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Digital Cougar
 At Cougar Mountain, testing
 an idea on a combined facility.

Page 6

Phasitron Love
 Steve Hemphill talks about his recreation of
 a 1946 General Electric BT-11-B FM exciter.

Page 18



Radio World

\$2.50

The Newspaper for Radio Managers and Engineers

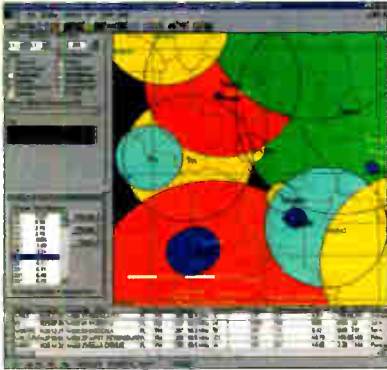
September 11, 2002

INSIDE

ENGINEERING

▼ We evaluate the rfDetective-FM search tool, we visit a storefront radio studio and Guy Wire comments on RFR.

In This Issue



GM JOURNAL

▼ Radio pauses to remember 9/11.

Page 27

▼ Legalized payola: Is it extortion?

Page 27

BLUE AND YOU

▼ Comrex and RW award a BlueBox codec to a California reader.

Page 4



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NEWS ANALYSIS

Hogan Move Seen as Shift In Priorities

by Naina N. Chernoff

SAN ANTONIO, Texas As John Hogan steps in as the new head of Clear Channel Communication's radio division, he inherits a solid business unit, despite dramatic fluctuations recently in the company's stock price, according to analysts.

Weeks after Clear Channel moved Randy Michaels to become the head of a new technologies division, speculation continued about the motives for this unexpected shift in leadership.

Hogan

Hogan was named Michael's replacement on Aug. 20. He had been the radio division's chief operating officer for the past year (see sidebar, page 8). Mark Mays, Clear Channel president and chief operating officer, had assumed Michael's duties temporarily while the company searched for a replacement.

After the July 22 news that Michaels would step down from the radio post, the company's stock plunged to its lowest price since 1990 while investors

See MICHAELS, page 8 ▶

N.Y. Station Battles Botanical Garden

In Lengthy Tower Dispute, Landmark Site Says 'No' to 480-Foot Structure in Its Backyard

by Randy J. Stine

NEW YORK A tower siting dispute spanning eight years has left a radio station here with a half-constructed broadcast tower and a neighboring nature area willing to contribute financially to get rid of it. A private meeting between the parties and the FCC this fall could settle the issue.

The legal battle pits a noncommercial broadcaster against preservationists
 See WFUV, page 10 ▶



WFUV's partly constructed tower is seen from the Botanical Garden.

Courtesy of the New York Botanical Garden

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◆ NEWSWATCH ◆

Powell: No More Spectrum

WASHINGTON FCC Chairman Michael Powell has called for efficient use of existing spectrum, not just allocation of more of it. He said demand increasingly is far outstripping available bandwidth.

"The real challenge is how to get more use out of spectrum that 80 percent of the time lies fallow," he said. Powell believes the answer lies in increasing the use of existing technologies such as software-defined radio and spectrum sharing.

He cited a need for continued use of unlicensed bands.

"The time has come to realize that there's not a whole lot of spectrum in the closet we have back here at the FCC that hasn't been put out yet," Powell said.

He reiterated his market-based ideas for regulation. Powell also said the government and commercial sectors must improve the balance and processes used for reconciling critical governmental uses with commercial uses.

He made his remarks before a spectrum policy forum in August. A spectrum policy task force will present its recommendations to the commission by the end of October.

Recent FCC Fines

WASHINGTON The FCC cut in half — to \$5,000 — a fine for WESL(AM) in East St. Louis, owned by M&R Enterprises.

The agency said the station twice denied access to its public-inspection file to members of the public. The station said the file was in the manager's office and that the individuals who made the complaint did not ask for specific materials.

The station did not contest the violation but asked for it to be cancelled, citing an inability to pay. After reviewing the station's tax returns for the past three

years, the commission reduced the fine. Separately, the commission upheld a \$16,800 indecency fine for WLDI Inc., licensee of WCOM(FM), Bayamon, Puerto Rico.

The station asked for the penalty to be reduced or eliminated, saying said it was owned by Chancellor Media at the time of the 1999 violations and then sold to Spanish Broadcasting System. The commission ruled that ownership transfer did not affect the licensee's responsibility.

Magazine Merger Follows Settlement

SAN ANTONIO Inside Radio and Clear Channel Worldwide have settled their lawsuits and as a result, Inside Radio merged with former competitor M Street Publications, a partially owned and independently run subsidiary of Clear Channel.

The price was not disclosed. The deal included Inside Radio's daily fax and e-mail publications, the Web site and the weekly publication Who Owns What.

Powell Ready to Fight Corporate Crime

WASHINGTON In light of the Enron and WorldCom crises, President Bush has appointed FCC Chairman Michael Powell to serve on a new interagency corporate fraud task force.

"The commission stands ready to offer its expertise to assist in the effort to investigate and prosecute significant financial crimes and restore credibility to the market," said Powell.

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Index

NEWS

Hogan Move Seen as Shift In Priorities	1
N.Y. Station Battles Botanical Garden	1
NewsWatch	2
NPR Technicians Ratify Contract	3
Where's My Digital ROI?	3
Am I Healed or Am I Just Numb?	4
AM IBOC Consequences Weighed	5
Digital News	5
IBOC Idea Tested at Cougar Mtn.	6

FEATURES

Workbench: How to Expand Scrunched Screens	12
Storefront Radio Opens in Erie	14
Search Tool Imports From FCC	16
Buff Recreates a 1946 Classic	18
What's Your Importance Quotient?	20
Soaking Up the Waves: RF and You	24
An AM Expanded-Band Success Story in Fargo	24

GM JOURNAL

They Remember Sept. 11, 2001	27
Legalized Payola: Is It Extortion?	27
News Radio Thriving Post-9/11	30

INTERNET RADIO

Net Stations Face 1st Payment	35
NTR and the Web: Made for Each Other	35
Arbitron/MeasureCast July 2002	36

STUDIO SESSIONS

Behringer Small Mixer Line Grows	41
Just Another Cheap Detective Novel	41
Velvet Voices and Vintage Mics	43
Digilink-Free: Hints and Kinks	45

OPINION

52-54

See us at the NAB Radio Show Booth #1025

World Radio History

NPR Technicians Ratify Contract

NABET Contract Includes Job Guarantee in Light of Jurisdictional Work Rules Change

by Randy J. Stine

WASHINGTON Broadcast recording technicians at National Public Radio no longer hold the exclusive right to mix audio for broadcast at the network's Washington headquarters and its U.S. bureaus.

Unionized technicians in August overwhelmingly voted in favor to approve their first contract since the union's certification in April 1999. The National Association of Broadcast Employees and Technicians, a sector of the Communications Workers of America, represents the 80 or so technicians.

NABET-affiliated technicians had rejected an NPR contract offer earlier this year after company officials insisted on changing work rules to allow non-technicians to mix audio for air.

The jurisdictional work rules had been in place since 1989 when technicians were given the exclusive right to mix audio. NPR management said modernized work rules were needed because the network is now using new editing technology that increases efficiency.

Union bargainers say the offer was approved thanks to a larger pay increase and a promise that no technicians would be laid off as a result of the work rule changes.

"We are satisfied with the contract,

and so is membership. There was some flexibility in the final language on both sides," said Paula Olson, the NABET staff representative for NPR.

Technicians will receive a 5-percent pay increase retroactive to 2001 and 3-percent raises in subsequent years until the contract expires in Oct. 1, 2004. The contract also includes a 1-percent signing bonus, Olson said.

New top wage

NPR technicians previously earned a top annual wage of \$62,059 after four years of service. Technicians hired before the new contract went into effect last month will now earn a top wage of \$71,204 in their fifth year. Technicians hired in the future will be on a newly implemented 10-step pay scale, receiving top pay in their tenth year.

Ken Stearn, executive vice president at NPR, said the public broadcaster would immediately begin training its reporters, producers and editors on computer-based digital editing software. NPR's digital transition began in 1997 with the purchase of Dalet Digital Media Systems software for newsroom workstations.

The new work rules will go through an evolutionary process to determine exactly how much audio mixing NPR reporters, editors and producers do, Stearn said.

"We think this way we'll wind up with a more integrated system. The NPR sound will not be compromised. If anything, we believe we can use the new computer technology to further improve the NPR sound of the future," he said.

NPR technicians had claimed during contract negotiations that allowing non-technicians to mix audio would compromise the overall "NPR sound" to which listeners have become accustomed.

The NPR sound will not be compromised.

— Ken Stearn

The American Federation of Television and Radio Artists covers NPR reporters, producers, anchors and editors in the production unit. Stearn said the management rights clause in the AFTRA contract gives NPR the right to assign mixing duties to AFTRA members.

"We had discussions with AFTRA about mixing to specifically inform them of our proposal to the technicians. AFTRA never expressed any concerns with us about the mixing issue," Stearn said.

Olson said she is curious to see how the members of AFTRA will react to being assigned additional job duties.

The contract calls for NPR technicians to maintain quality-control responsibilities, Stearn said.

"(Technicians) will certainly still do the majority of the mixing and have a say in what actually airs," he said.

Olson said technicians will be able to reject substandard three-source mixes, but not two-source mixes.

Stearn said AFTRA members in the news division can immediately begin to mix stories with two audio sources. Eventually, NPR producers will be permitted to do three-source mixing.


A so-called blackout period calls for broadcast recording technicians to mix three-source stories that are scheduled to air within three hours or less, Stearn said.

The new contract contains no new work assignments for technicians, Stearn said. NPR technicians previously spent approximately 65 percent of their time mixing audio.

Olson said no NPR technician can be laid off as a result of the jurisdictional changes for the life of the contract.

As for when the new contract expires in 2004, Olson said, "Job-security issues are always a part of contract negotiations. It's just too early to worry about that yet."

After three years of trying, Stearn said it was clear to all parties that the time had come for an agreement.

"We are pleased with the results. With the agreement, our technician unit will remain a very important part of the NPR product," Stearn said. 

IBOC Q&A

Where's My Digital ROI?

This is one in a series in which Ibiquty Digital Corp. answers questions about how to implement HD Radio, the newly-trademarked name of its in-band, on-channel digital audio broadcasting technology.

Director of Broadcast Business Development Scott Stull answers here. Past answers are posted at www.rwonline.com under the tab "IBOC DAB."

Q: What benefits would my station gain from converting to HD Radio IBOC technology in the next few years?

A: According to a recent Yankee Group study, half of all consumers shopping for a car or home receiver in the next year are interested in buying a digital AM/FM radio. Broadcasters will play a key role in driving Ibiquty Digital's HD Radio IBOC technology to eager consumers through the prompt conversion and implementation of HD Radio technology for commercial use within the first year. So what are the advantages of converting your station to IBOC system now?

New revenue opportunities — Throughout its history, advertisers have prized radio for its ability to deliver a highly targeted audience. HD Radio's integrated wireless data capability leverages this existing ability with new capabilities to deliver even greater value to the advertising community by providing the basis for advertisers to communicate more effectively with their target audience.

Better service to listeners — HD Radio will increase the audio quality and signal reliability for both AM and FM. This

clear benefit will potentially increase stations listenership and Time Spent Listening for early broadcast adopters.


Level playing field — By meeting the public demand for digital products and services, broadcasters will have the ability to become part of the digital age and provide progressive leading-edge services and sound to their listener base. HD Radio technology will make listeners think twice about abandoning AM/FM radio for other digital infotainment alternatives like MP3, mobile Internet and other digital broadcast services.



All these benefits are achieved with an easy and inexpensive transition for broadcasters and listeners, by using existing infrastructure and spectrum, as well as maintaining listener behavior. Listeners will still tune to their favorite dial position, thus preserving broadcaster equity in dial position and branding. For example, "WETA 90.9 FM" can still remain "WETA 90.9 FM."

We strongly believe that the return on investment associated with the implementation of HD Radio technology will be immediately evident. Those stations investing in the near term will see dramatic payoff in the long term.

Send your IBOC questions to radioworld@imaspub.com. Contact Salemi via e-mail to info@Ibiquty.com or by fax at (410) 872-1531.

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Am I Healed or Am I Just Numb?

I would expect to be affected by what happened on 9/11. But a year later, why don't I feel it more?

I can remember the intensely powerful emotions of that morning and the days that followed. But I now find I cannot access those feelings with the same intensity.

Have I lost the capacity to appreciate the loss of all those people? Is this the wall that journalists build to protect themselves against a daily diet of bad news? Am I just another American consumer, bombarded by too much death and destruction, real or fictional, to react anymore?

Or is this an unconscious response that healthy people have to horror of unimaginable scale, a numbing that protects me from pain I otherwise could not tolerate?

I should feel it, still. Beyond the huge loss of life, my personal connections to New York and Washington should guarantee it.

I was born in New York City. On that day in 1960, the front page of the New York Times featured a story about plans for a mammoth new trade center to be built near the lower tip of Manhattan.

By the time I was a teen, living in New Jersey, the World Trade Center was a reality, part of the landscape of my high-school years. I could see the towers simply by riding my bike down to the train tracks that cut through Westfield and

looking east and slightly north. Even 15 miles away and across a river, those towers were magisterial.

Truth be known, I preferred the Empire State Building for its historic significance and elegance. The twin towers were incongruous in that beautiful skyline. But they remained for me part of iconic New York even after I moved away from the area.

I instinctively looked up, out the window, and saw the smoke rising, right there, in my world.

I would visit them whenever I could. I still have a photo from the late 1980s that I took on the observation deck of the South Tower showing a friend happily facing the camera, 1,362 feet up, with the harbor and the Statue of Liberty sprawled below.

I remember another trip to New York. My friend and colleague Gerrett Conover and I were representing Radio Systems at the IBS convention in town. The boss had

told us we could treat ourselves to dinner. We took him at his word and headed off for the Windows on the World restaurant, where we ran up quite a tab in drinks and food, taking in the magic of the city at night.

I recall an autumn when my mother treated my brother and me to a flight around New York in two open-cockpit biplanes. The ride was spectacular. A

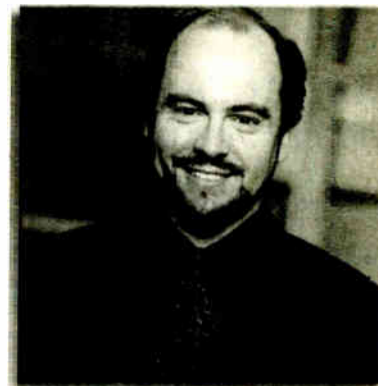
highlight of the trip was flying up and down the Hudson. We passed the twin towers, very close, at half their height.

Given the carnage that took place a year ago, perhaps my memories are trivial. Millions of people have recollections like these. But they make up the skein of experience that puts me in that time and place. Through these memories, I should feel the loss more.

The Pentagon, where 184 innocent people died, is a local landmark. Like many Washington-area residents, I drive past it several times a week. I recall marveling, even before 9/11, at how close airplanes would come to the Pentagon, to the Washington Monument, to the 14th Street Bridge. You notice this, living here.

I remember that terrible morning, standing in front of a TV set here at the office, trying to make sense of the news reports from New York, when someone said, "There's been an explosion at the Pentagon!" I instinctively looked up, out the window, and saw the smoke rising, right there, in my world. If I had been standing on our sixth-floor rooftop moments earlier, I would have seen the jet plunge.

From the Editor



Paul J. McLane

I remember the feeling of sickness in my stomach. "My God, what's going on? What happened up the road? What happened in Pennsylvania? Is it safe to go on the roof? Is it safe to be here? What next? What next?"

For months after the Pentagon crash, people drove, bicycled or walked to a hillside overlooking the site. I was among them. I came to pay my respects and to see history before workers rebuilt it.

On that hilltop, I felt some of the terror of 9/11 return. "People died here," I thought.

"The airplane passed overhead here." I watched as a worker threw an office chair from a third-story window, a few feet to the right of the gaping hole made by the plane; and I wondered whose chair it had been, whose life had been destroyed or altered or spared as the plane hit.

To research facts for this column, I went online and discovered some Web sites where people have posted pictures of the twin towers — not photos from 9/11 but before, from their own visits.

I saw the happy tourist faces, the familiar lobby and plaza, the top-deck photos of the North Tower and its trademark mast as seen from the South Tower. New York was far below. I remembered being there. I thought about what it must have been like for visitors on Sept. 11, for office workers, for the broadcast employees in that North Tower.

My stomach knotted. My eyes teared. It was fresh again, for an instant. Then sadly, the sensation faded, to a lingering gloom.

I don't know if I want those feelings back. But I mourn them when they are gone.

Clay Roe, owner of Sideshow Sound Labs in Lancaster, Calif., wins the prize this time in our online Reader's Choice Sweepstakes.

It's a Comrex BlueBox codec, which provides 15 kHz audio over a POTS line or enhanced audio over GSM wireless for remote broadcasts.



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AM IBOC Consequences Weighed

In the Sept. 1 issue, *Radio World* published a selection of comments filed with the FCC about the NRSC report on Ibiqity Digital Corp.'s AM in-band, on-channel digital audio broadcasting system. Here is another sampling.

"Susquehanna recognizes that AM IBOC is not without its shortcomings. Potential does exist for additional interference to the analog service of adjacent channel stations but the benefits of IBOC far outweigh the additional interference that may be received by some AM stations. The problem with AM is that it is not a pristine service. ...

"Today, the commission is faced with the decision of authorizing a fundamental change in the AM broadcasting that may cause additional interference to some existing stations in areas on the fringe of their coverage. Susquehanna believes that this potential interference is minimal when compared to the quality and durability gains that will occur in every station's main listening and marketing area. ...

"The NRSC evaluation reports on both the AM IBOC and the FM IBOC called attention to the potential of adjacent channel interference and recognized that neither system was perfect. Tradeoffs

occur but the gains of the system far outweigh the losses. AM allocations and propagation are far more complex than FM, making it more difficult to fully ascertain the extent of this adjacent channel interference, particularly during night hours.

"With the information known today, it would appear that the commission has two choices: authorize a day only service for AM or no IBOC service for AM. Susquehanna believes that without IBOC, the AM band has little hope for the future. "Susquehanna understands that with-

We reject the idea of the FCC sanctioning the payments of royalties to the developers of the IBOC technology.

— The AM Broadcasters Association

"Susquehanna recognizes that no broadcast service is optimum when authorized as a day-only service. Nevertheless, there is presently no information available that can determine the true extent of the potential adjacent channel interference during night operation. Future testing and allocation studies may provide the needed information for the commission to consider some form of night service operation." ...

out night service, AM IBOC, standing alone, may have little chance of success but we also believe that neither AM IBOC nor FM IBOC will be an overnight success. Ibiqity has often stated that their AM and FM technology are interlaced in such a manner that all receiver chip sets will provide for the reception of both AM and FM IBOC. It is possible that many AM stations will decide to hold off on implementing IBOC until FM stations have paved the way and created demand for IBOC receivers."

Charles T. Morgan
SVP, Susquehanna Radio Corp.
York, Pa.

"We agree and appreciate the concept of digital AM, and in fact would encourage it under other conditions. However, our chief reason for rejecting the current proposal is the extraordinary costs and financial burdens that will be placed on the smaller, independent AM radio stations in the U.S.

"We reject the idea of the FCC sanctioning the payments of royalties to the developers of the IBOC technology. ... iBiqity (sic) is owned by several of the major radio consolidators which have been allowed to consolidate nearly 50 percent of the radio stations in the U.S. since enactment of the Telecom Act of 1996. Is it the FCC's desire to give these few companies which control 50 percent of all commercial radio in the U.S. complete control over the digital broadcasting signals in the U.S. and hold all stations hostage by requiring a royalty payment on a government-mandated broadcast standard?"

The AM Broadcasters Association Inc.
Central City, Ky.

"We suggest that any implementation of AM IBOC hybrid be postponed until full analysis of skywave propagation interference, especially to clear-channel stations, be closely analyzed and unanswered questions can be answered.

"We suggest that Ibiqity include in the subjective measurements, human opinion while listening to the degradation of the analog audio at 5 kHz vs. 10 kHz and observed on the same scale as have been made regarding 'improvements' to the AM

See AM, page 6 ▶

DIGITAL NEWS

Sirius Complains of Media Speculation

NEW YORK Sirius Satellite Radio took on the media in August for speculation in published reports about the satcaster's financial future.

Sirius executives said news articles played up one aspect of its recent filing with the Securities and Exchange Commission out of context, specifically that seeking bankruptcy protection is an option should the company not secure additional funds in 2003.

Sirius said the reporting language in the quarterly form 10-Q was routine and contained language similar to what Sirius has used before. The language expressing what might happen did not mean bankruptcy is imminent, it said.

"We are making significant progress in solidifying our balance sheet, and I remain extremely confident that we will secure additional financing shortly," said Sirius President/CEO Joe Clayton.

In a conference call with analysts and investors on Aug. 13, Sirius detailed its funding requirements and stated that it was seeking additional financing from existing partners, bondholders and other stakeholders.

Sirius disclosed that it had approximately \$300 million cash on hand, enough to fund activities into the second quarter of 2003, and was looking for ways to extend cash reserves further through cost-cutting. Sirius hired UBS Warburg to recommend financial options.

Asked why Ford has taken a low-key approach to its relationship with Sirius, in contrast to GM's relationship with XM, Clayton said those launch plans were still being worked out.

Separately, BMW of North America, LLC said it will offer Sirius service in its new Mini, as well as in the BMW 3 Series, 5 Series and X5, as previously announced.

Sirius is expected to be available, beginning this fall, as a dealer-installed option through BMW centers and Mini dealerships.

Sirius added Sears to its list of retailer partners. Displays were being installed in about 850 Sears locations with the retail program to be operational by Aug. 30.

Sirius Shows Q2 Net Loss of \$1.62/share

NEW YORK Sirius reported earnings before interest, taxes, depreciation, amortization and non-cash stock compensation loss of \$67.3 million and a net loss applicable to common stockholders of \$124.6 million, or \$1.62 per share. In comparison, for the second quarter of 2001, Sirius had an EBITDA loss of \$32.8 million and a net loss applicable to common stockholders of \$72.5 million, or \$1.35 per share.

Sirius launched its service nationwide July 1. At June 30, it had 3,347 subscribers; six weeks later, it had 6,510 subscribers.

On June 30 Sirius had \$326.9 million in cash, cash equivalents, marketable securities and restricted investments.

Analysts Cut Projected Subs, Earnings for Sirius

Equity analysts with the SoundView Technology Group scaled back projected subscriber estimates for Sirius, mainly because receiver partners are still ramping up product supplies, leading to product unavailability in some areas.

SoundView reduced its Q2 net subscriber estimate from 5,000 to 3,000 and

See DIGITAL, page 7 ▶

Radio Systems





Radio Systems' new analog to digital converter is a broadcast quality device optimized to provide flexibility along with super high quality conversion of analog and digital signals.

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DIGITAL NEWS

IBOC Idea Tested at Cougar Mtn.

by Paul J. McLane

SEATTLE Participants of a test in Seattle say they've found a way to

auxiliary transmission facility of Entercom Communications.

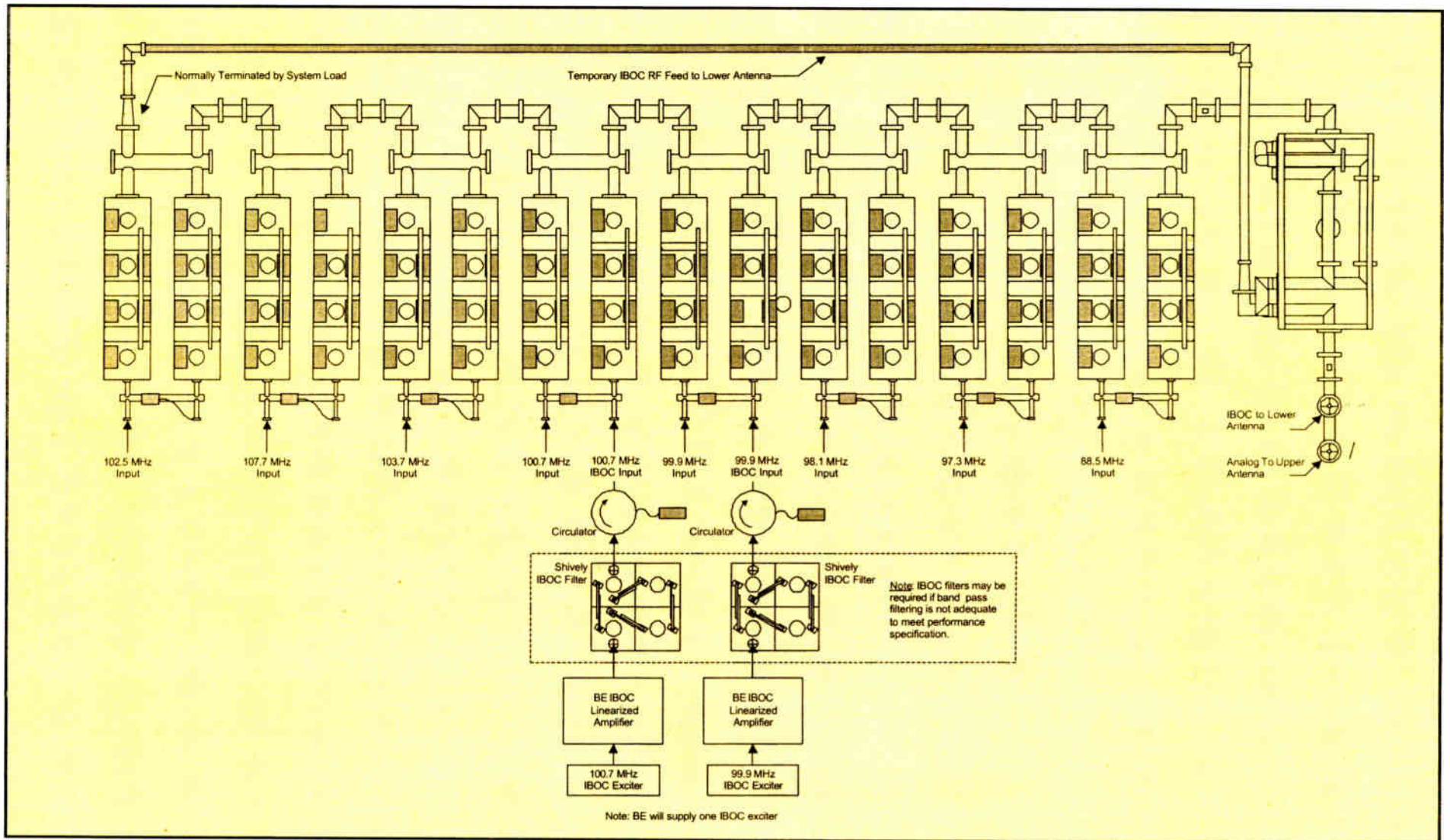
In August, employees of Entercom, Shively Labs, Broadcast Electronics and

Entercom Seattle's senior facilities engineer, in conversations with Shively's RF manager, Bob Surette.

"Freinwald's approach involves feed-

ple high-power analog signals, but also meant a minimum of downtime while the system was reconfigured for each night's testing," Shively stated. This was a requirement because the stations on the system "needed to maintain operational readiness" while routine maintenance was being done at the main broadcast site on West Tiger Mountain.

According to Surette of Shively, the



IBOC Dual Antenna/Combiner Test at Cougar Mountain

implement HD Radio that could save some stations using combined facilities a lot of money. HD Radio is the new name for Ibiqity Digital's IBOC technology.

The test is at the Cougar Mountain

Ibiqity Digital Corp. met to explore the feasibility of this technique for feeding digital signals through existing balanced combiner systems. The idea grew out of a proposal made by Clay Freinwald,

ing the digital signals through an isolator into the combiner in the same manner as the analog signals, but through the opposite or normally terminated leg of the input hybrid," according to a statement from Shively.

"The digital signals are then combined and travel down the broadband line in opposite directions. The digital signals exit the combiner through the analog wideband input, where a transmission line feeding a separate 'digital' antenna replaced the standard wideband dummy load."

Marty Hadfield, Entercom's vice president of engineering, reported satisfaction with what he called a "proof-of-concept" test.

"Stations implementing this novel use of existing multi-station balanced FM combining equipment will realize significant cost savings over the options of installing a separate multi-station IBOC combiner at their site or the alternatives of expensive high- and low-level combining techniques."

The test uses the existing Shively 6014 six-bay broadband panel antenna, which is configured with dual inputs. The design makes it possible to feed analog to the top half of the antenna and digital to the bottom half, simultaneously, while maintaining analog transmitter power.

"This not only enabled the digital signal to be tested in the presence of multi-

tests prove the feasibility of broadcasting analog and IBOC digital signals over the same equipment without combining them in a high-level injector type system and without causing interference.

"This process allows stations operating on combiners to forego many of the start-up and operating costs of IBOC implementation. Since the digital and analog signals are never combined, the losses associated with injecting the digital onto the analog carrier are eliminated."

Also, he said, the 90-percent digital and 10-percent analog signal losses associated with normal high-level IBOC combining are eliminated. For multi-station sites where AC power, air conditioning and space increases make standard high-level combining expensive, this technique provides a practical alternative, according to Surette.

The Cougar Mountain test used Entercom's Shively Labs Model 2540 combiner using a BE Fsi-10 IBOC signal generator, BE-Fxi-60 digital FM exciter coupled into a broadband FM-1C1 transmitter and Ibiqity DAB encoder and processing equipment. To keep the DAB signals within the Ibiqity spectral mask, the RF output of the DAB package was fed into a small Shively IBOC filter before coupling into the existing combiner module, Shively reported. ●

AM

► Continued from page 5
IBOC hybrid digital sound quality. ...

"We suggest that more portable receivers be tested and Ibiqity compile a list of the receivers that have adjacent channel interference problems or inadequate filtering. This is imperative because the AM broadcast bandwidth will be modified; whereas the FM broadcast bandwidth remains unchanged. Many portable receivers have bandwidths that exceed 6.5 kHz and will be adversely affected by IBOC hybrid signal.

"While it is true that many receiver manufacturers use very narrow filters, (as narrow as 3 kHz), all receivers should not be characterized as performing this poorly. Reducing the broadcast bandwidth to 5 kHz will, in effect, 'force' every receiver to have this poor analog bandwidth and all receiver manufacturers will be forced to install narrow bandwidth analog filters."

Robert C. Crane
President, C. Crane Co., Inc.
Fortuna, Calif.

"WGUL(FM) Inc. is the licensee of a number of stations, both AM and FM, in Florida.

"It has long been a supporter of IBOC, and has even offered its station WGUL(AM) as a test site at its own expense. However, WGUL(FM) Inc. fears that the future of IBOC digital is now being controlled by those who have no desire to see the AM band (and particularly smaller stations) succeed. ...

"It should be troubling to all broadcasters of good faith that Ibiqity is guided by America's largest broadcasters, some of whom think it perfectly appropriate to own revenue shares of 95 percent in markets like Sarasota-Bradenton, Fla., and whose bulk of ownership come from FM stations and 50 kW AMs.

"Ibiqity is an FM-concentrated company at its core with no real incentive to pull AM stations into parity with FMs."

Carl J. Marocco
Chairman/CEO,
The Gulf AM-FM Group
WGUL(FM) Inc., Licensee
Tampa, Fla.

Digital

► Continued from page 5

year-end subscriber total from 100,000 to 78,000. It estimates a \$900 million funding gap, and increased its projected 2002 EBITDA loss estimate by 5 percent from \$283 million to \$298 million and 2003 estimate by 17 percent from \$255 million to \$298 million.

"We worry there is a lack of brand awareness and the company will need to overspend to catch up" with rival XM, the analysts stated, noting what they call limited marketing support so far for Sirius other than NASCAR sponsorships.

Sirius is confident it will have between 300,000 to 400,000 units in the retail chain by the end of the year.

reflect the company's transition from building out its infrastructure to commercial operations, including sales and marketing activities.

In April, XM completed a public offering of common stock and grossed \$167 million, funding the company's current plan into the first quarter of 2003.

With close to 137,000 subscribers, the satcaster said it is beginning to better determine listener needs and starting to change its channel offerings, including offering a premium Playboy channel for an additional \$2.99 per month.

XM's second-generation lower-cost chipset will be released by the end of the year in a new plug-and-play product called SkyFi.

Panero said XM still has "excellent performance" even in markets where it now competes with Sirius.

Sirius to Introduce Updated Chipset

NEW YORK Sirius will introduce its second-generation chipset for satellite radios this fall. The news means Sirius will move from a black-box product to getting its technology in the dashboard. Fewer production costs should translate to lower radio prices.

The price-cutting has begun. Sirius introduced a \$75 national consumer rebate. Consumers can buy a Sirius system beginning at \$175. The special runs through Nov. 17.

XM's receiver partners previously lowered the price of some XM models.

The new Sirius chipset uses Agere

Systems' 0.13 micron, 6-Layer metal technology to integrate all digital portions of the receiver circuitry, excluding memory, into a single chip. Analog and mixed signal integrated circuits complete the set. This reduces the entire component dimensions to the size of a credit card, the company said.

The new chipset includes other improvements, including a 50-percent cut in required power and better heat management. Sirius says the design will lower its system cost by nearly 50 percent.

Panasonic planned to introduce Sirius radios this month. The product lineup includes a CR-SRF 100 universal adaptor kit that enables any vehicle with an FM radio to receive Sirius service.

— Leslie Stimson

XM Still Shows Loss; Moves Toward OEM Sales

WASHINGTON XM Satellite Radio is changing its focus from aftermarket retail sales to sales of original equipment in autos. Manufacturers are offering XM radios as factory- and dealer-installed options. President/CEO Hugh Panero says General Motors' commitment to offer XM radios in 25 models later this year is almost a re-launch of the XM product.



XM uses balloons at retailers and trade shows to mark its spot.

For Q2, XM reported consolidated revenue of \$3.8 million and EBITDA loss of \$79.3 million. For the same period a year ago, XM had no consolidated revenue and EBITDA loss of \$36.1 million. The variances between the financial results for the two quarters primarily

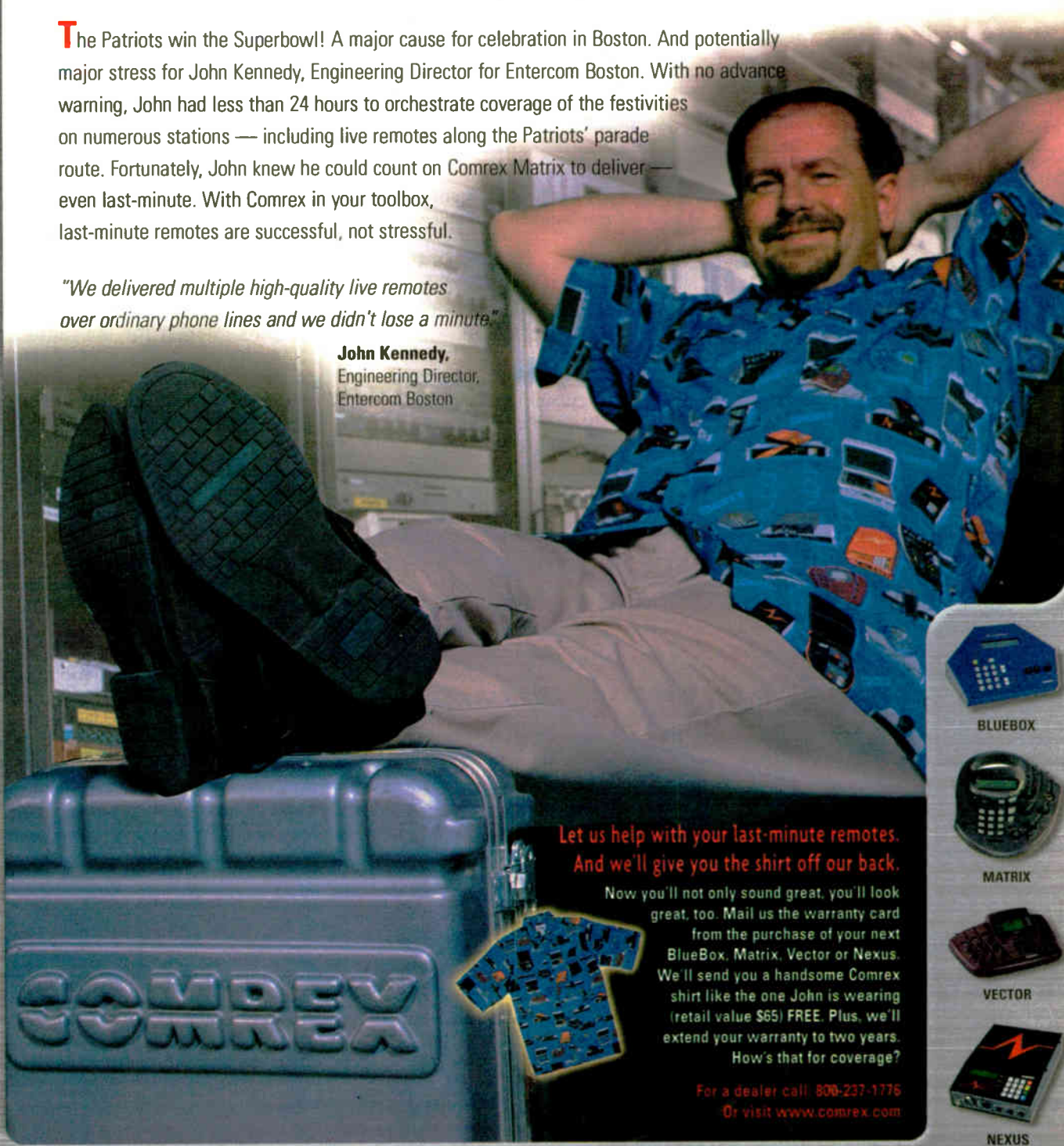
Last-minute remotes?

No stress for John Kennedy of Entercom Boston.

The Patriots win the Superbowl! A major cause for celebration in Boston. And potentially major stress for John Kennedy, Engineering Director for Entercom Boston. With no advance warning, John had less than 24 hours to orchestrate coverage of the festivities on numerous stations — including live remotes along the Patriots' parade route. Fortunately, John knew he could count on Comrex Matrix to deliver — even last-minute. With Comrex in your toolbox, last-minute remotes are successful, not stressful.

"We delivered multiple high-quality live remotes over ordinary phone lines and we didn't lose a minute."

John Kennedy,
Engineering Director,
Entercom Boston



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Michaels

► Continued from page 1

coped with uncertainty over Clear Channel's new direction, said Merrill Lynch broadcast analyst Keith Fawcett. The company tried to deflect attention away from Michaels by issuing its second-quarter earnings two days after the announcement, a week earlier than planned. The company's stock had moved back up somewhat, to \$34 a share, in late August.

Appointment of a new radio group CEO was expected to soothe Wall Street fears. Beyond that, the company is still on solid footing, Fawcett said. Despite the sluggishness of radio advertising, he said the performance of the radio group has been quite strong.

Why the shift?

According to Mays, Michaels' vision and foresight allowed the radio group "to develop the best, most well-positioned, unduplicatable collection of radio stations in the world. In his new role, Randy will be able to utilize his strength to enable us to react better to the advent of new technologies and their impact on the company."

In addition to selecting Michaels' replacement, the company's leadership was facing other decisions in August: whether to move the 40 or so employees from the Covington, Ky., office where Michaels based himself, to company

headquarters in San Antonio. According to Clear Channel spokeswoman Pam Taylor, little had been said about how the management shift will affect the office. "We're waiting to see what will happen." Hogan will be based in San Antonio.



Randy Michaels makes a point during the 1998 NAB Radio Show.

Many observers viewed the decision as a way for Clear Channel to remove Michaels from the critical radio driver's seat and deflect criticism the media company has received over its size and business practices. Michaels implemented many of those practices, said observers.

Complaints and recent legislation from Sen. Russ Feingold, D-Wis., may have

contributed to Clear Channel's decision. The bill is aimed at stopping large radio groups from accepting compensation from independent promoters in exchange for playing singles on the air.

"If (the complaints) take everyone's attention away from what needs to be done, whether they hold true or not, it doesn't help the company take itself to the next level," said media and entertainment analyst James Goss of Barrington Research. "It's a distraction."

Goss does not object to Clear Channel's practices. He said the use of promoters, who serve as intermediaries between music companies and radio groups, makes sense because a promoter acts as a filter.

"Playlists can be limited in the number of songs that can be played, and music companies compete for those spots," he said. "The goal is to have the highest number of listeners to sell advertising. Having an intermediary is one more step in making the right decision."

HQ concept

Goss also pointed to the geographic distance between Michaels and the rest of Clear Channel's leadership in San Antonio as a possible reason for the change.

Others sources say the company executives were tired of the radio group getting negative press. Known as a company with a conservative leadership, the Mays family, Clear Channel's majority shareholders, "doesn't like attention," said Tim Pecaro, principal at Bond & Pecaro, a Washington-based consulting firm contracted with the radio group.

Pecaro also believes the decision came down to needing a different person at the helm. "They're now further along the road. They're past the big acquisition binge."

Pecaro still sees Michaels playing a key role at Clear Channel by developing its Internet properties, an emerging area of interest for the radio group. Now that the issue of copyright costs seems close to being resolved, Clear Channel could take some of properties such as its talk programming to the Internet, Pecaro said.

Additionally, Michaels could focus on molding Clear Channel's plans to exploit radio to its fullest — whether it involves digital terrestrial or satellite radio. "I think what you had in the past isn't what you have now in radio," said Fawcett.

Former and current employees have commented in the past that Michael's colorful style drew attention to the company. An Internet chat room at a site called www.clearchannelsucks.org states that "Michaels has long had a reputation for being an outspoken micro-manager with a very vengeful attitude. He has had a penchant for technology management throughout his career, however, and he is credited for initiating the development of Clear Channel's network which allows DJs to voice track to many radio stations from a central studio."

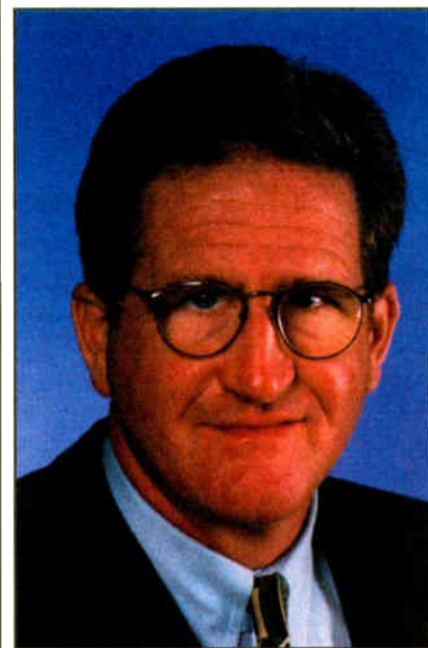
A well-known programming and management executive, Michaels has held virtually every position possible at a radio station, from the control booth to the CEO office. He moved to management in the early 1980s; in the following decade, he began serving as CEO of Jacor Communications. At Jacor he honed his skill of amassing clusters of stations to sell advertising packages, a practice Clear Channel adopted when it acquired Jacor in 1998, according to sources.

Both Pecaro and Fawcett credit Michaels with shaping the radio group

John Hogan Moves Up

SAN ANTONIO John Hogan, the new CEO of Clear Channel Radio, was its COO for the past year, assembling a team of senior and regional vice presidents and overseeing the New York and Los Angeles markets.

He has also worked as a senior vice president for the company, overseeing 15 regions including Los Angeles, Atlanta, Houston and Dallas.



John Hogan

Mark Mays, president and COO of Clear Channel Worldwide, made the announcement after what he called an extensive search.

"In the end, though, this was an easy decision," Mays said, citing Hogan's sales and management background, operating vision and industry experience.


"With much of the acquisition activity behind us, the overriding operating goal is to grow our business organically, leveraging assets now in place," Mays said.

into the organized operation it is today.

"He took advantage of the consolidation opportunities and used technology to leverage the company into higher operating margins," Pecaro said. The company, he predicts, now will focus on managing the approximately 1,200 stations it owns rather than consolidating further into smaller markets, the only areas of commercial radio currently untouched by Clear Channel.

Fawcett said the objective for Hogan will involve upkeep. "(The radio group) is not a fixer-upper," Fawcett said, prior to the Hogan announcement. "They need someone to take over and drive it forward."

In August, Michaels was keeping out of public view. Sources inside the company say the former CEO was "significantly missing."

After the Michaels announcement was made, just before the company announced its second-quarter results July 24, a source said, "You could have expected to see him featured on any number of conference calls since then, but haven't." Around the office, "It's certainly as if no one utters his name." 

Fluke Issues DMM Recall

EVERETT, Wash. Fluke Corp. says certain of its digital multimeters may be potentially unsafe. A recall affects early versions of its Fluke 175, 177 and 179 DMMs, those manufactured from Jan. 1 to July 12 of 2001.

If an "R" follows the serial number, or if the serial number is 79000001 or higher, the notice does not apply.

"When measuring AC voltage above 500 volts, the display on affected meters may be slow in showing a final, accurate measurement," the company stated on its Web site.

"The final reading may not be displayed for 6 to 18 seconds. During this delay, the meter may not indicate that high voltage is present, placing the user in a potentially hazardous situation. No injuries have been reported as a result of this situation."

Although the problem will not occur when measuring the U.S. standard of 480 volts or less, the company said, instruments should be returned for free repair. For information visit www.fluke.com/170recall or call (800) 260-4819.

Cross-Platform Campaign 'Unprecedented'

SAN ANTONIO Clear Channel Worldwide is trumpeting a promotion with Sony Electronics and ABKCO Records for a campaign to push the Rolling Stones Remastered Series and the Super Audio CD format.

"The campaign will harness the power of Clear Channel's radio division ... and will feature one of Clear Channel Entertainment's top productions of the year, the Rolling Stones North American

Tour," the company stated.

Clear Channel said its stations will run 288,000 promotional announcements for daily giveaways of Sony Super Audio CD players and the Stones series on hybrid Super Audio CD to coincide with the band's tour. Listeners can win a trip to a Rolling Stones concert.

Then Clear Channel, Sony and ABKCO will sponsor 22 local-market promotions to encourage listeners to go to stores to buy the Stones' Super Audio CD.

Mark Mays, president and COO of Clear Channel, called it an unprecedented multi-platform campaign.

"This project mobilizes the strengths of our assets to build interest in the Super Audio CD," Mays said.

NRSC Exhibits To Attract Members

SEATTLE For the first time in recent memory, the influential National Radio Systems Committee has a booth at a trade show.

David Layer said the standards-setting group is exhibiting at this week's NAB Radio Show to generate interest and solicit new members.

"I've been here for seven years; it's the first time since I've been here that we've done that," Layer said.

"In the fall and next year, we'll be working on IBOC standards," he said. Broadcast groups and other interested parties have a chance to influence that process by becoming NRSC members.

The committee has about 50 member organizations that are interested in U.S. radio. It is run by the NAB and the CEA, representing broadcasters and receiver manufacturers respectively.

Layer, director of advanced engineering for the Science and Technology Department of NAB, helps administer the group.

CLEARLY NOT FOR EVERYONE

Your Grandmother is certainly a very nice lady, but a Porsche is probably not her ride.

It's the same with processing: Some people should stick with the conservative stuff. Give them something too fast and they just won't know what to do with it.

Frankly, the new Omnia-6 is probably not for them. It's just too potent, too flexible.

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Omnia is used in 4 of 5 leading stations in New York, 2 of the 3 top stations in Los Angeles and 5 of 6 of the most listened to stations in the US. It's on the leading stations in Paris, all of the BBC's local FM stations in the UK, and the number one stations in Canada, Ireland, Germany, Finland, Australia, India, China, Denmark and Sweden.

WFUV

► Continued from page 1

concerned about the impact on a National Historic Landmark. The final determination of this case could set a precedent for this type of siting near an historical area, experts believe.

Fordham University began construction of the tower for the school's WFUV(FM) in 1994. It was to be 480 feet high. The partly built structure, now at 260 feet, is on the school's Rose Hill campus in the Bronx. It sits 150 feet from the property line of the New York Botanical Garden.

School officials say tighter guidelines governing radiofrequency radiation exposure proposed by the FCC in the early 1990s prompted the new tower project. The commission adopted the new RFR rules in 1997.

Dead-stop

Construction on the tower was stopped just days after it began when Garden officials notified the New York City Buildings Department and the FCC of alleged inaccuracies in the construction-permit application submitted by the school.

The Garden claims Fordham failed to disclose the proximity of the proposed tower to the 250-acre National Historic Landmark.

"(Fordham) wrote in the application that the site area was not significant from a historical, architectural or cultural standpoint. That's hardly the case," a spokesman for the Garden said.

The consulting engineer who filed WFUV's Environmental Impact Statement to the FCC in 1983, Stuart Meyer, wrote, "The site is not noted for its scenic or recreational value. Actual construction of the proposed tower will have negligible impact."

Fordham spokeswoman Libby Schmalz said the station's assessment was made in regard to "the site" and not the surrounding areas. She declined further comment.

Construction work was stopped with a bit more than half of the proposed tower completed. The radio station moved its antenna to the partly constructed tower in

stop the project. The Supreme Court for the state of New York refused to hear the case on appeal in 1996, saying the garden failed to prove it would suf-



Fordham University Campus. The tower is indicated by the red arrow.

2000 and continues to transmit from the location using special temporary authority from the FCC, operating at half of its permitted 50 kW capacity.

Garden officials claim the landmark's beauty is lessened by the tower looming over the skyline.

Karl Lauby, vice president for communications for the Garden, said, "The tower diminishes the experience of those visiting the Garden. It also violates the National Preservation Act by undermining the Garden's value as a landmark. Visitors who take a bird walk or forest tour are overwhelmed by the distraction of the tower."

The Garden is open to the public. It also is a research institution dedicated to the documentation and preservation of the earth's plant biodiversity, Lauby said.

The Garden has exhausted legal appeals in New York state courts to

fer any "significant economic harm" because of the project.

Subsequently, the FCC ruled that the tower would have an adverse impact upon the Garden and has held Fordham's CP in limbo, prohibiting work on the project while it debates mitigation measures and the environmental effects the tower would impose.

pages of information, including engineering exhibits for what it believes are feasible alternative sites.

Sources said the FCC likely will reschedule the meeting for this fall and hopes to guide the parties into a compromise.

"We cannot wait forever to finish the tower. The Garden people have submitted a list of additional potential tower sites. We are evaluating the additional sites at this time," said WFUV General Manager Ralph Jennings.

Negotiations between the school and the Garden continue, with Garden officials hoping the sides can agree on an alternative tower site.

Relocation cost

The Garden has agreed to pay two-thirds of the cost of relocating the tower if a suitable replacement site is found. The Garden commissioned engineering studies for several sites; none of those have been acceptable to Fordham University, sources said.

Lauby said one specific site holds a great deal of potential as an alternative. Neither side would disclose its location.

"The Garden is in the process of negotiating a purchase of the property. However, that's just one of the options we are exploring," Lauby said.

One option the Garden would like Fordham to consider is to rebuild the antenna atop three-story Keating Hall, where WFUV's old antenna once stood on the building's clock tower. Several engineering reports commissioned by the Garden indicate a new 45-foot structure with a new antenna would comply with

You can't get around the fact that the tower sits 150 feet from our property line and is visible from most areas of the Garden.

—Karl Lauby

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"Because of the FCC's declaration and pursuant to the National Preservation Act, an automatic federal review was triggered. Mediation had failed, so the FCC moved into a public consultation phase," Lauby said.

'No Tower, No Tunes'

The commission held a public hearing in New York in June to hear public comment on the matter. The forum featured eight hours of testimony from backers of both WFUV and the Garden.

"It was a bit contentious, but there was a preponderance of agreement that there should be an alternative to the current tower's location," Lauby said.

School officials said WFUV supporters wore T-shirts to the meeting emblazoned with "No Tower, No Tunes" to help make their presence more noticeable. They said more than 9,000 WFUV listeners signed petitions and wrote letters to the commission in favor of finishing the tower.

A formal consultation session among all sides scheduled for August was cancelled to allow for a 30-day extension of the comment period after the Garden filed approximately 1,500

the FCC's RFR exposure guidelines and give the station a larger coverage area than other potential sites.

"That's not in the equation. The structural integrity of the building would not permit it. And we believe there would still be the question of the radiofrequency radiation levels," Jennings said.

Sources close to the situation say four alternative tower locations are being considered. The options include building the tower elsewhere on Fordham's Rose Hill campus or at one of several industrial sites north of the school.

Jennings said the FCC is considering Fordham's concession to lower the height of the existing tower bordering the Garden from the original planned 480 feet to 380 feet to better suit the aesthetic nature of the area.

The station could still reach its core listeners with the reduced height, sources said.

Garden officials believe anything short of moving the tower from its current location is unacceptable.

"You can't get around the fact that the tower sits 150 feet from our property line and is visible from most areas of the Garden," Lauby said.



Seven Hot Signals - One Great Console

Pictured Above:

E. Curtis Johnson,
Program Director

Pamela Whitmire, aka - 'PK the Redhead'
Air Personality

Dave Case,
Chief Engineer



ALICE@102.7



Soft Rock 98.9



P.K.: Well, unlike some previous boards that I've used – I never have to beat on this console to get it to work. My music just always sounds great on it. And the board's features are great. Our engineers wired it so that I've got lots of extra sources on my B inputs so I can use my air studios to do production. And, they've got the remote keys on the right hand side of the board wired for EAS and even the back door intercom, which is really convenient.

The built-in talkback system is excellent, too. It really saves time and it's really fun to use it to annoy my co-workers in the other studios.

The console layout is uncluttered, with everything where I'd expect it to be. It makes it really easy for me to train part-timers on the board. Oh, and I LOVE the squishy push buttons.

Dave Case: Two years ago when I began this build-out I had a big decision to make. I was going to be able to throw out a hodge-podge of old consoles and buy all brand-spanking new boards. I knew that I wanted to standardize on one manufacturer, and budget was definitely an issue – but still, which should I buy?! Frankly, I was all set to go with another brand that I was more familiar with until Dan Braverman, President of Radio Systems, asked if he could stop by. Boy was I surprised when he arrived with one of his 18 channel consoles almost literally under his arm.

While I was previously aware of Radio Systems' older RS series line of boards, I hadn't seen the Millenniums before. And within a half hour of Dan's presentation we were sold on the console's construction, features, specification and looks. Of course, two hours later Dan was still talking, so finally we had to take him out to lunch to get him to shut up.

In the end, we bought and installed thirteen 18 and 12 channel Millennium consoles, and now 2 years later, I can honestly say that we've never regretted our decision. These consoles are really unusually well featured and optioned for inexpensive consoles. Every board is equipped with 4 extra mix-minus outputs, which are probably more than we need. This freed the TEL bus up for any special phone mixes that I need, and it's nice to have some extra outputs if I ever need them for additional connectivity in the future.

I'd like to be able to comment on the serviceability of our Radio Systems consoles, but I can't. That's because since they've gone on the air, they really haven't needed any! Aside from some initial shipping problems, which the factory fixed for us right after delivery, I've got some consoles that I don't even think we've opened up a second time since they've been installed.

We were also able to use Radio Systems' StudioHub wiring system for this installation – which was really a lifesaver. We were really under the gun time wise, and StudioHub made the entire 13 studio complex and engineering area go together quick and easy. Another real time saver was that with all the inter-studio cables being CAT-5, we were able to utilize local telephone and network crews to install this wiring. And those guys are much easier to come by than degreed broadcast engineers, who you don't need with StudioHub.

Oh yeah, and one more thing. I love the fact that all the illumination in these boards uses high-brightness LED's. Thank God that with over 150 console channels in my plant – I have yet to have to replace even one light bulb!

E. Curtis Johnson: Mainly, I like the looks of the Millennium consoles. I think that my disc jockeys have to look at a board and say, "you know what - these look good." They have kind of a soft touch to them, so it's not like dealing with a piece of hard plastic. And they look cool with the track lighting.

The ergonomics on them feels right. They're the right size. Some boards try to cram too many things in which means the faders are too close to where the buttons are. When push comes to shove, you end up pushing the wrong button. Here, everything's just right!

There's very little maintenance on them. Of 13 units we bought, I've only seen one on the bench, and that was for only a couple of minutes. The bottom line is, in 2 years of using these boards I have never had a disc jockey be unable to do his or her job—because these boards always work.

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Workbench

Radio World, September 11, 2002 Past columns are archived at www.rwonline.com/reference-room

How to Expand Scrunched Screens

by John Bisset

We'll start off with a simple yet effective tip from Fred Greaves Jr., director of engineering for Susquehanna Radio Corp.

Over the years, a lot of engineers have written utility time saver programs for PCs in BASIC. Under Windows 2000, a lot of these programs run with "scrunched" screens.

There is a solution.

Thanks, Fred, you've saved a lot of us from squinting.

★★★

If you have a newer transmitter, this is a good time to replace the "memory" battery.

As shown in Fig. 1, these batteries are usually located near or on the control card.



Fig. 1: Radio's secret power source? No, but if you don't replace the 'memory' battery in your transmitter on a regular basis, problems can result.

The way around this problem is to add a first line in the program as follows:

```
screen 0,0
```

Behold, a full screen!

Windows 2000 apparently does something weird to the screen sizing.

sorts of weird things can happen, including powering up with zero power out.

If you don't know the effects caused by these batteries going dead, you can spend several hours of tail-chasing as you try to fix a non-existent problem.

★★★

While you're at the site, check your surge suppressor, if you have one.

Fig. 2 shows an LEA model that provides go/no go green indicators to show the status of each protection module. Remember, if a light is out, swap modules to make sure it's not a bulb problem (though the neon indicators seldom fail).

★★★

Joe Portelli works for WMLP(AM) and WVLY(FM) in Milton, Pa. A picture in the May 8 *Workbench* of an electrical panel with a warning sticker caught Joe's eye.

He identified the panel as a Federal Pacific Electric model, with Stab-Lok breakers. Joe reports that the breakers in these panels have been shown to have a significant failure rate and should be checked regularly. The double-pole breakers common at transmitter sites have been shown to especially troublesome.

While there hasn't been an official recall notice made by the Consumer Product Safety Commission, owners of these panels may want to consider replacing them. There is some excellent information on this issue at www.inspect-ny.com/fpel/fpepanel.htm. For a sampling of what has been written on this topic, do a Web search for Federal Pacific Electric.

★★★

Dale Tucker sells advertising for Radio World and is a lover of broadcast nos-

algia. He recently passed on a neat little tidbit from Bill Brister, chief engineer of KETH(TV) in Houston.

Bill was responding to a question on a Broadcast Net listserv as to the origin of the BNC connector. No, it's not British Naval Connector. Amphenol engineer Carl Concelman and Bell Labs engineer Paul Neill co-invented the BNC connector.

BNC? Of course it's (B)ayonet (N)eill (C)oncelman connector. The threaded version, the TNC, is (T)hreaded (N)eill (C)oncelman connector.

★★★

This time of year is great for outside construction, but the good weather also increases your chance of backhoe fade.

Fig. 3 on page 14 was a shot taken at an AM site. A close look reveals broken copper radials. In the lower right of the trench is what's left of a satellite coax.

See WORKBENCH, page 14



Fig. 2: Green indicators show the status protection modules on your surge suppressor.

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FACILITY PROFILE

Storefront Radio Opens in Erie

by Mike Hedrick

"Erie, Pa., is a town on the verge of a major facelift. And with a beautiful waterfront at its disposal, it's a great setting for growth."

The speaker is Mark Stennett, vice president of engineering for NextMedia Group. The city also has a new radio attraction: a broadcast cluster located on the street level of a historic department store, enclosed in glass and open to public eyes.

The storefront radio project began last year when NextMedia decided to consolidate five stations and a new radio license for the Erie area in a single location.

Rick Rambaldo, vice president/general manager and partner in NextMedia, searched for a site and found something special: the Boston Store, an old department-store building, opened in 1886. It was vacant from the late 1980s until 1995.

"It's a historic site in the heart of the city," said Rambaldo, "and a very recognizable building. I've been told that generations of Erie-ites would meet under the huge bronze clock on the main floor of the building. 'I'll meet you under the clock' was used when one would meet a friend downtown."

The store closed in 1979, but in the mid-1990s a development firm invested \$20 million in renovations, so when Rambaldo surveyed the building in 2001, he found it complete with modern heating and lighting.

In the action

"I was excited; we would be downtown in the center of it all," said Rambaldo. "When I walked through the building, I was impressed with the quality. Everything except the exterior was brand-new. It had huge pane window displays running along State Street, and I wanted to put our on-air personalities right on the street." State is a main boulevard.

Hoping to improve and increase activity in the town's downtown while combining assets to create economies of scale, Rambaldo and Stennett designed a project that would incorporate six stations in the first floor of the old store and make it a public attraction. People could walk by, watch radio broadcasts in progress and interact with the talent.

"Our disc jockeys, now more than ever, feel like they are in touch with their community and have the ability to interact with listeners," Rambaldo said. "This is because of our 'windows on the world.' We broadcast at street level, with floor-to-ceiling studio windows, in the heart of Erie. Being interactive and accessible to the public keeps our listeners loyal."

"We pulled out all the stops," said Stennett, who supervised the implementation of the technical facilities, "with speakers on the street, windows and a complete facelift to the public space outside so people can sit on the new benches and take a look at what's going on. The DJs can flip a switch and talk to whoever's outside at the moment."

Three studios are behind windows along State Street; the other three have



'Erie's No. 1 Hit Music Station' offers a sidewalk-level view of the world going by.

windows opening on the atrium inside, which is 25 feet across and 30 feet tall. NextMedia is using the location

to its full advantage by designing each studio with a plug-and-play setup, so it can switch locations if necessary.

Workbench

► Continued from page 12

The Radio Doctor, Lyle Henry, does contract and project work in California. He has repaired short pieces of RG-17 lines using thin copper tubing from a hardware store soldered to the broken center conductor, and then some thin copper sheeting for the shield, using a hose clamp to secure the sheeting at each end.

Thick packing foam that can be cut with a knife will work to insulate the splice. Covering the splice with a big piece of heat shrink probably will hold the splice for years.

Although not a permanent fix, splices like this will get the station back up and running.

★ ★ ★

With daylight-saving time coming to an end toward the end of October, I've encountered a few questions from engi-

neers programming VRC-2000 systems for day and night pattern changes. Bob Newberry, the RF supervisor for WBRC(TV) in Birmingham, Ala., offers perhaps the simplest method.

Enter two extra pattern change times for April and two for October. At the appropriate time, you activate the standard time pair, and deactivate the DST pair. You'll end up with a total of 28 pattern change entries. This process also simplifies things for the air staff.

An interesting Web site about daylight-saving time is found at <http://webexhibits.org>. It

News/talk station WJET(AM), Jet Radio 1400, sits in the middle studio on State, but when one of the other stations has a major event or celebrity guest, it can switch with Jet Radio and sit in the spotlight. Directly behind the three studios facing State is a space that contains a bleacher area for 50 people, which allows for town-hall meetings and similar gatherings or backstage passes for listeners to watch national touring acts perform.

Rent to own

The project began with the renting of studio space in July 2001 and ended with the final station going on-air in January. The buildout cost \$1.3 million. NextMedia will buy the studios in 2003. Other businesses in the building include a gift and card shop, the Erie Chamber of Commerce and a rental office for the apartments on the upper floors.

The 13,000-square-foot facility houses rock station WRKT(FM), top-40 WRTS(FM), oldies WFGO(FM), news/talk WJET(AM), sports station WFNN(AM) and the new active-rock WRPL(FM).

"When you're pulling stations into a

See STOREFRONT, page 22 ►



Fig. 4: Radio World cameras catch the author hard at work during the SBE Chapter 37 picnic.

includes a calculator so you can figure out the exact dates of DST for future years.

★ ★ ★

We'll wrap up this issue with a neat little item from Robert Gonsett's CGC Communicator newsletter.

It's a fun online tool provided by V-Soft Communications. You can specify a five-digit Zip Code and see a list of FM stations likely to be received at that location.

The free tool uses the FCC's F(50,50) propagation algorithm; the receiver coordinates usually are those of the local U.S. Post Office. If a station is directional, its pattern is taken into account.

Visit www.v-soft.com/NBT/default.asp.

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

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

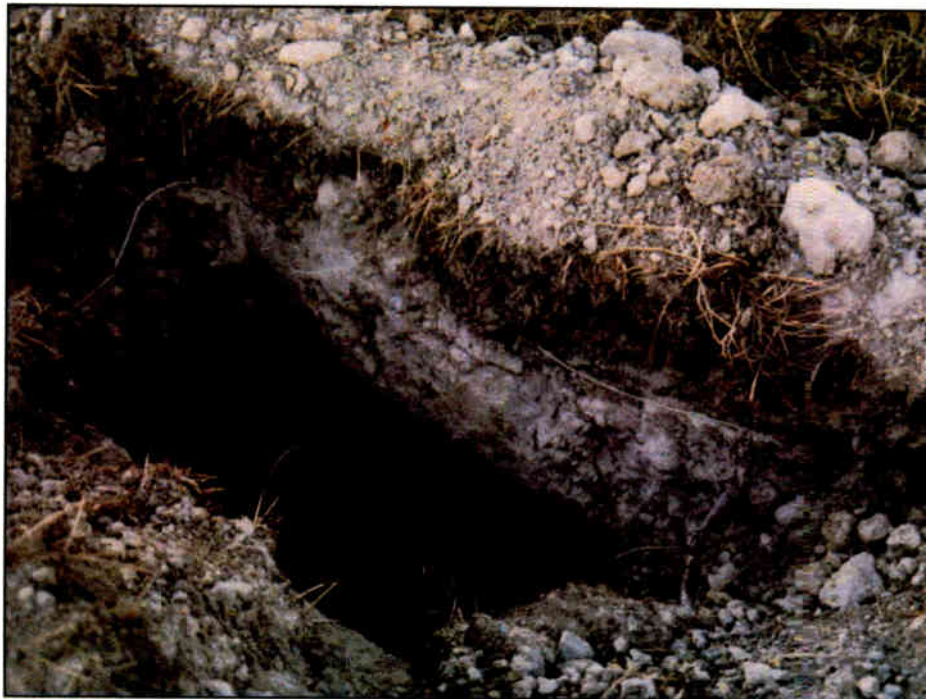
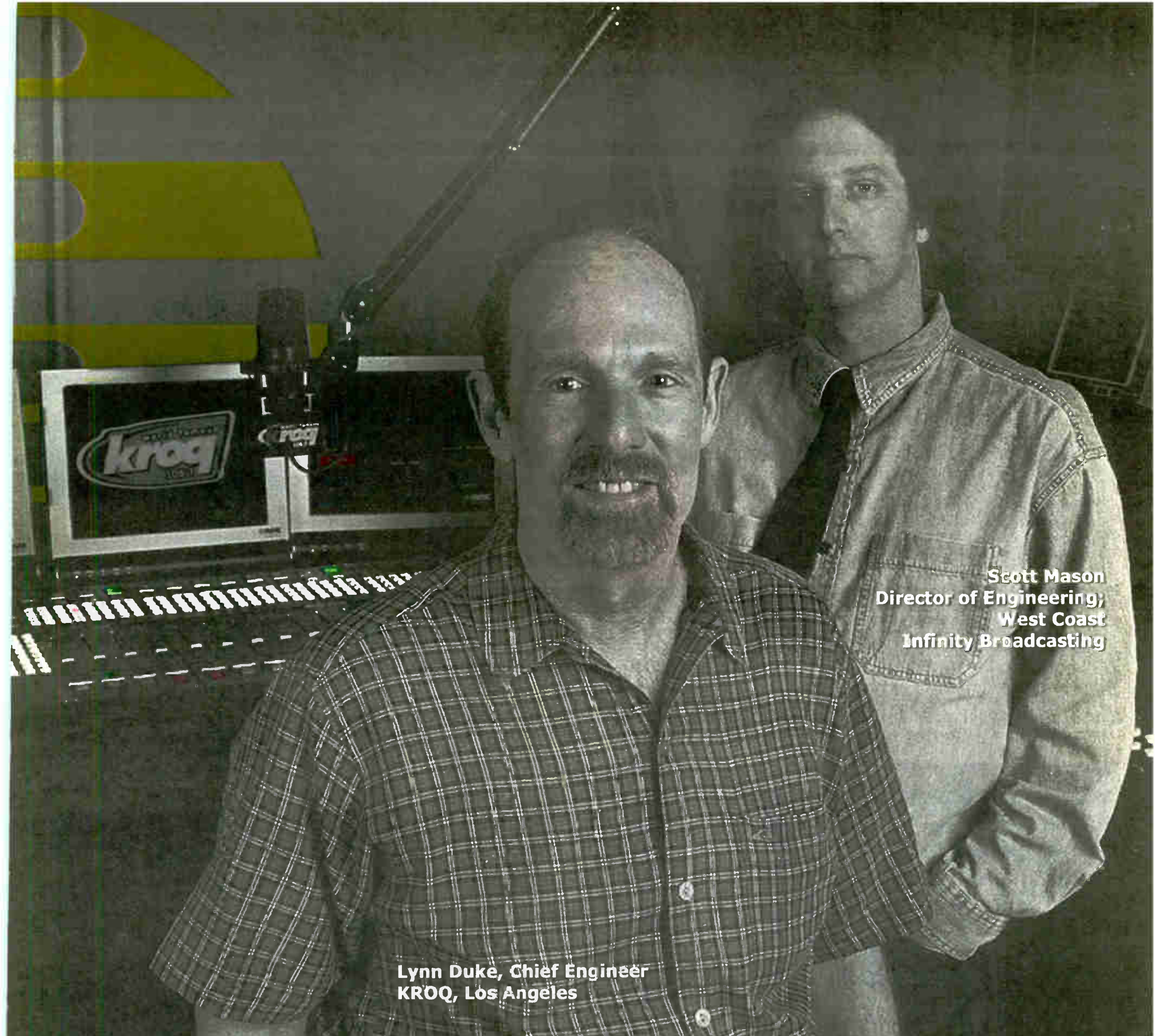


Fig. 3: The source of backhoe fade. This trench produced broken radials and satellite coax.



Scott Mason
Director of Engineering,
West Coast
Infinity Broadcasting

Lynn Duke, Chief Engineer
KROQ, Los Angeles

The New Face of Digital

"We knew we wanted to go the digital route. So when considering cost and functionality... we really made the best financial decision." - *Scott Mason*

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KLOTZ DIGITAL AMERICA / SBE Chapter 47

PRODUCT EVALUATION

Search Tool Imports From FCC

by Barry Magrill

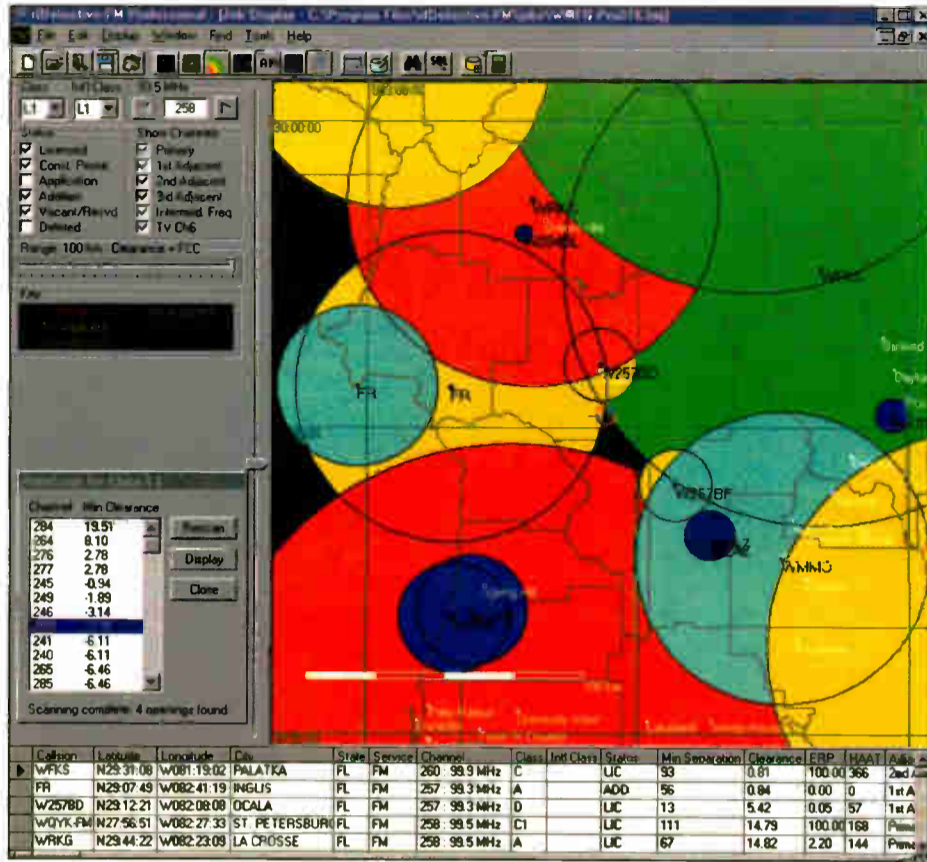
Would you like to own a program that allows you to import data directly from the FCC database as soon as it is released? Such a program would allow you to pick up the daily changes in the FCC database instead of waiting for a weekly update. You would gain additional time to plan strategies and lose the maintenance fees for updates.

The program would tell you who owns the station down the block, whether another FM will fit in the market and if it is possible to apply for an increase in power.

I have had the pleasure of testing a new FM search tool recently. It is fast, accurate and capable, and it will answer these questions. It works in a Windows environment and is easy to install. I have versions running in both Windows 95 and ME. It also features SQL search capability for advanced users.

Helpful functions

The tool, called rfDetective-FM, is made by rfSoftware Inc. The company supplied me with copies of the program to use in exchange for reporting bugs. I was an alpha tester and my name is listed in the program credits for that reason. Joe DiPietro of rfSoftware Inc. is a friend and former



rfDetective finds an opening for a 100-watt LPFM.

business partner but I have no financial interest in his firm.

rf-Detective-FM allowed me to

determine which competing LPFM stations were filed illegally or erroneously. I obtained this information by using the powerful statistical capabilities of the program.

Product Capsule:
rfSoftware Inc.
rfDetective-FM Search Tool

Thumbs Up

- ✓Fast, no-cost data updates directly from the FCC
- ✓Powerful statistical capabilities help ferret out defects in competing applications
- ✓Advanced graphics allow easy generation of Area-to-Locate studies

Thumbs Down

- ✓Fair amount of proficiency needed to use the advanced statistics
- ✓No implementation of contours

Price: \$3 995

For information, contact rfSoftware Inc. in Florida at (352) 336-7223 or visit www.rfsoftware.com.

The tables can be exported to a spreadsheet program such as Microsoft Excel.

A nationwide database, about 5 MB in size, supplies information to the program. The Pro Edition can build its own database directly from files downloaded from the FCC Web site.

To focus on a particular area of interest, the program builds a "job," a mini database created from the nationwide database. These jobs are small enough to be e-mailed and so can be distributed to other persons easily. A free Reader Edition of rfDetective allows others to review these jobs easily.

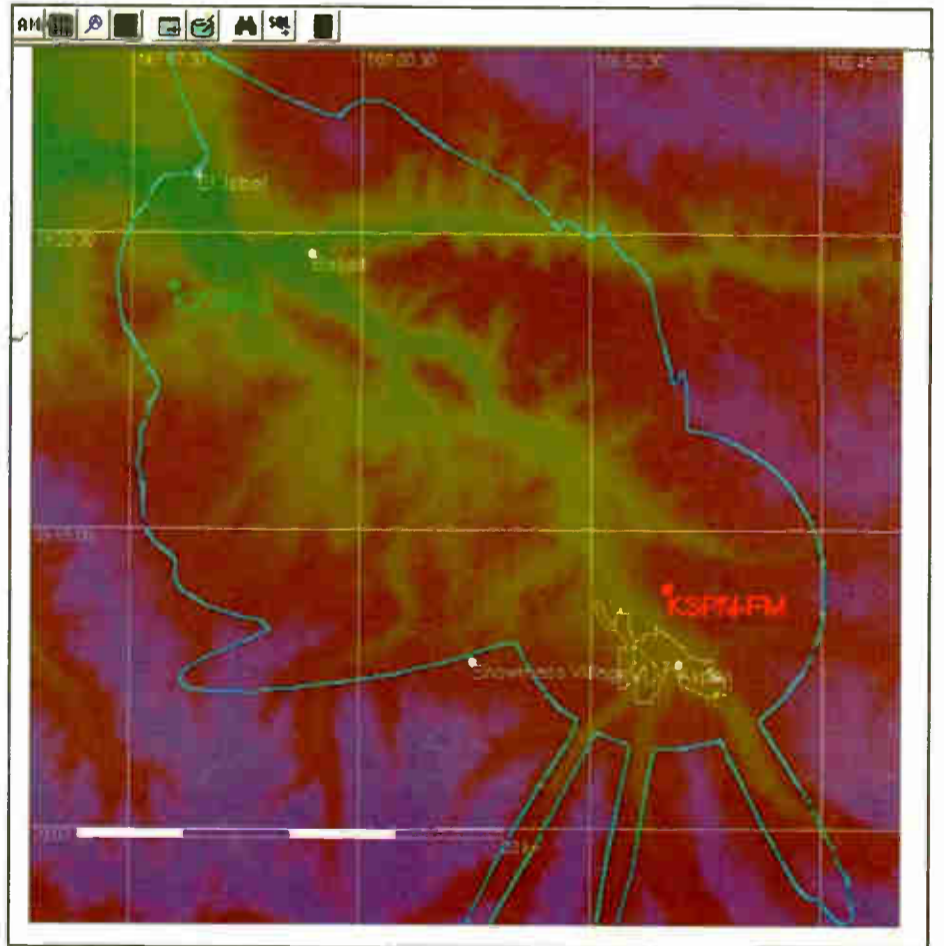
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Shown is the service-grade contour of KSPN in Aspen, Colo., over three-second terrain data.

This ability to perform statistical searches on the FCC engineering database allows one to find parties who have filed multiple applications even though they do not use the same name. It can answer questions such as "How many stations are owned by the XYZ Corp.?" and "How many of those are located in Florida?"

The program allows you to do "what-if" scenarios by allowing you to hide, add or edit stations in a job. The engineer has a great deal of versatility because he can enable or disable various classes of interference such as allotments and vacancies.

The tool also will search for vacancies
See RFDETECTIVE, page 22 ▶

You Read It Here...

One Year Ago

In the wake of the World Trade Center collapse, five New York City radio stations are faced with rebuilding transmission facilities, following the loss of the 360-foot broadcast mast atop the north tower in the attack of Sept. 11.

Gone were the eight main television antennas, auxiliary antennas and a master FM antenna, which had been transmitting since 1980.



FM stations WKTU, WPAT, WKCR, WQCD and WNYC lost transmission facilities in the building collapse after suicide pilots flew two commercial jets into the 110-story twin towers. ...

The radio industry reacted with dismay and sympathy to the events.

Joe Riley, president of the New York State Broadcasters Association, said he was proud of the way broadcasters handled the tragedy.

"All of the New York City stations did exactly what was expected of them. They had prepared for an emergency situation and carried through their coverage plans," Riley said. ...

Los Angeles County emergency communications committee chairman Richard Rudman encouraged stations to postpone EAS tests for a few days to avoid misunderstandings, according to the online newsletter CGC Communicator. ...

In Washington, one of the hijacked planes crashed into the Pentagon. News stations went wall-to-wall with crash coverage and most music stations dropped their regular song rotations and cut back or rearranged commercial blocks. ... Federal offices closed, the NAB sent its staff home, RTNDA cancelled its Nashville trade show and XM Satellite Radio delayed its launch events planned for Sept. 12. The Audio Engineering Society postponed its convention planned for New York, in part because the Javits Convention Center had been taken over by emergency personnel. ...

NAB President and CEO Eddie Fritts thanked stations for their "tireless and outstanding" services to listeners and viewers. He saluted stations sponsoring relief efforts and blood drives.

"N.Y. Radio Rebuilds After Attack"
by Randy J. Stine
Sept. 26, 2001

MARKET PLACE

Site Analyzer Series Expands

The Bird Site Analyzer 4000 is new to the company's Site Analyzer Series.

Introduced at the spring NAB convention, the handheld device is used for checking antennas and feed-line systems for faults and other problems. The unit performs sweeps on the line and antenna systems, checking distance to fault, match, VSWR and other characteristics.

A previous model was used primarily in the cellular business and did not go below 806 MHz. The new model reads from 25 MHz to 4000 MHz.

For information contact the company in Ohio at (440) 248-1200 or visit www.bird-electronic.com.




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For more information on the new **FS10** IBOC generator, contact your Broadcast Electronics representative.

See us at the NAB Radio Show Booth #616

Buff Recreates a 1946 Classic

by Mario Hieb

For nostalgia buffs, a highlight of this spring's NAB convention was a beautiful re-creation of a 1946 General Electric BT-11-B FM exciter, lovingly constructed by Steve Hemphill of Solid Electronics Laboratories.

"I always had a fascination with the technology," Hemphill said. "I decided to build the transmitter because I was completely enamored with the Phasitron FM modulation concept, which was developed by Dr. Robert Adler of Zenith Radio Corp. in the 1940s."

Mesmerizing

Adler, better known for another of his inventions, the TV remote control, had the idea of generating a phase-modulated carrier by using a highly focused electron beam produced by a special electron tube, the Phasitron.

"The carrier, influenced by an external magnetic field produced by a deflection coil placed around the Phasitron tube, totally mesmerized me," Hemphill said. "Crystal controlled wide-band FM with a minimum of components. Wow. What a concept!"

The design later was commercialized by General Electric Co., which used it in its early FM broadcast transmitters.

Hemphill started in the industry as a design engineer for Gately Electronics in

Havertown, Pa., which made audio consoles and equipment for the professional tape- and disk-recording industries.

He had an interest in high-

quality FM broadcast audio and founded his own company, Solid Electronics Laboratories, in 1973, originally to market FM exciters, stereo and SCA

quality of construction.

All original documentation from GE had been lost. But a station alumni, Dave Weston, provided Hemphill with copies of 35 mm slides of the front and rear views of the original GE transmitter, which he had taken as a student in 1968. These photos allowed him to re-create the panel layouts.

with the power supply components that I needed."

Meyer at Belar Labs offered Steve use of the company's sheet-metal shop, where he produced the chassis and panels. Hemphill made production templates and silk screens for the project and had custom coil shield cans made.

"I also had a special Allegheny MU-metal shield can constructed for the Phasitron tube so that the mechanical design would remain original," he said. "I

I designed and hand-wound all of the RF multiplier coils and transformers. ... I even had to hand-wind the Phasitron modulation coil. It's 4,000 turns of No. 36 wire.

— Steve Hemphill



Admirers Geoff Mendenhall of Harris Broadcast, Arno Meyer of Belar Electronics and Dave Hershberger of Axcera pose with Hemphill's project.

Photo by Geoff Mendenhall

"I had been working on the project for about six months. Bill Gillman (another Phasitron aficionado) in Salt Lake City sent me an original GE instruction manual for a model BT-1-A transmitter, which is a 250-watt version that used the same Phasitron modulator panel as the 10-watt version that I built.

"Thanks to Bill and his donation of the manual, I was able to replicate most of the original circuitry and layouts."

Parts

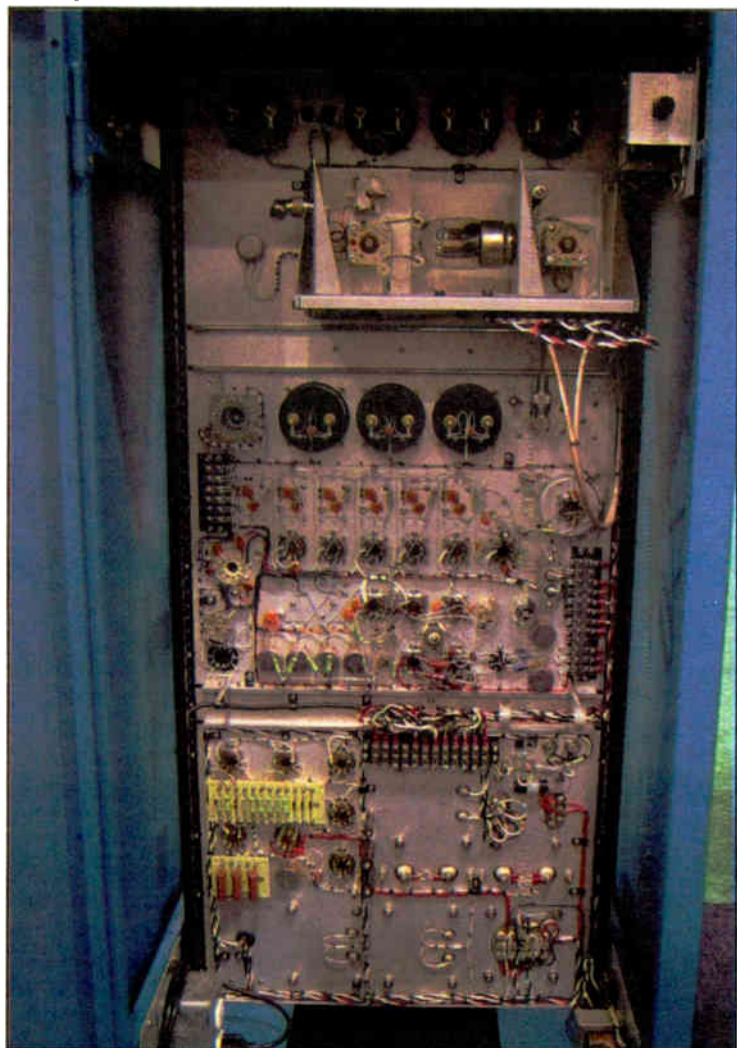
Hemphill also was able to find original tubes and some components from suppliers on the Internet.

designed and hand-wound all of the RF multiplier coils and transformers. No details were provided by GE on these items, so I had to do them from scratch.

"I even had to hand-wind the Phasitron modulation coil. It's over 4,000 turns of No. 36 wire. I had to review Maxwell's equations on flux density to calculate the design of this coil."

The finished product, displayed in the Belar booth at the NAB show, earned Hemphill a "Cool Stuff" Award from Radio World. It also has cost him more than \$7,000 to date.

"If I had known that it was going to go to this level of



Rear View

Photo by Geoff Mendenhall

generators and related accessories. His designs ultimately were used by Singer Broadcast Products, which later was acquired by CCA.

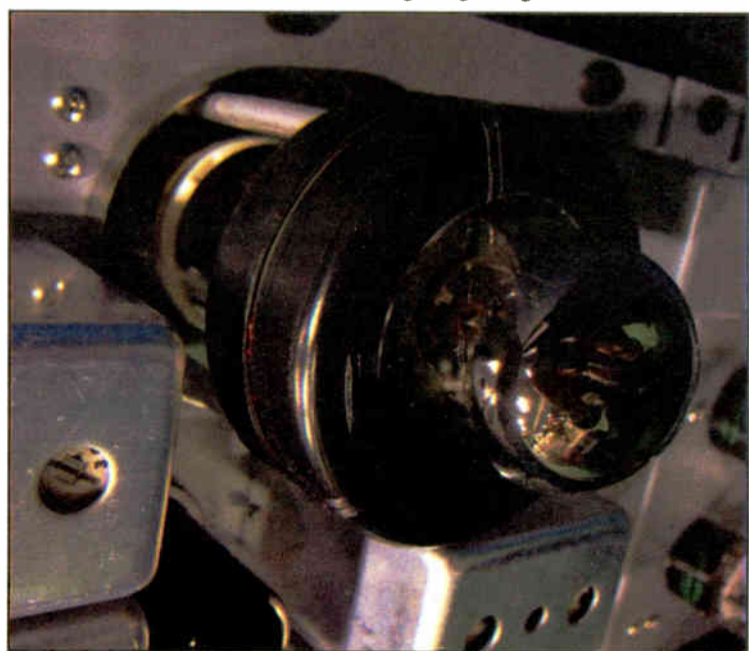
He now markets an FM broadcast composite processor and low-pass filter, the Model DCP-1A, which has been exhibited at NAB in the past, and does design and consulting work for Arno Meyer at Belar Electronics Laboratory. Hemphill also has a restored Gates BFE-10C transmitter in his exciter collection.

But the seeds of the GE recreation were planted a long time back.

"My high-school radio station, WHHS(FM) in Havertown, Pa, my home town, originally went on the air in 1949 with a GE BT-11-B transmitter," Hemphill said. "I believe that WHHS was the first noncommercial high-school FM licensee on the air in the United States.

"The original unit had been replaced in 1969, due to the obsolescence of Phasitron tubes, with a Gates model BFE-10C 10-watt transmitter by the time I got there," he said.

Hemphill recalls the technical adviser, Charlie Higgins, speaking fondly about the GE unit and its robustness and



The GE Phasitron tube is shown mounted inside its phase-modulating coil.

Photo by Geoff Mendenhall

"One local supplier in my area, Fred Chassey Electronics, actually had an old GE 1 kW AM rig, which he allowed me to part-out," he said. "I was able to obtain many original parts used in the FM version of the GE. Fred also supplied me

expense, I am sure that I would not have started it," he said with a laugh. "You can see in this experience that love and good sense are mutually exclusive."

To learn more about the Phasitron, visit www.w9gr.com/phasitron.html. ●

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What's Your Importance Quotient?

Feeling Small? Here's a Simple Way to Assess Your Personal Standing in the Universe

by Skip Pizzi

Looks like my role as scourge of the IBOC camp has been taken on by others with more clout and influence. So it's time to move on to another project — like figuring out how to become someone with more clout and influence. We'd all like to have those, right?

After taking this simple test, you'll know what you'll have to do to gain clout and influence.

As with any project that involves movement from one place to another, it's essential to determine with substantial precision the point from which you are starting. Therefore I present the following test of your "IQ" (*Importance Quotient*). After taking the following simple test, you will know just where you stand in the grand scheme of things, and thereby know how much work you'll have to do to gain clout and influence. Let's begin.

- 1) On how many people's speed dials does your home number appear?
 - a) 0 to 2
 - b) 3 to 5
 - c) 6 to 10
 - d) 11 or more
- 2) How many NDAs (non-disclosure agreements) have you been asked to sign?
 - a) None
 - b) None that wasn't intended to stimulate a leak
 - c) 1 to 5 (real ones)
 - d) I'm not at liberty to disclose that information
- 3) How many times have you been audited by the IRS?
 - a) None
 - b) Once, but they ended up owing me money
 - c) 1-3 times
 - d) 4 or more times (1 point bonus if handcuffs were involved)
- 4) Have you ever been sued?
 - a) No
 - b) Only by former spouses
 - c) Yes, but the case was dismissed
 - d) Yes, and the story became a Hollywood screenplay
- 5) Have you ever been invited to testify before a congressional hearing?
 - a) No
 - b) Yes, once
 - c) Yes, twice or more (it's now accounting for a significant portion of my current income)
 - d) Not since joining the Witness Protection Program

- 6) Have you ever heard the words "It's Morley Safer calling. He wants to interview you for '60 Minutes'"?
 - a) No
 - b) Yes, but it ended up on the cutting-room floor
 - c) Yes, and the piece actually ran
 - d) Yes, and my voice and image were disguised

- 7) Have you ever been the subject of an artistic creation?
 - a) No
 - b) Yes, but it was my child's elementary-school project
 - c) Yes, but I really needed the money at the time and I'd rather not talk about it now
 - d) I'm the one Carly Simon was

singing about in "You're So Vain"

- 8) Have you ever been an adviser to an elected official?
 - a) No
 - b) Does a student-government representative count?
 - c) None that weren't subsequently indicted
 - d) I am not at liberty to disclose that information
- 9) Are you now or have you ever been a member of Mensa?
 - a) What's Mensa?
 - b) Never
 - c) Possibly, I can't remember
 - d) Mensa is my life
- 10) Finally, how would you categorize your life's most impressive achievement to date?
 - a) My amazing children
 - b) My incredible personal wealth
 - c) My vastly over-inflated ego
 - d) Did I mention my incredible personal wealth?

OK, pencils down. Now tabulate your "IQ" score. It's easy.

Give yourself one point for every (a) answer, two points for every (b) answer, three points for every (c) answer, and four points for every (d) answer. Let's see how you rate:

If you scored less than 15 points, you are advised to try a career in the monastic life.

The Big Picture

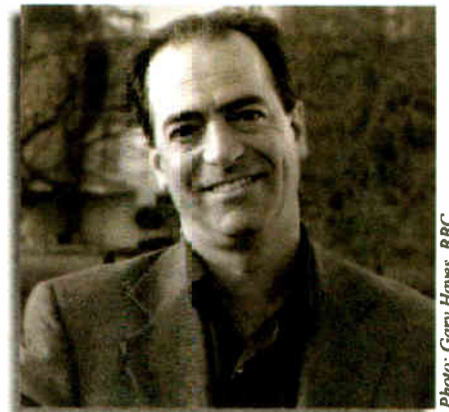


Photo: Gary Hayes, BBC

by Skip Pizzi

If you scored between 15 and 25 points, you should probably hire an agent (a good one — you'll need it).

If you scored between 26 and 35 points, you show signs of extreme personal aggrandizement. Consider running for public office.

If you scored over 36 points, Zaphod Beeblebrox will be calling shortly to invite you to lunch. (If you don't get that, well, obviously that's one reason why you didn't score over 36 points, and perhaps you never read the Douglas Adams book or heard the BBC radio adaptation of "The Hitchhiker's Guide to the Galaxy.")

So now you know the place you occupy on the importance spectrum. Or at least on the *self*-importance spectrum. But isn't that the most important criterion of all?

Skip Pizzi is contributing editor of *Radio World*. 

BUSINESS DIGEST

Comrex Opens New Doors on Old Base

Comrex is in new facilities in Devens, Mass., not far from Boston.

The company, which makes codecs and related gear for remote audio use, had outgrown its offices in Acton, Mass., and could not easily add on to that building. The new



The New Comrex Facility

building, which Comrex owns, is on the grounds of the former Fort Devens military base, which has been converted into an industrial park, residential area and technology park. The new building has approximately twice the space of the old. The company declined to publicize the cost of the building.

"This location is closer to the majority of our employees, thereby reducing their commute," said Kris Bobo. The company threw a party in July attended by employees, customers and vendors.

Its toll-free number does not change. The new main number is (978) 784-1776 and new fax is (978) 784-1717. Test-line numbers could not be call-forwarded. To test a codec, users need new numbers that are available at www.comrex.com.



Dressed in a Comrex shirt for the opening party, Celia Hurvitt inspects her reflection in a steel drum.

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Storefront

► Continued from page 14

consolidated place, you've got a hodgepodge of systems," Stennett said, identifying one of the build-out's main problems. With an opportunity to start over, NextMedia implemented a few overall standards. The company chose a Broadcast Electronics Audio Vault II automation system. The infrastructure and wiring was done in a star configuration, meaning all studios have "home runs" of multipaired audio and logic cables concentrated in a central engineering rack area. This makes managing connections and adding services later a simple task.

Instead of employing the old stations' existing consoles, NextMedia decided to go with Audioarts R60 consoles; WJET received a Wheatstone A2000.

At the transmission site, the stations use various transmitters. WRKT uses a 4.2-kW Harris transmitter with a QEI backup. WFGO and WRPL use Nautel equipment, at 3 kW and 2 kW, respectively. WJET has a 5-kW Nautel, and WFNN uses a 5-kW Harris transmitter. The most powerful station, WRTS, has a 20-kW Continental. No new transmitters were added.

Stennett and Rambaldo describe the project further:



RW: What was the purpose behind the project?

Stennett: NextMedia acquired Rambaldo Communications and Jet Broadcasting in the Erie market in 2000. With a total ownership spanning three studio locations at opposite ends of town, it was difficult for one GM to manage. Consolidation was mainly for

ease of management.

Rambaldo: The purpose behind the project was to consolidate all six of our radio properties, which were housed in three separate locations, into one brand new state-of-the-art facility. The move to the Boston Store helped NextMedia build a platform that provides a strong infrastructure that allows us to grow with changing technology.

RW: Who performed the installation and wiring?

Stennett: Jim Hibbard of Pacific Mobile Recorders and myself. Furniture was provided by Vince Fiola of Studio Technology. Local wiring assistance was provided by Chief Engineer Mark Himmler and Assistant Engineer Matt Sharer.

One problem always facing the local engineer is that, consolidation or not, the rest of the facilities need attention.

Rambaldo: The installation and wiring of our facility was done by a talented group of individuals. Mark Stennett did a superb job and we have a plant that I am very proud of and is second to none.

RW: What special considerations did you have? Any unusual aspects to the project or equipment needs?

Stennett: Being in a historic storefront typically means a lot of glass. Keeping the studio layouts clean yet functional was a challenge.

Also, wanting to wire the facility analog while maintaining an upgrade path for any future digital cabling meant having the studios built with an extra conduit feeding the master wire room.

The facility was wired using multipair audio trunk cables by Gepco and 66 punch blocks for tiedowns and cross-connects. Having a seven-story building comes in handy for the STL shots, too.

We ran multipair trunk cables to a room in the penthouse where we house the STLs, air monitors and satellite receivers. Side-mounting the STL dishes to the penthouse wall was also convenient.

Rambaldo: Technically it was an ide-

Gear List

A selection of equipment chosen by NextMedia Group in Erie. Items with asterisks were purchased new for the project.

Broadcast Electronics AudioVault II for music storage and commercial playback (*)
 Radio Systems Millennium RS-12A boards for production (*)
 Audioarts Engineering R-60 boards for FM studios (*)
 Audiometrics CD players
 Panasonic SV-3700 DAT machines
 Sony single-rack CD players
 Telos Zephyr codecs in production and AM studios
 Radio Systems GPS clock system (*)
 Echo Audio Gina 24 soundcard (*)
 Tascam CD burner
 360 Systems Short/cut
 Electro-Voice RE-20 microphones
 Sage EAS system
 Tannoy Reveal studio speakers
 Harris CD Link digital STL (*)
 Omnia-6 processor (*)

al location. The Boston Store is one of the tallest buildings in our community, so we had no problem linking our studios to our remote transmitter sites.

Because the building was just recently renovated, acoustics, heating and air conditioning were not an issue. The concern we did have is the fact that the building is a historic landmark and we had to preserve its character. This caused some problems with signage.

RW: What impact has this project had on the downtown area?

Rambaldo: Erie has a beautiful waterfront and a lot of great historic buildings in the downtown area. Over the last five years, the city has made a concentrated effort to develop the waterfront and our downtown.

NextMedia's presence has helped spread the word of the excitement that is happening here. Recently we were awarded with the "2002 Downtown Now Renovated Business Award" for our investment in and commitment to the continued preservation of the revitalization of Downtown Erie. Our local newspaper, "The Erie Times News," also recognized NextMedia with their "Cornerstone" Award, given to several area businesses that have made a difference to the city.

RW: Have you obtained significant or unusual economies of scale?

Stennett: Having a common platform for our stations to operate from in one location has made continuity between them much easier. A lot of time being wasted traveling between the old locations is no longer an issue.

Common production and traffic departments have streamlined those elements of the operation as well.

RW: How is audio storage handled?

Stennett: We installed a BE AudioVault II system with mirrored, RAID 5 100 GB servers. Every station has four channels of audio on their console, with two coming from each server. The layout is meshed in such a manner as to have only one channel per station on any audio card.

rfDetective

► Continued from page 16

and upgrades automatically. Because various interference classes can be excluded, the automatic search can be extremely sensitive. Many programs on the market tend to miss openings that rfDetective-FM will find.

You can change the graphics and the displayed data while the program is running. The circles have a fill-in function that makes "area-to-locate" maps easy to read and generate. At the touch of a button you can display all AM stations with their zones of protection (3.2 km and 0.8 km) so you can avoid locating your FM too close. This has become my favorite program for finding potential upgrades and vacancies.

A new version of this program called rfInvestigator allows you to manipulate contours and design directional antennas with a special tool. You have several options in terms of mapping. You can use 30-second data (supplied) or three-second data to generate your terrain maps. The program also will display Year 2000 census data as an underlay.

rfInvestigator allows you to choose among 73.207 (normal) spacing, 73.215 (directional rules) spacing and contours. Flipping back and forth between "207" and "215" permits you to look rapidly for upgrade possibilities.

Useful features

The program incorporates many features found in other good search software. You can place and edit map markers, control the order and content of job tables, or print maps and tables.

It is easy to re-center your jobs and build new jobs in adjacent areas. The graphics are easy to manipulate and

read. The program is versatile, allowing the operator to select and turn on numbers of conditions on the fly.

ALS maps are easy; a feature allows circles to be filled in. You can also display "de minimus" (-1/2 km) spacing, which is valuable for locating a station in tight quarters.

The program allows the user to edit the master and job databases, which is useful when errors are discovered in the FCC database. Directional stations appear in a different color, facilitating searches for upgrades and new allocations.

Research tool

The program has some friendly features such as highlighting a ring by double-clicking on a station with the mouse. It also allows you to measure distance and bearing with a simple click and drag.

The program could be improved if the statistical search tools were a little more automated. It is easy to make a mistake going back and forth between menus.

rfDetective does not predict contours. It is based on the FCC "spacing" tables such as in 73.207. rfInvestigator predicts contours and designs directional antennas easily. Another new product, rfAnalyzer, will perform automated Channel 6 engineering for NCE stations. It also will include sophisticated propagation analysis.

Bottom line: These tools are cheaper than competing software, have no maintenance costs and are comfortable in a Windows environment.

Barry Magrill, P.E., advises local governments concerning tower siting issues and prepares AM, FM and TV applications for broadcast clients. Reach him at (352) 475-9338 or via e-mail to barry@atlantic.net.

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GUY WIRE

Soaking Up the Waves: RF and You

by Guy Wire

The following is an excerpt from a column by masked engineer Guy Wire. The full column can be read at www.rwonline.com.

We still don't know what the long-term implications to human health really are regarding absorption of

beings has been established. ... Neither the FCC nor any other arm of the federal government has determined that broadcast antenna emissions at levels normally encountered by workers or the public pose a present public health hazard. It is important to remember that the regulations have been adopted as preventative and precautionary measures."

that its antenna installation complies with the rules at license-renewal time, including provisions for power reduction to protect workers. Multi-user sites have had to cooperate to ensure that workers as well as the public are protected from any over-exposure.

Most such sites have drafted procedures that spell out how much power reduction is required for workers safely to access mapped areas of the tower structure to perform work or maintenance.

Certainly, reliable communications need to be established and maintained between tower crews in the air and engineers on the ground when tower work is underway. Now that personal RF moni-

tors are available widely and in use, there is little reason any tower worker should be over-exposed to high levels of RF. Every CE employing tower workers on his site should insist on their use.

The keys to preventing problems are careful planning and execution, with everyone paying close attention to rules, procedures and common sense.

It would appear that the Mt. Wilson boondoggle could have been prevented and kept off the FCC's radar screen had a little more mutual understanding and cooperative spirit been employed. Of all the rules we might want to impose on tower work operations, perhaps the golden rule is the one that matters the most.

Guy Wire is the pseudonym for a major-market radio engineer.

Read his or her column — and reply with your own opinions — at www.rwonline.com.

The Mt. Wilson boondoggle could have been prevented and kept off the FCC's radar screen had a little more mutual understanding and cooperative spirit been employed.

broadcast RF. Like any other abnormal stimulus or agent to which the human body is subjected, RF exposure may induce different consequences from one human to another.

'Precautionary'

The rules and guidelines contained in the FCC's OST Bulletin 65 really are based on the assumption that there *might be* adverse health risks associated with excessive exposure. The 1997 NAB publication on FCC RF radiation regulation compliance that includes OST 65 clearly states, "Although much scientific research has been done in the area of human exposure to RF radiation, as of this writing no conclusive connection between exposure to relatively low levels of RF radiation and health effects in human

Reasoning that it's better to be safe than sorry, most responsible tower firms abide by the rules and now require their workers to carry RF sensing devices to warn of hot spots. Yet a few small renegade tower outfits are willing to ignore safe limits just to get the work done and make the money. Both sides need to be vigilant when working around RF.

Recently, the industry has learned of two RF exposure infractions by broadcasters in California that have achieved high profile by provoking FCC investigations. One involved a TV station at Sunset Ridge, the other a station installing a DTV antenna on Mt. Wilson.

The FCC's rules on RF exposure and compliance have been on the books for 18 years. Every station must certify

FIRST PERSON

An AM Expanded-Band Success Story in Fargo

by Mark Persons

KQWB(AM) in Fargo, N.D., is one of the first AM stations to switch completely from the traditional AM band to the expanded band. Actually it is licensed to West Fargo, but the transmitter is on the Minnesota side of the border.

There is quite a story to be told here. It started in the summer of 2000 when Mark Borchert, chief engineer for KQWB, owned by Triad Broadcasting, called to say it was difficult and expensive to maintain the 1550 kHz, 5 kW night, five-tower directional antenna system. Daytime power was 10 kW, but the system involved switching between the upper and lower sections of the center tower to connect the top of the tower for non-directional day and then disconnect the top of the tower when the station was running in the night pattern.

Harsh conditions

High voltage and harsh Minnesota winters meant frequent visits by tower climbers, with the station off the air while they worked. Anyone who has been to this area also knows that the wind blows almost all the time, making it difficult even to schedule tower climbers.

The station was deemed a significant interference contributor to the 1550 kHz frequency and was a prime candidate for the expanded band. It was granted a construction permit for 10 kW day and 1 kW night on 1660 kHz, both non-directional.

Because adding a 1660 kHz station to the existing five-tower antenna system would have meant at least six RF filters and even more complication to the switching system, the decision was made to turn off 1550 kHz completely in favor of the 1660 kHz expanded-band frequency.

A Harris DX-10 transmitter was ordered for 1660 kHz. It was installed and ready when I arrived in September of 2000.

We turned off the 1550 kHz transmitter for the last time and got to work. A tower climber used a strap to bond

the top and bottom sections of the center tower permanently to make it a five-eighths-wave radiator on 1660 kHz.

The other four towers were disconnected and I measured the antenna resistance on the new 1660 kHz frequency. After a few calculations, we started moving components around in the center-tower antenna coupling network. This also involved removing the antenna-pattern switching relay. A few trial-and-error moves tuned the coupling network for broadband performance.

Successful switch

The new KQWB(AM) 1660 kHz station was on the air by late in the afternoon with a great-sounding signal. It is running in Motorola AM stereo and serves the Fargo/Moorhead market well by day and night. The 1550 kHz is gone forever from this site.



How have things gone since the changeover? Mark Borchert reports that maintenance has been next to zero. The station now runs local sports involving cities that were in the night directional pattern nulls on the old frequency.

The station's market share for adults 35+ is almost exactly what it was prior to the change. The format is nostalgia. Mark reported having to spend some time with listeners getting them converted over to the new frequency. That problem is past now, and the sailing appears to be clear for a station that had been facing financial disaster from engineering expenses.

Mark Persons W0MH is certified by the Society of Broadcast Engineers as a Professional Broadcast Engineer with more than 30 years experience. His Web site is www.mwpersons.com.

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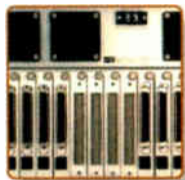
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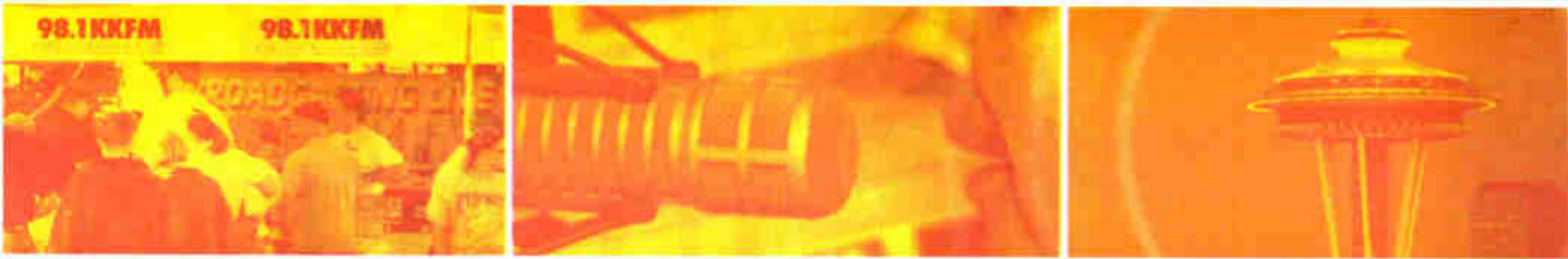
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They Remember Sept. 11, 2001

by Ken R.

No one was more involved in the coverage of the Sept. 11 terrorist attacks last year than the people at radio stations who could see the black smoke from their windows.

With the anniversary of 9/11 at hand, Radio World talked to broadcasters in New York and Washington and asked them to recall what went on during those confusing and emotional moments.

'Unbelievable'

Director of Marketing and Promotions for ICBC Broadcast Holdings Tina Nachman passed the World Trade Center in her car 15 minutes before the first attack, on her way into WLIB(AM)/WBLS(FM).

She was tuned to WBLS and was surprised to hear national morning host Doug Banks quoting people from her

own station about a plane flying into the World Trade Center. By the time she got to the office she knew what had happened and could smell the smoke.

"Walter Williams from accounting and Walter Mysholowsky in sales actually saw the first plane hit while they were looking out a window," said Nachman. "They started screaming and called Jim Weiner, our engineer, who called Banks, our syndicated morning host who broadcasts from Dallas."

People from ICBC fed information to Banks who broadcast it to the rest of the world that day.

The stations are on the 41st floor of a building at 34th Street and Park Avenue, quite a distance from the World Trade Center; but the smoke was visible clearly.

"Our managers were running around trying to calm people down," Nachman said. "When the second plane hit, I was on the phone with my mom in

Brooklyn and I remember saying 'Oh, my God, oh, my God' as I watched it on my TV."

Both stations immediately broke format, airing news reports from the ABC network. WLIB broadcasts a live politically oriented program, "The Mark Riley Show" at 10 a.m., which was extended.

and crying. While a few employees went home, the rest stayed and pitched in to help wherever they could.

"We have two full-time news people and three part-timers," she said. "Our news director, Wayne Gillman, was feeding frequent reports to ABC. It was pretty wild for a while."

The city of New York was in chaos. Station employees went for food at noon to a delicatessen downstairs and saw nurses covered in soot. People



Deborah Rath, left, presents a check to New York firefighters Lt. Gary Demry, Stephen Dempsey, Daniel McCluskey, Dennis Freyre and John Colon. The check was presented at WQCD(FM)'s 'I Love New York Concert' last year, for money raised by Emmis New York's three radio stations.

Legalized Payola: Is It Extortion?

by Damon Cline

Payola. It's an issue that many in the radio industry don't want to talk about, and one that many commercial radio owners probably wish would just go away.



The folk rock band Phish, known for their long, experimental jams that meld nearly every genre of music, has spoken out against radio's heavily researched format-driven playlists, which it says keeps all but the most heavily promoted artists from getting airplay.

Pay-for-play controversies date back to the days of Alan Freed and Wolfman Jack. They have evolved, with the help of radio industry consolidation, into a nebulous system by which millions of dollars in music promotion money are funneled to radio groups as "non-traditional income" through third parties known as independent record promoters.

This system, which skirts the 1960s-era payola laws, is called legalized pay-

ola by a coalition of record companies, recording artists, trade associations and unions, who liken the system to extortion. The group has found an ally in U.S. Sen. Russ Feingold, D-Wis., who introduced legislation earlier this year that aims to rein in the radio industry by reinstating ownership caps.

Pressure

The coalition contends that the large broadcast corporations that have blossomed in the deregulatory climate of the past half-decade are using their newfound might to exert pressure on the recording industry through independent record promoters.

Ironically, these middlemen or "indie promoters" were created by the record industry years ago to get around exist-

ing payola laws that ban the practice of giving cash to radio stations in exchange for airplay without on-air disclosure.

The coalition decries the practice of indies funneling legitimate promotional money from record companies directly to the stations, as a type of kickback, for access to playlists. The group also contends station owners have established exclusive arrangements with indies for

See PAYOLA, page 32 ▶

"We had callers on the air all day so they could say what they needed to say," Nachman said.

She remembered staffers at the windows staring at the World Trade Center

couldn't get into or out of the city on most roads. Nachman said the only way she could get to her house was through the Midtown Tunnel, so she transported

See SEPT. 11, page 30 ▶

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News Radio Thriving Post-9/11

by Scott Fybus

Sept. 11 will long be remembered as one of the darkest days in America's history — but for big-city radio news directors, it will also be remembered as one of the proudest days in their business.

"Since Sept. 11, radio — particularly on the AM dial — has had a rebirth," said Harvey Nagler, vice president of CBS Radio News.

Nagler and his top network and local counterparts met at RTNDA@NAB in Las Vegas this spring for a "Radio News Summit," one of their first opportunities to discuss the changes wrought by the attacks last fall.

"You think you can prepare for days like that; you think you can have fire drills, but it's so different," said Mark Mason, executive editor and program director at Infinity-owned WINS(AM) in New York.

New Yorkers turned to news radio in record numbers on Sept. 11; in the 10 to 11 a.m. hour, Arbitron figures showed 943,000 listeners in an average quarter hour, nearly 10 times the station's usual listenership.

In many cases, the big news stories last fall brought listeners who had never tuned in before to news radio.

"We had just a huge surge of 25-54 listeners, and we've held on to them," said Steve Butler, director of programming at Infinity-owned KYW(AM) in Philadelphia.

New streams of competition

But hanging on to that audience in the absence of breaking news will be a challenge for news radio in today's media environment.

"There's a whole new generation out there. First thing in the morning they turn on their PCs and that's where they expect news to be," said Jim Farley, vice president of news and programming at WTOP(AM-FM) in Washington.

Farley said his station is better positioned than most of the nation's all-news operations to make that transition to the online world. WTOP, owned by Bonneville International, is the only major-market all-news station that's not operated by Infinity, which prohibits streaming of its stations' audio.

As a result, the WTOP Web stream has drawn an increasing number of listeners in markets far from the nation's capital.

"There's a lot of advantage in being the only major all-news station not owned by Mel (Karmazin)," Farley said.

"Obviously, traditional terrestrial radio is the core of our business and the source of our profits," said Robert Garcia, vice president of CNN Radio, "but delivering audio to listeners in vehicles is really the business we're in."

For CNN, that means offering news audio to listeners via services such as AOL By Phone and the OnStar satellite navigation system, as well as its more-traditional radio clients.

The Web revolution also has changed the way CNN operates behind the scenes. Instead of waiting for news audio to be delivered in an hourly satellite feed, CNN Radio affiliates have access to a Web site with MP3 files.

"The second one of our editors is finished cutting tape, it goes out to an MP3

on the Web site," Garcia said.

While the flagship product for the networks remains the top-of-the-hour newscast, stations are demanding a broader range of products.

"Our affiliates want live Q&A with our correspondents, wherever they may be," said Garcia.

Affiliate need

At the Associated Press, the demand for radio news brought new clients to the service, which now provides news to more than a third of all U.S. radio stations.

Since Sept. 11, radio — particularly on the AM dial — has had a rebirth.

— Harvey Nagler
CBS Radio News

"A lot of the growth since 9/11 for AP is music stations," said Thom Callahan, general manager of AP Radio. "We added a new one-minute newscast for music stations."

Even with fewer than a dozen stations around the country programming an all-news format, the newsroom managers at the summit agreed that locating the next generation of news staffers remains a huge challenge.

"It used to be, we'd look for people with five to 10 years major-market experience, preferably as a news director," said WTOP's Farley, "but the farm system isn't out there anymore."

For many stations, one solution is to develop new reporters, writers and editors in-house. That means maintaining a

steady stream of interns, many of whom are hired as soon as they've graduated from college.

"In the past year, I've promoted four former interns to full-time writers," said Frank Raphael, news director of Infinity-owned WCBS(AM) in New York.

"The other area where we've had a lot of success," said KYW's Butler, "is in recruiting people who are tired of television."

Butler said several former TV reporters have found radio work appealing because it allows them much more control over

the product they generate in the field.

Just as much of a challenge as developing new talent is finding the new listeners who will tune into news radio.

In Los Angeles, all-news Infinity-owned KFWB(AM) had a ratings spike in September, but few of the new listeners stayed with the station.

"This past October we looked at the cume, compared it to a year ago October, and it was no higher," said Chrys Quimby, KFWB's director of news and programming.

In addition to the transient nature of Los Angeles' population, Quimby said the station also faces the challenge of an audience that is increasingly Hispanic, often with little or no understanding of English.

Sept. 11

► Continued from page 27

as many of her co-workers as she could. The trip took three hours instead of the normal 25 minutes.

"We still have that same feeling today that we had then," she said. "Insecurity."

The cluster owned by Emmis Communications includes three FM stations: WRKS ("Kiss-FM"), which has an urban/adult contemporary format; WQHT, a contemporary rhythmic station known as "Hot 97"; and WQCD, which plays smooth jazz. Rocco Macri is director of marketing for Emmis in the city and was at the center of the events one year ago.

Disaster inspires charity

"As soon as the events became known, all three of our stations immediately shifted focus to news and information," he said. "In the first 48 hours we devoted a lot of time to the ABC Radio Network, but also provided local cut-ins from newscasters and air personalities.

"Bob Slade, WRKS news director and 20-year station veteran, was one of a number of employees who pretty

much lived at the station over the first few days. Bob provided reports all day long and was heard nationally on 'The Tom Joyner Morning Show,' ABC Radio Network's syndicated program that we air on WRKS."

Sept. 11, 2001, will be remembered for more than just instant format changes. It was a time that many stations across the country connected emotionally with their listeners in other ways.

"Once we returned to entertainment programming, we decided to give our listeners an opportunity to help the families that lost loved ones in the attack," said Macri.

"All three of our stations solicited donations and put on benefit concerts over the next eight weeks. In total we collected over \$305,000 to Safe Horizon, one of three charity organizations that were given the ability to write on-the-spot checks to families in need."

The staff at WHUR(FM), owned by Howard University in Washington, was close enough to the Pentagon to have been able to see the smoke rising from the plane crash last September.

But earlier that morning, reporter and on-air host Stephanie Gaines-Bryant didn't know anything about it and was vacuuming her living room watching "The Today Show."

She said KFWB has been studying the Hispanic audience in Los Angeles to find ways to better serve them with its news coverage. In the meantime, she's hoping the addition next year of L.A. Dodgers baseball will help bring in listeners who would otherwise never sample KFWB.

New York's WCBS has similar hopes; the station landed the Yankees this season, with the added benefit of a TV rights dispute that has forced many New Yorkers to turn to the radio as their only way to follow the team.

"These are people we could never have hoped to reach otherwise," Raphael said.

Still, the news audience remains, on the average, much older than other radio audiences. KYW's Butler said that's inevitable; in response to a question from a student about how to make news more appealing to her generation, he said, "You just have to be ready for us. You're not ready for us at that age."

Get ready

"The day they get a job that requires them to drive to work, I'll get them," said WCBS' Raphael.

News leaders said the aftermath of Sept. 11 brought them one unexpected benefit: the chance to cut down on the amount of commercial clutter that they fear was driving listeners away. New York's WCBS and WINS, both owned by Infinity Radio, ran no spots for eight days after the attacks, finally resuming ad sales to accommodate insurance companies eager to reach their customers.

Once regular advertising resumed, WCBS' Raphael and WINS' Mason sat down with their bosses at Infinity and persuaded them to stop running one category of commercials, which Raphael jokingly calls "the 'put lead in your pencil' spots."

"We manage the news till we're nauseous," Mills said, "but then these commercials show up and it's bye-bye to the audience."

Reach Fybus via e-mail to scott@fybus.com.

When she saw the shocking footage she turned off the vacuum and realized that "all hell had broken loose," so she called her baby sitter and arranged to drop off her children a little earlier than normal.

"I got to the station and stayed on the air about 10 hours," she said. "My co-workers also were here around the clock. It was the most incredible thing I ever witnessed as a journalist."

Her fellow news people were Renee Nash and Herman Washington, who were sending news feeds to other stations when they weren't covering the news themselves.

"Even though our station is owned by a university, we are commercial and have an all-paid staff," said Gaines-Bryant. "However, we're not a big station like WTOP(AM-FM), so we couldn't afford to send someone over to the Pentagon."

Gaines-Bryant, whose husband had worked at the Pentagon up until April, 2001, was as stunned as any American who saw the carnage.

"Everyone at our station did a wonderful job of keeping people informed. Associated Press, Metro Source and CNN were great, too," she said. "Even though our programming is aimed at an urban audience, there is absolutely no color attached to this story."

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World Radio History

Payola

► Continued from page 27

fixed annual or monthly sums.

"Before, it was record labels hiring indie guys to pay off the stations," said Ann Chaitovitz, national director of sound recordings for the American Federation of Television and Radio Artists, a union more commonly known as AFTRA. "Now it's the stations hiring an exclusive promo guy who says you have to pay me to get played on these 1,200 stations."

Many observers say the behind-the-scenes payoffs were welcomed by large broadcasters who burned through cash during the station buying sprees of the late 1990s and the ensuing economic downturn.

"You had this huge land grab, and then the advertising bubble burst," said Michael Bracy, government relations director for the Fair Music Coalition, a New York-based think tank supporting the Feingold bill. "So the stations have to

make their money through aggressive downsizing and non-traditional revenue."

But what had been a symbiotic relationship between the recording and radio industries has been thrown off now that station owners are as large as the record companies.

"The radio industry has as much power as they do, and they don't like it," said one radio industry analyst, speaking on condition of anonymity.

Enemy No. 1

Clear Channel Communications, in particular, has become the recording industry's public enemy No. 1.

The nation's largest radio company owns or operates more than 1,200 stations. Prior to the Telecommunications Act of 1996, corporations were limited to owning no more than four stations in one market and could not own more than 40 stations nationwide.

The so-called legalized payola never received much attention until broadcast giants such as Clear Channel and Infinity Broadcasting became big enough to call the shots.

Record company executives now estimate as much as \$300 million a year in promotional payments are being funneled to stations.

"From (the recording industry's) perspective, it's gotten out of hand," said Peter Hart of the New York-based media watchdog organization Fairness & Accuracy in Reporting. "Ten years ago, before consolidation, the stakes were much smaller. Now the indie promoters are much more powerful and the stations are more powerful. And there's a lot more money involved."

The recording industry-backed coalition claims Clear Channel is one of four groups that controls 63 percent of the 41 million top-40 listeners nationwide, and that in the country format, it programs music for 56 percent of the 28 million listeners.

Earlier this year, pop superstar Britney Spears made headlines when she claimed Clear Channel reduced her airplay time after her management refused to book her tour schedule through Clear Channel's concert promotion subsidiary, Clear Channel Entertainment. The company, formerly SFX Entertainment, is the world's largest producer and promoter of live entertainment, with a portfolio of more than 135 venues in 35 markets.

A Clear Channel executive said the allegation was ludicrous.



Earlier this year, pop artist Britney Spears alleged that Clear Channel Communications decreased her airplay on its stations after her management declined to book her tour through Clear Channel's concert promotion subsidiary, Clear Channel Entertainment. Clear Channel denies the allegations.

bly ruining the artist's career and the record label's investment in that artist, if the record label does not pony up the right amount of cash.

"What has accelerated the problem is the consolidation, and that you're getting fewer companies owning more and more of the airwaves," said Jonathan Lamy, a spokesman for the Recording Industry Association of America, one of 10 organizations in the coalition calling for an FCC probe into the new payola. "The payola rules have not been updated to meet the changing marketplace."

Here's hoping

So far, the FCC has declined to look into the issue of legalized payola. And the Feingold legislation, which had no co-sponsor for several weeks after it was introduced and has made few waves on Capitol Hill, may never become law. At least, that's what the radio industry is hoping.

"We strongly disagree with some of the contentions out there that radio has become less diversified," said Dennis Wharton, senior vice president of corporate communications for the NAB. "We think the radio industry has never been more diverse in terms of program formats."

Not so, says Chaitovitz. "The best isn't being played anymore, it's who can pay," she said. "There's less local music on the radio, the programming decisions are being by fewer and fewer people. It's starting to hurt radio. Fewer and fewer people are listening."

Lew Dickey, chief executive of Cumulus Broadcasting, owner of more than 258 stations, said he believes it is "far too early" to speculate on the ramifications, if any, that the Feingold bill will have.

"There's a very lengthy and laborious

See PAYOLA, page 33 ►

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Sen. Russ Feingold introduced the 'Competition in Radio and Concert Industries Act of 2002,' which would further regulate station ownership. Labels and artists have supported the attempt to rein in large radio companies, which they contend have become powerful enough to 'extort' money from them.

"If that were true, could you imagine the PR nightmare there would be if (the news) ever got out?" he said. "If there is any reason Britney Spears is getting less airplay, it's because her career is on the way down."

Still, the recording industry fears that a large broadcaster has the ability to exclude an artist from its playlists, possi-

Payola

► Continued from page 32

process that has to be undertaken in order to have an impact on our business," he said. "The odds are that nothing will happen."

In the meantime, broadcasters are keeping a watchful eye on developments in Washington. But for the most part they're staying mum on the topic of legal payola.



Mark P. Mays, president and COO, Clear Channel, said that his company is not using anti-competitive tactics nor engages in what critics call 'legalized payola,' in which station operators accept record company promotion money through independent third-party promoters as 'non-traditional revenue.' He said if the recording industry does not like the system, it should simply stop paying the third-party promoters.

Officials from major broadcasters such as Clear Channel, Infinity, Emmis Communications, Entercom Communications, Cox Radio, Saga Communications and Citadel Broadcasting either declined to comment for this story or did not respond to repeated requests for interviews.

The only major public response from a major radio group has come from Mark P. Mays, Clear Channel's president and chief operating officer, who issued a lengthy statement the day Feingold's bill was introduced.

He said radio is a relatively free industry compared to other mediums, adding that five major record labels account for 84 percent of album sales and that the 10 largest movie studios account for nearly all of that industry's revenue.

"Even Clear Channel, the largest owner of radio stations in the country, owns only 11 percent of the stations," he said. "So the notion of a few large corporations controlling the majority of the radio industry is not only incorrect, but is actually less of a factor in radio than in most other media and entertainment industries."

He also said the record industry needs to do some soul-searching before asking government regulators to intervene.

"These promoters are paid by the record companies, not by broadcasters," Mays said. "For years the record companies, particularly the Big Five, have complained about paying the promoters but have also refused to stop paying them."

Hilary B. Rosen, chief executive of the

RIAA, the lobbyist organization for the major record labels, did not respond to phone messages and e-mails seeking a response to Mays' comment.

It has yet to be seen whether the recording industry will stop paying indie promoters, or whether the FCC intervenes with an industry probe or new regulations. But some argue that no matter what law is passed, if any, radio will remain a market-driven system in which access comes at a price. For example, insiders say a record company will pay a promoter working in a major market as much as \$10,000 for getting 500 spins on the radio for certain records.

"It's product placement," argues "Heavy" Lenny Bronstein, a Los Angeles-based indie promoter who has been in the business since 1970. "At the grocery store,

it's common for companies to pay to have their products placed on the shelf. So why is that what is common business practice anywhere else is looked at like taking an Uzi out at a McDonalds?"

Disclosure

He said the new payola wouldn't exist if the radio stations that take record-company money would simply disclose the promotional considerations, similar to what public television does with its corporate-sponsored programming.

Of course, such announcements would be off-putting to listeners and take up valuable air time.

"I dare you to find more than a couple of stations that ever make those announcements," he said.

To some working in the radio industry,

payola is a foreign concept. For example, many indie promoters don't have exclusive arrangements with station owners and don't kick back any of the record company money paid to them for their promotional efforts.

Also, cash-on-the-table arrangements are rare and most dealings are said to occur in influential markets, such as New York and Los Angeles. A mid-market cluster manager, for example, may never come in contact with an indie promoter.

"As much as it's talked about, I've never seen it," said one industry veteran, speaking on condition of anonymity. "I've never witnessed it, and I've been in radio since 1973."

Damon Cline is the business editor of *The Augusta Chronicle*. Reach him at (706) 823-3486 or via e-mail to dcline@augustachronicle.com.

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National Ad Dollars Lead Uptick

Radio advertising sales are on the upswing, according to the Radio Advertising Bureau.

For the month of June, combined local and national revenues increased 3 percent compared to year-ago levels. Local dollars increased 2 percent during June; national sales jumped 7 percent.

For the first six months of this year, national revenues showed a 5-percent upswing while local numbers remained flat. Local and national sales together were running 1 percent ahead of the first half of 2001.

From a quarterly perspective, local revenues showed a 2-percent boost and national sales jumped 7 percent during the second quarter of 2002, when compared against the second quarter of 2001. Combined local and national figures for 2002's second quarter were up 3 percent.

"Radio's strength as an advertising medium is reflected in the industry's steadily improving revenue figures, and bodes well for back-to-school sales and the upcoming holiday season," stated Gary Fries, RAB president and CEO. "Looking forward, we see signs that radio's growth will outperform the economy in general, resulting in a steady and strong recovery in 2002."

PSAs to Target Urban Listeners

A new PSA campaign began airing on urban radio stations late this summer, timed for the back-to-school season. The National Urban League and Scholastic Inc., a children's publishing and media company, announced a partnership with UPS and the Advertising Council for "The Read and Rise Literacy Campaign."

The PSAs motivate parents and caregivers to become participants in their kids' learning and, organizers hope, to boost literacy rates among African-American children. The messages give a toll-free number for listeners to request a copy of a free guide to early literacy.

For more information visit www.nul.org/readandrise or www.scholastic.com/readandrise.



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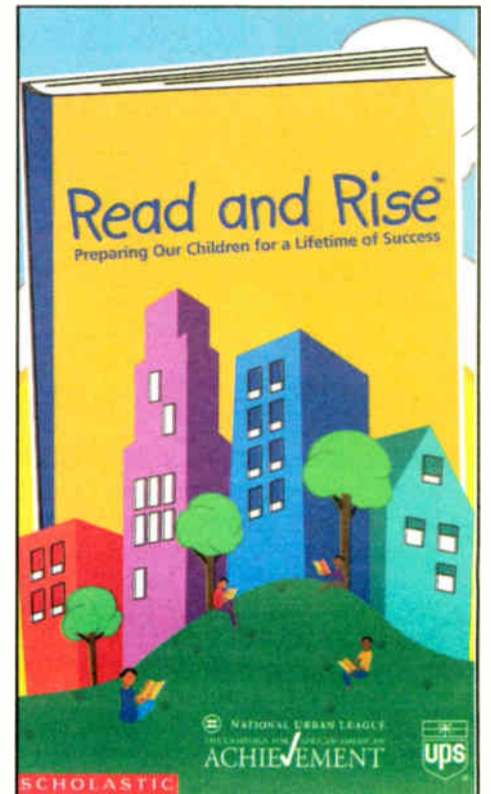
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Career Fair Panel to Talk Opportunities In Radio

A look at employment trends and opportunities will be the focus of a panel discussion at the NAB Career Fair in Seattle. The "Opportunities in Radio" session will be held Thursday Sept. 12 from noon to 1 p.m. at the Washington State Convention and Trade Center.

Session moderator is Alex Hitz-Sanchez, director of broadcast resource programs of the Human Resource Development Department of NAB.

Panelists include Steve Golsch, human resources director of Radio One Inc.; Andrew Thornhill, president and founder of Internet Strategies Inc.; and Robert Garcia, CNNRadio vice president.

Confirmed recruiters at the Career Fair include Emmis Communications, Sandusky Radio, Oregon Association of Broadcasters, Washington State Association of Broadcasters, Alaska Broadcasters Association, Texas Association of Broadcasters, Susquehanna Radio Corp., Hubbard Broadcasting Inc. and Radio One Inc.

For more information visit www.nab.org/bcc or e-mail khunter@nab.org.

Net Stations Face 1st Payment

by Craig Johnston

The pin has been pulled out of the copyright hand grenade that Internet radio stations are holding.

Webcasters have until Oct. 20 to file reports on sound recordings played and the number of Web listeners from Oct. 28, 1998 through Aug. 31 of this year. More daunting, Oct. 20 is the day they must pay the bill for all that listening.

on a misguided reading of the record," stated Hilary Rosen, chairman and CEO of the Recording Industry of America Association. "Not only was improper weight given to the testimony of Yahoo, but some 140 separate licensing deals were thrown out by the Librarian. The end result significantly undervalued the music used by Internet radio companies."

Though the actual appeal was not available at press time, the RIAA's beef



They seek a lower Web streaming copyright rate for sound recordings, claiming the Librarian's rate sets the cost of music at a level unsupportable by advertising revenues.

Parallel to their appeal, Internet radio stations also are negotiating directly with the RIAA for lower rates.

"I am hopeful that a negotiated resolution will enable the Internet radio industry to withdraw this appeal," stated Jonathan Potter, executive director of the Digital Media Association.

Survival

"But there has been no indication that the RIAA or SoundExchange are seriously interested in royalty rates that will enable thousands of small Webcasters to survive, or that will enable music lovers to continue enjoying the diverse Internet radio experience that promotes myriad artists whose music is never performed on traditional radio."

In a Washington Post article, SoundExchange Executive Director John Simson acknowledged that the recording industry was trying to establish a small Webcaster license.

Where is the NAB, a principal representative of terrestrial radio, in the matter?

Dennis Wharton, NAB vice president for corporate communications, explained it to Web Watcher: "NAB was not party to the first CARP proceeding because we continue to maintain that we — broadcasters that merely are simultaneously

See WEB WATCH, page 36 ▶

NTR and the Web: Made for Each Other

by Craig Johnston

During these times of a dot-com bust and stations by the hundreds pulling their Internet streams off the Web, it would be easy to dismiss all-things-Internet from a station's planning. But instead of throwing the baby out with the bathwater, some terrestrial radio stations are finding the Net useful as a tool for sales.

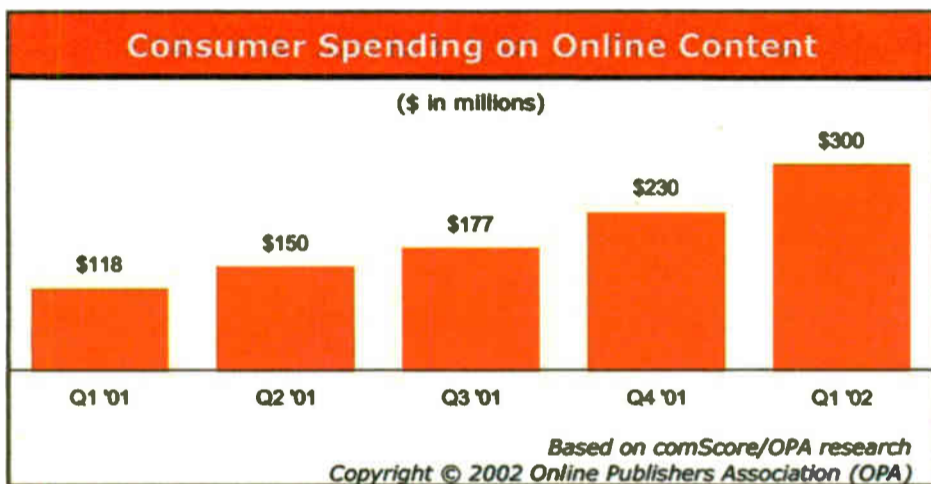
One of these areas is non-traditional revenue or non-spot sales. Station Web sites are proving to be suitable partners to on-air for NTR.

Station Web sites are proving to be the perfect partner to on-air for NTR.

"One of the problems an advertiser has in using the Internet as a promotion tool is how do they get people to see their message?" said Dave Casper, Radio Advertising Bureau's senior vice president for Internet services. "With radio, you can drive people to that message."

"The core of that marketing message is going to be whatever you put on the air. Internet enhances that. And can enhance it in all sorts of out-of-the-box ways that we're not used to thinking about."

See NTR, page 39 ▶



The forms and templates for these reports were still not available on the Internet as the end of August neared, though SoundExchange, the company designated by the Librarian of Congress to supply such reporting tools, promised they'd be on its Web site in time.

In the meantime, neither the sound-recording copyright holders nor the licensees are happy with rates set by the Librarian in late June. Parties on both sides have announced appeals to that determination: seven one-hundredths of a cent per song per listener for commercial stations. (The fees are retroactive to the October 1998, effective date of the Digital Millennium Copyright Act.)

"The Librarian's decision was based

appears to be the Librarian's tossing out the split copyright rate level suggested by the Copyright Arbitration Royalty Panel.

Under those terms, Internet-only stations would have paid fourteen one-hundredths of a cent per song per listener, while terrestrial stations simulcasting their programming over the Web would have paid the seven one-hundredths of a cent rate. Oh, and the RIAA press release stated the Librarian "was duped by Yahoo's self-serving testimony in the CARP."

On the other side of the dispute, more than two dozen Internet radio stations, including Listen.com, America Online, Radio Free Virgin, Live365, Onion River Radio, and RadioStorm have announced they too will appeal the decision.

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Web Watch

► Continued from page 35
streaming their over-the-air signal — are exempt from any copyright rates. We're pursuing that case with an appeal to the U.S. Court of Appeals for the Third Circuit in Philadelphia."

'Not working'

Web Watcher remembers someone once telling him that if neither side likes the outcome of a decision, it's probably fair. But it seems that U.S. Rep. Jay Inslee, a Democrat from Washington state, would disagree.

"The fact that all parties have appealed this decision demonstrates clearly that the standard used to determine royalty rates is not working, and Congress must act expeditiously to correct it," Inslee stated.

silencing of KPIG(FM)'s Webcasts. The small California station was believed to be the first traditional station to begin Webcasting, in August of 1995.

It is illustrative of the problems small Webcasters face to note that KPIG reports its monthly copyright fees of approximately \$3,000 were more than it could support. The station's resilience was shown in August, however. Its streaming signal has reemerged as an Internet subscription service, using the recently announced RealNetworks turnkey subscription service (see page 38).

"It will be the same programming as we had on our free streams," said Laura Ellen, KPIG Program and Music Director, "with one exception. There will be no commercials."

"I'm excited," she told Web Watcher.

As Round 1 of this copyright battle drags on, Round 2 is set to begin. A second CARP must convene soon to estab-

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"Undermining Internet radio, which is what prohibitively high royalty rates would do, is shortsighted and bad for the artists, bad for consumers, bad for Webcasters, and even bad for the labels. Congress erred when it created the 'willing buyer-willing seller' standard for determining rates, and we will continue our work to change the standard and ensure that we have a 'fair but not free' Internet royalty rate."

Inslee and Rep. Rick Boucher, D-Va., led a group of representatives in introducing the Internet Radio Fairness Act (H.R. 5285). The act would exempt small businesses that receive \$6 million or less in gross revenue from the royalty decision the Librarian has handed down, but will remain liable for the retroactive royalties at a rate to be set by an upcoming CARP.

The bill also requires future CARPs to change the royalty rate standard from the "willing-buyer/willing-seller" to the "traditional" standard that was enacted by the 1976 Copyright Act. The bill also would require future CARPs to consider the effect of rates they recommend on small businesses.

A Web Watcher word to the wise: Internet radio stations shouldn't hold their breath waiting for the congressional life ring to be thrown in time. Congress adjourns in October for elections, so there's little chance of the bill being passed and signed into law this year.

Meanwhile, as widely predicted, the Librarian's decision to uphold the CARP-recommended rates, even at a lower level for some, has spread a lot of Internet radio carnage.

Hundreds of Internet radio stations have left the Internet, more joining them every day. Of particular note was the

lish the January 2003 statutory license rates for streaming of sound recordings. (Look in Web Watcher's glossary under the heading "a thankless job.")

Wisdom for Webcasters

At least one record label, albeit not one of the majors, has seen the wisdom in offering its catalog to Webcasters for free. Artemis Records is making a no-fee license available for one year, through July 31, 2003.

"It's a win for us because we have a difficult time getting on radio," Adam Spielberger, Artemis vice president of new media, told us. "With the Internet radio we have a whole other pool to expose our artists to a mass market audience."



Adam Spielberger

"For the Internet radio stations, especially the small Webcasters, the guys in their garages, this exemption will hopefully ease the burden, because there have been these huge debates about the royalties they would need to potentially pay, and that would put them out of business because the royalties don't match up to the amount of money they would get from the advertising."

Artemis artists include Warren Zevon, Steve Earle and Web Watcher's new favorite, the Australian group called 30 Odd Foot of Grunts.

And what happens after the year of no-fee copyright is up?

"I think it's going to kind of depend on how things play out in the long run with See WEB WATCH, page 38 ►

Virgin Radio, Jazz FM UK Take Top Spots in Arbitron Webcast Ratings

Virgin Radio ranked tops among individual Webcast channels for July, according to Arbitron. The operation, based in the United Kingdom, scored almost 1.4 million aggregate tuning hours. Jazz FM UK took the No. 2 spot, while the New York Times' WQXR(FM) ranked third. Among Webcast networks (chart not shown), Radioio moved into the top 10 for July at No. 9. Live365 held fast to the No. 1 spot, while Clear Channel Worldwide ranked No. 2 and ChainCast/StreamAudio ranked third.

ARBITRON WEBCAST CHANNEL TOP 25 RATINGS REPORT JULY 2002

Channel	URL (Corporate Affiliate)	Format	ATH
1 Virgin Radio	www.virginradio.co.uk (SMG plc)	Hot Adult Contemporary	1,382,800
2 Jazz FM UK	www.jazzfm.com (Guardian Media Group)	Jazz	1,014,200
3 WQXR(FM)	www.wqxr.com (New York Times)	Classical	737,800
4 Radioio	www.radioio.com (Radioio.com)	Album Adult Alternative	564,400
5 KING(FM)	www.king.org (Classic Radio Inc.)	Classical	546,700
6 MEDIAMazing	www.mediaamazing.com (MEDIAMazing)	Variety	368,700
7 Radio Margaritaville	www.radiomargaritaville.com (Radio Margaritaville LLC)	Adult Contemporary	345,200
8 KPLU-Jazz	www.kplu.org (Pacific Lutheran University)	Jazz	315,100
9 KNAC.COM	www.knac.com (KNAC.COM)	Album Oriented Rock	298,800
10 Ministry of Sound	www.ministryofsound.com (Ministry of Sound)	Electronica	269,200
11 WGMS(FM)	www.wgms.com (Bonneville International Corp.)	Classical	229,700
12 WHTZ(FM)	www.z100.com (Clear Channel Worldwide)	Contemporary Hit Radio	204,000
13 Virgin Radio Classic Rock	www.virginradio.co.uk (SMG plc)	Classic Rock	199,900
14 Killer Oldies	www.killeroldies.com (Royal Programs Inc.)	Oldies	198,500
15 JazzRadio Berlin	www.jazzradio.net (JazzRadio Berlin)	Jazz	189,000
16 WFXZ(FM)	www.937thebone.com (Sea-Comm Media)	Classic Rock	176,800
17 Tom Joyner Morning Show	www.tomjoyner.com (ABC Radio Networks)	Talk/Personality	166,400
18 KFI(AM)	www.kfi640.com (Clear Channel Worldwide)	News Talk Information	165,400
19 WFUV(FM)	www.wfuv.org (Fordham University)	Variety	164,900
20 KSBJ(FM)	www.ksbj.org (KSBJ Radio)	Contemporary Christian	150,900
21 WBUR	www.wbur.com (WBUR Group and Boston University)	News Talk Information	147,400
22 WTOP News	www.wtopnews.com (Bonneville International Corp.)	News Talk Information	146,800
23 WOXY(FM)	www.woxy.com (Balogh Broadcasting Co. Inc.)	Alternative	134,500
24 KBCO(FM)	www.kbco.com (Clear Channel Worldwide)	Album Adult Alternative	130,400
25 Live365-victorsdivas	www.live365.com (Live365)	Rhythm & Blues	126,700



MeasureCast: More Folks Listening to Fewer Online Stations

It appears Internet radio is more popular than ever, according to MeasureCast Inc. Contending that "the industry has plenty of room to grow," MeasureCast CEO Randy Hill said there has been a 714-percent increase in the total time spent listening to stations measured by MeasureCast since January 2001. "Nevertheless, only 27 percent of the U.S. population, or 77 million people, has listened to a radio Webcast."

July MeasureCast numbers reveal 4.6 million people listened to Web radio stations, up from 4.3 million listeners recorded in June.

Clear Channel Worldwide continues its run in the top Internet radio network spot. The company streamed a dozen more stations in July than in June. Virgin Radio once again ranked as the No. 1 Webcaster in the MeasureCast Internet radio stations ranking (not shown).

MEASURECAST TOP 10 INTERNET RADIO NETWORKS JULY 2002

Rank	Network	URL	Total TSL ¹ (in hours)	Cume Persons ²
1	Clear Channel Worldwide	www.clearchannel.com	7,351,905	944,282
2	Radio Free Virgin	www.radiofreevirgin.com	3,417,988	500,044
3	Warp Radio	www.warpradio.com	2,854,096	293,633
4	Internet Radio Inc.	www.internetradioinc.com	2,610,364	607,204
5	Virgin Radio	www.virginradio.co.uk	2,197,847	306,503
6	StreamAudio	www.streamaudio.com	1,697,067	146,551
7	SurferNetwork	www.surfernetwork.com	1,504,915	70,306
8	ABC Radio Network	www.abcradio.com	1,119,248	176,167
9	Standard Broadcasting	No Web site	932,958	41,407
10	The New York Times - WQXR	www.wqxr.com	765,330	101,006

Notes:

1. Total TSL (Total Time Spent Listening) is the total number of hours streamed by the broadcaster in the reported time period.
2. Cume Persons is an estimate of the total number of unique listeners who had one or more listening sessions lasting five minutes or longer during the reported time period. This estimate is derived using an algorithm that takes into account unique media player GUIDs, unique IP addresses, and other variables during the reported time period.

About MeasureCast, Inc.

MeasureCast, Inc. is the first company to provide Internet broadcasters, advertisers, and media buyers with true third-party audience size and demographic information with the MeasureCast Streaming Audience Measurement Service™. MeasureCast employs patent-pending Active Event Monitoring™, a unique server-side technology, to record the exact number of streams requested from Internet broadcasters' streaming servers. Accurate, secure reports are available to customers within 24 hours of a webcast via a password protected web site. MeasureCast supports Microsoft Windows Media Technologies, RealNetworks RealSystem servers and other proprietary streaming technologies. MeasureCast products and services are available through its direct sales force, and through Nielsen Media Research as part of a strategic partnership with Nielsen Media Research and NetRatings. MeasureCast issues a weekly MeasureCast Top 25™ ranking of Internet radio broadcasters, a weekly MeasureCast Internet Radio Index™, which tracks the growth of on-line radio listening, and a monthly Top 50 ranking of Internet radio broadcasters. For additional information and a demonstration, visit www.measurecast.com. Corporate headquarters is located at 921 SW Washington St., Suite 800, Portland, Oregon 97205.



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Web Watch

► Continued from page 36 the CARP issues and such," said Spielberg. "In a year we'll revisit it and see what happens." Copies of the license are available on Artemis' Web site.

Growth continues

In the meantime, once again, just like last month, in spite of the hundreds of Internet radio stations that silenced their Web streams, Internet listening has grown.

Internet ratings company MeasureCast reported that, after an early-summer slowdown around the fourth of July, the amount of Internet stream listening later in the month shot to an all-time high. Message from Web Watcher: less compe-

tion, more customers. In both the MeasureCast and Arbitron Internet ratings, a British duo topped the Web radio station listings, with Virgin Radio No. 1 and Jazz FM UK in the second spot. Arbitron's network ratings gave the top spot to Radio365, with second going to Clear Channel Worldwide (see page 36).

MeasureCast announced it has revamped its Internet ratings methodology to reflect measurement possibilities unique to Web radio.

"What many of our customers asked us to do was to come up with a new set of metrics that were more in tune with the way the Internet works," said Bill Piwonka, vice president of marketing at MeasureCast. "Specifically, one of the biggest requests we had was to remove the five-minute rule."

Piwonka explained that because some Internet radio stations use pre-rolls or gateway ads, when a listener clicks on a stream the first thing they hear is an advertisement. Eliminating the five-minute rule allows the advertiser to know that his gateway ad was heard by the listener, even if that listener checked out before five minutes was up.



Bill Piwonka

"With the Internet we have the ability to know exactly when somebody starts listening and exactly when they stop listening," said Piwonka. "We have the ability to have extremely accurate time-spent-listening metrics and know exactly how many peo-

ple are listening at the same time. We're not estimating any of that information."

News from the supplier side:

One way Webcasters don't have to wait for advertisers to get aboard in order to generate revenue is the subscription model. Radio Computing Services is hoping its iSelector turnkey Internet radio subscription service will entice stations to join the giants such as MusicNet and pressplay, owned by the major labels, that jumped into the subscription space.

"There is nothing to do for the radio stations other than promote the Web interactive radio on the air and provide us with their IDs, liners, promos, whatever they want to communicate to the listener," said Philippe Generali, president of RCS. It holds the recording company copyright licenses for the iSelector service and pays the copyright fees.

We can work it out

Because iSelector is a subscription service, Generali said, "The radio station doesn't pay us. The listener will pay to listen to iSelector, to the customized channel of 'my-radio station.' We'll share (the subscription fees) with the radio station."

The station doesn't have to own an RCS Selector automation system; though Generali said, "If you're not a Selector customer, we're going to start by bugging you about becoming one, that's only fair. But that's okay; we can work with anybody."

RCS is content to stay in the background. As far as the listener can tell, he has linked to the station's subscription service from the station Web page. The branding reflects the station. The music is the music the station plays. In fact, it's a bit more than that.

"In iSelector the listener has the ability to ask for depth tracks, where the listener wants to listen to more album tracks from the artist," said Generali. "They might want to say, 'I want more, deeper tracks from Bruce Springsteen,' and we're going to be playing album tracks."

Elsewhere, in late August, RealNetworks Inc. made a large announcement about the release of its Helix universal media player, which plays the Real, Windows Media and Quicktime formats as well as CDs, DVDs, MP3s and more.

Of particular interest to Internet radio stations are changes and upgrades to RealOne Radio. In addition to the 50 commercial-free subscription stations available through Real's SuperPass service and RadioPass, they are indexing other stations available on the Web so that listeners can search for the kind of music or talk radio they want.

Stations wishing to be listed in that database should go to radio.real.com to look for a link to contact Real to get listed.

Real hub

Real also is looking to add subscription services from existing Internet radio stations onto its RadioPass service.

"We think it's going to be a hub of premium services from some of these folks who really are caught between the CARP ruling and bandwidth costs and constraints, and frankly just getting enough distribution,"



Erik Flannigan

said Erik Flannigan, Real's vice president of music services and programming.

"RadioPass is going to be a way to put See WEB WATCH, page 39 ►

Enter to win one of 26 great prizes in Radio World's reader appreciation contest giveaway!

Dear *Radio World* Reader: Last year, many of the greatest names in our industry teamed up with *Radio World* for a year-long sweepstakes extravaganza that resulted in almost \$50,000 in prizes given away. Due to the overwhelming response from you, we've decided to do it all again in 2002 as a way of showing our appreciation to our loyal readers.

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To enter the contest you need to complete these three easy steps:

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NTR

► Continued from page 35

While many stations go only so far as to tag spots with "For more information go to www-dot . . .," the Web offers many more opportunities.

"For a residual amount you may sell an extended package where their radio buy will last until a certain period of time, but you keep them up on the Web site for a period of time," said Peggy Miles, president of the Internet consulting company Intervox Communications.

She said a station, through its Web site, can alert listeners to remotes and other advertiser-sponsored events.

Casper said the Internet "brings to the table all sorts of new tools radio stations can sell in to retailers. Those are everything from spelling out promotions online, collecting e-mail addresses, coupon-ing, product display, special information sections that deal with the client, especially like in the medical field, or in really any area where there's expertise involved."

One example Casper has seen at several stations, including KCBS(AM) in Los Angeles, is an auto dealer's "ask-the-expert" section. Listeners, through the station Web site, can ask a mechanic about car problems. The questions and answers are posted for all Web site visitors to see.

"The automotive dealer can use their on-air campaign, whatever they're doing



Peggy Miles

in terms of traditional advertising to drive people to that section of the Web site where they can again have a chance to market to them using the station's Internet site."

'Ask the expert'

Automotive isn't the only category in which this approach can work.

"There's a station up in Tulsa, KBEZ(FM), that did TulsaHealth.com," said Casper. "That site's devoted to answering medical questions in the Tulsa area. That's a terrific use of a station's Internet presence to serve the community and also generate some non-traditional dollars."

Warner's AOL Internet unit, has promised it too is looking to revamp its Internet radio offerings, including an up-sell subscription service on top of AOL's existing subscription fees.

So even though some of the giants got a head start into subscription Web radio, they don't appear to have unassailable leads. Combine that with an August 2002 report from the Online Publishers Association, which found Internet users are becoming more willing to pay for content, including music.

"As consumers become more familiar with the Internet, they become more willing to pay for things online," said Michael Zimbalist, executive director of the Online Publishers Association. "That

"I think it's helpful for stations to look at the Internet as a non-traditional tool, because it tends to opens up a few more doors, rather than thinking of it as a straight marketing tool with banner ads and click-throughs and that sort of thing. Using their Web site to play out some of these non-traditional revenue opportunities can result in a lot of revenue as well, and it also opens the door to a little more creative thinking."

The Web also brings the opportunity to utilize e-mail for NTR.



Dave Casper

"One of the ways that a lot of radio stations are finding it successful, if they do it accurately, is the proper use of e-mail databases," said Miles. "But this has to be very, very controlled, and very opt-in, as far as what you're sending the consumers, how often you're sending it to consumers."

may seem daunting, she compares it with starting a radio station itself.

"The first time you come on the air, you don't have many consumers, and you start advertising the program and keep saying you have the features," she said. "You might collect a thousand people who want the weather alerts, the emergency alerts, and then you get to the point where that's enough people that they're driving to work and you get a retail sponsor to start putting this on their Web site."

While the idea behind each NTR sale is to bring revenue to the station, you derive benefits by having a lot going on at your site.

"The more content-rich a radio station's Web site is, the more reasons there are for people to visit," said Casper. "That's the real challenge for our industry ... it's a very different kind of medium for radio, and it doesn't mean we can't do it well; there are stations all over the country that do an exceptional job with their sites."

One worry for both stations and advertisers is whether relying on the Internet leaves too many non-Internet users out. Neither Casper nor Miles find that concern a deal-breaker.

"It begins with the argument that the people who are online are your best customers," said Casper. "These are people who tend to be better educated; people who tend to have a higher income. The Internet is now more than 50 percent female, and women tend to be the key decision-maker in any household. When people have a real time-crunch, they tend to use the Internet more, especially where shopping is concerned."

Web Watch

► Continued from page 38

many more stations up on that national footprint, and make sure that those folks are actually getting paid and that their costs are being covered."

So now that there are turnkey paths to put subscription services up on the Net, Web Watcher notes two things that are promising for stations wanting to start such subscription services: those with the head start have continued to stumble, and recently announced research shows listeners are more and more willing to pay for services over the Net.

KPIG's stream has re-emerged as a subscription service. Is it the start of a trend?

Pressplay, the subscription music and download service backed by record labels Sony Music Group and Universal Music Group, found that its restrictive download policies were not enough to entice the subscribership the venture had predicted. On Aug. 1, the service debuted version 2.0, which allows unlimited musical downloads and lets users to burn some downloaded music to CDs for their permanent music libraries.

Other subscription services were quick to demand the same capabilities with music from Sony and Universal, though this was still up in the air at this writing.

Jimmy deCastro, former radio biggie and now president of AOL Time

is a general phenomenon. If you look at online shopping overall, it takes about six months for people to warm up to buying something online, and they try something small, like a CD or book."

Zimbalist told us that business content and investment news are tops because they have an immediate effect on people's lives.

"Entertainment content is the second most-paid-for item, and if you look at that, it's people paying for things like NASCAR and Britney Spears on RealOne on multimedia, topics people feel passionately about."

Web Watcher notes that No. 3 is online dating. ●

The core of a marketing message is going to be whatever you put on the air. Internet enhances that.

— Dave Casper, RAB

With Internet users ever more overloaded with spam, how much e-mail is too much?

"It's more important what content they've opted-in to participate in as far as frequency," said Miles. "In some cases, if it's the lunch special every day, and they've opted-in, then send them a lunch special every day. Or it could be more practical for you at the beginning of the week to send out on Monday five different lunch specials."

Give them what they want

"It's basically determined by the value of the content and if the consumer wants it. If they want it, if it's like the joke of the day and they sign up for it, then send them the joke of the day, brought to them by brand ABC. If it's something like a weather alert package that's sponsored by (an advertiser), then that's going to be once every couple of weeks or every six weeks, whenever the weather gets bad."

Miles said software tools are available for a station looking to set up such an e-mail marketing program. Some are turnkey solutions, others use standardized software such as Microsoft Access or Outlook. And while building a large database of listeners

"One of the basics of proper marketing and direct mail is to make sure you reach people the way they want to be reached," said Miles. "And you're not going to be able to reach your whole audience on the Internet."

"Now, today more than ever, because of the at-work use of the Internet and at-work listening, most people do have access to the Internet or can find out information. You should always give them options for getting information in other ways, such as (by) fax."

Both Casper and Miles advise station sales staffs not to give up on the potentially significant source of revenue.

Miles said of salesmen, "They're going to run into some clients who think this is the best thing since sliced bread. They're going to understand and basically integrate it with the client's own marketing effort on the Web."

"And they're going to find, just like anybody, that other clients are going to go, 'No, I don't believe in this Web stuff. But I do believe in radio.'"

Craig Johnston is a Seattle-based Internet and multimedia developer. Reach him via e-mail to craig@craigjohnston.com. ●



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Studio Sessions



Old-Time Mics
See Page 43

Radio World

Resource for Radio On-Air, Production and Recording

September 11, 2002

PRODUCT EVALUATION

Behringer Small Mixer Line Grows

by Carl Lindemann

Behringer's latest, the Eurorack MXB1002, is a 10-channel console featuring five microphone preamps, sliders for faders, and can run on battery power.

The MXB1002 does not match the flexibility and sound quality of other mini mixers at three times the cost. But the price/performance ratio is terrific. Those looking to do radio work will be pleasantly surprised by the value of this Behringer device.

Tiny footprint

At 11.7 inches by 8.5 inches, the footprint of the MXB1002 is about the same as a standard sheet of paper, albeit almost three inches high at the thickest and weighing in at about 5 pounds. Except for the external power supply connector and the on/off button, all connectors/controls are located on the top.

From the left, the first two channel strips are mono and the remaining three are stereo. Each comes with a gold-plated XLR connector. The mono channels also have a balanced 1/4-inch line input jack and an insert jack; the stereo channels have L/R balanced 1/4-inch jacks that

can be used in parallel with the microphone input.

Each channel has a three-band EQ, pan, gain and FX level controls. A separate stereo tape channel gives another two channels of I/O and offers both 1/4-inch and RCA connectors. Besides the headphone and main output, monitor send and FX send 1/4-inch jacks complete the I/O layout.

The sealed faders, five-level LED meter, phantom power switch and monitor/FX and headphone levels fill out the rest of the board's real estate. It is laid out in a straightforward way.

For the most part, construction quality was excellent. The sliders and pots were solidly built and had a good feel — amazing for the price (less than \$150).

We started by turning up all the pots to max and see how much noise there was with nothing attached.

Recording with Cool Edit Pro 2.0 through a Digital Audio Labs CardDeluxe, the hiss was enough to light up the first LED on the meter and Cool Edit's analysis gave about a 46 dB signal-to-noise ratio. Fortunately, that dropped drastically to reflect the published specs of about 96 dB when everything was dropped down to a more reasonable (i.e. mid) range.

Taken alone, the microphone pre-

amps are rated at a respectable 104 dB. At that point, it was hard to pick out the noise from the preamps from other possible sources.

The real point of the "pump-up-the-volume" test was to see how susceptible the board is to RF and the like.

Given the amount of noise floating around PC-based studios, this can be problematic. Even using balanced connectors does not help when the circuits inside the board are not wired correctly.

The MXB1002 seems to be properly

shielded and did not act like an antenna picking up noise from my production computer. It does not suffer from such shortcomings and is up to snuff in the production studio. Despite the low price, this is not a toy.

This board uses the same 17-volt power brick as that on the Micromixer in the line, the MX 602A. The bonus with the MXB1002 is the ability to run off of batteries. The battery slot on the bottom closes with a Phillips-head screw.

Inside, the workmanship seems sloppy compared to the fit and finish of the rest of the unit. But once in, the batteries do not bounce around.

See BEHRINGER, page 47 ►



The Eurorack MXB1002

Just Another Cheap Detective Novel

by Alan R. Peterson

(Cue seductive 1940s saxophone track.)

It was another grim, wet day in the big city. The rain clouds cast a dull pallor over the skyline like a cheap gray suit on a door-to-door vacuum salesman, and the rain bounced off the roof with a sound like frozen peas cascading onto a kettledrum.

The perfect day for a mystery. My name's Mark Coney. I'm a detective. I also come up with really lame similes.

Whodunit?

The morning started out as slow as melted caramel running uphill in the Yukon, when she glided into my office.

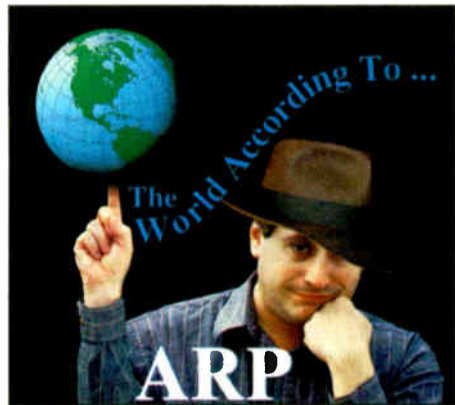
"Mr. Coney," she purred, "I'm in need of your help."

"Spill it, doll," I replied. I couldn't help but stare at her eyes, big as a pair of Western Electric VU meters, topped with eyelashes long enough to be windshield wipers.

"Meters? Wipers?" she asked. "You really do come up with lame similes, Mr. Coney."

She continued, as I pondered to myself how she heard that.

"My name is Gertrude Gates, Mr. Coney," she went on. "My father was murdered yesterday morning in Cincinnati and I want you to find the killer."



"Gates?" I asked. "Your father was Harris Gates, the prominent congressman?"

"The same," she replied. She didn't weep, but had a bitter look in her eyes. A look so bitter, I could have used it in place of Angostura in an Old Fashioned.

"Will you please stop with the similes?" she barked out at me.

Again wondering how on earth she heard me, I pressed on. "You got any idea who did this to your father, Miss Gates?"

"Only one person," she answered. "A Cincinnati jock my father angered last year in an FCC obscenity case. My dad filed a complaint and this man swore he'd

See ARP, page 48 ►

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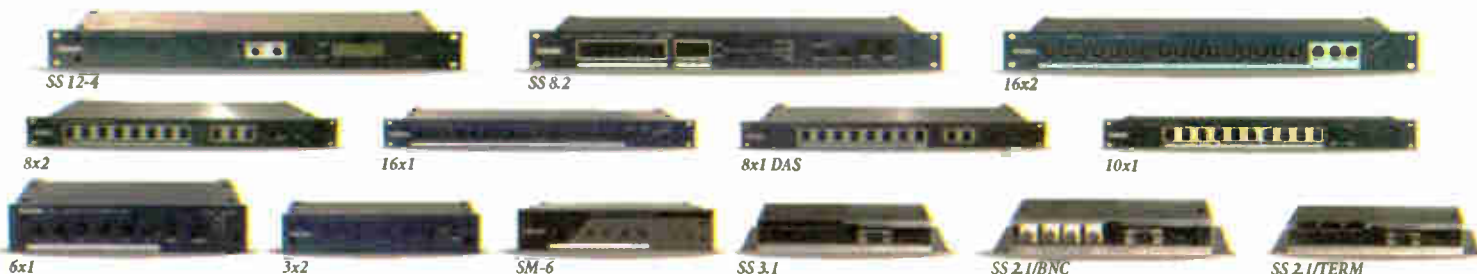
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ROOTS OF RADIO

Velvet Voices and Vintage Mics

by David L. Hollyer

In radio's "Golden Era," the mid-1930s to the late 1940s, before the flickering images of television captured our interest, there was only radio. And unlike television's favorite and familiar faces, radio offered just voices — distinctive voices whose owners became famous and recognizable.

Who can forget the marvelous voice of David Ross, of Alois Havrilla, John S. Young and other equally famous radio announcers of the era? To name a few, there was Harry von Zell, Ben Grauer, Del Sharbut, and, of course, Don Wilson, the hearty belly laugh on the Jack Benny show.

Who does not remember the cultured and dignified delivery of Milton J. Cross on the Metropolitan Opera broadcasts faultlessly articulating opera names and musical terms in Italian, German or French and the smooth polished diction of Andre Baruch?

There were other radio voices, newscaster like Gabriel Heatter ("Ah, there's good news tonight!"); the soothing voice of Lowell Thomas; the clipped authoritative voice of H.V. Kaltenborn; the measured tones of Edward R. Murrow and the flat Middle Western twang of Elmer Davis or entertainers like Major Bowes and his "Original Amateur Hour."

The nasal acerbic delivery of comedian Fred Allen and, on the long-running drama, "One Man's Family," the deep resonant timbre of Michael Raffet, who played the part of Paul.

Workhorse mics of the era

But all these voices, different as they were, had one thing in common. They were almost faithfully conveyed to listeners in all their recognizable individuality by the two microphone "workhorses" of that era — the RCA types 44B and the 77D. Of course, there were other makes and models, but these two stand out.

These two versatile velocity-type microphones delivered almost-flat audio response from the lower bass registers up to well above 10,000 Hz. These were studio microphones; never meant to be used outdoors. The wind beating against their fragile internal ribbon elements would make them unusable outside.

The RCA 44 was big and bulky, with a bidirectional pickup pattern. It was great for interviews across a table because it had pickup from both faces.

The classic RCA 77 was versatile; it was smaller and cylindrical in form. Through a screwdriver adjustment in the bottom of the mic, the pickup pattern could be changed from omnidirectional to unidirectional.

The microphone seen on the desk of CNN's "Larry King Show" is an RCA 77. Show insiders say it is not connected; live or not, it makes a great prop.

In the early 1940s, as America edged closer to war, Hollywood and broadcasting stars began to desert the American radio scene.

Jimmy Stewart joined the Army Air Corp. Murrow began reporting from beleaguered London. Glenn Miller and orchestra went into uniform and many announcers joined up.

In early 1943 I found myself disembarking from a ship in the port of Casablanca in North Africa. A public-

address system was blaring loud music to anyone within range.

As the music ended, a voice familiar to me announced that we were listening to a request disc show called "The Old Oaken Bucket," broadcast over the Army Broadcast Service (ABS) station in Casablanca.

The owner of the voice identified himself as Andre Baruch. That I already knew, what I did not know was how a famous network announcer ended up in French Morocco doing a disc show for GIs.

A few weeks later I met him at the studios of ABS in the Fraternal Building in

The models go back as far as 1920 and include the old double-button carbon mics, condenser models, dynamics and, of course, the classic RCA ribbon microphones. He has dozens of the model 77s and 44s dating back to 1931.

Mic museum

Bob Paquette, on the other hand, has been an aficionado of old microphones since he was a kid in grammar school. He has collected so many of them that he has opened a museum, part of his home in Milwaukee.



RCA 44 BX and RCA 77 DX

Casablanca. The building also housed an RCA 1 kW medium-wave transmitter. Baruch was a captain and commanding officer of the Casablanca detachment of the ABS. I really went to see him so I could hit him up for a transfer to his broadcast unit and get away from a rather dull Signal Corp. assignment.

Unfortunately the unit's Table of Organization, which spells out the number of personnel, was full up. He was sorry and so was I; I never got to work with him.

His show was popular with the troops and no one could blame Baruch if he gave a lot of airtime to recordings of Bea Wayne, his singer wife, who was at the top of the charts with hits made with the Larry Clinton band, "Reverie" and "Deep Purple."

I lost track of Baruch when my Signal Corp. outfit moved to Oran and then into Italy.

Vintage microphone collectors

Many people are so enamored of vintage microphones that they started collecting them. Two of the best-known collectors are Jim Webb of North Hollywood, Calif., and Bob Paquette of Milwaukee.

Webb has been collecting for more than 20 years and has acquired more than 200 microphones of all makes and models. Most of the mics work and can be listened to by visitors.

held a surplus sale, which included several RCA microphones, at its studios in Munich. RFE was replacing all of its older RCA 44B and 77D microphones with Sennheiser and Neumann mics.

I had an affection for the RCA models, having taken them along on RFE "remotes" in London, Berlin and Rome. I bid \$5 each for two type 44Bs and two 77Ds; my bid was accepted.

A few years later I sold them. Collectors were then offering \$500 each and I thought that was a pretty good price. Nowadays, collectors' classified ads in radio magazines and newspapers, including Radio World, offer \$2,000 to \$3,000 for these microphones in mint condition.

Ah, those vintage microphones, which carried so many voices to our

The collection, which consists of more than 1,000 microphones, may well be the largest collection of U.S. vintage microphones in the world. Paquette was fortunate enough to have acquired the entire NBC collection, which had been on the market because NBC lacked the space to store or display the microphones.

Paquette's collection is housed in a garage attached to his home, which also contains his business, Select Sound Service. To arrange a visit, call him at (414) 645-1672.

My own efforts at microphone collecting have been more modest. Circa 1965, my former employer, Radio Free Europe,

ears in that Golden Era of Radio, when our entertainment was aural rather than visual. As more than one writer has noted, nothing visual can ever equal the pictures created by our imagination through listening.

David Hollyer began in broadcasting in 1938. During World War II he served with the Signal Corp. in North Africa and Italy.

His career included engineering work for Voice of America, Radio Free Europe and Radio Liberty in Greece, Germany and Spain. He also worked for Page Communication Engineers and MITRE Corp. ●

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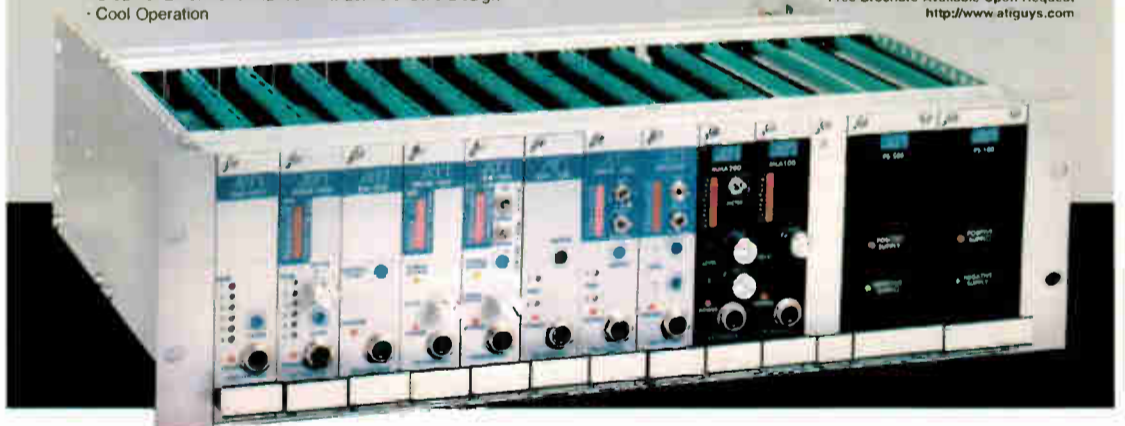
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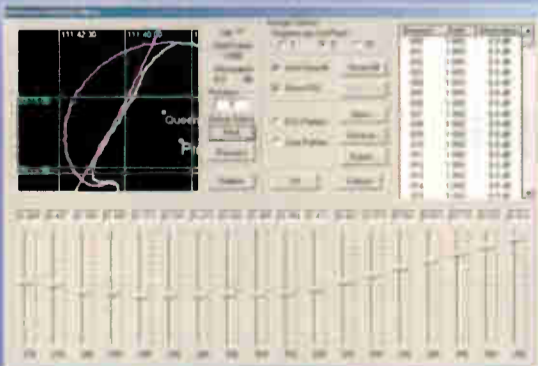
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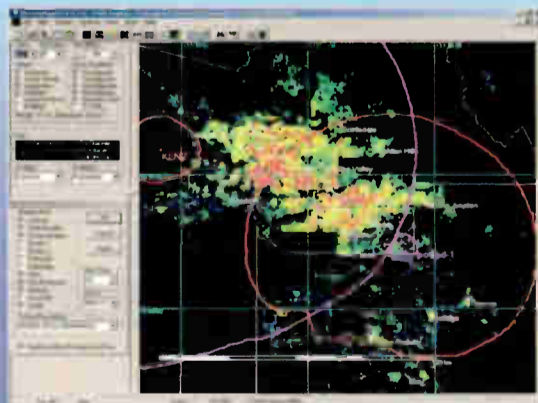
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PRODUCT EVALUATION

Digilink-Free: Hints and Kinks

by Jon Brookmyer

Digilink-Free is a hard drive automation package, created by Arrakis software engineer Aaron Palmer and offered free by Arrakis Systems.

extension to all cuts under that cart number.

For example, assume you have only one legal ID and have assigned it Cart No. 1000. You later wish to add two additional IDs to rotate. Open the recorder panel (Ctrl+E) and add an extension to the original cart num-



The company requests a small fee if you wish to register the software. However the functional, no-strings-attached automation system is available for download to anyone with Internet access (www.arrakis-systems.com).

Anyone familiar with Digilink II or III should find this system familiar.

I have tinkered with the software for several months and decided to put it to the ultimate test. I am running it full-time on a 25 kW FM station in the St. Louis area.

While it seems to be performing well — in fact much better than the \$1,200 software it has replaced — I did encounter a few glitches along the way.

Some of the information included here may seem like common sense to a broadcaster, but I have provided it for the sake of any hobbyists or audiophiles who may not be as familiar with the concepts involved.

The information contained herein pertains to the current version 1.01. Digilink Plus and Digilink Supreme provide optional enhancements to Digilink that are explained at the Arrakis Web site.

Cart numbers and rotations

When using the program, use numeric-only cart numbers. This will make life much easier when you have a library full of carts and cart rotations. Just trust me on this one.

The program limits you to a maximum of eight-character cart numbers. This can hardly be considered a limitation, as it means your library can contain several million cuts.

The manual does NOT mention that you cannot have more than 99 audio cuts rotating under one cart number. To attempt otherwise may result in strange schedule quirks, such as the same cart number rotating to infinity.

Imagine, for example, a hypothetical Cart No. 2002 with 101 cuts rotating under it. When this cart comes up in the schedule, it tends to "hang" and play only cuts 2002-01 through 2002-101 over and over again. I discovered this while trying to create a music schedule via random rotation.

One cart does not a rotation make. If you have only one audio cut under a given cart number, do not attach a rotation extension (-xx) or the software may lock up looking for the next cart in the rotation.

If you later add cuts to create a rotation, apply an

ber (such as 1000-01), as well as all subsequent cuts (1000-02, 1000-03).

If you do not do this, only the original Cart 1000 will play.

Avoid duplicate cart numbers. As the cart number is

What Do You Want for Nothing?

By itself, the Arrakis Systems Digilink-Free is a bargain. But what about when you need rudimentary music scheduling, the ability to build a log or playlist, or perhaps wish to drive external equipment or a satellite system?

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A new feature set for Digilink-Free came out at NAB2002. For an average \$50 tab, it offers new flexibility to the award-winning automation package.

The first feature set is called Digilink+Plus, which takes the basic freebie and adds the capacity for a second soundcard to feed a cue channel and serial I/O to communicate with routers and satellite receivers, all for \$49.95.

Another \$50 gets you Music+Plus, a simple but flexible music scheduler that lets you assign music categories, generate format clocks and create playlists for on-air playback.

While eschewing features such as tempo, dayparting and mood, as found in more expensive schedulers, it provides a fast and inexpensive way to prepare and import music logs into Digilink-Free.

Full program schedulers and a file management plug-in are available, but if you feel uncomfortable with having to trust your station to free software, check out the \$1,995 Digilink-Supreme.

This consists of a rackmount hardware controller and software solution that adds satellite control, "magic calls," time sync and other necessary features to the fundamental Digilink+Plus, creating an integrated automation and satellite music system.

— Alan R. Peterson

only the first eight characters in the filename of every cart in your library, and all additional information is contained thereafter, it is possible to assign more than one cart the same number. As scheduling is handled via cart number, this should obviously be avoided.

See DIGILINK, page 47 ▶

High-Powered Fun

It's usually work, work, work for engineers. But when it's time to relax, where do they go?

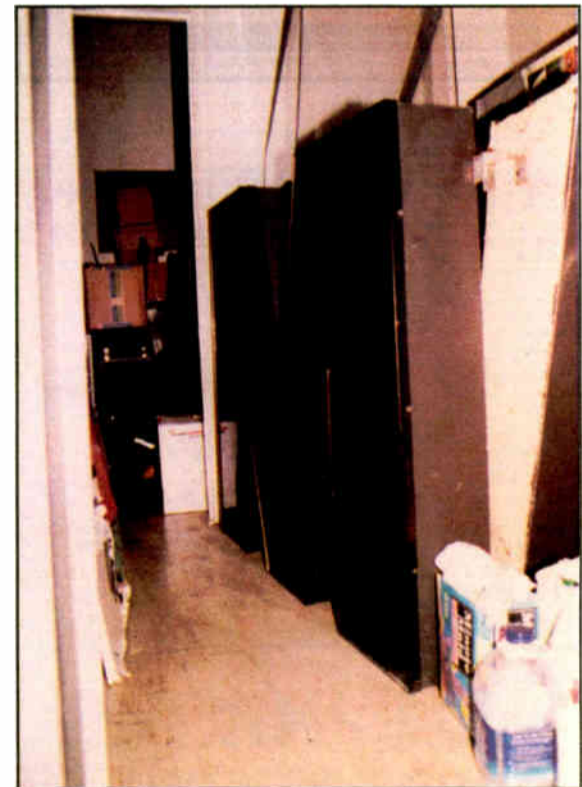
To a transmitter site, of course.

Chapter 37, the Washington chapter of the Society of Broadcast Engineers, held its annual Broadcast Engineer Spouse and Family Appreciation Picnic and Chapter Elections Aug. 10.

The location was the WMAL(AM) transmitter site, just off the Capitol Beltway.



Hungry engineers and their families dig in.



This giant fluorescent 'M' was part of an illuminated set of call letters that once adorned a studio location for WMAL.

Photos by Alan R. Peterson

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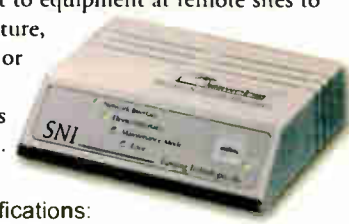
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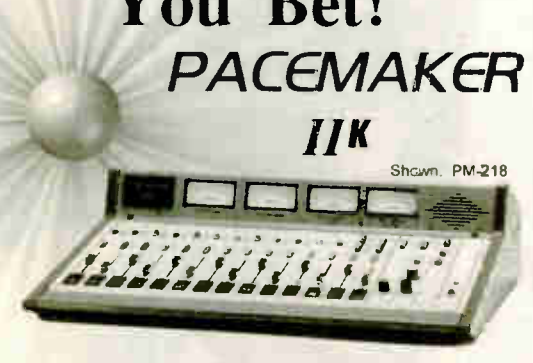
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Digilink

► Continued from page 45

This discussion assumes that normal broadcast practices are being employed and there is no deadroll at the beginning or end of any audio file.

As stated in the Arrakis manual, the actual time that an event is fired during automation is dependent upon which is shorter: the outro time of the cut that is currently playing or the intro time of the next scheduled event. This can make for bizarre segues.

The answer to this is simply to set your outro times to one or two seconds. You may have a cut with 45 seconds of repetitive garbage at the end, but an audio-editing program can be used to fade out the last few seconds past your desired outro point to prevent an audio train wreck. You may then set your intro times appropriately.

Digilink-Free requires approximately 0.5 seconds after an outro is reached to load the next cut and begin playing it. The simple fix for this is to add 0.5 seconds to the time you actually want the next cart to begin. If you have an audio cut that you want to segue into the next at 1 second before the end of the file, you would actually need to set the outro time to 1.5 seconds.

Cold cut

If the cut ends cold, you should still add the 0.5-second outro time to avoid dead air.

The countdown or intro timer is not exact, particularly because the time a cut is fired and the time it actually begins playing never occur at exactly the same moment.

In my experience, rounding the post time up or down to the nearest tenth of a second, then adding 0.1 second to that, works nicely.

This feature really is useful only when running live-assist; the only time you will see the intro timer count down is when you are starting automation or reentering automation after a break.

If you are running unattended 24/7, I suggest setting all your intros for long files such as music, to 59.9 seconds and at 0.5 seconds for short files like spots and liners. Because Digilink-Free takes the shortest time between intro and outro, your outro times for long files can pretty much be considered

etched in stone and your liners/spots should never stomp on the tail end of a song or each other.

The outro time for spots and liners should always be set at 0.5 seconds with the only exception being the kink explained above.

Digilink-Free does not like files shorter than 15 seconds. If you must use files of this length, you should set their intro and outro times to zero (0.00).

Lockup

This may cause you to have a little dead air when these files are encountered but the alternative is that, at some point, it will come upon one such short file and lock the whole thing up. It will not happen each and every time, and there seems to be no pattern to it. It just is the way it is.

(Note: According to the developer, this observation is specific to the reviewer's PC. Arrakis states it confirmed operation without delay at the factory.)

My best guess is this: Several processes are being performed during segues between two audio files, which tends to occupy a lot of the processor's attention. This could well be amplified by the necessary software decompression of MP2 and MP3 files, assuming you are using these to conserve drive space.

You also have the play log being appended, the selection of the cart that will play after the two that are currently cross-fading, further complicated by any cart rotations.

If you try to assign a three-second intro to a five-second liner, you will likely be confronted with a pop-up message, basically telling you that it is not possible, but not clearly explaining what it is you've done wrong or what you should do to correct it.

What is happening is that the intro and/or outro time cannot be longer than one-half the total runtime of the cart, minus one-half second. In other words, if your cart is five seconds long, your intro/outro times can be no longer than two seconds each (5/2: 0.5 second = 2 seconds).

Any local or network folder can be assigned as your library folder and can be shared by any number of networked computers running Digilink-Free.

The only stipulation is that the library folder found in the Digilink-

Free directory must be empty. When started, the software will look here first for audio files and if any reside there, they will be loaded by default.

This is true of every machine in a network environment. With the default folder empty, from the setup screen, you can select Directory Folder Path and navigate to any folder containing audio files. You must select one of these audio files and click the Open button, thereby loading the files in that folder. Then, back in the setup screen, click Save.

You will be prompted for a password and may simply click the Save button to the right of the Password box. A password may, however, be entered if you wish to restrict future access to the setup screen.

This software was designed to be functional with a consumer-grade sound card and does so well. For those of us who prefer to use a professional audio card, things can get tricky.

My card of choice is the MIA by Echo Audio. It is a great buy and has impressive specs. I ran into problems though, trying to use it under Windows 98 with Digilink-Free.

After some hair-pulling and calls to Echo and Arrakis, I opted to switch operating systems and go with Windows 2000 Pro. I loaded the latest WDM drivers from www.echoaudio.com. Problem solved, and as one would expect, I realized an improvement in system stability with the NT-based OS.

In keeping with what some would consider a long-standing tradition with broadcast equipment documentation, the help file and manuals leave room for improvement.

Such is the case with the Hot Keys; in this instance, some are just plain wrong. Also, the explanation of processes such as the voice-tracking

recorder and how to set the Jingles path are thready at best.

According to the manual, Digilink-Free is supposed to be capable of restarting in automation mode in the event of an improper shutdown.

Restart

After exhausting the conventional methods, I called tech support. It seems this feature was never actually incorporated into the software. Hence, in critical applications, the importance of a UPS cannot be stressed enough.

As I mentioned earlier, there are some similarities between Digilink II/III and Digilink-Free. While not essential, familiarity with these systems can be a real asset.

Putting aside the bumps I encountered on the road to building an automation system suitable for full-time implementation in a commercial broadcast environment, I have to conclude that Arrakis' Palmer did pretty good with this one.

You get a feature-packed, music-on-hard drive automation package for the staggering price of nothing.

The system I am using consists of a Pentium-III-750, 128 MB, 23 GB SCSI hard drive, 2 MB PCI video card, CD-ROM, floppy and a ZIP-100 removable disk drive for quick and easy file transfer, 56k modem, NIC and the sound card.

The whole works is housed in a full-sized server tower, leaving plenty of room for expansion. Perhaps someone will come up with a stereo generator, processor and exciter, all designed to fit in 5.25-inch drive bays. It could happen.

Jon Brookmyer has 12 years experience as a full-time audio broadcast engineer. He is an advanced-class amateur radio operator and computer tech. ●

Historically Significant Site for IEEE Symposium

The 52nd Annual Broadcast Symposium, taking place Oct. 9-11, will be held at the Omni Shoreham Hotel in Washington. The venue has historical significance because the main ballroom of the hotel was the home of broadcasts over the Mutual Broadcasting System in the 1930s.

"Embracing new broadcast technologies" is the theme of this year's symposium. A tutorial for radio broadcast engineers will focus on HD Radio, the new name for Ibiqity Digital Corp.'s IBOC technology.

Topics will include transmission system design, FM and AM HD Radio transmission plant design, select topics in implementation, HD Radio data broadcasting standards and NRSC evaluation of HD Radio.

In addition to tutorials and engineering sessions, two luncheons and a cocktail reception are planned. The first luncheon takes place Oct. 10 and is a joint luncheon of the IEEE/AFCCE (Association of Federal Communications Consulting Engineers) with Edmond J. Thomas, chief of the FCC's Office of Engineering serving as the keynote speaker.

The society's annual awards luncheon takes place Oct. 11, with keynote speaker Robert J. Struble, president, CEO and chairman of the board of Ibiqity.

For more information from the IEEE call the organization in New Jersey at (732) 562-3900 or visit www.ieee.org/btsymposium.

Behringer

► Continued from page 41

The major issue is the battery power this unit consumes. For those of us addicted to using rechargeable batteries, 9V is a tough choice. The biggest problem is hunting down a charger for 9V NiMH type cells. My "AA" setup does not include the requisite connectors.

Proper voltage

My tests were done with the recommended Duracell alkaline cells. Of course, getting the proper voltage from AA batteries would require 12 or more. So this may be the best choice given the size of the board.

Switching to battery shuts off the LED showing levels. Also, the 48-volt phantom power drops to 18 volt only. Depending on what microphones you are using, this could be problematic. Despite these energy-saving measures, a set of batteries lasted slightly less than official specs — just under four hours. For extended projects, keep a few extra sets of 9V alkaline batteries around.

The multitude of inputs on this unit seem to come at the price of more outputs. For just a strait stereo out, that's not a problem. But I did wonder about the lack of dual balanced control room jacks in addition to the main outs.

Instead, there is a single (unbalanced stereo) monitor send. So setting the mixer

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up in a project studio means feeding the mains into the production computer, and sending the control room jack to monitors through a "Y" cable.

I don't know why Behringer included the added amenity of 1/4-inch and RCA tape-ins and cut the dual monitors of its other entry-level boards.

The MXB1002 is handy and well-built; it sounds exceptional. It is suitable for those doing fieldwork on tight budgets.

In an upcoming issue of *Radio World*, Alan R. Peterson will evaluate the larger Behringer DDX3216 mixer. ●

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**RW NEWS
BYTES**
from the editors of

Radio World

ARP

► Continued from page 41
get even."

She handed me a picture of a Cincinnati DJ. He called himself "Rockwell" Collins.

"Strange," I observed. "He looks just like this guy here in New York ... calls himself J. Jason. I'd better check this out."

I grabbed my coat and headed for the door with my client.

"Console yourself, Miss Gates," I punned. "I'll get to the bottom of this faster than a fat guy on a bungee cord."

"That one wasn't even funny, Mr. Coney," she sniffed as she headed out the door.

As she left, I couldn't help but think about her loss. "What a shame," I thought. "Congressman Harris Gates ... he always was a solid statesman."

Man on the move

I made it to the radio station and lucked into catching J. Jason just as he wrapped up a four-hour show in only 15 minutes. "Well, well. Detective Mark Coney," he hissed.

Grinning and nodding toward the studio door, he added, "Voice tracking, babe. I can do my whole show here in New York in mere minutes. Frees up my whole day."

There was something about that grin that bothered me. It lacked sincerity, like a half-hour Sunday morning infomercial for bee pollen vitamins or Aloe Vera therapy gel. The little string section inside my head was screeching out an *agitato* passage right now.

I saved myself the time and trouble and took an instant disliking to him.

"So listen, Jason ... if that's your *real name*," I sneered, "what do you know about this Gates thing?"

"My real name?" he laughed. "Of course it isn't my real name, gumshoe. This is radio, remember? I'm on in eight cities. In Boston, I'm 'Modd Monitor,' in Utica, I'm 'DJ Kreem Sickle' ..."

"And what about Cincinnati, *Mister Collins*?" I sneered.

"You already used the word 'sneered' three paragraphs ago, Dick Tracy," he replied.

I checked. By golly, he was right. "Anyway," he continued, "I was there. But in *voice only*."

I stood there with a confused look on my face, like the look on a starving seagull trying to figure out a rubber worm freshly pulled out of an unattended tackle box.

"Man, it's a good thing you're not on the air," said Jason. "You sure don't know how to turn a phrase."

"Never mind that," I answered. "What's this voice thing?"

He explained, "When Gates was killed yesterday, I was here in New York cutting the show directly to the Cincinnati computer."

I still didn't get it.

"See," he offered, "in each city where I'm on the air, I simply record all my breaks down the hall and MP3 them out to each station, including Cincinnati. Sometimes I can cut those tracks days ahead of time with no problem. So you see, even though I had an ax to grind with Gates, I couldn't have done it."

"I don't suppose you have a copy of that show I could listen to, do you?" I

inquired. He handed me a CD-R stamped with the date, along with one of his personalized station pocket calendars. In big gold letters, it read "J. Jason, DJ. FM/AM." Whoopy-doo ...

"Anything else there, Sam Spade?" he asked as he grinned at me again.

I despised that crooked, stained grin ... like peeled-up mahogany veneer on an old waterlogged parlor piano after an upstairs bathtub overflowed through the ceiling onto it.

"Coney, get out of here!" he shouted. "Those similes are bringing me down!"

I listened to the CD of the show, my heart sinking with every break.

Not because it proves he didn't do it, but because he got everything wrong. Song titles, the name of his local news sidekick, pronunciations of local landmarks; yep, he was definitely not in Cincinnati when the murder occurred.

"They're still working on the Louis and Richard Rosenthal Contemporary Art Center at Eighth and Walnut Streets," one so-called *local* break proclaimed. Had my suspect actually checked, he'd have known it was *Lois* and Richard on *Sixth* and Walnut.

**'Hey,' banged the
upstairs tenant, 'Keep
those similes down.
I'm trying to read!'**

"Sunny and beautiful at Tobay Beach," went the weather break. Whoopsie, got his forecasts confused. Tobay is in New York. East Fork State Park might have been a more appropriate choice.

After that came traffic reports, upcoming concert notices and remote appearances that actually occurred two weeks prior. The more I listened, the more I was convinced that he was nowhere near Ohio when Gates met his fate.

My heart felt heavy as a trash bag filled with a month's worth of spoiled food from the jock lounge's fridge. I had no choice but to call his daughter.

"Miss Gates? Mark Coney here." I sheepishly said. She replied, "What was that about a trash bag and a fridge?"

How does she *do* that?

I briefly explained how my best suspect passed the sniff test and that we were back to square one. "Swell, now you're into clichés," she replied. "What's next, a reference to a Swiss Army Knife? Maybe sliced bread?"

I understood her frustration. But it meant now I had to look elsewhere. "I'll figure it out, Miss Gates," I told her. "It's just a matter of time."

Wait a minute ... time ... hmmm ...

I scooped up Jason's calendar and read the front again. "J. Jason, DJ. FM/AM." It only took a moment before I realized the printing stood for *the first letter of every month of the calendar starting with June and ending with May!*

Something else Jason said. As Collins, he could "cut those tracks days ahead of

time with no problem." He was very much enamored with the fact he could manipulate time to his supposed advantage. Yet every time he did, it came back to bite him when his break was totally wrong.

I went back and replayed part of the CD. "Traffic is unusually heavy today crossing the Brent Spence Bridge, and it's looping all the way around Vine to Sixth Street, boxing you in around the Convention Center."

I had him at last. My eyes blazed with the light of realization ... blazing as brightly as a pair of overfueled Coleman camping lanterns decked out with brand new mantles.

"Hey Coney," banged the upstairs tenant, "Keep those similes down. I'm trying to read!"

Jason was his usual smug self when I showed up at his studio with Miss Gates and two constables from the ranks of New York's Finest.

"What's the matter, Sherlock? Nothing better to do this morning?" he grinned.

Oh, that arrogant grin ... like the sneer of a trapped beaver that *WHACK!* ... a subtle reminder to the head from Miss Gates grounded me.

"J. Jason," I declared, "or Mr. Collins or whoever you want to be called, you are under arrest for the murder of Congressman Harris Gates!"

The grin faded and the look in his eyes changed when the cuffs went on. He knew that he was caught. "How did you figure it out?" he demanded.

"Simple," I replied. "You boasted how you could be in one city while a crime was being committed in another. Your pocket calendar, your own air name and your own actions betrayed how much you enjoy being able to play with the very fabric of time itself. And you did your best to convince me that you were doing a live show in New York while your pre-recorded show ran in Cincinnati, when the truth was ..."

Miss Gates gasped and finished my thought.

Enlightenment!

"... That you were really voice-tracked in New York and you flew out to do your show live in Cincinnati that morning!"

Jason could not deny it. "But how did you figure it out?"

"Your traffic report for the Brent Spence Bridge," I told him. "You got it *right*. The only way that could have ever happened would be if you were actually there!"

"Gee, this reads like just another cheap detective novel," said one policeman. "It is," said the other. "Didn't you see the title on page 41?"

As the cops and Miss Gates led Jason away in irons, he barked out orders to his producer to call his lawyer, his agent, and his affiliates to have some Best-Of shows ready to go in about three weeks. He was already caught up on pre-tracked "live" shows until that point.

I headed back to the office, pleased with the work I had done. I felt prouder than a papa goose who just led his flock to the pond for the first time.

A cabbie drove by, rolled down his window and shouted, "That's a gaggle, not a flock, you moron!"

I wish I knew how they did that.

Epilogue: Miss Gates never did pay Mark Coney for solving the case once she finally figured out his Harris Gates "console yourself" gag.

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Radio World, September 11, 2002

PAGE	ADVERTISER	WEB SITE URL
35	AEQ	www.aeqbroadcast.com
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37	Harris	www.broadcast.harris.com
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46	Kintronic Labs	www.kintronic.com
15	Klotz Digital AG	www.klotzdigital.com
41	Lynx Studio Technology	www.lynxstudio.com/rw
42	Mager Systems	www.magersystems.com
46	Mager Systems	www.magersystems.com
31	MediaTouch	www.omt.net
34	Moseley Associates	www.moseleysb.com
42	Nott Ltd.	www.nottltd.com
9	Omnia, a Telos Company	www.omniaaudio.com
46	PTEK	www.ptekpower.com
12	Radio Design Labs (RDL)	www.rdlnet.com
5	Radio Systems	www.radiosystems.com
11	Radio Systems	www.radiosystems.com
44	Raduga Automation	www.raduga.net
44	RAM Broadcast Systems, Inc.	www.ramsyscom.com
46	Ramsey Electronics, Inc.	www.highpowerfm.com
44	rfSoftware, Inc.	www.rfsoftware.com
3	S.C.M.S.	www.scmsinc.com
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Check With the Manufacturer First

by Martin Sacks

The amount of help that is available to today's broadcast engineer is truly marvelous. It's a testimony to the power of the Internet, particularly the popularity of the list server. Assistance can now come from people on the other side of the world, where in the past such help could only be obtained one-to-one.

A lot of us were fortunate to enter the business when many excellent engineers were available to turn to. I was always picking the brains of Dave Garner, now market engineer for the Washington, D.C. Bonneville stations, and Milford "Smitty" Smith, vice president of radio engineering for Greater Media.

parts of the world. Some may not have information on where to find the equipment manufacturer. And some firms don't support their products very well. The only solution in these cases may be the list server.

However, for the rest of us, the manufacturer is the best place to start. At Telos/Omnia, and in many other firms like ours, there are a number of people dedicated to supporting customers. We take this function seriously and have devoted significant resources to it, including the writing of comprehensive user manuals.

In addition, these manuals can be downloaded free from our Web site or via CD-ROM (email me at

I noticed an unfortunate trend: a tendency to turn to online friends to solve equipment problems before contacting the equipment manufacturer.

These great engineers helped me to really understand and apply concepts learned in textbooks and equipment manuals. They could answer anything I threw at them. They were, and continue to be, mentors.

Group think

Today, we see broadcast professionals in countries all over the world offering and receiving tremendous amounts of advice from one another via the Internet. Who could have imagined how enabling this web of computer connections could become for our industry?

There's no doubt that the Internet can be incredibly helpful, but I have begun to notice an unfortunate trend: an increasing tendency to turn to online friends to solve equipment problems *before* contacting the equipment manufacturer to seek assistance.

Why the concern? Because many posts seek information from the group to solve problems that we as the manufacturer could address quickly.

This has the potential to be counterproductive, because the advice from the list may not be accurate, especially in light of the changes that can occur with manufacturers' hardware and software upgrades. It also contributes delay to finding the solution because the engineer must wait for the "ring in" from the others in the group. In some cases, failing to contact the manufacturer first can even increase the severity of the problem.

Of course, some manufacturers are no longer in business. Some folks are in locations that make it difficult to have real-time communication with other

marty@telos-systems.com and I'll send you one). We also have an online tool to help customers determine the current software revision levels of their Telos and Omnia products.

Most important, we have full-time telephone support dedicated to answering questions that come up before and after purchase. These are just a few of the things manufacturers do to support our customers.

We're here

Of course, nobody's perfect. There's always room for improvement in any endeavor. But I'm told that Telos does pretty well in the area of customer support, and I've been told most other manufacturers do too.

Yet, like other manufacturers that I talk to, we often see posts asking for answers to problems we could quickly solve. Sometimes we even get "flamed" by somebody who never sent us an e-mail, gave us a call or looked in the user manual prior to "going off." In many cases the negative postings are never retracted publicly in spite of their inaccuracy.

I know that our group is committed to providing the best support possible. Many of us are former radio engineers, so we know that good support is vital. We will continue to grow in this area and we welcome your suggestions on how we can do this to serve you more effectively.

In the meantime, it is my hope that you will contact the manufacturer first when you have an issue with a piece of gear.

We're standing by to help you.
Martin Sacks is national sales director for Telos Systems/Omnia Audio.

◆ READER'S FORUM ◆

Radio World, September 11, 2002

Radio: business or art?

Pete Simon's letter (July 17, "CP instead of PC") left me feeling that his 20/20 hindsight is clouded by rose-colored glasses.

The free-form stations he looked back on sure were fun to work for and listen to, but the format attracted what any broadcaster (for that matter, any performer) considers his/her worst nightmare, a "small-but-loyal audience."

When the SuperStars format first came along, we free-formers whined that it wasn't creative enough for us, but most of us were convinced when we saw the phenomenal numbers it got on nearly every station that aired it. Rather than killing rock radio, SuperStars proved that album rock could make for a successful radio station.

Incidentally, SuperStars was developed by Lee Abrams, who today is the programming force behind XM. Pete credits (or blames) Bill Drake, who was responsible for "Boss Radio," the successful top-40 format launched in the 1960s.

Don't get me wrong; I had the time of my life working at KMET(AM), KPPC(FM), KSAN(FM) and others of the free-form era. It's just that the world, and peoples' tastes, changed. We didn't have time any longer to sit and listen to a 45-minute "thematic" music set about trains; and the new, tighter formats more closely matched



our new lifestyles.

I personally cheer for stations that can survive with eclectic formats — like KPIG(FM) — but they are an anomaly. The fact remains that radio is a business, it ain't art.

*Bob Gowa
Sales Manager
Verizon Wireless
Santa Rosa, Calif.*

Eventide ad

Ah, the finger. Raise an index finger and you want someone's attention; raise the pinky and you are drinking tea properly; raise the middle finger and you can get arrested.

Well, thumbs up to that, I say. Except when I did it to a co-worker from Bangladesh, he almost decked

me. An upraised thumb, he tells me, is a very bad thing to do.

I gave the thumb-and-finger "ok" sign, but that means "worthless" in France, and "@hole" in Brazil. Another near punch in the nose.

When we finally achieved some understanding, I gave the "V for Victory" sign, but had my hand in the wrong position and the Aussies got angry.

Unthinkingly, I scratched my earlobe and some Greek accused me of questioning his sexual orientation.

We can get so serious over something that expresses itself very clearly. Those who would boycott the company over its ads may well find themselves purchasing an inferior product out of spite. And I'm sure none of those self-righteous people ever tossed the finger in their lives. Nah. They'd never lower themselves.

*Tom Carten
Morning Producer/Host
WRKC(FM)
Wilkes-Barre, Pa.*

Micropower radio

Thanks for giving coverage to the discussion of micropower radio (July 17, "Pirate Radio Still Afloat"). You can call them pirates or whatever, but the truth is that people have a constitutional right to use the radio spectrum. William Kennard's efforts for democracy on the radio dial were attacked viciously by the NAB. And when they couldn't bully him into gutting LPFM, they went to Congress and got their special

EAS worked

We hear a lot about the shortcomings of the EAS system; however, the recent Rodeo-Chediski fire in Arizona provided an opportunity for the EAS system to demonstrate its capabilities. It didn't happen by accident, though.

Last year, a visit to many of the area radio stations by the FCC demonstrated serious deficiencies. One AM/FM station had never even purchased the equipment. Other stations were not monitoring the correct assignments, and all the stations were deficient in record-keeping. Navajo County had an EAS encoder/decoder, but the Sheriff's Office had no protocol for its use. There was no approved county EAS plan.

As a result, our company, Peak Broadcasting Company, was employed by most of the stations in the county and by the Sheriff's Department to correct these problems. In addition to fixing hardware problems at the stations, we reorganized the EAS structure regarding each station's participating role and set up feasible monitoring assignments.

In conjunction with the Navajo County Emergency Services Department and the National Weather Service, we rewrote the EAS plan for the county into a concise, understandable document that clearly detailed monitoring responsibilities and activation procedures for both the broadcast stations and the governmental authorities.

It took until late April for all the pieces to be put in place, but the system was operating just in time for the huge Rodeo-Chediski fire. This fire burned nearly half a million acres of timber and at the same time threatened the populations of the communities of Show Low, Lakeside, Pinetop, McNary, Honda, Heber, Claysprings, Linden and other seasonal home locations such as Forest Lakes.

The Sheriff's Office ordered the evacuation on a Saturday evening when many of the stations' staffs had left for the day. Their message went out county-wide over the system that our company, the local broadcasters and local governmental authorities had implemented. More than 35,000 people were evacuated in very short order, and with no accidents or serious problems.

This is a great success story for EAS. It demonstrates what is possible when cooperation is achieved between broadcasters and government.



The Rodeo-Chediski fire in Arizona as it looked from Michael Woodworth's backyard during the evacuation period.

*Michael Woodworth
Chief Engineer
Peak Broadcasting Co.
Show Low, Ariz.*

Call them pirates or whatever, but the truth is that people have a constitutional right to use the radio spectrum.

— Paul Griffin

interest legislation "fast-tracked" into law.

Despite the fact that the LPFM plan did not require any high-power station to reduce its levels or shut down one repeater, the broadcast lobby screamed bloody murder! Speaking of repeaters, aren't they in fact micropower stations by another name?

Here is my humble proposal: First of all, Clear Channel needs to be broken up. Second, high-power stations need to reduce their radiation. Third, let's open up the audio portion of TV Channel 6, just below the current FM dial, for micropower community stations. And finally, don't hand over any more spectrum to evangelical broadcasters. They really don't need any more space on the dial.

*Paul Griffin
Editor
Association of Micropower
Broadcasters
Berkeley, Calif.*

Write to Us

RADIO WORLD READER'S FORUM
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GUEST COMMENTARY

IBOC or HD Radio, Too Little, Too Early

by Tom Bosscher

Well, from all the press releases, this IBAC/IBOC thing — or HD Radio, as Ibiqity Digital is now calling it — is the killer application for us broadcasters. Let's dig a little bit and see what shows up.

Among the claims of FM IBAC/IBOC is that it sounds better than analog FM. 100 kbps? I don't think so. Any decent analog FM station will sound superior to this gigantic bit-loss audio transmission mode. What record company would be willing to send its latest single out down-coded to 128 kbps?

Yet, this is supposed to be better than analog FM. A simple statement: most FM stations sound better than IBAC/IBOC.

Keep in mind that you will be using an MP3-type signal as your audio signature. Remember just one thing with any digital compression scheme: once the bits are thrown away, you cannot get them back. Sampling of 32 kHz for 16 bits times two channels is 1,024 kbps. This is what the average FM analog radio station is on the air with today. FM IBAC/IBOC is around 100 kbps. IBAC/IBOC is throwing away 90 percent of the bits that we use on the air today.

All of the demonstrations that I have seen with IBAC/IBOC have been with a direct CD audio source. How does the new algorithm work with existing digital compression audio sources at most stations? ISDN, Musicam, MiniDisc, MP2 and MP3. And how will it sound being driven by the digital satellite sources, with their very own way of dropping bits?

Has there been any reasonable amount of listening tests using transcoded material? Transcoding — using more than one digital compression scheme — exists at most FM stations in the United States.

From my personal observation, the demonstrations of IBOC have been coming directly from a CD, with minimal audio processing. In the real world, PDs will want that average audio level right up next to the peak. The press for the highest-density audio will be present in IBOC just as strongly as it is now with analog FM.

Ask Bob Orban or Frank Foti what happens to highly processed audio that then goes through any perceptual encoder. This automatic blend to analog will dictate that the digital audio stream will be as aggressively processed as the

analog source.

Again, how will a digital satellite source sound after industry-standard level processing, then into the Ibiqity 10-to-1 bit-reduction scheme?

Another perpetuated strength of IBOC over analog FM is the elimination of multipath. Let me save the automotive manufacturers a lot of money. Take a look at the German-built Blaupunkt radios, which use DSP decoding at the 10.7-MHz IF. The capture ratio hovers at 1 dB, as opposed to the 8-10 dB of the average Detroit-designed automotive radio. Cut the capture ratio down to 1dB, and most of the multipath goes away. If Blaupunkt can retail these radios for \$200, what do you think Detroit can build them for?

Wishful thinking

Let's step sidewise and look at the highly touted AM IBOC. I will admit that I was oh-so-hoping for a solution for AM here. But, what was it, some 30-odd years ago that the FCC stopped licensing new AM daytime-only stations? Something about not serving the public? And now, IBOC AM is for daytime only? Should the FCC even allow this?

Let's look at a parallel, HDTV. The TV broadcaster gets to decide how to utilize the bandwidth. But not the closed-and-to-be-paid-for technology of IBOC FM. The digital signal *has to* be a copy of the analog. We, the broadcasters, cannot take the composite 150 kbps and use it the way we feel.

Why can't I decide to have one 50 kbps and four 25 kbps slots for audio? It's not allowed under Ibiqity. And why? Follow the logic of the touted superior digital signal. When this superior digital signal fails, Ibiqity wants to have the receiver fall back to the inferior coverage of the analog FM. If the digital is so superior, why does it need to fall back to anything?

Let's talk money.

Ibiqity plans to extract money from the broadcaster three ways. First, they charge a six-digit figure to the Ibiqity exciter manufacturers for the rights to build the exciters. Second, they charge a per-exciter fee. Last, they charge the station a direct fee. As of today, it is one fee for life — until Ibiqity asks the FCC for the entire RF mask, and dropping the analog FM signal. What will the fee be for that?

It was reported that Ibiqity has

9/11: Remember, Respect

The importance of this issue's cover date — Sept. 11 — is by no means lost on us at Radio World.

Flight 77 flew low over our Northern Virginia headquarters and rattled our windows on its doomed journey into infamy and into the Pentagon. More than the image on the television screen, the roar of those overstressed jet engines bearing down Columbia Pike toward Arlington, Va., made it an eerily personal experience.

On this date, we praise our resolve as a nation and observe the solemnity of the occasion, but cannot help being haunted by that sound even today.

Our nation presses on. And radio with it.

Changes in our own industry have been made since last September. Many stations have instituted new personnel and facility security measures and explored alternate backup studio and transmitter sites. News departments are being bolstered or, in some cases, established for the first time.

EAS, long a target of critics and the subject of many an RW editorial, is changing for the better. Amended rules adopted by the FCC in February further refine the alerting system.

But what is needed now for EAS is an understanding that someone in authority must be able to activate it. On 9/11, a state of emergency was declared in Washington at 1:27 p.m., yet nobody thought to activate the Washington EAS.

On-air personnel must be better trained on EAS procedure. Perhaps adopting a *twice-monthly* Required Test and staggering the test times so they don't always fall upon the midday jock and overnight announcer may be in order; remember, the terror of 9/11 began before 9 a.m., the domain of the morning host.

A fundamental understanding of basic journalism should be part of any broadcaster's skill set, whether music jock or news hound. Speculation, inaccurate reporting and sensationalism should not have driven the tempo of the day. It's our job to get it right before going on the air.

Furthermore, there is no humor to be found in human tragedy of any kind. Some pranksters still find it funny to call in bogus reports to news organizations during breaking stories, then spring in a reference to Howard Stern at the end.

Mercifully, no such fraudulent calls came through on 9/11; but a more recent tragedy, the July 4 shootings by Hesham Mohamed Hadayet at L.A. International Airport, brought the jokers out again. While this infiltration affects television coverage more so than radio, it is deplorable in any medium. It borders on cruelty and it is irresponsible to encourage it.

Broadcasters will play an honorable role today, Sept. 11, 2002. Our medium will pause in silence, then share our thoughts and our "where-were-you" memories with listeners. We need this catharsis as a nation, and we salute the stations that are helping us, even now, a year later, to heal.

— RW

invested over \$100 million, and the company says that it deserves the right to get that money back. Wrong. Ibiqity deserves the right to try to get that money back. Last I checked, the words were "and the pursuit of happiness." Why should the FCC guarantee any group the right to make money? Ask Magnavox how much money it made on AM Stereo.

IBAC/IBOC, the high-school experiment gone wrong, has been on the table for over 10 years. And yet, in the last few months, Ibiqity has changed to a new, "better" compression algorithm. Why can't we wait another decade and see what some students at MIT might come up with?

I would like to throw out a challenge. At this week's NAB Radio Show in Seattle, let's have a van with an Ibiqity receiver and a \$200 Blaupunkt digitally demodulated receiver. Audio source is identical, with identical preprocessing.

Let the riders decide.

If Ibiqity would really like to show the superiority of their product, they will build this van and put it on the road immediately. Schedule major markets, including those with multipath. Let's just see how easy it is to say no to this unneeded "improvement."

And here is the ultimate question. What benefit is IBAC/IBOC to any FM station, and to the consumer?

Tom Bosscher is director of broadcast engineering services and technology at Cornerstone University in Grand Rapids, Mich.

More Letters On Pages 52-53

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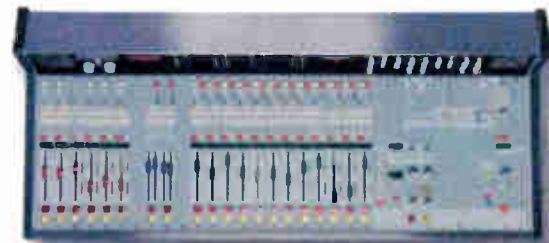
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