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 TUCSON AZ 85710 7905

**Finding the Code**  
 Mel Lambert ponders an EBU  
 report on Internet audio codecs.

**A Clock for ATR 1170**  
 ARP checks in with a status report on his  
 micro-power AM station.

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# Radio World

The Newspaper for Radio Managers and Engineers

November 8, 2000

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▼ Which parts of which DAB systems have survived the iBiquity merger?

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▼ It's fall show season, and new products abound.

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▼ Special Focus on Formats: What's hot and why.

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### STUDIO SESSIONS



▼ RW tries out the Creative Labs Nomad Jukebox and Native Instruments' Reaktor 2.3 Software Synthesis.

Inside

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## NEWS ANALYSIS

# Stations Look Beyond Associated Press Outage

by Randy Stine

**WASHINGTON** A failure of the Associated Press satellite distribution system this summer has some radio stations re-evaluating alternatives for

ware to satellite receivers on AP's Ku-band system.

Three thousand radio stations and another 1,000 TV affiliates lost AP audio and wire services. The incident was the largest failure of AP's satellite distribution system in the 20 years AP has used satellite delivery. Ninety percent of AP's customers in the United States were affected — some for as long as five days.

### Backup

AP immediately used various backup measures, including delivery via e-mail, faxes and Internet audio delivery. Extra ISDN dial-up service was made available and AP hourly newscasts were fed over ABC and CBS satellite channels



Photo by Chris Boone

AP Ku-band receiver from Clear Channel Dallas station KDMX(FM) on the morning of the AP crash

backup delivery. Meanwhile, AP says it will change its procedures and never again conduct a simultaneous upgrade to the satellite distribution system.

The disruption in August occurred during the downloading of new soft-

“We used as many alternatives as were available to us,” said John Reid, AP's vice president of technology. “We used the Internet sites, a few of which were still under development,

See OUTAGE, page 6 ▶

# Fighting LPFM on the Subcarriers

## Debate on Capitol Hill Raises Profile of Reading Services for The Visually Impaired

by Leslie Stimson

**ROANOKE, Va.** The national argument over low-power FM radio has put a spotlight on a small, dedicated group of narrowcasters that have long worked in radio's back-ground.

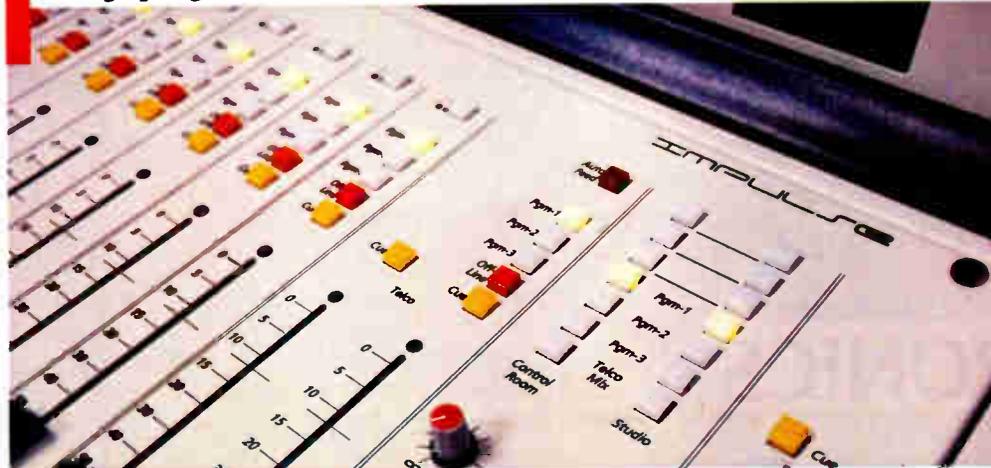
The International Association of Audio Information Services, which represents most of the country's reading services for the visually impaired, has taken a prominent role in the volatile dispute over the creation of a new class of low-power FMs favored by the Kennard FCC.

That dispute was carried to Capitol Hill, where legislation to restrict LPFM was being considered as the 106th Congress neared adjournment.

The IAAIS joined National Public

See SCA, page 5 ▶

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# ◆ NEWSWATCH ◆

## Scarce Spectrum For Wireless Devices

**WASHINGTON** As the Internet expands from the PC into Web-enabled wireless devices, spectrum scarcity has emerged as a big "gating factor" in the New Economy. That's what FCC Chairman Bill Kennard told attendees of a private wireless industry group meeting in October.

"We are in danger of suffering a 'spectrum drought' in our country," said Kennard. "From my vantage point, everybody seems to have a different solution."

While spectrum auctions have made it possible for the agency to allocate spectrum more quickly and efficiently, he said, there's more to be done.

Wireless devices use approximately 15 percent of the spectrum, with some 13 million transmitters and 1 million wireless licensees.

According to some estimates, he said, the United States would need as much as 300 MHz of additional spectrum to meet the demands of the wireless Web. Kennard encouraged attendees to help the agency find ways to encourage secondary uses for underused spectrum to create an emerging market as there is for wireline bandwidth.

## NAB, RTNDA Fight, Win on Political Rules

**WASHINGTON** Just before the election ad season began in earnest, the personal attack/political editorial rules were on, temporarily off, and then finally repealed in October.

FCC Chairman Bill Kennard said the commission intends to study the public interest obligations of broadcasters in the digital age, including whether the personal attack/political editorial rules should be reinstated.

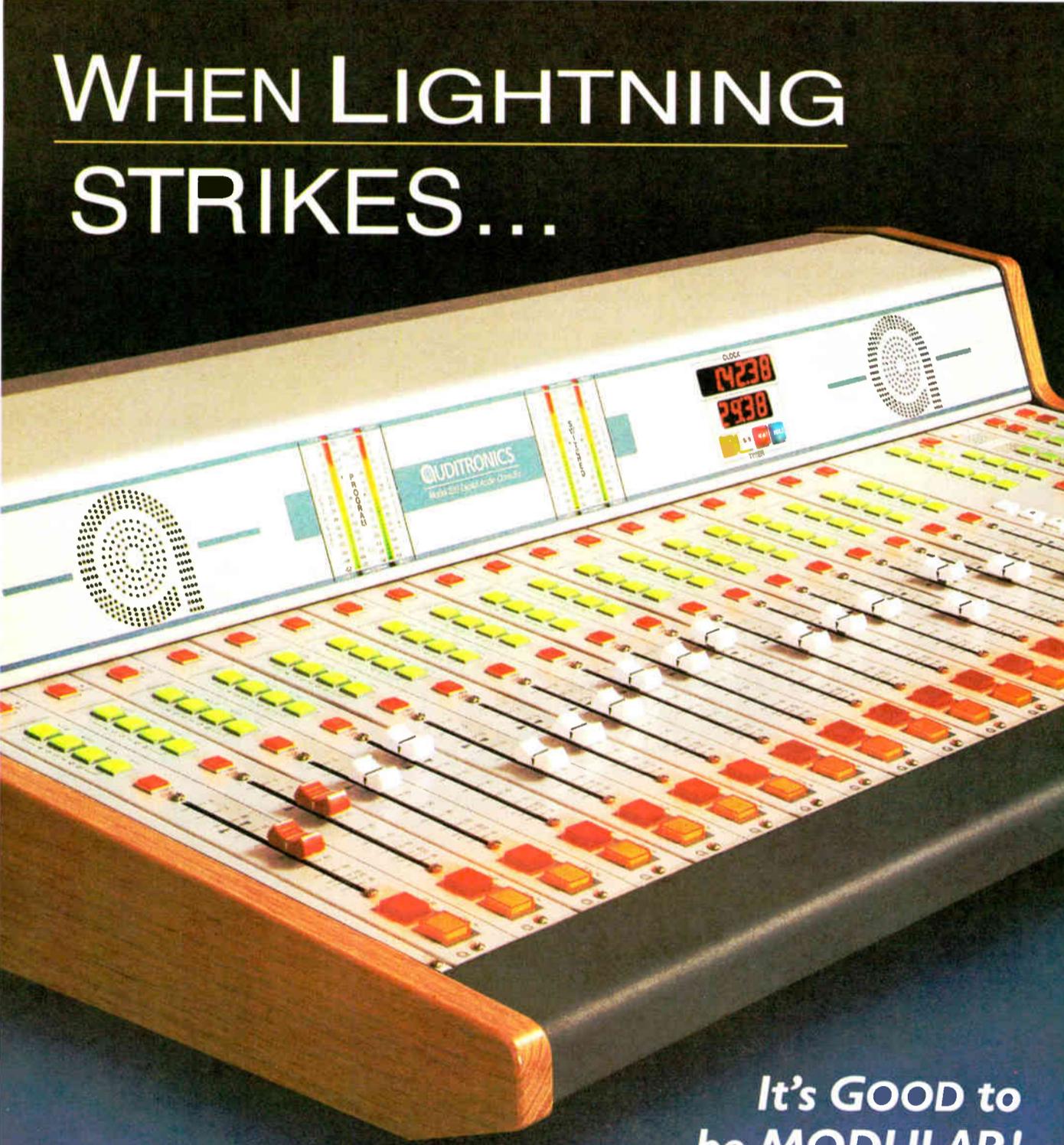
He was disappointed when an appeals court ordered the FCC to repeal the rules in October.

NAB and RTNDA were ecstatic. "This decision represents an historic victory in the 20-year fight to gain broadcasters the same free speech rights as print journalists," said NAB President/CEO Eddie Fritts.

The court ruling came days after NAB and RTNDA filed an "emergency motion" with a federal court asking justices to order the commission to revoke the rules.

Fritts said it was clear from the decision "that future FCC attempts to regulate free speech would be viewed with skepticism."

The FCC had temporarily suspended. See NEWSWATCH, page 3 ▶



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### OPINION

## DIGITAL NEWS

# iBiquity System Now Merged

by Leslie Stimson

The broadcast system that iBiquity Digital Corp. will pitch to the U.S. radio industry in coming months will use a blend-to-analog fallback approach and incorporate PAC as its codec.

These are among the important technical decisions made this fall during a two-month crunch of meetings and discussions.

The meetings were necessary after USA Digital Radio and Lucent Digital Radio agreed to merge their IBOC DAB efforts into iBiquity.

With only one proponent left, the industry is getting a sense of what the resulting in-band, on-channel digital audio broadcasting system would look like.

## Come together

iBiquity has made the main technical decisions needed to meld two separate digital radio systems into one, and has presented more details to the standards body, the National Radio Systems Committee.

Its system retains the USADR's blend-to-analog fallback and incorporates the former Lucent Digital Radio's Perceptual Audio Coder. While LDR's multistreaming method of splitting the signal into several "streams" to better ensure audio fidelity is not used in its entirety, elements have been incorporated into the merged system.

Although iBiquity still is tweaking its AM, FM digital and hybrid systems, the basic technical elements have been decided. Not all specifics have been released because some of the technology is subject to patent approval.

The AM and FM iBiquity system uses blend-to-analog as a fallback at the edge of a station's coverage area, and for quick tuning.

The FM system has dual redundant sidebands with a full copy of the digital audio on both. Each of those sidebands occupies 70 kHz bandwidth. The system uses a scalable version of iBiquity's perceptual audio coder, PAC,

as the codec. The audio data rate for the FM is 96 kilobits per second.

The AM system uses the blend-to-analog as a backup and for instant tuning. It also uses a scalable version of PAC as the audio codec. The system has dual redundant sidebands and occupies a total of 30 kHz of bandwidth. That's a change from the previous 20 kHz.



iBiquity displayed this Visteon unit receiving a live IBOC signal and displaying IBOC's data capabilities at The NAB Radio Show

iBiquity Vice President of Broadcast Engineering Glynn Walden said the company made the change primarily to reduce interference to the analog signals. The audio data rate for the AM system has yet to be released.

Elements of the USADR and LDR approaches have been incorporated into the iBiquity system. Among them is a scalable codec that's based on multi-stream principles.

"The scalable codec is used in the AM and FM all-digital modes, and is also incorporated into the hybrid modes," Walden said.

The scalable codec is needed in the all-digital mode, in which the system instantly tunes to the core audio and delivers digital quality after full acquisition. That acquisition occurs after an interleaver delay of three to four seconds.

Both AM and FM systems incorporate a data stream similar to the approach used in the RBDS.

Walden said the company has given the NRSC enough information to restructure its lab, field and subjective tests. NRSC sources agreed. The standards body is revamping the tests to account for the fact that it is testing only

one system, rather than one from the former USA Digital Radio and another from the former Lucent Digital Radio.

iBiquity and NRSC subcommittee

members appear to agree on how the lab, field and subjective tests should be crafted and at least one NRSC subcommittee member expressed pleasure with the company's cooperation.

Data collection would focus on real-world use of subjective listening by consumers, with direct comparison with analog performance under various propagation and channel interference conditions.

The merged system represents two months of intense work by iBiquity engineers, who could not begin to share information until the merger between USADR and LDR had closed.

"I have to credit the technologists for getting it done in a timely manner," said Walden.

Milford Smith, chairman of the NRSC's DAB Subcommittee, said he enjoyed seeing staff from USADR and LDR "on the same side of the table, and able to speak openly." He credited them with having a "great spirit of cooperation and the realization that now's the time to bring this to a conclusion."

Time is of the essence, in order to get the system evaluated and deliver results to the commission, which has been monitoring the NRSC's progress.

The NRSC has stepped up its meeting schedule to complete the evaluation. It has several meetings slated through mid-November, when it hopes to adopt the final test procedures.

An independent third party, likely the Advanced Television Technology Center in Alexandria, Va., would conduct the tests.

## NEWSWATCH

► NEWSWATCH, Continued from page 2 but did not repeal, the rules earlier in the month.

In their decision, D.C. Circuit Court of Appeals Judges Judith Rogers and Chief Judge Harry Edwards said the suspension just postponed a final decision on the issue by the FCC, and said it was "folly" to "suppose the 60-day suspension and call to update the record cures anything."

The suspension was to have lasted until Dec. 3 to give the agency time to gather further public comments on the rules.

At the time, the FCC said stations that want to editorialize in favor of or oppose to a political candidate or air material that may come within the scope of the personal attack rule could do so temporarily "unfettered by what broadcasters claim have been the confining restraints of these two rules."

The FCC also sought public com-

ment from groups and individuals who favor keeping the Fairness Doctrine.

NAB and RTNDA believe the rules are archaic and they opposed the FCC's action.

RTNDA President Barbara Cochran called the FCC's earlier order to suspend the rules "incomprehensible," while NAB President/CEO Eddie Fritts said it was "outrageous" and "astonishing."

The personal attack rule required stations to notify a person whose honesty, character or integrity is attacked and provide that person a chance to respond. The political editorial rule required any licensee that endorses or opposes a candidate to provide opponents with notice and an opportunity to respond. The rules are among the last vestiges of the Fairness Doctrine, which the commission stopped enforcing in 1987.

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# 'Allied' Returns; Wayne Mack Departs

News, cues and views from around the world of radio ...

★ ★ ★

In this issue, Business Editor Laura Dely and the staff of *GM Journal* take a look at the format side of radio. Is your PD in a good mood these days? What's hot and why? Should you drop that new country format and go all-Klezmer?

Our *Focus on Formats* starts on page 21.

★ ★ ★

Talk about starting a business with brand recognition!

Allied AirNet Services is a niche marketing venture set up by Dave Burns after his recent retirement from Harris Corp.

"Allied" at one time was the name of a prominent radio equipment distributor, where Burns worked for many years. After its acquisition of that entity by the much larger Harris, the Allied name was retired.

"I discovered that the name and the logo were still available," Burns said. "Although the direction of our business is different, the Allied name still enjoys a lot of respect and recognition."

Burns also has his first product offering: O.C. White microphone booms and arms. U.S. orders will go through the new Allied, which acts as an independent rep; customers still call their usual O.C. White dealer to buy. A riser accessory that permits inside wiring is coming soon; and Burns is seeking distributors and integrators for the line.

Just about everyone in radio has seen an O.C. White mic arm at one time or another; I've certainly worked with my share of them. Burns praised its penetration into radio and TV. He said the boom is the choice for at least "two doctors, a Rush, a Howard, a Don and a Frazier."

Burns is talking with other suppliers, offering representation, evaluations, launches, promotion and marketing research. You can reach him via e-mail to [dbocw@aol.com](mailto:dbocw@aol.com) or call (765) 935-3893.



Dave Burns with an O.C. White boom

★ ★ ★

Our own company continues to grow into new markets.

IMAS Publishing, the parent company of *RW*, will partner with Phillips Business Information's Cable Group, a publisher in the broadband technology industry, to launch Broadband China magazine next spring.

It will cover technology and business topics relevant to China's broadband market, using the resources of the PBI Cable Group's core publications, Communications Technology and Communications Technology International, as well as local contributions from IMAS' established network of technology writers in China.

★ ★ ★

I'm sorry to hear that longtime Cleveland radio broadcaster Wayne Mack died on Oct. 15 while residing at a nursing home in Rocky River, Ohio. He was 89.

I have the news from Jim Davison, a radio historian, collector and friend of Mack's. Davison said Mack was the dean of Cleveland broadcasting who began his announcing career in 1931 at WJAY, and spent the next 67 years on the air — 67 years!

He worked at WGAR(AM) from 1934 to 1950; he helped to sign on WDOK(AM), and was heard on WCLV(FM), WZAK(FM) and WRMR(AM).

He created live shows such as "The Waltz Palace," "Home Town Park," "The Palace Ballroom on the Lake" and "The Mighty Wurlitzer Radio Hour." These were created in the studio, but Davison says listeners would drive all over Cleveland trying to find the live dance remotes. In 1982, Mack was honored by AFTRA as a Gold Member; in 1998, he received a special "Lifetime Achievement Award."

Davison, who was five decades younger and would call Mack on the phone just to hear his voice, described him an inspiration and a teacher.

"If you asked him what was showing at a certain theater in 1938, or what song was on the air in 1944, or what stage play was showing in 1934, Wayne could tell you," Davison said. "He learned at least seven languages and sang beautiful opera. Listening to him on the air, I would get chills."

Wayne Mack touched him one more time before he passed away.

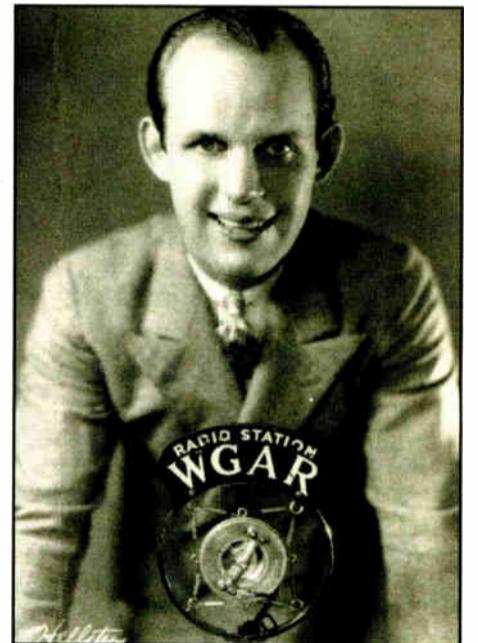
"I had seen this 1934 photo of Wayne

## From the Editor



Paul J. McLane

at WGAR hanging on his living room wall for years," Davison said. "and I always said to him that I would love to have that picture of him someday. I received that picture from a friend on Saturday, Oct. 14, and Wayne passed away the following day. It's hard to explain, but I felt inside that he knew it was time to pass the photo on to me for my collection."



Wayne Mack in 1934

"Wayne always left me with one thought: 'Radio — it's the theatre of the mind.'"

The photo appears above. Thanks for sharing your memories with us, Jim.

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# SCA

► Continued from page 1

Radio and NAB in arguing that the FCC's low-power plan would lead to interference with existing stations, especially for those that carry radio reading services for the blind and visually impaired on their subcarriers.

The potential impact on reading services had already been used by LPFM opponents. This fall, the LPFM stepped up its involvement by accusing the FCC of withholding test results that might prove its case.

It filed a Freedom of Information request seeking to make public the results of FCC tests on SCA receivers that the association had provided to the commission. These are the specialized radios used by the visually impaired to hear the reading services.

The FCC had 30 business days from Oct. 19 to respond.

## Not enough

IAAIS and NPR said the commission's recent efforts to prevent interference to FM translators and SCA receivers did not go far enough.

The commission developed a process for resolving interference complaints about LPFM, but the recent order containing rule changes "does not guarantee that radio reading services will remain protected from interference, and does not adequately safeguard translator stations," said NPR President/CEO Kevin Klose and AAIS President Ben Martin.

Their organizations favored a Senate bill that would enable the commission to authorize LPFMs but force the FCC to keep current channel protections, including third-adjacents. The measure also called for testing for interference

stance of NPR and AAIS and called it a "sad day when National Public Radio advocates a policy that would deny the public new radio service."

IAAIS took pains to make it clear the group is opposed not to the concept of LPFM, but to how the plan is crafted.

"We realize the positive role that an LPFM can have in a community," said Martin, "(but) what could possibly be more important, at this point, than providing the current printed word to indi-

viduals who have no other means of having it?"



Ben Martin of IAAIS

viduals who have no other means of having it?"

The IAAIS is worried because the FCC's updated rules give only temporary third-adjacent channel protection to FM stations using their subcarriers while the commission conducts interference tests. It sought permanent third-adjacent channel protection for subcarriers and the ability to generate an interference complaint.

"We didn't expect future channel space to be protected," said Dave

Some services receiving funding from local or state government while others receive contributions from foundations, service organizations or businesses.

There are several delivery methods, but FM subcarrier remains the most popular. More than one-third of radio reading services are heard on FM subcarriers of NPR members.

But supporters say audio quality on FM subcarrier isn't great now, and the IAAIS is worried it would be worse with LPFM.

"The technical quality on a subcarrier is marginal," said IAAIS Technical Committee Chair Bob Brummond.

## Other channels

In addition to transmitting their programming on FM subcarriers and TV SAP channels, some services are widening their distribution system using so-called dial-in news services and the Internet.

Although a small portion of the users own computers, use of the Internet to receive radio reading services is growing, said Brummond.

With the so-called dial-up services, the user dials a phone number and chooses what to listen to from a spoken menu. Users can scan the paper, choose a section to be read aloud, and manipulate the voice, all using a touch-tone keypad.

The IAAIS changed its name in 1999 from the National Association of Radio Reading Services to reflect these new delivery systems.

The IAAIS gave the FCC 14 SCA receivers to test for potential interference from LPFMs. Ten have been returned, but the association has yet to see test results, said Noble.



to stations on third-adjacent channels and required that one of the stations tested must provide a radio reading service.

The bill, sponsored by Sen. Rod Grams, R-Minn., was companion legislation to an LPFM measure passed in the House in the spring. The fate of LPFM legislation was unclear as the 106th Congress neared adjournment in late October.

Left unclear is how many LPFM stations would still be allowed if full-channel protection to existing stations were indeed restored.

One source estimated that of approximately 650 qualified applications received in the first LPFM window, 376 would not be eligible if full channel protection were restored, leaving roughly 279 potentially qualified applications. This does not necessarily translate directly into the number of stations; multiple applicants may have filed for one frequency.

FCC Chairman Bill Kennard was "profoundly disappointed" with the

Noble, immediate past president of the IAAIS and chair of its LPFM Task Force. "But when they came out with the temporary nature of the protection without the ability to complain about interference ... I can't imagine a station admitting they're the cause of interference."

The FCC said the complaint process would take 90 days. But only a main-channel FM or a listener could initiate an interference complaint. The complaint resolution process takes longer than 90 days for others, Noble said.

"That's great if all you're interrupting is music."

## One million listeners

There are approximately 150 radio reading services in the United States, of which 135 are IAAIS members. Combined, those services claim to reach about 1 million visually impaired or blind people.

Most services play recordings of people reading the daily newspaper, bus schedules, grocery sale items and other

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# Outage

► Continued from page 1

that we put up quickly. And we used what are normally internal news-groups," he said.

AP supplied radio stations with special passwords during the crisis.

Reid said AP's goal during the system failure was to deliver audio and text as efficiently and conveniently as possible while working to get the satellite system back on line.

## Reprogramming

AP technicians had to reprogram every Ku-band receiver with a special circuit board and re-program EEPROM chips in the receivers. The electrically erasable programmable read-only memory chips are memory circuits that store computer software instructions.

Reid said steps have been taken to prevent another satellite system failure. "An operational procedure was not followed properly and that has certainly been tightened up," he said.

On Aug. 29, AP technicians sent a command via satellite to erase the EEPROM chips in the Ku-band receivers electrically. Then they downloaded a new program to change the receiver's parameters.

Software upgrades for the Ku-band system are not an infrequent occurrence. "We've probably done a half-dozen since the system has been in

place since early 1999," Reid said.

In this case, AP hoped to add some functionality to the receivers and increase capacity for a broader range of products and services in the future, Reid said.

In August, the downloaded program was corrupt and the EEPROM chip received the wrong coding and caused the outage, Reid said.

AP will work with receiver manufacturer International Communications Products Inc., in an attempt to "build smarter receivers" to prevent each

the manufacturers, thoroughly understand what happened to the receivers," he said.

AP hopes a quicker fix in any future incidents will be available by sending out software instructions over the satellite system to get the receivers back up and running, Reid said.

AP has two delivery systems in place besides the Ku-band — C-band satellite and phone dial-up.

Radio stations were left scrambling for news, weather and sports in the early hours of the day AP's system

**I think it certainly uncovered a design weakness of the receivers we designed.**

— AP's John Reid

receiver from having to be reprogrammed individually when a software failure takes place, Reid said. ICP has built AP satellite receivers since 1992.

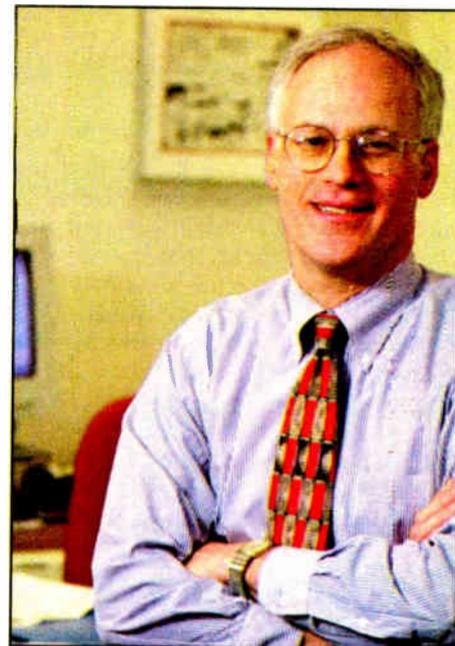
## Design weakness

"I think it certainly uncovered a design weakness of the receivers we designed. We certainly won't do any more downloads until we, along with

crashed.

Brian Olinger, news operations manager for WTOP-AM-FM, Washington, said the effect on the station's news operations was minimal because of well-thought-out backup plans.

"We already subscribed to AP's NewsTracker service on the Web, so our people knew immediately to go to that site to continue receiving the wire



John Reid

service. We also use AP's ENPS newsroom software, and within four hours, tech support called with instructions on setting up an Internet connection from our ENPS servers," Olinger said.

ENPS is AP's Electronic News Production System.

The all-news stations, owned by Bonneville International Corp., subscribe to both audio and data services from the AP, and depends on those services for the news product and the audio backbone of the Internet-only station, WTOP2, Olinger said.

"The next day our ICP DCR-972 See OUTAGE, page 7 ►

## One Question, Three Answers

An actual email thread, June 8-11, 2000 on broadcast.net

Thursday, June 8, 2000  
To: bsi-i@broadcast.net  
Subject: BSI Experiences?

We are a small AM station considering implementing BSI software to automate our station. It seems to have all the functionality that we would need. Is this a good solution? Thanks for your input.

- John

Sent: Sunday, June 11, 2000  
To: bsi-i@broadcast.net  
Subject: Re: BSI Experiences?

John,

We started using WaveStation in January and are extremely pleased with it. It's been running glitch free.

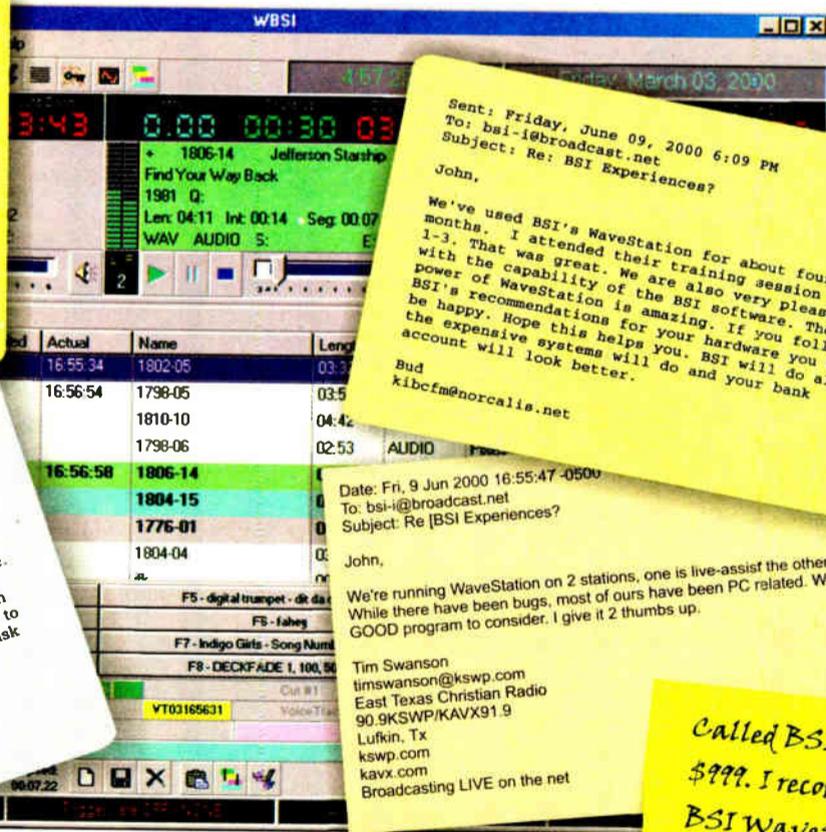
We use it weekdays in live assist to play our spots, PSA's, etc. and on weekends in full-automation. At 1p.m. both days, we lock the door and leave. WaveStation plays programs recorded earlier, picks up some programs live from satellite...joins news live at the top of the hour...records a couple of sports updates for playback a few minutes later...fades programs out...runs fill music...fades fill music, etc.

We currently have only one computer set up for WaveStation. We will probably purchase a second one in the not too distant future.

Perhaps it's a sad commentary on life, but WaveStation is much more reliable and dependable than the human beings we used to use...and "Wave Station," as we call the system here, doesn't ask for vacations or pay raises.

By the way, we are a small town AM station also.

Bob Ketchersid  
WYXI, Athens, TN



Sent: Friday, June 09, 2000 6:09 PM  
To: bsi-i@broadcast.net  
Subject: Re: BSI Experiences?

John,

We've used BSI's WaveStation for about four months. I attended their training session June 1-3. That was great. We are also very pleased with the capability of the BSI software. The power of WaveStation is amazing. If you follow BSI's recommendations for your hardware you will be happy. Hope this helps you. BSI will do all the expensive systems will do and your bank account will look better.

Bud  
kibcfm@norcalis.net

Date: Fri, 9 Jun 2000 16:55:47 -0500  
To: bsi-i@broadcast.net  
Subject: Re: BSI Experiences?

John,

We're running WaveStation on 2 stations, one is live-assist the other fully auto. While there have been bugs, most of ours have been PC related. WaveStation is a GOOD program to consider. I give it 2 thumbs up.

Tim Swanson  
timswanson@kswp.com  
East Texas Christian Radio  
90.9KSWP/KAVX91.9  
Lufkin, Tx  
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# Outage

► Continued from page 6

satellite decoder was replaced with a unit which was not subjected to the faulty software download, meaning we were back to normal operation within about 30 hours," Oliger said.

Mark Croom, chief engineer and operations director for WNWC-AM-FM, Madison, Wis., said he noticed the problem with AP when he did his usual "start-the-day" checks on his computers, including the system that captures AP.

## Fault

"I saw that there had been no stories since about 4:07 a.m. (CDT), and proceeded to check the receiver. I saw an alarm light on the front, and proceeded with the only thing I know to try for most of these types of boxes. I unplugged the receiver and then powered it back up again. The display went to a series of filled-in boxes on the LCD display and still showed the fault LED," Croom said.

Croom said that for AP audio, his stations get their newscasts through ISDN from their corporate office satellite feed. Northwestern College Radio Network in Roseville, Minn., owns the stations.

"Our corporate used some ISDN feeds and some phone coupler feeds until they got their receiver restored. We were without audio for no more than a few newscasts during that period," Croom said.

If AP has another major system outage such as the one this summer, Croom is hopeful that AP will have a better backup system in place.

"My staff didn't like the 'news server' (Network News Transfer Protocol) approach that used Outlook Express or other e-mail software to view wire copy. That's why we stuck with the apex.com site," Croom said.

Chris Boone, chief engineer for KDMX(FM) in Dallas, said the failure left the station scrambling for alternate sources for news.

"Luckily, AP provided some secondary sources by opening up a normally closed newsgroup which allowed us to search for stories by subject and location," he said.

Boone said the Clear Channel station had Netscape and Internet Explorer set up to access internal AP newsgroups.

"In fact, I had Netscape set to automatically go to the newsgroup upon opening," Boone said.

## Faxing from home

The AP failure meant extra work for many engineers.

"Our stations depend on AP for news and local weather. I was faxing news to the station for two days from my house at 5 a.m. using the AP Web site," said Jeff Allen, chief engineer for the Impact Radio Group Inc., in Twin Falls, Idaho, which owns KTFI(AM).

"We do have Internet access at the stations, but using the Web was slow and the on-air people did not have the time to sort through everything. I have DSL at home," Allen said.

Most radio engineers and newsroom personnel who spoke to **RW** gave AP a

passing grade throughout the outage.

"Generally, I think that AP handled an unfortunate problem pretty well with lots of alternatives available," said Bill Croghan, engineering manager for Lotus Communications Corp. stations KBAD(AM), KENO(AM), KOMP(FM) and KXPT(FM) in Las Vegas.

## Concerns

However, AP's backup delivery system and response to the outage did not please everyone.

"The tech at our level is very overworked as it is and has a huge area to try to take care of. And there was some confusion on AP's part early on (about) whether they were going to deliver via fax or e-mail or whatever," said Michael Barnes, chief engineer of KVMV(FM), McAllen, Texas. "Not

much service for the amount of money we pay."

Boone said his biggest complaint was that AP performed a corrupt download on 4,000 affiliates without testing it on some test receivers at AP's facility first. Boone recommends a way to prevent this kind of satellite system failure in the future.

"If you could have a default firmware in the receiver ROM so if the EEPROM gets trashed again, a jumper can be moved, the receiver powered back on and then ROM reload a factory configuration back into the receiver EEPROM, allowing a correct download," Boone said.

Any future AP satellite distribution system upgrades will be done one site at a time, Reid said. "(AP) will never do a simultaneous upgrade again."

## NEWSWATCH

### NTIA Awards Grants

**WASHINGTON** The Commerce Department's National Telecommunications and Information Administration has awarded \$25.8 million in Public Telecommunications Facilities Program equipment grants for FY2000. About \$20 million of the money is earmarked for TV. Of the 103 grant recipients, 56 are for public radio, while the balance is to help TV's transition to digital.

Radio received just over \$2 million out of a total of \$20 million in PTFP grants awarded in FY1999 (**RW**, Feb. 2).

The list is available on the Web at [www.ntia.doc.gov/](http://www.ntia.doc.gov/)

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**FEED LINE**

# Problems of AM Antenna Co-Location

**W.C. Alexander**

*This is the third installment in a series of articles about shared use of transmitter sites. The previous part appeared Oct. 11.*

AM sites that were once way out in the boonies now are found in the middle of upscale subdivisions. These transmitters can be good neighbors, but the telephone interference produced and the real estate soaked up often force a site move.

With real estate prices high and the difficulties in attaining approval from local government for tower placement, it makes a lot of sense to co-locate AM stations with other AMs or even with FM/TV transmission facilities. Broadcasters are aware of this dilemma; cell and PCS operators have recently begun to figure it out.

Unlike FM and TV licensees, an AM station cannot simply hang an antenna on the side of an existing tower and turn on the transmitter. As we deal with AM co-location, we will begin with what is often the most difficult case: sharing a single tower or directional array between two or more stations.

Consider three things when evaluating an AM site for co-location: frequency differences between stations, electrical height and location. If any of these are unacceptable, move on.

Most engineers consider 120 kHz to be the lower limit for diplexing multiple AM stations. Spacing any closer than that requires ultra-tight filtering that results in narrow bandwidth and high losses in the diplexer. Design of a diplexing system is difficult and operationally the stations probably won't sound very good.

Electrical height of an AM radiator determines efficiency. If a tower is too short, it will be inefficient, the resistance will be low and losses will be high. Radiation at high vertical angles may be excessive from electrically short towers, making them unacceptable for nighttime operation.

## Frequency differences, electrical height and location are keys to evaluating a site for co-location.

What is acceptable range of electrical heights? There is no set answer, but something in the 75- to 180-degree range produces acceptable results in most cases. The efficiency of the radiator and protection factors for co- and adjacent-channel stations determine how much power can be authorized from a particular site.

### The perfect place

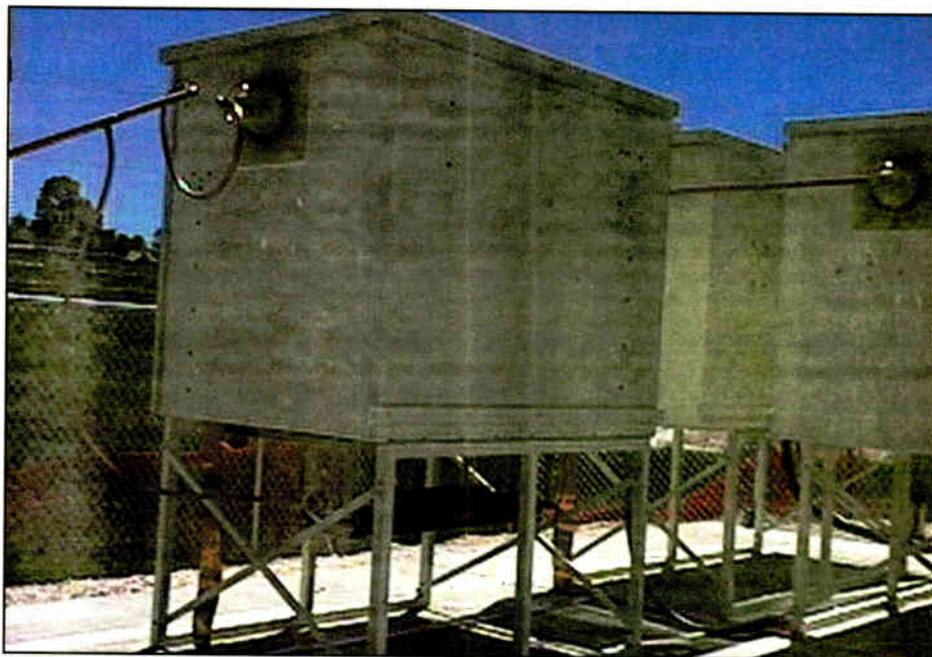
The three most important factors in real estate are location, location and location. Will the proposed facility produce the coverage of the desired area with the power permissible from that site? If the answer is yes, proceed with the evaluation.

All this may sound like an impossible combination, that co-location probably isn't worth even looking into. It usually isn't as hard as it seems. Just look around, keeping the three main factors in mind as you evaluate other sites for pos-

sible co-location.

One other big factor is the willingness of the tower owner, most often a competitor, to share its tower and site.

You might think that the guy across town wouldn't want to do anything to help his competitor. Money talks and adding a few hundred or a few thousand bucks to the top line every month is often an attractive, virtually effortless way to improve station cash flow. Most of the time, the other guy will be willing at least to talk with you.



A 30 kW diplexer at AM stations KCMN-KCBB in Colorado Springs, Colo.

Another consideration, before we get to the technical nitty-gritty, is the neighborhood. AM towers that are located in or near residential or commercial areas quite often have a tenuous relationship with the neighbors.

As we mentioned earlier, telephone interference is most often the problem. In residential areas, RF radiation concerns are sometimes a touchy issue (whether or not they are a real factor). Neighborhood factors should be carefully weighed

with a coil or capacitor.

This gives the trap a low impedance on the pass frequency and a high impedance on the reject, using only three components. In the shunt traps, the opposite is true — the residual reactance on the pass frequency is parallel resonated with a coil or capacitor, giving the trap a high impedance on the pass frequency and a low impedance on the reject.

If you think about it, you will find that there are an infinite number of component

combinations that will produce series resonance. Practically speaking, the number of combinations is limited by available parts.

The desired Q of the circuit further limits the design. Traps with too high a Q store a lot of energy. This can result in higher circulating currents and thus higher losses. A good design engineer will find a reasonable balance between loss, rejection, cost and bandwidth that makes use of commonly available parts.

It is certainly possible to use one element of a directional array as a diplexed non-directional radiator. To do this, you have to install filters at the towers that are not used in addition to the regular pass/reject filters at the common driven element.

Whether these filters provide for floating (open-circuiting), grounding (short-circuiting) or detuning the unused towers on the ND frequency is usually determined by the tower height. An unused tower that is close to 90 electrical degrees high can be floated on the ND frequency.

A 180-degree tower would probably be shorted and towers of other heights may require a detuning component to control the current flow on the unused tower on the ND frequency.

I should mention that it is also sometimes possible to use some or all the elements in one station's directional array to create a directional pattern for another station.

This is a rather uncommon situation, however, but it does occur. I mention it here because such a joint DA use should be considered in some circumstances. A separate set of diplex filters must be installed at each tower base.

We'll continue our discussion in the next part of this series.

■ ■ ■  
*Cris Alexander is director of engineering for Crawford Broadcasting. Reach him in c/o RW.*

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# Product Wrap-Up

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RADIO

The recent NAB Radio Show in San Francisco featured so many new products we couldn't fit them all in one issue. We present more on this page and throughout this section of RW.

The following *Radio World* staff and writers contributed to this section: Paul Cogan, Bernie Cox, Laura Dely, Scott Fybush, Lyssa Graham, Carl Lindemann, Bill Mann, Paul McLane, Sharon Rae Pettigrew, Ken R. and Leslie Stimson.

## Acer NeWeb Partners With Sonicbox

Acer NeWeb will brand and distribute the iRhythm, which lets consumers wirelessly control and transmit Internet radio and MP3 files from their PC to their home stereo system.

The company has a distribution partnership with Sonicbox. The iRhythm uses the Sonicbox iM Tuning Service. Listeners can tune into stations on the broadband-optimized iM Band or any station on the Web, and can develop and run personal MP3, Windows Media and RealAudio playlists.

iRhythm consists of three hardware pieces: a base station, a receiver and a remote.

For information contact Acer in California at (408) 383-2789 or visit [www.acerneweb.net](http://www.acerneweb.net)



## Aeta Has Mic/Line Preamp

The PSP3 is a mic/line preamp that lets you convert a consumer portable recorder into a professional-level input device. It is suitable for use with consumer DAT, cassette or MD decks.

The unit weighs less than 1.4 pounds and can attach to a belt or directly to the recorder. Features include adjustable input gain, XLR balanced in/out, phantom power, battery and external DC power, and M/S encoding/decoding.

For information contact the company in New Jersey at (973) 659-0555 or visit [www.aetausa.com](http://www.aetausa.com)



## Enco Opens Euro Office

Enco Systems announced a new presence in the United Kingdom.

The office and manufacturing plant in Crawley will handle direct sales in the U.K. and Ireland, and serve European and African dealers of its audio management systems.

"With Harris Studio Products departing the scene in the U.K. we felt that this was the best way to be able to maintain and even enhance the high level of support that our U.K. customers have come to expect," said Gene Novacek, president of Enco Systems.

The company retained Enco specialists who had been with Harris and Audio Connection before the latter's acquisition by Harris.

For information contact Enco Systems in Michigan at (800) 362-6797 or visit [www.enco.com](http://www.enco.com)

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## iTuner Brings Online Audio Inhouse

At the convention, iTuner promoted Mediabox, a Linux OS-base combination Web server, radio signal receiver and network service device.

It supports RealAudio, RealVideo, QuickTime and live MP3 formats. When working in conjunction with an Internet service provider, Mediabox can deliver quality streams that can be scaled to fit listener demand.

The Mediabox is priced at \$4,995 with a special introductory offer of 15 percent off through Nov. 15.

For information contact iTuner in California at (800) 978-8637 or visit [www.ituner.com](http://www.ituner.com)

## Surfer Network Rides Tidal Wave

Online audio has suffered from dropouts and other buffering problems inherent to the Internet. Surfer Network says its proprietary technology brings Net streams up to the same quality that radio listeners expect.

Surfer Network has developed strategic relationships with AT&T and other technology partners and will be using ad insertion technology. As a streaming audio content aggregator, it has the ability to draw large audiences to the various client sites with advertisers that might overlook individual stations.

For information contact Surfer Network at (973) 691-7420 or visit [www.surfernet.com](http://www.surfernet.com)



Harry Emerson, president of Geode Electronics, Surfer's parent company



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World Radio History



Joaquin Araya

## LPFM: A Solution to Jukebox Radio?

RW welcomes other points of view. Write to us at radioworld@imaspub.com or to the address on the inside back page.

Dear RW,

After working in radio for nearly 20 years and having a lifelong dream of operating a radio station of my own, I have been following the development of LPFM with quite some interest.

Having worked in the engineering and on-air side of things, I have had the

opportunity to carefully select and collect everything necessary to build a small studio to achieve my goal: a professional, well-engineered station, equipped with used (but not used-up) gear I had the good fortune to acquire over the years.

After a bizarre chain of events four years ago, I was laid off following the purchase by our competitors of the AM/FM combo where I worked, creating a near-monopoly in this market. LPFM, I felt, would provide an alternative to the "jukebox" offerings on the dial.

Unfortunately, following the ruling that prevented individuals from applying for an LPFM license and after pursuing the remaining options to meet LPFM requirements, my interest has cooled somewhat in this new class of service.

Since the deadline for our grouping has come and gone, I am hoping that individuals will be permitted to apply for an LP10 when that filing window opens, barring any retroactive legal action preventing LPFM from becoming a reality.

Even if that happens, there is still Part 15 AM. I feel there is good radio out there, waiting to happen. With today's seemingly endless entertainment options, "12 continuous hits in a row" or "it's 28 minutes past the hour" has very little appeal to a technologically savvy audience.

But if what is on the air is localized, has real meaning and is truly entertaining — if the listener feels he or she is truly cared about — those stations, whether big or small, will succeed.

I hope the LP10 application procedure

ing that I said that FM receiver design shortcomings caused deep reception shadow areas. What I really said was that existing deep shadow areas caused by terrain created conditions that revealed receiver design shortcomings.

Mr. Trapani states that adding an IF filter to existing radios can improve selectivity. Let's get real.

How many listeners would be competent to make such modifications? What would it cost to hire a technician to modify a radio? Why should listeners have to pay to improve their receivers? What about all those personal receivers that do not have room for additional components?

See LPFM, page 18 ▶

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I approached the local university about working with any interested departments to bring a second level of radio service to campus. Some questioned why it was necessary with an NPR affiliate and a statewide translator network already in place; others felt "some department" ought to be doing "something," as long as it was someone else's department.

Sadly, the deadline passed after a lot of talk but very little action. The largest town in the county has applied for a license but only plans to use it as an FM TIS. The local paper has already questioned the legality of the city owning a radio outlet, fearing it will become a mouthpiece for city-sponsored propaganda.

The county school district's response to an inquiry was one of disinterest, stating lack of student support and construction costs (funny, considering I offered to provide all the equipment ... and how many high school-age kids do you know who have no interest in the radio?).

Lastly, the area vocational center would only consider the idea if I could guarantee a minimum 90-percent placement rate. I am beginning to think I am the only one in my part of the country who believes in what a LPFM could do. Beyond a profit margin, more than "nothing" but the hits." Local radio at its finest.

will have room for the neighborhood broadcaster. You know the fellow, that slightly crazy guy around the corner with all the records in his basement; that gal who cares about what is going on in her little corner of the world, at the city council meeting, the high school football game, the scout troop, the PTA bake sale. That guy or gal who truly loves radio.

Friend S. Weller  
 Logan, Utah

Dear RW,

You published my *Guest Commentary* about the interference potential of LPFM caused by FM receiver shortcomings in the June 21 issue.

In the Sept. 13 issue, a letter was published from Jim Trapani replying to my commentary.

The letter from Mr. Trapani reminds me of the days when I worked on tape recordings of President Eisenhower's news conferences. A reporter would ask a question and Mr. Eisenhower's reply frequently had no bearing on the question asked. In those days, presidential news conferences were not broadcast live for fear a slip of the tongue could cause an international incident.

Mr. Trapani misquoted me by imply-

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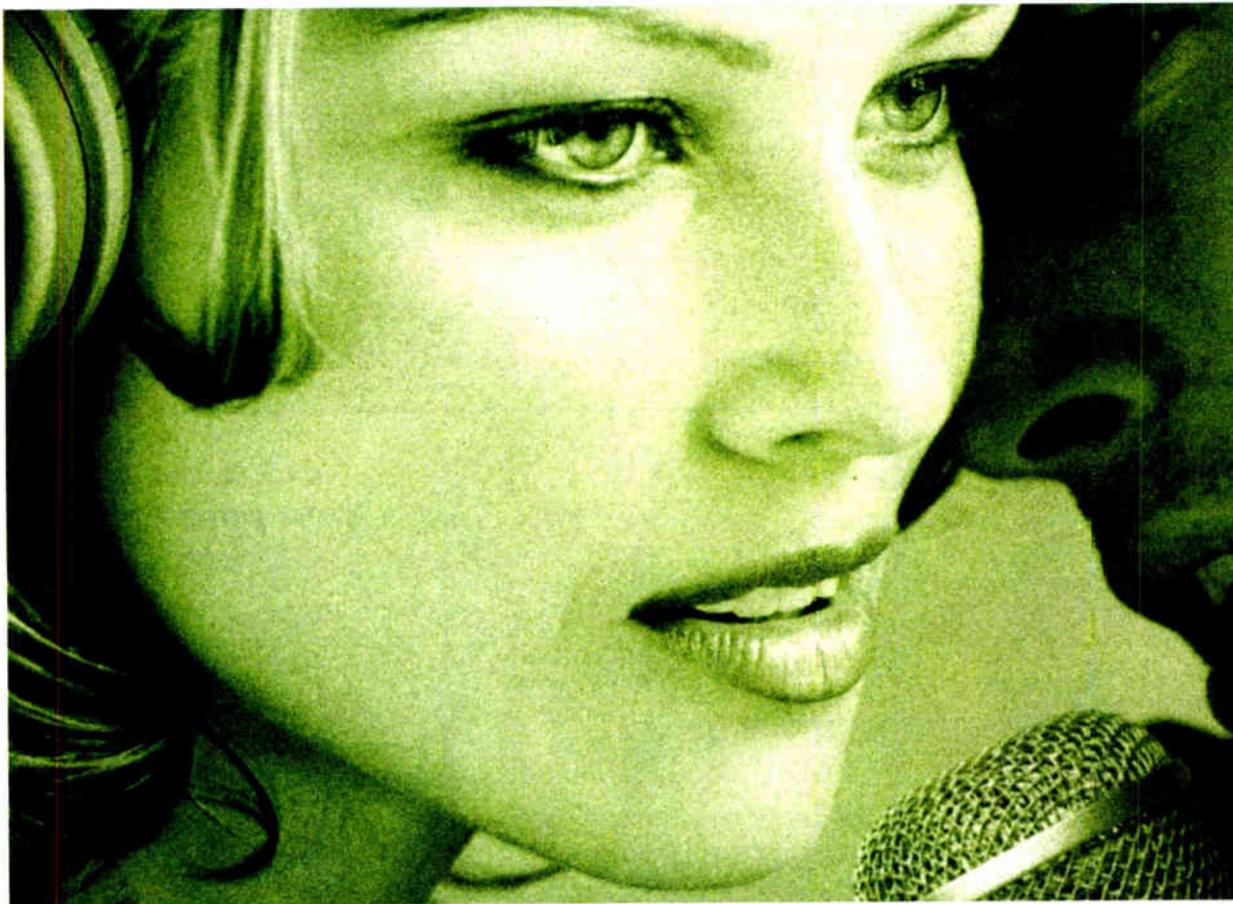
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**NAB PRODUCT WRAP-UP**

**Media Site Manager Creates Local Portal**

Media Site Manager is a community-based portal directed at radio stations. The portal uses individual passwords that allow clubs, organizations and groups to enter information relevant to the station's listeners. The company offers a community events calendar by merging all of the information into a database.

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For information call (888) 956-8674 or visit [www.media-sitemanager.com](http://www.media-sitemanager.com)



**GlobalMedia To Work With Bela Karolyi**

Streaming and e-services company GlobalMedia.com launched a Web site with 4Kids Entertainment Inc.

The company is working with 4Kids to produce the site, which brings gymnastics coach Bela Karolyi to the Internet. Karolyi, who has coached 28 Olympians, is the national coordinator of the U.S. women's Olympic gymnastics team.

GirlsGymnastics.com, by Bela Karolyi, is the online home of Karolyi, experts and guests. They share their secrets to success to help girls be the best gymnasts they can be.

For information call (250) 322-2282 or visit the Web site at [www.4kidsentertainmentinc.com](http://www.4kidsentertainmentinc.com)



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AXS (pronounced ax'-cess) 3 is the *third generation* of the most popular digital automation for radio! AXS is in its *second decade* as the *premier* satellite system and digital cart replacement.

AXS 3 is also radio's *first affordable* music on hard drive system with *triple overlap* to *three separate console faders*. Your live jocks get the ultimate in level control and mixing ability. For unattended operation, AXS 3's voice trax auto-fades music under voices smoothly, bypassing the console.

**Air Studio Production Bonus:** AXS 3 also gives you *another* stereo production output and record input. You can record and edit phone calls or spots and auto-delay news and audition them in a cue speaker while playing triple overlap on the air!

**Premium Hard Drives:** The 3 also tells you that AXS 3 gives you a *3 year limited warranty* on hard drives. AXS 3 uses *exceptionally reliable* and *fast* 10,000 RPM 18GB (or 20GB) *hard drives* from top quality suppliers (like IBM, Seagate, Western Digital and others you trust) to keep your precious commercials, jingles and other recordings *always* at your fingertips. Other systems cut corners with slower and less reliable drives that sometimes choke and sputter with triple overlap and music from hard drive. AXS 3 won't jeopardize your cash flow with unreliable drives that might crash.

**Awesome Sound Quality:** AXS 3 uses only the best *non-proprietary* +4 balanced digital audio cards by Audio Science. These are also sold by most of the major brands of digital systems, but only in their top-of-the-line models costing *lots more* than AXS 3. Scott Studios uses premium audio cards in all our systems, although AXS 3 software will work with any good Windows sound card. Of course, if any card develops a problem, we'll replace it under warranty. You'll also be able to get these non-proprietary audio cards from us, the manufacturer, and several other vendors of high end digital audio systems.

**Easy to Use:** AXS 3 was *designed by jocks*, for jocks. It's 100% intuitive. AXS 3's big on-screen intro timer and separate countdown timers on every deck make pacing a snap.

If you know how to work cart decks, you know how to work AXS 3. It's so simple, everyone can run it! AXS 3 has *big* buttons. Other systems use complex multi-step mouse mazes. AXS 3 gets things done with one simple touch.

**MP3 Import:** AXS 3 plays MP3's, MPEG II and uncompressed (linear) recordings.

**The Music's Easy:** AXS 3 is delivered with *your* music library already pre-dubbed for you at no extra charge. AXS 3 also comes with Scott's time-saving TLC (Trim, Label & Convert) CD Ripper software. It runs in your Program Director's computer and uses a CD ROM drive to digitally transfer 5 minute songs to hard drive in 15-30 seconds.

**The Best Voice Tracking:** AXS 3 works with Scott's optional Voice Trax. Announcers hear surrounding music and spots in their headphones in order to match their voice to the moods and tempos of the music.

**The Best Air Studio Recording:** AXS 3's built-in recorder has a graphic waveform editor for ease of recording and editing phone calls, spots, news or announcer lines. AXS 3's log editor lets you add new items to your schedule.

**Quality Hardware:** You get an industrial Pentium III rack mount Windows computer and a 1RU (1-3/4") tall case is available when space is tight. Jocks can use a keyboard or mouse, or optional button box or touch screen for fast control.



**Jocks love AXS 3, (shown with Scott Studios' 1RU rack mount case and optional flat panel touchscreen). AXS 3 works with three cart players on the right side of the AXS 3 screen. The program log (at left) automatically loads the decks, or you can insert anything from pick lists. The far left of AXS 3 has 12 Hot Keys that can play any time at a touch of a Function key.**

**The Best Tech Support:** Toll-free emergency phone support is available 24 hours a day, 7 days a week (including holidays). Software updates with new features are available for AXS 3 customers several times per year to stations on our annual support plan.

**Easiest to Install:** AXS 3 comes with a pre-wired connections to CAT5 LAN cables for snap-in installation on the AXS3 end of the wiring. Satellite control logic is also a plug-in snap. Your first two satellite audio connections for music format and news network, as well as another for your production console, are built into AXS 3 so interface cards or external switchers are not required.

**LAN and WAN:** AXS 3 and other MPEG and uncompressed WAVE Scott Systems use the same recordings. You don't have to dub the same spot several times for several stations.

**The Best Production Studios:** AXS 3 is compatible with popular multi-track systems you may already have, like Sound Forge, Vegas, Cool Edit Pro, Fast Edit and others. Simply add our time-saving \$500 no-dub instant LAN spot upload option.

**AXS 3 is Affordable:** Satellite AXS 2 systems start at \$7,995 including built-in GPI and switcher. Triple overlap AXS 3 includes AXS 2 and adds 18GB of music on hard drive for only \$9,995 delivered. For details, check [scottstudios.com](http://scottstudios.com) or [axs3.com](http://axs3.com) or call 800 SCOTT-77.

**Columbine, Enterprise Form Encoda**

The merger of software company Enterprise with Columbine JDS creates a global provider of broadcast and ad business services covering major media, including radio and ad agencies. The merged company, Encoda Systems, seeks to provide Internet-related products and services.

CJDS provides technology solutions for the ad buying/selling process within electronic media markets. With the acquisition last year of DA, it can offer automated transmission systems and services.

For information contact David Netz in Colorado at (303) 390-8239 or send e-mail to [mergerinfo@cjds.com](mailto:mergerinfo@cjds.com)

**FamilyNet Produces Religious Programs**

FamilyNet Radio produces five weekly religious programs: "Powerline" (hot AC), "MasterControl" (magazine/talk-show format), "Country Crossroads" (country hits, artist interviews), "On Track" (contemporary Christian music with artist interviews) and "The Baptist Hour" (Christian music, teachings by Frank Pollard).



The "John Tesh Christmas Special" is new this year. "It's a Wonderful Home Life" is another holiday special offered this year.

For information or a media guide call FamilyNet Radio at (800) 832-6638, ext. 1420 or visit [www.FamilyNetRadio.com](http://www.FamilyNetRadio.com)

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## NAB PRODUCT WRAP-UP

## Broadcast Data Consultants Does Windows

Broadcast Data Consultants unveiled The Music Director II software, which can be used with the company's Traffic C.O.P traffic software to produce an integrated traffic and music log.

The company also moved its original Music Director software from a DOS platform to Windows.

Broadcast Data Consultants is marketing the software to smaller-market stations by offering discounts for the first stations to sign up.

For information call (800) 275-6204 or visit [www.broadcastdata.com](http://www.broadcastdata.com)

## BroadcastAmerica.com Aims at Urban Markets

BroadcastAmerica.com introduced an addition to its family of streaming radio sites. BroadcastUrban.com will focus on urban-formatted stations, beginning with WHUR-FM in Washington, and Stevie Wonder's Los Angeles station, KJLH-FM.

### BroadcastAMERICA.com INTERNETWORKS

BroadcastUrban.com will also feature programming from Stank Radio, a syndicated music show produced by the hip-hop group OutKast.

The company is adding 41 stations owned by Regent Communications to its list of streaming-audio partners.

For information contact the company in Maine at (207) 321-5100 or check out the Web site at [www.broadcasturban.com](http://www.broadcasturban.com)

## DYI Fans Tune In to C.A.R. Show

Every weekend The C.A.R. Show, hosted by Roger Kwapich and Dan Pietras, can be heard on more than 200 affiliates.

The acronym C.A.R. stands for Consumer Automotive Repair, and for two hours each week, these gentlemen make their experience available on a barter basis to stations from Presque Isle, Maine, to Mendocino, Calif.



Roger Kwapich and Dan Pietras, from left

The show can be received via satellite or on CD. Participating stations can have their Web sites linked to the C.A.R. Show site to reach more than 2 million visitors.

For information contact The C.A.R. Show in Ohio at (419) 878-0444 or visit the company Web site at [www.thecarshow.com](http://www.thecarshow.com)

## Comedy World Grows

Comedy World positions itself as the first 24-hour "all-comedy" independent radio network that produces and broadcasts original comedy-talk radio programming. The network mixes live audio, streaming video, animation, interactive features and games.



Comedy World programming is original, and features such talent as Sandra Bernhard, Bobby Slayton, Sue Murphy and Beth Lapidus.

It serves stations looking for a new way to draw the 18-34 male demographic and comedy fans in search of edgy topical humor. Stations can join Comedy World 24 hours a day or syndicate individual shows.

Comedy World will begin broadcasting its programming nationally, on the Sirius Satellite Radio Network, as well as in several local markets across the country.

For information, call (310) 255-6504 or e-mail to [daveb@comedyworld.com](mailto:daveb@comedyworld.com)

## Lightningcast Launches PSA Initiative

Lightningcast invited nonprofit organizations to submit PSAs for airplay on its recently launched affiliate network as a showcase of its ad insertion technology. The PSAs could potentially reach an audience of approximately 25 million listeners. The technology also allows for targeting the right segments within the millions online.

Lightningcast says inserting ads into streaming media allows marketers greater accuracy in targeting audiences than has been possible in traditional mass-market media. Its affiliate network partners include 2000radio.com, ChoiceRadio.com, ClickLive.com, CyberRadio2000.com, DiscJockey.com, e-RadioLive, Kundi, Morfeo.com and RadioAlbany.com.

For information call Lightningcast in Virginia at (703) 535-5806 or visit [www.lightningcast.com](http://www.lightningcast.com)

## Arbitron Methods, Terms Online

The Arbitron Co. made its products easier to use with free online software. Anyone can log onto [www.arbitron.com](http://www.arbitron.com) and take a step-by-step tutorial.

"There are modules for Tapscan, PD Advantage and other products," said Diane Woodard, manager, customer analysis/research. "You can also find a glossary of terms and other helpful features."

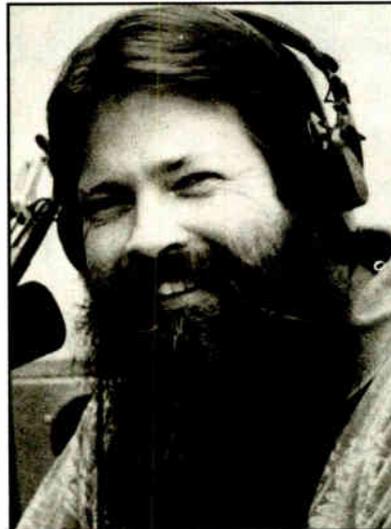


Additional free products are available from Arbitron online including the "American Radio Listening Trends" report in the Ratings, Reports and Studies section of the home page.

For information call (410) 312-8442 or visit [www.arbitron.com](http://www.arbitron.com)

## Pair of Shows From Home & Garden

Two radio talk shows are offered by Home & Garden Radio, according to Rick Starr, vice president and general manager.



Nick Federoff

"You can hear tips on home construction and remodeling from Jim and Morris Carey on a show called 'On the House,' which airs four hours every weekend," said Starr.

"Our other show is 'Nick Federoff on Gardening.'"

The shows are delivered via satellite or tape delay. Each program is also available in a one-minute daily tip format.

For information contact Home & Garden Radio in Tennessee at (423) 470-4029 or visit [www.hgtv.com](http://www.hgtv.com)

## Production Music in the Groove

Groove Addicts released two new CD demos of its musical ID jingles.

"Wired" showcases CHR and hot A/C formats with packages created for KIIS(FM), CHUM(FM), KSTP(FM), KZZP(FM) and others.

The "A Culture" demo is geared more toward traditional adult contemporary formats with packages for WPCH(FM), BBC Radio 2, WASH(FM), KODA(FM), WJXA(AM) and WLYT(FM).

According to Debra Grobman, director of broadcast relations, the firm also has seven production libraries under the umbrella name "Who Did That Music?" Library titles include WDTM, Gravity, Revolution, Ignite, Mindbenders, and two libraries imported from the United Kingdom: Unity and BPM.

For information call (800)400-6767 or visit [www.grooveaddicts.com](http://www.grooveaddicts.com)

## Video Invoices Radio

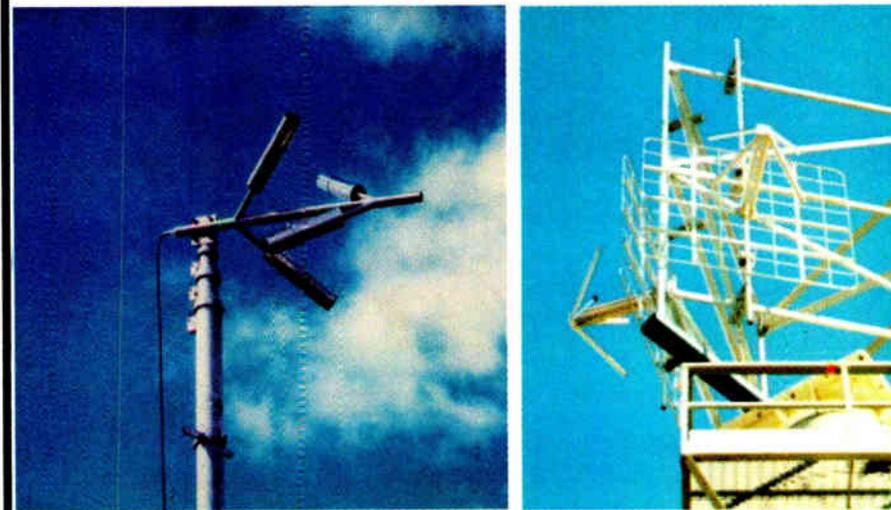
Video Networks Inc. applies its electronic trading technology to the radio industry.

VNI's application services allows stations to transmit invoices to advertising agencies electronically, using their existing infrastructure and without investing in additional hardware or software.

This eliminates the need for stations to depend on paper invoices to bill agencies or advertisers and it makes radio ad time easier to buy and sell.

For information call (770) 619-0801 or visit [www.vninet.com](http://www.vninet.com)

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# Workbench

Radio World, November 8, 2000

## Your Site: Time to Make the Rounds

John Bisset

★★★

Weather is turning colder. Autumn is a perfect time to spend some time at the transmitter site, buttoning things up for the colder seasons.

As you drive up to each facility, check your gate lock. Bring along a can of penetrating oil to spray inside the lock. You will appreciate how quick you can get into the property when the temperature is in the single digits.

Looking for really good protection? Take a few station caps or T-shirts along with your visit to civil service authorities. The fire, rescue, police or, for that matter, the power or utility companies will appreciate your kindness.

When I was chiefing stations, I had direct access to both power and phone company emergency repair — talk about looking like you can pull a rabbit from

directional array to go whacky.

Remember, when you spot a problem with a directional array, don't adjust the phasor until you have made a thorough inspection of the site.

The burned transformer in Figure 2 was due to a broken ground strap. The strap shorted the windings of the transformer and you can see the results.

★★★

Yes, some arrays are just simply unstable. Others stay rock steady and a major shift in the antenna monitor parameters usually points to a component failure — perhaps a capacitor has blown, a coil winding shorted or a J-plug is missing.

I remember a phasor where the J-plug jacks were mounted on the roof of the phasor. This placed the J-plugs in an upside-down position. They were always falling out, shutting the station off.

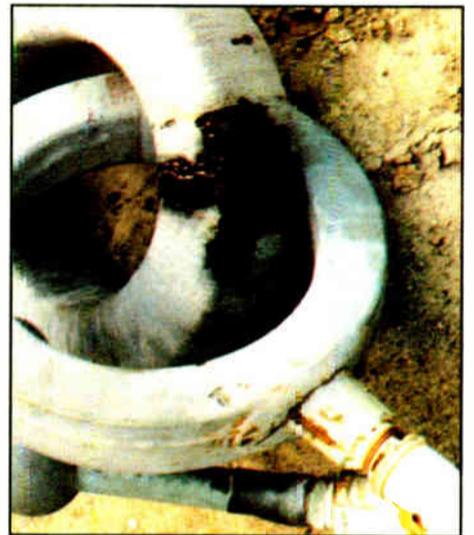


Fig. 2: Austin Ring transformer damage



Fig. 1: Damaged door

If your locks are old, you might consider switching to the four-digit combination locks that Master manufactures. You can set your own combination, which will cut down on the number of keys you carry, to say nothing of being able to keep the site secure should you need to change the combination.

Another good addition is a sign advising whom to contact in case of an emergency — if your gate or fence does not already have one.

To avoid vandalism, keep the station logo or calls off the sign — your cell phone or pager number can work. While you're at it, notify both the local police precinct and the fire/rescue department of the contact numbers.

any hat! It only takes a minute and the payback is a hundredfold.

Keep a critical eye open as you drive up to the building.

Figure 1 shows the deterioration of a door, damaged by water. The door has rotted from within and will shortly provide access to either animals or vandals. These are the kind of problems of which you need to be aware.

★★★

As you walk to the tower, watch for obvious burns, arcing or similar damage. In addition to causing the tower lights to fail, the burned Austin Ring transformer, seen in Figure 2, shorted, causing the

for that matter, dirt bikes.

Want to ruin your AM coverage in a hurry? Then it is possible lose half your radials because deer have trampled them or a dirt bike track runs right over them when they are exposed.



Fig. 3: Exposed ground radials invite a citation

We finally used wire ties to hold them in place. The lesson here is to look for the obvious, first.

Figure 3 is a violation waiting to happen. The FCC inspectors don't like exposed radials. Neither do animals — or

It's nice to see the condition of the radials when they are exposed, but after you've determined they are in good shape, get them covered up.

The small plants growing outside the See WORKBENCH, page 18 ▶

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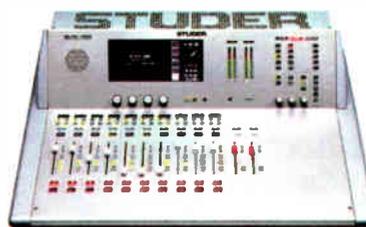
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## NAB PRODUCT WRAP-UP

**MyCity.com Creates Local Portal**

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MyCity can help stations seeking to become the window to their local communities online with its Media Partner program, a co-branding arrangement that makes the local MyCity.com site an extension of the station's online presence. The product includes local info from more than 100 MyCity.com content partners, interactive features and MyWebkit, a line of e-business products and services for the local small business community.

For information contact MyCity.com in Miami at (305) 531-7139 or visit [www.mycity.com](http://www.mycity.com)

**Radio Unica Fills Hispanic Niche**

Radio Unica is a radio network that broadcasts 24 hours a day in Spanish. With information, sports and news, Radio Unica reaches about 80 percent of the Hispanic population of the United States.

The network, based in Miami, features well-known personalities such as Pedro Sevcec, Doctor Isabel, Jorge Ramos and Cristina Saralegui.



One popular programming feature on the network is soccer. Additional future sports programming will include the 2004 Summer Olympics and Copa America 2001 and 2003.

The network boasts new fully digital studios and transmitting equipment.

For information contact Radio Unica in Florida at (305) 463-5000 or visit [www.radiounica.com](http://www.radiounica.com)

**LPFM**

► Continued from page 12

In many cases, the interference is caused by non-linearity in the RF stages and mixers ahead of the IF stages. One study by a receiver designer revealed that the apparent sensitivity of some typical component FM tuners decreased by an order of magnitude when an external antenna was connected in a typical suburban location. IF filters are not likely to make much improvement here.

Mr. Trapani discussed capture effect in FM receivers. He compared signal strengths of a 100-kW station with a 10-W station. I would like to remind Mr. Trapani that most FM stations operate with much less than 100 kW of power and that the first LPFM stations will operate with 100 W, not 10 W.

Mr. Trapani compares field strength of the two stations at the same distances. He conveniently neglects the inverse square

law that relates signal strength to distance from the transmitting antenna. At 100 miles from a 100-W station and 50 miles from a 100-kW station, which signal would win?

Mr. Trapani reports on an experiment comparing interference to a 10-W signal from a 20-kW signal 15 miles away. (I would be very interested in seeing a copy of the FCC permit for this experimental operation.) He reports that beyond 1,250 feet, the 10-watt signal did not interfere with the 20-kW signal. He is silent about interference to the 20-kW signal closer than 1,250 feet from the 10-W transmitter.

Although the shade of President Eisenhower probably would be proud of Mr. Trapani's performance, he did very little to refute my position that LPFM operation will cause interference problems in many receivers in use by the public.

Fred Krock  
Engineering Supervisor  
KQED-FM  
San Francisco

**Workbench**

► Continued from page 16

tower fence can be curbed. Cover the earth with landscaping fabric or black plastic, then a cover of pea gravel. Sand, as shown in the photo, works too, except the wind can slowly remove it, making the task of keeping the radials covered a never ending one.

★ ★ ★

As you inspect the ground system at the base of your tower, look for loose or broken connections — this includes grounds on FM towers, too.

Many AM sites have tied their galvanized fencing into the ground system. Inspect these connections, especially where dissimilar metals are used.

Remember that any ground radials, strap or screen repairs are to be made with silver solder. Use a MAPP gas torch — available at hardware stores. It's simpler to use than an acetylene torch and produces a hotter flame than standard hand-held gas torches, so the job gets done quicker.

We've only begun to touch on damaged components. Next time we'll inspect them more closely.

★ ★ ★

In our recent NAB Transmitter workshop, Martin Cooper of

Transcom, a used transmitter buyer and reseller, offered some tips on getting the most out of your used transmitter.

First, any transmitter built prior to 1975 has a limited value in today's market. A 10-year-old transmitter may return 10 percent or more of its new value, depending on its condition. A 20-year-old transmitter may return only 5 percent.

Cooper warned that a station couldn't obviate or transfer its responsibility with regard to PCB oil filled devices (capacitors and transformers) found in many older transmitters.

His advice? Get your local power company to remove and dispose of them — don't sell a transmitter to anyone with PCB capacitors or transformers inside.

What's the biggest factor that determines resale cost? Cooper says adequate maintenance, cleanliness and properly documented changes top the list. Surprisingly, an accurate tech manual and schematics figure into the overall value — as do spare parts.

■ ■ ■

John Bisset has worked as a chief engineer and contract engineer for more than 30 years. He is a district sales manager for Harris Corp. Reach him at (703) 323-8011.

Submissions for this column are encouraged and qualify for SBE recertification credit. Fax your submission to (703) 323-8044 or send e-mail to [jbisset@harris.com](mailto:jbisset@harris.com)



Fig. 4: Grounding the fence at an AM tower site

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# **HARRIS**

## Next Up: Baby Boomers' Babies

Ken R. & Laura Dely

The children of the baby boomers will direct the course of radio programming for the next 10 years.

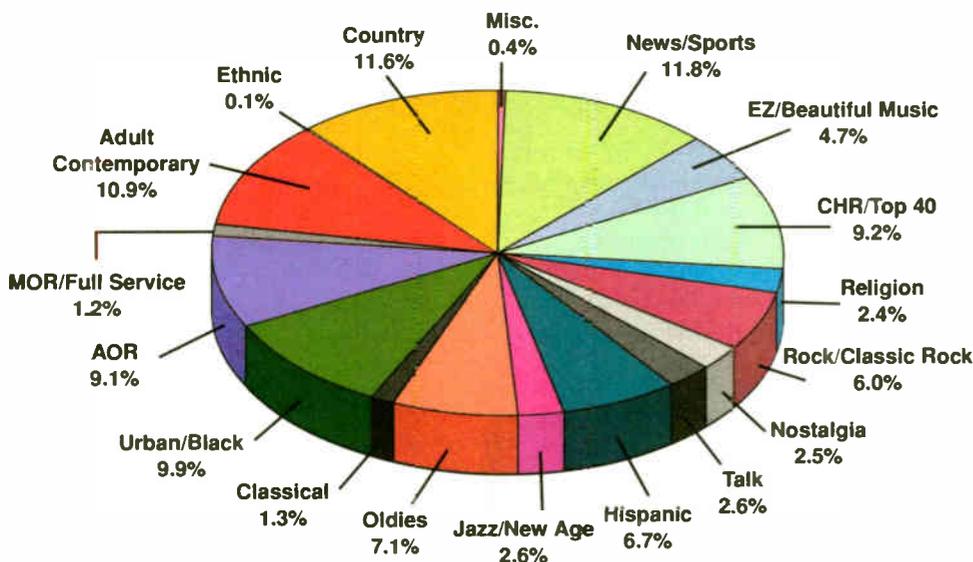
According to John Parikh, CEO of Joint Communications, the biggest population boom since the one that followed World War II will begin to affect programming definitively in the first decade of the 21st century.

revenue generators, but adult contemporary comes out on top with \$1.48 billion, followed closely by country at \$1.43 billion and news/talk at \$1.35 billion.

Just below the leaders are contemporary hit radio with \$1.10 billion and urban stations with \$982 million in revenue.

"State of the Radio Industry 2000," prepared by BIA Financial Network, identified the top-billing station in the United States as WFAN(AM) in New

BIAfn Listening by Format 12-Plus Shares



Source: BIA's MEDIA Access Pro™ and The Arbitron Ratings Co., Fall 1999

BIA Financial network

"You'll see more new music and top-40 formats, more New Kids on the Block and Boyz II Men — which are all the same band anyway."

Parikh joked in the '60s these same bands were called Herman's Hermits.

According to Interep, news/talk is the most popular format, followed closely by adult contemporary, then country, in the adults 18-plus cume.

These three formats lead the list of

York, which airs a sports/talk format.

WFAN billed more than \$60 million in 1999. The No. 2 biller, WXRK(FM), is also in New York. The alternative rock formatted station billed \$53.3 million in 1999.

The BIAfn report suggests that country is the most effective format nationally, with a weighted audience rating of 10.9 percent. Adult contemporary followed closely with 10.7 and contemporary hit radio with 10.6 percent.



Bob Michaels

BIAfn explained that these figures mean that almost 11 percent of all listeners in Arbitron rated markets listen to country, slightly fewer listen to AC and contemporary hit formats.

BIAfn took the entire population of all Arbitron rated markets and then determined which percentage each market's population represents in order to calculate a format's relative popularity nationally.

Another important statistic in the BIAfn report: Spanish formats grew about 65 percent in weighted audiences nationwide over the last five years while country was the big loser, down 31.5 percent over the same period.

"News and talk formats are marvelously adaptable," said Larry Rosin, president of Edison Media Research. "The FM talk stations will continue to grow with their rock and roll attitude and younger people who didn't grow up with it will like the format as they grow older."

BIAfn noted that a newcomer to the top 10 station revenue producers is KLSX(FM) in Los Angeles, which billed an estimated \$38.4 million in 1999 with its young adult talk format.

See TRENDS, page 26 ▶

### MANAGEMENT CORNER

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Vincent M. Ditingo

Radio executives who identify and define target demographics in today's media marketplace can achieve a winning program strategy.

The better the "quality" of the overall audience, the better the sell. To that end, even if a station does not lead in a select, upscale 25-to-54-year-old demographic, it can still record healthy advertising sales if it attracts even a part of that audience.

\$\$\$\$

One principal way to gage the inherent strength of a format is to see what kind of programming is garnering the highest "power ratio" — that is, the format that does the best job in converting audiences into revenue.

Enter sports radio.

According to BIA Research, the all-sports format, which entails sports talk, news and play-by-play programming, tops the list of all major format power ratios at 1.55.

Simply stated, this means that sports radio tends to "oversell" their

See SPORTS, page 38 ▶

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# Hispanic Listeners Use Radio More

Steve Sullivan

"Spanish radio is the same as English radio — only in Spanish."

That statement was made at a recent Radio and Television News Directors Association convention by Josivan Padilla, news director at Hispanic Broadcasting Corp.'s WADO(AM) in New York City.

Padilla's point is that there are many formats within the Spanish-language radio, just as there are in English-language radio: from news and sports to various styles of music and talk.

Combine a rapidly growing Hispanic population in the United States, the tremendous cross-over appeal of artists such as Ricky Martin and Christina Aguilera and an annual economic growth rate that outpaces that of the nation on the whole and you can see why Hispanic radio is *my caliente*.

## Population, ratings, revenue

"It's a three-pronged situation," said Kathleen Bohan, vice president for research and marketing at Katz Hispanic Media. "First comes population, then comes ratings and then comes revenue. The Hispanic population is growing five to seven times faster than the nonethnic population, and it's a group that's being underserved."

The United States Census Bureau projected that as of July 2000, there were more than 32 million Hispanics living in the United States, representing 11.8 percent of the total population. The bureau further predicts those numbers will increase to nearly 44 million and 14.6 percent by the end of this decade.

And these millions are listening to their radios.

According to Bohan, if you look at the raw numbers, Hispanics across all markets are 20 to 30 percent more likely to be listening to radio at any given time than the nonethnic audience, and

the raw time spent listening annually averages out to about three hours longer per week.

You see that in the ratings of the stations, Bohan said. They're not just drive-time driven like some of the general market formats.

"The reason is that the Hispanic market doesn't have saturation in other media. You have two major Spanish-language television networks, but they broadcast the same thing all across the U.S. But when you look at the Hispanic population overall, it encompasses many different cultures. There are people from Mexico, the Dominican



Kathleen Bohan

## Consolidation is having a favorable impact on the format.

Republic, Cuba and lots of other places. Radio has the ability to offer multiple formats in each market so you can serve all the different segments."

Consolidation is having a favorable impact on the format. As big groups such as Hispanic Broadcasting Corp., Spanish Broadcasting System and Radio Unica come into markets, they have the resources to buy more and stronger signals.

"Signals play a huge role," said Bohan. "The better your signal, the better your ratings."

"To this day, Spanish radio has more AM stations than FM stations, which is rare for music-driven formats. But as more FM stations with better signals are being purchased by Spanish-lan-

guage broadcasters, the ratings are exponentially going through the roof."

Advertisers know about all of the above. They know this, too: that the purchasing power of the Hispanic community in the United States is estimated at nearly \$350 billion. While the nation's economy as a whole grows at an average of 3 percent annually, within the Hispanic market it has grown 65 percent over the past eight years. Advertisers are able to get better returns on their efforts by targeting Hispanics than by competing in the oversaturated English-language market.

"Spanish radio is unique in that it has continued to grow from year to year, because every year in every market it's getting a little bit more Hispanic," said Bohan.

"The radio offers a local community language. If you're an immigrant, you don't have a lot of things that are programmed directly to you that are the voice of your own community. Radio has a connection because of its interactivity in general. But in a population that's not saturated by other media, it's even stronger. It's a cultural touchstone for people."

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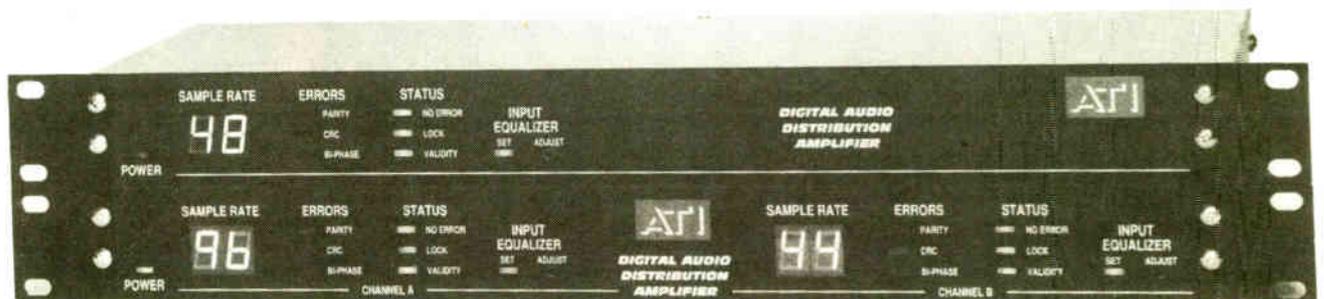
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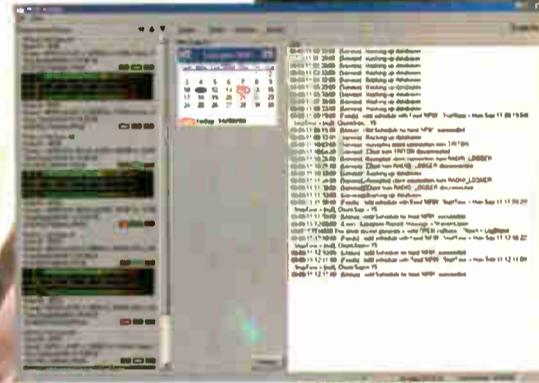
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World Radio History

# Radio News Format Is a Survivor

**Steve Sullivan**

Radio news is a survivor.

Through the years it has managed to hold its own against newspapers, television and cable. Today, you can add the Internet and a growing number of wireless devices to the mix. It's a crowded media mix, with everyone looking for some distinct advantage to attract an audience.

"Radio is basic information, and perhaps the worst thing we could do is try to be like television or the newspaper," said Tom Petersen, news director for Chicago's WGN(AM).



Maura Clancey

"TV news is seeing an erosion of its audience and newspapers are having circulation problems, but radio is stronger than ever. As for the Internet, it's an excellent source of information, but not as portable or accessible as radio."

Petersen says radio's immediacy sets it apart from the competition.

"We can still put a story on the air faster than TV, the Internet and newspapers. When a story breaks, chances are most people get first word of it from radio and that's the advantage we should continue to exploit."

In addition, radio news could do well to exploit its localism. The Radio and Television News Directors Foundation recently released findings of a news listener survey conducted earlier this year.

**We can still put a story on the air faster than TV, the Internet and newspapers. That's the advantage we should continue to exploit.**

— Tom Petersen

Among the findings were that, behind music, news is the second reason people tune into radio, and it occupies half of all listening time. Perhaps the biggest endorsement for radio news is the study's conclusion that "local news and information ultimately may be the one distinguishing factor that can keep audiences tuned into local radio."

Maura Clancey is vice president of Statistical Research Inc., the Westfield, N.J., company that designed and conducted the RTNDF survey.

"One theme that ran through the survey was that radio is a local medium. No matter if we were talking about how people are defining news in general, or what people are looking for from radio, or what they're getting from radio, people said they want radio to give them information on community events, community problems and community solutions.

"Local is key in people's minds as to what radio news is all about."

But it's often at the local level where stations are faced with the fiercest competition.

"In our market there's been tremendous growth in morning television news shows," said Mark Miller, news director

for WBAL(AM) in Baltimore. "Franchise areas that had been traditionally left to radio are now being done by TV."

Miller said there are four keys to making radio news stand out from the glut of

local competition.

"First, we have to promote the fact that we're still the most mobile, portable medium. Second, we've got to keep in mind that content is king. We're very conscious of story life. While our morning TV competition is rehashing last night's news, we get a rush doing stories that are fresh.

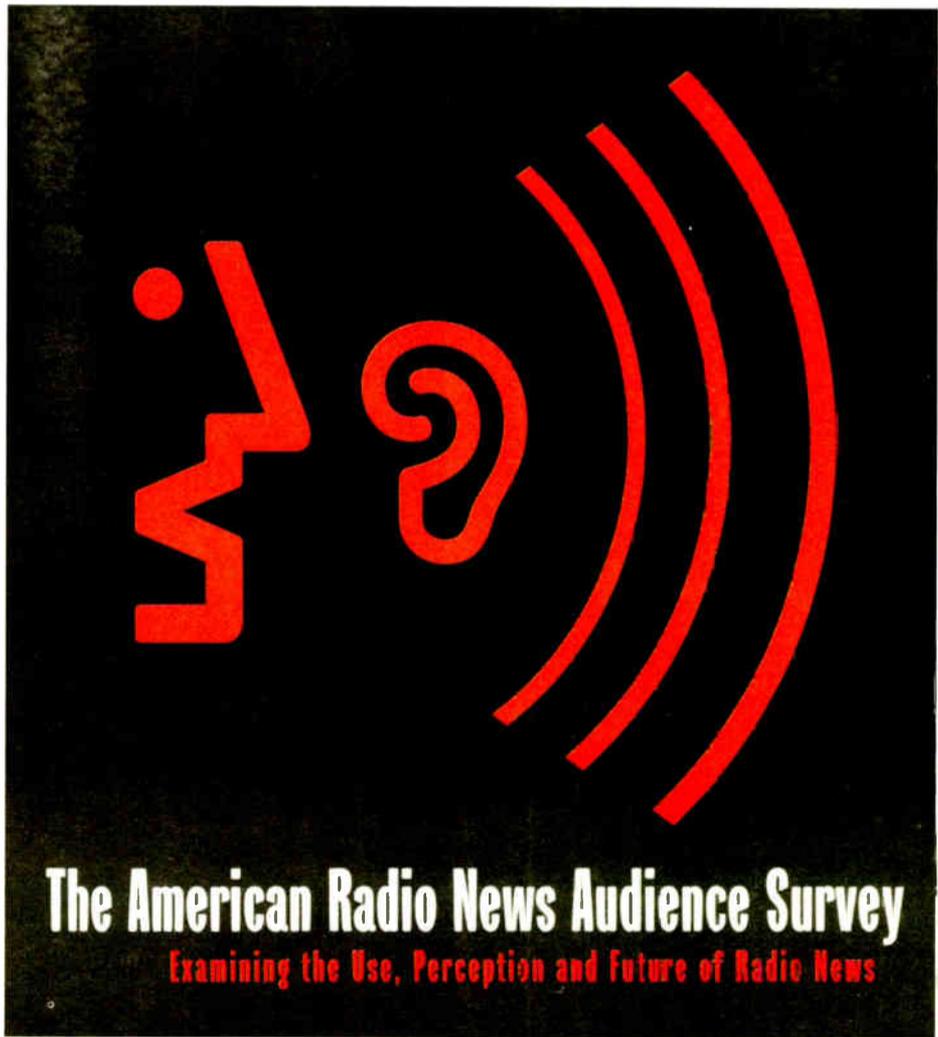


Mark Miller

spot news is going to change until every aspect of the story is nailed down. Some people don't understand that is part of what radio is about. Radio is always changing because it's constant. Television is not constant."

An encouraging revelation from the RTNDF survey is that listeners' attitudes don't always reflect their behaviors.

"A lot of things live in the shadow of television. When we asked people where they turn for news, most of the attitudes



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"Third, is personality. It still comes down to a choice of whom people feel comfortable with. And fourth is credibility. You have to be right. Even with something as small as school closings, if you get it wrong, people won't trust to come back to you next time."

"I think adding to the credibility concern is the general population's lack of understanding of the environment in which we operate," said Miller.

"If you hear something in the morning, generally you're getting a story that's still unfolding. The information you get in

— particularly in younger people — favor TV news.

"But when you look at where the younger people actually get their news, it's from radio. TV looms large, but you shouldn't worry too much because people are listening. I think radio is very healthy because in terms of where they're actually going, a substantial proportion of people are getting their news from radio."

■ ■ ■

Steve Sullivan, co-founder of the Advanced Interactive Media Group LLC, lives near Austin, Texas.

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# Trends

► Continued from page 21

News/talk has the highest AQH share, 15.8, according to Arbitron. AC is a close second with 15.3 AQH share.

According to Interep Research, the news talk format has more than tripled its audience since 1990 in the 18-plus cume.

## Divide and conquer

The oldies format has doubled its audience since 1990 in the 18-plus cume, according to Mary Ann Slepavic, vice president of research at Interep Research.

Parikhhal believes the baby boomers' kids have set the stage for a further fragmentation of oldies formats.

"You've already seen jammin' oldies... now you'll start seeing mood driven formats like hard rock (oldies)."

Rosin also predicted that the format due for the greatest change is oldies.

"As the audience ages there are two possibilities," said Rosin. "Advertisers will go with the older audience or oldies stations will have to go back to the AM dial."

Rosin said advertisers show little interest in the 55-plus age group.

Other formats will also split to gain market share, Parikhhal said.

"The hip-hop format is powered now by freshness, but in a few years you may see hip-hop oldies," said Parikhhal. "Classic rock will also fragment."

Rosin believes radio is not paying sufficient attention to the enormous trend among young listeners to tune in rap and hip-hop.

"For the first time in years, there is a big generation gap in music," said Rosin. "Above the age of 22, the taste for rap drops dramatically, and since most stations are concerned with their adult listenership, they have steered clear."

Rosin believes these formats will grow only if advertisers tell stations they are interested in young listeners.

But whither rap and hip-hop in the

future?

"I think 60 years from now people will be rolling back and forth in their wheel chairs listening to Snoop Dogg and Puffy," said Rosin.

The Hispanic format is beginning to subdivide as that population increases and demands more variety.

Alfred Alonso is president and CEO of Mega Communications, a U.S. Spanish language radio broadcasting company. Alonso said music, culture, customs and Spanish dialects vary from one radio market to another.

"Mega programs its stations based on local preferences in each market it serves," Alonso said.

Mega has pioneered both the "Hurban" format, a musical mix of salsa, merengue

and re-mix of Hispanic targeted dance music and the "classica" format, mixing gold-based salsa, merengue and ballads.

The company recently launched a 24/7 all-news Spanish language station, WNNY(AM), in New York City.

Parikhhal said Hispanic music programming reflects the diversity of tastes within this category.

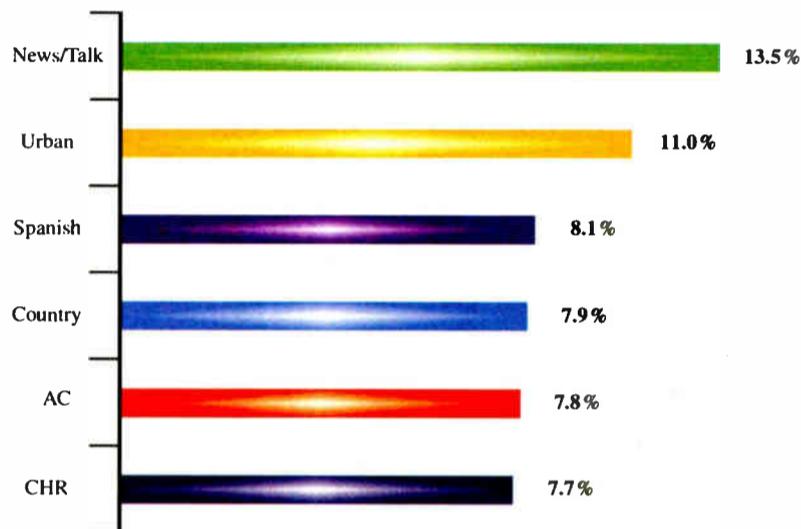
"It has already divided into Tejano which is popular in the southwest, and Balladas (slower more emotional songs) and Nortegna (similar to country music) in Los Angeles," said Parikhhal.

"You're going to see a continual increase in shock value on the air," said Parikhhal. "There will be more of whatever the talent can get away with."

Parikhhal cited such personalities as Opie and Anthony on WNEW(FM), New York and Tom Leykis who is syndicated nationally by Westwood One.

"More formats will try to push the envelope because if companies have a choice between good ratings and community service, they'll go for the ratings."

## Format shares, which measure total listening to a given format



Source: Interep's analysis of Arbitron's 93 Continuously Measured Metros - AQH Share, Persons 12+, Mon-Sun 6A-12M.

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Arbitron is known for its documentation of the past rather than predictions for the future. However Bob Michaels, vice president of programming services at Arbitron, said CHR stations, which appeal primarily to women, should watch carefully the new technologies that change the way listeners tune in to radio.

"I'd be concerned about what's coming down as far as Internet and broadband are concerned," said Michaels. "Younger, more fickle listeners are more likely to try these new technologies and I'd be attempting to shore up my image with them."

According to Interep, CHR has lost 5 percent of its audience since 1990, in the 18-plus cume.

Michaels compared the current situation in radio to what took place in the 1980s with television.

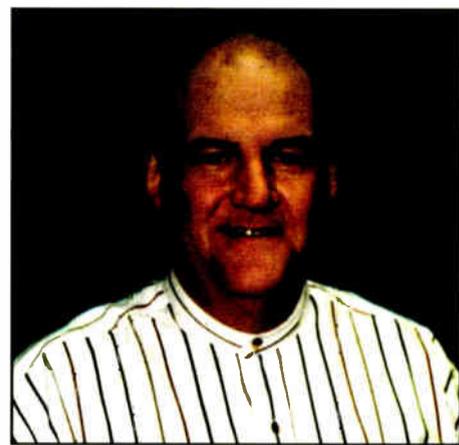
"Cable came on board and made the networks market and promote smarter," said Michaels. "Radio programmers will have to freshen their sound more frequently."

Michaels believes radio programmers must be given room to work on their long-term vision rather than being forced to focus only on the current quarter.

"Because of the pressures of Wall Street, managers are forced to look at the short-term tactical standpoint, rather than the long term strategic outlook."

Another concern of Michaels is the decrease in overall time spent listening to radio. "It's a combination of increased commercial load, marketing budgets being cut and listeners having more choices," said Michaels. "And this is before satellite and Internet really take hold."

Arbitron data from the last 29 rating periods shows that weekly average time spent listening to radio decreased from 93.0 average quarter hours per week to 83.0 AQH



Ed Shane

between spring, 1993 and spring, 2000.

Of note, cume persons using radio for the same period remained relatively constant. No qualitative data is available to show specifically where the listeners went.

According to Ed Shane, president of Shane Media Services, music from the 1970s constituted the last "mass" music.

"Music went in different directions after that," Shane said. "When FM became more popular, there were suddenly more stations in each market so formats had to fragment to survive."

According to Arbitron, the number of AM stations has remained almost constant since 1970. However the number of FM stations almost doubled in that time.

## No niches

When consolidation swept radio in the late 1990s, there was much talk of radio being able to support niche formats, now that the administrative costs were being shared among a cluster of stations.

"A niche format is a waste of a signal," said Shane. "It must add to the financial portfolio. If I've paid a big multiple for that station, I must get my money back."

"Formats like jazz are not a good asset value for a station owner, but they will appear on XM and Sirius satellite formats and on the Internet."

Shane and his staff spend a great deal of time studying the country format and advising client stations on how to program it.

"The format is soft now because Nashville is searching for something," said Shane. "Nashville has lots its way."

Consultant Pete Salant predicted that innovations would be scarce in the present industry climate.

"No format trailblazing is going on inside the vast majority of major- and medium-market stations which are owned by a handful of public entities," Salant said.

"The conservative, cautious management style of these operators and their centralized control over programming doesn't exactly encourage experimentation."

Salant believes part of the problem is the frantic level of activity within these clusters, which leaves little time for development of the next new format.

"Today's program director is hard-pressed to keep up with the administrative duties, in some cases, with a slashed promotional budget," said Salant.

"And many stations have smaller staffs and a commercial load which has increased."

Salant believes tasks such as talent coaching and weekly freshening of image elements, commonly considered critical to success, are displaced by the front-line struggle to meet revenue goals and cost control requirements.

"The way to win the heart of our listener hasn't fundamentally changed in radio's 80 years: put on a great show," said Salant.

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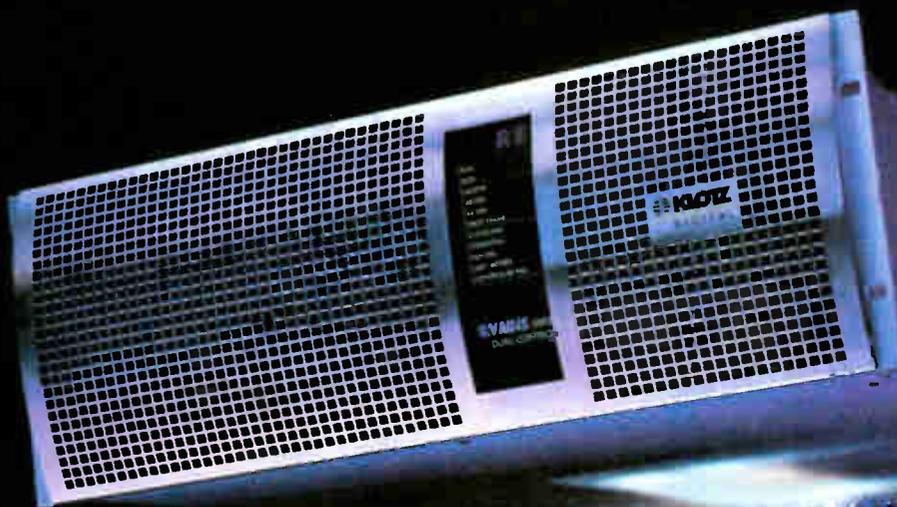
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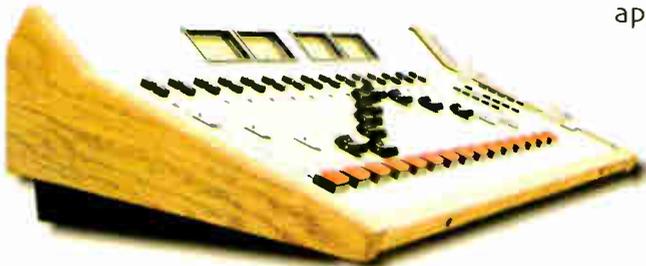
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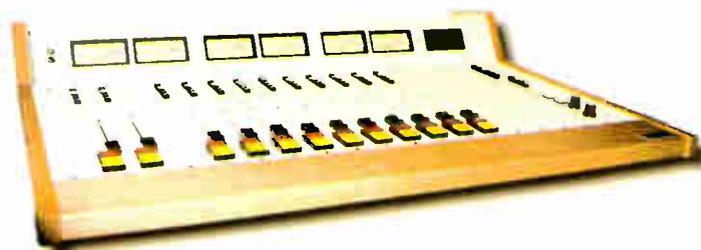


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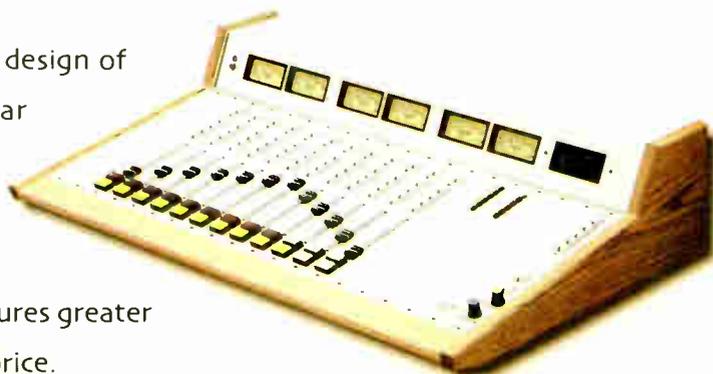
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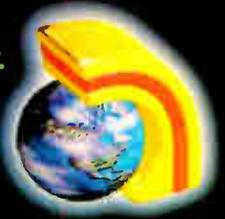


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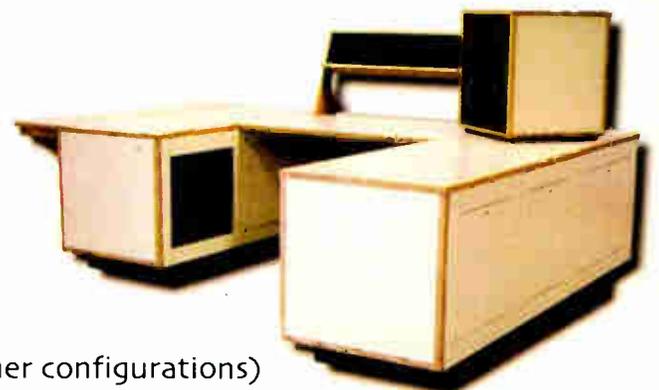
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## Sandy Wells

At many stations, programming the oldies format is about following formulas. How to keep it fresh?

One California station provides a case study.

Until about 18 months ago, the KRTH(FM) oldies format was comfortably settled into a pattern of playing hits from the late '50s and early '60s, which included lots of Motown plus a sprinkling of inoffensive pop and soul hits from the late '60s and very early '70s.

The formula kept the station in the top five of Los Angeles/Orange County stations throughout most of the '90s. But subtle changes in the music started in the summer of 1999 and became impossible to ignore a year later.

The "reengineering" at the Infinity station recently undertaken by Program Director Mike Phillips and Music Director Jay Coffey was driven by a realization that it was time to realign the "oldies" timeline.

"People in the industry are watching us very closely," said Phillips. "All oldies stations around the country have the same challenges. The core audience is getting older than the advertisers are wanting to target."

But how successful has KRTH (K-Earth 101) been in updating its image without alienating its already large and very loyal audience?

"The feedback has been really positive," said Coffey, who is also the evening host on the station. "Even the older demographics have said that they like the change of adding the '70s and '80s music. You have the real '50s loyalists that aren't necessarily happy about it, but it's not that many."

## Wide mix

With artists such as Carole King, the Eagles, Crosby, Stills and Nash and the O'Jays in the mix, what K-Earth appears to offer is more genuine variety than in the past. Some might argue the change hearkens back to AM top-40 radio's eclectic roots 30 years ago.

"The '70s were an interesting time for me, because there were really these camps that got developed," Coffey said. "It was the beginning of hard rock. The hard rock and rollers absolutely hated disco. And things also started going more adult contemporary.

"So you had really three different

groups of music. You had adult contemporary, which were the Manilows, the Streisands and the Neil Diamonds. Then you had the real hard-rock stuff, which was Boston and Foreigner and then you had the disco. And it was tough to blend all that music together.

"That was one of the problems. People developed these camps. You had KMET, which played the hard rock. Top-40 stations on AM had problems because they had to blend all this stuff together. The challenge in the '70s when I was a program director was 'how am I going to get a Foreigner, a Manilow and a Donna Summer in the same quarter hour?'"

We don't have to experience that here, we can make it blend a lot better."

## Experienced

Phillips calls upon programming skills honed working at legendary outlets such as Seattle's KJR(AM), San Francisco's KFRC(AM) and WXLO(FM) in New York.

The arrival of competition from KCMG(FM) "Mega 92.3" (formerly Mega 100) with its Latino-oriented mix of R&B and disco from the '60s, '70s and '80s was a significant challenge to K-Earth's dominance, making the station sound a little out of date.

Now, according to Phillips, KRTH has turned that to advantage by playing the variety card.

"Because of what they (Mega) are, they can't play the same variety that we can play. We can play Elvis to the Eagles."

"And we can play a lot of the things they play," added Coffey. "Motown is a big staple of ours and a lot of the '70s R&B stuff we can play. We're a little bit better-positioned to be mass appeal than they are."

Once again, as in the late '70s, disco is the big consensus breaker, this time determining the decisive fault line between KRTH and Mega 92.3.

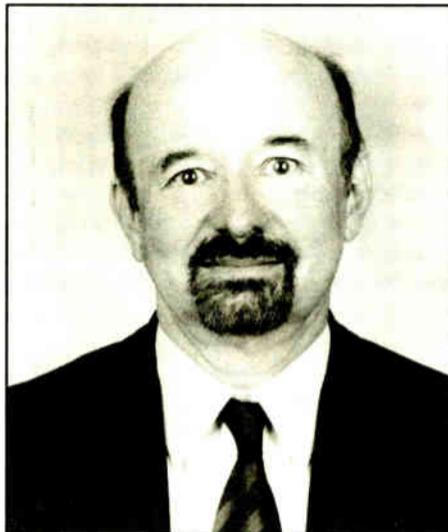
"We put on a disco song and the phones will light up and they think we're changing format," said Phillips.

And K-Earth's core audience might not sit still with a seismic shift of that magnitude.

"One thing about K-Earth is that we have very loyal (listeners) and we have more 'program directors' per square mile," said Coffey.

"They really have a love affair with this radio station. They are committed

to this station. They are afraid that it will go away, because so many other stations change. We always reaffirm to them that we've been doing this for 27 years and we're not going away. We are going to keep doing this."



Mike Phillips

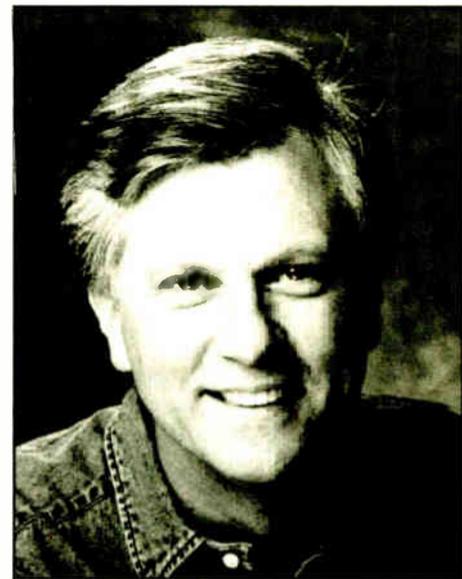
One of the keys to making the change work is deciding how to present the newer oldies. Until a few years ago, selections by the Eagles, Chicago and the Police were staples of adult contemporary KBIG(FM) and KOST(FM). Phillips credits Coffey's background as a Bay Area rock musician from 1965 to 1973 in keeping the transitions among the various sub-genres of rock sounding smooth. He grew up alongside many of the bands that defined much of what KRTH(FM) represents.

"He's a master of making this music flow and it's real tricky when you're playing this many kinds of music," said Phillips.

Bands such as the People, Syndicate of Sound, the Doobie Brothers and the Grateful Dead were making the scene in those years.

"Where I grew up there were garage bands on every block," said Coffey, who played bass guitar in San Francisco Bay area bands during the late '60s and early '70s.

K-Earth is adding production elements to help listeners accept the some-



Jay Coffey

times-acute genre shifts. A '50s oldie such as "That'll Be the Day" by Buddy Holly is typically preceded by a jingle identifying the song as "oldies fun!"

Traditional a cappella transition jingles borrowed from the Bill Drake era and KHJ add to the classic top 40 feel of the station. And when KRTH(FM) reaches into the '80s, the message is even more explicit.

"The first time we put on 'Every Breath (You Take)' by the Police, we got real nervous about it, because we added it fairly early in the whole '70s transition and it just stuck out like a sore thumb," said Phillips.

"That's why you hear what we call a 'sweeper' now that said '17 years ago today ...' and then we'll play it, and then people will realize that if it's 17 years ago then maybe it's ok that K-Earth plays it."

And Jay Coffey adds, "I had a guy call up when we played it and he said, 'Well, Jay, I guess I'm an old guy now.' I said, 'What do you mean?'"

He goes, "Well, I was in college when that record was No. 1 and I didn't realize how old I'd gotten. I'm 40 years old now. That's almost a 20-year-old record."

"I said, 'Yeah, that's an oldie now.'"

■ ■ ■

Sandy Wells is a radio columnist for San Gabriel Valley Newspapers in Southern California.

Contact him via e-mail at SandyWells@Prodigy.net

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Chris Witting, host of 'The Success Journal'

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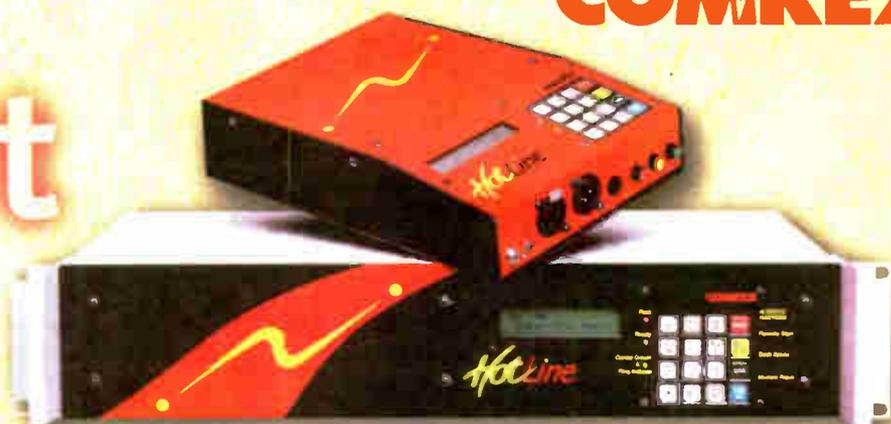
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# Country Radio Adapts to New Era

**Ken R.**

It was 75 years ago this month that country music was born, as 80-year-old Uncle Jimmy Thompson brought his fiddle tunes to the air on the WSM(AM) "Barn Dance" program.

In the ensuing years, artists such as The Possum Hunters, The Fruit Jar Drinkers and Roy Acuff and his Crazy Tennesseans have given way to acts like Faith Hill, George Strait and Alan Jackson.

Nashville's "Grand Ole Opry" is still going strong, but social and technological upheavals have forced the popular country format to evolve.

"About a fourth of all commercial stations in the USA and Canada play country music," said Paul Allen, executive director of Country Radio Broadcasters Inc., a nonprofit association that holds conventions nationally and regionally.

"But the format appears to be at a plateau."

## What next?

Allen believes that while the recording industry is producing some good music, not enough chances are being taken.

"I'm talking about the programmers becoming more comfortable in a consolidated environment," said Allen. "They still need to play more unknown artists that they believe in and they need to expand their current playlists from 25 or

30 songs to 30 or 35."

Allen also cited longer chart rides for established artists and increased commercial loads as reasons that new music is difficult to expose on the radio.



John Crenshaw

"I think stations will have to find the threshold where the spotlight begins to chase listeners to alternative entertainment," said Allen. "Most listening occurs in the car where people also can go to cassettes and CDs."

John Crenshaw, program director of WCMS(FM) in Virginia Beach, Va. believes that the country format is on its way back up from a recent slump.

"We are on the beginning of the bell curve," said Crenshaw. "The product is

out there but timing is everything."

WCMS is owned by Barnstable Broadcasting Inc., which also owns country station WGH(FM) in the same market.

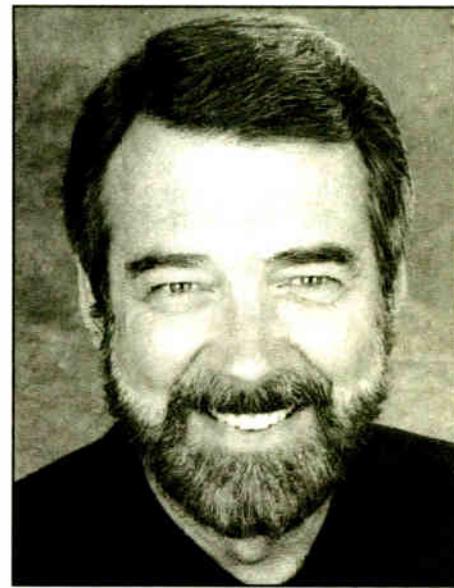
"We evolved our format so that we don't clash with our sister station," said Crenshaw. "While we play a lot of the same music, we went with a more laid-back approach and more service. WGH(FM) is more upbeat with an accent on fun."



Ed Benson

Consultant Michael O'Malley, president of O'Malley Media Group LLC, expanded on the idea that country stations must differentiate themselves with their non-music elements.

"The challenge facing most stations is developing a unique 'stationality,'" said O'Malley. "That's the greatest hedge in the ratings because whether the music is hot or not, if you have strong people who understand the market, you'll be able to weather the swings."



Paul Allen

is still popular and enjoys great support of the advertising community, an "off-shoot" format might allow more exposure for new artists.

"There's a lot of discussion about this now," said Benson. "Some of the radio guys think that if we had another 'brand' of country, we might be able to get around the tight playlists and limited exposure for new artists."

## Tailor-made

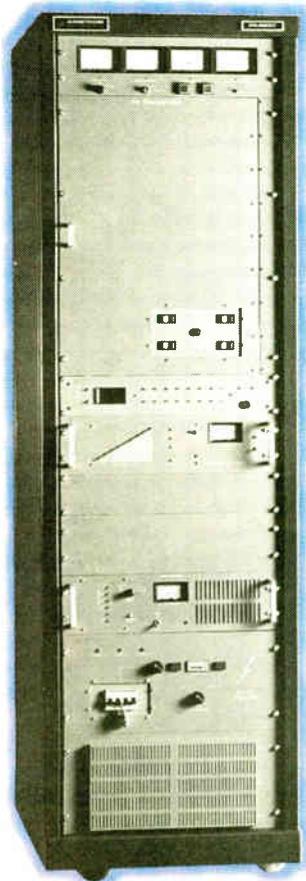
Benson noted that Nashville now produces multiple mixes of certain songs tailored for different formats.

"Some of the artists are trying to develop a bigger mass audience, but this isn't really anything new."

There is some uncertainty in the future of the format.

"I'm thinking about the long-term ramifications of clusters," said Benson. "When there are several stations in a cluster, management might not be willing to devote as much marketing and creative

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**About a fourth of all commercial stations in the U.S. and Canada play country music.**

— Paul Allen

"Over the last 10 years, the passion level for the music diminished," said O'Malley. "But now many programmers are listening more critically and not just taking the latest hits by established artists."

O'Malley said the industry will face satellite-delivered programming and more Internet music sources, which will battle for the same advertising dollars and listeners.

"The winners will be the stations which are broad-based," said O'Malley. "While narrow formats are helpful in rounding out a cluster, the narrow segments of the format often fail to attract enough of a cume to overtake a format leader."

Nashville is ground zero for the country format. Ed Benson, executive director of the CRB, sees country music as the last big "national" format.

"It's the only one that hasn't really fragmented," said Benson. "You don't see a lot of difference in playlists around the country like you used to."

Benson believes that while the format

energy to a station as they would if were a stand-alone. They tend to back off on their promotional collars, but I guess this is true the other formats as well."

How does country fit into the overall format picture?

"Some people want to run a great country radio station," said Crenshaw, "I want to run a great radio station that just happens to play country music."

For an earful of what country music is today, turn on the radio on Thanksgiving Day.

On Nov. 23 at 9 p.m. ET, Westwood One radio will simulcast the CBS Television special "Grand Ole Opry 75<sup>th</sup> Anniversary Celebration." Vince Gill and Dolly Parton will host the show from the Grand Ole Opry House.

The "Grand Ole Opry" is the world's longest running radio program, according to Westwood One. Throughout its history, the program has featured legendary artists like Hank Williams Sr., Minnie Pearl, Earl Scruggs and Patsy Cline, and current artists such as Garth Brooks, Vince Gill, Diamond Rio and Clint Black.

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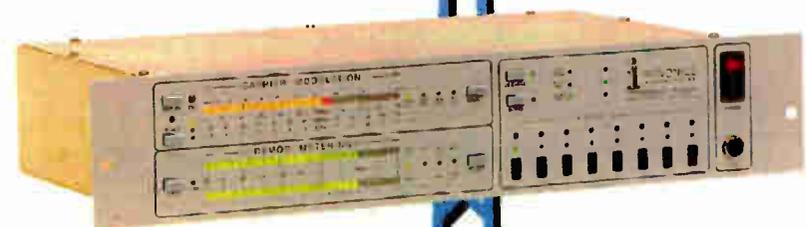
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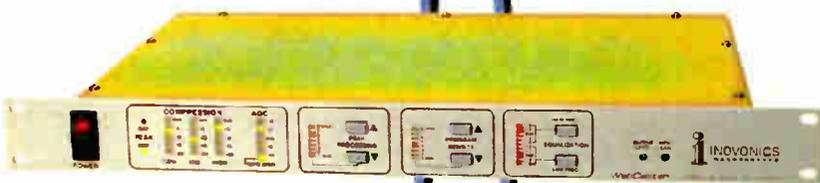
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# Adult Standards Are New Nostalgia

## Bill Mann

Sinatra and Bennett are hip again, and what used to be called "nostalgia" is now called "adult standards" to reflect its changing nature and younger demos.

As a panel of experts recently explained, if you manage the format correctly, you'll not only keep older listeners, but you'll add audience in their 30s and 40s who may have given up on radio.

As demos age, the music many listeners want to hear also changes. People who once couldn't stand Frank Sinatra have become fans. And carefully identifying artists like Ol' Blue Eyes and Tony Bennett, who appeal to both young and older audiences, is the key to adult standards' growing success, an overflow audience at The NAB Radio Show learned from broadcasters who are using the fast-growing format.

## Picking the cool

"As people age, do musical tastes change? I know mine did," said Allen Shaw, president of Centennial Broadcasting and former president of ABC's owned and operated radio stations.

Shaw, who has worked in CHR and other rock formats for more than 30 years, said he bought a station in Las Vegas in 1997 and inserted the CHR format — with great success.

"The key is finding younger-skewing standards, and which underplayed AC hits to incorporate. We use Sinatra, Ella Fitzgerald, Nat King Cole, Tony Bennett, among others."

And choosing carefully also means not picking the wrong artists from the '40s and '50s, Shaw said. He gave some specifics:

"Mel Torme is cool; Teresa Brewer is not.

"Peggy Lee is cool to younger listeners; Margaret Whiting is not.

"Sinatra is cool; Frankie Laine is not."

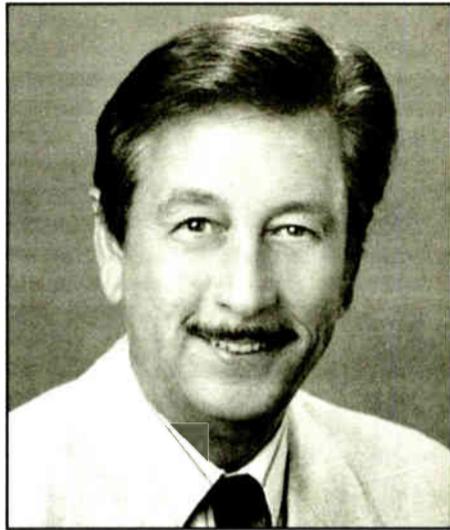
The adult standards format hits a lot of affluent 40-plus listeners, said Charlie Whitaker of the new 4Everadio Partners in Dallas.

"They hate everything they hear on the radio, and many tell us they'd almost given up on it until they heard what we're doing. This is a graying format in flux right now — you're trying to keep traditional over-60s while pulling in new, 40-plus listeners.

"We just got a perceptual study back," said Whittaker, "and we're hitting precisely the demos we were looking for.

We're the number-one sell in 50 to 54, 45 to 49, and 40 to 44. This is where the money is now, and these listeners have high educational levels and incomes in excess of 75K."

About this new standards audience, Whittaker said, "In 1960, they first heard this music played by their parents when they were 12. By 1978, most were married adults. This music really lives, and it resonates with them strongly."



Chuck Southcott

More than 600 stations are programming adult standards, said "Music of Your Life" programmer and NAB panelist Chuck Southcott.

"And the number is growing. It's a living, breathing format."

Shaw said a big part of his playlist is '70s soft AC artists abandoned by today's ACs — people like Barbra Streisand, Anne Murray, Barry Manilow, Neil Diamond.

"Millions bought their records in the 40-to-54 demo, but where can you hear them now?" But Shaw agreed that programmers need to choose their music carefully — some younger listeners may find that artists like Diamond are still a turnoff.

One station where Shaw said he installed the format in 1998 "was number 16 in 25 to 54. We're seventh now, and we're number five in women 25 to 54. And we haven't lost any women over 54," he said.

"They really have nowhere else to go."

The panelists agreed that selling over-40 demos is getting easier because of the aging U.S. population, but stations still need a motivated sales force.

Shaw: "We have a 250-watt station on Long Island with the format. It has \$1.5

million in billings. Our Cleveland station has \$3.5 million. If it's sold properly, this format can reap tremendous rewards."

He said, "It's hard finding salespeople who believe in it because the agencies are still so biased."

He mentioned former KABC general manager George Green as one excellent sales consultant for the format.

## Coming back to radio

Southcott said "Music of Your Life" keeps its sound fresh through tricks like adding selections from recent hit movies' soundtracks.

Whittaker said the music changes he makes are almost all made with 40-to-54 listeners in mind.

"We found in our study that 23 percent of these people didn't listen to radio at all ... they were disenfranchised. They'd given up on radio."

"No way that 'Music of Your Life' could make it today if it sounded like it did when it started in 1979," Whittaker said.

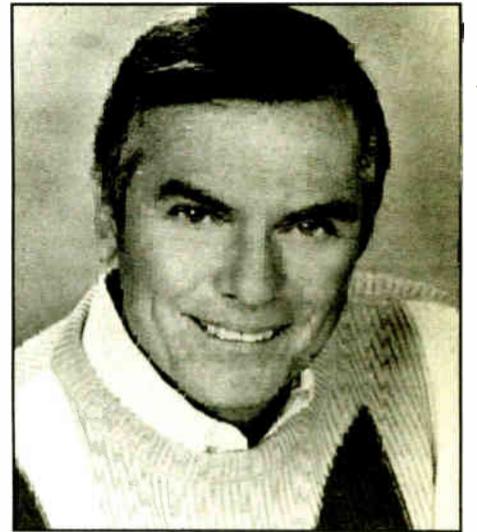
Shaw and Whittaker agreed that "core" artists in the new format include Sinatra, Bennett, Streisand, Johnny Mathis, Cole, Robert Goulet, Diamond and Manilow.

"We've come full circle with these artists," said Peter Marshall, the original "Hollywood Squares" emcee and former big-band leader who now does a nationally syndicated show for "Music of Your Life."

"People are listening to them again."

Whittaker and Shaw agreed the format shared a lot of audience with classical, another up-and-coming format that's benefiting from increased 40-to-54 listening.

Whittaker offers another format tip: "We're careful not to overload the format with news. These are educated listeners. They know where to go for an all-news station."



Peter Marshall

Whittaker said the majority of adult-standards stations are still on AM, and people under 50 are just not used to tuning to AM for music.

"And the growing number of FM adult-standards stations are drawing significantly lower-age audiences than the AMs."

Shaw said talk radio is the biggest competitor against adult standards, because it draws older listeners.

He offered this advice to programmers: "We don't make a lot of references to yesterday or the past. That way we sound fresher. Even older listeners don't want to be reminded about the past. We play a Sinatra record like it's a current hit."

Southcott reminded the overflow audience that "Irving Berlin and Cole Porter are again a big hit on Broadway. And the recent interest in swing music among young people has also sparked interest in a lot of this music."

Whittaker notes, "adult standards isn't any one thing — there's room for a lot of different format hits here."

Underlining this, a representative of Sirius Satellite Radio said the satellite service "will have a variety of adult standards formats available. Adult standards will be a significant part of our service."

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# AC, Alternative Formats Face Tests

Scott Fybush

They may share a radio dial, but programmers for adult contemporary and alternative rock stations face different challenges at the start of the new century.

For adult contemporary program directors, the task is to stay focused on the core elements of their format, even as much of the music they play overlaps with CHR and other formats.

"Stations fail because they wander off from where their audience is," said Bill Conway of San Francisco's KOIT-AM-FM. "You can get very creative in your positioning but you've got to come back to the simple things."

Barry James of Chicago's WTMX(FM) agrees.

"One of the fatal mistakes we've all

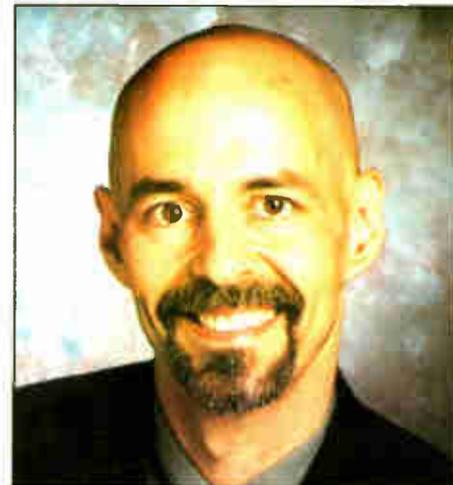
Even so, programmers say there's room to make subtle modifications to the format — as long as subtle is the opera-

**Unlike AC, nontraditional revenue is playing a growing role in the lives of alternative programmers.**

made is not knowing who our target is," he said. "We're wanting to be hipper than we are."

tive word.

Conway notes that his station has slowly moved toward a younger audience

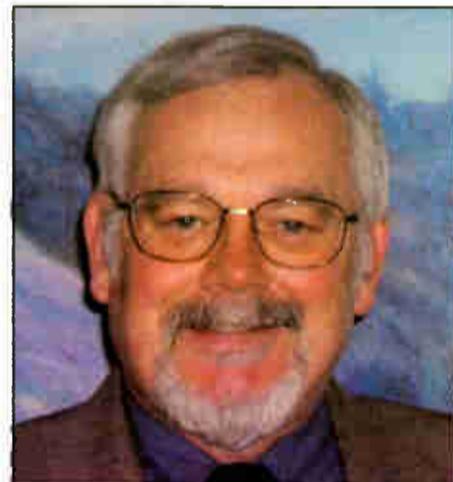


Barry James

from its strengths a decade ago with women 35 to 44, yet retains its image as the "lite rock" outlet in San Francisco.

As the AC format splinters into "soft," "bright," "modern" and other variants, programmers agree that a clear concept of a station's identity and the market it serves is important. In his market, James said he's been able to add a surprising amount of rock-based AC to his playlist.

"In Chicago, one of the things we've learned ... is that even in the heyday of top 40, WLS, as the monster that it was, had rock roots," he said.



Bill Conway

And while other formats dive headlong into Webcasting and other new forms of promotion, the advice for AC programmers is to focus on what's always made them successful — the core artists and music-intensive formatting that has long defined their product.

## New technology

Rock/alternative programmers must adapt to an audience that now gets much of its music from the Net, while remaining true to the mission the first alternative stations developed in the 1980s.

"I still have to satisfy the people who have been listening to the station since 1985," said John Caracciolo, general manager of Long Island's WLIR-FM.

But while the Generation X audience still wants to hear the Cure and Depeche Mode, a new generation of listeners is bypassing radio entirely to find new music, and nowhere are the signs as apparent as on college campuses.

"They may be listening to our radio station in their dorms, but at the same time, they're downloading stuff from Napster, and when they get continuous play, I'm afraid of what's going to happen," said Susanne Gubanc, faculty advisor and PD at commercial college station KBVU-FM in Storm Lake, Iowa.

Unlike AC, nontraditional revenue is playing a growing role in the lives of

See AC/ALT, page 38 ▶

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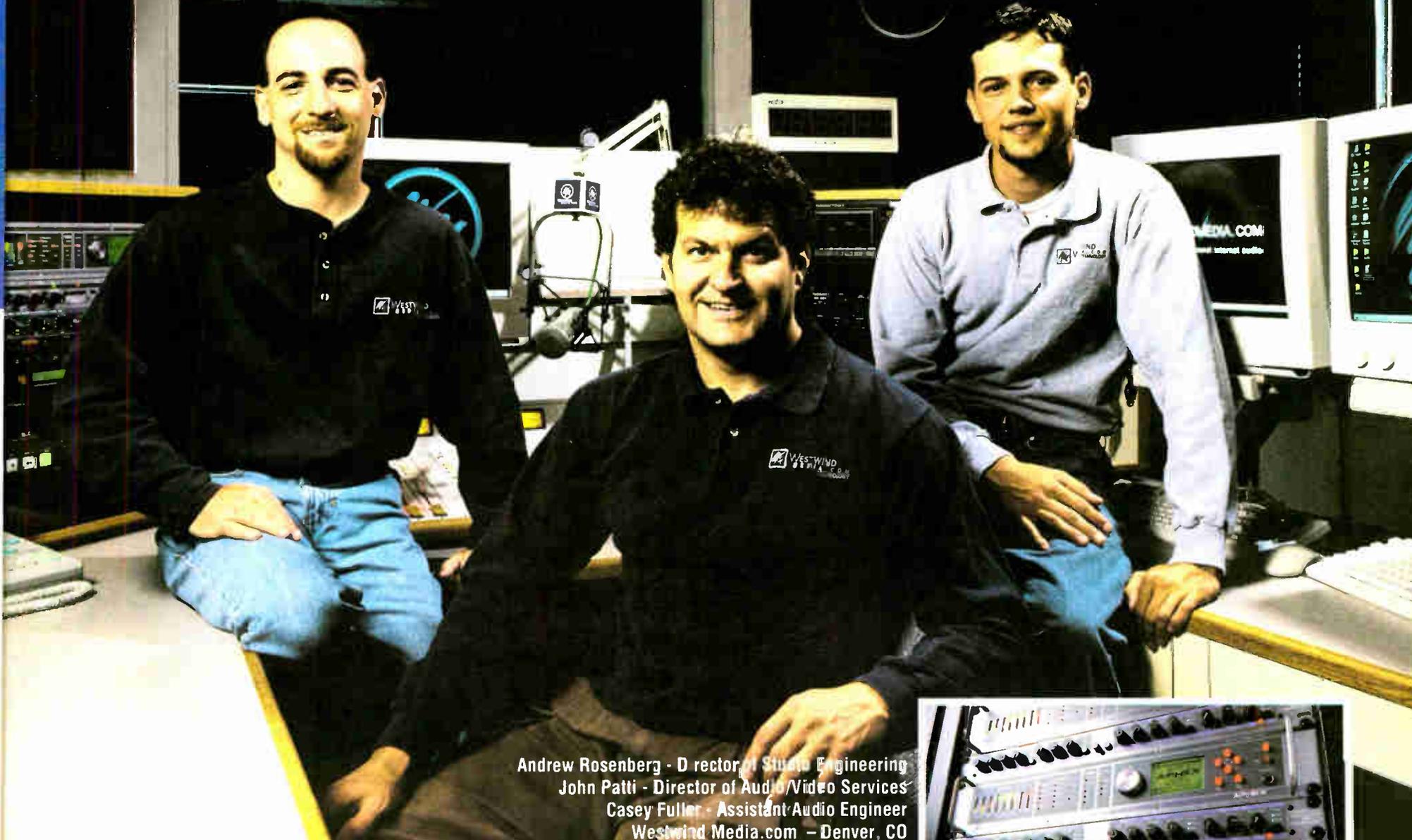
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World Radio History

# Sports

► Continued from page 21  
weighted audiences by 55 percent. In fact, two other nonmusic, AM-oriented formats, talk and all-news, also fall into the top five format power ratios, both at 1.17. (See accompanying chart.)

Like most nonmusic formats, all sports is expensive to produce and local play-by-play rights packages for radio, like in television, have soared during the 1990s.

However, the financial rewards, including season-long team coverage sponsorships and promotions, can be substantial, especially if upfront expenses can be leveraged against the operations of other stations in a commonly owned, local station cluster.

## Stemming the AM tide

The all-sports radio program concept, started in 1987 by WFAN(AM) in New York, then owned by Emmis Communications and now by Infinity/CBS, has been a major factor in revitalizing the AM band, or at least stemming its erosion.

An examination of Statistical Research Inc.'s RADAR reports over the past two years shows AM radio's average quarter-hour audience holding steady at about 18 percent.

From the relatively small to the very large radio markets, the all-sports format as well as play-by-play spot sports coverage has become instrumental to build and sustain audience listening levels.

"Sports (play-by-play) is proprietary programming. It is impossible to duplicate," said long-time programming executive Steve Goldstein, executive vice president of Saga Communications, which airs several play-by-play sports coverage on its stations.

Live play-by-play sports programming of major and/or minor league teams also attracts loyal and passionate listeners, especially those who consider themselves devoted fans to a specific team.

And there are ample syndicated sports products out there today, with offerings from ESPN Radio, Westwood One and One On One Sports, among others.

## The cream

When looking at the dynamics of all-sports radio, a newly updated Interop study on the format shows that 75 percent of its audience falls into the 25-to-54 demographic with 31.5 percent of that total in the 35-to-44 age cell when many consumers are approaching peak earning years.

According to Interop, the all-sports radio listener — who is mostly male — is twice as likely as the average adult to hold professional and managerial positions and to have an annual household income of more than \$100,000.

For radio, and to a lesser extent broadcast television, mass-appeal programming has without question given way to niche programming. Cable television, like radio, has been airing niche programming for years.

And sports programming, whether it is the all-sports radio format or live play-by-play coverage on many AM stations as

well as some FM outlets, is niche programming at its finest.

Niche programming is now of vital importance to advertisers looking to reach select segments of the population.

Advertisers will stand up and take notice if you can demonstrate that your format reaches a large, targeted segment of the consumer population, such as young adults and affluent or upscale adults.

Take, for example, the programming lineup for the WB television network. Among the lower-rated shows in overall household ratings in any given week are "Dawson's Creek," "Roswell" and "Popular."

They rarely break the top-100 mark in the weekly Nielsen television standings, yet they are considered highly successful programming vehicles for WB and have been renewed for the 2000-01 TV season.

The reason: they specifically deliver teen viewers in large numbers to advertisers targeting that consumer group.

The lesson here is to make the best possible case for a format's demographics — whether it's all-sports, classical, adult contemporary or oldies or another niche format — and turn those demographics into gold, quickly and efficiently.

For many radio executives, that task has become simpler since the Telecom

## Sports Wins in Power Ratio

The power ratio quantifies the relationship between sales and audience shares. It is calculated by dividing a station's share of market revenue by its shares of local market commercial listening.

So the country format's 1.12 means that it sells 12 percent more of the total available radio ad revenues than if the pie is divided according to each format's audience share.

| Format Category    | 1999 Weighted Power Ratio |
|--------------------|---------------------------|
| Sports             | 1.55                      |
| AC                 | 1.20                      |
| AOR/Classic Rock   | 1.19                      |
| News               | 1.17                      |
| Talk               | 1.17                      |
| MOR/Full Service   | 1.13                      |
| Country            | 1.12                      |
| Rock               | 1.09                      |
| Oldies             | 1.07                      |
| EZ/Beautiful Music | 1.05                      |
| Jazz/New Age       | 0.96                      |
| CHR/Top 40         | 0.90                      |
| Urban/Black        | 0.80                      |
| Spanish            | 0.65                      |
| Classical          | 0.57                      |
| Religion           | 0.50                      |
| Nostalgia/Big Band | 0.37                      |

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## AC/Alt

► Continued from page 36  
alternative programmers.

"We're so cluttered on our radio station — 'brought to you by this, this, and that' — Web sites are a great way to get rid of all that by directing listeners there," said Wall.

too," said Tom Fricke of SBR Creative Media, which specializes in developing such streams for radio Web sites.

Whether it's multiple streams or a single broadcast channel, there still will be a need for radio programmers.

"There will be a role of someone to say, these are the best of the best, these are the hits," predicts Dave Beasing of Jacobs Media.



The staff of commercial college station KBVU-FM

When they get there, listeners may also find a solution to the splintering of the alternative format, in the form of multiple Web-only streams.

"An alternative format might want to do a retro channel — Cure, Depeche Mode — and there might be a grunge channel

The programmers took part in a panel discussion at The NAB Radio Show.

Scott Fybus is the editor of NorthEast Radio Watch when he's not reporting for Time Warner's R News cable channel in Rochester, N.Y.

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I am especially happy with the simplicity of your systems. In today's complex world, everyone seems to be trying to complicate everything. **The simplicity of your equipment is a breath of fresh air.** It makes installation and maintenance easy and I'm sure it plays a part in keeping your equipment affordable.

I can't forget affordability. It was one of the major reasons I considered OMB when I started my decision making process. I did a lot of research and came to the conclusion that **OMB would provide me more for my dollar.** OMB did just that and more. Your products and customer service have far exceeded my expectations.

In closing, **I recommend OMB to any broadcaster** and my doors are open to anyone who would like to see your products in action.

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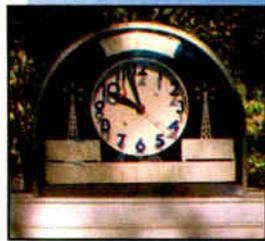
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World Radio History



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# Studio Sessions



Now  
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See Page 48

Radio World

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November 8, 2000

## PRODUCT EVALUATION

# Jukebox: Early Look at Future

Carl Lindemann

Creative Labs' next generation of digital audio devices, the Nomad Jukebox, points the direction for portable audio recorders.

As much as consumer MD player/recorders have become a staple for sound gathering, the Nomad Jukebox may be an early glimpse of the basic design for the next wave in field recorders.

Like the first MD units, the Jukebox is going to have to undergo a few revisions before it becomes practical, as the idea is better than the execution. However, low-cost field recorders like this unit will get up to speed before long.

### Good concept

The Nomad Jukebox is good at what it is primarily designed to do — store and organize up to 150 CDs' worth of compressed MP3 and/or Windows Media music. It also reads uncompressed WAV files.

Basically, this is a 6 GB hard drive with a rudimentary built-in processor and simple pushbutton interface on top. A USB connector allows for fast data transfer of music from a host computer.

This is the next generation of MP3 players. Instead of relying on pricey static RAM chips for storage, this unit opts for having an actual hard drive with an 8 MB RAM buffer for anti-shock.

The unit is about the size and shape of a portable CD player and is powered by four rechargeable AA NiMH batteries.

The Nomad Jukebox has greater capabilities than previous models, such as playback speed adjustments and an analog Line In port. The D/A sounds much better than previous Nomads. It also has a mini

headphone jack and dual Line Out jacks.

Earlier versions of the Nomad had an integrated mic that allowed for rudimentary recording with a low-resolution codec.



The mic could only be called cheesy at best, and was not conducive to capturing broadcast-quality audio, but it made the most of the limited storage capabilities.

On the Jukebox, the Line In connection can record uncompressed 16-bit mono audio. Software controls allow the user to adjust the sampling rate from 48 kHz down to 11 kHz. At any setting, there is room for hours of recording.

The controls also allow for setting levels on the fly and simultaneous monitoring through the headphone jack. Unfortunately, there is no metering to indicate levels.

Moving the recording off the drive to the computer for production is easy through the USB port. But at a 12 MB-per-second transfer rate, very large files may take awhile.

As with other static RAM recorders available, recordings do not need to be played back in real time for editing — a major drawback to cassettes, DATs and MDs. The WAV data files are dropped and dragged into the host computer for editing.

Except for the lack of metering, this unit seems to be a phenomenal deal for the \$499 list price.

Actually, it is when used as a jukebox.

As the unit boots up, I noticed that the unit is not a simple "instant-on" consumer electronics device. Instead, it is a computer pared down to essentials for audio.

Unfortunately, things were cut a little too much for recording.

### Mic check

The line-in jack requires a powered microphone. So I tried it out with a beyerdynamic MCE 58 condenser mic and with a couple of cheap electret lavalieres.

Recordings at any sampling rate were contaminated with a high-pitch howl and more hiss than a cheap cassette recorder. This happened with every mic I tried.

I guess RF pollution from the hardware is too much for the unbalanced analog jack.

Hector Marinez, public relations manager at Creative Labs, said, "It is a known problem that if the input gain in recording mode is set at a value of +5 or higher (max +15), audible noise will be experienced. Creative is working on this and will have the problem resolved through a firmware update."

Also, the monitoring was right out of the Outer Limits. An eerie echo effect came through which was incredibly distracting. I finally turned off the monitoring after setting levels.

Another problem was how easy it was

See JUKEBOX, page 47 ▶

## DIGITAL DOMAIN

# MUSHRA And Codec Comparisons

Mel Lambert

A couple of months ago I wrote about my subjective impressions of the ATRAC data-compression schemes used in MiniDisc recorders. I thought the codec scheme sounded better than early generations of this Sony-developed algorithm.

Several readers pointed out that such an analysis was far from scientific and that I should refrain from making such subjective comments rather than objective ones — a good point.

But, aside from listening tests that might be organized in a production studio, just how do we secure information about the objective performance of data-compression schemes?

It seems that people in the European Broadcasting Union had been asking the same question.

### An interesting report

I recently came across a fascinating report written by Gerhard Stoll and Franc Kozamernik titled "EBU Listening Tests on Internet Audio Codecs."

The article appears in EBU Technical Review No. 283; June 2000, available on the Web in PDF at [www.ebu.ch/trev\\_283-contents.html](http://www.ebu.ch/trev_283-contents.html)

Given that digital radio broadcast networks and audio automation systems are almost completely based on low bit-rate audio codecs, the findings in the report are illuminating.

The EBU Project Group, B/AIM

See CODECS, page 44 ▶

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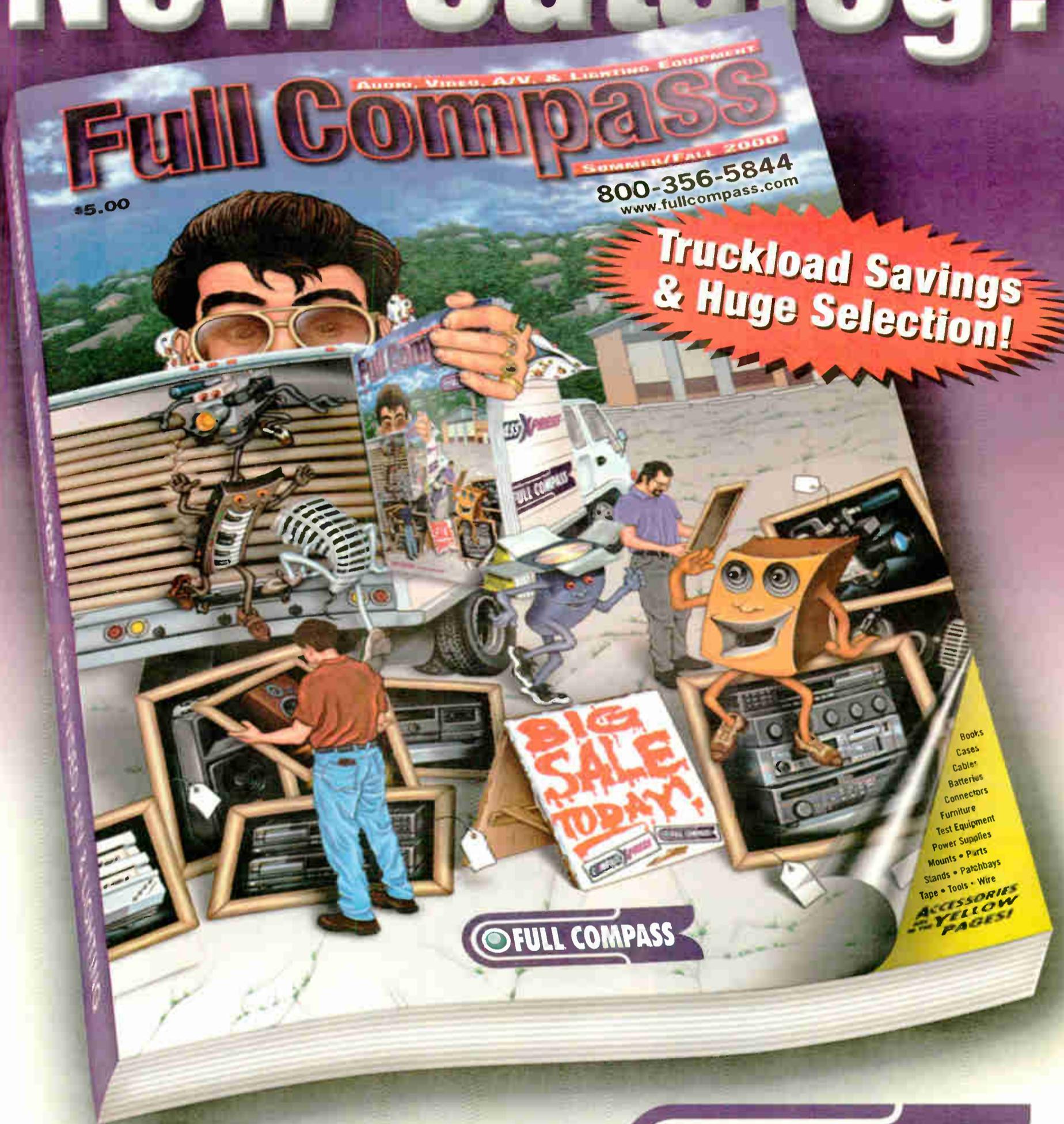
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## PRODUCT EVALUATION

# Reaktor: An Audio Lab in a PC

Alan R. Peterson

It did not take long to whip through your station's collection of zaps and electronic production elements, did it?

So fresh only six months ago and now each effect has been used several times, even the ones you thought were weak. Inspiration does not come without fresh sounds. It is easy to feel as if you have hit a creative wall.

If one more computer can be wedged into the production room — it does not need to be a big one — here's a software program that can give an existing audio library, and maybe even the entire studio, a lift.

## Software bundle

Reaktor 2.3 from Native Instruments of Berlin, Germany, combines digital synthesis, sampling and audio processing into a single software bundle for \$499. With an inexpensive MIDI keyboard used as a controller, Reaktor emulates classic music synthesizers, creates whole new instruments and generates lots of down-and-dirty, happily distorted clips desired in radio production.

Reaktor is not a DAW, nor should it be thought of as one. It is a modular development system that generates and modifies audio in ways that a user dictates by constructing an on-screen processing system.

Put simply, the software helps produce laser zaps and music beds by the DATload. But Reaktor may also be used to modify an existing library heavily to add some new dimensions and explore new possibilities.

My best yardstick for any production toy is, "Will this make me look like a genius?" With Reaktor, the answer is yes.

Reaktor is not a simple program. It is remarkably complicated and some knowledge of synthesizers, or at least a curiosity about them, is almost mandatory.

A user needs a basic understanding of

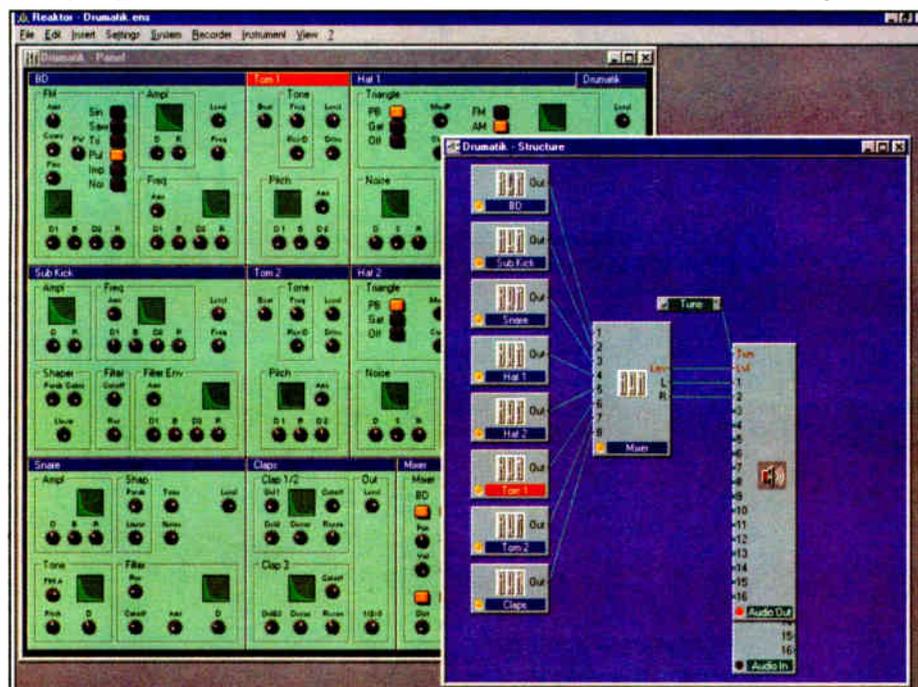
how sound is generated in order to get anything out of it.

On the upside, Reaktor fills a library with hip-sounding electronic effects that nobody else has and can help invent new ones when a situation demands it. With a CD burner, it can even produce a unique library of production elements.

accomplished in Reaktor only. Previous Dynamo owners can upgrade to Reaktor for \$329.

Simply open the program, lasso a few Modules, the basic building blocks inside Reaktor, mouse them together with virtual patchcords and start making noise.

Click the screen and a mint-green con-



A front and rear look at a typical Reaktor ensemble processing audio for a production project

Reaktor combines two previous NI programs, Generator and Transformator, along with a large library of sounds. The software bundle turns a PC or a Mac into a combination modular synthesizer, sampler and audio processing rack.

Some of the sounds can be found in the Dynamo program, a stripped-down version of Reaktor for \$199. It can play the 25 instruments in the Reaktor Premium library, but does not allow access to modify the structure of these instruments. Creating instruments can be

controlled panel replaces all the modules and patchcords. Knobs and faders appear that controls all the parameters of the sound.

Reaktor runs on a minimum 233 MHz Pentium PC or a 250 MHz Mac Power PC 604e. An advisory: P-233 machines are inexpensive, but run slower than we remember. If a faster computer can be obtained, do so. A 600 MHz Celeron PC costs less than a new 233 once did.

Installation is effortless, and includes the Reaktor program, the NI Premium Library of ready-to-use sound generators

and a CD-ROM of audio samples that may be used with the program.

Reaktor may be installed on multiple machines, but when installing, opt for the extra 100 MB enigma file. This option will occasionally request the main CD ROM to confirm the user is the owner, which means keeping the installation disks nearby at all times.

This may be annoying to some, but NI is trying to keep guard over piracy. It is either keeping the CD nearby or a "dongle" hardware key attached to the printer port of the computer.

The NI Premium Library is a collection of software beatboxes, samplers and synths written by sound designers from around the globe. For the production freak that actually spent time with real synthesizers, Reaktor offers good emulations of classic Moog, EMS Putney, SEM and PPG instruments.

A slick sample playback module called Formantor introduces the user to "granular synthesis," a wild way to experiment with audio samples. I will explain that soon.

A collection of sequenced and non-sequenced drum machines bangs out hip rhythm tracks as effectively as anything found in a paid-for CD library. One favorite is "Gonzo," an eight-slot sample player that can be triggered by a MIDI keyboard.

## Thrill factor

On the surface, it is not thrilling. But the slots can be loaded with any sound, then played in rhythm like a drum set. Clients will love this in their spots.

Drop automotive effects into Gonzo, such as an impact wrench, door slam, horn, engine rev and brake squeal. Play select keys on the MIDI keyboard with a boom-TOK ... boom-boom-TOK rhythm and the neighborhood auto service center comes to life in dance.

Load dishes clattering and vacuum cleaners for a maid service spot. Sample sneezes, coughs and sniffles in anticipation of cold and flu season. Get the idea?

This could be accomplished with a discrete sampler, but remember, Reaktor is not a single instrument; it is a self-contained electronic music lab.

With the number of preset noisemakers provided, plenty of sonic mayhem can be created just within the Premium Library. But, the real power of Reaktor is in playing "what-if" and gluing digital audio tools together.

Reaktor works in a hierarchical manner. Modules are the smallest objects in the Reaktor environment and larger objects are comprised of many of these. If the user knows anything about synthesizers in general, these are the oscillators, filters, mixers and other low-level components that comprise an electronic musical instrument.

The Ensemble window is the main overall worksurface, providing an "aerial view" of the entire creation.

When building a new sound generator, work is done in a Structure window where the Instruments are loaded, or small groupings of Modules already constructed, forming some sort of function. Instruments already have MIDI processing built in, as well as pre-configured control panels that appear in the finished ensemble.

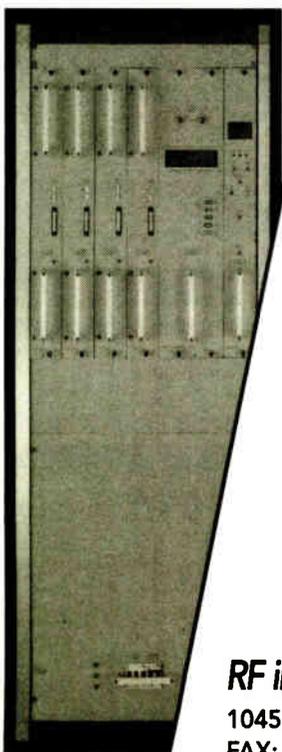
Macros are like do-it-yourself instruments intended for repetitive construction. If creating a nifty little audio building block and 10 of them are needed in a larger instrument, save it as a Macro first.

See REAKTOR, page 46 ▶

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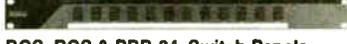
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# Codecs

► Continued from page 40

(Audio in Multimedia) performed subjective evaluations on low bit-rate codecs during late 1999 and early 2000. Of interest, the group devised a technique to evaluate low bit-rate, intermediate-quality codecs.

The new test method is known as MUSHRA, which stands for Multi-Stimulus test with Hidden Reference and Anchors. Both the EBU and ITU-R have adopted it as a standard evaluation method.

As the authors of the report point out, due to the limited bandwidth available over the Internet, efficient compression techniques for data reduction have been developed to optimize audio quality at low bit-rates.

Analog sound systems are measured in terms of the signal-to-noise ratio and bandwidth, and exhibit harmonic distortions and wide-band noise. In contrast, audio codecs are nonharmonic and produce noticeable and often disturbing distortions resulting in compromises in audio quality.

Because of this, conventional techniques are inappropriate. Instead, EBU suggested to MUSHRA that it provide a reliable and repeatable measure of the audio quality of intermediate-quality signals.

In essence, MUSHRA is a double blind multistimulus test method for evaluating medium and large impairments. It

uses not only a high-quality reference but also a direct-paired comparison between different systems.

The assessor can switch, at will, between the reference signal and any of the systems under test. Assessors are required to score the stimuli according to the five-interval Continuous Quality Scale: Excellent, Good, Fair, Poor and Bad.

## Different compressions

During the recent test series, the codecs that were investigated included Microsoft Windows Media 4; MPEG-2 AAC implementation by FhG-IIS; MP3 implementation by Opticom, which is close to MPEG-1 and MPEG-2 Layer III; Q-Design Music Codec 2; RealNetworks 5.0; RealNetworks G2; and Yamaha SoundVQ.

Each of the codecs was tested at five bit-rates: 16, 20, 32, 48 and 64 kbps, in mono and stereo modes. Test material consisted of pure speech, speech together with music or background noise, as well as music-only. Length of sequences was set to a maximum of 17 seconds, with a typical length of about 12 seconds.

According to the authors of the report, "The EBU listening tests on Internet audio coding schemes confirmed that the new MUSHRA methodology provides small confidence intervals and thus reliable and stable

results."

The authors stated that the tests also showed the evaluation results are repeatable and reproducible. The qualitative differences, in terms of actual numerical

Both MPEG-2/4 AAC codec and Microsoft Windows Media 4 exceeded the quality of the 7 kHz low-pass anchor. Differences between the best and the worst codec were particularly pronounced.

Table 2

Audio test items which were selected for the listening tests

|   | Type of audio content    | Audio item                               | Recorded by | Comments                            |
|---|--------------------------|--|-------------|-------------------------------------|
| 1 | Classical music          | Mozart: Requiem – beginning of Dies Irae | IRT         | New item                            |
| 2 | Broadcast programme      | Female speech (Dutch) & Music            | NOB         | Used already by EBU B/IR group      |
| 3 | Broadcast programme      | Female speech (Danish)                   | DR          | Used already by EBU B/IR group      |
| 4 | Folk music               | Swedish Folk Music                       | SR          | Used in ITU-R tests (ITU-R TG 10/2) |
| 5 | Live broadcast programme | Ice-hockey commentary                    | IRT         | New item                            |
| 6 | Jazz music               | Lee Ritenour                             | GRP-Records | New item                            |
| 7 | Broadcast programme      | Male speech (Danish)                     | DR          | Used already by EBU B/IR group      |
| 8 | Pop music                | Chris Rea – On the beach                 |             | New item                            |
| 9 | Pop music                | Susan Vega – Tom's dinner                |             | Used already in previous MPEG-tests |

The nine samples of audio that were used in the tests

scores, were relatively small. However, in the micro view, the authors discovered large differences amongst the different codecs.

For example, at 16 kbps, Q-Design Music Codec 2 provides "very good quality with all the music-only items."

Quality with the folk music item was no different from that of the 7 kHz low-pass anchor, which was in the range of "good quality." The same behavior can be found for the jazz item. However, this Q-Design codec "does not perform so well in cases where music is overlaid by a human voice or with speech-only items."

Results for 20 kbps stereo signal showed the quality provided by all the tested codecs was still significantly lower than that of the 7 kHz low-pass anchor.

Again, the Q-Design Music Codec 2 showed an odd behavior. With the music-only items, the codec demonstrated good quality. However, in the case of the folk song, the stereo performance was better than the mono case. With human voices, the quality dropped significantly.

Results for 32 kbps stereo signal showed that differences between various codecs became more pronounced.

Results for 48 kbps stereo signal showed that MPEG-2/4 AAC and the Opticom MP3 codecs exhibit a "fair" quality level comparable to the 7 kHz low-pass anchor.

Microsoft Windows Media 4, Q-Design Music Codec 2, RealNetworks G2 and Yamaha TwinVQ were similar to the 3.5 kHz low-pass anchor.

As the authors point out, "for certain audio items, for example folk music, the quality of the Windows Media 4 codec was indistinguishable from the hidden reference, whereas the MPEG-2/4 AAC and Opticom MP3 codecs produced 'good' quality."

Results for 64 kbps stereo signals showed that the MPEG-2/4 AAC codec came close to the hidden reference, the only codec to be evaluated in the "excellent" range for all the items.

A number of general conclusions are made in the technical paper.

- The AAC codec is the only one that was evaluated in the range "Excellent" at 64 kbps for all the audio items evaluated.
- The Q-Design and RealNetworks 5 codecs produced a grading in the range "Poor" or "Bad" independent of the bit-rate used.
- MS Windows Media 4 exhibited a nonuniform distribution over the different audio items and bit-rates. At 16 kbps, the quality varied mainly between "Fair" and "Poor;" at 64 kbps the quality level could be "Excellent," "Good," "Fair" or even "Poor."
- The Opticom codec quality was mainly in the "Poor" quality range at the lowest bit-rate and mainly "Good" at the highest bit-rate.
- Quality range of the Q-Design Music Codec 2 was dependent on the nature of the audio item and was not affected by the chosen bit-rate.
- The RealNetworks 5 codec was tested only at 16, 20 and 32 kbps; quality evaluation was mainly in the "Fair" category and was independent of bit-rate.
- The RealNetworks G2 codec showed at 20 kbps a significantly worse quality than at 16 kbps mono; at 32 kbps it offered a similar quality to 16 kbps mono. Interpretation: Does Real G2 gain from joint stereo coding?

For me, results from this series of EBU-sponsored tests should be essential reading for any station that is streaming audio via the Internet, or contemplating the use of low bit-rate codecs.

It brings some much-needed scientific methodology to an area mired for far too long in subjective nonsense and a lack of reality.

■ ■ ■

Mel Lambert founded Media & Marketing to provide communication and consulting services for pro audio firms and facilities. Reach him via e-mail at [www.mel-lambert.com](mailto:www.mel-lambert.com)

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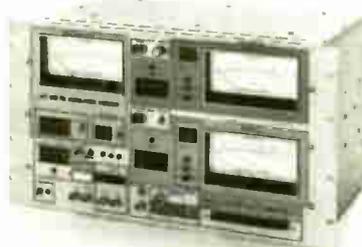
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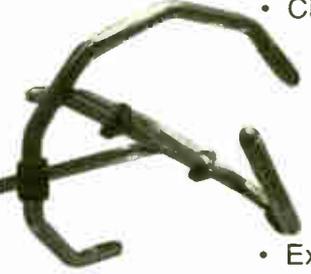
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# Reaktor

► Continued from page 42

Later, drop that Macro into the project 10 times instead of having to create that same block over and over.

On the work surface, which is the Structure window, begin opening and dragging Instruments and Macros. Click and drag connecting lines to patch everything together in any manner. String a virtual output to the soundcard, warm up the MIDI keyboard and hit a few notes. It is surprising to hear what comes out.

Click on the screen and the patchwork spaghetti disappears behind a control panel. Grab a knob, tune up, tweak a filter, add some delay or distortion — whatever the user wants to do.

By the way, to look “behind the panel” of one of the stock Library sounds to see how the programmers did it, just click the window. The control panel drops away, showing the Structure window and all the connections.

## Amber grains of WAVs

Granular synthesis is probably new to the radio production person and the possibilities it offers cannot be ignored. Audio is treated as grains or particles rather than as a series of fluctuating waves.

For a moment, suspend your notions of waveforms and wave editing and pretend a WAV file is a cookie that is bashed with a fist. Rather than making lots of tiny cookies, thousands of particles are created instead.

If those crumbs were actually little

pieces of sound, imagine being able to sweep a whole bunch together and play back whatever is contained on them or being able to use a single crumb as the basis for a loopable sound.

This is a rough idea of what granular synthesis offers — the ability to use only a particle of original audio as the foundation for a project.

One Reaktor sampler that employs granular synthesis is Formantor, found in the NI Premium Library. It is possible in Formantor to freeze the replay at any point in the sample and not hear the usual ticks and clicks heard when looping in a typical sampler.

Formantor also shift formants, the overtone structure of a complex sound, so a male voice sounds feminine and a child's voice sounds similar to a lumberjack.

What station does not have the Homer

**Product Capsule:**  
**Native Instruments Reaktor 2.3**  
**Software Synthesis**

**Thumbs Up**

- ✓ Works on both Mac and PC
- ✓ Open-ended flexibility
- ✓ Granular sampling
- ✓ WAV file export

**Thumbs Down**

- ✓ Dull green screen

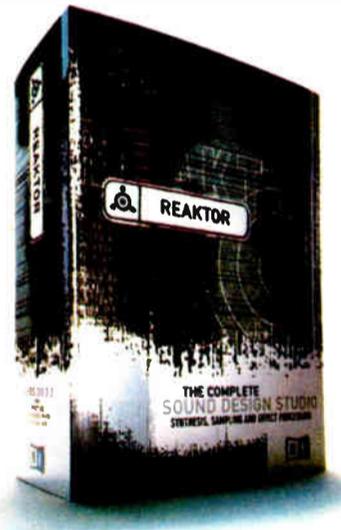
For more information contact the California office of Native Instruments at (800) 665-0030 or check out the Web site at [www.native-instruments.com](http://www.native-instruments.com)

Simpson “D’oh!” effect filed away somewhere? Drop it into Formantor, freeze the playback in the middle of the “O” sound and MIDI it. Now it is a whole choir of Homer Simpsons that, depending on your keyboard skills, can sing in full-blown harmony.

## Make a mess

But for real creativity, go back through an existing CD library and begin modifying all of those sounds. Slap some around with a little distortion, a bit of granularity and maybe a drum machine track. Save the finished work as a WAV and network it over into the DAW.

Reaktor does not work like a DAW, but more like an instrument. If some editing is needed to clean things up, feel free to use a separate editor. Then launch Reaktor and add some real-time creativity.



Even if new sounds are created by accident, the sounds will find a use somewhere. Remember, Silly Putty and Teflon were both invented by accident too.

If there were anything I would change about Reaktor, it would be to offer some variation from the green control panel screen. One complete ensemble often looks like the one just before it. Maybe the same folks who come up with new “skins” for the WinAmp Internet free media player could offer a suggestion or two.

Other than this, I have nothing but praise for Reaktor. It is somewhat difficult to locate, but is worth the effort. Larger national chain music stores may carry it.

A free limited demo is available from the company Web site, [www.native-instruments.com](http://www.native-instruments.com). Just remember to scroll down on the opening page and click on the English version. Updates for registered owners are also a free download from the NI Web site.

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# Jukebox

► Continued from page 40

to accidentally interrupt a recording by hitting one of the control buttons. The Lock button must be engaged after pressing record so the controls cannot be used.

However, this device was not designed to do recording as a primary function. The feature seems to have been included as an afterthought, and was not considered thoroughly.

Other issues are inherent to using hard drives in the field, such as sensitivity to dampness, temperature and vibrations. But those will remain unchecked until these more obvious issues are addressed.

On the positive side, battery life was decent. I got more than one hour of use off the AAs. An external battery pack could easily be rigged to feed the AC adapter jack, but this is not worth the



In comparison with an MD, the Jukebox is about the same size as a CD player

effort yet.

The Nomad Jukebox was first announced a few months ago. As a player, it is likely to enjoy great popularity.

I hope that the next version will bring the recording capabilities up to speed.

In perspective, the evolution from MD's introduction to the near-CD quality of the

**Product Capsule:**  
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- ✓ Poor recording quality

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ATRAC 4 codec took more than five years. I doubt the portable hard-drive recorder concept will take as long to become a serious contender for ENG applications.

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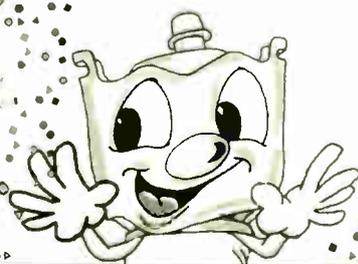
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# The Ultimate Radio Time Machine

Alan R. Peterson

Awriiiight! Now *this* is a clock!

From when I began collecting all the little things necessary to put Annandale Terrace Radio "ATR 1170" on the air in the Washington, D.C., suburbs, I have been obsessed with the desire to outfit my humble Part 15 rig with a replica of an old-fashioned radio advertising clock.

As I mentioned in previous articles, the general ambience of my 1950s-era neighborhood influenced my passion for finding one of those magnificent old timepieces — but not just any old timepiece.

It had to be one from that era, or at least look like one from that era. And it had to have some sort of kinetic charm, whether a color wheel or some other amusing aspect set in motion with a synchronous motor.

## Butterfingers

My own design, revealed in the last *World According to ARP*, is proving to be a challenging project. While it probably will not be fleshed out with any elaborate interior machinery, the fabrication of even a simple case and art-deco front is frustrating enough.

Sheet acrylic plastic has a tendency to crack and split along lines I had not intended, and the old-style "Broadway" lettering I am fond of is not easy to



Talk about a classic radio station clock: This KSRO(AM) blast from the past was found on eBay.

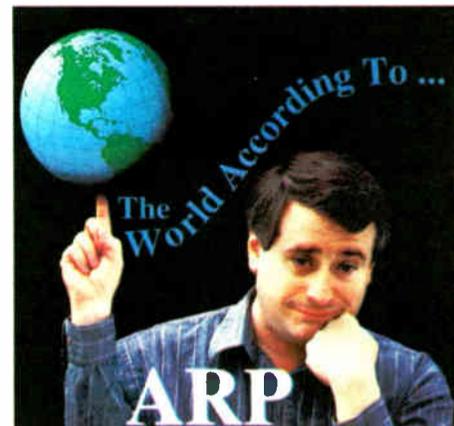
recreate in reverse on the back masking of the face.

Add to that my utter inexperience in bending even the lightest of metals, and I am almost tempted to ditch the whole thing. My attempts to date look like a junior-high shop project that was assembled in the dark.

But every now and again, along comes

the inspiration that forces one to persevere. In my case, it was a radio station clock discovered in mid-October on eBay, the online auction site.

This classic looks as if it was retired from longtime duty at Radio City Music Hall or perhaps the Grand Ole Opry. But according to its present owner — a fellow known on eBay as "Big Rider Harry" — it came from KSRO(AM) in Santa Rosa, Calif. Harry granted permission to reuse his photo and even provided me with a description of this beauty.



letters, the frequency and perhaps a slogan more permanent than what would go in the marquee.

It is hard to make out in print, but it may be possible to discern an AM frequency around 1350 or 1360 on either side of the clock face.

Best of all, the face is flanked by the very things that make a radio station clock great — animated radio towers. According to Big Rider Harry, the two towers emit little lightning bolts while the clock motor is running. Lit from behind, this would elicit a smile out of even the most jaded of broadcasters.

Harry also told me, "The clock works, but is very noisy and needs to be cleaned. The whole thing measures approximately 24 by 24 inches and is around four inches deep. I think it weighs about 10 pounds or more, and the back of the clock has a hole with a cover plate," presumably to maintain the motor and change the tube.

## no sehcrum emiT

Knowing what little I do about old electric clocks, I wonder if a little work will be necessary on the innards. Besides scaring up a fluorescent or neon tube for

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## The face is flanked by the very things that make a radio station clock great — animated radio towers.

*This*, my friend, is what I had been seeing in my head for months, but so far had been unable to adequately explain or even sketch. Now that I have an established, original design in mind, I can only look at this model with admiration.

## Marquee message

Let's begin at the bottom. The rectangular portion of the clock that looks like a theater marquee is actually intended to hold slide-in letters for advertising or for a message of the day. These three rows are where the receptionist would have posted "Welcome Cub Scouts," "Your Information Station" or other message typical of the local AM station of 40 years ago.

It also is where some smart-aleck kid would wait until the receptionist was turned away and hurriedly rearrange "Sandy Kramer in the Morning" into "the Man iS a dork" and still have letters left over.

The blue arched upper section holds the clock motor, a neon or fluorescent tube — Harry sounded unsure about that — four white spaces for the station call

this puppy, the motor might need more than a little TLC.

An odd characteristic shared by many old electric clock motors is their tendency to sometimes begin spinning backwards. A guy that runs a motor repair shop told me it is common in older electric clocks, as he tried to explain to me the fineries of shaded pole AC motors, Telechron rotors and Hammond organ motors before I stopped listening.

Whether or not this baby needs any serious work, I may still place a bid on it. Of course, I still intend to complete work on my art deco special. But as I said before, this is mighty close to the kind of clock I was envisioning some weeks back. Either way, there will be a classic studio clock adorning the walls of ATR 1170 before much longer.

I'll fill you in on how the actual *station* is coming along next time.

■ ■ ■

Alan Peterson is an instructor and CE at Connecticut School of Broadcasting's Washington, D.C., campus. Reach him at [alanpeterson@earthlink.net](mailto:alanpeterson@earthlink.net) or [TerraceRadio1170@aol.com](mailto:TerraceRadio1170@aol.com)

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Andrew HJ7-50A, 300', 1-5/8" air dielectric helix, new on reel, \$3100/BO. Amy Davis, WASY, 12714 East Hwy 97, Rocky Mount NC 27803. 252-442-8092.

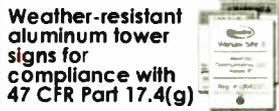


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Want to Buy

Gates Sta-Level to make a pair. Mark Schackow, 307 4th Ave E, Lemmon SD 57638. 605-374-3424.

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ITC 99/B stereo R/P's, plus many various model stereo players. Call for items & prices. Also CD & DAT machines for sale. Dan Krantz, 602-943-1958, email: [imagewestcommunications@yahoo.com](mailto:imagewestcommunications@yahoo.com).

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Ramko DC8MS Touchmatic 8 chnl stereo bdct console w/power amp & assys, books, \$500/BO. Robert Curtis, WRMC, HC-82-190-C, Violet Hill AR 72584.

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25B consoles or any other WE items, paying up to \$7500. Larry Drago, WELI, POB 85, New Haven CT 06501. 203-230-5255.

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Radio Design Labs ST-GCA2 fast gain control amp w/pwr supply, new, \$100/BO; Radio Design Labs ST-CL1 compressor, limiter w/pwr supply, new, \$100/BO. Al Wendel, ALW Electronics, 300 So 18th St, Estherville IA 51334. 712-362-7939.

Sony audio mixer, made by same as Shure M68, Hi 2, Low Z, aux input, gd cond, \$60/BO; McMartin rack mount amp, mono, great for monitor, PA, background music applications, like new, \$100/BO. Al Windel, ALW Electronics, 300 So 18th St, Estherville IA 51334. 712-362-7939.

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Urei LA12 stereo limiter in excel cond, \$600; Urei/JBL M712 stereo limiter in excel cond, \$400; dbx 163 single chnl unbalanced compressor, older model, \$110. Mark Schackow, 307 4th Ave E, Lemmon SD 57638. 605-374-3424.

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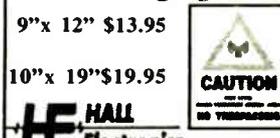
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**Revox A77**, in very gd cond, BO; Tascam 234 Syncaset 4 trk pro cassette for bdct/project use, like new cond, several avail, BO. Patrick Wahl, WOGO, 2396 State Hwy 53, Chippewa Falls WI 54729. 715-723-1037.

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**Tektronix**, dual trace oscilloscope RM-561-A, rack mount, 3576-DT sampler 3T77 sweep, \$500/BO. Robert Curtis, WRMC, HC-82-190-C, Violet Hill AR 72584.

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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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## ◆ READER'S FORUM ◆

## WNIC keeps it clean

Dear RW,

I thoroughly enjoyed Ken R.'s Aug. 2 article on WNIC(FM) ("At WNIC, Nice Guys Finish First").

It is absolutely refreshing to read that an AC station can make it as a ratings leader by "playing it clean all the way."

I would like to applaud the ownership, management and on-air staff for being "careful that everything we do appeals to the whole family."

WNIC is positive proof that a family-friendly format pays in a big way.

The day will come when the "shock-jock" programming of today will fade away, and those who program clean radio will "clean up" in the ratings.

Steve Tureen  
Station Manager  
WANE(AM)  
Worcester, Mass.

## AM argument

Dear RW,

I appreciated Scott Todd's Aug. 2 article regarding AM minimum design for receivers ("AM Isn't Bad — Its Receivers Are").

About 10 years ago, I sent a long letter to RW stating this same need; it was not published at that time.

I remember it to be 10 years because I had just purchased a 1989 GMC S-15 pickup and was disappointed with the receiver in it. Before that I had an old Falcon with an analog AM radio and it had a much better receiver. My findings on the '89 radio were these:

1. There was a cheap ceramic IF system with no width. (Ceramic filters are dirt cheap, narrow, and have a poor nose shape to them.)

2. The AGC left a lot to be desired.

3. There was no RF tuned stage and in parts of Los Angeles, some strong stations would show up in a couple of places on the dial. The lack of RF stage also made it less sensitive in rural areas.

4. When within two miles of a 10-kW station, I could hear that station leak past the IF and be in the background of all other stations, probably modulating the AGC line.

Other than these shortcomings, the radio looked fine, had a clock, and had very good FM performance. From what I have noticed, most of the shortcomings I noted in 1989 are still issues today.

I cannot understand the lack of FCC action on this issue for the last 30 years other than to say that the commission has too

many lawyers and not enough real "dyed-in-the-wool," "broadcast-loving" engineers.

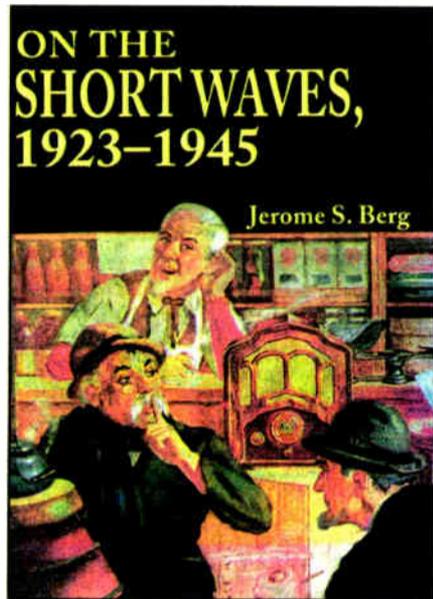
Again, thanks for the good article but I doubt that we will win this one.

Hal Williams  
Broadcast Engineer  
Los Angeles

## Book review

Dear RW,

I had a little chuckle regarding Paul McLane collecting books ("Berg Goes On the Short Waves," RW, July 19).



As a matter of fact, I enjoyed the review of the book on shortwave. I picked up a copy recently and it was pretty good, and yes, it would be nice for the author to continue the saga where he left off to the present time.

Radio World and Popular Communications are about my only resources for book reviews on radio. I have picked up a few of the books in the last couple of years from RW reviews.

Keep up the good work.

Al Ogrizovich  
Jacksonville, Fla.

## Quetzal questions

Dear RW,

Thanks for the excellent Aug. 16 article "Diversity Down Since Consolidation" by Lyssa Graham.

I'm not surprised that Betsy Cameron had not received a return phone call from the Quetzal Fund. It appears they have their hands full investing in hip-hop Web sites.

I attended a session of minority broad-

Localism:  
Listeners'  
Choice

News flash: Local content is key to radio's success. This actually is not a new thought; indeed the concept has become a mantra, repeated by the authors of study after study.

Yet radio's dependence on syndicated products suggests this lesson is lost to many broadcasters.

At this fall's NAB Radio Show, for example, sessions such as "Local News: Long-Term Life Insurance for Small Market Radio," "The Internet, Local Retail and Radio" and "Radio + Internet Portal = Super Localism" examined aspects of localism. All hammered the same point: consumers turn to radio first, and they expect and want local content available there.

Also remember localism when designing your station Web site.

Arbitron and Edison Media Research recently compared what consumers want to see on their favorite radio station's Web site to what was actually on that site. The researchers found a disconnect.

Most stations post pictures of their personalities and hosts, but they skip local events and community calendars — exactly what listeners say they want to see. Your morning crew may not like to hear this, but their toothy grins rank very low on listeners' Web wish lists.

Radio's strength is its immediacy. Consumers expect us to carry breaking news and information about their communities.

A recent survey of consumer views on radio news reinforced this. Maura Clancey is vice president of Statistical Research Inc., which conducted the news survey for the Radio and Television News Directors Association.

Clancey said, "One theme that ran through the survey was that radio is a local medium. Local news and information ultimately may be the one distinguishing factor that can keep audiences tuned into local radio."

Syndicated programming has its place, but it can move significant blocks of the day out of the reach of local programming. And local stations may be unable to compete with the resources that a nationally distributed program has at hand. Yet research still shows that listeners prefer programming about their community, schools, local politics and events.

And with approximately 80 percent of most stations' revenue earned from local business, this is an obvious opportunity to match local sponsors to local programming. That's a form of traditional revenue that may be overlooked as stations use more syndicated programming that diminishes this natural link.

Get local!

— RW

casters at a convention in June. The panelists and participants were critical of Quetzal/Chase Capital Partners (Quetzal/CCP).

As reported by Yahoo, [http://biz.yahoo.com/bw/000522/ny\\_quetzal.html](http://biz.yahoo.com/bw/000522/ny_quetzal.html) May 22, two of the companies funded by Quetzal were Web-based companies. Only one was a minority broadcaster.

Quetzal/CCP, which announced the first closing of its fund on March 31, has completed three investments which include the following: a \$30 million investment in Blue Chip Broadcasting Inc., an African-American-owned-and-operated radio group headquartered in Cincinnati; a \$4 million investment in Hookt.com, [www.hookt.com](http://www.hookt.com), a New York City-based company that has developed an online community and entertainment portal dedicated to the hip-hop music genre and lifestyle; and a \$7.5 million investment in Urban Box Office Networks Inc., [www.ubo.com](http://www.ubo.com), a New York City-based Internet media company focused on

serving the urban marketplace.

While the Web-based companies fall within Quetzal's mandate to invest in "communications" entities, they do nothing to further the diversity of broadcast voices.

Chuck Tarver  
Manager  
WVUD(FM)

University of Delaware  
Newark, Del.

## Write to Us

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READER'S FORUM

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## Radio World

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## NEXT ISSUE OF RADIO WORLD NOVEMBER 22, 2000

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# *THE WHEATSTONE D-5000*

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## *DIGITAL AUDIO CONSOLE*

**HIGH TECH** — FOR LESS!



*This new D-5000 audio console from WHEATSTONE gives you our top-of-the-line D-600 digital technology—at a modest price!*

- Totally modular design lets you hot-swap all modules for on-air servicing; even DSP and CPU functions reside on easily changed modules.
- Traditional user interface with clean layout and familiar control surfaces.
- Available with up to 26 input modules (any mix of analog and digital).
- 4 stereo mix busses, each with digital and balanced analog outputs.
- Flexible mainframe layout options.
- Inputs can be field-converted from analog to digital (and back) through a simple daughterboard change.
- Choice of 32, 44.1 or 48KHz console clock rates (can be synced externally).
- Serial port allows true integration with routers and automation systems.
- Dedicated phone module with DSP generated MXM—two modules can be combined for up to 4 MXM sends.
- 8-character alphanumeric source displays above each fader.
- All channel fader, display and switch settings are addressable via the serial port for remote control and router/automation communication.
- Exclusive VDIP™ software lets you configure console with a laptop PC (no pulling modules, installing jumpers or setting dipswitches). Once configured console runs standalone.



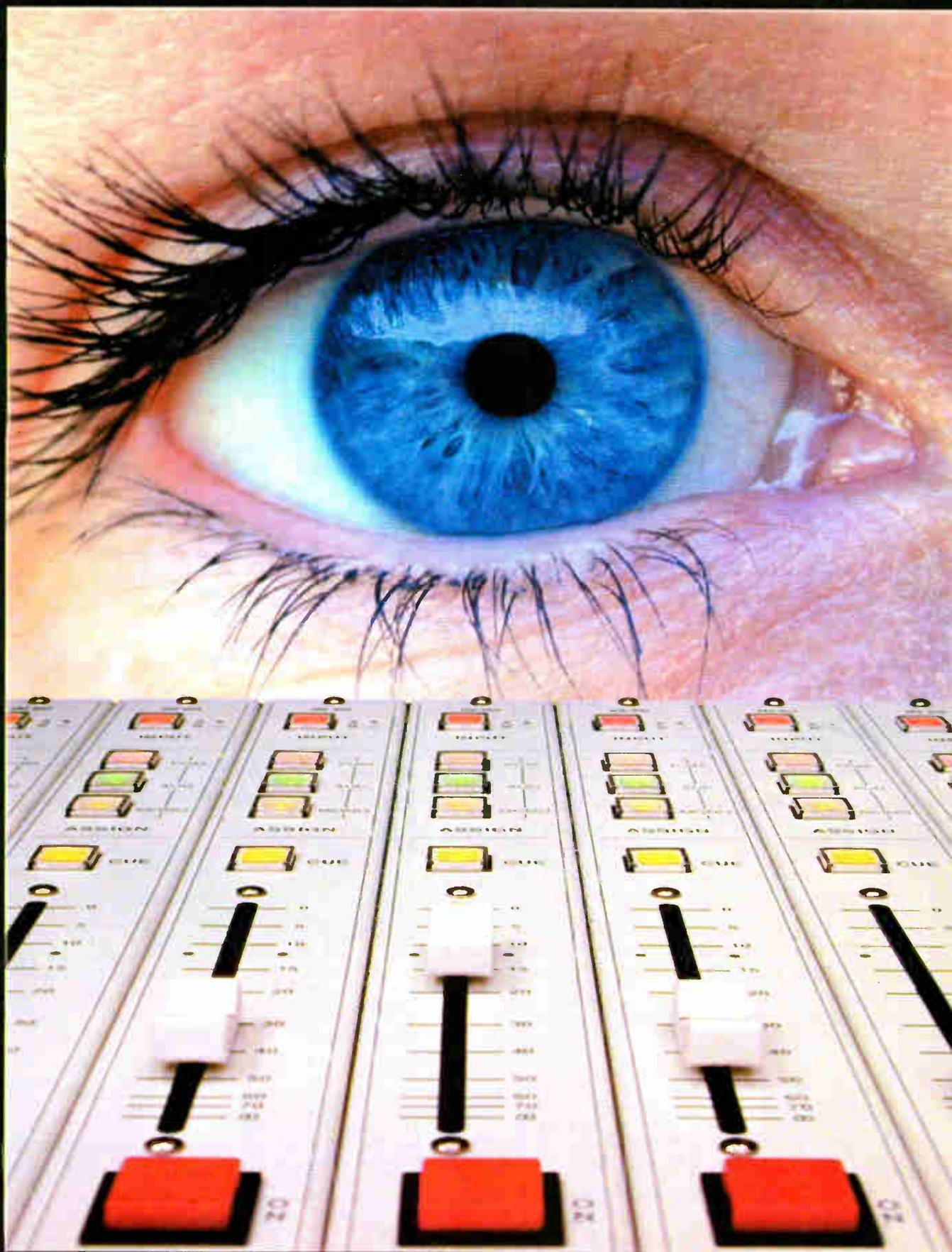
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