment at the site suffered damage during the power outage, I decide to examine the surge protector connected to the machine.

The surge protector looks well-built and is approved by a major testing laboratory. I find no burned parts. In fact, I find only one surge protection part: a metal-oxide varistor (MOV) between the hot and neutral AC power connections.

An effective MOV-type surge protector needs at least three MOVs: one between neutral and hot, one between

neutral and ground, and one between hot and ground. MOVs do protect against power surges, but have a tendency to lose their protection capabilities in as little as one protective cycle.

Reliable surge protection units contain not only MOVs, but also inductors, protective diodes and at least a \$10,000 guarantee that your equipment is protected. The expensive FAX machine with no real surge protection prompted an extensive survey of the site, which, thankfully, revealed only quality surge protection units.

Everything is operational now, but I am still uncomfortable about having swapped two UPSes. Because there are physical differences between the UPS units, I needed to change cable routing.

While making the cabling changes, I discover a hidden surge protector between the UPS and the computer equipment. An oscilloscope on the output of the troublesome UPS shows a trashy modified sine wave output with spikes and noise, which the surge protector clamps, causing the UPS fuse to short out. A new UPS replacement is needed: the old one is not repairable.

Importance of protection

Many of the problems I encounter while servicing computer and telephone systems are power-related. In the situation described above, the site owners paid almost \$10,000, none covered by insurance, to get all their equipment back into service.

What should you look for in power protection? Good surge protectors prevent surges, spikes and noise from reaching and possibly damaging computers and other equipment. Check the specifications.

Do not accept a surge clamping protection level of more than 330. No equipment protection guarantee? Buy your surge protection elsewhere.

An adequate UPS provides surge protection as well as sufficient emergency power to run your equipment until it can be shut down in an orderly manner, either automatically or manually during brownout or blackout situations.

For reliability, the UPS should handle twice the load you intend to protect. Modified sine wave output is acceptable, but I have encountered fewer problems with sine wave output units. In my opinion, they are worth the small difference in price.

I do not trust UPS surge protection, so I recommend placing additional surge protection on the input side of the UPS.

UPS units require maintenance. Keep them clean and free from dust and dirt. They must have adequate ventilation.

A load test, once a month, for two or three minutes, assures the required time to safely shut down computer equipment. Replace the batteries or the entire unit every two years.

A small investment in proper power protection can not only eliminate computer, LAN and telephone equipment downtime, it can also allow personnel to continue work during short power interruptions.

You can repair or replace equipment, but you cannot recover time.

W.C. Spenn is a networking and communications consultant for Dove Data Systems in San Antonio. Contact him at (210) 656-8011 or via e-mail at wespenn@texas.net

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The AC power line feeding your entire station is filled with voltage irregularities: surges, sags, spikes and noise, among others. And if this "dirty" power reaches the sensitive circuitry that controls your commercial and music inventory or traffic computer, for example, the results can be devastating. Lost or corrupted data, satellite delivery interruptions, mechanical failure – whatever the outcome, it's always bad news. Which means it's bad for business.

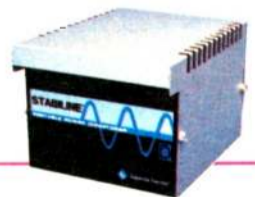
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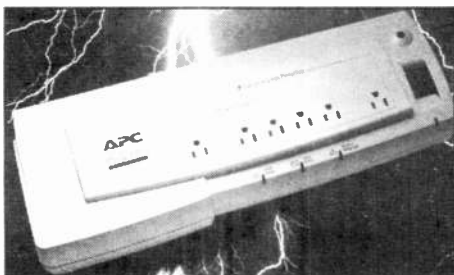


Circle (47) On Reader Service Card

Protect Yourself: UPS Market Is Well Stocked

Uninterruptible power supplies are available from numerous manufacturers. Contact them at the numbers shown below to ask for more information. Watch the pages of **RW** and computer publications for other models. Broadcast distributors are also an excellent source, and usually can offer you a choice of multiple brands and features. And don't be shy about asking for advice directly from the manufacturer of the equipment you are trying to protect. You may obtain specific recommendations that will guide you in your shopping.

The following companies provided information about their uninterruptible power supply products. Other companies were contacted, but did not provide information by the specified deadline.



APC

APC: The Back-UPS office from American Power Conversion (APC) is the first multipath UPS designed to protect an entire workstation from power problems.

Back-UPS Office offers multi-outlet AC surge protection for peripherals, data line protection and battery backup for a computer's CPU and monitor. With its exclusive BlockSafe outlet spacing, there is room for transformer blocks without sacrificing other outlets.

For information, contact Jennifer W. Seymour in Rhode Island at (401) 789-5735, extension 2290; fax (401) 788-2739; or circle Reader Service 55.

Best Power: The award-winning Ferrups uninterruptible power system from Best Power provides "bulletproof" power integrity for critical broadcast equipment. It delivers continuous, no-break power with outstanding lightning and surge protection.

For information, contact Larry Bobrowski in Wisconsin at (608) 565-7200, extension 5632; fax (608) 565-2929; or circle Reader Service 96.

Citel: Coaxial Protector coaxial surge



Citel

suppressors from Citel Inc. protect transmitters and receivers against lightning surges and electrical transients. They automatically reset after every strike and are available with N, BNC, TNC or 7/16 connectors.

For information, contact Fabrice Larmier in Florida at (305) 621-0022; fax (305) 621-0766; or circle Reader Service 57.

Controlled Power: The Series LT UPS from Controlled Power Co. provides complete power protection for all radio broadcast applications.

Among its technologically advanced features is the patented "Fuzzy Ranging" battery management system, which enhances overall performance.

For information, contact Rich Dunmore in Michigan at (810) 528-3700; fax (810) 528-0411; or circle Reader Service 74.

Fenton Technologies:

Fenton manufactures the Tele-UPS extended run time standby UPS system, as well as the PowerPal line-interactive "intelligent" 280 VA to 1.4 kVA UPS and the PowerOn true on-line sine wave 3.5 or 5.5 kVA UPS.

For information, contact Dan Rothman in New York via fax at (516) 261-0108, or circle Reader Service 82.

Holec Power Protection: Battery-free UPS performance with integrated diesel support is available in the Holec dynamic diesel continuous power supply (CPS) systems.

CPS systems are available from 480 VAC to 22.5 kV, 200 kVA to 1,600 kVA modules, in single or parallel configurations.

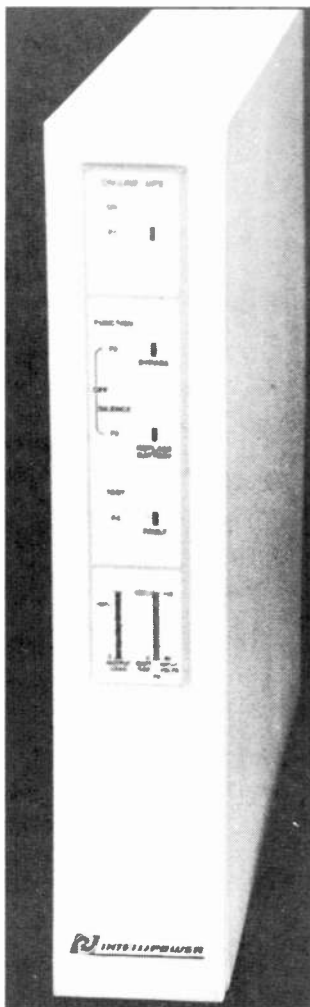
For information, contact the company in the Netherlands at telephone: +31-74-246-2640; fax +31-74-246-2800; or circle Reader Service 83.

IntelliPower: The BrightUPS On Line UPS from IntelliPower Inc. is an on-line, double-conversion UPS. It features intelligent, digital, fault-tolerant technology, a PWM pure sine wave, voltage regulation capabilities (3 percent, an RS-232 interface, auto bypass and 30 user-selectable options.

For information, contact J. Robert Hashbarger in California at (714) 587-0155; fax (714) 587-0155; e-mail: jrhash@intellipower.com; or circle Reader Service 97.

Minuteman UPS: The New Pro Series (200 to 1,400 VA units) of UPSes from Minuteman offer a unique shell design, line-interactive technology, modem/fax/data line surge protection and hot-swappable batteries, as well as a three-year warranty.

For information, contact Rick



IntelliPower

Huntman in Texas at (972) 446-7363; fax (972) 446-9061; or circle Reader Service 84.

SEC: The PA-800 Power Administration from Systems Enhancement Corp. (SEC) is a power management device designed to facilitate management control of individual power receptacles anywhere on or off a local area network. It is designed for use in medium- to high-end applications for control of 115 VAC and 240 VAC power distribution.

For information, contact Jamey Johnson in Missouri at (314) 532-2855, ext. 147; or circle Reader Service 85.

SPK Technologies: The Compact Series UPS from SPK Technologies Inc. is designed for use with computers, fax machines, telecommunications and security devices.

Automatic shutdown software, as well as surge protection and automatic voltage regulation capabilities, are included in the series.

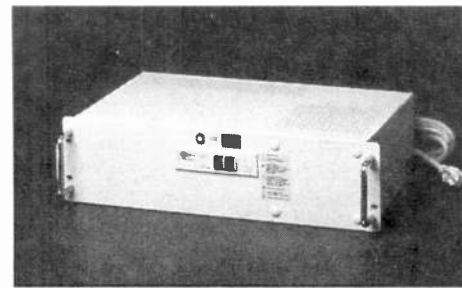
For information, contact Stephen Spector in Massachusetts at (617) 297-3552; fax (617) 297-7611; or circle Reader Service 122.

Toshiba International: The 1400 Series uninterruptible power system from Toshiba is a true on-line, self-contained unit with input power factor correction, automatic bypass and the exclusive Toshiba "Security Plus" three-year on-site warranty.

For information contact the Toshiba

UPS sales department in Texas at (713) 466-0277; fax (713) 466-8773; or circle Reader Service 101.

Tripp Lite: The SmartPro Series UPS



Tripp Lite

from Tripp Lite is a line interactive intelligent UPS that includes power-management software on CD-ROM.

For information, contact the company in Illinois at (312) 755-5401; fax (312) 644-6505; or circle Reader Service 75.

Warner Electric/Superior Electric: The Stabiline UPSY61005 uninterruptible power supply from Warner

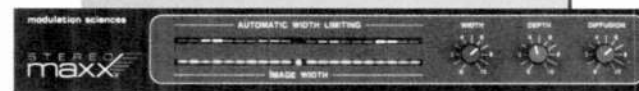


Stabiline

Electric/Superior Electric is a true on-line UPS that regulates voltage, protects from noise and provides battery backup power in case of mains power failure. Rated at 500 VA, 20 VAC, 50/60 Hz output, Stabiline UPSes are UL 1778 listed and CSA certified, and adapt for rack mounting.

For information, contact the company in Connecticut at (860) 585-4500; fax (860) 582-3784; or circle Reader Service 98.

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ROOTS OF RADIO

Oh, Those Midwest Radio Vendors

Ronald Pesha

One of the most common sources of mail-order parts for radio stations in the '40s and '50s was the comprehensive catalog from Allied Radio Corp. in Chicago. Its 1950 catalog, 196 pages thick, featured an artist-designed cover emphasizing the rapid rise of television with a turnstile antenna superimposed on a picture tube.

In addition to a full parts line, the Allied catalog included ham gear, "hi-fi" audio, and radios and TVs with brand names appealing to electronics people, including Hallicrafters and National. The Magnecorder open-reel tape recorder, then popular

with radio stations, was available either as two, 7-inch-high rack mount panels or in a pair of luggage-style cases for \$499.50. Allied also offered its own "Knight" brand public address amplifiers, and Knight kits. Build your own vacuum-tube voltmeter or oscilloscope.

Remember Burstein-Applebee, Kansas City 6, Missouri? (No ZIP codes in those days.) Like Allied, Burstein-Applebee was a full-line parts house, offering a thick, glossy catalog divided into conventional categories: tubes, resistors, capacitors, wire and cable, and hardware. But when we opened that fat catalog, we turned first to those yellow pages filled with bargains.

We found great prices on selected tube types, nice resistor assortments, and items ranging from a brass telegraph key for perhaps 99 cents, to "war surplus" transmitters and receivers.

Also included: a disc recorder for \$49.95, made by Wilcox-Gay. The portable case contained an AM superhet receiver with a microphone input and a 78 rpm turntable that recorded on acetate discs. Apparently a clutch-like device underneath engaged a feedscrew to cut a spiral groove on the blank disc. Wilcox-Gay supplied a "crystal" pickup, and like any piezoelectric transducer it would vibrate if driven with an audio signal. Presumably the user

replaced the playback needle with a cutting stylus to record. It appears in the small picture that the straight (not offset) tonearm featured a setscrew on its front end. All this was available from Burstein-Applebee at 1012-1014 McGee Street.

Heartland radios

How about McGee Radio Company, also in Kansas City at 1422 Grand Avenue? (Why wasn't McGee Radio on McGee Street like B-A?) McGee catalogs, too, went across the nation. Not quite a full-line supplier like Burstein-Applebee, McGee nevertheless offered a wide range of parts. But we remember McGee for speakers. If you needed a replacement speaker, you checked the McGee catalog.

In 1950 a 6-inch speaker, common in table radios of the era, cost \$1.69. A 15-inch, "50-watt" wide-range speaker went for \$15.95. (The fine print said it "will take 35 watts with ease.") But radio stations needed higher-quality coaxial speakers, with the tweeter mounted inside the woofer. A 15-inch model for \$19.95, and "it woofs as it tweets."

Another supplier in the heartland, appropriately named Midwest Radio Corp., was headquartered in Cincinnati. For decades Midwest ran full-page ads in electronics publications and general periodicals such as Popular Mechanics, offering receivers in chassis form. A "chassis" radio arrived complete, ready to plug in, sans cabinet but with cabinets available.

In 1927 the two- to three-foot-wide wooden cabinets contained no speaker and could sit atop a table. The six-tube chassis included three tuning controls (tuned radio frequency receivers with multiple RF stages outnumbered superheterodynes) and sold for \$36.75, with the seven-tube single-dial set at \$49.75. They required batteries; power supplies to operate from light sockets were available, price not stated.

War surplus

The 16-tube all-wave receiver of 1933 offered five bands with continuous coverage from 150 kHz to 33 MHz with "clear, loud-speaker foreign reception from stations 10,000 miles and more distant," for \$47.50 of your Depression-era money.

By 1933 designs had stabilized into the sophisticated superhet we've known since. The receiver featured AVC, an IF frequency of 450 kHz, and a cone speaker, size not specified. The chrome-plated metal chassis floated on rubber shock mounts. A console cabinet to house your new radio was available.

The radio chassis offered by the Midwest Radio & Television Corporation in 1950 appeared equally elegant but now included FM and a phono input.

But most of the full-page ad showed a television chassis, "not a kit ... a completely assembled receiver," with "giant 16-inch picture tube." Not a word about price. Request the free catalog with a one-cent postal card.

And then of course there was the Heath Co. across the lake at Benton Harbor, Mich. How many of us acquired our station's first 'scope by assembling a Heathkit? Or perhaps a vacuum tube voltmeter, or a "proof of performance" set with a Heathkit audio signal generator and harmonic distortion meter pair? Oh, those wonderful Midwest vendors!

■■■

Ronald Pesha is Associate Professor of Broadcasting at Adirondack Community College, Queensbury, N.Y. Reach him at (518) 743-2200 ext. 567, or by fax at (518) 745-1433.

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Running Radio

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station image.
See page 34.

Radio World

Resource for Business, Programming & Sales

January 22, 1997

COLE'S LAW

Are EEO Revisions on FCC Agenda?

Harry Cole

If you're trying to identify one of the likely hot issues of 1997, think EEO. The FCC has a proceeding all teed up and ready to drive. Comments and reply comments were filed last year, and now all the commission has to do is decide what, if anything, it wants to do with its broadcast equal employment opportunity rules and policies. But our guess is that you shouldn't expect any massive changes in those rules or policies, at least from the FCC.

As you doubtless know, the FCC has long prohibited employment discrimination in the broadcast industry on the basis of race or gender. In recent years, the thrust of its EEO efforts has not been toward actual discrimination concerns, but rather toward record-keeping relative to employment practices. In only a handful of cases has the FCC concluded that one of its broadcast licensees actually discriminated. On the other hand, the commission often has fined broadcasters

for failing to maintain adequate employment records to demonstrate that they had not discriminated.

Last year the commission initiated a rule making proceeding to explore possible ways of modifying its approach to EEO enforcement. A rulemaking proceeding, of course, provides everybody and his sister the chance to chip in their two cents' worth, and that's just what happened.

Off the mark

Broadcasters showed up in droves, some complaining about how the EEO process has become incredibly burdensome and off the mark — because, after all, one would expect the goal of an EEO program to be equal employment, not a vast maze of bureaucratic record-keeping requirements. Many, if not most, commenting broadcasters suggested that the commission should cut back, if not eliminate, its EEO requirements.

Not unexpectedly, a group describing itself as "EEO Supporters" disagreed. In

their view, "the diseases of bigotry and intolerance have spread at an alarming rate, becoming the national symbols of the radio industry." Right. The EEO Supporters also claimed that a "system of race and gender exclusion has been tolerated too long," and they repeatedly berated commenting broadcasters as "mean-spirited." So much for useful debate and discourse. The competing positions taken by the various parties are pretty easy to guess. Broadcasters by and large do not oppose the prohibition against race/gender discrimination; how could they? They do, however, tend to oppose the burdensome record-keeping obligations imposed on them by the commission in the name of EEO.

It's as if we had a speed limit of, say, 150 mph, and along with it were a raft of other rules requiring you to calibrate your speedometer every month or more and to keep detailed records of each calibration, or to document how often you checked

your speedometer to make sure you weren't going over 150. Rare would be the instances when anyone would actually violate the 150 mph limit (whether or not they got caught doing so). But it would not be surprising if many drivers failed to jump through all the various record-keeping hoops.

Discrimination inclination?

The EEO Supporters, on the other hand, seem convinced that broadcasters are, for the most part, intent upon discriminating, and that broadcasters will indeed discriminate if given even the slightest opportunity. If the FCC eliminates record-keeping and reporting requirements, they say, "many broadcasters who no longer discriminate will drift back into the practice again. Some who never discriminated will begin to do so for the first time."

So, unfortunately, the dialogue presented to the commission in the rulemaking comments seems largely to reflect the traditional polarization of views.

What, then, will the commission do? It's hard to tell at this point. However,

See REVISIONS, page 28 ▶

STATION SNAPSHOT

All-news Is Not Just for Big Market Players

Chris Hamaker

Major market radio stations would do well to take note of some of the shining stars of small market radio. By keeping community, technology and good radio in



mind, some of the country's best-run stations thrive in markets with total revenue that wouldn't keep a major market station running for a month.

WRGA(AM) in Rome, Ga., for example, a 5 kW station broadcasting since 1929, received two NAB Marconi Awards this year: one for Small Market Station of the Year and one for Small Market Personality of the Year.

The WRGA success story is perhaps most measurable by the stature of the station in its community, in turn reflected in the ratings book. Among Georgia markets having two or more AM stations, WRGA pulls in the highest Arbitron 12+

rating of any station, AM or FM.

Situated between Atlanta and Chattanooga, Tenn., WRGA reaches approximately 100,000 people with its all-news format. In 1993, the station switched from country music to news in the face of new, high-powered competition for the country audience from FM stations.

Filling a void

"We were using country music maybe 15 minutes an hour," recalled President and General Manager Michael McDougald, who said WRGA had a news emphasis even when pegged as a music station.

"We were using it (the music) as glue to hold the news programming together. I said, 'The heck with that. Let's be what we can best be.'"

Analyzing the market, McDougald, who has 50 years of broadcast experience, found a void for hard news on the radio dial. WRGA would use the newly-available all-news Associated Press feed as a foundation for programming a variety of news services.

"We said, '(AP) can be our nucleus, and we will add other forums around this to make it a valuable product,'" said Vice President in Charge of Programming Randy Quick. He cited ABC News, CNN Headline News, Georgia Network News

See ROME, page 29 ▶

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Just Ducky

"The World of Ducks Unlimited," a one-hour weekend show and three-minute weekday series, focuses on outdoor activities and conservation issues. It launches this month and next.



Ducks Unlimited Inc. will use the programs to promote its more than 5,000 annual fund-raisers, its upcoming television program (debuting in July) and its forthcoming Web site.

Award-winning veteran producers Tony Dean and Mike Walker will produce the new radio shows, available on a barter basis in the United States and Canada.

Bob Hirsch hosts the three-minute weekday show, while Dan Hertsgaard anchors the longer weekend program.

For information, contact Mike Walker at The Walker Agency in Tennessee, (800) 248-9687, or circle Reader Service 72.

Lucky Listener Receives Spontaneous Gift

A Virginia woman who called in during the live broadcast of "Pure Black" received an unexpected gift: a platinum plaque of Clint Black's "Greatest Hits" collection.

A platinum album signifies sales of more than 1 million copies.

Westwood One Entertainment, distributor of the "Pure Black," said the special was heard by more than 500,000 listeners.

Christina Puryear, on whom the platinum album was bestowed, called in on WMZQ-FM in the Washington market.

In other Westwood One news, WKTU(FM) in New York joined the format-specific Westwood Young Adult Network.

For information contact Renee Casis at Westwood One in New York, (212) 641-2052, or circle Reader Service 78.



Bob Dunn (left), Executive VP Affiliate Relations of Westwood One and John Fullam, VP GM, WKTU-FM.

The Copy Formerly Written In-house

Write Ads 4 U is a new company offering outsourced ad copy writing. The company claims it can provide the dedication to ad copy that is often missing

when this task is thrust upon overburdened or less-than-creative production and sales staff.

Appealing to the bottom line, Delaware-based Write Ads 4 U suggests that salespeople should be on the phone or meeting with clients rather than trying to come up with advertising material.

Washington's WTOP(AM) uses the service: General Sales Manager Joel Oxley is "very pleased" with the service.

For information contact Paul Mayer at (302) 537-9425, or circle Reader Service 79.

The Far East on Your Radio Dial

After previously setting their sights on such tourist destinations as California, Ireland and Canada, On Travel Radio looked eastward and produced "On Hong Kong," recorded on location in December.

The program, hosted by Paul Lasley and Elizabeth Harryman, will be broadcast internationally, including public and commercial stations in the United States.

"On Hong Kong" is available free to any station.



It is also available on the World Wide Web at the On Travel home page.

www.ontravel.com

For information contact C. Michael Leone at On Travel Radio in California, (714) 493-7988, or circle Reader Service 102.

Fifty Years of Bob and Ray

To mark the 50th anniversary of the Bob and Ray comedy team, the Radio Foundation Inc. has released to public radio "Classic Bob & Ray," a new series of the team's comedy sketches, some of which have not been heard before.

The 52 half-hour programs include



some of the duo's classic commercials for products such as Grime, "the shortening that spreads like lard."

Cutaways at the halfway point of each program and extra time at the end of each show allow for local underwriting credit.

The Bob and Ray package also includes CDs and cassettes, designed as premium giveaways, as well as promos and press releases to help sell local underwriting.

"Classic Bob & Ray" is independently produced by Larry Josephson for the Radio Foundation, Inc.

For information contact Daisy Pommer at RadioArt in New York, (212) 595-1837; or circle Reader Service 73.

Parents Award Kids News

"Radio AAHS News for Kids" received an Audio Approval Award from Parents' Choice, a nonprofit consumer guide to children's media.

The three-minute program features contributions from 18 young reporters. It is delivered every half-hour between 7:30 and 10:30 a.m. and 5:30 and 7:30 p.m. (EST), Monday through Friday.

The weekly wrap-up edition, "News AAHS It Was," airs four times during the weekend.

For information contact Joy Plaschko at Children's Broadcasting Corporation in Minnesota, (612) 330-9524; or circle Reader Service 100.

EEO Rules Reviewed

► REVISIONS, continued from page 27

several factors may come into play. Foremost, EEO as a general concept seems politically untouchable. That is, the notion of non-discrimination as a fundamental principal is so universally accepted that we find it extremely unlikely that the threshold requirement of non-discrimination will be abandoned.

What about all those pesky record-keeping requirements? Those might well be on the chopping block, and even if the FCC does not eliminate them completely, it may pare down their reach considerably. Such a paring would be consistent with the political drumbeat we've been hearing for the last several years about reducing federal governmental intrusion into the day-to-day operations of small businesses.

However, we find it likely (if not virtually certain, in view of the rhetoric of the EEO Supporters) that such a reduction of EEO-related record-keeping requirements would be seen by EEO fans as a dramatic retreat signaling the end of the world as we know it. If they raise a sufficiently loud hue, the commission might feel obligated to leave things the way they are, so as not to appear "soft" on discrimination.

Remember, the commissioners are political appointees who presumably prefer to follow the administration line, and they can therefore be expected not to take any positions counter to that line (whatever it might be).

The most interesting question, though, probably will have to be resolved by the courts. In view of the Supreme Court's 1995 decision in the Adarand case, are the FCC's various EEO record-keeping requirements unconstitutional? You can be sure that the FCC will never voluntarily concede that they are, but one can make a very strong argument along those lines. A number of the parties commenting in the EEO rulemaking proceeding framed that argument clearly, so we may actually see it litigated over the next couple of years.

The constitutional argument is strong. Contrary to the broad rhetoric of the various fans of EEO in its broadest terms, little if any evidence of actual discrimination in the broadcast industry exists. Supporters of EEO, and affirmative action generally, point to the percentage of minorities and women in the ranks of broadcast ownership and employment vs. the percentage of minorities and women

in the general population. Because those percentages are far from equal, proponents of EEO argue, some discrimination must have occurred somewhere, so let's put an end to it. The Supreme Court, however, has clearly indicated that general statistical disparities reflecting merely "societal discrimination" are not alone sufficient to justify governmental classifications by race.

For the most part, supporters of the FCC's EEO regimen tend to offer nothing but references to just such general statistical disparities. Absent some more compelling justification, we see reasonable cause to believe that the EEO regimen is fatally flawed. But again, if this call is made, it will probably be left to the courts.

In the meantime, the FCC will continue to require record-keeping of job applicant referrals and the like, and will probably continue to issue fines to the unfortunate few who get caught with their documentation down. And so it goes. If you have any questions about the commission's EEO requirements or its EEO rule making, contact your communications counsel.

■■■

Harry Cole is a principal in the Washington-based law firm of Bechtel & Cole, Chartered. Reach him at (202) 833-4190 or via e-mail at coleslaw@erols.com

Award-winning News From Rome

► ROME, continued from page 27
and Reuters as several other sources of news broadcast on WRGA.

Quick said sports broadcasts, heavily featured on the weekends, are integral to the station's success.

WRGA picks up the Motor Racing Network feed on Sundays, reserving Saturdays during football season for University of Georgia games and Friday nights for high school games. The station also simulcasts basketball games from the University of Georgia and Rome High School.

When no weekend football games or racing are scheduled, sports fans can listen to two-minute sports feeds from AP at :15 and :45.

Quick said the AP feeds constitute "some of the best overall sports coverage ... that I've ever heard." Four-minute sportscasts from Georgia Network News during morning drive round out the WRGA sports lineup.

Grady Frisby

McDougal attributes his Small Market Personality of the Year Marconi Award to his on-air character Grady Frisby.



This is one in a series of Radio World profiles of Marconi Award winners.

Created by McDougal in 1957, Grady Frisby has "appeared" on WRGA since 1977.

"He's kind of a dumb ass. Carries a cow around with him," said McDougal of the popular character, who has his say from 7:20 to 7:25 each morning.

According to McDougal, Frisby is the radio equivalent of a newspaper political cartoon, airing on a station that leans away from political commentary.

When issues of importance to the local community arise.

McDougal himself strays from the hard news format to offer more specific editorial commentary.

"We do not do an editorial every day," he said. "We do not have the time or the resources as a newspaper would," he said, noting that editorials require extensive research. "We will come out on certain issues, but not every issue," he said. "But when we do come out, people just seem to love it."

Knowing how powerful editorializing on the radio can be, McDougal takes a cautious approach.

"We really walk softly and carry a big stick," he said, echoing his comments upon accepting the Marconi Award. "A radio station has the biggest stick in town: that tower out on the edge of town. If it's used right it can be bigger than the newspaper. But you don't need to hit everyone over the head with that stick," he said.

Hurricanes and blizzards

Chief Engineer Bob Mayben joined WRGA two years ago, bringing hard news experience he gained working at WCNN(AM) and CNN television in Atlanta. He requested a second Marti

RPU system to allow more remote segments and added more automatic dubs from network feeds for quicker, easier on-air playback.

"Everything we do that's out of the building, if we can see a news angle for it, we send it back here and they record it whether they use it or not," he said.

Mayben cited a local Veterans Day ceremony last year as an example of the coverage possible with the newer equipment.

"Since I was already feeding the PA system there I just took the patch, plugged it into the Marti, sent it back to the radio station, and they had a perfect audio pickup of the entire proceedings,

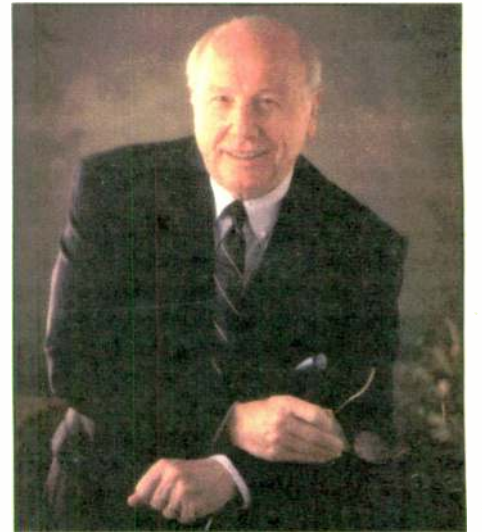
which they dumped into the (RDS Phantom System) and used for their news actualities and so forth," Mayben said.

Mayben also takes pride in being the "only station in town" that has generators. "We just don't like being off the air," he said.

"That really bugs me."

In fact, WRGA and sister station WQTU(FM) used generators to remain on the air for six straight days during the blizzard of 1992, arranging for medical assistance for listeners in need.

The station was recognized with the 1992 Humanitarian Award from the Country Radio Broadcasters Association for its outreach during the storm.



General Manager
Michael McDougald

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MANAGER'S NOTEBOOK

Managing With a Human Touch

Sue Jones

First-rate management is so difficult that few people are able to achieve it.

Good managers must acquire several technical managerial skills such as finance, resource allocation, sales, profits, negotiation, ratings/market share, writing, speaking and listening. In addition, good managers must demonstrate leadership qualities like sensitivity, commitment, intelligence, ethical standards, and vision. Moreover, a good manager, in addition to being responsible for the station's success, makes a great deal of money for the station and should share it

generously with the whole staff.

Too much focus on technical managerial skills — statistics, analysis, sales, and financial controls — and too little on character is one reason for the dearth of great managers. We fall short in training people how to respond like great managers. Somehow we need to instill qualities that cannot be taught, such as courage and integrity.

Those who become great managers understand that managing is not merely a series of mechanical tasks but a set of human interactions. Managers are only human, which explains why character means more to us than technical manage-

rial skills. People may love and work hard for a manager who knows too little about computers, transmitters or the local market, but is a decent human being who understands what motivates individuals.

People invariably dislike and thwart managers who are miserly, unwilling to listen to another perspective, or mean-spirited, no matter how great their technical managerial abilities. The manager who concentrates only on the technical managerial skills so loved by owners will have only marginal success. However, a manager of limited technical managerial skills who uses human understanding to motivate the staff will surpass the perfor-

mance of the manager who does not possess these qualities.

So where do you focus attempts to enhance your human motivational skills? One of the most important human characteristics of a great manager is integrity. Some think integrity is the same thing as secretiveness or blind loyalty. Others seem to believe it means consistency, even in a continuously declining market or in spite of overwhelming evidence that the current course is disastrous. Some confuse integrity with discretion and some with the opposite quality, bluntness; some think integrity means simply not telling lies.

Integrity means being responsible, but it also means communicating clearly and consistently, keeping promises and other commitments, and knowing oneself so that you can avoid hidden agendas that distract you from reaching the station's goals. Integrity is similar to honor, which in part means being honest with yourself so you can stay on a course that benefits the station owners and is at the same time a winning situation for the staff.

Another area of focus should be treating your subordinates with visible respect. Give your staff your full attention while listening to ideas and thoughts for station programming, promotions, and technical and other improvements. If you think of your staff members as log-heads who have to be prodded and pulled to get their jobs done, you will most likely have to spend an inordinate amount of time and energy supervising them. As an alternative, retain the handful of responsibilities that must remain with the management — contracts, strategy, alliances, the authority to make changes in management — and delegate everything else.

Delegating authority and imparting the responsibility for getting the job done takes courage. It may mean repressing your own instinct to control. Make sure that you give your subordinates the basic acceptable guidelines and framework for decisions and actions. They need to know their mission (engineering maintenance of the station, for example) and the budget available to support that effort. You can give them full authority to provide the mission, giving them the acceptable amount of off-air time. However, the purchase of an item that exceeds the budget may require your final approval.

Surrender control

Be willing to give up your own control and do not hold onto it in unconscious ways. You will continue to run all of the departments of the station if you give advice to every subordinate who asks for help in addressing a problem.

When they come to you for a solution, ask them what they would do to solve the problem. Force them to think through the problem and the possible solutions using their own intelligence and experience. Stop attending the meetings in which decisions are made or discussed. Focus your efforts on the arts of coaching, teaching and facilitating. Then you can concentrate on vision, market share, profitability and those other things for which the owners will hold you accountable.

Great management is a continual exercise in learning, education and persuasion. Getting people to do what is best for the clients, the listeners, the station and even for themselves is often a struggle because it means getting people to understand and want to do what is best. That requires integrity, the willingness to empower others, courage and well-developed teaching skills.

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BOOK REVIEW

Get Lost in a Good Radio Book

Peter Hunn

Somewhere in the attic there is a dark green box of Shamrock tape held together with a rubber band. And 25 years ago, its contents moved me closer to radio.

A friend, whose uncle knew someone at this small station in Rhode Island got me the aircheck. It was not very good, but I would play that reel over and over, each time concentrating on the guy's little monologue at the end.

There, he nervously addressed the "PD" about having a third phone with broadcast endorsement, running a "tight board," being adept at "top-40 and C&W as well as MOR."

After assuring his potential boss "... as far as bucks go, 100, maybe 110 (per week) would do it up fine," he paused for a few seconds. Then, perhaps in an effort to separate himself from dozens of other applicants, he proceeded in rather great detail to describe everything in the studio. For this teenage broadcast wannabe miles from any local station, the word pictures on the tape represented my first behind-the-scenes window into real radio. What I could have done with a copy of "The Radio Station" by Michael Keith.

New edition

Originally offered in the late 1980s, Keith's book has just arrived in its fourth edition. Published by Focal Press/ Butterworth-Heinemann, the work's 322 pages of informative text and useful graphics easily immerse the reader into radio's world. While this is a great resource for high school and college kids hoping for a broadcast career, "The Radio Station" is an appropriate handbook for any industry pro.

Eleven full chapters include details on topics the likes of: station management, programming, sales, news, research, promotion, commercial production, syndication and engineering, as well as commercial traffic/billing and radio consultants. Taking these subjects well past ordinary coverage are each chapter's numbered "highlights," exhaustive bibliographies and digestible contributions from radio insiders.

For example, program consultant Donna Halper's critique of a client "classic hits" FM is included (minus actual call sign) for all to see. No doubt some bright young hopeful will review that like I did my aforementioned tape.

Also making Keith's fourth edition palatable is his desire to display American radio as a province of both large and small outlets. Gaining just as much editorial space as major market illustrations are comments and artwork from hometown stations. The sales section features a rate card from an AM licensed for a modest 18 W at night. This chapter's sales "Do's-Don'ts," and computer-related spot inventory info are well worth the price of the book.

Radio's most challenging contemporary issues, such as station consolidation and downsizing, are also adequately handled, often causing the reader to ask pivotal questions. While the notion of an AM "renaissance" (often a mom & pop product) is introduced, spot-sales rep expert Ralph Guild speculates in "The Radio Station" that within a few years,

"pure broadcasters (who eschew being molded into a hybrid of broadcaster/ marketer/financier) will not be able to compete."

Speaking as the former owner/operator of a husband/wife AM property in Adirondack, N.Y., that statement really got me thinking. But then, isn't that what such an A-to-Z manuscript is supposed to do?

On the outside chance one might discount a reviewer who says only good things about his subject book, I'll nit-pick regarding a few personnel and call letter changes. Some of the station staff, formats, and call signs noted are different

today than they were even at the book's recent print date. One mentioned station picked new calls between the third and fourth editions of this book (and was duly noted), but has changed again.

Unanticipated changes

How can the author avoid such motion? Quite obviously he cannot, unless the book goes on-line. Truth is, no one need get too worked-up about such unavoidable details, as unanticipated change is Lesson Number 1 in radio.

Readers unfamiliar with the specific people and facilities won't suspect a thing. Those of us with a past in this

business can reflect on an obvious change — like a promotional piece touting Cleveland's all-sports WHK as an oldies outlet — and benefit from the reality that one won't get far in radio by standing still.

At its best, the American broadcast landscape should be as interesting and diverse as walls of watercolors in a fine gallery. Mr. Keith's latest effort scans the spectrum from crystal set to Internet and satellite radio. In so doing, he hands brushes and palette to anyone interested in painting our audio medium's future. A very worthwhile book about a worthy institution ... "The Radio Station."



Peter Hunn is a professor of communications at the State University of New York at Oswego. You may contact him at hunn@oswego.edu

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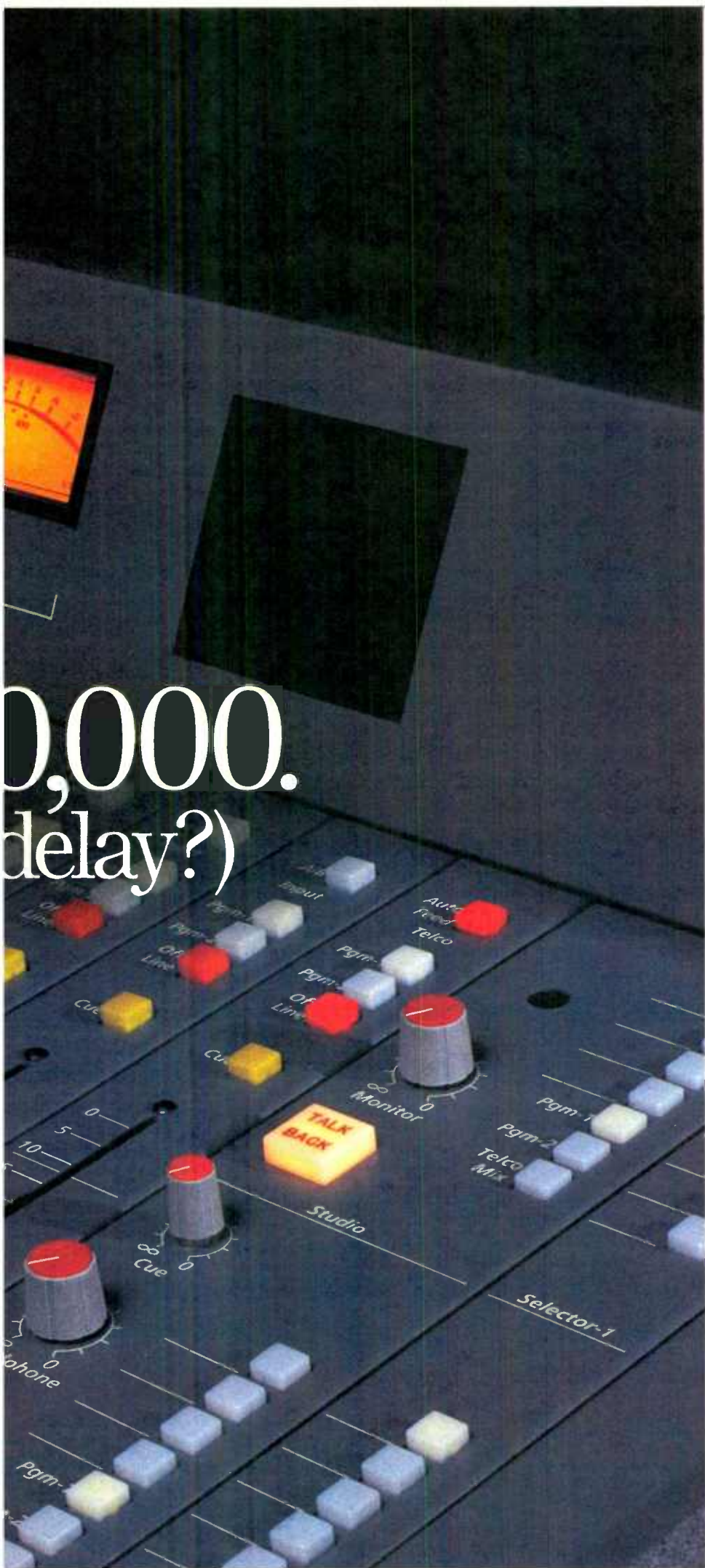


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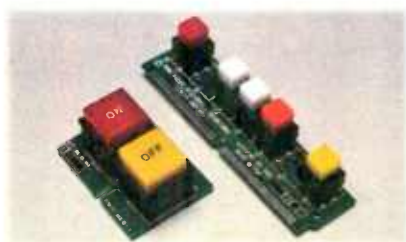
How did we do it? It wasn't easy. We started with a clean sheet of paper, chose the most appropriate features for today's programming, and borrowed from years of industry experience.

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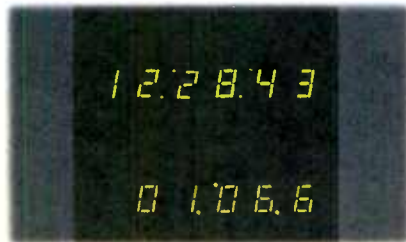
We've retained many of the features you find in our high-end consoles. Features that competitive consoles don't have. Like a fully shielded mainframe. Assignable logic control. Easy-access user connectors with plain language labeling. High redundancy 96-pin Euroconnectors. And a convection-cooled rack-mounted power supply.

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You hear them between songs or out of stopsets. The laser blast, the sweep, the subterranean baritone telling you, "You're listening to the galaxy's best radio station ... Q102!"

A few ticks down the dial, the oldies station drops in happy, upbeat jingles as often as it plays music.

Your favorite classical station no longer plays "Blue Danube" behind its car commercials, but has good-sounding, crisp, contemporary production music backing the advertisements.

The urban station across the street has the right mix of punchy voices,

scratches and samples. Its sound is tight, dynamic and arresting. The station sound is immediately identifiable. These elements — production libraries, voice-overs and jingles — deserve attention, for they are the glue that holds a station together during pauses in programming.

Exciting promos and well-crafted commercials hold an audience in place until the song starts or the host returns. Jingles link dissimilar songs together and maintain an upbeat feel to the station.

A station's image is incomplete without these elements. In this issue, **RW** focuses on the importance of production libraries, voice-overs and jingles for your station.

Your Station Sound, Behind the Scenes

Chris Hamaker

When creating or tailoring your on-air sound, where should you start? If your mind turns first to the on-air talent, think again. Production personnel shape the sound of a station arguably as much as, if not more than, the on-air talent.

"One can't live without the other, and they both have to know what they're doing," said Ziggy Pelzer, production director at WCBS-FM in New York. "(Every station) is playing the same ... music. It depends on how it's presented,

the whole flavor."

Finding the right production libraries to mold the station sound is one of the production director's most important tasks. The right package should be updated frequently and coupled with the payment option best suited to a particular station's budgetary concerns: will you look for a buyout plan, in which the station buys a package outright, or a lease agreement, or a needle-drop pay-per-use arrangement? Will you pay for your library, or take a package you can barter for?

First, foremost

For stations playing current hits, the most important element in their production music is how contemporary the sound is. The "sound of the moment" today certainly won't sound too modern a few years down the road.

"Very few libraries put out a significant amount of updates," said Flip Michaels, production director at WGMS-FM in Washington. "You can tell from the style of the music if they've really been in tune with their library and kept it current. Libraries will send out new CDs, but sometimes they'll do it in just one category ... and in the course of five years they've only updated six or seven categories by one CD. That does squat."

BRG/Division of Premiere Radio Networks avoids this pitfall by offering monthly updates. Using a staff of approximately 40 writers, the company also produces its own music, which President Andy Mark said is a creative advantage.

"If a station calls and says, 'We'd really like something like Bush,' we can produce that for them," he said.

Format is the driving force behind the choice of a production sound, and not all formats need the most modern production elements and music. A case in point is the oldies format. Pelzer became so frustrated with what was available for oldies stations that he helped SJS Entertainment create its new "Gold Cuts" package specifically for the oldies format.

"A lot of companies miss the boat, because they're into the synthesized sound, the drum machine. If you look at the music of the '50s, '60s and early '70s, it was real instruments, and that's what these production houses are missing," he said.

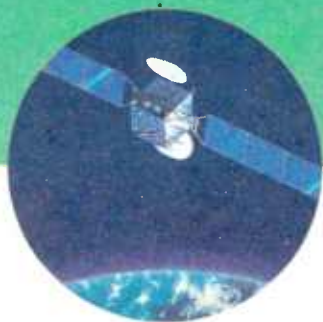
Is it live?

Pelzer's motto is "keep it fresh." With oldies stations all playing the same songs, it's the production that sets one oldies station apart from another. "There are only so many ways you can present (the same) song, so ... production has to help keep it fresh," Pelzer said. "With the right production behind it, that song sounds like it's brand new."

Steve Liquori at Aircraft Production Libraries echoed Pelzer's concerns about live instruments, which he said Aircraft used to great effect in its American Music series, featuring music from the Revolutionary War period through the 1950s and '60s. "All the music was performed live on acoustic instruments and recorded and mixed on digital mixing

See LIBRARIES, page 36 ▶

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READER SERVICE NO. 43

Voices and Jingles Create Image

Alan R. Peterson

A station's on-air image is enhanced by some personal sonic signature that says: "This is our station."

The heyday of AM top 40 provided the momentum that continues to propel the radio jingle well into the late '90s. Other stations opt for the flexibility — and sometimes, simplicity — of the voice-over personality, or "liner guy."

Either one or a combination of both may be the answer to your station's need for a memorable, recognizable signature that will reserve a button on the car radio.

Voices in the air

John Driscoll of Los Angeles is the voice of countless stations across the United States. His studio is equipped to send audio via any number of delivery methods.

Transplanted to Los Angeles from Washington, Joe Cipriano got into voice-overs in the mid-'80s. Before then, the station's production director or other in-house announcer was the promo and image voice.

"One day," said Cipriano, "radio started to listen to TV stations and networks and realized they are using guys specializing in imaging. They could get a guy from anywhere."

Connecticut broadcaster Elizabeth McGuire is just now testing the voice-over waters. Despite her newcomer sta-

tus, she is already voicing Ireland's Longwave Radio Atlantic 256.

Voice trends, like hit music, come and go. Driscoll and Cipriano see the overpowering "flame-thrower" voice waning in favor of a more natural-sounding voice, less dependent on equipment to sound good. A word has been coined defining an electronically-deepened voice: "Electrosterone."

"If you spend a lot of time trying to emulate what's hot right now, in five years it may be your death," warns Driscoll. Cipriano suggests finding your own voice. "Anything you can do that you can lock on to that makes you stand out from the rest of the guys is good."

How are women doing on the voice-over front? McGuire notes, "I think the tide is turning. Stations are adding female voices, but this is usually in addition to the male. A female voice can't stand on its own?"

More humor

So why aren't female voices more prevalent? McGuire believes it has to do with perception. "Programmers ask themselves, 'Does this female voice sound like my mother, getting on my nerves? My wife nagging me?' It is very subjective," said McGuire.

Stations are exploring the use of out-takes and "tweeners" (what happens between takes). Cipriano hears stations use his jokes, false takes, quips and asides as on-air imaging. "I see a lot

more humor going into station imaging voices," he noted.

A catchy five- or six-note jingle can make a great radio station immortal and unforgettable. Stations can pick from the feel-good nostalgia of the classic PAMS jingles, the in-your-face attitude of Thompson Creative, a country twang from Ben Freedman Productions or a breezy jazz pad from Groove Addict Productions.

Ken Deutsch of Ken R. Music is exploring a new avenue for radio jingles: satellite formats. "We are making six- and seven-second jingles. Because it is a satellite format, it has to fit within that window very neatly. A lot of the stations we work for are small and medium that are satellite-fed."

Deutsch noted the number of news and talk stations starting to go with jingles. "I see a shift towards those folks getting a jingle image where before they only had sounders."

Thompson Creative's director, J. Larry Thompson, is exploring a region once exclusive to voice-overs only:



Voice Talent Elizabeth McGuire

alternative-formatted stations.

"It will be a totally different approach, not a jingle-type sound at all," said Thompson.

"Vocals will be a combination of sung and non-sung parts."

Thompson also noted jingle collections done for several urban stations that depended more on solo voices than the traditional five- or seven-voice ensembles.

Current digital technology, including

See IMAGE, page 37 ▶

Customize Your Sound

▶ LIBRARIES, continued from page 34

consoles. A lot of research was done to make the music authentic to its period," he said.

Aircraft licenses its product on an annual basis. Other companies such as Dimension Music & Soundeffects Inc., Ghostwriters Comedy Services and Radio Potato offer buyouts. SJS Entertainment and BRG/Division of Premiere Radio Networks offer libraries on a barter basis to interested stations.

Fran Bell at Dimension said her company was one of the first buyout libraries available, starting out in 1983. Since then the market has dramatically changed, and the competition intensified. "We started by selling LPs, and it was \$125 for an LP," she said. "When we went into CDs it was \$150 for a CD. Now we're selling them for \$25 a CD."

Ghostwriters Comedy Services, which does not manufacture its own production libraries but markets other companies' libraries, tries to offer the best price to radio stations by cutting out the traditional "free demo," which President Dave Dworkin said is a myth.

"It's built into the price. It has to be because it costs money to make a demo, it costs money to ship a demo," he said. "We make up for the lack of demo by putting a 60-day money-back guarantee on all production libraries we sell," he said.

Dworkin gives no preference to any one manufacturer, often bundling promotional material for several libraries into the same mailing. He said manufacturers use Ghostwriters because it eliminates the marketing expenses those companies would otherwise incur.

Michaels is a proponent of purchasing a separate sound effects library in addition to a production music library. He

thinks this approach is a necessity despite the combined music and effects packages offered by some of the major players in the industry.

"Most libraries will throw in some kind of sound effects package, but they've never been, in my career, full enough to be that true complement to your music library," he said. "So you are, in the long run, forced to go out and purchase ... a sound effects library."

Marshall Such, head potato at Radio Potato, said his company offers a popular sound effects package, "Super Themes,"

in addition to its Spud production music library. He said "Super Themes" received enormous exposure during the 1996 Summer Olympics and the Ross Perot presidential campaign.

Radio consolidation seems to have buoyed many production library manufacturers and marketers.

The majority of companies contacted for this article said growing group ownership has strengthened the bottom lines of many individual stations.

"The difference is a much greater percent of (stations) are profitable than they were five years ago," said Dworkin.

"If you're looking at a production library for three, four, five stations, you're willing to spend more money, or you're willing to buy more total libraries because you're consolidating your use of them," he said.

"We can call the stations in the group and say, 'Your (other stations) are using (our library),' and it makes it easier for us to march our products around like that," said BRG's Mark.

His company deals on a barter basis, which can have its advantages. "Budgets don't come into play as much as they would if we were charging money," he said.

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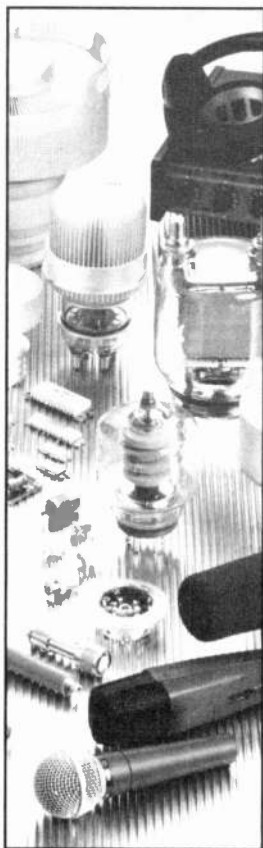
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The Voices of Your Station

► *IMAGE*, continued from page 36

two-way ISDN communication, allows station decision-makers to sit in on the jingle or voice session as it is happening.

Tony Griffin Productions has demonstrated this technique several times at NAB shows. Griffin conducted jingle recording sessions from the BSW booth in Las Vegas and New Orleans while his singers in Texas sent their performance down a 15 kHz stereo ISDN line.

A full mix was recorded to DAT on-site and handed to the client with zero turn-around time.

Is digital technology an absolute necessity for voice-over talent? It helps, but

You can have every device there is and not get work.

— John Driscoll

the talent's particular sound is what makes the magic happen. Cipriano points out technology has made the biggest names in the business available to anybody who wants them.

"Stations can have Ernie Anderson or Don LaFontaine live in their production rooms," said Cipriano. "Technology



Voice Talent Joe Cipriano

made the big-time voices available right after the time radio stations wanted to get the real pros."

Driscoll has ISDN, a Digital Generations send unit and satellite capability for his work but says it does not make or break the talent.

"If you are at the bottom of the totem pole, you can have every device there is and still not get work," said Driscoll.

"If it needs to be there next Wednesday, why pay \$50 for satellite time when you can wait for a FedEx? These are all dictated by need; they have nothing to do with the talent."

Driscoll admits that, given two people at the same talent level, the one getting it done fastest under strict deadlines will probably get the job. In that case, the one with the technological edge may win.

...

Elizabeth McGuire can be reached at (860) 568-6379. John Driscoll is available at (818) 766-0491. Joe Cipriano can be reached at (310) 454-8905. Thompson Creative demo CDs are available at (214) 559-4000. Tony Griffin Productions is at (214) 306-3100. Ken R. Music is at (800) 451-5367.

You Read It Here ...

One Year Ago

"I think (the Internet) is a sexy thing right now. It is something that looks like you're onto the information superhighway. But the biggest question, I think, is after people understand what it is, how do they make money on it? I think there are a lot of opportunities we haven't uncovered."

— John David, NAB senior vice president, Jan. 10, 1996

Five Years Ago

"The NAB's Digital Audio Broadcasting (DAB) Task Force's

Technical Advisory Group (TAG) canceled its Jan. 23-24 meeting due to a 'lack of interest.' The meeting was scheduled to allow various DAB systems proponents to reveal technical information about their particular system.

"According to TAG Chairman Don Wilkinson, the group canceled the meeting because most of the in-band systems proponents were concerned about revealing proprietary information in the presence of other system proponents. Most decided not to attend."

— News item, Jan. 22, 1992

Ten Years Ago

"The FCC has imposed a freeze on the acceptance of applications for new AM daytime-only facilities.

"The commission ... said that, effective immediately, it was issuing a 'temporary freeze' on the acceptance of new applications for daytime-only stations.

"The action, the FCC added, is 'taken in contemplation' of a future formal rule-making proposal to impose a permanent ban on applications for new daytimers."

— News item, Jan. 15, 1987

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Circle (44) On Reader Service Card

PRODUCTION LIBRARIES GUIDE

These companies create and distribute production music libraries and sound effect collections for radio. Contact each for licensing information at the number given.

Aircraft Production Music Libraries

Contact: Lisa Leigh
162 Columbus Ave.
Boston, MA 02116
telephone: (800) 343-2514; fax: (617) 542-7222
e-mail: soundtrackgroup.com

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For information, circle Reader Service 106.

APM/Associated Production Music

Contact: Connie Red, broadcast sales
6255 Sunset Boulevard
Hollywood, CA 90028
telephone: (800) 543-4276 or (213) 461-3211; fax: (213) 461-9102

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For information, circle Reader Service 107.

AVDELI/CHATEAU Brazil

Contact: Tom Flynn (AVDELI) or Joe Kelly (CHATEAU Brazil)
225 E. St. Paul Ave., Suite 201
Milwaukee, WI 53202
telephone: (414) 224-6396; fax: (414) 224-6393
e-mail: AVDeli@aol.com or CHBrazil@aol.com

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For information, circle Reader Service 108.

DeWolfe Music Library

Contact: Andrew Jacobs, vice president
25 West 45 Street
New York, NY 10036
telephone: (212) 382-0220; fax: (212) 382-0278
e-mail: DeWolfe4u@aol.com

DeWolfe Music Library is a full-service music library with over 200 CDs. Each year, we produce 30-40 new CDs of fresh material. Our music library is always current and up-to-date. We have a variety of recordings with real instrumentation. Small group to large group, full orchestra and symphonies. DeWolfe also has a collection of 18 SFX CDs all digitally recorded. Call us now for a free CD demo and a price quote.

For information, circle Reader Service 111.

Dimension Music & Sound Effects Inc.

Contact: Rex Bell
P.O. Box 992
Newnan, GA 30264-0992
telephone: (800) 634-0091; fax: (770)

253-9388

Fantastic buyout and production music and holophonic sound effects. Over 70 CDs of music and sound effects, specialty CDs customized for you. Call for a demo disc. Prices as low as \$25 per disc.

For information, circle Reader Service 112.

Flying Hands Production music Library (a division of Media Beat)

Contact: Brian Curella
P.O. Box 5372
Louisville, KY 40255
telephone: 536-6007; fax: (502) 493-8545
email: mediabeat@uky.campus.mci.net

Buy-out production music library (try-before-you-buy plan) jingles, station IDs, liners, sound design.

For information, circle Reader Service 109.

Halland Broadcast Services Inc.

Contact: Steve Steinberg, sales manager
1289 E. Alostia Ave.
Glendora, CA 91740
telephone: (800) 425-5263; fax: (818) 963-2070

Web site: <http://www.h-b-s.com>
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For information, circle Reader Service 113.

Network Music Inc.

Ken Berkowitz, vice president of sales
15150 Avenue of Science
San Diego, CA 92128
telephone: (800) 854-2075 or (619) 451-6400; fax: (619) 451-6409
e-mail: feedback@networkmusic.com

Independent originator of instrumental production music. Founded in 1979, the company libraries have grown to thousands of original compositions, sound effects and production elements. These libraries are constantly growing with monthly updates and new issues.

For information, circle Reader Service 114.

Non-Stop Music Library

Contact: Val Butcher
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For information, circle Reader Service 76.

OGM Production Music

Contact: Curt Kendall, marketing
6922 Hollywood Blvd., Suite 718
Hollywood, CA 90028
telephone: (800) 421-4163; fax: (213) 461-1543
e-mail: OGMmusic@ogmmusic.com
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Contact: Marshall Such, head potato
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For information, circle Reader Service 70.

Signature Music Inc.

Contact: Joanne Mullin
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telephone: (800) 888-7151; fax: (219) 921-0704

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For information, circle Reader Service 123.

Sound Ideas

Contact: Brian Nimens, president
105 West Beaver Creek Road, Suite 4
Richmond Hill, Ontario L4B 1C6
telephone: (800) 387-3030 or (905) 886-5000; fax: (905) 886-6800
e-mail: music@sound-ideas.com

The Sound Ideas Music Library consists of over 90 CDs, representing more than

20 different music categories. Production elements and sound effects CDs also are included in the library and new CDs are released monthly. Recent updates have included: American Songs, Period Music, National & Ethnic Music and Olympic Sports music.

For information, circle Reader Service 124.

Thompson Creative

Contact: Larry Thompson
4631 Insurance Lane
Dallas, TX 75205
telephone: (214) 559-4000; fax: (214) 521-8578
e-mail: jingles@onramp.net

One of the world's leading suppliers of radio jingles. We also offer male and female promo voices/production services.

For information, circle Reader Service 130.

TRF Production Music Libraries

Contact: Kenneth Gilman
747 Chestnut Ridge Road
Chestnut Ridge, NY 10977
telephone: (800) 899-MUSIC; fax: (914) 356-0895
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How to Get a
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See page 45.

Radio World

Resource for Radio Production and Recording

January 22, 1997

PRODUCT EVALUATION

Fostex Multitrack Will Please ADAT Fans

Lou Rizzo

Attention ADAT aficionados: your non-linear ship has come in. The team at Fostex digital research and development has created the Fostex D-80, an eight-track 16-bit hard disk recorder.

The similarities to ADAT-type multitracks are clear: the D-80 is digital, it gives you eight tracks and fits in a small space. Certainly, you can run down to the supermarket for Super VHS tapes to feed your ADAT, but the D-80 never has tape dropouts or jam-ups.

If you prefer a straightforward analog-style multitrack approach in your radio production studio, the Fostex D-80 could be a good unit for you.

Two for one

The Fostex D-80 consists of two primary pieces of hardware: the 3U rack-mountable hard-disk "head" unit and a removable control surface. The head has an eight-channel unbalanced RCA I/O configuration, a bit more friendly to the home studio than the balanced +4 dB world.

It is also equipped with a SPDIF light pipe I/O port for backing up to DAT and slaving. The D-80 MIDI functions open up a world of digital possibilities from sequencing to creating a 36-track D-80 system.

The control surface display is a 2 x 6-inch, high-visibility fluorescent tube display, similar to those used on Fostex pro DAT machines. The display shows an eight-channel level meter, function indicators and message board. There is a shuttle/jog wheel and various command and control buttons. The control box connects to the head by a D-sub 15-pin cable.

I find the removable control surface to be one of the best features of the D-80. Unfortunately, the stock connecting cable is only 8 inches long. You will need to special-order a longer one to reach to the console.

Removable drive

The 850MB IDE-type hard disk gives you about 18 minutes of memory inside a removable cartridge. I would recommend immediately upgrading to a 1.2GB or similar hard disk for about 30 minutes of recording time. Nothing is worse than cranking out a great piece, then all of a sudden come to a screeching halt because you've run out of memory.

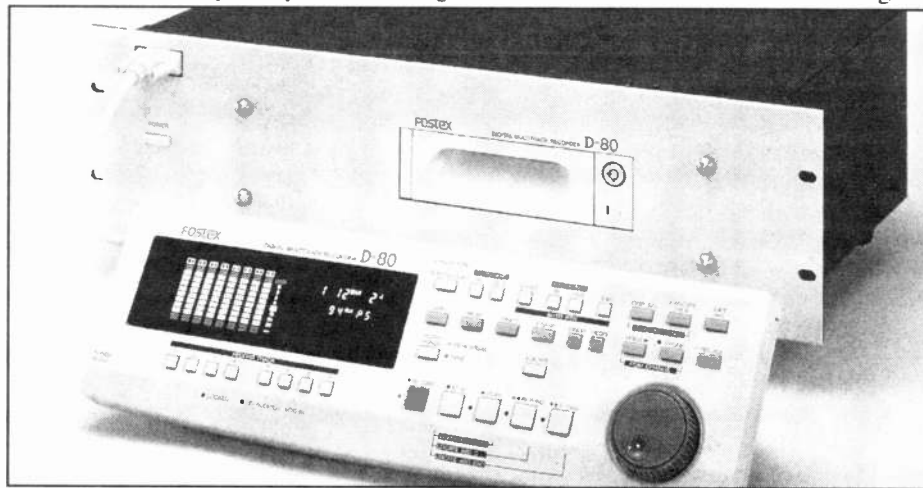
The D-80 manual explains removal and upgrade of the disk drive along with manufacturer-tested and recommended models and brands. This drive is something of a special-order item, so you may want to stock up before you jump into a big project.

A word about the 130-page manual. Function instructions are in bold face, followed by specifics of the operation.

The diagrams are clear and cross-reference directions help move you through the book.

Because the D-80 is a disk-based system, you can cut-and-paste audio as you would words in a word processor. Precise punch-in and out points can trigger automatically, audio can bounce back and forth between tracks and loops can be created.

The internal tempo map is interesting.



Pop the Panel: The Fostex D-80 Digital Recorder

A metronome with time signature functions can be sync'd via MIDI for such complicated functions as sequencing. It can even be a click track.

Editing on the D-80

Cut-and-paste operations work through a series of commands.

First, enter the specific edit mode by hitting Recall, then Clipboard In. Move

D-80 will tell you "Completed!" The audio you have copied to the clipboard will live there until it is replaced by new audio.

I didn't mean to do that

Another big advantage to hard disk recording is Undo. Say that you have accidentally erased the wrong effect overdub track. Hit Undo and, like magic, it comes back. No more searching the

floor for that eighth-inch piece of tape.

Now say you realize you erased the right thing after all. Hit Redo and it is done just as easily. The D-80 even gives you a range of Undo options in order to save memory.



Undo All commits all recording and editing functions to memory, so you will need enough free disk space to accommodate everything you are doing. You

do your leads and overdubs without wear to the master tape. It is also good for mastering, but it only records at a sample rate of 44.1 kHz.

The D-80 would work in a radio production studio, although there are many other digital products out there better suited for the fast-paced bang and slap radio production environment, including the Fostex Foundation 2000 and Roland D-800.

The D-80 editing functions are basic and the steps to perform these functions may confuse your average jock. Although the shuttle/jog wheel is fast, you cannot scrub audio with it.

PC-based systems like ProTools and Vision work off existing computer hard-

Product Capsule: Fostex D-80 Hard Disk Recorder	
 Thumbs Up	 Thumbs Down
<ul style="list-style-type: none">✓ Extremely Versatile Digital Multitrack Recording✓ Compact Size✓ Affordable	<ul style="list-style-type: none">✓ Multistep Functions✓ Unbal RCA Analog I/O✓ No Scrubbing
For more information, contact Fostex at (310) 921-1112 or circle Reader Service 53	

ware and are easy to upgrade; with the D-80 there is no accessible software card so you would have to send the D-80 back for an upgrade.

■ ■ ■

Lou Rizzo is regional program director for four Commodore Media stations in Connecticut and a freelance producer of jingles, spots, music and other audio production.

Fostex lovers: think of the D-80 as a loaded hard-disk version of the RD-8.

the jog wheel to your desired In point, hit Store, then Clipboard In. Set where you want the Out point with Recall, then Clipboard Out. Move the jog wheel to your Out point and hit Store, then Clipboard Out.

You can check your in/out points by hitting Clipboard In/Out respectively. Arm the tracks you wish to cut with the Record Track keys, then hit Copy or Cut.

To Paste the clipboard audio, enter Edit mode by hitting Recall, then Auto Punch In. Move the jog wheel to the desired location, arm the tracks, hit Store, then Auto Punch, then Paste.

The D-80 always asks you "Are You Sure?" before executing a potentially destructive operation. It will also ask how many times you want it to repeat the paste function, and that's how to "loop" the audio.

If you are sure, hit Execute/Yes. The

can turn this function off and it will only remember Auto-Punch, Cut, Copy, and Paste functions.

Applications

So who needs a Fostex D-80? It can certainly work well in pro studios. But because it builds off of the ADAT concept, this product is better suited for smaller project and home-based studios as evidenced by its compact size, RCA analog I/O, and versatility. In fact, Fostex lovers can think of this as a loaded hard-disk version of the company RD-8.

The D-80 gives you affordable (about \$2,000) digital multitrack recording with all the advantages and improvements over ADAT configurations including Cut-and-Paste and similar functions.

It is great for overdubs and recording lead tracks. Bounce a basic mix from a 24-track two-inch tape to the D-80 and

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PRODUCT GUIDE

Companies with new product announcements for Studio Sessions Product Guide should send them to:
Radio World, c/o Studio Sessions Editor, P.O. Box 1214, Falls Church, Va. 22041

Focusrite Green Range

Focusrite Audio Engineering has added two new products to its Green Range of audio processors.

The Green 4 is a dual compressor-limiter. Its two channels feature a compressor with threshold, attack, release and makeup gain, with selectable soft- or hard-knee settings and stereo linking. The limiter stage has control over threshold and release and has a look-ahead feature. The Green 5 Channel Strip is a multipurpose recording and mixdown tool combining a mic input preamp, six-band EQ and compressor. It can handle direct

injection of a guitar or bass without the aid of a DI box. (800) 775-3660 or circle Reader Service 56.

For information, contact Group One, Ltd., at (516) 249-1399, or circle Reader Service 54.

Custom CD Rack

Spacewise Broadcast Furniture introduced the CDR-208 wall or surface mount CD cabinet.

The rack holds 208 CDs in 16 separate compartments, in a total space of only 25 inches square. Construction includes a durable solid oak face and 3/4-inch lumber.

For information, contact Spacewise at



AirWorks Audio Software

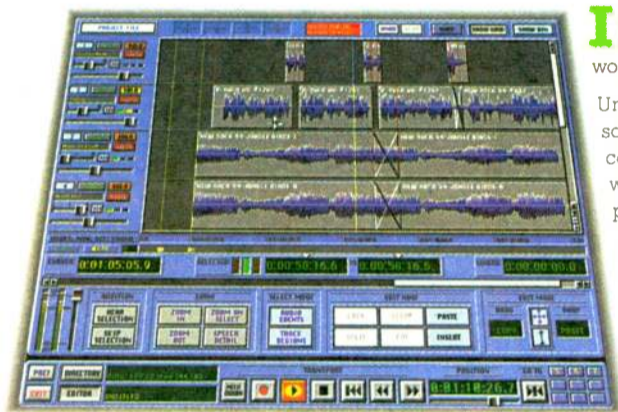
AirWorks Media, creator of TuneBuilder, introduced SoundHouse, the company's first major retail project.

SoundHouse is a multimedia sound application program aimed at the desktop market and users who lack the expertise of sound professionals. SoundHouse includes electronically cataloged and searchable music samples, editing and synchronization tools and automatic sound cueing.

SoundHouse is designed to integrate with most popular Win 95 and Mac/OS multimedia authoring programs.

For information, contact Airworks at (403) 424-9922 or circle Reader Service 71.

No manual required but we'll send you one anyway



If traditional audio production is analogous to walking, a digital audio workstation is the equivalent to flying.

Unfortunately, a lot of audio production software can seem like the equivalent of 747 cockpit controls: serious technoid overkill when you're just trying to get from point A to point B.

That's why we developed the Express™ software interface for our Prisma™ workstation hardware. So you can enjoy workstation speed and maneuverability instead of logging frustrating hours just trying to get the thing off the ground.

Express is the creative tool for radio broadcast production with a clean interface so simple that even your program director could learn it. Everything you need is on a single screen — cut/copy/paste buttons, snapping/grid controls, faders & pans, a transport that is very familiar, a pull-down sound library list, and the ever popular 10-level undo/redo. And the best part is, it works the way you work — quickly and intuitively. So you don't have to spend endless hours inside a manual deciphering cryptic icons, memorizing multiple keystroke combinations, and struggling with computerese.

Not that we cut out any feature you might need: we just took out all the stuff you hate about digital workstation software. Like nested menus, tricky hardware set-up, and way too many screens piled up on top of each other.

But Express isn't just some kind of "dumbed down" product. Lurking underneath this deceptively simple interface lies a tremendous amount of power and capability that allows you to accomplish even the most difficult editing tasks. Powerful tools like time compression/expansion, normalization and one-touch submix.

Prisma systems also work well in groups, with Internet-compatible network audio transfer between systems in different rooms or across the planet. You can even send a spot you've created in Express directly to one of several popular digital on-air delivery systems — all ready to play.

And if you really want to get going fast, we'll build you a complete turnkey Prisma system, so all you need to provide is some desk space and a power outlet.

So don't just sit on the runway reading the manual. Grab the controls and fly. Express for Prisma. Get it done while you're still young.



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Dave Green
Director of Production Services
Paxson Communications, Orlando



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Spirit Folio F1 Mixer

Spirit has the new Folio F1 mixer in 16/2 or 14/2 input configurations for small and medium mixing jobs.

The F1 features 100mm tapered faders, +48v phantom power and three auxiliaries with Aux Masters. Three-band EQ with sweepable midrange is featured on each mono channel, with two-band EQ on the stereo inputs.

The mixer is fully portable with a built-in handle, and specs out to 20 Hz - 30 kHz.

For information, contact Spirit by Soundcraft at (916) 888-0488 or circle Reader Service 61.



New Maxell Website

Maxell Corporation of America has launched its new website: www.maxell.com

The new site features product information on the company's line of tapes, memory cards, computer data storage products and batteries.

A company news page carries corporate developments and new product introductions and a comments area allows feedback with the company. Specific product information is available by clicking on the desired item.

For information, contact Maxell at (201) 703-2168 or circle Reader Service 63.

AEA Phasescopes

Audio Engineering Associates (AEA) has two versions of its Stereoscope LED-driven phase meters.

The LD 2020 is a portable stereo phase display.

A 400-LED display shows the phase relationship between L and R channels as normally seen on a CRT-style phasescope. The SS 220 is a rackmount version of the Stereoscope. The panel is designed to fit in 2 RU of space.

For information, contact AEA at (818) 798-9128 or circle Reader Service 60.

SHORT TAKE

Harris Launches A/D Converter

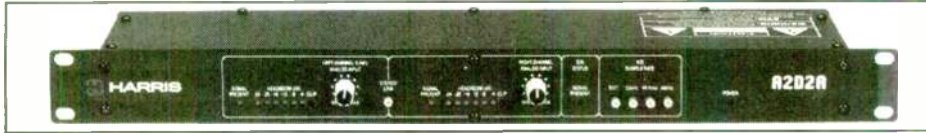
"This thing works like a hog!" Maybe it is not the kind of quote that ends up in an advertisement, but it is how KKDA-AM/FM's Paul Strickland praises the Harris A2D2A digital converter. His Grand Prairie, Texas, station took delivery of the new A/D-D/A converter last November and he is convinced it was the right decision.

KKDA uses the A2D2A as part of a T1 STL line. The unit converts studio program audio into an uncompressed 44.1 kHz data stream, then feeds the digital signal into an Intraplex T1 digital interface. The signal is reconstructed at the transmitter site.

Other stations such as KEX-KKRZ,

Portland, Ore., and WDVE-FM, Pittsburgh have also discovered the inexpensive, high-quality Harris device.

Applications include standalone A/D conversion for workstations, DAT recorders and digital multitrack recorders.



New from Harris: The A2D2A Converter

The 20-bit A2D2A has standard XLR and quarter-inch analog connectors and supports both AES/EBU and SPDIF formats. Three standard sample rates — 48, 44.1 and 32 kHz — are available and the

unit can lock to an external AES/EBU reference signal.

The front panel has been kept very simple, with two analog input controls, a stereo link button and four push buttons to select sample rate. Calibrated LED

indicators track input level. One front-panel LED confirms a digital signal is

present for conversion back to analog.

Input impedances are 20k ohm balanced, 10k ohm unbalanced. Signal-to-noise ratio is better than 95 dBFS on the input and better than 90 dBFS on the analog output. The A2D2A can perform simultaneous A/D and D/A conversions and factory specs claim 100 dB of A-weighted dynamic range in both signal paths. The 1 RU-high converter weighs under nine pounds and uses a line lump external power supply. The product is certified safe and CE ready for European use as well. Domestically, the Harris A2D2A is priced at \$599.

For information on the Harris A2D2A, contact Harris at (800) 622-0022 or circle Reader Service 58.

— Alan R. Peterson

Sound Forge Update

Read G. Burgan

To update my previous review on Sonic Foundry's Sound Forge 4.0, (Jan. 8, RW) the new version 4.0a is now available in four separate executable files that freshen the main program and the three primary Plug-Ins.

SF 4.0a solves the Pitch Shift problem described in my article. It enhances the Noise Reduction tool with a "Keep Residue" option that allows you to hear if any actual sound is being removed with the noise.

The graphs depicting Noise Reduction and Spectrum Analysis have been expanded to allow settings down to -120 dB and -150 dB respectively. This helps realize the results one should expect when working in the digital realm.

The Spectrum Analysis (SA) tool now provides real-time analysis during playback or recording. Plugging a microphone into your sound card lets you

audition the response of a speaker-room-microphone combination. Running the SA in real time is dependent upon the capabilities of your computer.

The new Cutlist feature allows instant deletion of a portion of a long file. Previously, processing a deletion of a small portion could take a minute or more.

RealAudio 3.0 support lets you create sound files for a Web site. Options allow stereo files on 28.8 KB modems and near-CD quality with ISDN or LAN connections. The update also supports sampling rates up to 96 kHz and shared presets with another computer. Version 4.0a requires SF 4.0 and all Plug-Ins you wish to update. If you have Sound Forge 4.0, access the download menu of Sonic Foundry's website at <http://www.sfoundry.com>

Once you have downloaded, execute each file to update the appropriate programs.



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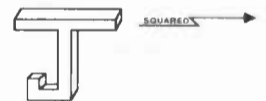
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READER SERVICE NO. 142

VT-1 Processor Is Real 'Boss'

Alan R. Peterson

There is a branch of technology I like to call "goodie-boxes" — fun, low- to mid-tech devices that we all love and want.

One such box ideal for the production person is the Boss VT-1 Voice Transformer from Roland. The RW Cool Stuff award went to the VT-1 this past Spring and the ubiquitous blue and orange box has been turning up in radio stations and project rooms ever since.

The VT-1 is not exactly a lab-quality sonic processor. It was intended specifically as a goodie-box and that is the way Roland demos it at the trade shows. This is the device to have when you want to give your voice a dose of whatever nature left out.

Voice only, please

The VT-1 was designed strictly for voice. This is borne out by the input frequency specs (62.5 Hz to 1 kHz). A pre-amp trimmer on the rear panel sets mic or line input level for incoming audio. A quarter-inch mic level output jack and a pair of RCA line out jacks send signals to the mixer.

Four faders on the front panel give you full control over Pitch, Formant, Mix and Reverb Level, all in real time. These are key reasons why this box is such a gas.

You need not be a programming genius to whip up the sound you want. The VT-1 faders appeal to the gadgeteer in all of us. Dragging them around while intoning "check, check, one, two, three" makes anyone smile.

Putting pitch changers into itty-bitty boxes is no longer a novelty. But in the past when it came to making adjustments on such boxes, the processing sounded artificial and sped up.

Roland gets around this with some slick circuitry that allows independent control over the degree of pitch change and the "formants" as well.

Formants are regions of frequency

emphasis determined by vocal cord size. This is why Lurch the butler sounds different from Goldie Hawn.

When conventional pitch shifters are used, pitch and formants are displaced simultaneously. By manipulating formants independently from pitch, the size of the "virtual vocal cords" are altered. Vocal quality changes while pitch remains the same.

This translates into airy feminine attributes or the rumble of a basso profundo without sounding demonically slow or cartoonishly sped-up.

You can drop or raise the pitch by



Boss VT-1 Voice Transformer

altering only the Pitch slider, ignoring the Formant control. You want chipmunks? Work them both.

A good-quality reverb is included in the VT-1 to complete the effect. It is a one-trick-only reverb with a mix level fader, but for a goodie-box it serves its purpose to satisfaction.

The VT-1 has a number of preset positions where favorite variations can be stored and recalled. Flashing red LEDs let you know when a fader position has been altered and the voice character has become different from the memory contents.

This new sound will not be stored to memory until the Write button is pressed. Be warned: There is no "are you sure" safety message on the Write button and it is extremely easy to overwrite a favorite

preset accidentally.

You can hit the Bypass button and cancel the Write operation if you realize you are about to make a mistake.

One-pitch wonder

Big bonus: the Robot button. Hit this and the VT-1 locks onto one pitch and remains constant for the classic "does-not-compute" effect. Use the Pitch slider to zero in on the voice you want.

Technically, the VT-1 is not a Sonovox, but the Robot button does a respectable impression of one without you having to learn sono technique.

How one reacts to the VT-1 is subjective and could be influenced by the job at hand. For ultra-serious production, the VT-1 may be too close to a toy.

Radio stations such as WFLS-FM, Fredericksburg, Va., bought one just for the fun of it. I am using one now as a post-production audio effect for local cable television programming.

However, Jack Daniel Productions of Potomac, Md., tried out the VT-1 and told

us, while lots of fun, the effect was unusable for the type of product they create.

Part of the reason is the device sounds somewhat "digital." Due to the artifacts remaining in a processed sound, nobody will be fooled into thinking James Earl Jones or the Smurfs just walked in. Roland intended for this to be a goodie-box, so it should be treated as such.

Jocks love toys, so they will naturally gravitate to the VT-1. They can create new comedy characters just by stepping around the presets in real time. A high-pitched baby can interact with Jabba the Hutt, ducks, bears and a Klingon computer without missing a beat. It goes without saying production people are going to have a field day with the device.

Spin a tape backwards through the VT-1 for Instant Exorcist. Have Tony the Tiger beat up Snap, Crackle and Pop. Use the VT-1 reverb when it is too much of a hassle to turn on the big box in the rack. For mono voice tracks, it is quite satisfactory.

You will keep coming back to the VT-1 for inspiration, silliness and to wow the Cub Scouts when they tour the radio station. The Boss VT-1 lists for \$395.

For information, contact Roland at (213) 685-5141 or circle Reader Service 59.

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We're All Going to Al in a Handbasket

Alan Peterson with
Alan Peterson

The person on the left is Al Peterson. The person on the right is also Al Peterson. Perhaps you know one or the other.

Left Al is RW's technical editor. Right Al is founder and president of Peterson Media Services. Both subjects are fundamentally linked through a common bond — radio — although they have never met in person. There are distinct qualities you should be aware of when dealing with either one.

There has been some confusion in the past when one Al has been congratulated for the efforts of the other. There have been no reports of any misdirected payment checks, but neither will admit to anything.

Probability

It is likelier you will encounter crowded roomfuls of air personalities all named Scott Davis or Jay Michaels than a mere duet of Al Petersons. Yet it is this "dual singularity," if you will, that makes this pair unique.

Someday you might meet one or both Al Petersons at a radio station or broadcast convention.

It is very important the two should never meet and shake hands; doing so could potentially annihilate the universe in a shattering submolecular implosion, but that is a subject better left to Star Trek scriptwriters.

One or the other may corner you someday at a seminar and you might slip up and say the wrong thing. Do not panic. Just relax, talk in a calm voice, scratch them behind the ear and let them get used

receiving satellite programming from Westwood One. Left Al once ran his own radio production and commercial studio in the Berkshire Mountains of Massachusetts.

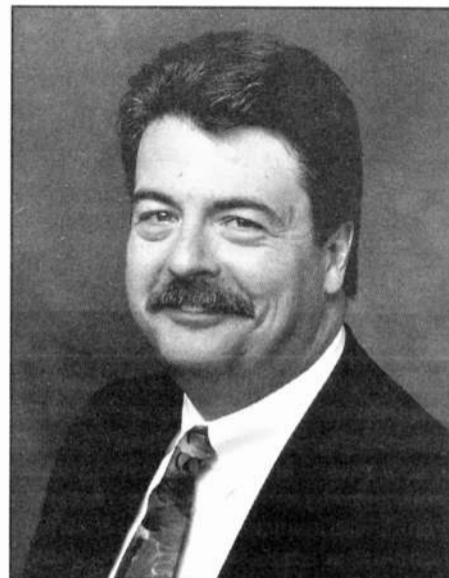


Alan Peterson, RW's Technical Editor

In charge

Left Al programmed two medium-market Northeast radio stations. Right Al was vice president of operations for PAR Broadcasting in San Diego.

Right Al has 25 years of broadcast and



Alan Peterson the Radio Consultant

music industry experience. Left Al has logged over 42,000 hours of studio time in stations big and small, both ill- and well-equipped.

Left Al wanted the e-mail address alpeterson@aol.com but Right Al got it first. Right Al is older than Left Al, or as Left Al gleefully points out, "Much, much older."

In spite of this, Right Al shows no signs of going gray. Left Al jealously wonders how he does it.

Right Al looks good in a mustache. Left Al looks like Sergeant Schultz of "Hogan's Heroes" in a mustache. Both think baggy eyes look sexy on a man.



The chin is the giveaway. Note the smooth chin on Right Al, while Left Al has a cleft chin, or as he puts it, "Popeye's little brother."

Watch for it.

Guys like Right Al tell guys like Left Al what they are doing wrong on the air. They use words like "reliability," "audience alienation" and "focused demographic appeal."

Guys like Left Al can sometimes be insecure about their performance and think guys like Right Al don't know what they are talking about. They use words like "when is the last time you did a show, buddy?"

Bury the hatchet

In the end, guys like Left Al and Right Al know they must work well with each other to create a successful radio station with common goals in mind.

That is what keeps successful radio stations competitive in an ever-volatile marketplace. Every indication shows it is bound to continue at an even more break-neck pace.

Both Als agree on this point. It is what keeps your stations from going to Al in a handbasket.

Left Al can always be reached at RW's office at (703) 998-7600. Right Al can be reached at (619) 486-7559 for advice.

Look, with a name like Al Peterson, he must be a decent guy.

to you. Then mentally go over the following:

Both Als were on the air in upstate New York during the 1970s. Left Al made it through Syracuse twice and Right Al was in Rochester. Both have been insulted on-air by Don Imus.

Both are prolific writers on the subject of broadcasting. Both are dashing handsome, incredibly modest and highly talented... or so they tell us.

Right Al helped found the Pollack Media Group and has worked with stations in the United States, Australia and New Zealand. Left Al can make air bubbles come out of his eyelids and juggle while standing on top of a circus elephant.

Right Al was the in-house affiliate consultant to more than 1,000 stations

PRODUCT EVALUATION

Software for SAW Creates Reverb

Bruce Bartlett

SAW (Software Audio Workshop) and SAW Plus by Innovative Quality Software (IQS) are sophisticated Windows programs for digital audio editing. Many SAW users have long wanted a reverb plug-in for the program, and finally it is here. FX Reverberator is a supremely well done addition to the product.

The module lets you create a huge variety of stereo ambiance effects in the SAW MultiTrack Window. If you wish, you can add a different type of reverb to each track. There are 29 presets of different room sizes, tonalities, and effects — each of which can be modified and stored for later recall.

How does it sound?

The quality of the reverb is exceptional: very smooth, no "spring reverb" effect. And you have control over a wide range of parameters.

The plug-in requires a Pentium 133 or faster, SAW v6.4 or SAW Plus v3.3 or

later and a 16-bit Windows-compatible sound card. This is for real-time playback of a 44.1 kHz stereo file. A Pentium 90 will handle a 22 kHz stereo file in real time.

To make a P90 do real-time processing of a 44.1 kHz stereo file, temporarily set the multitrack sample rate to 22 kHz. You can do destructive reverb on any computer using the SAW Process/Mixdown function to process the effect to a new sound file.

I reviewed the product using a Pentium 166 and a Card-D Digital-Only card by Digital Audio Labs.

How it works

To understand FX Reverberator, first we need to know about acoustic reverb.

Room reverberation is a series of echoes with mostly random timing. Reverb algorithms try to simulate this by mixing delayed signals with the original dry signal. When you add a signal to its delayed replica, you get a comb filter. This is a series of evenly spaced peaks and dips in the frequency response, caused by phase

cancellations.

In FX Reverberator, reverb is produced by a comb filter/all-pass filter model. Delayed signals cause comb filtering, and simulate early reflections. All-pass filtered signals cause time-smearing delays, and simulate reverberation.

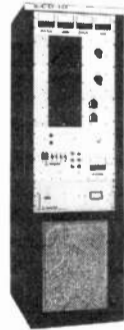
The program can create up to 20 comb filters and 20 all-pass filters. This remarkably high number of filters makes the reverb sound dense and smooth. Each delay tap has adjustable high-frequency rolloff and bandpass filtering, which affects the tonal balance of the reverb.

Installation is fast and easy. When it is done, the Reverberator program appears in the SAW Patch Builder Window.

The reverb controls first show up in a condensed view. Here you choose reverb presets, and set sliders for decay time, amount of dry signal, and amount of wet signal. Reverb processing happens in real time. You can change a parameter as the track is playing, and hear the change about two seconds later. Setting the

See SAW, page 47 ▶

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SAW Reverberator

► SAW, continued from page 46

Preload Buffer Queue to 2 may result in a faster response.

Reverb presets have names like Hall, Plate, Room, Gymnasium, Garage, Afterburn, and Warble Chamber. They are useful just as they are, but can be tweaked ad infinitum. Some sounds have a smooth decay, some have echoes and some are just plain bizarre.

When you press the Edit button, the view expands to reveal many more controls. You can set the delay, feedback, and frequency response of each comb filter and each all-pass filter.

A display shows each filter as a verti-

cal line. The height of the line indicates the amount of feedback and the distance from the left axis shows the delay of the filter. When you click the Response button, the display shows the impulse response of the reverb chamber you are hearing.

There are spaces to type in the upper and lower frequencies of a bandpass filter. The filter makes the chamber sound duller or brighter.

After you choose the chamber and its settings, you can build a mix of the soloed track and its wet signal. Place the effected output on its own track. That way, you can vary the amount of reverb dynamically by using the reverb track fader. Pan the reverb sound left or right, and fade it in and out. These actions do not destroy your original sound file.

Product Capsule:
IQS Reverberator Plug-in

<p>Thumbs Up</p> <p>✓ Quality reverb sounds ✓ Easy to install and use ✓ Wide variety of sounds ✓ Fully adjustable ✓ Smooth interface</p>	<p>Thumbs Down</p> <p>✓ None</p>
---	---

For more information, contact Innovative Quality Software at (702) 435-9077 or circle Reader Service 62

All actions in this interface feel smooth and intuitive. I found no bugs. The on-

line help is easy to follow, and has application notes on the effects of different parameters. In all, FX Reverberator is very well implemented. It is a standard that other software companies would do well to emulate. Price is \$299. Intro price for registered users is \$149.

Innovative Quality Software is at 4680 S. Eastern Ave. Suite D, Las Vegas, NV 89119. The web site is <http://www.iqsoft.com>

■ ■ ■

Bruce Bartlett is a mic engineer, writer and recording engineer, and the author of "Practical Recording Techniques" published by Butterworth-Heinemann. He can be reached at (219) 294-8388.



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Meter Bridge



Another IQS plug-in now available is the Meter Bridge, which gives users of SAW 6.x and SAW Plus the option of following levels on individual or multiple tracks.

Select between LED bargraphs or VU meter-style displays or a mix of the two. The meters retain the highest margin hit, even after playback is complete. This allows a quick visual reference of the overall mix level.

The Meter Bridge suggested price is \$199. Contact IQS at the number shown in the reverb story or visit the company website for more information.

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DIGITAL DOMAIN

Downside of Computerized Radio

Mel Lambert

While helping a chief engineer colleague of mine collect a replacement downlink interface for a satellite delivery service, we had the opportunity to compare notes on the reliability of modern broadcast hardware. Or, more appropriately, its non-reliability.

Mortality

It seems what should be sitting in the equipment rack year after year without a murmur is failing for a myriad of depressing reasons. Broadcast gear will break from time to time, but there are far too

many intermittent and catastrophic failures in far too short an in-use period.

My thoughts immediately went to tracking down possible causes. In general terms, the type of system I am alluding to are micro-processor-based units that manipulate data streams or implement signal processing.

The faults can range from something as trivial as a power supply failure to a strange intermittence that causes data to be lost for indeterminate — and totally random — periods of time.

When such a fault happens on a system feeding a rigidly formatted country music station, and manifests itself as a series of very distracting dropouts, it is time for the

test meter and some Bufferin.

The systems in question were from a reputable manufacturer and brand new. Here is what we surmised after a great deal of head scratching:

The design might have benefited from a longer burn-in period, allied with some attention paid to routine power-supply decoupling and capacitive smoothing at critical circuit points.

Our best conclusion was that the system designers simply had not done their homework.

Instead of evaluating the effects of their collective handiwork by leaving a prototype on the bench for a couple of weeks

(where the intermittent fault would have revealed itself), the product was signed off and passed to manufacturing.

Even when we encounter a product that has passed burn-in with flying colors, it can fail ungloriously within a short period of time. Some rack-mount signal processors we might utilize in the production studio often fall into this category.

I wonder if, in the chase to offer more bang for the buck, some firms are not overlooking the blindingly obvious.

Broadcasters are in the business of staying on the air 24 hours a day, seven days a week. Downtime ranges from seriously embarrassing for those of us with professional standards, to downright expensive; after all, no play, no pay.

This forces the question, why do some manufacturers shave a couple of bucks off a build-kit cost, when the result is a box that they have to spend additional time and money debugging and modifying? All to fulfill the job for which we purchased it in the first place?

Level of maturity

By now, microprocessor design and fabrication have reached a point where we can take for granted the device in question will perform consistently and reliably for an indeterminate period of time — given access, of course, to a reasonably clean power supply with not too many wild voltage swings.

All of us own desktop and portable computers that we know will be obsolete before we have to crack the case and search out a problem, for those of us brave enough to take a logic probe to such tightly packed board layouts, that is. Definitely not for the faint-hearted.

When was the last time you had to delve inside a printer to fix an electronic problem? This and just about every other piece of consumer and office electronics we purchase is cheaper and more reliable than ever before.

In general, manufacturers prefer happy and contented customers. That way, the repair department is obsolete and customers come back for more hardware from the same vendor.

Must I conclude that, in the rush to bring a new product to market, some firms shave pennies off development and manufacturing costs of a system that could cost us — and them — significant sums to correct after the event?

While price is obviously an important factor in the purchasing decision for any broadcast station, a far more important parameter is the return on our investment of money, time and human resources.

Anything that detracts from that bottom line, including having to chase all over creation looking for a replacement in the middle of the night, makes no sense to anyone. I rest my case.

Important caveat

This month's column is not based on a single incident, but rather on a series of mishaps and experiences I have been exposed to during the past several months.

To save embarrassment to both manufacturers and broadcast colleagues alike, I have condensed incidents and/or blurred the facts to throw you off any obvious blood trail. Still, I am sure the facts speak for themselves.

■ ■ ■

Mel Lambert is principal of Media&Marketing, a Los Angeles-based consulting service for the professional audio industry. Reach him at (818) 753-9510 or at mediapr@earthlink.net

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Radio World

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AMPLIFIERS

Want To Sell

Hafler DH-200 stereo pwr amp (2), 100 W per chnl, rackmount w/front-panel stereo level control, excel cond, \$285; Kenwood KA-5700 stereo amp & loudspeaker system, produces 40 W per chnl w/(4) Radio Shack Mimimus-7 loudspeakers w/mounting brackets, speaker cables & road case for all, complete system, \$345. R Streicher, Pacific A/V Enter, 545 Cloverleaf Way, Monrovia CA 91016. 818-359-8012.

Phase Linear 400 amp (2), working, \$250, non-working, \$50. D LeVan, Narwood Prod, 211 E 43rd St #603, New York NY 10017. 212-983-3320.

ANTENNAS/TOWERS/CABLES

Want To Sell

Jampro JSLP-20 2 bay FM, tuned to 99.3, BO; Phelps-Dodge CFM-HP10 10 bay FM, tuned to 99.5. R Siebert, KUTT, 414 4th, Fairbury NE 68352. 402-729-3382.

Andrew 1-5/8 EIA flange Helix connectors (2), \$100 ea. T Hodgins, KUJ AM, Rt 5 Box 513, Walla Walla WA 99362. 509-527-1000.

ERI 1105 3 bay 5 kW antenna, no deicers, BO. H Kneller, WZZS, 7891 Hwy 17 South, Zolfo Springs FL 33890. 941-637-7745.

Phelps-Dodge high pwr 10 bay FM on 99.5 MHz, vgc, \$4400. F Hoffmann, KXCC, 826 S Padre Island Dr, Corpus Christie TX 78416. 512-851-1725.

Phelps-Dodge 3 bay CP used for 6 kW, \$1500 FOB. C Jones, WMNY, 7620 Old #6 Hwy, Santee SC 29142. 803-854-6396.

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Want To Buy

12-bay antenna on 101.1 mHz, ERI preferred. L Soto, WRIO, POB 487, Caguas PR 00726. 787-744-3131.

AUDIO PRODUCTION

Want To Sell

Dolby 361 type-A NR, 2 chnls, mounted in sturdy road case, complete package, \$800; Optimus SCT-50 CD player/cassette recdr, in one compact deck, excel cond, \$300. R Streicher, Pacific A/V Enter, 545 Cloverleaf Way, Monrovia CA 91016. 818-359-8012.

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Neve 33114 discrete 3 band EQ modules w/mic preamps, avail w/custom rack mt & pwr supply at extra cost, \$1500 ea; Pultec MEQ-5 (2) rack mount tube EQ's, excel cond, \$1700 ea; Pultec EQH-2 full range tube EQ, (2) space rack mt, excel, \$2400; Lexicon Prime Time digital delay, \$500; McIntosh 2105 Solid State audio amp, 105 W per chnl, \$650; Dolby 361 (2) single rack space NR units w/Dolby A cart, \$250 ea; Ramsa 8118 mixing board, 18 chnl, 4 Buss board, vgc, \$900; Westlake BBSM-4, Nearfield monitors, perfect cond, \$1200. G Guarino, Sorcerer Sound Studios, 19 Mercer St, Nyny 10013. 212-226-0480.

Eventide 1945M digital delay w/flanger & pitch control, \$200. S Ross, Gold Star Studios, POB 2141, N Hollywood CA 91610. 213-849-5137.

JBL 4410AL studio reference monitor speaker, practically new w/original box/papers, \$280. R Evans, WPFJ, POB 1335, Franklin NC 28734. 704-369-9196.

Orban 621B parametric EQ, \$495; Orban 424A comp/de-esser, \$695. F Hoffmann, KXCC, 826 S Padre Island Dr, Corpus Christie TX 78416. 512-851-1725.

Symetrix 528 mic signal processor, low noise, downward expander, compressor/limiter, wide dynamic range, de-esser, voltage controlled amp, parametric EQ/notch filter, rack mountable, \$475; Behringer EX3100 Ultratex II multiband snd enhancement processor, \$250; Lexicon Alex sound effects processor, \$275. G Beckmann, B-Mann Prod, 24 Alta St, Glen Carbon IL 62034. 618-920-8989.

JBL 4333A 15" speaker, \$950/pair; Vintage recond tube mic pre's & mixers, \$300-\$700; ADC new patch bays, 1/4" 52 points, \$169; ADC TT bays, \$129 up; ADC new TT or 1/4" TRS cords, \$9; Furman 1/4" to 1/4" patchbays, \$95 ea; like new tape, 1/2"x2500' 456, \$15 ea; 1" 456, 226, 250, \$25 ea; Rane ME15 graphic EQ, \$150; Digitec 3.6 sec delay, \$150; new pwr dist/filter rack mt, \$75. W Gunn, Box 2902, Palm Springs CA 92262. 619-320-0728.

Want To Buy

Lang, Pultec, Sontec EQ's. R Fuelle, Hit Single Recdg, 1935C Friendship Dr, El Cajon CA 92020. 619-258-1080.

Tascam or Otari 2 or 4 trk r-r's, slider stereo on-air consoles, mono cart machines, etc, in excel cond. B Lang, Media Arts Ctr, Media Park, 130 Birdseye Rd, Farmington CT 06032. 1-800-887-2346 or fax 860-677-1141.

Compressors & EQ's, tube & solid state. W Gunn, Box 2902, Palm Springs CA 92262. 619-320-0728.

AUTOMATION EQUIPMENT

Want To Sell

SMC 452 Carousel, \$300; Schafer 903E parts; SMC pwr supplies, \$100. D Rose, KDUC, POB 432, Barstow CA 92312. 619-256-2068.

CART MACHINES

Want To Sell

Fidelipac CTR 124 stereo R/P, like new, \$1500/BO. Jeff, KTKK, 2470 N Fairfield, Layton UT 84047. 801-771-4171.

Tapecaster 700 play in gd cond, \$125. A Ishkanian, 9091 N Congress St, New Market VA 22844. 540-740-4630.

BE Series 2000 R/P, mono, excel cond, \$250. T Hodgins, KUJ AM, Rt 5 Box 513, Walla Walla WA 99362. 509-527-1000.

Harris Criterion 90-3 3 deck, mono (2); also one stereo RP & 1 stereo play, BO. H Kneller, WZZS, 7891 Hwy 17 South, Zolfo Springs FL 33890. 941-637-7745.

ITC Delta - new pinch rollers: Mono playback (2), record/play (2), stereo record/play (1). MOTIVATED! Spotmaster series 2000 record (1). Wes, 818-798-9128.

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ITC record amps, 3 tone, stereo, \$250 or mono \$150. W Gunn, 619-320-0728.

Want To Buy

ITC 3D stereo PB cart machines. J Torsitano, K-Love Radio Network, 1425 N Market Blvd #9, Sacramento CA 95834. 916-928-1515.

Streight Wire Audio program cards for ITC cart machines, also need any diagrams or documentation on these cards. M Friend, WNRN, 2125-L Ivy Rd, Charlottesville VA 22903. 804-971-4096.

ITC, BE, Fidelipac cart machines: single, triple, mono, stereo, play & record/play. Call M O'Drobinak @ 619-758-0888.

COMPUTERS

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DigiDesign Session 8 digital editing station, 2 yrs old in like new cond. MacIntosh version, w/all hardware. 8 chnl digital rec, 16 inputs, effects inputs, analog/digital output, waveform editing, also has complete MacIntosh setup w/PowerBook Duo 230 w/DuoDock, 14" Apple color monitor, 1GB Micropolis external HD, keyboard & mouse, \$5200. G Beckmann, B-Mann Prod, 24 Alta St, Glen Carbon IL 62034. 618-920-8989.

CONSOLES

Want To Sell

BE 4M50 4 chnl mono, great cond, avail after 12/15/96, presently in service. \$250. P Deen, WAJQ, 208 Douglas St, Alma GA 31510. 912-632-1000.

BE 8M150 8 chnl mono, gd cond, \$650; Fostex 350 8 chnl stereo mixer, \$300. P Deen, WAJQ, 208 Douglas St, Alma GA 31510. 912-632-1000.

Harrison MR4 32/24 w/diskmix automation, excel cond, non-smoking environment, \$30,000. P Sample, Paradise Sound, POB 410, Index WA 98256. 360-793-2614.

Realistic 32-110A stereo mixer, 5 chnls, VU meters, AC/DC, \$60. B Kidd, Video Prod, 1605 Lamy Ln Ste B, Monroe LA 71201. 318-322-6600.

Shure mixer, \$400. T Balistreri, SportsRadio, 1801 Coral Dr, Waukesha WI 53186. 414-784-2863.

Spirit Live/4, 12x4x2 w/2 addtl stereo inputs & 5 aux busses, custom modifications, excel cond, \$1600. R Streicher, Pacific A/V Enter, 545 Cloverleaf Way, Monrovia CA 91016. 818-359-8012.

Auditronics 218, (4) stereo P/G 201-SL1 faders, \$500/ea/BO B Jeffries, WQOL, POB 0093, Port St Lucie FL 34985 561-335-9300.

McMartin MX-5 5 input mixer, similar to Shure M-67, excel cond, \$125. D Meyer, 805-962-8273

Sound Workshop 40 modules A Polhemus, Excalibur Sound, 750 8th Ave, Nyny 10036. 212-302-9010.

Spotmaster 8 chnl stereo audio console, \$850; Spotmaster 5 chnl stereo audio console, \$550. F Hoffmann, KXCC, 826 S Padre Island Dr, Corpus Christie TX 78416 512-851-1725.

Tascam M5, \$350; M35, \$400; (2) Sescom 4 chnl -10/+4 line amps, \$50. D LeVan, Narwood Prod, 211 E 43rd St #603, New York NY 10017. 212-983-3320.

Soundcraft 600, 32x16, w/patch-bay, mint, \$6950; Tascam 512, 12x8 mixer, \$750; Tascam 520, 20x8x16 mixer, \$1750. Allen & Heath SYNCON 28x24, great sound, \$8000; Ramsa 820 mixer, \$2200. W Gunn, Box 2902, Palm Springs CA 92262. 619-320-0728.

Want To Buy

Collins Audio Rock 10 for parts or complete console. T Hodgins, KUJ AM, Rt 5 Box 513, Walla Walla WA 99362. 509-527-1000.

Manual & diagrams for Cetec Sparta A-20-B. J Reichard, WIAV-TV, 7501 Greenway Ctr Dr, Greenbelt MD 20770. 301-345-2742.

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JBL E-120 12" replacement speaker designed for guitar (2), excel, \$150/pr/BO. R Evans, WPFJ, POB 1335, Franklin NC 28734. 704-369-9196.

Master Labs crossovers (2), \$70/both; (2) Altec 604 utility cabinets, gray, \$50/ea +shpg. S Ross, Gold Star Studios, POB 2141, N Hollywood CA 91610. 213-849-5137.

Portable DJ outfit, \$1000; (4) large instrument speakers, \$100 ea. D Rose, KDUC, POB 432, Barstow CA 92312. 619-256-2068.

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Moseley 5CG-3T stereo gen, \$300. P Deen, WAJQ, 208 Dougins St, Alma GA 31510. 912-632-1000.

Orban 245E stereo synthesizer, excel cond. J Gelo, 941-642-6899.

Aphex II aural exciter, balanced outputs, like new, \$250. T Hodgins, KUJ AM, Rt 5 Box 513, Walla Walla WA 99362. 509-527-1000.

dbx 166 limit/comp/gate, \$200; 8 chnl dbx 155 NR, \$250; (2) Eventide Omnipressor, \$300; Orban 3 chnl de-esser, \$200. D LeVan, Narwood Prod, 211 E 43rd St #603, New York NY 10017. 212-983-3320.

Hnat Hinds TriMaze stereo FM limiters (2), recently factory recond. BO. H Kneller, WZZS, 7891 Hwy 17 South, Zolfo Springs FL 33890. 941-637-7745.

Howe Phase Chasers (3), \$280 ea. F Hoffmann, KXCC, 826 S Padre Island Dr, Corpus Christie TX 78416. 512-851-1725.

Want To Buy

dbx 160, 165; UREI 1176, 1178; RCA BA-6A, Neve 2254, 2264 compressor/limiters. R Fuelle, Hit Single Recdg, 1935C Friendship Dr, El Cajon CA 92020. 619-258-1080.

Valley 440 limiter. A Polhemus, Excalibur Sound, 750 8th Ave, NYNY 10036. 212-302-9010.

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Countryman TVH tie-clip mic, miniature hypercardioid condenser, requires phantom pwr, \$165; AKG D-140 dynamic cardioid mics (3), \$115/ea; Schoeps Colette KC5L cable w/connector & adaptor, like new cond, \$335. R Streicher, Pacific A/V Enter, 545 Cloverleaf Way, Monrovia CA 91016. 618-359-8012.

EV RE38N/D N/DYM studio cardioid dynamics (2), 16 EQ positions, internal breath filter, internal Dyna-Damp shock absorption, extremely low noise, new in orig cases, \$295/ea +shpg. M Carroll, Southern Bdct Engrg, 220 Beverly Dr, Madison TN 37115. 615-741-2277 or 615-353-7891.

Shure SM-7 cardioid dynamic studio mic, like new, \$275. J Ellingson, Jeff Ellingson VoiceOvers, 923 Barnett Dr, Cedar Falls IA 50613. 319-277-8535.

Samson wireless system, like new w/documentation, Shure SM58 & SR-33, \$350; EV RE-20 studio mic, suspension shock mnt & desk mnt/mic arm, \$415. G Beckmann, B-Mann Prod, 24 Alta St, Glen Carbon IL 62034. 618-920-8989.

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77DX & 44BX mics, N.I.B. will pay 2000+; also interested in on-air spares, will pay \$400. L Drago, WELI, POB 85, New Haven CT 06501. 203-230-5255.

Triad HS-1, HS-25, also UTC HA-105, HA-106. L Blackmon, Requin Audio, Hillcrest Rd #10, Medfield MA 02052. 508-359-1796.

RCA 77-DX's & 44-BX's, any other RCA ribbon mics, on-air lights, call after 3PM CST, 214-271-7625.

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Middle Atlantic Prod SLIM 5 audio equip rack, flat blk finish, like new, \$350. G Beckmann, B-Mann Prod, 24 Alta St, Glen Carbon IL 62034. 618-920-8989.

Telfax TFX 30 sports mixer, \$350; Nikko AM-FM tuner, \$50; 1929-1945 vintage AM radio collection, \$800; Delta Lab DLA effect-delay, \$200; Fostex EQ, \$100. D Rose, KDUC, POB 432, Barstow CA 92312. 619-256-2068.

Various gospel albums, approx 600, \$300 FOB. C Jones, WMNY, 7610 Old #6 Hwy, Santee SC 29142. 803-854-6396.

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Heco 3-way studio monitors, \$250. D LeVan, Narwood Prod, 211 E 43rd St #603, New York NY 10017. 212-983-3320.

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Scully 280, \$250; Scully 280B, \$400; Technics RS1500, \$300. D LeVan, Narwood Prod, 211 E 43rd St #603, New York NY 10017. 212-983-3320.

Vintage Ampex PR10-2, 350-2, 351-2, 354-2, 300-2 tape recorders; also MCI, Otari, Ampex, etc. J Price, Prices Recdg Studio, 2651 Globe Ave, Dallas TX 75228. 214-321-6580.

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Otari MX70's 16 trk 1", mint, 150 hrs w/video layback system, \$6950; Tascam ATR60-2 in stand, \$1200; Tascam ATR60-8, \$2750; Tascam 58 8 trk, \$1950; Tascam 38 8 trk, \$1650; Otari 5050-8 Mk III, \$2200; Ampex 440C-8 1", \$2900; Ampex 1200 PURC cards, \$400 ea; nakamichi 550 portable cassette, \$250; Custom locator for ANY deck, \$495. W Gunn, Box 2902, Palm Springs CA 92262. 619-320-0728.

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Technic RSM-65, RSM-85 & RSM-95 rack mount cassette decks. J Diamond, Blue Diamond Co, 290 Chubbick Rd, Canonsburg PA 15317. 412-746-2540.

Manual & schematic for a Tascam 352B. T Hodgins, KUJ AM, Rt 5 Box 513, Walla Walla WA 99362. 509-527-1000.

Ampex ATR100 taperecorders for parts. Circuit cards, heads, motors, machine parts, or electronic parts. Call 818-907-5161.

Ampex machines, record electronics, mixers. W Gunn, Box 2902, Palm Springs CA 92262. 619-320-0728.

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TURNTABLES

Want To Sell

Russco Studio-Pro w/Micro-trak tonearms. Stanton cart. \$100 ea; Russco Micro-trak preamps. \$50 ea. D Rose, KDUC, POB 432, Barstow CA 92312. 619-256-2068.

Technics SL1200 w/Stanton cart. \$350; KLH/Burwen TNE/DNF NR system. \$300; Dual 721 w/cart. \$100. D LeVan, Narwood Prod, 211 E 43rd St #603, New York NY 10017. 212-983-3320.

Technics SP15 TT; SME 3012R tonearm. J Hartt. 2418 36th Ave West. Seattle WA 98199. 206-282-0720.

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ACTION-GRAM

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Radio World's Broadcast Equipment Exchange provides a FREE listing service for radio stations and recording studios only. All other end users will be charged. Simply send your listings to us, following the example below. Please indicate in which category you would like your listing to appear. Mail your listings to the address below. Thank you.

Please print and include all information:

Contact Name _____
Title _____
Company/Station _____
Address _____
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Zip Code _____
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I would like to receive or continue receiving **Radio World** FREE each month. Yes No

Signature _____ Date _____
Please check only one entry for each category:

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- D Combination AM/FM station
 - A Commercial AM station
 - B Commercial FM station
 - C Educational FM station
 - E Network/group owner
 - F Recording Studio
 - K Radio Station Services
 - G TV station/teleprod facility
 - H Consultant/ind engineer
 - I Mfg. distributor or dealer
 - J Other

- II. Job Function**
- A Ownership
 - B General management
 - C Engineering
 - D Programming production
 - G Sales
 - E News operations
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Make: _____ Model: _____
Brief Description: _____
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WTS WTB Category: _____
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*Closing for listings is every other Friday for the next month's issue. All listings are run for 2 issues unless pressed for space or otherwise notified by listee.

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TRANSMITTERS

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Harris MS-15 FM exciter, \$1350. Kathleen Cherrier, Vital Music, 352-669-2098 or 1-800-796-2941.

Gates FM 5 K in gd cond, used as stand-by, \$6000. T Hodgins, KUJ AM, Rt 5 Box 513, Walla Walla WA 99362. 509-527-1000.

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400 Watt	\$13,171
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- 2.5KW FM Collins 831D-2. \$8,500.00. Includes exciter.
- 12KW AEL 12KD. \$6,500.00. No exciter included.
- 2.5 KW FM Harris FM2.5H. \$9,600.00. Includes exciter.
- Broadcast Electronics FX30 exciter. \$2,000.00.

call Tyler, Jim, or Steve
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CCA AM 5000D 5 kW, 1 kW cut back, 3CX2500F3 final two 4CX3000A modulators, excel cond, \$12,500 FOB; Kintronics 1 kW AM cutback to 500 & 200 W, adjustable, \$500 FOB. C Jones, WMNY, 7610 Old #6 Hwy. Santee SC 29142. 803-854-6396.

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QEI 695T3.5
FM TRANSMITTER
\$6000.00
1-800-678-4762

New McMartin 20 W. BFM-8000 FM exciter, New McMartin IBM1005D FM relay rebroadcast rxvrs, also some used McMartin B910 exciter 15W. Goodrich Ent., 11435 Manderson St., Omaha, NE 68164. 402-493-1886 fax 402-493-6821

Wilkinson FM-1000E w/SGC stereo gen & FMR 10 exciter on 106.1 MHz, \$1600. F Hoffmann, KXCC, 826 S Padre Island Dr, Corpus Christie TX 78416. 512-851-1725.

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HARRIS 10H
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50 kW RF components in gd cond, inductors, at least 12 microhenrys at 50 amps, capacitors, 500 pF, 15 kV at 50 amps vacuum fixed or variable, RF contactor rated at least 80 amps, 30 kV, 220 V coils or complete 50 kW ATU. G McLintock, WNQM, 1300 WWCR Ave, Nashville TN 37218. 615-255-1300.

1 kW FM xmtr needed by community station on limited budget. M Friend, WNRN, 2125-L Ivy Rd, Charlottesville VA 22903. 804-971-4096.

CCA 1000D AM crystal 1110 kHz, buy or trade for 1080 kHz; CCA 1000D AM mod transformer, L Maierhofer, WQHG, Fairgrounds Rd, Huntingdon PA 16652. 814-643-9620.

CSI T-1F or Harris/Gates FM1G/H/K. D Davis, 1217 Valencia NE, Albuquerque NM 87110. 505-255-2431.

McMartin AM/FM xmtr, any model, exciter or stereo modules. Goodrich Ent., 11435 Manderson, Omaha NE 68164. 402-493-1886.



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5 KW FM 1969 RCA BTF 5D	10 kW AM 1974 CSI T-10-A
10 KW FM 1965 Collins 830F1	10 kW AM 1980 Harris MW-10
10 KW FM 1970 Harris FM 10H3	10 kW AM 1976 Continental 316F
10 KW FM 1976 RCA BTF 10E	25 kW AM 1982 CSI T-25A
20 KW FM 1975 Harris FM20K	50 kW AM 1978 Harris MW50C3 (1100 KHZ)
20 KW FM 1974 Collins 831G2/Cont 816R2	50 kW AM 1978 Continental 317C-1
20 KW FM 1967 Collins 830H-1B	50 kW AM 1973 Continental 317C
25 KW FM 1980 Harris FM25K	50 kW AM 1981 Continental 317C-1
	50 kW AM 1982 Harris MW-50B

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Lance Saylor,
General Manager, KKOW AM/FM,
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Prettyman Broadcasting Co. seeks Chief Engineer for 4 FM's and 2 AM's on Maryland's Eastern Shore near Ocean City. Maintain 2 remote transmitters (FM) plus 3 studio/transmitter sites. Vehicle and good benefits including 401 (K). Locally owned and operated group broadcaster. EOE. Contact: Bill Prettyman, POB 909, Salisbury MD 21803
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space availability
contact Simone
at
1-703-998-7600

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CE seeks AM/FM/TV station contract employment, exper CET, FCC licensed, resume upon request, prefer NE. M Rakoff, 81-12 Roosevelt Ave #413, Jackson Heights NY 11372. 718-591-3859.

Graduate, announcer/producer, stuck in a position in OKC, ready to get back into the real stuff, exper at several stations, air check & resume ready to be sent. Brian, 405-642-3276.

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Seeking position as assistant program director/on air talent, college degree & exper in all phases of radio field, for tape & resume call Herb Brown, 904-384-1259.

Big, friendly, adult voice, nice guy too, will add class to your station. News anchoring, production, air shift, board operation also maintenance. Alex, 513-777-8423.

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Any individual can run a "Position Wanted" ad, FREE of charge (25 words max), and it will appear in the following 2 issues of Radio World. Contact information will be provided, but if a blind box number is required, there is a \$15 fee which must be paid with the listing (**there will be no invoicing**). Responses will be forwarded to the listee, unopened.

Mail to: **BROADCAST EQUIPMENT EXCHANGE**,
PO Box 1214, Falls Church, VA 22041 Attn: Simone Mullins

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International: Stevan B. Dana	+1-703-998-7600 Fax: +1-703-998-2966
Latin America: Alan Carter	+1-703-998-7600 ext 111 Fax: +1-703-998-2966
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World Radio History

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A-500 Studio Furniture delivered March 1993
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A-6000 Console S/N 22536 delivered March 1995
R-16 Console S/N 22557 delivered March 1995
SP-5 Console S/N 22593 delivered April 1995

1995 Academy of Country Music Award
1995 Marconi Country Music Award
1995 Billboard Country Music Award
1995 Country Music Association Award
1995 Country Music Association SRO Award
1995 Gavin Country Music Award
1996 Gavin Country Music Award
1996 Academy of Country Music Award

Wheatstone Model A-6000 Audio Console shown

 **Wheatstone Corporation**
tel 315-452-5000 / Syracuse, NY.

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World Radio History