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AI's Ugly Mug
A tribute to an old friend.

STUDIO SESSIONS
RW tries the Marantz PMD680
PC Card Recorder.

Page 43

Page 41

Radio World

The Newspaper for Radio Managers and Engineers

March 1, 2001

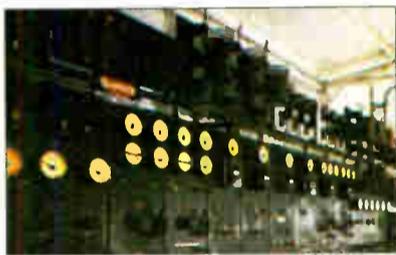


INSIDE

ENGINEERING

▼ How is your favorite dealer coping in post-consolidation times? **Page 10**

▼ A New Mexico museum salvages a 34-foot, 10-ton transmitter. **Page 12**



GM JOURNAL

▼ Questions linger in the wake of the AFTRA strike.



Page 25

INTERNET RADIO

▼ How the MP3 revolution is creating new competition for our industry. **Page 35**

ANOTHER WINNER

▼ We give away a Belar CSA-1 FFT Spectrum Analyzer. **Page 4**



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Satellite Radio Ready to Rock

by Leslie Stimson

LAS VEGAS This is the year of digital satellite radio. Barring any unforeseen production problems, Americans soon will hear digital-quality audio from the developers of satellite-delivered DAB — Sirius Satellite Radio and XM Satellite Radio.

Some consumers and electronic retailers heard satellite-digital audio for the first time in the United States at the Consumer Electronics Show in January.

Sirius, XM and their receiver manufacturing partners are talking to retailers about

how to market the service to consumers and about product orders of three-band radios to be shipped this summer.

"We believe satellite radio, as a category, will be the fastest-growing auto sound product of all time," said Sirius' Tom Steckbeck, Jr., vice president, retail marketing and distribution.

Big expectations

"The market opportunity here is huge. Our target audience is the 200 million registered vehicles on the road today," he said.

Based on analysis from The Yankee

Group, Steckbeck said Sirius expects to have 20 million subscribers in 5 years, and that another 20 million will sign up with XM.

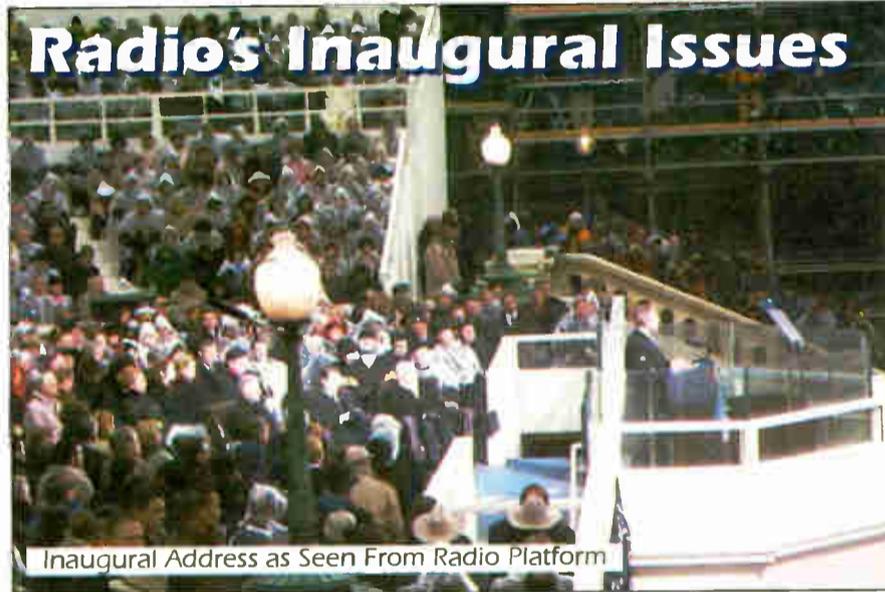
Sirius and XM figure that retailers need to sell an average of 12 to 15 percent more units each year to maintain the same dollar value of their annual sales, so they seek products on which they can make more margin.

That's what Sirius and XM intend to do.

"Retailers can benefit from selling a better type of radio ... and they can earn

See SATELLITE, page 3 ▶

Radio's Inaugural Issues



Inaugural Address as Seen From Radio Platform

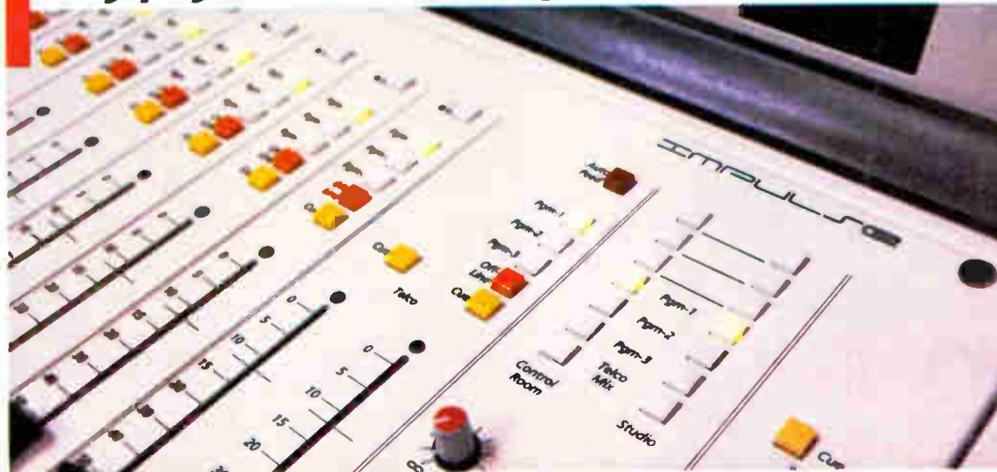
Beefed-Up Presidential Security Gave Radio Networks Less Time to Prepare and Check Gear for Inaugural Remotes

by Randy J. Stine

WASHINGTON Every four years, news media engineers and reporters plan inaugural coverage, plotting their strategies and choosing their gear to cover events culminating in the swearing-in of the president on the steps of the U.S. Capitol and the parade back to the White House afterwards.

Security was tighter than ever this year, due to planned protests at the inauguration of
See INAUGURAL, page 6 ▶

Why pay extra for analog?



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◆ NEWSWATCH ◆

NAB, Others Fight Streaming Fees

WASHINGTON NAB and six broadcast groups await the next step in their lawsuit filed against the U.S. Copyright Office regarding its opinion that radio stations should pay performance royalty fees if they stream music on the Internet.

If subjected to liability under the Digital Millennium Copyright Act, broadcasters say, stations that want to stream their on-air programming would be forced either into individual negotiations with copyright holders of every song they stream, or to secure a license

that covers streaming if they meet certain qualifications.

The conditions to qualify for such licenses are "onerous, and plainly were not drafted with the formats of over-the-air broadcasters in mind," states the complaint filed in U.S. District Court.

Broadcasters want the December 2000 decision by the U.S. Copyright Office reviewed and vacated. Stations have already paid copyright fees, and shouldn't be required to pay twice, they believe.

Broadcast groups joining NAB in the complaint include Bonneville International, Cox Radio, Emmis Communications, Entercom, Infinity Broadcasting and Susquehanna Radio.

NAB has dropped a separate lawsuit against the Recording Industry Association of America on this issue.

Furchtgott-Roth, Ness to Leave FCC

WASHINGTON Two FCC commissioners plan to leave the agency. Democrat Susan Ness, serving a "recess" appointment, will not seek another term. Neither will fellow commissioner Harold Furchtgott-Roth, a Republican.

Both Ness and Furchtgott-Roth said they would continue to serve until depar-

ture dates are worked out with the Bush administration.

The makeup of the commission is changing, though it's likely to take several weeks before the Senate schedules FCC confirmation hearings. When Bill Kennard stepped down as chairman in January, he left only four commissioners, evenly divided between Republicans and Democrats.

New Chairman Michael Powell is expected to name a Republican to fill Furchtgott-Roth's seat and a Democrat to fill Ness' seat. Powell is also to fill Democrat Kennard's seat with a Republican to gain a 3-2 majority.

FM CP Auction Dates Moved

WASHINGTON The FCC has moved back the auction date for 355 vacant FM allotments in the non-reserved band, from Feb. 21 to May 9.

Those who want to place a bid may merge their bidding efforts before March 19 when Form 175 short-form applications are due.

See NEWSWATCH, page 5 ▶

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Index

FEATURES

SBE at NAB2001: Full Slate by Jerry C. Whitaker	8
Dealers: Times Are A'Changing by Ken R.	10
Paying Tribute to a Radio Giant by Tommy Bolack	12
Shared Use of Transmitter Sites by W.C. Alexander	16
Workbench: T-Shirt Now, Helpful Hand Later by John Bisset	19

GM JOURNAL

AFTRA Looks Beyond Strike by Ken R.	25
Down in the Valley, Radio Rocks by Steve Sullivan	25
Joyner Tests RBN Ad Insertion by Craig Johnston	33

INTERNET RADIO

Net Selling: Dead & Alive by Ken R.	35
MP3: Why Radio Should Care by Scott Fybush	35
Web Watch: Net Central: AOL-Time Warner Power by Carl Lindemann	36
Net Radio Audience Grows Again	39

STUDIO SESSIONS

Marantz Puts Flash in the Field by Carl Lindemann	41
Acoustic Treatment for Radio Studios by Bruce Bartlett	41
Perform Cool Tricks in Cool Edit by Alan R. Peterson	42
Slip Me a Slug From the Radio Mug by Alan R. Peterson	43

OPINION

54

Satellite

► Continued from page 1

commissions from having those radios activated by a service provider like XM," said Dan Murphy, XM's vice president of retail marketing and distribution.

Another satellite company, WorldSpace, is offering satellite-delivered digital radio overseas, but it is targeting home and portable product sales. But because most Americans listen to their radio in the car, XM and Sirius will aim first at the mobile environment.

They plan to offer selling tools such as training seminars, in-store merchandising and promotions for retailers, who can sign up to sell the services through 800 numbers and Web sites for XM, Sirius and their receiver manufacturer partners.

XM recently added Sears to its stable of retail partners and so far plans to merchandise its service in about 2,200 outlets.

Several receiver manufacturers exhibited satellite radio product at the CES show, including Kenwood, Pioneer, Alpine, Clarion, Delphi Delco, Jensen, Blaupunkt, Visteon and Sony.

Product in the stores

"We believe satellite radio is going to be an incredibly important consumer accepted format, and we also believe (that) as traditional radio transitions to digital from analog, there's going to be tremendous consumer acceptance there as well," said Bob Law, vice president for mobile electronics, Kenwood USA.

Kenwood is developing receivers for Sirius as well as for iBiquity Digital Radio, which hopes to provide a terrestrial digital radio service soon.

The receiver contains chipsets that can decode the satellite signal; the receiver typically is installed in the trunk or under the passenger seat and hard-wired to both the head unit and the antenna.

Manufacturers showed some satellite-ready models at CES, but plan a more substantial product ramp-up this summer. Pioneer, for example, had three XM-compatible products at the show but plans to offer 21 radio models this summer.



XM Satellite Radio President/CEO Hugh Panero shows off some of XM's prototype head units, receivers and adapters.

Aftermarket products will be available first. Automakers are targeting the end of this year to offer factory-installed and dealer-installed product, said Tracey Stanyer, vice president, OEM for Sirius.

XM has two custom chipsets ready to pass on to receiver manufacturers. S.T. Microelectronics completed first-pass fabrication and initial testing of the silicon chipsets. The baseband signal processor chip and the source decoder chip will be in each XM radio.

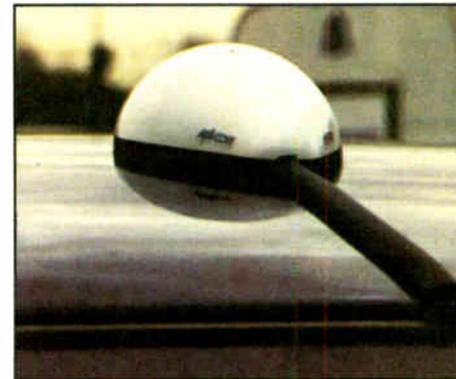
Dr. Stell Patsiokas, XM's senior vice

receiver that gets both services, won't occur until 2005 or '06.

Several antenna choices also were featured at the show.

Antennas

XM displayed eight antennas for auto, marine and truck use from Terk and Antenna Specialists, as well as its own XM antennas. The products were glass-mounted and roof-and hood-mounted products.



The N/A-COM roof-mounted antenna is one of two antennas Sirius featured on vehicles.

several antenna partners on developing glass-mounted products and eventually hopes to hide the antenna in the car.

Attendees could hear programming examples from each service, in their booths and in demo van rides.

Although both companies have terrestrial repeater systems already built in Las Vegas, Sirius turned off its two repeaters during the show so attendees could hear the Sirius audio, in a mobile environment, directly from its three satellites.

XM demoed 20 channels, originating the audio from its Washington studios, uplinking the signals to a third-party Ku band satellite, and downlinking the audio to its four local terrestrial repeaters.

While Sirius' satellites are up and being tested, XM has yet to launch a satellite. Boeing scrubbed a January launch when it appeared a measurement was incorrect. March 18 was the new target launch date for the first of XM's two satellites.



XM's SVP Technology, Dr. Stell Patsiokas, holds one of XM's custom receiver chipsets.

Some satellite head units are available now. Manufacturers also took orders from retailers at the show for products that will ship later this year, including more satellite-compatible head units, receivers and adapters. Retail list prices range from about \$250 to \$1,000, depending on the product configuration.

For about \$150 more than analog head unit/receiver/antenna packages, customers would be able to upgrade to the satellite digital service, XM said.

Typically, manufacturers showed satellite-compatible head units and said the "black box," or receiver, will ship this summer when Sirius and XM begin service.

president of technology, said getting the chipset design completed was the last remaining hurdle to having receivers in the market on time this summer. He estimated XM shaved several months of receiver production time by designing its own chipsets, done with 26 XM engineers dedicated to the receiver portion of the technology.

Sirius is using eight chipsets in each receiver initially, but plans to reduce that number later, Stanyer said.

He said Lucent Technologies has completed "first fabrication" of the Sirius chipsets.

Both Sirius and XM believe true chipset integration, so that a customer can buy one

One custom-designed XM antenna system comprises two antennas enclosed in a housing shaped like a shark fin. Patsiokas said the use of a second antenna will make the audio more robust.

Sirius featured antennas shaped like a computer mouse from N/A-COM and RecepTec. The demo automo! drilled out so the antennas could be drilled onto them. Sirius also is w

iBiquity Looks to 2003 Receivers

LAS VEGAS The sole company developing digital technology for terrestrial radio, iBiquity Digital Corp., expects 2003 to be its big year at CES. That's when its manufacturing partners hope to have receivers to show retailers.

For iBiquity to reach that goal, a standard for in-band, on-channel digital audio broadcasting must be set. iBiquity hopes that would happen by the end of this year. It has been working with the standard-setting group, the National Radio Systems Committee — separately as USA Digital Radio and Lucent Digital Radio, and now as one company.

As Sirius and XM are developing chipsets for their three-band receivers, so is iBiquity.

"Our schedule puts us at getting 'first silicon' in July of this year," said iBiquity Senior Vice President Ben Benjamin.

"We anticipate we will give manufacturers their production silicon in the February 2002 timeframe, allowing them to begin to roll out units later in 2002 and fully ramp production in 2003."

When might receiver manufacturers be interested in combining the satellite and IBOC technologies into one product?

Asked about that, Bob Law, vice president of mobile electronics for Kenwood USA, said, "We do expect, when the appropriate time is here, that our head units will control both an iBiquity and Sirius (unit), and at some point, I'm sure, an XM box as well.

"I don't believe that it will be in the foreseeable future that you will have a single box, or, certainly, not the capability to build it into a head unit. The space just isn't there, given the current state of the technology."

"Pioneer is analyzing all the digital technologies out there right now," said Keith Burnett, senior marketing manager of the Car Electronics Division for Pioneer Electronics USA.

Because iBiquity is selling its technology to manufacturers, not directly to consumers, its business models differs from that of Sirius and XM, which are selling a subscription service.

Benjamin said iBiquity is considering three avenues for revenue: licensing its technology to manufacturers, charging royalties on the sale of integrated circuits, and collecting other royalty payments around certain software it would sell to infrastructure developers.

— Leslie Stimson

What It Is, What It Could Be

When readers sign up for our 25th Anniversary Silver Sweepstakes at www.rwonline.com, they also have a chance to comment about Radio World.

Here's a sampling.

Many wrote to compliment us. The chief of a Clear Channel station in Tennessee writes, "Excellent tool for the radio professional. Information is the key to success. Thanks for keeping us informed!"

The president of a firm in Ohio loves *Who's Buying What* and our occasional *Soundwaves* personnel column.

A general manager in Minnesota said, "I have dropped my subscription to *Broadcasting & Cable ...* and I look forward to receiving *Radio World ...* To tell you the truth, it is the bible of the industry as far as staying up to date."

An Illinois chief engineer said, "You seem to have everything covered. You introduced me to my favorite dealer, which *always* has the best price on anything I want to buy. I would not have found out about them if not for the ads in your publication. Love the technical articles, actually, most your articles. I can't really think of anything I would change."

Indeed we got lots of praise: "Good job ... a must-read ... great rag ... happy 25th." Popular features include our historical articles, *Workbench*, product reviews and the venerable *Broadcast Equipment Exchange*.

And one writer was emphatic, "Never lose Alan Peterson! His stories are the greatest!"

Better yet

But there were plenty of suggestions.

A Virginia chief engineer would like to see more maintenance tips for studio and transmitter sites: "More info on the technical side of mergers, interviewing engineers who are consolidating stations and what problems they run into, solutions."

The president of a Pennsylvania media group writes, "I would appreciate a feature written for the non-engineer owner/operator explaining the functions of the equipment advertised. It could be

titled, 'What the hell does that thing do? And how could it help my stations?'"

Here's a fellow who isn't quite sure how he feels about advertisements: "Good publication. Should stay free, or get rid of the ads to keep editorial integrity intact."

From a production manager in Ohio: "You have a lot of great stuff in your magazine, however, you seem to leave out 'the people of color' in the media." A company president in Minnesota wants us to publish product pricing more consistently. An assistant engineer in Pittsburgh would like to learn more about installation techniques.

A lot of people use RW as a tool to teach young people. An Illinois reader trains students at a small carrier-current junior high school station, and would like to see a section devoted to educational radio. An associate professor of radio/TV in Alabama uses RW in the preparation of course lectures and recommends that his students check out our Web site.

The GM of a station in Connecticut asks, "Recognize that there are young(er) people coming into radio all the time, so you can't assume that these people know all the history of radio and broadcasting."

An Infinity chief would like to see more vendor profiles and added, "Got the job I have now from RW classifieds." Awesome.

"I've been a reader for years," relates a chief engineer in Montana, "and still am amazed at the content you continue to improve on; but it's just the business after all, right? You have a way of leveling everything to its most digestible level, and I love it."

But a CE in Oregon said, "Please go back to more engineering-related items and less business/GM-related items." On the other hand, a radio network reporter in the Big Apple finds that *Radio World* is too heavy on engineering and technical aspects of the business.

The owner of a N.Y. engineering firm would like lists of FCC actions, stations bought and sold. In Wisconsin a reader wants more shortwave radio. A PD in

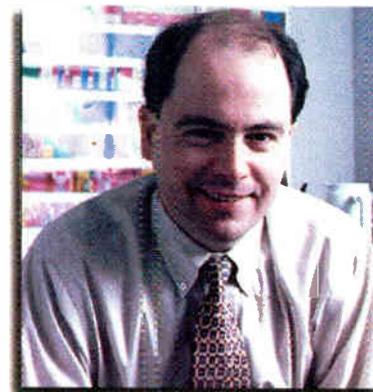
Virginia seeks better coverage of small-market concerns. A tower company in Kentucky would like more about maintenance of big steel.

An owner-chief in Pennsylvania wants more IBOC coverage. Another Montana reader thinks our Web page could be a better reflection of the newspaper itself. (Stay tuned.)

Among the many suggestions we

See MCLANE, page 15 ▶

From the Editor



Paul J. McLane

Dennis Blais is the winner of a Belar CSA-1, a versatile FFT spectrum analyzer that can be used for AM, FM and TV applications as well as just audio. Retail value: \$2,700.

The analyzer is the latest prize in our online 25th Anniversary Silver Sweepstakes. Did you sign up yet? If not, go to www.rwonline.com

Dennis is chief engineer of Mortenson Broadcasting stations WJMM(FM), WSTL(FM), WCGW(AM) and WUGR(AM) in Kentucky, all of which carry Christian formats of various flavors.

When I called him to let him know he had won, Dennis was in the middle of reading *Radio World*. That's what we like to hear! He said he enjoys the paper immensely, particularly articles by Cris Alexander and John Bisset, and likes to keep up with industry events in our news section.

His new analyzer is equipped with 2 MHz RF/IF, 150 kHz wide-band composite, and 24 kHz L/R audio inputs, AES/EBU and analog. It can be used to view the real-time spectrum of a variety of input signals. Its vacuum fluorescent display provides high-contrast images with several vertical and horizontal axis controls, allowing for easy adjustment to the amplitude and frequency scales.



Belar Spectrum Analyzer

An on-screen cursor function allows direct reading of any frequency and amplitude displayed at 0.1 dB resolution.

And how fitting that this week's prize is contributed by Belar. Just two weeks ago, the NAB announced that it will honor Arno Meyer, founder and president of Belar, with its Radio Engineering Achievement Award at the upcoming NAB2001 show.

Congratulations, Arno. And you, too, Dennis!



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Powell: Unsure of LPFM's Effect

by Leslie Stimson

The new Republican chairman of the FCC is speaking in cautious tones about the LPFM initiative he inherited from his Democratic predecessor.

In his first comments to reporters as chairman, Michael Powell said that when he gave a qualified "yes" vote on the low-power issue last year, he was "at a loss as to whose version to accept," referring to engineering data from the FCC, LPFM supporters and the NAB regarding potential interference.

He said the LPFM technical debate calls into question the FCC's current system of technical assessment.

Wider issues

On wider issues, having served as an FCC commissioner for three years, Powell seems comfortable handling a variety of telecommunications issues, and says he will wait for matters to come to him for decisions, rather than seeking out more issues to regulate.

His more deregulatory approach would be a shift from that of Democratic predecessors Reed Hundt and Bill Kennard, during whose terms the FCC required TV stations to air more educational kids' programming and created rules for the planned LPFM service, respectively.

The FCC increasingly finds itself on what Powell calls "Internet time," and he said the FCC needs to better handle uncertainty in the businesses it regulates. At the press conference, Powell laid out general goals, such as restructuring the agency, to better reflect the convergence of markets.

While he did not get into specifics about his plans, he shared thoughts on a

variety of issues:

LPFM — Powell still supports a gradual roll-out of the new service, as he said a year ago when he voted for it, although no official decision on the timetable has been made. He believes language passed by Congress last fall directing the agency to conduct interference tests and an economic impact study resolves some of his concerns.

After listening to engineers debate the



New FCC Chairman Michael Powell

results of four LPFM interference studies conducted last year, Powell said, he was still unsure if the service would cause interference to existing stations.

"That matter points out my concern about the continuing ability to independently assess technological questions. ... Part of what I think we need is we need a greater independent ability to assess those questions on the front end."

Powell also said some of the biggest low-power FM opponents he met when the issue was being debated were not big radio group owners, but rather small

independents.

"What you're talking about often is the viability of the lower end, marginal stations in local and smaller markets who almost can't afford to lose one more advertiser, or one more listener, or it's done for. What's ironic here is sometimes, these kinds of debates are presumed to be about little guys and really big guys. Sometimes what it's about is one class of little guys vs. another class of little guys. In many ways, the stresses of that issue are more there than they are about big radio."

Telecom Act — Powell generally considers the Telecommunications Act of 1996 a success. The resulting competition and deregulation unleashed capital and helped get DSL "out of the closet," in his words.

When asked whether cable re-regulation portions of the act failed, he said higher cable prices are insufficient justification to reconsider the act.

"Americans like TV, multichannel TV — programming consumers seem to value highly," he said, citing more than 80 percent penetration of cable and DBS-combined into American homes.

The Internet — The Net will prove to be just a "cool experiment" if product providers don't just give consumers interesting products, but also find a way to make a profit, Powell said.

DTV transition — When asked what the FCC might do to help the DTV tran-

sition, Powell said, "Whether DTV succeeds or fails does not rest in the hands of the government," but in the hands of TV programmers and set makers. Consumer acceptance of DTV, he said, still remains a "wild card."

Digital divide — Powell rejects the notion of a so-called digital divide splitting the country between those who have computers, Internet access and other telecommunications services and those who do not. He joked that he has a "Mercedes divide."

Corrected Correction

RW published a letter to the editor in our Jan. 3 LPFM Reader's Forum that contained an error. Here is the correction from the author.

I recently wrote a commentary concerning field-strength measurements relating various classes of stations to each other. The article indicated these measurements were calculated at one mile from the transmitting antenna. This was a typographical error.

They were calculated at four miles from the transmitting antenna. The remaining figures are correct. I apologize for any confusion this may have caused. Regardless of the error, the conclusions remain the same.

*Jim Trapani
President
JT Communications
Ocala, Fla.*

NEWSWATCH

► NEWSWATCH, continued from page 2
Upfront payments are due April 16. (See Auction No. 37 Filing Public Notice, DA 01-119.)

In connection with the auction, the FCC will not accept applications for minor FM modifications for both commercial and noncom FMs from March 7 to March 19. This is to ensure conflicts do not arise between auction participants that specify preferred sites and FM minor mod applicants.

FCC Clarifies 'Count' Rules

WASHINGTON The FCC has fine-tuned its mass media attribution rules, which define what kind of "interests" count toward ownership.

The commission eliminated the single majority shareholder exemption to the broadcast attribution rules.

Previously, minority voting shares in a corporation with a single majority shareholder were not attributable, i.e. would not count, under the multiple ownership rules. Now, such shares of 5 percent or greater will be attributable, if those interests were acquired on or after Dec. 14, 2000.

The commission also clarified aspects of its equity/debt plus attribu-

tion rule, under which the agency will attribute financial interests amounting to more than 33 percent of the total assets of a mass media entity where the interest holder is either a major program supplier to the entity or a same-market media entity.

The agency clarified how to determine the total asset base of an entity so the percentage share of the firm represented by a particular interest can be ascertained, and how to count options and other interests in applying the EDP rule.

Tauzin Now House Commerce Chair

WASHINGTON Rep. Billy Tauzin, R-La., has been promoted to chairman of the House Energy and Commerce Committee, formerly called the Commerce Committee, a job he sought for the last two years.

The former Democrat has named his recommended slate of subcommittee chairmen for the 107th Congress. Rep. Fred Upton, R-Mich., takes over Tauzin's role as chairman of the Telecom Subcommittee.

In the Senate, John McCain, R-Ariz., resumes leadership of the Senate Commerce Committee.

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Inaugural

► Continued from page 1

George W. Bush which, in turn, affected equipment decisions by radio networks and stations

Radio was well represented among the thousands of media personnel in the nation's capital.

The weeks leading up to the event were hectic ones for news planners. Even though it took 36 days for a president-elect to emerge, networks did not delay coverage preparations.



Assembled Crowd Near the Capitol

"We knew we'd be there. We just didn't know who would be joining us for sure for quite some time," said Wally Hinder, assistant managing editor for Associated Press Radio.

Tight security

Because of security concerns, broadcasters were not allowed much set-up time around the Capitol. With little time to test for interference, most networks tried to stay away from relying heavily on wireless mics and RPU equipment.



From Left: NPR Co-Hosts Elizabeth Arnold, Scott Simon; Director Charlie Mayer

"Broadcasters really don't get in to set up along Pennsylvania Avenue until the morning of the inauguration. That just doesn't leave much time for testing and looking for interference," Hinder said.

Staffers of the Broadcast Operations Communications Authority, the group that oversees frequency coordination during the inauguration, were present. BOCA is a private agency financed by news organizations. It required broadcasters to submit RF equipment for tagging and inspection by the frequency coordinating committee beforehand.

Quick turnaround makes planning more important, said Hinder. "You want to show up, open up some boxes, plug in and go."

Most of the networks relied upon typical live broadcast gear. Critical components of the audio chain included cellular phones, ISDN, POTS, T-1 lines and digital audio

codecs.

"We hate to try out any new equipment during a time like that. It's the time for using reliable equipment. By using gear that everyone is comfortable (with), knowing it will work, we eliminate a lot of risk. We've been very happy with ISDN," Hinder said.

Inaugural coverage presented technical and logistical challenges for the radio networks.

"What makes covering the inauguration atypical is that you have a moving event along the parade route," said Hinder. "It starts at the Capitol and ends up a couple of miles away at the White House."

AP Radio provided inaugural coverage on

its two radio networks. AP Network News offered short-form reports while AP Hotline News provided long-form programming. Correspondents Lisa Meyer and Mark Smith anchored AP's long-form live coverage.

To fill in the gaps along the parade route, AP had broadcast positions staggered down Pennsylvania Avenue for stationary reporters to feed reports via POTS lines using Comrex HotLine POTS codecs. AP supplemented its coverage by using cell phones.

In addition to covering the parade route, AP anchored its coverage across from the

presidential reviewing stand in Lafayette Park. ISDN digital phone lines and Telos ZephyrExpress codecs delivered audio to AP's main studios in Washington for mixing.

Hinder said AP Radio used Shure M367 portable mixers and Sony MZ-R55 MiniDisc recorders to collect and prepare audio. AP also had POTS lines installed at the anchor location to allow laptop computer dial-up connections to databases on its LAN.

CBS Radio News inaugural coverage, anchored by correspondents Dan Raviv and Dave Ross, included 60-second reports throughout the morning and additional updates as President Bush took the oath of office.

CBS Radio also fed long-form coverage from 11:30 a.m. until 12:30 p.m. Eastern to its 500 affiliates.

"We wanted to offer plenty of options for

our affiliates to carry as much as they needed," said Harvey Nagler, vice-president of CBS Radio News.

He said CBS Radio installed POTS lines at stationary locations from the Capitol to the White House to allow correspondents to file reports. CBS Radio employed Comrex HotLine codecs for POTS and CCS CDQ1000 ISDN codecs that fed Adtran ISU 2x64 terminal adapters.

Even GSM circuit cellular phones were used. GSM stands for Global System for Mobile communications, a digital wireless technology compatible with POTS and ISDN used primarily outside the United States.

"We have had pretty good luck with GSM phones. Washington has so much RF interference sometimes even cell phones act up, or you can't get a cell when you need one," Nagler said.

To add to Nagler's worries, the electricity went out on the main radio platform located just to the west front of the Capitol building several times throughout the morning of the inauguration.

Nagler said the problem probably was related to the weather. A drizzle, then steady rain, fell that day. CBS Radio News had backup plans drawn up in case the swearing-in was moved inside the Capitol.



Radio Platform Center Seen From the Presidential Podium

— the Capitol, the Canadian Embassy and Lafayette Park. NPR broadcast in stereo from its radio platform locations using MPEG Layer III algorithm joint stereo.

Joint stereo is a mode of MPEG stereo transmission using data reduction, available in both Layer II and Layer III, according to one expert.

Joint stereo differs from "normal" stereo. During passages in which the left and right channels are quite similar, i.e. with reduced separation, the data reduction dynamically and automatically readjusts to become less aggressive. This is possible because more data is available to code waveforms that are more alike than in source material in which



AP's Lisa Meyer takes a break from anchoring at the AP platform.

The wet weather caused some audio problems for National Public Radio. Moisture caused RF interference problems in the headsets at NPR's anchor platform at the Capitol. "Either rain seeped into a codec, or our Crown CM-311A headset microphones, and messed things up just prior to the broadcast," said Shawn Fox, NPR election technical director. As a result, Fox said, NPR used Neumann KMR 811 short shotgun mics from that location.

"They're really not intended to be used for that application, at least not when you have a marching band 100 feet away, said Fox. "That sometimes covered up our announcers."

Another NPR weather casualty was a Neumann RSM 160 mic being used for ambience at the Canadian Embassy.

Faced with using shotgun mics from the Capitol location, Fox said NPR used a Millennia mic preamp to help cut down on background noise. The on-site audio was mixed on a Mackie 1402 mixer. The audio was then fed to NPR's Washington studios.

Fox said NPR used Musicam USA CDQ Prima 220 codecs with Telos Zephyr backups at its three primary broadcast locations

the left channel is much different from the right channel.

Joint stereo has a more natural sound, as if a higher data rate was employed.

NPR provided stations continuous coverage from 11 a.m. until 5 p.m. Eastern. Anchored by Scott Simon, Elizabeth Arnold, Juan Williams and Neal Conan, NPR's six-hour special focused on all aspects of Inauguration Day on more than 650 public radio stations.

Cell phones for parade

NPR chose to cover the parade route by cellular phone, with results that were less than desired.

"We had some drop-outs on the air that were really unfortunate. Cell service became very spotty and it was tough to get good lines through," said Fox.

CNN Radio Network covered the inauguration for its more-than-1,900 worldwide affiliates with a series of short-form and long-form programming. CNNRadio Washington correspondents John Bisney and Dick Uliano anchored from the Capitol. The network provided its regular hourly news

See INAUGURAL, page 7 ►

Inaugural

► Continued from page 6
updates supplemented by long-form programming made available to affiliates.

Contacted to ask about equipment used for the inaugural events, a CNN spokesman said the network was experiencing layoffs and could not provide any information.

ABC Radio News provided status reports four times per hour to affiliates throughout the morning of the inauguration. Live-anchored coverage began at 11:06 a.m. and was lead by Bettina Gregory, ABC political analyst Steve Roberts and correspondents John Bascom, Vic Ratner and Tim Scheld.

"Covering an event of this magnitude takes a lot of planning and organization. We had been working on it since before the elections," said Chris Berry, vice president, radio for ABC News.

"The only advantage of doing the inauguration is that it really doesn't change much every four years. But it still requires a lot of teamwork."

According to an internal ABC Radio memo, no fewer than 80 people were assigned to help cover the inauguration, from reporters and engineers to editors and newsroom assistants. Berry worked as executive producer of the long-form broadcast.

Pool coverage

ABC Radio handled TV/radio pool audio coverage.

"We just plugged into a mult-box at the Capitol during the swearing-in and received the feed," Nagler of CBS said.

Members of the radio pool include CBS Radio, ABC Radio, AP Radio, NPR and Voice of America. The pool allows broadcasters to defray some of the costs associated with covering a live event.

ABC Radio deployed nearly 70 microphones around Capitol Hill to collect ambient sound during the swearing-in ceremony. Sources including the Marine Corps band and cannons for the 21-gun salute had to be wired for sound.

"We actually worked in conjunction with the PA sound designer to create a plan to cover the entire area with mics in such as way as to create an audio pattern of things," said Art Gauthier, ABC engineer in charge of the Capitol Hill pool.

Gauthier said ABC Radio worked with the vendor, Maryland Sound of Baltimore, to put together a range of microphones for pool coverage. Condensers, dynamics and shotgun mics from ElectroVoice and Shure were used. All mics were cabled to a transformer splitter in front of the Capitol. No wireless mics were used due to concerns about possible interference.

ABC Radio leased a Mackie 32-8 digital console for the pool coverage. The 32 input, eight-bus console with a 24-channel expander could handle the large number of audio sources, Gauthier said. A Mackie 1642 console was used as a sub-mixer for crowd mics. Gauthier then mixed the broadcast from a production trailer parked on the south side of the west front of the Capitol.

"It was really an amazing experience and a lot of work. I thought the pool broadcast went well. The weather was miserable but caused us few problems," Gauthier said.

The radio networks were mobile during the parade, thanks to a flatbed truck. The truck preceded the presidential motorcade and provided room for network reporters to ride. ABC Radio provided a Marti RPU transmitter for pool members to use. At least one network declined to use the Marti because of interference problems during

testing on the morning of the inauguration.

"Washington is weird. Because of the location, you get so much interference from surrounding buildings," AP's Hinds said.

The coverage plans of the radio networks had to remain flexible thanks to tight security between the Capitol and the White House. AP Radio lost one of its POTS line locations after the Secret Service deemed the position unacceptable.

"It was at the corner of Seventh Street and Pennsylvania Avenue. We gladly moved," Hinds said.

Nagler has covered inaugurations since 1972. He said one thing has remained constant over the years. "Whenever you are dependent on a telephone company to install a phone line, it's always a last-minute hassle. I've never planned an event like the inauguration and not had phone-line installation be a hassle." ●



From Left: AP Radio's Lisa Meyer, Mark Smith, Denny Vohar and Wally Hinds

Photo by Brad Kalbfeld

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SBE NEWS

SBE at NAB2001: Full Slate

The Upcoming NAB2001 Convention in Las Vegas Will Be a Showcase for Society Activities

Jerry C. Whitaker

RW regularly provides space for commentary from the Society of Broadcast Engineers as a service to the industry.

The annual NAB spring convention is a milestone event for broadcasters. Again this year, the Society of Broadcast Engineers is playing a prominent role.

All is ready for the Broadcast Engineering Conference, which is being organized by a committee of SBE- and NAB-appointed members. Work on the BEC began last summer when the first call-for-papers announcements were mailed.

This year, several unique sessions are being offered at the BEC, including a day-long broadcast-networking workshop under the auspices of the SBE Ennes Foundation. In order to bridge the gap between traditional broadcast engineering and the increasingly important area of information technology, the NAB2001 BEC will feature "Broadcast Networking Workshop: Putting the Pieces Together."

SBE and NAB are co-sponsoring this special Ennes workshop, to be held on Saturday, April 21, at the Las Vegas Convention Center.

The comprehensive workshop, which will be moderated by Richard A. Farquhar, CPBE, of RAF Associates Inc., will cover the following topics:

- 9:15 a.m.: Network topologies/layouts and common network protocols
- 10:30 a.m.: Wiring and connector types, system standards and installation practices
- 1 p.m.: Maintenance, troubleshooting and connectivity issues
- 2 p.m.: Challenges unique to media-

based network platforms

Immediately following the workshop, from 3:30 to 6:15 p.m., SBE will offer a Certification examination consisting of 50 multiple-choice questions relating to radio and television broadcast station internal network installation and operation.



The convention floor is the place to meet vendors and shop for new products.

The exam is not software-specific and is designed to emphasize hardware and installation issues common to all platforms. A passing grade will earn the attendee Broadcast Network Technologist Certification from SBE. The exam is based on the material covered in the workshop.

Anyone interested in taking the exam must register with SBE by contacting Certification Director Linda Godby-Emerick at (317) 253-1640. Or visit the

SBE Web site for more information at www.sbe.org

The instructor for the workshop will be Terrence Baun, CPBE, of Criterion Broadcast Services.

Meetings and sessions

The 55th BEC, continuing its tradition of excellence, offers a comprehensive examination of new technologies, systems and products for radio and TV.



number of booths — affords attendees a superb opportunity to check out new technologies and products.

As in the past, NAB2001 also provides unlimited networking opportunities in the technical sessions, during the exhibition hours and at any of the many social gatherings scheduled during the show. One such gathering, the Ham Radio Reception, a long-time favorite of attendees, is scheduled for Wednesday evening.

Meet with peers

Several SBE events and meetings will also be taking place at NAB. The SBE Board of Directors meets Sunday, April 22, from 8 a.m. until noon at the Las Vegas Hilton. The SBE Membership Meeting will be held April 24, at 5 p.m. at the Las Vegas Convention Center.

Both of these events are open to SBE Members and are a great opportunity to hear what SBE is working on. (A list of SBE events and meetings will be posted on the SBE Web site and published in the March issue of *The Signal*.)

Also make sure to stop by the SBE booth while you're touring the exhibit floor. Books from the SBE Bookstore will be available, as well as SBE logo merchandise.

You can also pick up information about membership, certification, educational opportunities and more. In addition, SBE is celebrating 25 years of Certification. Show your SBE pride by wearing your certification and membership pins, and if you don't have the proper pins, purchase them at the booth before attending the Membership Meeting on Tuesday.

Change is accelerating in the broadcast industry. Digital radio and television, advanced production tools and streaming media will affect profoundly how broadcast professionals will do business in the years to come.

Indeed, these technologies and others may well redefine broadcasting as we know it. Staying on top of leading-edge developments has never been more important, and the best place to accomplish this task is the NAB convention.

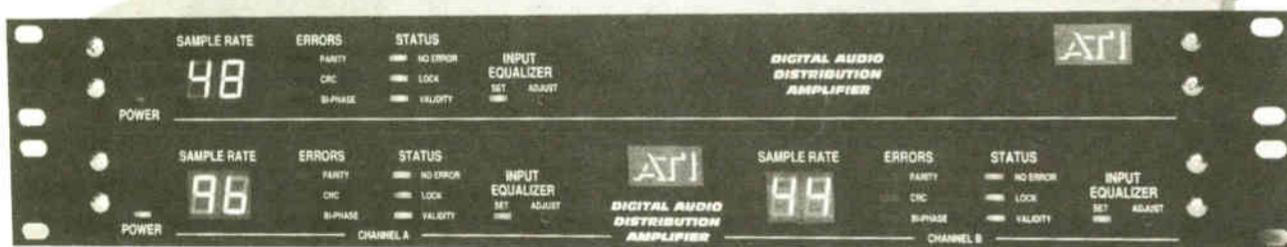
The joint NAB/SBE Broadcast Engineering Conference Committee has worked hard to provide attendees with a wide range of topics and speakers. One thing to keep in mind is that SBE members can register at the NAB member rate, making the trip more affordable for you or your company. We hope you can take advantage of this opportunity and attend the show.

Jerry Whitaker is technical director of the Advanced Television Systems Committee. He is a member of the Board of Directors of the SBE and chairman of the NAB/SBE Engineering Conference Committee.

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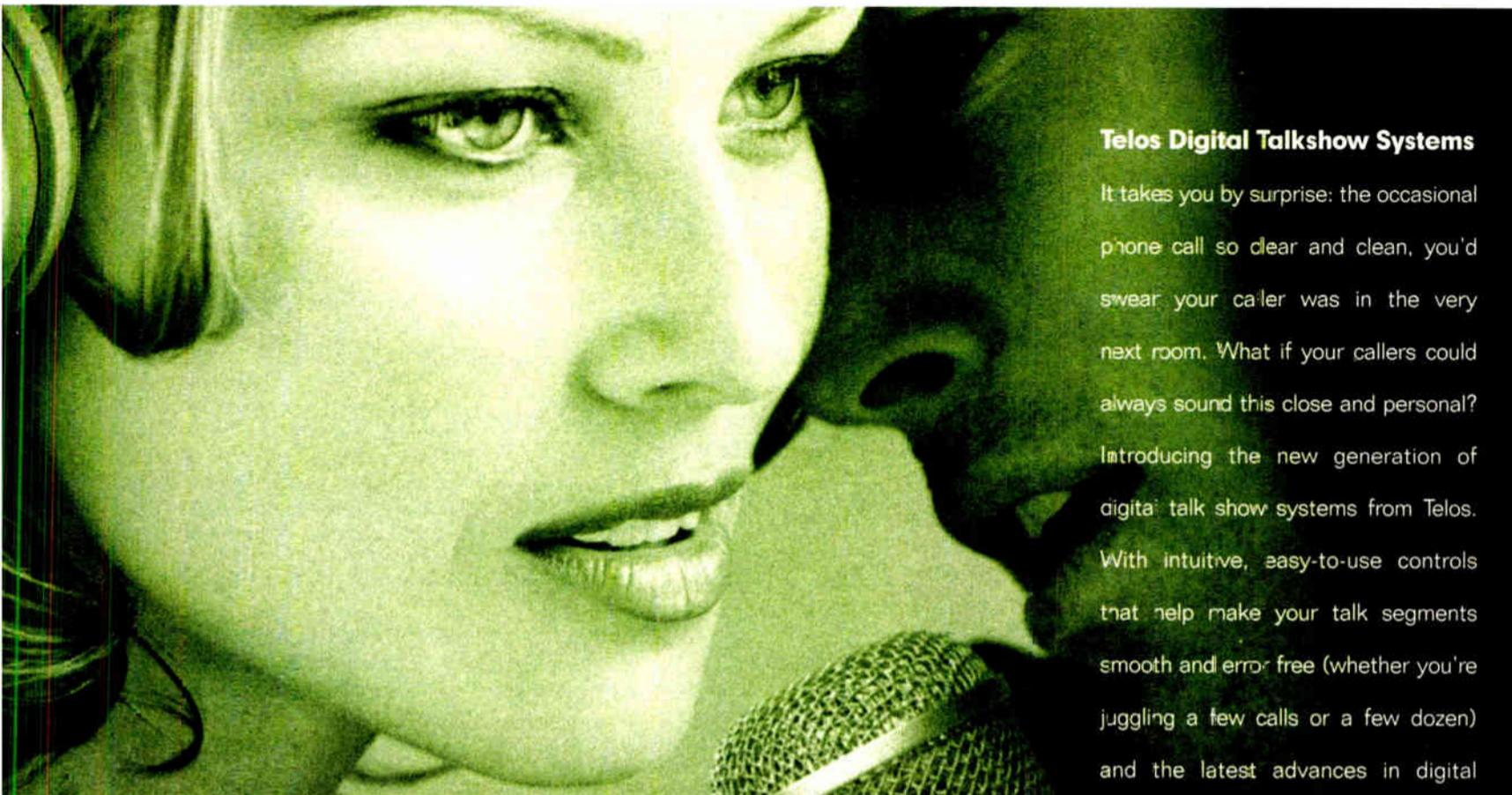


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Dealers: Times Are A'Changing

Ken R.

The deregulation of the broadcast industry was a stone that created many ripples in the radio pond. Everyone from station owners to engineers to the companies supplying sound-effect CDs have been affected.

Nowhere are these changes more dramatic than in the world of broadcast equipment sales. Asked to reflect on the challenges they face, dealers speak of small margins, blanket purchase orders, online competition and a smaller base of technically savvy customers.

Certainly, radio equipment dealers face a world of relatively thin markups, compared to their peers in the wider retail world.

"Almost no dealer sells at retail, and that's been true for 15 years," said Dave Burns, who is president of rep firm Allied AirNet Services and a former Harris Corp. marketer.

"It's always a juggling act, because the buyer expects a discount. The exception to that rule is the exclusive product, which can't be purchased elsewhere."

Jim Wood, president and chief engineer at Inovonics, a manufacturer, said dealer margins have always been thin. Manufacturers are affected too.

"We now have to spend more money on advertising to assume a higher profile so we can deal with the large broadcast groups," said Wood. "The biggest dealers have an advantage, and I think it would be difficult for a small company to compete now."

John Shideler, vice president of Broadcast Connection, a dealer and turnkey supplier, remembers a time when 99 percent of products were sold by dealers.

"But now manufacturers can get a much bigger piece of the pie if they eliminate the middleman," said Shideler. "Or if they don't make a bigger profit, at least they control their own sales."

Dealers remain an important part of

the industry landscape, according to manufacturers and customers, but the demands are different.

Ron Paley, general manager of MediaTouch, a manufacturer, believes it's still a profitable business for suppliers, "particularly if they can add excellent service and support to the equation." But he said the margins are very slim for those just selling "boxes."

As broadcasters are consolidated, smaller engineering staffs don't have the time or resources to integrate new systems.

Mark Kalman, national broadcast studio vice president for New York-based Sirius Satellite Radio and a long-time radio engineer, is even more emphatic about that point.

"I'm not sure that a 'box house' can survive anymore," said Kalman. "As broadcasters are consolidated, smaller engineering staffs don't have the time or resources to integrate new systems. Larger supply firms with the ability to support complex facilities are the more logical choices for many stations."

The director of engineering and technical operations for ABC Radio is Margaret Bryant, based in Dallas. Bryant stresses that whether buying through a dealer or directly from the manufacturer, the relationship and trust are important.

"Some broadcast dealers have become order-takers, but the need still exists for

people who can give advice," said Bryant. "It might be more cost-effective to buy strictly from the lowest bidder, but sometimes the relationship can be even more important, provided prices are similar."

George Molnar, chief engineer at WNDU(TV) in South Bend, Ind., seconds that emotion. "Once you start to feel comfortable with a vendor, you go back

— Mark Kalman
Sirius Satellite Radio

to them over and over as long as they stay in business."

ABC procedures call for three bids on each purchase, and Bryant will intentionally split up her business among approved suppliers. "I don't want all my eggs in one basket," said Bryant.

User knowledge

With engineers becoming more scarce, dealers have had to become more attuned to what users need, said Paley of MediaTouch. The company sells audio management and automation products directly to stations as well as through dealers.

"Now, we're working with program directors and general managers who may have little product knowledge" compared to engineers, he said.

For instance, MediaTouch sells certain simpler products, such as its iMediaLogger and Quic-Pix audio suites, through dealers.

"These are products which are easy for the user to install," said Paley. "They don't require a lot of tech support."

But the company finds it effective to sell more complex products direct to stations.

"With integrated systems, network setups, automation or multiple-user suites, there are no set rules and each installation is different," said Paley.

Many manufacturers face the same tough choice: Sell direct, or use a network of dealers? If the latter, how many?

Enco Systems recently announced it was establishing its own direct sales

force in the United States, ending its exclusive representation by Harris Broadcast Communications Division.

"Harris did a good job for us, but the primary reason we made this move was to gain more control over our own destiny," said Don Backus, director of sales and marketing. "We felt that having our own sales force will allow us to maintain the whole chain of information flow right from our code writers to the end user."

Enco still will use dealers in countries such as Japan, Germany, Poland and Russia.

Backus echoed the sentiments of others when he said, "You don't have to go to Electro-Voice to buy an RE27. 'Box' products are easier to sell through a rep."

MPAs

In the days when stations were owned by smaller companies and by families, experts say, radio equipment suppliers tended to think of themselves as business-to-consumer sellers. Now that many groups have become behemoths, it's more of a business-to-business transaction.

Jay Batista is vice president of sales and marketing for the broadcast division of Harris Corp., which is both a manufacturer and a dealer. He said large groups want to enter into annual contracts with a large equipment partner.

"They want more than just a low price and easy shipping, and we want to keep them very happy."

Thus the appearance of the master purchase agreement or MPA, sometimes called a blanket purchase order, a document that spells out a relationship between equipment manufacturer and station owner.

"These are the creative carrots used by the bigger boys to say, 'If you buy all your antennas and antennas from me, I'll make you a great deal,'" said Burns of Allied AirNet.

Here is how it might work: "Godzilla Broadcasting," which owns 900 stations, promises to make any and all microphone purchases within the next year from "Bob's House of Microphones," guaranteeing 500 orders at minimum. In exchange for this promise, "Bob's House of Microphones" grants a discount of a certain percent below retail price for all these purchases.

"These MPAs were not feasible before consolidation," said Burns. "But when you own 1,000 stations, you have a lot of clout."

But is it always a "win-win" situation? While MPAs may work out well for the client stations, they may not be ideal for the equipment suppliers.

"They can tie your hands," said Batista. "Most ethical suppliers are reluctant to grant any special deals to one group that they wouldn't give their other

See DEALERS, page 20 ▶

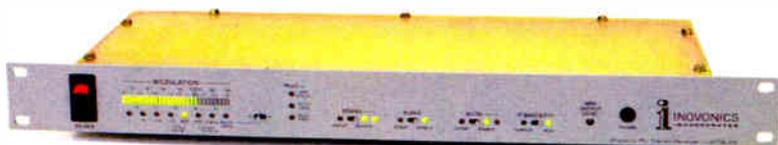
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On The Air

A Monthly Newsletter from Broadcast Software International

Issue 2

Quote of the Month

"We were in a lot of trouble and you bailed us out. Your software and customer service are above and beyond the industry standard."

Katina Stamat
WPDQ- Howell, NJ

News

System Design Made Easy

What do you do when you want more than software, but don't need a turnkey system? Look to BSI's new studio automation kits.

BSI's new Studio Kits give greater design and cost-saving opportunities to broadcast engineers and studio designers. The three kits are optimized combinations of software and hardware customized for small, medium and large market broadcasters.

"These are complete two-studio automation kits... just missing the PC's," says BSI President Ron Burley, "System design is quicker and easier because we've done all the difficult research and testing."

The Studio Kits come in three configurations and offer significant savings when compared to purchasing the components individually. The \$4,799 US Studio Kit 100 is geared towards smaller markets and single stations. The Studio Kit 200 provides the versatility and power required in mid-sized markets, for just \$6,599 US. The Studio Kit 300, priced at \$9,999 US, is a world-class package for major markets and enterprise broadcast facilities.

Each Studio Kit contains all of the hardware and software needed to equip a production and air studio. Among the products included in the Studio Kits are BSI's acclaimed WaveStation digital automation system, Cool Edit Pro editing software from Syntrillium Software and professional audio adaptors from AudioScience. Each kit also comes with one year of free tech support and software upgrades.

"With our Studio Kits, all you need is a Pentium class PC and you're on the air," says Burley. "Our customers often already have computers or have the ability to barter them. Studio Kits give them the ability to build a top-of-the-line system using that hardware."



Calendar

Apr 24, Demonstration of a new product at the NAB by BSI President Ron Burley. Call for an invitation.

Aug 16-18, WaveStation Weekend

Birthdays:
Mar 25 1942, Aretha Franklin
Mar 25 1920, Howard Cosell

Tip

Dynamic Web site

You don't need an expensive hosting service to have a dynamite station web site. BSI's \$1499 US WaveStation automation software can automatically post to your web site what's playing, recently played and what's coming up. Build your own page with station graphics and text, then just insert a few special HTML tags for WaveStation to fill-in. You can even give songs and spots their own web pages or frames. Banner ads anyone?

User File

KRQZ - Lenny Harris



Lenny Harris of Trinity Church realized that he wanted to combine his love of music and his ideals into a radio station for teens. "We searched a long time for an automation system," said Lenny. "We didn't have a large budget, so we needed something that was going to be

affordable, user-friendly and really easy.

"I downloaded the WaveStation demo and was able to figure it out just by playing with it. Other stations I asked about the program were really happy with it. I was pretty sold on buying the WaveStation, and then I went back to Ohio to see our network and they were using it. I thought if it worked for them, it would surely work for us."

WaveStation has been a KRQZ hero. "We were on network, but nothing was coming out," recounted Lenny. "It only took me a few seconds to get our next stopset on-the-air and line up a few songs to cover the outage. WaveStation saved the day."

Lenny is really happy with his system. "We checked just about every other kind of software out there. There're a lot of good people in the industry, but BSI's WaveStation is the most reasonably priced and user-friendly product that we found anywhere." Send us your User File story.

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World Radio History

FIRST PERSON

Paying Tribute to a Radio Giant

Local Enthusiast and Museum Operator Salvages KOB(AM) Transmitter in Central New Mexico

Tommy Bolack

The author is owner of the Bolack Electromechanical Museum in Farmington, N.M.

From the small "radio shack" at the College of Agriculture and Mechanic Arts in Las Cruces, N.M., KOB(AM) would evolve into one of the nation's most powerful radio stations.

A dream of Ralph W. Goddard would begin unfolding in June 1920 as tone and telegraph over a 50-watt transmitter. "Goddard's Magic Mast," as the antenna was called, was placed atop the engineering building that would later bear his name.

The following year would see an increase to continuous 1,000-watt transmission, reaching El Paso and all of Dona Ana County. Regularly scheduled programs began airing in 1922 along with entertainment presentations — the same year KOB was assigned its call letters.

The dream of regional radio was unfolding, with Goddard and his Model T touring the state giving demonstrations and encouraging this new engineering study.

Cutting a new path

The public service pioneer became a source of information for more than 20 states with an increase of power to 5,000 watts in 1925. In a still-experimental field, skills in this new "art" would prove vital in design and construction of prototype units.

The establishment of the Federal Radio Commission in 1927 would begin to relieve congestion of the airwaves. KOB had become an area leader and was allowed to increase its power to 7,500 watts.

By 1929, radio sets were in 40 percent of American homes. KOB had become a

10,000-watt "clear channel" operation in less than 10 years.

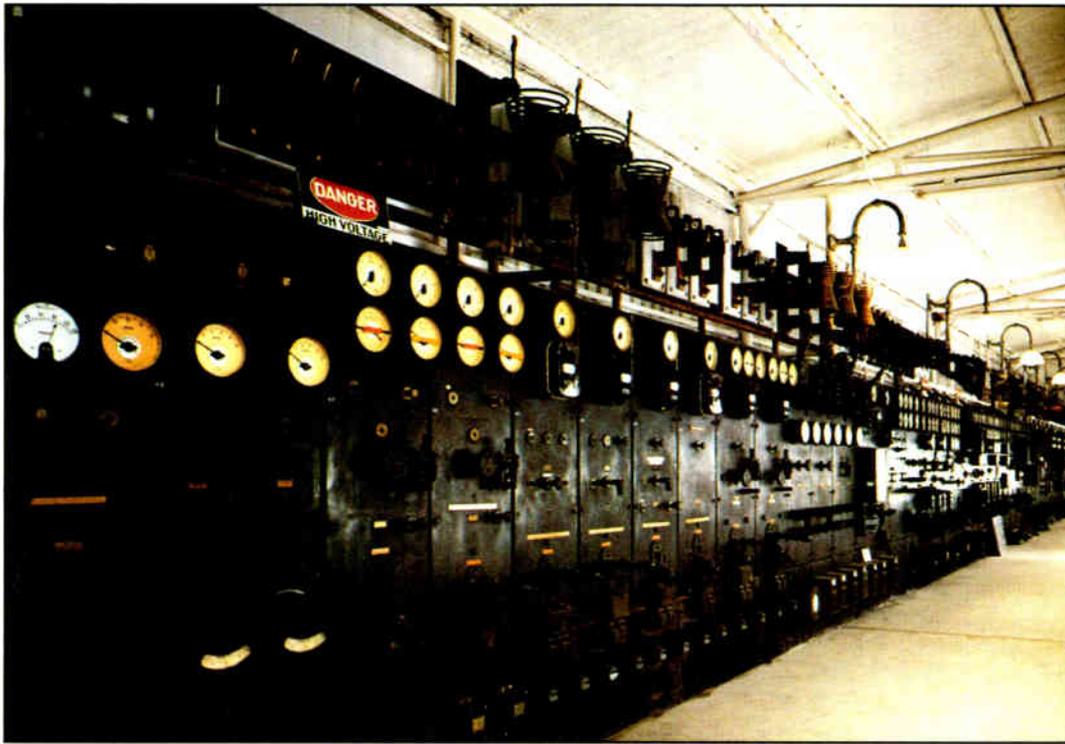
The very equipment that powered Goddard's dream would take his life in December 1929, silencing the station until after the New Year. He was electrocuted on the MG set that powered the transmitter.

paid off in the construction of a one-of-a-kind installation. The old 10,000-watt transmitter was utilized as an exciter to the 50,000-watt unit.

The pioneer station had become a leader in dedication and standards for the entire country.

A 35-year nonstop service record and nearly 20-year standby service record would represent over a third of a million hours of airtime for the 50-E.

Failure of KOB's main transmitter in



The KOB Transmitter

His dream would live on in George Johnson with the action of Mr. Ralph Pepperday of the Albuquerque Journal moving the station to Albuquerque in 1932. In 1937, an RCA-5C prototype was placed into operation at KOB the same year the station became an NBC Radio Network affiliate.

Once the North American Broadcasting Agreement was finalized in Havana, allowing the FRC to issue several 50,000-watt licenses, the way was clear for KOB to become one of the most powerful stations in the United States.

Again prototypes came into play, with the first-to-be-built RCA 50-E transmitter, which went on the air July 17, 1941.

Traditional ingenuity and expertise

mid-1992 began a chain of events that would finally allow the "Big 50" to find a second home. Its age and low efficiency required round-the-clock attention and a copious amount of electric energy.

On Nov. 30, 1992, the "Big 50" was laid to rest with an open house at the transmitter site during this last day of operation. At 5:30 p.m. "Taps" was aired and a history was read, followed by a half-minute of radio silence, a fitting tribute to a loyal servant.

Few then would know that a loyal fan, yours truly, Tommy Bolack, would give the silent giant a second life and save it from the souvenir hunters and the junk man. With its size and beauty admired

See KOB, page 24 ▶

50-E Specifics

The KOB 50-kW AM transmitter was a unique marriage of a 1936 RCA 5-C and a 1941 RCA 50-E.

Prior to KOB going to 50 kW, the 5-C was converted from a 5 kW to a 10 kW by the addition of two more 892s that were water-circulated series for cooling. This operation continued from 1938-41. This unit was then converted back to a 5 kW and used as the "exciter" for the new 50-E.

The 5-C uses a complement of tubes with 6A67 oscillators, 807 as buffer amp, 203 A5 as the first RF amp and two as a second RF amp. Water-cooled 892s were used in the PA.

A dozen 872-As made up the rectifier component. Audio amplification was accomplished using two 843s with second Audio Amp having 4-845s.

Audio frequency is amplified by push-pull class "A" driver followed by Class "B" modulator transformer coupled to a second RF amp. Final RF is a linear power amp. RF carrier is modulated in the second RF amp by class "B" modulator.

The RF exciter portion of the 50-E was not purchased because the 5-C would be used in its place. The main modulator used two 828s for intermediate amplification and four 828 drivers.

Modulation was accomplished as high-level Class "B" using two 893-Rs that were later changed to two 5671s in the years to follow. This unit was the first to use air-cooled 893s and there was serious concern over whether the 5,000-foot elevation air would prove adequate.

Power amplification used four 893-Rs Class "C" that were later converted to two 5671s. The main plate rectifier was equipped with six 857Bs hot cathode mercury vapor rectifier with a heated spare.

A special switching arrangement allowed a failed tube to be removed from the circuit and the spare placed in service without dismantling either tube; slightly under 10 kV plate voltage was needed. At 100-percent modulation, overall efficiency was around 30 percent.

For further reading, check out "KOB Goddard's Magic Mast: 50 Years of Pioneer Broadcasting" by Ann Velia. New Mexico State University Press published the book in 1972.

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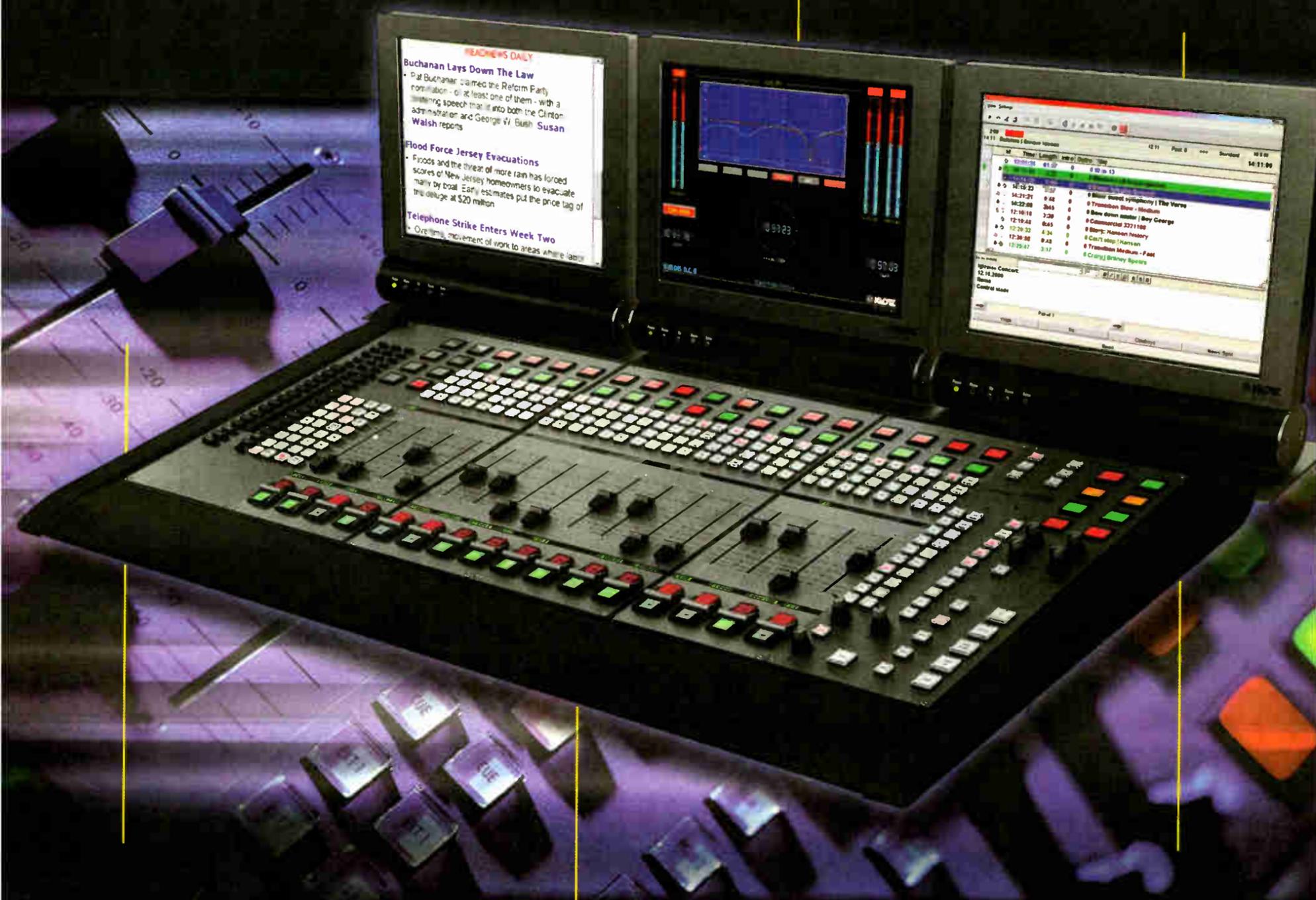
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DIGITAL

McLane

► continued from page 4
 received were more stories about computer-based products, ratings methodology, old-time radio, AM design, schematics, employment information, FCC actions, sales, noncommercial radio.

How about a reader question column? More pix of station interiors and floor plans? More help in interpreting advertisements for equipment?

RW on online

Oh, and how about the Internet? The owner of a streaming audio-video portal owner said, "I commend Radio World on its non-biased coverage of Internet radio and the radio industry in general."

A network technical manager in Michigan would like more on the demise of dot-com suppliers and the dispute over fees for streaming content. Several readers asked for more about Net radio, like this one in Massachusetts: "Thanks for adding the Internet Radio (section), now that we're assured it is, indeed, the future of radio."

But a chief in Oklahoma feels differently: "I'm pleased with the editorial decision to devote a section to Internet coverage. That way I can simply skip a whole section. I think the Net is a nice tool and fun toy, but don't find it as compelling and Second-Coming-of-Christ important as many others seem to."

As editor, I'm particularly pleased with the many readers who find time to read Radio World, even in age of information overload.

From a public radio chief in Utah: "Great magazine. A must-read even with a busy schedule and the overwhelming amount of information that comes at you each day."

From the DOE of a West Virginia broadcaster: "It would take more than 100 words to describe how valuable RW has been to me. It is sent to my home so I'm sure to read it, then it's taken to the station to share. I've subscribed or read RW since 1984."

A CE in Minnesota: "I've been forced to cut back periodicals due to time constraints, but Radio World is not one of them."

And from an Alabama CE: "RW is the best source for info today, and should be passed to each department head at all radio stations."

A senior engineer with a broadcast services company in New York told us, "Radio World is a great publication, and provides an excellent source of engineering and product information in a professional, accurate and concise manner to enable broadcast professionals to keep abreast of new technology and current changes affecting the radio broadcast industry."

Sign that man up for the marketing department.

And my special thanks to the reader who wrote simply, "The greatest radio publication available."

These are wonderful comments and suggestions. Thank you for them. ●

MARKET PLACE

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The SX1115 Series is a new family of single-unit rackable surge suppressors and power conditioners from SurgeX.

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FEED LINE

Shared Use of Transmitter Sites

W.C. Alexander

This is the last in a series of articles on shared use of transmitter sites. The previous part appeared in the Feb. 1 issue.

For the past several months, we have taken a hard look at just about all the aspects of co-locating broadcast transmitting facilities with other broadcast and non-broadcast transmitting facilities.

In today's tight tower space market, co-location is sometimes the only reasonable solution for a station seeking a new home.

In this, the final installment of the series, we will wrap up our look at using an existing FM, TV or wireless tower as an AM radiator, discussing skirting, tuning, guy wire considerations, bandwidth and lease elements.

Making it work

An ideal AM radiator generally is an insulated tower, meaning that both the tower base pier and guy wires are insulated from the tower structure, electrically isolating the tower from ground and other conducting objects and structures.

An ideal AM radiator also features a 90-degree, 120-radial buried copper ground system. Take a look at just about any FM, TV or wireless tower and there are two things you generally won't find: insulators and ground radials.

A couple of thoughts come to mind: it can't be easy to insulate an existing tower, and plowing in a ground system in the presence of streets and buildings is tough. These factors do not necessarily disqualify its use, however. In many cases, creative engineering can be employed to make such a tower work as a perfectly acceptable AM radiator.

We dealt with options for ground systems in the previous part of this series, so we'll set our focus this time on using a non-insulated (or grounded-base) tower as an AM radiator.

Years ago, the FCC allowed shunt-fed towers to be used as AM radiators. In this case, a grounded-base tower was fed with a slant wire that sloped up from an insulator on the transmitter building or tuning house to a point some distance up the tower that would produce an acceptable drive resistance.

This arrangement made for a simple feed arrangement and left the entire tower available for other transmission lines and antennas without the need for isocouplers, isocoils or quarter-wave stubs. It also kept the tower base at ground potential, making climbing the tower much safer in the presence of excitation.

The downside of the slant-wire arrangement was that it tended to directionalize or distort the otherwise nondirectional radiation pattern. The tower would develop a slight gain on the side of the slant wire and a slight null or flattening of the circle on the side away.

While many such slant-wire arrangements are grandfathered and still in use, the FCC no longer allows new slant-wire feeds. In a lot of ways, this is too bad. If slant-wires were still allowed, they would make co-location much easier and less expensive in a day and age when co-location is a necessity, not an option.

With slant-wire feeds off our list of possibilities, we have one realistic option: the folded monopole. This is, in effect, a quarter-wavelength transmission line consisting of a wire "skirt" on the tower. The skirt is made up of a number of wires that are installed on the tower legs, faces or both on fiberglass rods that hold the wires at a fixed spacing from the tower and insulate them.

The ends of the wires are joined at the base, and this becomes the driving point of the antenna. On the tower, the wires are joined at the quarter-wavelength point and bonded to the tower. This cleverly

produces the same transformation as a quarter-wavelength transmission line, transforming the short up on the tower to an open at the tower base.

Skirt factors

We must consider several important points when skirting an existing tower.

First, a structural analysis must be run to determine whether the tower with all its installed antennas and transmission



Shown are two skirted towers on Mt. Scott in Portland, Ore. The left tower supports an FM antenna and serves as an AM radiator. The wireless tower on the right also supports a one-bay FM aux antenna.

lines is capable of supporting safely the skirt wires, insulators and hardware with the maximum expected ice/wind load. A wire skirt may look light and rather flimsy, but it can add a lot of weight and surface area to a tower. Add in a little ice and wind and if the tower was loaded

fully already, it could just be the straw that breaks the camel's back.

Assuming the structural analysis shows the tower to be capable of supporting the skirt, the next consideration is how the skirt will interact with existing antennas. Putting a skirt wire directly in the aperture of an FM or TV transmitting antenna really is out of the question.

Ideally, the top of the skirt will be 20 or more feet below the bottom element of the lowest transmitting antenna. If the tower is tall enough so that the quarter wavelength shorting point can be reached at a location well below the transmitting antenna aperture, this won't be a factor.

If, however, the top of the skirt must be up in the antenna region, only the expert services of a consulting engineer can tell you if the situation is workable. This will likely require modeling of the antennas with various placements of the skirt wires with respect to the transmitting antennas.

Should the model show that the skirt and transmitting antenna could co-exist on the tower, the next step likely will be range-testing of a single bay of an exact replica of the transmitting antenna on a mock-up of the tower with the skirt wires in place. Such range testing will reveal what, if any, actual pattern distortions can be expected as a result of the skirt.

Just as the skirt wires will affect the radiation pattern of any nearby VHF/UHF transmitting antenna, the proximity of the transmitting antenna to the skirt will affect its Q and impedance. Some compromise will likely have to be accepted.

Ideal range

The guy wires on a typical FM/TV or wireless antenna are not usually insulated. The exception may be those wires that are in the aperture of the transmitting antennas, which may be made of a non-conductive material.

Skirting such a tower will require the guys to be insulated and broken up into nonresonant lengths with compression insulators. This can be an expensive proposition, particularly if the tower is tall with large wires and many guy levels. The cost of this part of the operation should be considered before committing to a course of action.

In consideration of the above factors, it would seem for most AM frequencies, lightly loaded FM/TV/wireless towers in the 300- to 500-foot range would lend themselves fairly well to skirting.

See FEEDLINE, page 23 ►

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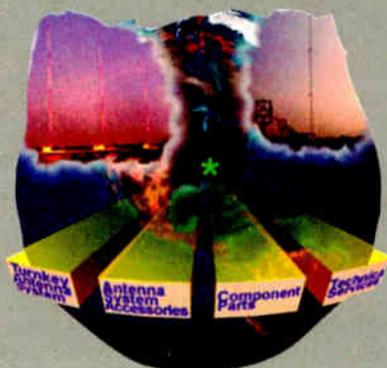
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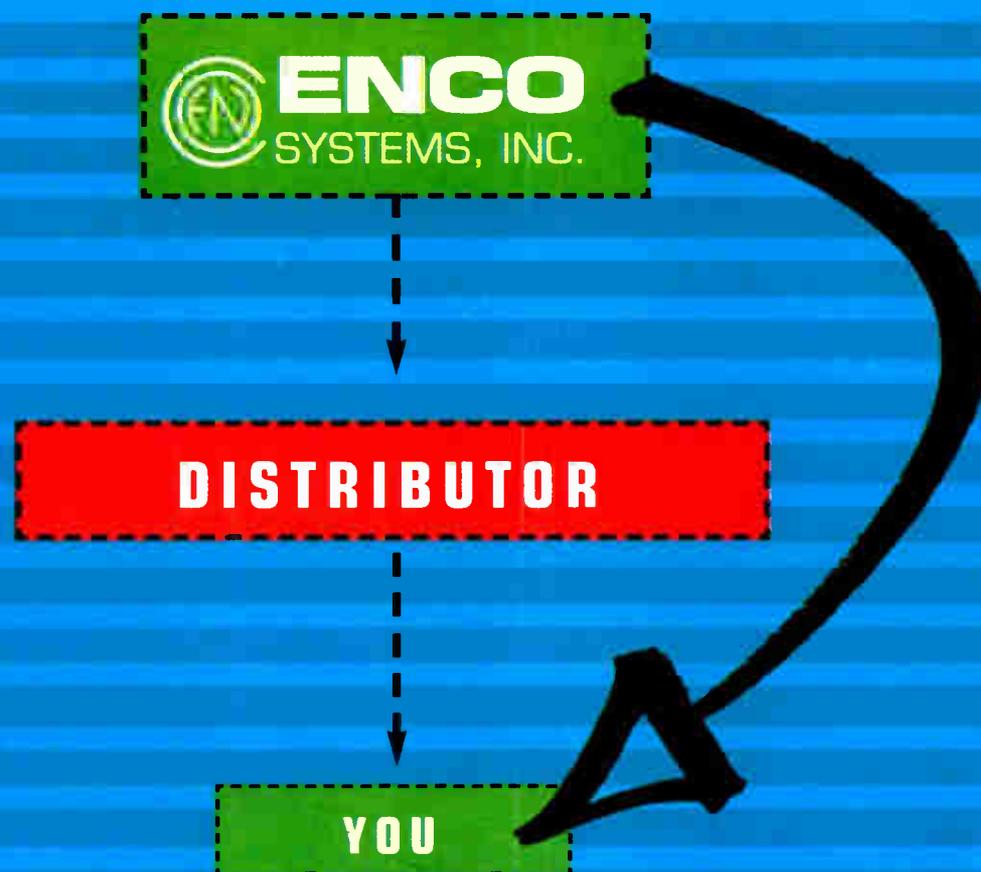
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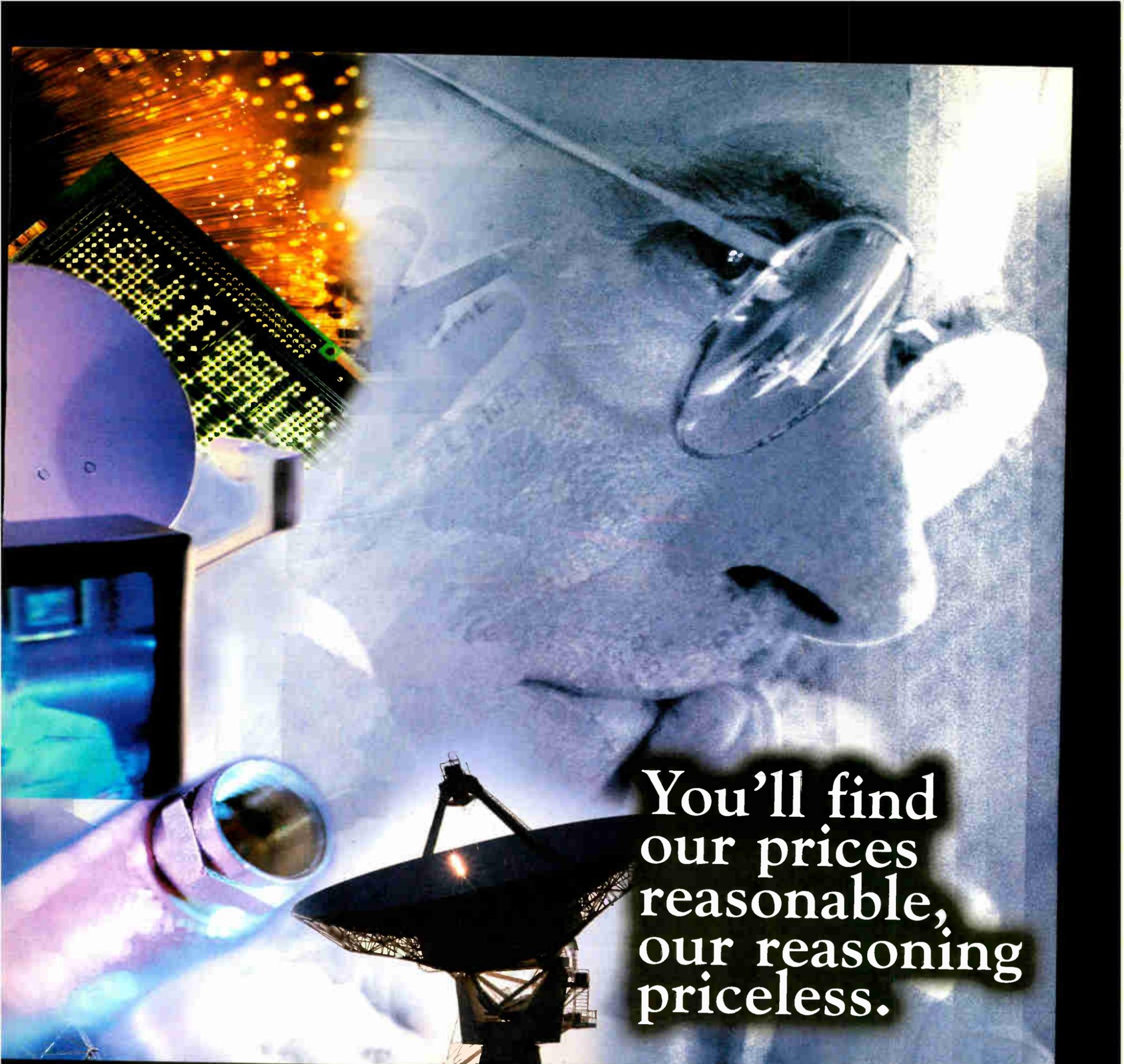
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T-Shirt Now, Helpful Hand Later

John Bisset

As the weather improves, this is a good time for checking on the health of your transmission lines.

Richard Mertz of Cavell, Mertz and Davis (703-591-0110) provided an interesting SBE program outlining the use of a RF analyzer to document both new and existing RF systems.

In addition to checking the impedance, bandwidth and return loss, the analyzer can serve as a time domain reflectometer to spot any line anomalies.

of this test. In addition to some faults on the sampling line (seen at 100 and 150 feet from the input), a fault just before the sampling toroid can also be seen. Figure 3 shows the normal echoes, similar to Figure 1.

The analysis demonstrates why it is important to evaluate everything before adjusting a directional array, simply because the antenna monitor is not reading properly.

So where do you find this service? In addition to consulting firms like CMD, tower companies and a number of con-

★ ★ ★

Not all transmitter fires end in disaster, but the repair costs can be staggering.

Many times, the insurance company pushes for repairs rather than replacement. Pictures of the damage, prior to any work being performed, are an engineer's best protection.

Figure 4, on page 20, shows a part of the final cavity of an RCA-BTF-20E1 transmitter. Most of the damaged components have been removed, but a series of pictures were taken during each step.

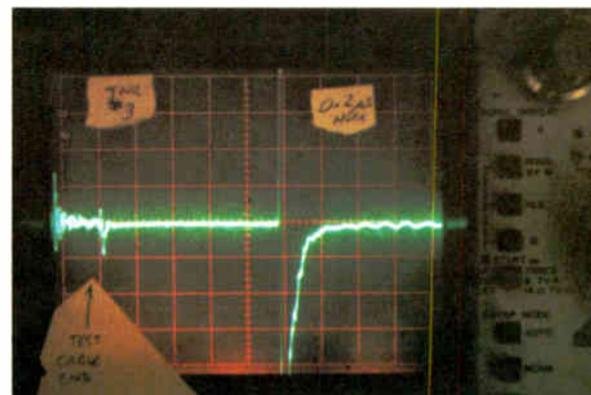
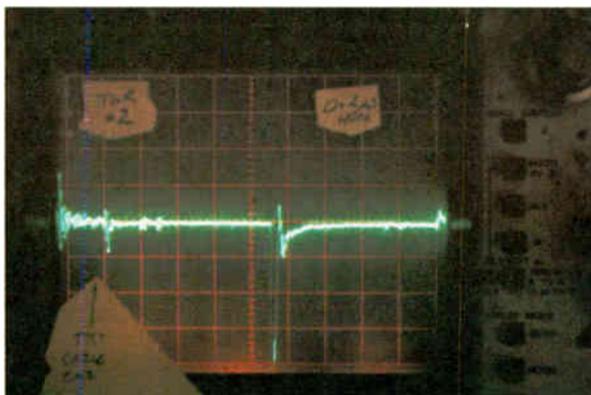
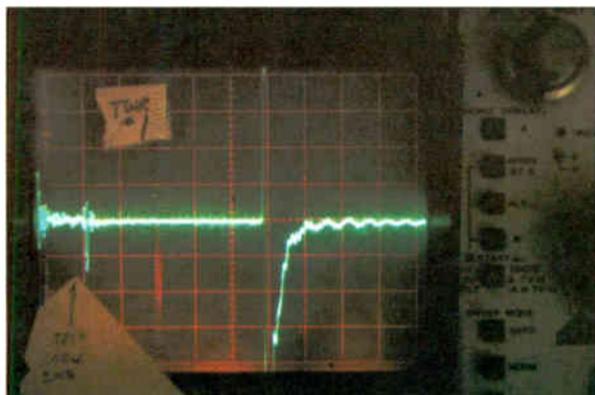
your mother's silver, but when used in the quantity to clean a final cavity's parts thoroughly, you need plenty of ventilation.

A rebuild of this scale isn't an overnight project and shouldn't be rushed. Taking the time to snap photos of mounting bolts, positions and washer-lockwasher-nut sequences is worth the effort.

And what have you done to plan for a backup while you are rebuilding your main?

Something as simple as some 1/2-inch coax and connector adapters to get your FM exciter on the air or a low-power LPB AM transmitter can be money well spent.

I've heard of several transmitter fires over the past couple of months, and



Figs. 1-3: An AM Station's Sampling Lines, Measured Using a Delta Electronics PRH-1 TDR

Figures 1 through 3 show how this kind of preventive maintenance can help. The photos document an AM station's sampling lines, which were measured using a Delta Electronics PRH-1, a high-power TDR.

Analysis of the photos turns up some interesting effects. First, a 100-foot test cable was used to couple the TDR output into the sample line at the antenna monitor. The 5cm from the "test cable ends" flag represents the 500-foot run of sampling line. The spike at the far right end of the photo is the sampling toroid signature.

Figure 2 demonstrates the usefulness

tract engineers provide this service. This periodic checkup of your lines is invaluable. Because you can't see inside transmission lines, it's difficult to spot impending problems.

I remember measuring a line for a television station and discovering a troublesome "bump" on the display. We measured out to the fault, finding it at the junction of two sections of rigid line. The tower rigger found a severely heated bullet, which, if left alone, would have certainly taken the station off the air.

Just as our bodies need period health checkups, so do our transmission systems.

Not only will the pictures document the extent of the damage; in this case, because the transmitter was to be rebuilt, the pictures assisted in the reconstruction.

Figure 5 shows the rebuild in progress. Quite a difference! After all components were removed, the cavity walls and shelf were cleaned thoroughly. All reusable silver-plated parts were cleaned with silver polish. This work was done outside, because of the noxious fumes the polish emits.

Using silver polish isn't a big deal when you are removing the tarnish from

except in Florida, they can't be blamed on lightning strikes. Take some time to clean up your transmitter site; add a smoke and/or fire detector to your remote control system.

Make sure you know the address of your transmitter building. Post the street number so it can be seen from the road; this will assist emergency crews.

When I supervised a remote transmitter site, I made friends with several of the neighbors, passing out T-shirts or baseball caps with the station logo. They had all my contact numbers and I had theirs.

See WORKBENCH, page 20 ▶

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Dealers

► Continued from page 10
MPA clients."

"MPAs are good for the customers who want a long-term relationship with some price guarantees, and we often include free training and other intangibles," said Batista. Intangibles in this case might also include on-shelf, instant restocking of replacement products.

The two major types of MPAs are "exclusive" and "non-exclusive." With the former, the broadcaster agrees to buy all of a particular product from a supplier. The latter allows the broadcaster to purchase a certain portion of that product from another supplier.

"Non-exclusives are not really very useful for the customers, because they don't give them enough clout," said Batista. A company, he said, wouldn't feel obligated to give non-exclusive MPA clients as favorable a deal as it does to exclusive clients.

The popularity of such blanket deals also depends on the autonomy that a particular radio group gives to its engineers in the field. If a group were to standardize on one audio processor, for instance, a master purchase agreement might make sense. If individual station staffs are allowed to choose case by case, such a deal might be of little use to the clients.

Higher level

Another trend observed by equipment dealers is that customers are more sophisticated in the way they buy equipment.

"The consolidated companies are much more organized about their capital expenditures," said Tim Schwieger, president of dealer Broadcast Supply Worldwide. "This can translate to feast or famine for a given manufacturer."

Equipment companies that become suppliers to large broadcast groups will find many more customers for their merchandise. Those companies whose products are not in favor can be shut out of the picture.

"It behooves manufacturers and dealers to work very hard for their customers," said Schwieger.

Another sign of sophistication is that much of the ordering process is becoming automated, or at least electronic. At Harris, customers can log onto a Web site, find a catalogue of products and prices and enter a purchase order online.

"Our customers can now link their

office systems to our office system, which lowers their transaction costs and ours as well," said Batista. "We can coordinate accounts payable, accounts receivable, purchasing and invoicing automatically."

Broadcasters seem to like the convenience of the Internet.

"You can get all the specs and prices and use e-mail to get quotes," said Molnar of WNDU. "Some of us work crazy hours, so we can generate messages outside of normal business hours."

Will e-commerce eliminate the need for salespeople? "No," said Batista, "it's a good tool, but the face-to-face contact is very important too."

But without doubt, the marketplace is different than it was.

Burns of Allied AirNet laments some of the recent developments in the business, visible to those who sell equipment for a living.

"(Radio) management believes they can do without engineering, which is

really sad," said Burns. "It started with unattended transmitter sites, and that was the beginning of the end."

Burns said one contract engineer now handles as many as 11 stations, each of which employed one or more engineers in the past.

"Our talent is going to other industries because broadcasters are pushing for technology which allows them to get rid of people ... and the equipment industry has responded." ●

Workbench

► Continued from page 19

We stopped a couple of vandalism incidents working together in this manner.

A stop at your local police precinct and fire/rescue station is a worthy use of time. Make sure they know your new call letters and location.

first reaction would be, "Who would put a water pipe in a wiring trough?" Like most of us, I inherited that problem, and that's another story!

Of more immediate concern was locating the water meter shutoff valve to stem the spray of water. It was located across the tower field, buried under ice and snow, in a location the plumber knew and I didn't! The problem got fixed, and I looked like a hero. Once

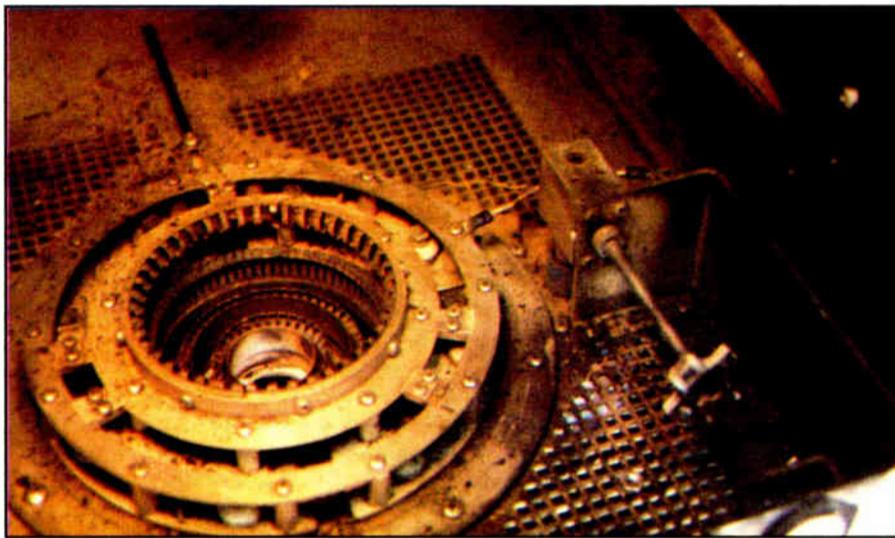


Fig. 4: Part of the final cavity of an RCA-BTF-20E1 transmitter damaged by fire.

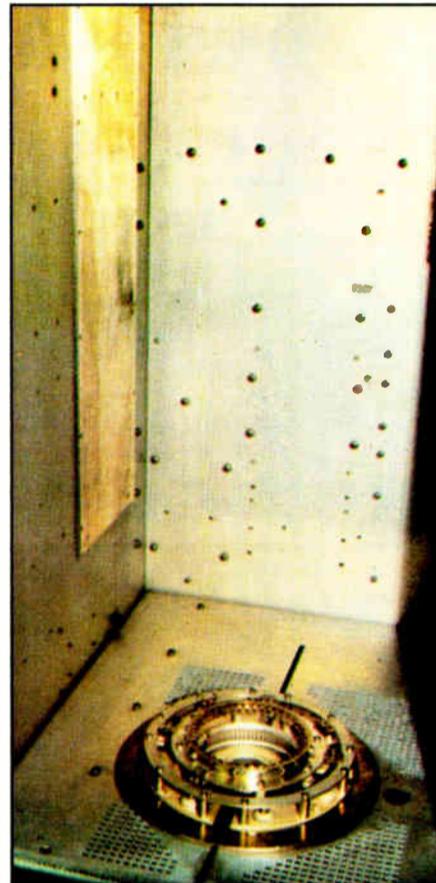


Fig. 5: The rebuild is underway.

With all the consolidation, you don't need emergency response crews driving to a location used three owners and 10 sets of call letters ago. You hope you'll never need their service, but you'll never regret your efforts if you need to call 911!

I've talked to other engineers who have extended this courtesy to their electrician or HVAC contractor. It works.

One year, I got service for a burst water pipe located in a wiring trough, underneath the transmitter, at midnight on Christmas Eve. Now I know your

again, the camera documented how terrible things were, and I included the pictures in my annual engineering accomplishments memo when I had my review.

It's funny, though. I wasn't anticipating the looming emergency when I had bought lunch for this plumbing company's crew a month earlier and made sure everyone had a station T-shirt. It was inexpensive insurance, given the magnitude of the catastrophe. The gesture created a bond between the station and the contractor that is still in place.

I imagine my GM would have passed

out sacks of money that night, just to get the problem fixed; but planning for an emergency in the middle of a disaster just doesn't work. Take a few minutes now to make sure your house is in order.

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 jbbisset@harris.com ●



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Juggling Too Much? Harris Can Help!

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next level solutions

SERVICE

SYSTEMS

AUTOMATION

TRANSMISSION

Feedline

► Continued from page 16

The Q of a typical folded monopole is about 10. This can be improved somewhat by spacing the skirt wires farther from the tower structure, but this presents its own set of additional structural, loading and maintenance headaches.

If a stub point is chosen on the tower so that the feed point at the base has a resistive component of about 50 ohms, the reactive component will be about 500 ohms inductive. This will require a capacitive reactance of equal value to tune out, all of which creates something of a series resonant circuit. Naturally, this tends to limit bandwidth.

There are techniques available to improve bandwidth, and these should be considered and discussed with your consulting engineer at design time. One is to tap the stub point for a resistance other than 50 ohms to obtain a more favorable reactance. A conventional T- or L-network can then be used to match the feed point to the transmitter.

Remember the lease

The last point I want to touch on in this series is far from the least in importance, and that is the lease agreement.

A good co-location agreement will have, in addition to all the usual lease language, a couple of key elements. One is a relatively long term. A station owner will make a substantial investment building out his transmission system at a particular site. Relocation is expensive and difficult. The term should be long enough to make the build-out worthwhile.

For example, if it costs \$100,000 to set up a transmission facility at a community tower, that \$100,000 had better secure the station a home for many years. A station owner can ill afford to spend that much to move the station every five years.

How long is long enough? Ten years

should be a minimum. It will generally take you that long to recoup the investment. Twenty-five years would be better.

The next key element of a good co-

powering down or going off the air for tower/antenna maintenance, who owns and is responsible for maintenance of traps, filters, diplexing equipment, and

How well everyone gets along depends largely on solid lease language.

While we are on the subject of individual responsibilities, it is often a good idea to give a responsible third party, such as a local consulting engineer, charge of the diplexer. This will alleviate conflicts that will arise when one party makes a repair or adjustment to the system that adversely affects one or more of the other users. The third party will look after all the users' interests equally and impartially.

I trust this series has been of some help to those who are contemplating a site move or consolidation of facilities, or those who are looking for new streams of revenue. Remember co-location as an often cost-effective alternative to new site development.

Cris Alexander is director of engineering for Crawford Broadcasting.

Consider giving a third party, such as a consulting engineer, charge of the diplexer. This will alleviate conflicts later.

location agreement is language spelling out responsibilities of all the parties. This should address interference resolution, RFR compliance issues, procedures for

specific remedies for dealing with the inevitable conflicts.

By nature, the interests of the various parties will be at odds from time to time.

embrace the future

Set the Dial for Success

Whether you create or deliver electronic content, the breakthroughs that affect radio come together this April at NAB2001. Electronic media's Convergence Marketplace presents the products and services fueling the digital revolution, and your future.

NAB2001 is the one place where you can truly experience the latest technology by seeing it demonstrated. It's a hands-on, practical way of comparing and selecting what's right for your company's future. And **E-TOPIA**, NAB's newest destination for next-generation technology, features breakthrough companies that are reinventing radio. Among the innovations you'll find are:

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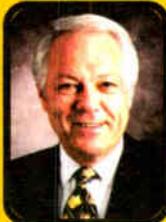
Put your technology discoveries into perspective at NAB's educational events. Conferences and Super Sessions cover tactics to make you money and save you money. Topics include the impact of satellite radio on your markets, streaming and webcasting as profit centers and the status of IBOC digital radio for AM and FM.

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Conferences: April 21-26, 2001
Exhibits: April 23-26
E-TOPIA Exhibits Premiere: April 22
Las Vegas, Nevada USA

MARKET PLACE

RadioSoft Offers Training

RadioSoft is offering training seminars to users of its ComStudy 2 software.

"Each participant is given a complete overview of the software's capabilities," said Marketing Director Dale Tahner. "So far we have had excellent response."

Classes are conducted at the com-



pany training center in Edgewater, Fla., but corporations also can inquire about on-site training. Users must bring a laptop computer loaded with ComStudy 2.

RadioSoft has conducted training for employees of radio groups like Clear Channel, as well as institutional users like the National Weather Service and U.S. Customs.

For information contact the company in Florida at (386) 426-2521.

KOB

► Continued from page 12 since 1969, I envisioned saving this unique piece of radio history in a museum I hoped someday to build.

The carefully crafted curves and cobalt-blue windows gave it a look that is as artful today as it was in 1941. Artist John Vassos is credited with the aesthetically pleasing design. Four 50-Es were built; this is the only one to survive.

My request was renewed from time to time as KOB radio's management and ownership changed over the 23-year waiting period. When I built the Electromechanical Museum in 1989, space was reserved for the entire 34-foot length of the 20,000-pound transmitter so it could

be displayed properly.

Upon installation of a new transmitter, occupying only one-sixth the space and consuming one-third the energy, the call was made to the waiting new owner. I suggested the open house and final tribute and said, "When do you want me there?"

I was there to perform the final sign-off, cut the power cables and dismantle the transmitter. The next morning, loading began on the two-day project for the move to Farmington, N.M.

Followed by a week of assembly, the radio giant now stands on display at the Bolack Electromechanical Museum so many more can appreciate something that few saw while it was doing service to so many.

The Bolack Electromechanical Museum is open to the public free of charge. Museum hours are 9 a.m. to 3 p.m. Monday



Switchboard

25th Anniversary Silver Sweepstakes

Enter to win one of 25 great prizes in Radio World's reader appreciation contest giveaway!

IMAS Publishing is celebrating 25 years of serving you and the radio broadcast industry. To mark this significant milestone, 25 of radio's leading equipment suppliers have teamed up with Radio World to express their appreciation.

Throughout 2001, Radio World will conduct 25 random drawings. Prizes and winners will be announced in every issue of Radio World all year long.



To become eligible to win, you need to complete these three easy steps:

- 1) Register online at our Web site www.rwonline.com
- 2) Click the Silver Sweepstakes icon on our homepage
- 3) Fill out the electronic entry form — that's it, you're done!

It's your chance to celebrate our Silver Anniversary with these fine Radio World supporters ...

Contest Rules: To enter the drawing, simply register online at www.rwonline.com/sweeps. 25 drawings will be held throughout the year. Contest ends December 19, 2001. One prize per winner. All contestants MUST reside in the United States and have a valid mailing address. Winners should receive prizes within 30 days of notification, however, actual delivery time may vary and is not guaranteed by IMAS Publishing. Federal, state and local tax laws may apply to prizes and are the sole responsibility of the winner.

through Saturday. Call the museum at (505) 325-4275. The museum is looking to purchase large high-powered water or air-cooled transmitting tubes, especially the RCA 862, 898 and 5831 or equivalents.

Contact the author at 3901 Bloomfield Hwy., Farmington, N.M. 87401 or by phone at (505) 325-4275.

MARKET PLACE

SoniCase Protects Field Gear

Constructed with double layers of 1000 denier Cordura fabric, the SoniCase is a rugged equipment carrying case for field use.

The weather-resistant enclosure provides storage for a portable DAT recorder, two rechargeable batteries, a microphone preamp, microphones, cables and other accessories.

The case is compact for easy travel. It offers access to batteries and connectors via openings that help you charge and make changes without having to unpack.



While in use, double-protection against the elements is afforded by a rain fly, which opens to reveal transparent plastic windows safeguarding the gear. The zipped windows keep moisture out while maintaining front-panel visibility of components stored on the case's four shelves.

A padded shoulder strap and securing waistband are included.

The SoniCase is available from Sonic Sense for \$195. An accessories pouch attaches to the main body and costs \$32.50.

For information call (877) 324-4463 or visit www.sonicssense.com



See Page 32

AFTRA Looks Beyond Strike

Ken R.

For about six months last year, major-market radio personalities and free-lance announcers made their only personal appearances on the picket lines. Virtually no new national radio or television advertising campaigns were recorded.

From early May until the end of October, the world of commercial broadcast production was in a tizzy. Yet, in most medium and smaller markets, it was business as usual.

The American Federation of Television and Radio Artists, along with their brethren in the Screen Actors Guild, was on strike against the American Association of Advertising Agencies and the Association of National Advertisers.

The money

At stake were millions of dollars in fees and the rights of announcers to participate in future Internet revenue.

AFTRA is active at about 300 stations located primarily in major markets and has agreements with these station owners to represent their announcer talent. Free-lance voice artists (announcers and jingle singers) in these markets have separate agreements with AFTRA.

The strike was settled on Oct. 23, 2000, when a tentative agreement was reached between the talent and producers. SAG and AFTRA members ratified this agreement shortly thereafter and union commercial production resumed as striking announcers returned to their microphones.

Ira Shepard is counsel to the joint policy committee on broadcast talent union relations of the Association of National Advertisers and the American Association of Advertising Agencies. He is the chief

negotiator for the AAAA and the ANA.

"In the end the industry was pleased with the settlement. The union got an 8-percent increase over three years. We were pleased that the union came to terms and came in on our budget," Shepard said.

One question that has yet to be played out is compensation for Internet work.



One of Many AFTRA Strike Rallies in Los Angeles

While union rates are standardized for specific services such as recording a 60-second radio spot or singing a jingle, Internet spot rates are yet to be determined.

Greg Hessinger took the reins as AFTRA's national executive director in the middle of the work stoppage last year.

"We're going to wait and see what the Internet market will bear, but producers still agree to make health and retirement contributions," said Hessinger.

"In three years, when the current contract is up, both parties will sit down and bargain accordingly. It's premature to fix rates in a way that will stunt growth for the Internet."

Shepard said that currently, most of the commercials on the Internet are banner ads without audio or actors, so it makes sense

to wait and see what develops in the rapidly changing Internet arena.

"There just aren't enough Internet ads right now to justify a rate. We'll just let the free market set the rates over the next three years for the Internet. At three years end, nobody really knows what the future will be," Shepard said.

Besides winning jurisdiction over Internet spots, AFTRA/SAG won several other goodies for their station-affiliated members and free-lancers. These include an economic package increase of just over 8 percent in wages and health and retirement benefits.

Station monitoring

A committee also was established to investigate a plan to monitor radio stations for commercials.

A long-time AFTRA/SAG free-lance announcer in Chicago who did not want to be identified was pleased with the settlement.

"Originally, producers didn't even want to recognize AFTRA as having jurisdiction over our Internet work. In my opinion, had that stood, they then would have tried to call everything 'Internet,'" said the talent.

"That's really what the whole strike was about, as we probably would have gotten small increases in our rates even without the strike."

This announcer lamented that a strike was considered necessary.

"We were all out of work for six months, but I guess we had to go through this," he said. "The producers out there don't hold anything against the union talent now that we are back at work, but producers got used to dealing with new (non-union) people while we were gone."

Dominique Bravo is AFTRA's national director for legal and legislative affairs. With the recent contract settlement, Bravo said many AFTRA members are receiving

See AFTRA, page 30 ▶

MARKET WATCH

Down in The Valley, Radio Rocks

Steve Sullivan

It's not quite accurate to say that Spanish-language radio in the United States was born in Texas' Rio Grande Valley. But you could make a strong case that it came of age here.

This market, at the southernmost tip of Texas where the Rio Grande empties into the Gulf of Mexico, stretches inland for almost 50 miles. On the U.S. side of the border, the Rio Grande Valley is defined by three primary cities — Brownsville, Harlingen and McAllen — plus numerous small communities in between.

Across the border

Just across the border, the Mexican towns of Matamoros and Reynosa frame a sub market that, although unmeasured, is highly influential to the sound of the Valley.

In 1949, McHenry Tichenor bought two stations in his hometown of Harlingen, Texas. Thirteen years later, one of those stations, KGBT(FM) — the call letters were the initials of Tichenor's wife, Genevieve Beryl — became one of the first radio stations in the United States to broadcast Spanish programming full time.

Tichenor's influence on Spanish-language radio continued to grow throughout the 1960s, until he turned over the reins of Tichenor Media System to his son, McHenry, Jr., in 1967.

From his home near Harlingen, the elder Tichenor watched as his son continued to grow the company. In 1996, just three years before his company evolved into Hispanic Broadcasting Corp., McHenry Tichenor, Sr. passed away at the

See TEXAS, page 26 ▶



Broadcast Systems for Radio, Television and the Internet

**MANAGEMENT DATA**
MEDIA SYSTEMS

Texas

► Continued from page 25
age of 98.

Joe Morales, one of the nation's most recognizable Spanish radio voices, is general manager of Hispanic Broadcasting's three stations in the Valley — KGBT-AM-FM and KIWW(FM).

"Tichenor was a visionary, a man with a lot of courage," said Morales. "He was a man who loved the Hispanic people. We're very, very proud to work for this company he founded."

"Tichenor was the first Anglo to correctly identify the market," said Joe Nick Patoski, a senior editor with Texas Monthly magazine. "He let the market play to the market, rather than dictate what

he thought they should be listening to."

That market is overwhelmingly Hispanic. On the U.S. side of the border, the population estimates approach 1 million, 85 to 90 percent of which is Hispanic. The population on the Mexican side of the Rio Grande Valley is even larger, estimated at just over 1 million.

Spanish programming

On both sides of the border there are no fewer than 40 radio stations broadcasting in the Valley. All 14 Mexican stations and at least 16 of the 26 U.S. radio stations broadcast at least a portion of their programming in Spanish.

Much of the music filling the airwaves is homegrown. Tejano heartthrob Bobby Pulido lives in the area, as did one of the pioneers of Conjunto music, the late Narciso Martinez. Also from the Valley is

Conjunto/pop crossover star Freddy Fender.

While the sounds of Tejano and Conjunto are pervasive, they do not have an exclusive franchise on Valley radio.

"This is no longer a one-flavor market," said Bruce Smith, editor of the weekend entertainment section for the Harlingen Valley Morning Star. "As the population base has grown and influences like cable TV have come in and people are exposed to different types of music, it stops becoming a one-note market."

Smith said top 40 and Tejano fight for the format laurels here.

"For awhile, country was king, but like in other markets, country has faded. There was even a time when there was a lot of hair-band stuff going on back in the '80s and heavy metal was king."

Texas Monthly's Patoski also said that

McAllen-Brownsville, Texas

Market rank: 63

Market revenue rank: 106

Number of FMs: 15

Number of AMs: 10

Estimated Revenue (in \$000s):

1996: 15,200

1997: 15,300

1998: 16,200

1999: 18,200

2000: 19,800

Revenue Growth:

'93 - '98: 3.8%

'99 - '03: 7.7% (projected)

Local Revenue: 88%

National Revenue: 12%

1998 Population: 86,310

Per Capita Income: \$8,375

Median Income: \$21,797

Average Household Income: \$30,709

BIA Financial
network

Background: The agave plant grows everywhere on the border.

even within Spanish radio, the formats are morphing and it's noticeable in the Valley.

"There was a real boom down there in the '90s when the Tejano format became hugely popular throughout the region. Now stereo Latino is hammering it, which is pan-Latin. What was once a pretty monolithic Spanish-language radio is getting divided into niches now and that's pretty reflective of radio in the Valley today."

As they have in most markets, the outsiders are moving in. Although large and national in scope, because of McHenry Tichenor's local roots, Hispanic Broadcasting's three stations are arguably locally owned. However, the "mom-and-pop" owners in the Valley are giving way to the large corporate owners.

HBC competitor Radio Unica entered the market in March 2000 when it purchased talk station KVJY(AM). Entravision owns classic rockers KFRQ(FM) and KVPA(FM), Tejano station KKPS(FM) and adult contemporary KVLV(FM).

And in September 2000, Clear Channel came to town, buying contemporary hit radio/international KBFM(FM) and the market's lone country station, KTEX(FM), from Cumulus Broadcasting.

It's hardly a surprise that Clear Channel came into the market on top. When it bought KBFM — B104 — from Cumulus late last year, its contemporary and international format topped the market with a Spring 2000 rating of 15.6. (Arbitron only measures the market in spring and fall. See sidebar for Fall 2000 ratings.)

That was well ahead of KGBT(FM)'s 8.8 and KVLV's 8.5. Clear Channel's country station, KTEX(FM), ranked fourth at 7.9. And according to Duncan's Radio Market Guide, KBFM was the highest-billing station, with revenues of \$2.9 million or almost 14 percent of the total radio revenues in this market in 1999.

"We're in a unique situation in that we're the only CHR and only country station," said John Greider, Clear Channel's

See TEXAS, page 27 ►

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Just as a car needs a reliable driver, so does every radio broadcast transmitter. The Crown FM series exciters, drivers and low power transmitters offer reliability unsurpassed throughout the world. Incorporating standard features as an integral part of all power levels, the quality in workmanship standard is consistent for all of Crown Broadcast products.

The exciter/driver model offers high reliability as an RF driver while maintaining the audio purity associated with FM broadcasting today. The internal low pass filter allows the exciter to be placed directly on-air in the event of a main transmitter failure.

Crown transmitters are stand alone low power units and can be configured with optional stereo generator and audio processor. Thousands of broadcasters around the world have come to appreciate the rugged, reliability of the Crown Broadcast line of transmitters.

So when making your decision on a new exciter, RF driver or low power transmitter, reliability should be at the top of your list. Crown Broadcast builds reliable transmitters from 1 watt to 2 kilowatts.

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Texas

► Continued from page 25
 general manager for the Valley stations. "So really, we can go about our business and do pretty much as we like knowing we have a real corner on the market."

"We don't want to get arrogant about that, but we can play it pretty much by the books and the listenership comes."

Billy Santiago is the PD for KBFM and KTEX. He said that so far, Clear Channel has been content to let him continue playing what has worked in the past to make the station No. 1.

"When you listen to B104, you hear an eclectic mix of music. We've got international dance music and international bilingual songs. We play songs by Ricky Martin, who is now in the mainstream market, but he was big down here in '94. We jump out on those kinds of songs early

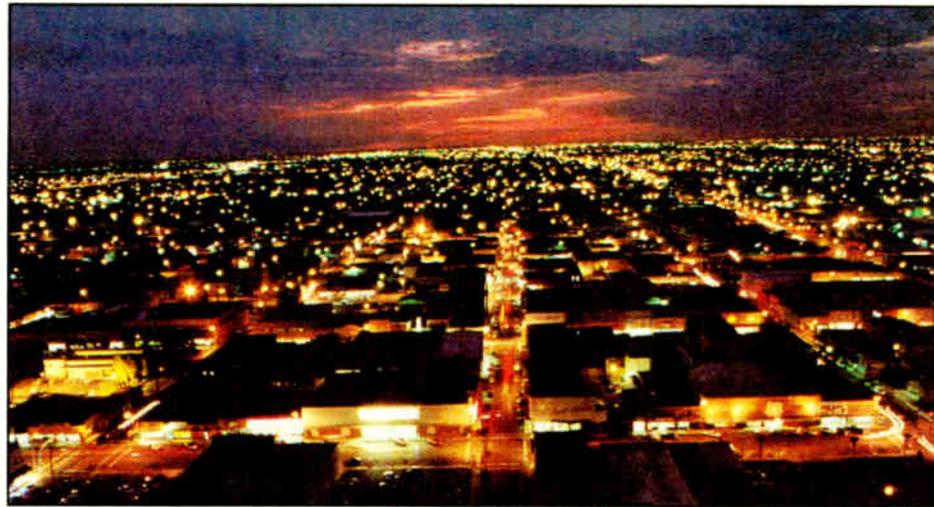


Photo: David Nancher

Sunset in McAllen-Brownsville, Texas

up of the market.

"The good thing about our situation is that since Clear Channel has come in, they've let us do what we need to do to

And what about the stations south of the border?

While Mexican listenership goes unmeasured, its 14 area radio stations broadcast into the U.S. market that is measured. Do the Brownsville-Harlingen-McAllen stations consider them a threat to their own ratings?

"There are some Mexican stations with some cume, but their programming is very weird," Santiago said. "They're all over the road, they talk in the middle of songs. They don't really have a structure to their format. If they could get somebody in there who could teach them some structure, they could present a threat. Plus, they'd have to market themselves on this side of the border and they don't really do that."

Local eccentric

Back in the 1950s and '60s, a man named Ty Cobb, (no relation to the baseball player,) hosted a popular radio talk show from the top floor of the Cortez Hotel in Weslaco, a town midway between Brownsville and Harlingen.

Something of a local eccentric, Cobb had four secretaries and he'd have them send an invoice for \$5 if he mentioned your business on air. Carl Meiners, now 87 and a volunteer for the Weslaco Area Chamber of Commerce, remembered a sidewalk encounter with Cobb.

"I met him one day on the street and we started talking and I told him I owned an auto parts store. A day or two after we met, I got a bill from him for \$5. I was surprised because I hadn't ordered anything from him. I think I probably paid it because whenever he mentioned your business it was good publicity."

Nobody quite knows for sure if the

money went to Cobb or his station.

What is certain today is that radio advertising in the Valley is healthy.

The local economy is fueled by retail trade and manufacturing. The latter was given a tremendous boost by the North American Free Trade Agreement, which sparked the growth of industrial plants in Matamoros.

Tourism is also big business in the Valley. The warm climate causes the wintertime population to swell by nearly a half million people. And nearby South Padre Island has long been a favorite spring break destination for college students.

While the market is unique in many ways, radio advertising tends to feature a pretty familiar group of clients, including auto dealers, restaurants and nightclubs.

The last revenue reports available at the time of writing were for 1999. They show the Entravision stations, owned at that time by Sunburst Media, leading the clusters with combined revenue of \$5.15 million. Hispanic's three stations were second with a combined \$5 million.

When Cumulus owned KBFM and KTEX in 1999, those stations posted just under \$4.5 million in revenues. Clear Channel's Greider said the group finished "right at \$5 million" in 2000.

"We had a real strong year in 2000 with local auto dealers. With some of the prognostications coming down for 2001, there seems to be a little bit of caution going into the year, so it will be interesting to see how this plays out in the new year."

Greider said that despite a slowing economy, he expects revenue to grow this year.

"We've got a little bit of insulation against the economy because of the two factors we've got here. We've got weather that's better than almost anywhere in the U.S. So during the winter and early spring of year we're looking at an influx of 300,000 or so 'winter Texans' in our market, which is a boost to our economy."

"And we've got the national Mexican presence, with an additional clientele and audience down there. And we know that audience is listening, even though Arbitron doesn't measure it. It's difficult to get a handle on the dollars spent because so much of it is spent either discreetly or completely on the side. It's just a remarkable market because it's got so many of these crazy little characteristics."

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

Reach him at (512) 260-3313 or via e-mail at sullicom@aol.com

McAllen-Brownsville-Harlingen Commercial Radio Market Overview

Station	Owner	Format	BIAfrn's 1999 Est. Station Revenue (\$000s)	Fall '00 Rating
KBFM(FM)	Clear Channel Communications	CHR/Intn'l	2,800	17.5
KGBT(FM)	Hispanic Broadcasting Corp.	Spanish	1,800	11.3
KKPS(FM)	Entravision Communications	Tejano	2,800	10.3
KVLY(FM)	Entravision Communications	AC	2,000	8.3
KFRQ(FM)	Entravision Communications	Clsc Rock	1,600	7.2
KTEX(FM)	Clear Channel Communications	Country	1,650	6.1
KIWW(FM)	Hispanic Broadcasting Corp.	Tejano	1,300	4.7
KGBT(AM)	Hispanic Broadcasting Corp.	Spanish	1,000	4.0
KURV(AM)	Voice of Valley Agriculture	News/Tlk/Sptrs	750	3.4
KRGE(AM)	Christian Ministries of the Valley	Chrst/Span	500	2.3
KIRT(AM)	Gomez Group	Spanish	250	1.9
KTJN(FM)	Trevino, Edgar	Var/Tej/Span	350	1.1
KBOR(FM)	Trevino, Edgar	Spanish	250	1.0
KBOR(AM)	Trevino, Edgar	Varty/Span	250	0.9
KUBR(AM)	La Radio Cristiana Network	Spanish	200	0.7
KBIC(FM)	Christian Ministries of the Valley	Chrst/Span	0	0.5
KVJY(AM)	Radio Unica	Talk/Span	0	0.5
KILM(FM)	Sendero Multimedia	Mexican	400	0.5
KJAV(FM)	La Radio Cristiana Network	Religious/Span	0	0.5
KSOX(AM)	Voice of the Valley Agriculture	Oldies	0	0.4
KVPA(FM)	Entravision Communications	Clsc Rock	250	N/A
KZSP(FM)	Alternative Broadcasting Corp.	Jazz/RhyBls	50	N/A
KQXX(AM)	Trevino, Edgar	Spanish	0	N/A
KRIO(AM)	Rio Grande Bible Institute	Spanish	0	N/A
KESO(FM)	Alternative Broadcasting Corp.	Alternative	0	N/A

N/A indicates the station is not rated in the market, but is heard there.

BIA Financial network Stations are ranked in order of Arbitron Fall 2000 12+ share. Copyright 2000 the Arbitron Company. May not be quoted or reproduced without the prior written permission of Arbitron. Other information provided by BIA Financial Network through its MEDIA Access Pro Radio Analyzer Database software.

Background: Wood-Carved Madonna From the McAllen International Museum

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 - ... without creating a critical "stereo seat"

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Moseley's Starlink SL9003Q is the transmission leader: an open architecture, all-digital, 4-channel aural STL without compromise. Using spectrally efficient QAM (quadrature amplitude modulation) technology, it conveys up to four linear uncompressed audio channels over a single narrow bandwidth 950 MHz STL channel.

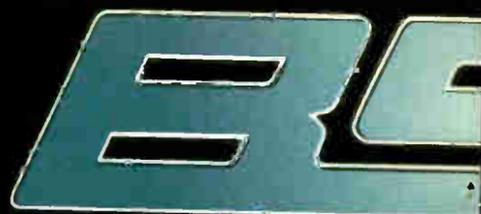
This uncompressed 16-bit linear audio is absolutely uncompromised and can be configured with up to two pairs of stereo audio (that's like getting two radios for the price of one). AES/EBU I/O, combined with a built-in sample rate converter, provide seamless connection without delay. User selectable digital audio sampling rates of 32, 44.1 or 48 kHz together with a choice of 16, 32 or 64 QAM allow the optimization of occupied bandwidth, robustness and connectivity to equipment in the all-digital air chain. Other features include T1/E1 connectivity and full metering and diagnostics.

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The ApheX Dominator II 720 is a precise stereo multi-band peak limiter for applications requiring an absolute peak ceiling. **Features:** peak ceiling adjustable in .2 dB steps over a 34 dB range; switchable low-to-mid and mid-to-high crossover frequencies; remote control hardwire bypass; dynamic range 104 dB and THD distortion of less than .005%; balanced XLR I/O.

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The A-6 digital recorder from Roland makes it easy to mix vocals, music beds and sound effects. It's the perfect workstation for a busy radio production studio. It uses an audio clip pad so you can easily save and insert narration and music in real time. The large 2.1 GB hard drive stores up to 9 hours of audio. Right now, we are including FREE headphones with your purchase! **Features:** high sound quality (20-bit A/D converter and 24-bit internal signal path); four stereo tracks; numerous "virtual" tracks for a total of 32 stereo tracks which can be used to create the final mix-down; 99 professional-level audio effects (noise suppressor, compressor/limiter, reverb, delay, voice transformer, etc.); 400 sound effects and music tracks; non-destructive editing with undo; GPI jack for use with editing controllers.

Beyer DT231 lightweight, closed ear headphones perfectly compliment the Roland recorder/workstation. They offer excellent bass response and brilliant sound. Soft ear pads ensure long-term comfort. Includes stereo mini-jack and 1/4" adaptor.

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Designed for Heavy On-Air Play

The Denon DN-C630 CD player is built robust for continuous use. **Features:** instant start; auto cue; cue to audio with adjustable threshold; variable speed; time remaining display; re-cue or next functions; program play with 25 tracks; fade-in function; balanced XLR and unbalanced RCA outputs; coaxial digital output.

DENON DNC630 List \$599.00



Trusted CD Player with High-End Features

The Denon DN-C680 is engineered to provide the ultimate in flexibility and high performance. **Features:** program play up to 25 tracks; large illuminated display; track search select; jog/shuttle wheel to perform searches to 1 frame precision; continuous, single/A-B play modes; finish modes (stop, next, recue); auto cue; auto edit; auto space; pitch control; balanced XLR and unbalanced RCA analog outs; balanced AES/EBU digital out.

DENON DNC680 List \$899.00

**Denon's Renowned Cart-Style
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For state-of-the-art recording and playback, the DN-M991R cart-style MD machine offers everything the broadcaster could want. **Features:** Hot Start function (load up to 10 tracks); program play with up to 25 tracks; keyboard terminal for remote operation and titling; auto level record start; auto track increment (digital or analog); records stereo or mono; editing capabilities that include 2 levels of undo and redo; SCMS option (on/off); rotary track selector knob; instant start (less than 0.01sec); auto cue to music; single/all repeat; cue search (up to 5 cue points per track); 86 frames per sec. for precise cueing/editing; fader start/pause; user adjustable presets; headphone jack; balanced AES/EBU digital I/O; balanced XLR analog I/O; parallel remote port; 25-pin D-sub; RS-232C/422A serial port w/ terminator switch.

DENON DNM991R List \$2,299.00



Quality AM/FM/RDS Stereo Tuner

The TU-1500RDP is an affordable AM/FM/RDS stereo tuner featuring highly sensitive reception performance and detailed, clear sound. **Features:** sophisticated tuning circuit design; 4-stage variable capacitors in its front end guarantee accurate tuning of station frequencies; low-impedance output circuit (100 ohms); RDS compatible; 40 AM/FM station preset memory; rack mount kit. **DENON TU1500RDP List \$399.00**

AFTRA

► Continued from page 25
increases in rates for the first time in years.

"Part-timers are now getting benefits and better conditions with respect to turnaround, holidays and overtime. Without a contract, employers are not required to provide those things," said Bravo.

Another feature of the AFTRA contract mentioned by Bravo is a set of guidelines governing severance pay.

"You can be working in radio successfully for years, and suddenly you get fired when a new program director comes in," said Bravo. "With a union contract, at least they will have to give you a little security."

The impact of unionization tends to vary depending on the market and the station situation.

An unusual situation exists at the Infinity stations in Detroit, where because of a merger, AFTRA has an agreement with WWJ(AM) but not with sister station WXYT(AM) in the same building.

Georgeann Herbert is the operations manager who oversees these stations. She said

many clauses in the AFTRA contract would have been provided even without the agreement.

"Rules regarding schedule posting, personal appearances by the talent and overtime are just fine," said Herbert. "But with regard to salaries, AFTRA only provides for minimums. We certainly pay our talent a lot more based on their experience."

Herbert said AFTRA rules are somewhat more burdensome for her accounting and payroll staff, "but overall, if you have a motivated group of people, the contract becomes what you want to make it."

Across the river from Detroit lies the town of Windsor, Ontario, where the CHUM Group of stations resides, including CKWW(AM), CIMX(FM), CIDR(FM) and the legendary CKLW(AM), all under the helm of Eric Proksch, vice president

and GM.

"All our stations are AFTRA-affiliated and have been for a long time," said Proksch. "Strangely, the Canadian labor laws are more strict than the AFTRA contract, so even without the union, our employees would be treated very well."

When Proksch first arrived at the station, he was caught off guard by the lack of interest in the union by most employees.

"We have a very strict set of rules we as employers must follow, but the employees take a very relaxed approach," said Proksch. The CHUM group of stations in Windsor has about 30 employees under AFTRA jurisdiction.

"AFTRA affords managers an opportunity to put together a very cost-effective benefits package for the employees," said AFTRA's Hessinger.



Greg Hessinger

"However, we try to coordinate our efforts among the markets to get some strength of scale," said Hessinger. "When we get interest in a particular area, we try to give them added leverage by having other drives going on at the same time."

"Our biggest challenge is ensuring that as companies develop new distribution technologies, their employees continue to share in those growth opportunities," said Hessinger.

Hessinger is aware of the changes that have occurred in the broadcast industry and is trying to help AFTRA keep current. "There was a shift

that took place several years ago in which services traditionally done by staff announcers were outsourced," said Hessinger, referring primarily to traffic and weather.

"We have been able to reach a balance with the industry wherein companies have been able to get the flexibility they need and at the same time, preserve the standards for the people working at the stations."

Bravo said AFTRA is setting up seminars and inviting members of the public and the broadcast industry to hear speakers such as talent attorneys and agents talk about negotiating contracts.

"Once we establish more of a presence in the local markets, we will be looking to add more stations," said Bravo.

AFTRA currently has a strong presence only in the largest cities, but welcomes inquiries from any radio markets.

"However it's very important for us to focus where we already have a foothold," said Hessinger.



The T-shirts tell the story at a rally in Los Angeles.

Good deal

"They get a good health and retirement plan and a portable pension, and because of our national scale we can offer these things at a cost that is far lower than what stations could obtain elsewhere."

Hessinger also pointed to the dispute resolution mechanism his union offers its members.

"It's far more streamlined and efficient than litigation because we can settle things through discussion and arbitration."

Because of the federal labor laws, AFTRA groups in various markets must be organized independently.

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Big Prize Promotions at Low Cost

KTWS(FM) of Bend, Ore., got a free listener promotion with the chance at a big prize in a recent event at a newly renovated local mall. The "Santa's Cookie Toss" event invited listeners to KTWS (98.3, "The Twins") to go to the mall and register to win a new Honda Insight parked at the main entrance. Once a day, the station would call out one of the registered names on-air. That person would have 98 seconds to call the sta-

tion to qualify for the cookie toss.

Fourteen contestants, selected in the three weeks prior to the competition, lined up before a 6-inch-wide bowl filled with milk. Their challenge was to fling an Oreo cookie into the bowl, parked 20 feet away. The winner would go home with the new Honda.

SCA Promotions underwrote the contest and paid Bob Thomas Honda to offer the new car. The car dealer



Tod Boucher shows off his new Honda Insight.

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Major stations in major markets choose Scott Studios' *Invincible*. It's a *mirrored* pair of top-of-the-line SS32 digital audio systems, plus Scott's *exclusive* diagnostic watchdog that double-checks everything several times every second by fast USB. At any *hint* of trouble, the backup automatically starts playing where the problem unit left off! *Invincible* switches so fast that most listeners hardly hear a glitch. In fact, one touchscreen controls both systems seamlessly so some announcers don't notice a switch.

Hands-free redundancy is one of many reasons why major stations in New York, Chicago, Los Angeles, Houston, Dallas, Philadelphia, San Francisco, DC, San Antonio, Phoenix and Toronto installed Scott Studios' SS32 recently. 3,500 stations in the U.S. have Scott systems and those of our sister company, Computer Concepts Corp. More stations use our systems than the second and third largest digital vendors combined! Our customers benefit from the biggest and best service and support staff in radio's digital audio industry, with 105 people at your service.

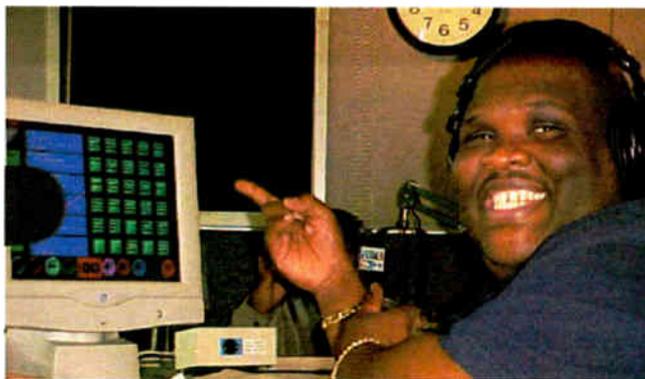
Scott's *Invincible* SS32 is the most robust digital system of all! SS32 delivers more streams of perfect uncompressed and MPEG audio than any other system. You get industrial rack computers, the fastest CPUs, mega-memory, hot swap redundant power supplies, ultra-fast RAID mirrored hard drives, extra cooling, NT networking, two premium four-output stereo audio cards per system, the best flat panel touchscreens and up to a 5-year exchange warranty! Nothing else gives so much peace of mind as Scott's *Invincible*.

Scott Studios SS32's user-friendly intuitive touchscreen is the simplest for announcers to use and gives all the features that creative major market air talent demands.

For example, SS32 delivers:

- 30 sets of 30 hot keys for instant play of jingles and effects.
- Cart walls that play song requests within 1 to 3 seconds.
- Display of last play and next scheduled play dates/times.
- Ripper puts CD music on hard disk digitally in 18 to 28 seconds!
- Easy voice tracking in context in air or production studios.
- Fast "no-dub" production uploads from Sound Forge.
- Phone recorder with audible scrub and waveform editing.
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For details about SS32 *Invincible*, go to ss32.com or call toll-free at 1-888-GET-SCOTT.



Shown above is the top-rated "Big Boy" morning drive personality pointing to the SS32 touchscreen at KPWR, Power 106 FM in Los Angeles. For details, visit ss32.com or call 1 888 GET SCOTT.

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Internet: scottstudios.com

World Radio History

got exposure for his business on both KTWS and at the mall, while the radio station got to offer a great prize to listeners at no cost to them.

SCA helps malls find promotion partners. The company said its approach can provide radio with an opportunity to do a big promotion on a low budget.

For more information call (888) 860-3757 or visit the company Web site at www.scapromotions.com

NAB Radio Show Adds Net Tech Expo

To bridge the gap between traditional radio content delivery and new, rich media content exchange, the National Association of Broadcasters will offer a complementary trade show at The NAB Radio Show this September in New Orleans.

The "Xstream" will provide exhibitors and sessions on streaming technology and the future of electronic media delivery. Featured streaming technologies will include content development tools, storage and digital asset management, encoding, broadband delivery systems, e-commerce and hosting.

NAB Xstream
A New Conference & Expo from the
National Association of Broadcasters
September 5-7, 2001 New Orleans, LA

NAB President and CEO Eddie Fritts said that it became apparent that there was a demand for more access to streaming technologies from the NAB's trade shows' attendees.

"We're working with industry experts to make NAB Xstream the perfect arena for broadcasters looking to expand into the new streaming industry."

NAB Radio Show registrants will have access at no extra charge to the NAB Xstream.

For more information about the NAB Radio Show and NAB Xstream visit the NAB Web site at www.nab.org/conventions

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Joyner Tests RBN Ad Insertion

Craig Johnston

ABC Radio's "The Tom Joyner Morning Show" was the first radio program to use RealNetwork's new ad insertion system, the Real Business Application 2.0.

When RealNetworks announced the system last fall, a prototype had been in use by the Joyner show for a year. Real and ABC Radio Network engineers jointly developed that prototype.

Geoff Rich, executive VP of programming and Internet for ABC Radio, said the company has had good results with the system, and is realizing added revenues from the Internet-only ad sales.

"It is critical to monetize Internet delivery of radio because of the incremental cost to the delivery of each stream to an Internet listener," Rich said. "If you have no way to recover your streaming costs, the more they listen, the faster you go broke."

Sales

ABC Radio formed a dedicated sales force for Internet radio sales. Rich said the arrangement gives focus to the Internet sales effort. The Internet sales force cooperates with ABC's traditional sales force.

Prices for Internet sales are based on projections, and are reconciled against actual measurements of the streamed audience.

"With the streaming audience growing at double-digit rates, we're not afraid of under-delivering," Rich said.

The RBN equipment consists of a rack-mounted Unix PC. Rich said that it takes up no more space than a stream encoder. Internet-only spots are inserted at that point, and the signal is input to a frame relay and transported to RBN's Broadcast Operations Control (BOC) in Seattle. From there, it is distributed through RBN's network to the Web.

enough to be profitably divided into smaller slivers. He said that last November on average just fewer than 600 online Joyner listeners received a streamed signal at the same time.

"Radio programming," Rich said, "is self-targeting. Tom Joyner draws a large audience of 25-to-54 African-American males. AM talk draws a strong 35-to-64 male demographics."

Reaching secondary demographics will also be a problem with targeted ads, Rich said. "P & G (Procter & Gamble) targets 25-to-54-year-old women for detergent, but they know others buy it too. With regular advertising, they get impressions from secondary buyers. The question is, on the Internet do you want to deliver only to your prime demographic, without spill?"

But Rich said the time for targeted ads is not too far off, perhaps two to four years. And he cites the tremendous growth of Internet listeners.

In November 1999, the Joyner show sent 290,000 streams, with an average listening time of 21.8 minutes. A year later, it sent over 640,000 streams, with listening time averaging 38 minutes.

Rich believes the steady improvement in encoding technology has allowed more Internet listeners to tune in. And he sees radio having an advantage over video service with the current state of listeners' connection bandwidth: An Internet radio listener can have a quality experience with a 32 kbps connection.

Soon

According to Michael Leo, RealNetworks expects to introduce targeted ad insertions soon. Inserting targeted ads will mean one major change in the RBN system's block diagram: In order that the radio station will not have to send multiple streams to RBN, the targeted ads will be inserted at RBN's BOC.

In addition to ad insertion, the RBN

to purchase CDs online.

Another feature allows the player to display "now playing" title and artist information about music currently being played. That feature came with Real's acquisition of Multi-Point Inc., which in 1993 had developed a system to allow radio stations to display title information of music currently playing on billboards.

Hurdles

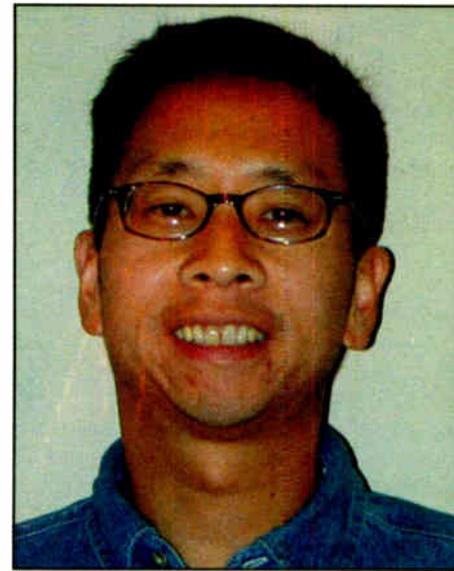
Leo said the Multi-Point acquisition solved one of Real's biggest hurdles in building the ad-insertion system: interfacing with a radio station's automation software.

Version 2.0 interfaces with automation systems from Broadcast Electronics, Computer Concepts, Scott, Dalet and Enco. Compatibility with other systems is expected to be added, according to Leo.

Multi-Point's founder Allen Hartle remains at RealNetworks as head of their Radio Systems Group.

Internet ads inserted in a station's stream can be enhanced through linking to a visual image or call to action displayed on the screen. RealNetworks notes this will allow advertisers to reach consumers in ways never before possible.

Rich sees the interactive ads as an advantage to advertisers, where listeners can click on an advertiser's logo in the



Mike Leo

player and be sent to the company's Web site. Online listeners continue to listen to the streamed audio signal while they surf to other sites. But some research he's seen gives pause to total reliance on interactive ads: Ninety percent of Internet radio listeners minimize or cover their players while listening. He suggests that the spots be able to sell based on their audio track alone.

A final feature in the new RBN system allows digital content to be added, such as local and national news, sports and weather, customized for the listener.

If you have no way to recover your streaming costs, the more they listen the faster you go broke.

— Geoff Rich

Real's Senior Product Manager for RBN, Michael Leo, calls the system "transparent" to a station's operation. The rack-mounted PC is delivered to the station configured with the encoder and other systems. Station engineers do installation, with telephone guidance from a RealNetwork's technician. Leo said if the frame relay is in place at the time of installation, the station can be up and running in about four hours.

The station's traffic department, with browser-based control, handles spot placement.

At this point, the RBN system does not insert targeted ads. While Rich feels that will be important in the future, he said the current audience isn't large

system offers other features. Perhaps most important to the advertising community, the system is "Arbitron- and MeasureCast-ready," allowing a station's streaming activity to be measured by those third-party measurement and tracking firms.

RealNetworks also offers Internet sales assistance through Real's own ad sales force. The Internet audience represents some special opportunities, said Shelly Morrison, Real's VP for media and distribution sales. It is "an audience that is twice more likely to engage in e-commerce and shopping online," she said.

Through a nonexclusive arrangement with Spun.com, an e-commerce company, the RBN system will allow listeners

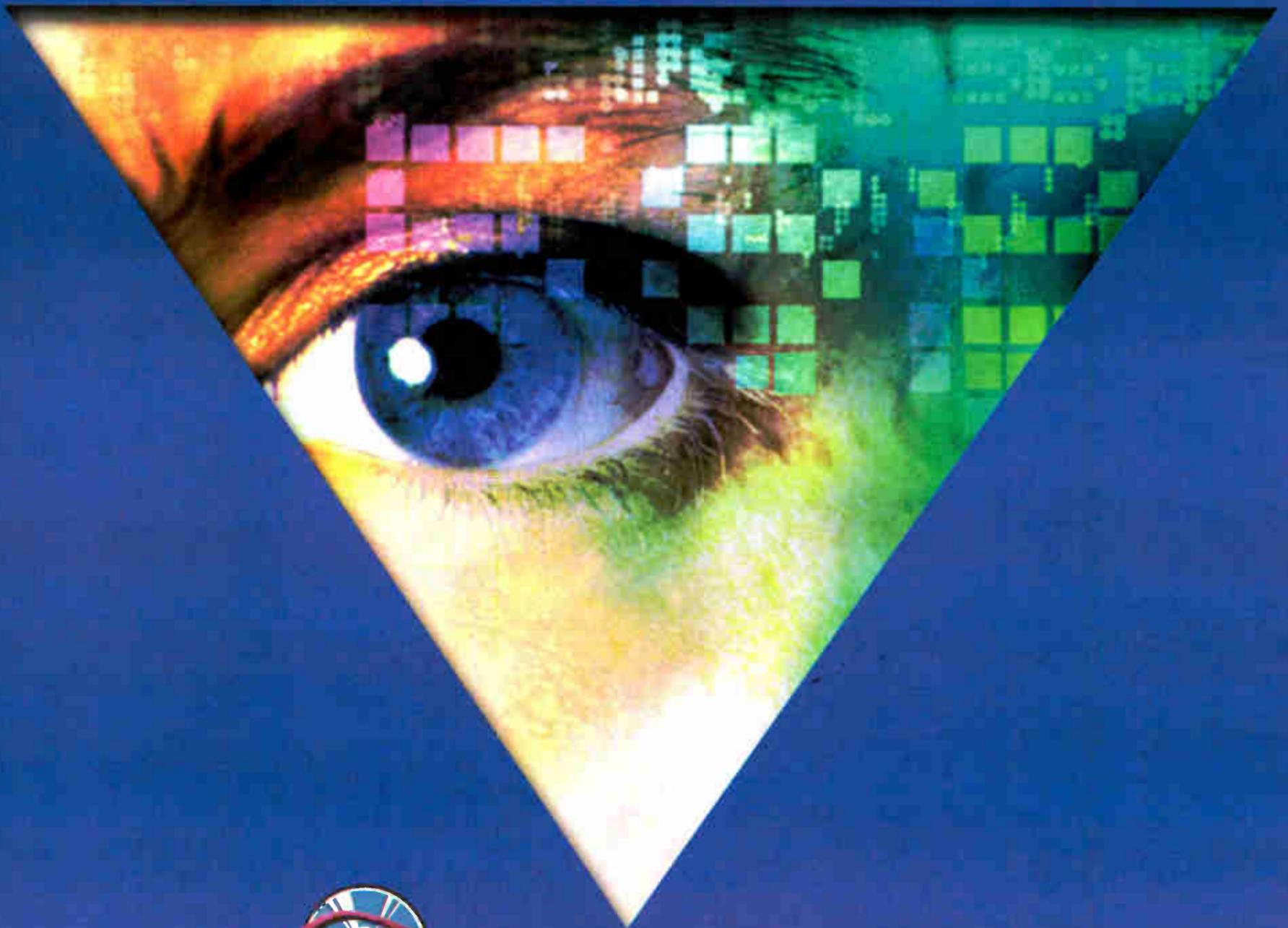
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*SOURCE: "The Ultimate Radio Station Web Site Study", Arbitron/Edison Media Research, December 2000

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Net Selling: Dead & Alive

Ken R.

The traditional "banner" ad online is the grandfather of all Net advertising. But is it already a dinosaur at the tender age of five?

AdRelevance, a Jupiter Media Matrix company that measures Internet advertising, recently released a report disputing that banner ads are unsuccessful. However, the survey reported that although 80 percent of advertisers use the full banner, other ad formats account for a majority of impressions.



Peggy Miles

These other forms include pop-up windows, buttons and GIF animation, among others.

Peggy Miles, president of Intervox.com, a company that provides digital broadcasting, e-commerce and Web consulting services, said one reason for the relative ineffectiveness of

See ADRELEVANCE, page 38 ▶

MP3: Why Radio Should Care

Scott Fybush

For most radio stations, the biggest question when it comes to a musical presence on the Internet is whether or not to provide streaming audio.

Perhaps there's some thought of offering a side channel or two, or experimenting with ad insertion. In an era when millions of computer users are programming their own formats by playing MP3 music files on their own machines, though, some radio stations are finding ways to turn the "MP3 revolution" to their advantage.

Music my way

How can traditional radio compete with the personalized music mix that a listener equipped with software like Napster or Real Jukebox can create?

At San Diego's KSON(FM), the answer is right on the station's Web site: a link to MP3.com, one of the first and largest MP3 sites, complete with an invitation to listeners to take advantage of "free music downloads."

Some stations might see such a link as a concession to the enemy, but KSON's Webmaster and midday air personality Nick Upton sees an opportunity.

"For us, it has given us a way to serve the local music community more than we could on the air," Upton said.

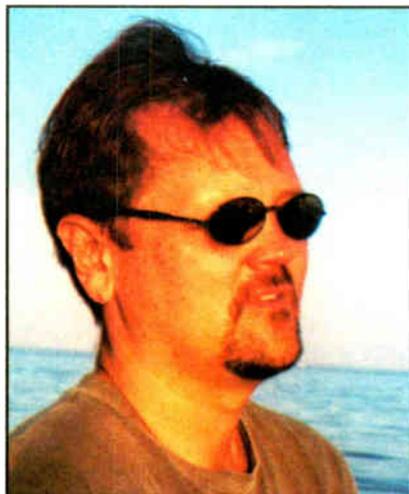
While Upton's playing the music of Faith Hill and Brooks & Dunn on the air, KSON's Web audience has the opportunity to check out artists like Natisha Lynn and the Country Conscience Country Band, local musicians who have uploaded their songs to the KSON/MP3.com site.

"It was difficult to find room on the air for local artists, especially in the country format," said Upton.

The local songs with the most downloads from the KSON/MP3.com site during the week do find their way to the airwaves at least once a week, when Upton

hosts the Sunday morning "Country Download" show on KSON.

The station, owned by Jefferson-Pilot Broadcasting, gets the Web site for free from MP3.com in exchange for four minutes of ad time during the show each weekend.



Nick Upton

For MP3.com itself, partnerships with radio stations offer more than just a chance to barter for some free advertising time.

"Local music has turned out not to be a ratings-getter over the years, but (offering local music via MP3 files on the Web) is a way to serve that set of the community that wasn't hearing what it wanted to hear on the radio," said MP3.com Vice President/General Manager Terry Ash.

"What we took a look at was local stations having a traditionally low penetration for their Web sites," Ash said.

By offering weekly charts of the most popular local and national MP3.com downloads, Ash said, stations can draw more listeners to their sites and keep them coming back more often.

Upton said the addition of MP3.com to

the KSON site has increased traffic, with the promise of more to come.

"There are certain times where we could drive more traffic to the Web site by promoting it better on the air," he said.

Music money

Another benefit MP3.com offers radio stations is its "Spirit 2000" program, which allows schools and colleges to create their own CDs of student-produced music, which are then sold online through MP3.com's sites. Stations that participate in local schools' Spirit 2000 programs can add their partnership to their public files to help them out at license-renewal time, Upton said.

The biggest benefit for stations, though, comes in the data MP3.com makes available to them. Stations have access to listeners' e-mail addresses for their own marketing efforts. They also get detailed information on who's downloading what.

"That, for a program director, has always been guesswork," said Ash.

MP3.com is hardly the only player where MP3 and radio are concerned.

Over at Live365.com, the idea is to let listeners take their own music files and turn them into streaming "stations" that can be accessed from any Net-connected computer — and soon, thanks to a new partnership, the Kerbangø Internet tuner that is expected to be on the market by year's end.

Peril?

"Some people would say that's a threat (to traditional radio)," said Live365 vice-president of marketing Alan Wallace. "It would depend on who you are."

Live365 is betting radio stations would rather work with the concept than against it. Through the company's "Private Label Radio" service, the company is offering stations access to its own high-capacity

See MP3, page 37 ▶

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WEB WATCH

Net Central: AOL-Time Warner Power

Carl Lindemann

Web Watch is a roundup of all things radio and the Web. Send your news and tips to Internet Radio editor Laura Dely at LD@imaspub.com

The America Online-Time Warner merger marks a major turn in the evolution of the Internet into a broadcast medium.

Basically, it confirms the thesis offered by Massachusetts Institute of Technology comparative media studies Professor Henry Jenkins that appeared in these pages some three years ago.

Jenkins argued that the evolution of early radio — which began as a point-to-point form of communication, but transformed to the point-to-multipoint form we know today — parallels what would happen with the Internet.

Three years ago, that appeared utterly absurd. The core architecture of the Internet seems resistant to broadcasting and is better suited to pointcasting.

Even on the Web, egalitarianism seems to rule. One Web site is pretty much on the same ground as the next. Suddenly, obscure online publications like the **Drudge Report** managed to scoop national news organizations. Lucky little guys who happened to sign up for URL names like **Altavista.com** walked away with millions as moguls moved in to stake out the prime real estate to get whatever edge was possible.

Crash

Other issues cropped up with streaming media. In fact, the recent failure of so many dot-com ventures seems to show this to be a misuse of the medium. Unlike radio, scaling audiences online means increasing costs. Each listener gets an individual stream and the cost for providing that grows quickly.

BroadcastAmerica finally collapsed under a mountain of bills for such services. The only real hope of overcoming this is by taking advantage of the Internet's one-on-one approach through ad insertion. Time will tell as to whether revenues from this will defray the costs.

So the Internet's idiosyncratic qualities makes it best suited for e-mail and other point-to-point propositions. Broadcasters have had the greatest success supporting traditional fare with Web-based promotions, chat rooms for listeners and the like — at least for now.

The AOL-Time Warner deal marks an enormous move toward centralization in what had been a decentralized medium.

And then you have AOL-Time Warner. This marks an enormous move toward centralization in what had been a decentralized medium. While the Internet is international and unwieldy, gated communities like AOL are able to focus and direct members to its pick of the Web. Add Time Warner to the mix and there's no need ever to extend beyond the world as defined by this conglomerate.

Aggregator

What the merger creates isn't quite the same thing as broadcasting. Still, it serves to aggregate large audiences — and with it, the bulk of advertising dollars. Broadcasters face a tough battle competing against this new Goliath. As broadband becomes widely adopted, AOL may have a chokehold greater than that of the three TV networks in the 1960s and '70s. So, as Jenkins observed, media history repeats itself.

The AOL-Time Warner deal also marks an interesting end to the **Bill Kennard** era at the FCC. His advocacy for LPFM seemed somewhat out of step in a time when micro-broadcasters might do better by going online. Though Kennard managed to attach several conditions to the AOL deal, it seems likely that the media giant will aim to squeeze out smaller voices.

Given the ambitious earnings estimates, AOL is going to



have to go all-out to satisfy investors. Don't be surprised if what's coming online mirrors the way the NAB squelched LPFM. Having Michael Powell at the FCC helm will only accelerate the process.



Michael Powell

During the AOL discussions, Powell didn't seem to think that any caveats were necessary. Expect a free-for-all ahead — "free" at least for those able to foot the cost of lobbying.

Quickly

AOL wasted no time in getting set to capitalize on the merger.

Kevin Conroy, a former top exec at **BMG Entertainment**, has taken over AOL's digital music strategy to leverage the all-important synergy now possible.

"The online medium has the potential to transform the music industry as dramatically as the phonograph, radio or the compact disc," said Conroy.

"Only AOL-Time Warner has all of the pieces needed to lead this industry to the next level — tens of millions of subscribers and users, an incredible library of great albums and songs, an industry-leading technological infrastructure and some of the world's best-known recording artists," he said.

And, as noted here earlier (RW, Jan. 3), broadcasters are going to have a hard time competing against the online arms of record companies if saddled with paying onerous music licensing fees to these same companies.

Dot-com demise

Meanwhile, the shakeout continues in the online world. The latest seem like mere aftershocks following the total collapse of **BroadcastAmerica** and **GlobalMedia's** departure from the streaming radio biz. **Audiohighway.com** has also joined the parade of busted dot-coms after filing for Chapter 11 in January.

Others seem ready to weather the storm. **eYada.com**, the Internet-only talk radio streamer, is cutting back on the 28 shows in their lineup. According to eYada CEO **Bob Meyrowitz**, this trims the fat.

"After a thorough review of our lineup, we have decided to strengthen our schedule by focusing on 13 of our most popular programs, which together account for about 85 percent of our total audience," Meyrowitz said.

Support and production staff for the 15 shows cut account for 30 positions. Aside from this, eYada appears to be building strength in the Arbitron Webcast Ratings.

"In the last month alone, we have increased our Aggregate Tuning Hours (ATH) from 88,000 to an impressive 112,000," he said.

Despite the demise of the **BroadcastAmerica**, demand for streaming services for radio remains robust. **Real Broadcast Networks** has completed its all-digital Internet Broadcast Operations Center at its headquarters in Seattle.

Cox Interactive recently announced that it is forming a

See WEBWATCH, page 37 ►

RW NEWS BYTES

Did you see these breaking stories?

Spanish Format Scores Big Online

ARMA to Convene in Maryland

Soundcraft Releases Compact Mixers

Sony to Make XM Radios

Clear Channel Buying Enigma Digital

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www.rwonline.com

RW NEWS BYTES

from the editors of

Radio World

MP3

► Continued from page 35

streaming infrastructure to offer their stations' audio online — as well as side channels full of music that complement a station's broadcast format.

As the company looks beyond home computers to the future of the wireless Internet, Wallace said services like Live365 will be essential partners to get radio stations into new Internet listening environments, especially products like Kerbango and in-car players.

"It's a great back end for a station to be able to thumb their noses at satellite radio," he said.

Like MP3.com, Live365's model includes interactive opportunities for listeners.

"(Stations) can turn around and go to your fans and say, why don't you build a side channel for us," said Wallace.

Wallace believes there's a huge opening for radio to take advantage of opportunities like those Live365 is offering. After a radio career that included stops in Nashville, Phoenix, Houston and Los Angeles, he thinks listeners are ready for something new.

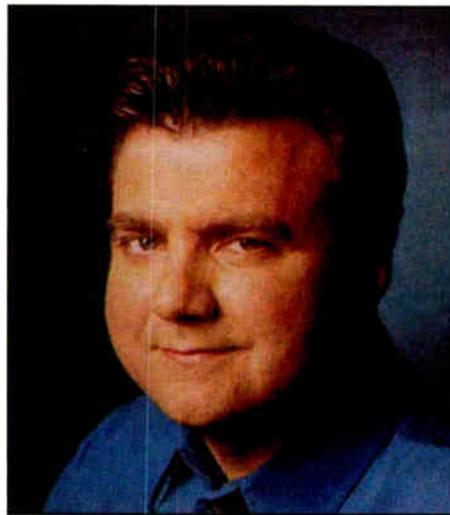
Connecting with listeners

"We've put up with it (traditional radio) because we've had no choice," he said.

The key to the success of services like

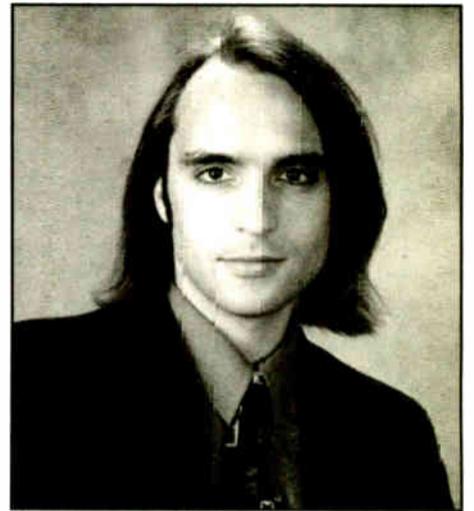
these, said one analyst, is to get to radio listeners where they do the most listening.

"So far the effect (of MP3s) is fairly limited," said Malcolm Maclachlan of the



Alan Wallace

consulting firm IDC. "About half of radio listening is in the car, and so far you can't



Malcolm Maclachlan

major-label music content right now under the Digital Millennium Copyright Act," Maclachlan said. The copyright issues that have plagued services like Napster, he said, stemmed from downloading music instead of streaming it.

The ultimate effect of the wide avail-

Web Watch

► Continued from page 36

strategic alliance with **StreamAudio**. Under the agreement, StreamAudio will provide the audio streaming and revenue-sharing ad insertion services for all of Cox Radio's 83 stations.

Gregg Lindahl, Cox Radio Interactive vice president, said the arrangement would go into effect in February, when their contract with Yahoo's Broadcast.com expires. Lindahl has had the monumental task of bringing these properties online — as well as getting folks at the station level up to speed with the demands of multimedia production.

Already, **WSB(AM)** in Atlanta had the excitement of breaking the news of former President Clinton's deal with the special prosecutor in their market.

"We launched the station Web site that day," said Lindahl, "They had to turn over the site with the breaking news three times."

Got it goin' on

Last September at The NAB Radio Show, I was most impressed with the people at Interactive Pools. They seemed to be offering just the spice for morning shows with Web-based contests, pools and games. Now, **NBG Radio Network** will rep the service throughout the radio industry.

Dean Gavoni, executive vice president of NBG Radio Network, sees this as a strong addition to their current offering of radio shows that they either produce, syndicate or rep to more than 2,700 station in the United States.

"This is another step furthering our efforts to expand NBG's offerings to radio stations," he said.

The Madison Avenue crowd seems to be getting ready to deal with the deluge of advertisers expected to be flocking online when ad insertion catches on in the months ahead. **Cybereps** and **Interep Interactive** have merged, with Interep taking the 51-percent majority stake. The new company will operate under the **Cybereps'** name.



Gregg Lindahl

Adam Guild, founder and president of Interep Interactive, will remain with the merged company as president, corporate and business development. **Mike Warsinske**, co-founder of Cybereps, will continue on as CEO.

Likewise, **Mediapassage** and **OneMediaPlace** have merged. This is a natural combination, according to **Jerry Machovina**, president and CEO of OneMediaPlace.

"The merger will provide an opportunity for us to leverage Mediapassage's extensive print and broadcast relationships. By combining the OneMediaPlace front-end solution with the Mediapassage back-end systems, the new company will provide customers with a complete product," he said.

Machovina will continue on as the co-CEO of the newly formed OneMediaPassage.

According to Gil Scott Heron, the revolution will not be televised. However, the folks at **PenguinRadio** might give some glimpse of the action. During the inaugural inanity, the Washington-based Webcaster streamed the **D.C. Police Department's** radio signals.

As it turned out, the action was somewhat subdued. While the protests were the most intense since the Vietnam Era, peace prevailed, unlike the fracas during the notorious "Battle of Seattle" last year.

PenguinRadio President **Andrew Leyden** described this as a "great opportunity for law enforcement officials from all over the country to listen in and learn from the tactics employed by the D.C. Police."

Of course, this could be a learning experience for those on the other side of the barricades as well. Wherever you are on the political spectrum, it's sad to think that such intriguing offerings may be lost as things like the AOL juggernaut go forward.

Carl Lindemann is Radio World's Internet Radio news columnist.

RW welcomes other points of view.



Adam Guild

Anyone who wants to can stream major-label music content right now under the Digital Millennium Copyright Act.

— Malcolm Maclachlan

get the Net in the car."

That's changing, though. At recent trade shows, Live365 has drawn attention with its Chrysler PT Cruiser equipped with high-speed wireless Internet access connected to a high-powered sound system. Once systems like that move from the experimental stage to commercial reality, Maclachlan said, the threat to radio will grow.

"Anyone who wants to can stream

ability of MP3-based music online, Maclachlan believes, will be to force some changes back in the world of traditional radio.

"Radio will become more responsive to consumer demands, with broader playlists," he said.

Scott Fybush is a frequent RW contributor and editor of NorthEast Radio Watch. Reach him via e-mail to sfybush1@Rochester.rr.com

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AdRelevance

► Continued from page 35

banners is that they look too much like newspaper ads.

"That is not to say that impressions don't count, it's just that it's not news to us anymore."

Miles believes sponsored e-mail is the strongest method of Internet advertising.

"It's hard to do, but all ads must contain a call to action, motivation and a response mechanism."

Advertorials

Miles said "advertorials" can work on the Internet. She gives the example of a nursery that e-mailed an "advertorial" about lawn and garden protection for the winter. It mentioned products that are available through that local merchant.

PricewaterhouseCooper/Internet Advertising Bureau's survey of online advertising for the second quarter of 2000 shows that the banner is still alive, but losing ground quickly.

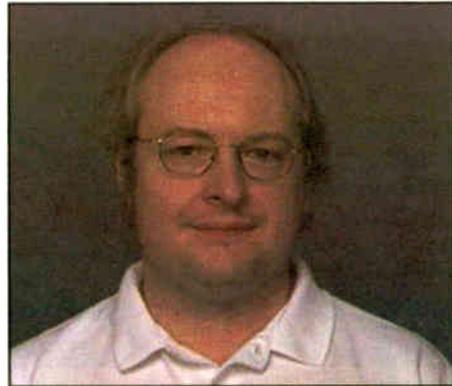
Peter Petrusky, director of new media there, said part of the problem is that

Internet ads to get it rolling."

Not all Net gurus are enamored with the state of Internet advertising.

"Anything is better than banner ads," said Jakob Nielsen, Ph.D., a "user advocate" and principal of the Nielsen Norman Group.

"Users have issued a collective declaration of war on banners and have decided



Jakob Nielsen

to ignore completely anything that looks like an advertisement on a Web site."

Nielsen calls banners "the most ignored form of advertising."

Sponsored e-mail is the strongest method of Internet advertising.

— Peggy Miles

Internet ads can't touch the emotions.

"But broadband is going to change that."

Ryan Oettinger, senior manager of communications for AdRelevance, said that some of the same tools used in the offline world work on station Internet sites.

"Come to the sales presentation armed with demographics of the viewers of your site and a traffic count. It also helps if you can list some other advertisers who are already there."

Oettinger also suggests emphasizing the biggest advantage of Internet ads: immediacy.

"You can produce the ads very quickly and they really don't take a lot of talent. You can also rotate them frequently."

Oettinger suggests that for best results, stations should use both on-air and online advertising to create a package.

"Even if you have to throw in the

Internet ad avoidance, he said, is hard-wired into users' brains. "They immediately close pop-up boxes and will learn to ignore other forms of (online) advertising as well."

Nielsen's theory is that listening to or reading ads online is contrary to the goal-directed navigation behavior used on the Internet.

"This is the opposite of a radio environment," said Nielsen. "When you're driving in your car and listening to radio, you are in a passive mode where you are receiving information, but not actively seeking it out. This mode is highly receptive to advertising, which is why it works so well."

Nielsen said that on the Web, "You are going places with each mouse click so you are not receptive to advertising which is trying to get you to do something different than what you wanted to do."

Some radio stations may not even wish to handle Net advertising themselves. In those cases, companies such as Gotmerch.com can be used.

John Broaddus is president of Gotmerch, which handles e-commerce for radio stations and other entertainment sites.

Broaddus also sees the imminent demise of the banner ad.

"They don't work and haven't worked. The click-through rate is next to zero and marketers know that now and they're looking for other options."

Gotmerch.com tries to match customized merchandise to the station and sell it for them in an online "store."

"If it's an alternative station, for example, we present the right mix of music CDs, T-shirts and related items," said

Broaddus. "The stations drive traffic to their Web sites and we do everything for them from store creation to credit card processing, customer service and merchandise returns."

The revenue generated by Gotmerch.com is shared with the station and there is no out-of-pocket cost for setup.

Broaddus believes that one flaw in most Internet advertising is that it directs traffic away from the original site.

"That's the last thing you want to do," said Broaddus. "When we set up an online store, you keep everyone right there."

When it comes to using the Internet to sell radio, Miles said success requires training and commitment from the whole station.

"It won't work if you just spend \$50 or barter your Web site." ●

NET RADIO SERVICES

Streampipe.com Gets Stations Online

Streampipe.com focuses on providing streaming services specifically to the broadcast industry.

Streampipe.com's services cover content creation, production, acquisition, encoding and distribution.



The company says its relationships with Young & Rubicam, PSINet and ATC Teleports give the expertise needed to handle most station needs. Streampipe.com also is a RealNetwork Level 3 service partner.

For more information contact Streampipe.com at (703) 678-2000 or visit www.streampipe.com

PoPstick Connects to Listeners in High Style

PoPstick's PoPgram Radiogram aims to make a station's e-mail stand out.

With e-mail marketing on the rise, PoPgrams are designed to get noticed, with animated graphics and minimal bandwidth. The flash-based creations provide full-motion graphics and quality audio at all connection speeds for presentations to listeners and clients.

The custom media creation service ranges from \$2,500 for motion ads to \$75,000 for full implementation of a marketing program.

For information contact PoPstick in Boston at (617) 867-0303 or visit the Web site at www.popstick.com

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INTERNET RADIO AUDIENCE GROWS AGAIN

Despite radio industry concerns about the future of Internet radio, its audience continues to grow.

Total time spent listening to online radio is up 16 percent from December's numbers, according to MeasureCast. Meanwhile, Arbitron reports that online listeners and viewers of streaming media spent more than 16 million hours listening to top Webcast networks in October, 2000.

Arbitron said an Internet-only aggregator, NetRadio, took first place in its latest report with 4.6 million aggregate tuning hours — the sum total of all hours that listeners tune to a station. Newcomer to Arbitron's top 10 Internet radio stations chart is Live365, an Internet broadcaster that allows anyone with a computer to create his or her own radio station. Live365 was No. 4, with 1.63 million hours of listening in October.

Alan Wallace, Live365's vice president of marketing, said the Webcast ratings reveal the future of radio.

"In fact, our stations are now featured in Internet radio devices, such as Kerbango and the iM Tuner, which is a testimony of the growth in the (Internet radio) industry."

MeasureCast tracked a 10 percent growth rate in Internet radio audience over the previous month in its January report. And the company found that Net radio listening is significantly an at-work activity.

According to MeasureCast, 83 percent of Internet radio listening took place between 8 a.m. and 8 p.m. EST, with the peak listening hour occurring at 2 p.m.

MeasureCast CEO and President Edward Hardy said that the Internet radio growth trend is encouraging and that advertisers are aware of its potential.

"No other medium allows advertisers to deliver their messages to a well

educated and affluent demographic during daytime hours," Hardy said.

Joan FitzGerald, Arbitron's director of marketing/research and development, Webcast ratings, said the continued upward trend in Internet audience numbers that Arbitron measures offers a business model for online radio broadcasters.

"We envision that a Webcast channel will sell content through its network or even through a combination of Webcasters, so that agencies and advertisers can target audiences of various channels."

ABC Radio Networks' WABC(AM), the New York talk radio station that offers Rush Limbaugh and Dr. Laura Schlessinger, is once again No. 1 in the MeasureCast ratings. Callie Enterprises' listener-formatted MEDIAmazing is second, followed by WPLJ(FM), a hot adult contemporary station also owned by ABC Radio Networks.

MeasureCast also provided demographic highlights that indicate that more men (72 percent) vs. women (28 percent) listen to online radio and that the number of listeners in the 13-to-17-year-old age group decreased from 8 percent to 4 percent in January.

Online listenership was highest in California, where the percentage of online media users rose from 13 percent to 17 percent in the month of January. Texas was second; Florida and New York shared third.

The most popular formats, according to the MeasureCast report, were talk, news/talk, classic rock and listener-formatted.

For the full Arbitron report, visit www.Internet.Arbitron.com. For the full "Top 50" MeasureCast report, visit www.MeasureCast.com. Click on the "January Internet Ratings Report" icon on the left side of the screen.

— Laura Dely

The MeasureCast Top 10 — Jan. 2001



Stations are rated by TTSL hours — Total Time Spent Listening — the number of hours streamed by the broadcaster in the reported time period (Jan. 2001).

Channel/Format	Owner	URL	TTSL
1. WABC(AM)/Talk Radio	ABC Radio	www.wabcradio.com	335,053
2. MEDIAmazing /Listener Formatted (Internet-only)	MEDIAmazing	www.mediAmazing.com	241,374
3. WPLJ(FM)/CHR/Top 40	ABC Radio	www.wplj.com	160,165
4. Radio Margaritaville/ Classic Rock (Internet-only)	Radio Margaritaville	www.radiomargaritaville.com	151,818
5. KSFO(AM)/Talk Radio	ABC Radio	www.ksfo.com	150,987
6. KQRS(FM)/Classic Rock	ABC Radio	www.kqrs.com	138,055
7. WLS(AM)/News/Talk	ABC Radio	www.wlsam.com	122,214
8. KGO(AM)/News/Talk	ABC Radio	www.kgoam810.com	117,508
9. WBAP(AM)/News/Talk	ABC Radio	www.wbap.com	110,490
10. KLOS(FM)/Classic Rock	ABC Radio	www.955klos.com	109,927

Arbitron Internet Radio Networks Top 10 Report — Oct., 2000



Webcast networks (either radio station owners that stream their content online or aggregators of online content) are rated by ATH — aggregate tuning hours — the sum total of all hours that listeners tune to an Internet station.

Network	Owner	URL	ATH
1. NetRadio	NetRadio Corp.	www.netradio.com	4,638,500
2. GlobalMedia	GlobalMedia	www.globalmedia.com	2,135,500
3. ABC Radio	ABC Radio	www.abcradio.com	1,761,100
4. Live365	Nanocosm, Inc.	www.Live365.com	1,639,600
5. BroadcastAmerica	BroadcastAmerica	www.broadcastamerica.com	1,339,300
6. Enigma Digital	Enigma Digital	www.enigmadigital.com	496,800
7. Corus Entertainment	Corus Entertainment	www.corusentertainment.com	466,400
8. New Wave Brdcast.	New Wave Brdcast	www.kpig.com	378,000
9. Fisher Broadcasting	Fisher Broadcasting	www.570kvi.com	311,400
10. DiscJockey.com	DiscJockey.com	www.discjockey.com	298,800

NET RADIO SERVICES

Access Offers Web Expertise

Access Broadcasting provides broadcasters Internet services designed to create income from local and regional clients, while building cume and TSL. Its products



include online business directories, coupons, station/local event and news management, banner ad management, online classifieds and personals, as well as tools for managing and P-1 request marketing e-mail. Ongoing sales and support staff training and custom Web site design are available.

For information contact Access Broadcasting in Oregon at (541) 431-0036 or visit the Web site at www.accessbroadcasting.com

RadioWave.com 2001 and Beyond

RadioWave deploys in-stream ad replacement technology for live broadcasts. The company says this effectively doubles radio stations' potential inventory.

Its automated order entry systems can manage advertising inventory across any number of channels. A proprietary interface links ad serving technology to a general ledger accounting program, providing verification of execution and invoicing of campaigns on either an impression or execution basis.

RadioWave works with the music industry, including Virgin Records, Capitol Records, Astralwerks Records and Alligator. Blue Note Records recently launched Blue Note Radio with RadioWave.

RadioWave also has announced a partnership with Microsoft to deliver audio content to MSN Chat rooms, a service known as Chat Radio.

For information contact the company in Vancouver, Canada, at (360) 760-5000 or visit www.RadioWave.com

Interactive RDS/RBDS

Model 711 - \$1200

THIS FULL-FUNCTION RADIODATA ENCODER LINKS TO STATION AUTOMATION

RDS radios are being supplied as standard equipment in a growing number of new cars. This multi-featured encoder communicates with station automation to send song titles, phone numbers, contest results and promo or advertising messages for immediate display on listeners' radios. It also features the "TA flag," capable of temporarily overriding other program choices - even tapes and CDs - when your station broadcasts a traffic alert.

The 711 is quickly programmed with the usual format identifiers, translator frequencies and other static data. Its RS-232 serial interface connects with any PC, and with most automation systems for dynamic messaging. Giving access to all the most-used RadioData groups and features, this versatile encoder complies with both NRSC and CENELEC RadioData standards.



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Introducing the Cash™ miracle diet.



Lose three minutes in an hour!

Gone are the days of hunt-and-cut editing, warbling time compression, and sped-up chipmunk audio. Now overstuffed, overtime audio productions can be reduced through a real-time, undetectable process that can cut up to one minute of audio from every twenty without reducing program content.

The Cash audio time machine from Prime Image is a fully digital, easy-to-operate device that utilizes a patented system of random "micro-edits" to reduce the length of any production, whether voices, sound effects, or music. And Cash works automatically, in one pass, with no additional processing. Simply enter the amount of time you want to lose and the period of time over which to lose it. Then push the start button and find

something more important to do. Like kicking back and enjoying a cup of coffee—but, in the interest of your waistline, take a pass on the donuts.

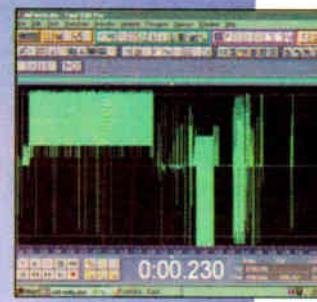
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Page 42



Radio World

Resource for Radio On-Air, Production and Recording

March 1, 2001

PRODUCT EVALUATION

Marantz Puts Flash in the Field

Carl Lindemann

The Marantz PMD680 PC Card Recorder is the manufacturer's second offering in the portable digital recording line.

Like the recently released PMD650 MiniDisc, the PMD680 will be immediately familiar to anyone who's ever been out gathering sound for radio.

The form-factor and overall "look" of the old cassette units have been retained. But the new PC Card technol-

ogy promises to be as much of an advance over MiniDisc as MD has been over the analog cassette.

DAW dump

By using the common computer storage format, this recorder becomes a natural extension of a DAW. Audio can be dumped directly into the typical digital workstation. If you need to get a story up fast, there is no point in having to wait while loading audio in real time, a perennial problem with other formats.

Though others manufacturers have been working along these lines, Marantz may come to dominate this new category with the PMD680, much

inch mono mic connectors are augmented with line-in and -out RCA jacks. An RJ-11 telephone jack is built in.

The multiple I/Os can be handled only one source at a time, selected by a switch on the top control panel. The left side has an additional S/PDIF digital-out RCA jack.

As with the earlier designs, the 1/4-



as it did earlier with cassettes.

The PMD680 is a mono-only recorder with ample I/O to work in most any pro setup. On the right side, XLR and 1/4-

inch headphone jack is placed conveniently on the front panel and an integrated mic is on top. The unit runs on

See MARANTZ, page 44 ▶

LINE OUT

Acoustic Treatment For Radio Studios

Avoid Murkiness, Muddiness and Booms With A Combination of the Right Materials

Bruce Bartlett

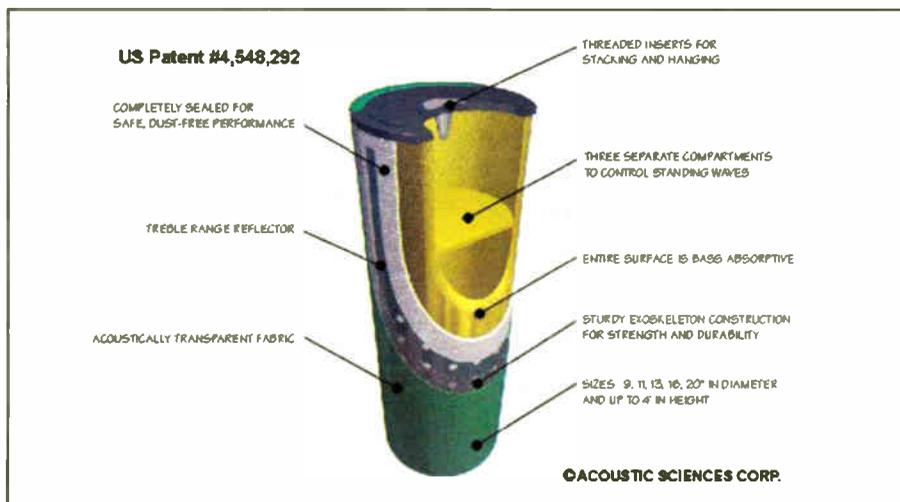
When you listen to an announcer or a group discussion on your station, is the sound boomy and muddy? If so, you might need to upgrade the acoustic treatment of the studio. This article tells how to do a treatment yourself.

First, make the reverberation time very short by adding sound-absorbent materials. Porous, fibrous materials

the absorption into the mid-bass region will be extended. Low-frequency absorbers called "bass traps" are available as Tube Traps from Acoustic Sciences Corp. — Web site www.tube-trap.com

Sound divided

Equal sound absorption is important to have at all frequencies up to 4000 Hz.



Anatomy of the Tube Trap

such as fiberglass insulation, acoustic tile, carpeting, curtains and open-cell acoustic foam wedges best absorb high frequencies.

Several manufacturers of acoustic foam can be found on the Web (see sidebar), and their products are available from most broadcast equipment dealers.

If these materials are spaced several inches from the wall, rather than on it,

Here's why: Suppose a room is highly absorbent at high frequencies, but not at low frequencies. The highs quickly will be absorbed but the lows will continue bouncing around the room.

Consequently, the reverberation time will be short at high frequencies and long at low frequencies. If you pick up speech in such a room, the

See LINE OUT, page 47 ▶

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US Patent #5,811,112

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US Patent #5,811,114

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US Patent

TIPS & TRICKS

Perform Cool Tricks in Cool Edit

Alan R. Peterson

Since its shareware debut a few years ago, Cool Edit from Syntrillium Software has evolved into a favorite audio editor for field and studio production for radio.

The Pro version turns a garden-variety PC into a powerful 64-track studio. The latest version, Cool Edit 2000, can be teamed with a plug-in to convert any computer with soundcard into a four-track recorder with effects, for about \$100.

Both versions are packed with enough features to keep production directors very busy and very happy.

Whether due to time constraints or a lack of adventure on the part of the producer, many features in Cool Edit end up neglected or underutilized. This is too bad, as there is a whole wide world of processing out there beyond simple bandpass filtering, doubling and the classic sample stutter.

Which is why we offer the following cool tricks you can do with Cool Edit.

Some tricks are out in the open, while some require a little digging to get to. All are unusual, potent additions to your studio arsenal. Try these out as they are shown here, or use them as a springboard to inspire you to create your own processes.

Ring modulator

Ring modulation has become a generic term referring to amplitude modulation done at frequencies that create interesting audible sidebands.

It is not frequently used in radio production, as it has the tendency to turn intelligible audio — especially music — into mush. But applied to voice, it creates the effect of audio received over ham or CB radio.

Due to its nature, the effect cannot be tolerated for very long. But it works well as one side of two-voice spots, adding a deeper reality than simple telephone filtering.



Fig. 1: Expect this kind of waveform when opening a graphic file, such as a .GIF, as an audio file. It sounds pretty neat, too.

between 200 Hz and 1.5 kHz. Make sure you also click the box marked "Lock to these settings only" and enter a zero in the "Modulate By" window. You may then preview the resulting mix before rendering it to the original file.

When you are satisfied, apply some compression and perhaps a little EQ to the file to make it sound as if it had just bounced all over the ionosphere. Slow, gentle flanging and panning to simulate frequency drift also go a long way in making the effect legitimate.

Cool Edit Pro stubbornly will try to open nearly any file as audio, whether it is or not. See Fig. 1.

The first time this happens by accident, the resulting screech in the headphones

When trimmed of extraneous noise, the data bursts and gurgles that remain are light years ahead of the modem bleeps everybody else uses in their spots and promos.

Humorously enough, this author has found that the Cool Edit executable file itself (coolpro.exe) has some wonderful sonic possibilities, and when trimmed, makes a fantastic background effect that can be used in promos soliciting telephone participation:

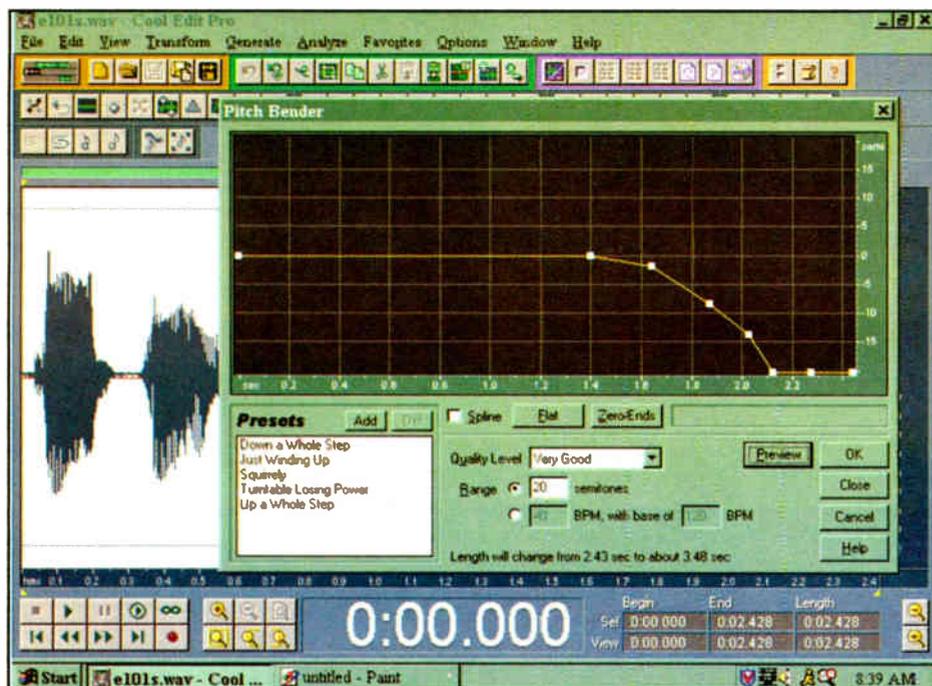


Fig. 3: You can slow down a virtual vinyl record with the Pitch Bender.

Cool Edit does not refer to the process anywhere as ring modulation. But details on the process can be found under Windows Help if you do a search for "modulate."

Open the audio file you wish to modify in the Edit Waveform View (the main workspace). Pull down "Generate Tones" from the menu bar, click the checkbox marked "Modulate" and then enter a frequency

causes the producer to stop playback, rub his or her ears in confused pain, then close the file and open the correct wave, vowing never to do something so stupid again.

But stupidity, after all, is in the ears of the beholder. Larger files, such as graphics (.gif, .jpeg, .bmp or similar) or even executable files that run programs (.exe) have interesting sonic characteristics which emerge when allowed to play until the end.

Number 9, Number 9 ...

I did a promo once in which a "record" was being played backwards in a congressional subcommittee meeting for the benefit of lawmakers bent on regulating subliminal evil messages.

First came the need to record and reverse the satanic phrase. "Your mother listens to 94.5, WEBR," in a demonic voice. Once done, it was mixed with some generic thrash metal music we had on file and a heavy helping of vinyl surface noise (which no studio should be without).

When it came time to play the record backwards, a fictional congressional clerk placed his thumb on the "record" and spun it haphazardly against the motor to hear the secret message.

The jerky, inconsistent playback was accomplished by drawing a jerky, inconsistent curve in the Cool Edit Pitch Bender, with a setting of three semitones. When applied to the reversed mix, the result was more realistic than simple reversal alone.

This was saved under the name "Number 9," should I ever need to use the trick again.

— Alan R. Peterson

frequency. Then randomly highlight sections of about one-tenth of a second and use the Transform Silence menu item or click the corresponding Toolbar icon to zero the highlighted portions. Do enough of these to the end and then loop the playback.

Faster pauses sound like packet data, while slower rates sound like hand-keyed code. If the effect is a little too ho-hum, try ring-modulating the tone to give it an angrier edge and begin with a square wave instead of a sine.

For realism, generate several files at different speeds and frequencies, drop them

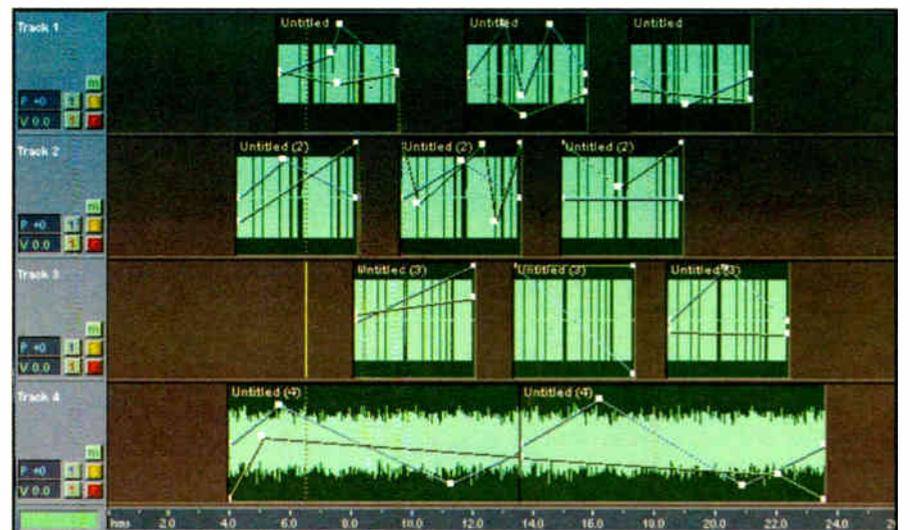


Fig. 2: A multitrack project becomes a pileup on the amateur radio bands when you know what you are doing.

"Be the tenth caller right now (zap effect) at 1-800-MIX-1-0-7-3 to win the Cash Call Jackpot!"

Here are two cautionary notes. First, these zaps may become fairly generic in a short time, so add some variation with pitch-shifting, looping, stereo delay and other processing to keep them sounding fresh.

Second and more important, do not forget to save your new creation under a different file name and extension! Nothing will make you feel like a moron faster than overwriting and ruining the .exe file of a critical and expensive program needed to run your station.

Returning to our ham radio theme for a moment, Cool Edit is remarkably adept at creating the sounds of Morse code and packet radio bursts, with a little help from you.

Again, going back to Generate Tones, draw a few seconds of a tone at a chosen

into the Multitrack View as in Fig. 2, then randomly pan and fade them coming in and out. Weave some white noise in and out at a low level on another track. The result is what radio operators call a pileup and sounds like the band is buzzing with activity.

Another cautionary word: Someone in your audience is going to know Morse code and will tell if you surreptitiously sneaked a potty word into your tracks. Whether this is a fineable offense is unknown, but why chance it?

Syntrillium makes no secret about this feature and prominently displays it in the Menu bar of the Multitrack View window.

Many producers I know simply don't know what to do with it or cannot get it to behave the way they want. Comments range from "not precise enough" to "what will I ever need this for?"

See TIPS, page 49 ►

Slip Me a Slug from the Radio Mug

Alan R. Peterson

Dang, I just busted my favorite radio mug.

It was a beaut. A high-quality hand-thrown ceramic coffee mug made by a potter named Susan Peterson (no relation) in Huntington, Mass.

The mug was brown with gray and cobalt blue highlights, with a handle that fit my fingers as if it weren't mass-produced, but made just for me.

It was my constant companion since 1984, outlasting three morning show partners at one station, surviving a format tweak at another, keeping me sufficiently caffeinated at a third and providing the inspiration (or at least the jitters) to crank out mind-numbingly lame commercials at yet another.

Jobs came and went, new cities and new directions in career and life beckoned; ex-wives took the house and split. But through it all, my favorite java jug was along for the ride.

Now it's a casualty at age 17 — a victim of a sudden gust of gravity in the kitchen.

Didn't even make it to voting age ... a shame.

Set the Wayback Machine

The tradition of a brown station mug began for me in 1981 at WMAS(AM), Springfield, Mass., where the free coffee once flowed (and tasted) like the Mighty Mississippi.

I had no mug to call my own, so I appro-

CHR format he was putting on WHMP(FM) just outside of Springfield, the first thing through the door with my joke book was that lucky brown mug.

Sadly, the mug didn't last long there — it was dropped by another jock, shattering the handle.

We glued it together, but it didn't hold and the handle disintegrated when I lifted it. A full cup of station mud spilled right in front of the console.

When the pieces stopped rocking and spinning around, I realized what had shattered.

If the board had been one of those low-profile jobs mounted through the tabletop, I would have been in deep fudge. Instead, the rotary pot mixer was mounted on top of the table surface, so no coffee spilled inside and my hide was spared. But I was without my mug.

I procured my new one from the aforementioned Ms. Peterson, the potter at her workshop high in the Berkshire foothills. This handcrafted cup was the one that

at various stations. But like a camel sticking a nose into the tent, my mug crept back slowly inside until it again was by my elbow.

The juggler

I was frequently tempted by the clay of another. In 1989, Radio World sent me one of their classic "FCC Lays an Egg" mugs. Record companies and promotional item manufacturers sent me dozens of giveaway

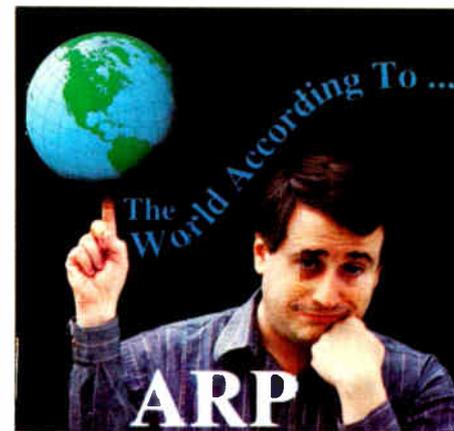
mugs. Stations I part-timed at let me have as many as I wanted.

All classy, some expendable, many I wouldn't miss if I lost them. They all piled up at home while my favorite brown mug stayed put at work.

I am both pleased and amazed to note that I have never had any catastrophic spills on any equipment, anywhere. Thanks to what I call "juggler's reflex," I have avoided spills caused by carelessness or accident, capturing my favorite radio mug in hand before any expensive damage was wrought.

But my luck was destined to run out.

After being downsized from my public access TV/radio gig last year, I brought my mug home. While putting something away in a kitchen cabinet, something slid inside on a shelf and tipped my mug out the open door. When the pieces stopped rocking and spinning around, I realized what had shattered.



That old soldier went out in such an ignoble way — almost like the long-time market legend that is told one Friday that he need not come in Monday, or ever again.

But unlike that first brown mug I tried to glue back together in 1984, there was no saving this one. Too many pieces. As I scooped the fragments up to pitch into the pail, I could only think about the years I enjoyed having my brown mug with me and what a wacky ride it had along the way.

Just a mug

But I had to be pragmatic. Before I got too far along in reminiscence, I had to tell myself, "Ah, it's just a mug. I have plenty."

Fortunately for me, a replacement came along fairly quickly, courtesy Michele Kramer, the managing editor of Pro Audio Review magazine. Ms. Kramer, no slouch on the potter's wheel herself, recently crafted a new brown mug for me, to take along on the next great phase of my ride through the weird world of radio.

This mug has a very different feel and color and holds a *great deal* more coffee than my old one ever did. But it carries on the tradition of having a brown mug by my side and reminds me a lot of my favorite old radio mug.

Did I say, "favorite radio mug?" I guess that one is really my second favorite now. The mug I now have really *is* made for my hand. And I like it fine.

Alan Peterson writes from Annandale, Va., a suburb of Washington. Give yourself 10 points if you knew a thermochromic mug changes color with temperature. 🌍

If the board had been one of those low-profile jobs mounted through the tabletop, I would have been in deep fudge.

priated one used as a grease-pencil holder in production room A, replacing it with a hideous macaroni-encrusted frozen juice can, crafted by some Cub Scout who once visited the station.

After an eternity rinsing and scrubbing the vessel out — evidently there was more in there than just grease pencil marks — I put it to work as my personal mug. It didn't leak and its remnants didn't kill me, so I kept it.

Before long, it was my constant companion in production, lubricating my voice and inspiring new directions in radio advertising on a classic pair of two-track Scullys. The brown beauty kept me awake on the air during some of the softer, slower and squishier music blocks when we did the "Music of Your Life" format live.

The mug soon became a good luck charm. It fueled me with the inspiration to create the spots that landed our station a couple of advertising awards. The potent contents once unintentionally kept me awake well past my beddie-bye one night, and in sleepless frustration, I began pecking at a typewriter, creating the first published article I would ever sell.

So in 1983, when "cousin" Brucie Morrow came calling to ramp up a new

solidified the tradition of owning a brown radio mug.

The mug was simple in appearance, but it commanded respect in the station's coffee corner among the other mugs. It looked classy — lacking the razzle-dazzle of the "official" station promotional mugs. It didn't feature silk-screened pictures of pet kittens, as did the continuity director's personal coffee cup.

Absent were the inspirational clichés found on the sales manager's mug, and the declaration of "World's Greatest Golfer" as imprinted on the Big Boss' number. It didn't even have my first name imprinted in those wacky letters that change color when hot liquids are added, whatever that effect is called.

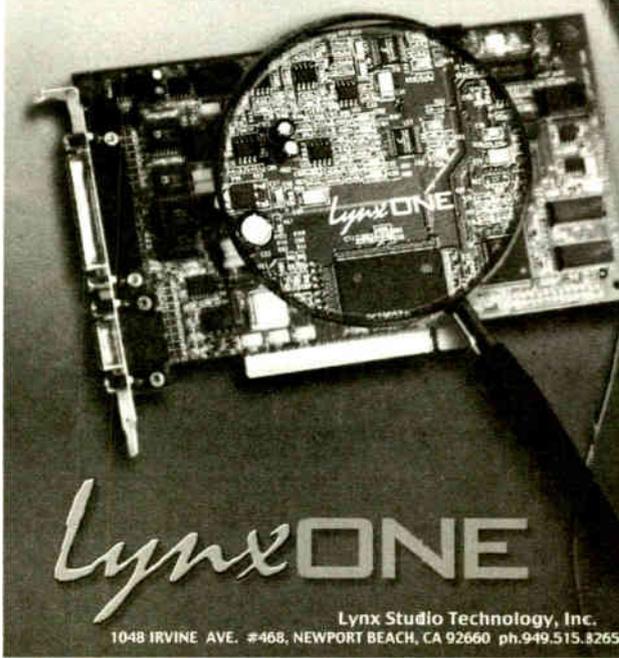
Unlike its owner — me — my mug stood quiet and dignified among its peers.

If some part-timer had my mug in his or her possession during a shift, I would scowl at them, offer up a generic station mug and transfer the contents. My mug was then taken back to where it was found, or secreted in my mail slot until needed again.

Like smokers banished to the great outdoors to assuage their nicotine demons, my mug and I were exiled from studios when "no food or drink" policies went into effect

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AUDIO QUALITY: 5 [out of 5]!

-Electronic Musician
August 1999

Marantz

► Continued from page 41

eight AA batteries or a special rechargeable power pack.

Eating eight alkaline cells for two hours of recording can be costly, so the power pack is a necessity. The power pack can be recharged in the unit. A 13 V plug-in power supply is included.



The PMD680 features digital ...

The only things you might add would either be a USB or 1394 (FireWire) connector. But that really isn't the way to move audio data in and out, given the convenience of the card format.

The front-loading PC card slot makes it simple to pop out the static RAM cards and feed them into a card reader attached to a desktop computer or into the PC card slots built into most laptops.

Full control

At first, the array of nine switches, five buttons and an on/off switch located on the top for setting the basic controls seems a bit involved. Just a few minutes with the manual clears up any mystery.

Most of these options are as simple as whether to turn off the built-in speaker or select the input source. Again, some of these are carryovers from earlier models, like the record level that chooses between manual or automatic level settings or the mic attenuation — 0, -15 dB or -30 dB.

The recording mode switch is familiar, although the SP/MP/LP settings hide the difference between this and more conventional recorders. This switch chooses between different levels of bit rates for the formats supported — MP2 (MPEG 1, Layer II), Broadcast Wave (BWF) or standard PCM WAV files. The buttons under these allow for renumbering or erasing tracks as well as other light editing functions.

Unlike some digital recorders, the

Marantz does not bother with extensive editing capabilities. That is what the DAW is for. For those that insist, a simple EDL marking system allows different sequences of cuts to be played.

The "transport" controls are simple enough — forward/reverse, play/pause, record/mark and stop. Finally, the backlit display does a good job with metering, showing time elapsed and time remaining.

The most complicated aspect of the controls is setting the presets. Changing recording formats requires altering these.



... and analog connections.

After deciding between MP2, Broadcast Wave and WAV, the three choices in bit rates set by the top switch can be changed. MP2 compression levels in the SP setting can range from 192 to 64 kbps; on the LP (long play) goes as low as 32 kbps.

Most users are likely to find a single happy medium for their purposes. The presets also can be used to change the ID numbers built into BWF files.

After popping in a PC card and powering up, the PMD680 takes a look to see if the card is properly formatted. This is not quite as fast as snapping a cassette in — the user has to wait a few seconds.

Reformatting a 32 MB card required turning the unit off, then putting it back on while holding the format/erase button. It took just a few moments and then it was ready to record. The factory default recording format is MP2.

After some experimentation with a beyerdynamic M58 and an ElectroVoice RE-11 mic, MP2 seems to be right for most uses. While I will admit to a preference for uncompressed audio, PCM recording eats way too much storage to be practical with pricey PC memory cards.

While 400-plus MB cards are available, they cost as much as \$1,000. This is even harder to justify given that I am hard-pressed to differentiate between

uncompressed files and those captured at moderate levels (e.g. 128 kbps) of compression. At that rate — about 10:1 compression — audio takes up about 1 MB per minute.

A pair of 64 MB cards could tackle most events. Drop down to 64 kbps and double recording capacity with only a moderate loss in quality. At the LP record setting, highs were noticeably missing at 32 kbps. Even so, speech was quite intelligible. For AM broadcasts, it might do fine and provide terrific economy.

The only issue I had with the unit itself was some confusion over the way the presets are laid out. The way it's organized is that the user first selects

between PCM/MP2/BWF, then enters a submenu to choose the bit rates for the format. But choosing bit rates is really geared to MP2 and not PCM.

PCM quality is about sampling rates and bit-length (e.g., 16-bit, 44.1 k). Here, the PCM "bit rate" is 768 kbps. But the submenu can change that. Unfortunately, PCM recordings made at other rates were unidentifiable when transferred to the computer.

Laptop compatibility

According to Marantz, this layout is for future compatibility with the WAV format. For now, the better way to set up for PCM recording is to set the top menu for MP2 and then select the 768 kbps rate (uncompressed) as one of the options. But the submenu can change that.

Unfortunately, PCM recordings made at other rates played back fine in the unit but were unidentifiable when transferred to the computer. Again, the way to avoid this pitfall is to stick with the MP2 or BWF presets.

The real joy here was snapping the PC Cards out and putting them into a laptop. The cards were automatically identified as an additional drive and either could be drop-and-dragged into the hard drive or opened directly by audio editing software.

Product Capsule:

**Marantz PMD680
PC Card Recorder**



Thumbs Up

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- ✓ Ample I/O
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Thumbs Down

- ✓ High cost of PC card memory
- ✓ Bit-rate layout

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The WAV files are easy for most any audio software to handle. MP2 compatibility is somewhat rare. Still, Sonic Foundry's Vegas Audio handled it easily. Again, all but the lowest bit rates sounded just fine for radio production.

Of course, the real-world test is bouncing this around for a few weeks in the careless hands of various individuals out covering assorted assignments. The Marantz is too new to have much of a track record as far as such ruggedness. But compared to the cassette units, this is likely to be far more durable.

With few moving parts, little can go wrong mechanically. The plastic case seems able to handle a bit of abuse. As long as the circuit boards do not crack and the unit does not end up in the drink, it should hold up well.

The upshot: this new Marantz is a winner. But for a few minor qualms, it is a straightforward recorder that is well-thought-out and will be familiar to those who have been raised on the company's cassette units.

The hardest part for many is the fact that MD has only recently become the format of choice. But the MP2 capabilities here give quality and flexibility that MD's ATRAC can't touch. Add the standard PC Card format's easy interface with computers and there's no contest.

At \$1,249 this is a nice investment. Of course, if stereo production is your thing, that is another matter. However, Marantz will soon release a stereo version of the unit called the PMD690 weighing in at \$1,499.

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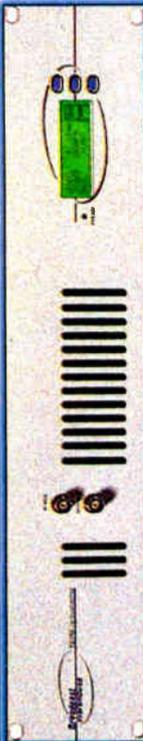
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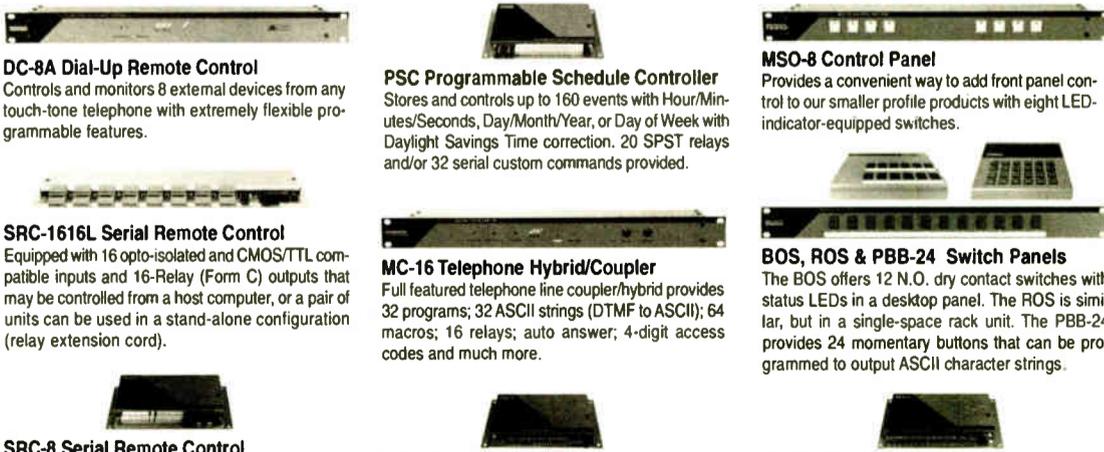
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Line Out

► Continued from page 41

sound is likely to be bassy, boomy and muddy, due to the persistence of low-frequency reverberation.

In other words, if your studio has a lot of fibrous absorbent materials but has no bass traps, you can expect dull and muddy sound. Carpet or acoustic tiles tacked to all the walls is not the way to create a good-sounding studio.

Try these treatments instead:

- *Carpet the floor.*
- *Attach open-cell acoustic-foam wedges on or near the walls.* The thicker the foam, the better the low-frequency absorption. Four-inch-thick foam on the wall absorbs frequencies from about 400 Hz up.
- *Install a floating acoustic-tile ceiling.*

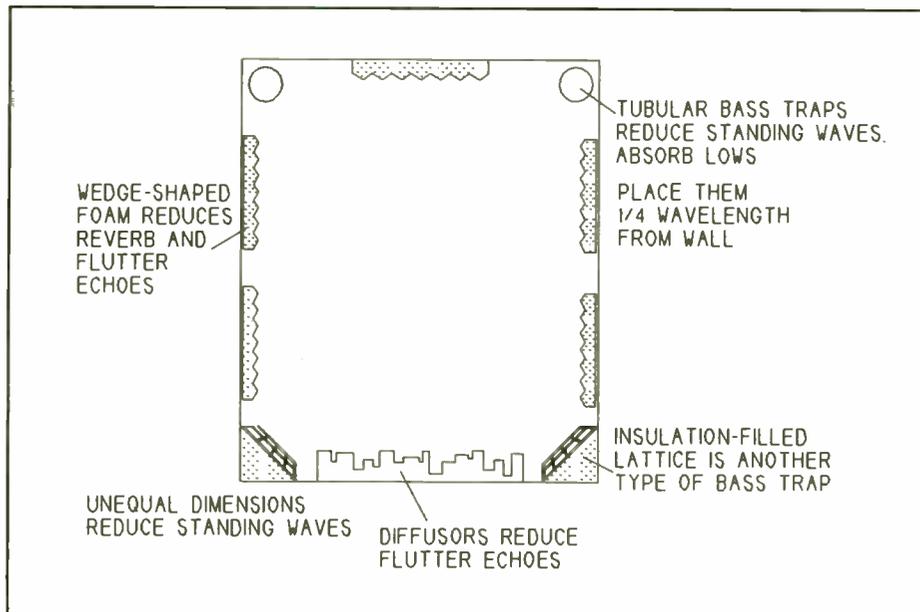


Fig. 1: Placement of Traps

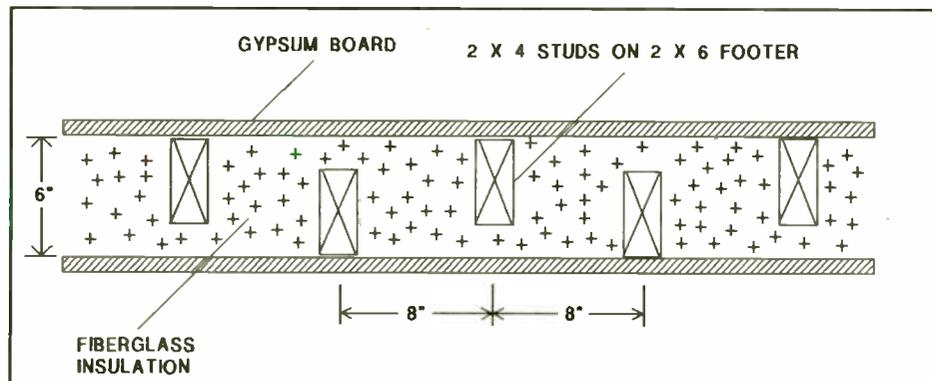
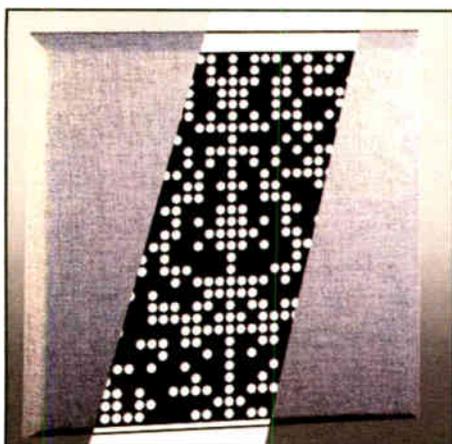


Fig. 2

The airspace absorbs low frequencies.

• *For bass trapping, buy ASC Tube Traps.* Some studios have made their own bass traps out of 35- to 55-gallon rubber trashcans. Stuff each one with fiberglass insulation — wear a dust mask and gloves — cover the open end with burlap or muslin and place one in each corner (Fig. 1).

• *For wide-range absorption, try pressed fiberglass board.* Nail Owens-Corning Type 703, three pounds per cubic foot, onto 2 x 6 studs, spaced four feet apart on the existing wall, with fiberglass insulation in the air space. Place the absorbent material in patches, rather than all together. The patches promote an even distribution, or diffusion, of sound in the room.



RPG Flatfusor

This acoustic treatment also will reduce flutter echoes. So will making the walls non-parallel, or using diffusers such as the kind made by RPG Diffusor Systems.

Frequencies at which the room resonates, most noticeable below 300 Hz, are called "room modes" or "normal modes." Resonance peaks of up to 10 dB can occur. Room modes occur in physical patterns called "standing

waves." They give a tubby or boomy coloration and should be minimized.

The frequencies at which the room resonates depend on the dimensions of the room. If the dimensions are identical, the same modal frequencies will be reinforced in all three dimensions, greatly emphasizing certain low frequencies.

On the other hand, if the dimensions are not multiples of each other, the modes will be different for each dimension. Then each room mode will be reinforced in only one dimension and there will be a more even distribution of resonance frequencies.

The table shows several room dimensions that distribute the modal frequencies uniformly. Units are in feet. Choose a combination of height, width and length that works well with your existing facility's dimensions.

Height	Width	Length
8	9.1	11.1
8	9.4	11.8
8	10.1	11.3
8	10.2	12.3
8	11.6	16.8
8	11.8	13.6
8	12.8	18.6
8	13.0	21.0

Height	Width	Length
10	11.4	13.9
10	11.7	14.7
10	12.6	14.1
10	12.8	15.4
10	14.5	21.0
10	14.7	17.0
10	16.0	23.3
10	16.2	26.2

For example, if your ceiling height is 8 feet, the room width should be 9.1 feet and the room length should be 11.1 feet for best distribution of room modes. Other combinations will work,

too, such as 8 x 11.6 x 16.8 feet.

Take the bottom three numbers as another example: If your ceiling height is 10 feet, the room width should be 16.2 feet and the length should be 26.2 feet. Or use another combination, such as 10 x 14.7 x 17 feet.

A common misconception is that nonparallel walls eliminate standing waves. Actually, low-frequency standing waves are not significantly affected by surface irregularities less than 1/4 wavelength in size.

For example, waves of frequencies below 280 Hz do not "see" a skew of one foot in a nonparallel wall. A better solution is to use bass traps tuned to the resonance frequencies of the room.

How can we quiet any noises from outside the studio?

- *Weather-strip doors all around, including underneath.*
- *Replace hollow doors with solid doors.*
- *Put several layers of plywood and carpet on the floor above the studio and put insulation in the air space between the studio ceiling and the floor above.*

• When building a new studio, reduce noise transmission through the walls by using plastered concrete blocks, because massive walls reduce sound transmission. Alternatively, nail gypsum board to 2 x 4 staggered studs on 2 x 6 footers (Fig. 2). Staggering the studs prevents sound transmission through the studs.

• Fill the airspace between walls with insulation.

By applying all these acoustic treatments, you can get the boom and noise out of your studio.

Bruce Bartlett is a microphone engineer and technical writer for Crown International and the author of "On-Location Recording Techniques," published by Focal Press.

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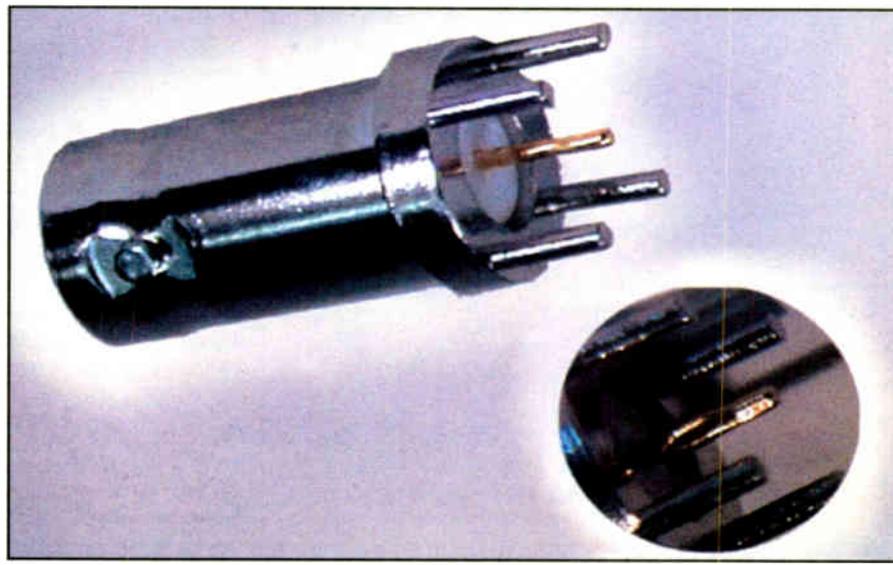
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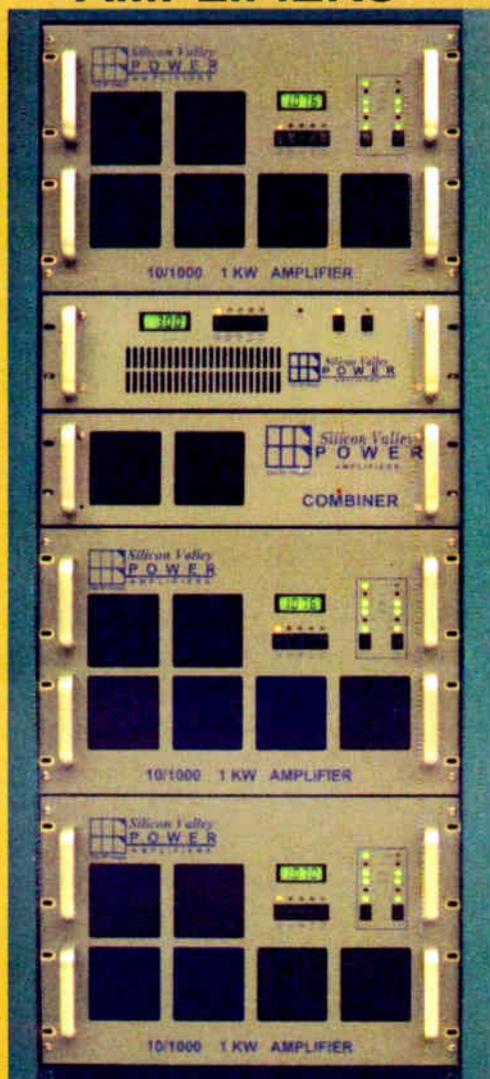
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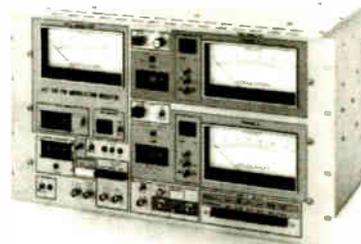
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Tips

► Continued from page 42

Addressing the latter first, paying clients love "new and different." Although vocoding is not a new technology, it's new to a client when he or she hears the name of their business sung or spoken in a vocoded voice. A good example is the old Goodyear Arriva tire commercial of some years ago, where the musical signature line was the product name vocoded.

The Electric Light Orchestra likewise made extraordinary use of vocoders. Go back and put "Mr. Blue Sky" on the turntable for a refresher.

Cool Edit allows a remarkable degree of control over all parameters of the vocoding process, but there are some limitations, especially in the Interval Size and Resynthesis Window settings.

The Source Wave (your voice) must be over-pronounced in order for the effect to be understood. Lip-lazy vocal techniques will become apparent, as the resultant vocoded wave sounds feeble, so speak clearly.

But in all fairness, old-style analog vocoders were similarly temperamental. It takes time to work with the process to find settings and a vocal technique that perform properly. And here is how.

Open the Multitrack View window. Place the voice track you wish to use as the Source Wave in Track One. In Track Two, drop in the Process Wave — the audio that will replace the voice in the finished work. Audio in Track One will be impressed upon that in Track Two, with the rendered wave being directed to Track Three, or other desired track location.

The part where most folks lose it is in

Bob's Bits

Bob Ellison, co-founder of Syntrillium Software, has a few favorite Cool Edit effects he is fond of. Add these to your list.

To create variable effects such as a reverb that slowly fades in, use *Ctrl-right-click-and-drag* to make a new copy of a multitrack wave object. Then double-click on the track and apply the effect you want to alter. Then return to multitrack view and use the Amplitude envelopes on the track *with* the effect and the one *without* the effect as the Wet and Dry controls, respectively.

For quick little custom echoes, use *Shift-right-click-and-drag* in the multitrack view to make a new copy of the wave block you want to echo. Place the new copy in a new track and offset it for the echo. You can do this multiple times, of course, varying the amplitude and tone of each echo as you please.

Remember, this creates a new copy of the wave *block*, not the wave file *itself*. To do that, hold the *Ctrl* key instead of the *Shift* key while you do the right click-and-drag.

Again with the *Shift-right-click-and-drag*: Zoom way in so you can see discrete wave peaks and valleys. Slide one copy of a wave block just a little to the right to create interesting interference patterns between the two. The resulting special effect can be subtle but beguiling, with a slightly metallic edge.

While you can perform ring modulation as described in the main article, you can also use Edit/Mix Paste to perform modulation as well.

I'm a big fan of the Pitch Bender, again found under Transform/Time-Pitch. It's great for making small adjustments to pitch, such as when a singer just barely misses an important note or for generating quirky special effects.

highlighting both waves for the process to begin. The mouse is used to highlight the sections carefully where vocoding is desired; if both wave segments in the Multitrack View do not turn a vibrant green when highlighted, they have not been properly selected.

Spin me round

A production effect I particularly like is the abrupt speed-down, as if someone stopped a turntable with the edge of a thumb. This makes a neat and interesting cold end to a promo or a call letter re-entry bumper.

Highlight the last syllable of recorded copy, or the last drumbeat of the music bed. From the Menu bar, pull down Transform/Time/Pitch, then Pitch Bender. The graphical screen shown in Fig. 3 comes up. Drag the rubber band down to pull the pitch down as far as you want.

The Pitch Bender works in *semitones*. If you have never endured piano lessons in your youth, a semitone is the difference in pitch from one musical note to one directly next to it, up or down (C to C#, let's say). Twelve semitones are in an octave, 24 semitones are in two octaves and so on. Knowing this helps to determine how much you wish to drag down the pitch.

The Pitch Bender is doubly effective for doing what I call a "Number Nine," in honor of the Beatle song of similar title. This is a great trick that simulates a vinyl record being imprecisely spun backwards by hand to seek death clues or satanic messages. See the first sidebar.

Cool Edit Pro has become popular due to its low price and the inclusion of more than 40 studio-grade effects and processes, plus the ability to link to third-party and aftermarket DirectX effects.

By eliminating the processor rack and the steep price that normally accompany this much versatility, the publishers of the Cool Edit product line created a new preference for radio production. In fact, Bob Ellison, one of the founders of Syntrillium Software, has his own favorite tricks that he has shared with us in another sidebar. Try these out too.

Don't be afraid to use these effects, as they will greatly add to your bag of magic tricks. And don't forget Cool Edit Pro's best trick of all: Open Help/About, then drag the little flower to the narrow end of the logo to play a game of classic "Pong" against the programmers of Cool Edit.

If you come up with any other tricks you think would be of interest to other production pros, e-mail them to me at alanpeter-son@earthlink.net for inclusion in a follow-up here in RW. 🌐

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BE 10 spot, like new, 10 mono slot play w/manuals, \$800; ITC triple deck play, \$150. J Lalino, WLAL, 319 Rt 29, Middleville NY 13406. 315-891-3110.

Dynamax CTR33, 3 deck R/P, great shape, \$1000/BO. J Lalino, WLAL, 319 Rt 29, Middleville NY 10406. 315-891-3110.

Harris 994-7993-001 twin 1/2 rack width mono PB cart decks; Gates 994-6701-002 mono PB cart deck; BE 5301B triple mono PB cart deck (s/n 9065301 22891). John Mulhern, KSCB, 1410 N Western Ave, Liberal KS 67901. 316-624-3891.

Harris Gates stereo R/P, \$200. J Lalino, WLAL, 319 Rt 29, Middleville NY 10406. 315-891-3110.

ITC 3D mono, BO; ITC RP mono unit, BO. Jaul Hansen, WYRQ, 16405 Hover Rd, Little Falls MN 56345. 320-632-2992.

ITC ESL IV erase/splice finder, \$200. J Lalino, WLAL, 319 Rt 29, Middleville NY 10406. 315-891-3110.

BE Series 2100C stereo cart record/PB deck, excel cond, BO. Tim Zeimann, KTAA, RR 6, Box 6000, Big Sandy TX 75755. 903-636-2000.

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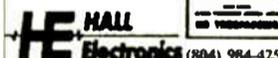
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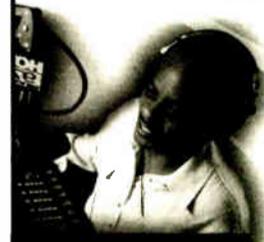
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◆ READER'S FORUM ◆

Man of few words

Regarding *Reader's Forum* "AM Receivers Trash AM Signals" on page 5 of the Jan. 3 issue:

Ditto.

Mike Edmonds
Engineer
Keane Inc.
Tucson, Ariz.

Nothing new

I read with some interest Gary Palamara's description of the "Regency Tester" in the Nov. 22, 2000, issue ("Build Your Own 'Regency Tester'").

This idea is not particularly new. I have used a similar system for more than 35 years.

My system used 10 K resistors wired in series and no battery. One put the first wire on the first 10 K resistor, the second wire on the second resistor, etc. The shield of the cable (or a known spare wire) was the "common" at the bottom of the resistor string.

To use it one merely used an ohmmeter set to an appropriate scale. The first wire then read out as 1 (or 10), the second wire read out as 2 (or 20) and so on. After all, if you are using a multimeter, it already has a battery (for the Ohms scale) so there's no need for another battery in the system.

Gary D. Sharpe
Technical Sales Manager, North America
SCOTTY Tele-Transport Corp.
of the Americas Inc.
Norcross, Ga.

Old EBS tones

Please do not release old EBS tones.

I field several calls a year from researchers looking for material on the old Emergency Broadcast System that has now been replaced by the Emergency Alert System. Sometimes the point of this research is for a drama or news event that will wind up being broadcast. The producer wants to have a program element that is authentic.

What many people do not realize is that broadcasting the old two-tone EBS attention signal will activate old warning receivers that are still in use in many parts of the country.

Turns out that the current EAS warning format contains the old two-tone attention signal, so those receivers will trigger on

either an EAS or EBS alert. Those receivers will activate any time they hear the tones, even if there is no EAS digital header.

To avoid broadcasting false emergency alerts, we need to discourage the use of the old EBS two-tone format whenever possible.

Richard Rudman
Chairman
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Los Angeles

Antenna articles

The recent articles on the CFA and EH antennas are quite interesting. They reminded me of some of the historical records I have read on antenna development over the years.

A lot of work was done in the 1930s on the improvement of AM broadcasting. It was at that time that the standard for a vertical radiator with a ground system was established. I believe that Carl Smith had a lot to do with this development along with the creation of directional arrays.

From the early 1920s through the '30s there were a lot of short, horizontally polarized long wires on the tops of buildings. Some lasted until the '60s.

WOR used a long wire extended between two towers in Carteret, N.J., into the late 1960s. It would be interesting to revisit some of this research to see what led to the present AM antenna.

Are these new systems revisiting the past? I don't know. Can they deliver an equivalent RMS field in the primary service area? What are their night radiation patterns?

**Big City,
Big Heart**

We love passing along news about radio stations doing good work.

Kudos are due to Y-107, Big City Radio's four-station "quadrocast" on 107.1 MHz. The New York City-area complex has just raised another \$1.1 million to help kids of St. Jude Children's Research Hospital.

It's an example of how a local radio station or cluster can create a powerful relationship with a community organization and a group of special sponsors — to the considerable benefit of all involved.

St. Jude is a research and treatment center for pediatric cancer and other catastrophic childhood diseases. The hospital, located in Memphis, sees approximately 4,000 patients each year, most on a continuing outpatient basis. It has treated 16,000 children from the United States and 60 other countries.

Its research includes work in gene therapy, chemotherapy, radiation treatment, viruses, blood and hereditary diseases, influenza, pediatric AIDS and the psychological effects of catastrophic illnesses.

New Country Y-107 collected the pledges during its Fourth Annual St. Jude Radiothon, a 39-hour live event in February held at Woodbridge Center Mall in Woodbridge, N.J.

Radio stations are always good at attracting musical talent. In this case, the hospital also has a long association with entertainers, and in fact was founded by Danny Thomas in 1962.

Past performers have included LeAnn Rimes, Bryan White, Martina McBride, Kenny Rogers and Keith Urban. The organizers arranged live appearances this year by Alabama singer Randy Owen, the founder of St. Jude Country Cares, and fellow country singer Reba McEntire.

Y-107's first Radiothon just three years ago earned \$426,000. Now the effort has broken the million-dollar mark, and it doesn't show signs of slowing down.

New Country Y-107 is made up of WYNY(FM) in New York, WWYY(FM) and WWZY(FM) in New Jersey, and WWXY(FM) on Long Island. Thanks to the efforts of this radio station cluster, St. Jude Hospital in the past four years has received more than \$3.2 million in pledges!

What a remarkable testament to radio's ability to bring people together.

There is a community organization somewhere out there that could use a radio station angel of its own. Could it be yours?

— RW

generated by electronic devices next to receivers.

The installation of this system should be underwritten by an organization (business, university, etc.) that believes this system is as good as, or superior to, the present

one of the expanded AM band frequencies.

I'm not saying the CFA or EH won't work. I'm not qualified to do that, but someone needs to test these systems in the current broadcast environment in America. You have to move past theory and offer a system that is equal to or improves the current design.

Ed Montgomery
Annandale, Va.

**Someone needs to test these systems in
the current broadcast environment in America.**

It would be interesting to get someone to experiment with one of the many Class IV AMs that have suffered over recent years from decaying antennas, buildings constructed next to their sites and the noise

antenna. I don't believe a broadcaster should shoulder the entire cost of such an experiment.

Will the new antennas improve their signal? Someone could also experiment on

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Radio World

Vol. 25, No. 5 March 1, 2001

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NEXT ISSUE OF RADIO WORLD MARCH 14, 2001

For address changes, send current and new address to RW a month in advance at P.O. Box 1214, Falls Church, VA 22041. Unsolicited manuscripts are welcomed for review: send to the attention of the appropriate editor.

World Radio History

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Radio World (ISSN: 0274-8541) is published bi-weekly by IMAS Publishing (USA), Inc., P.O. Box 1214, Falls Church, VA 22041. Phone: (703) 998-7600, Fax: (703) 998-2966. Periodicals postage rates are paid at Falls Church VA 22046 and additional mailing offices. POSTMASTER: Send address changes to Radio World, P.O. Box 1214, Falls Church, VA 22041. REPRINTS: Reprints of all articles in this issue are available. Call or write Michelle Inderrieden, P.O. Box 1214, Falls Church, VA 22041; (703) 998-7600, Fax: (703) 998-2966. Copyright 2001 by IMAS Publishing (USA), Inc. All rights reserved.

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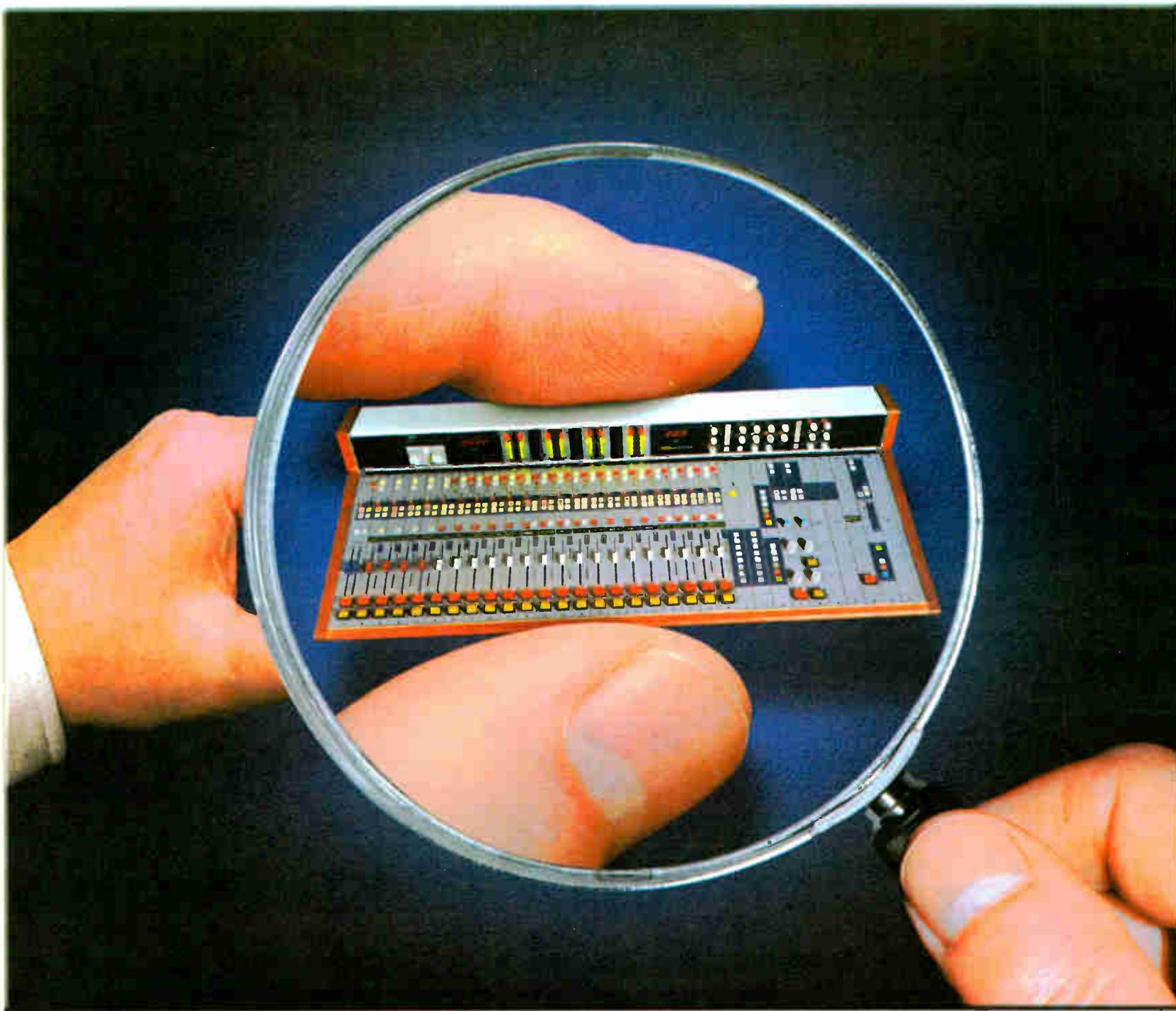
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