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The Newspaper for Radio Managers and Engineers

February 1, 2001

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DIGITAL NEWS

DAB: Slow Start in Canada

by James Careless

OTTAWA While Americans are likely to hear digital radio via satellite this summer and perhaps via terrestrial stations in late 2002, Canada has had digital radio for a year. But is anyone listening?

Few Canadians know about this new medium, and fewer still listen to it, even though digital radio has been officially on-air here since Nov. 1, 1999.

Radio reach

The Eureka-147 form of digital audio broadcasting can be heard in Toronto; Vancouver, British Columbia; Montreal and Windsor, Ontario. These L-band DAB signals reach about one-third of the Canadian population.

The digital programming comprises simulcasts of analog AM and FM radio stations.

Canadians know little about digital

See CANADA, page 5 ▶

NEWS ANALYSIS

The TC Act at Age 5

The Historic Legislation of 1996 Has Remade The Face of Radio Station Ownership

by Scott Fybush

Can it really be just five years since the Telecom Act changed the face of radio ownership?

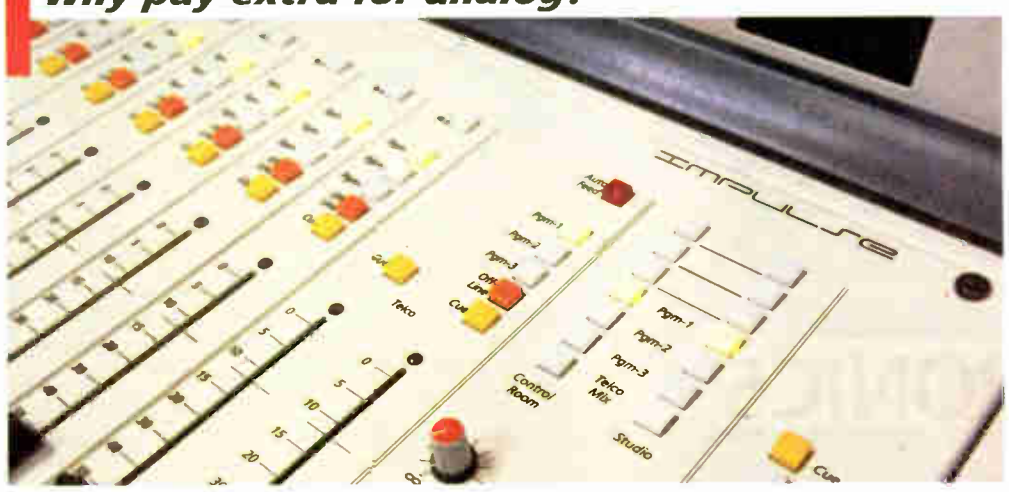
A look through the list of the largest radio groups at the end of 1995 shows plenty of familiar names. Infinity, Disney/ABC, Cox and Clear Channel all made the top 10 revenue-producing groups that year, just as they did at the end of 2000.

Take a look at their earnings, though, and the differences are stunning. CBS was the biggest group in 1995, but its revenues didn't even make a half-billion dollars — and it encompassed only 39 stations. Five years later, that top spot belongs to Clear Channel, with 1,157 stations and more than $3 billion in revenue, according to BIA Financial Network, the source of data for this article.

Then look down the list, as shown on the chart on page 8. If anyone had asked their managers in 1995, companies such as Evergreen, Chancellor, Viacom, ARS, SFX, EZ, Citicasters, Secret, Nationwide

See TELECOM, page 8 ▶

Why pay extra for analog?



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World Radio History

◆ NEWSWATCH ◆

$18 Billion Seen For Ad Revenue

Radio analyst Jim Duncan predicts industry revenues will increase just over $1 billion to surpass $18 billion in 2001 — a 7-percent gain over 2000. The projection is based on Duncan's analysis of more than 170 markets and factors in radio's performance over the past several years.

"The radio industry has had a stellar, two-year run of double-digit growth," said Duncan, publisher of "Duncan's American Radio." Overall industry revenue grew by nearly 13 percent in 1999, for a total of $15.5 billion, and the previous year was up 10 percent. If final figures for 2000 showed at least a 10-percent gain, that would be the third straight year of growth.

Duncan is not the only one predicting radio will grow past $18 billion.

BIA Financial Network predicts gross radio ad revenues of just over $18.5 billion for the year 2000 — a 16-percent increase from 1999. BIA surveyed radio executives to confirm its early projections. Surveys were mailed to more than 6,100 GMs and 3,600 owners of nearly 11,000 stations in November 2000.

And a few weeks earlier, Interep Chairman/CEO Ralph Guild predicted that radio would top $20 billion for 2000.

'99 Figures Released On Publicly Held Groups

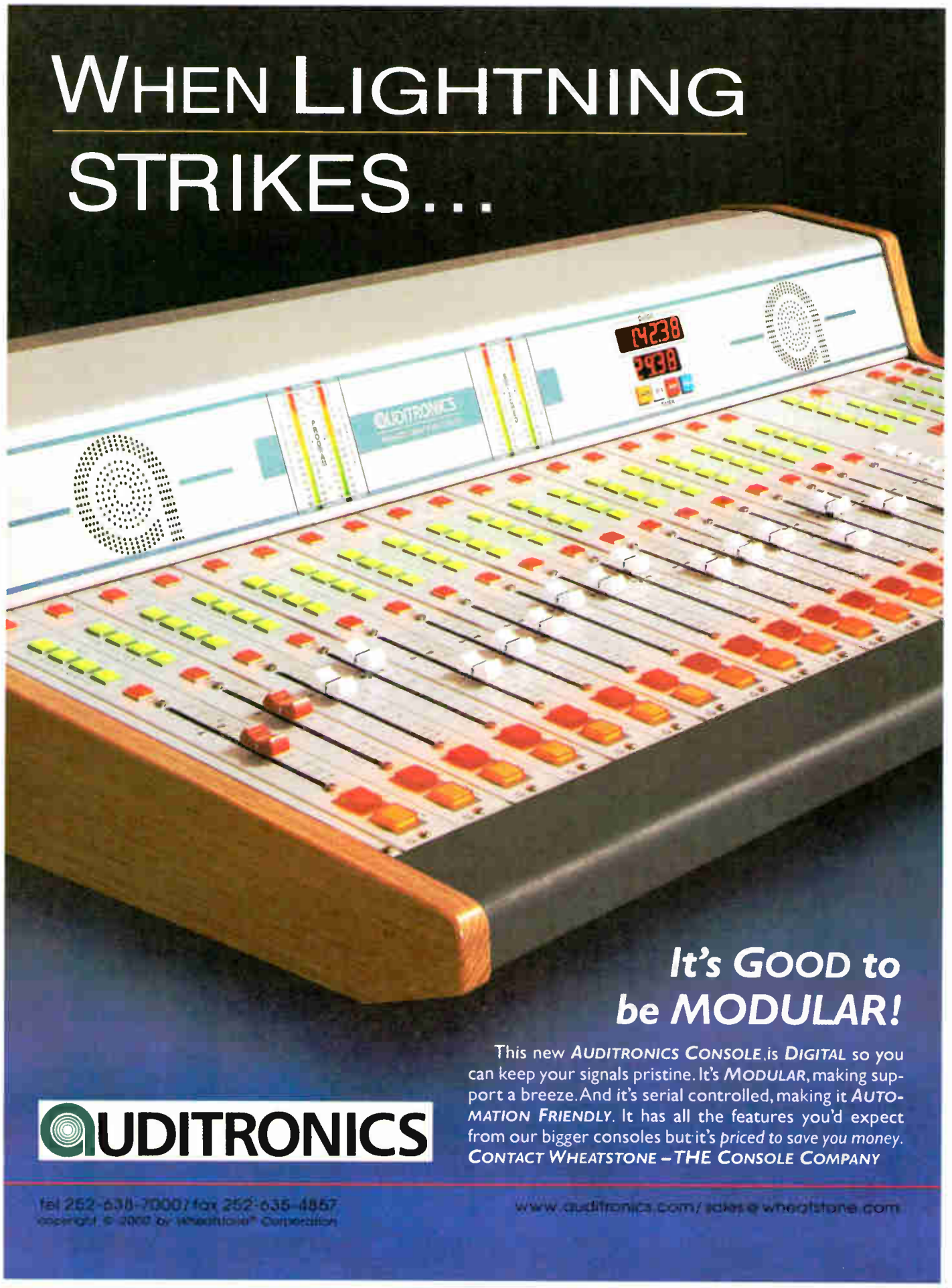
NEW YORK Radio consolidation helped 1999 revenues for publicly traded groups rise 20 percent from 1998 to just over $8 billion, according to media merchant bank Veronis Suhler.

Three major radio groups, Infinity Broadcasting, AMFM Radio and Clear Channel Communications, accounted for more than 72 percent of adjusted total radio revenues and 84 percent of combined assets at publicly reporting radio companies in 1999, according to its annual review.

Total publicly traded communications industry revenues reached $271 billion in 1999 and the number of companies covered grew from 473 in 1988 to 560 in 1999, due mainly to the number of Internet companies going public.

Veronis Suhler estimated Internet revenues for publicly traded companies at more than $9.6 billion in 1999, a nearly 70-percent increase over 1998.

See NEWSWATCH, page 8 ▶



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World Radio History

FCC Proposes Quick SDR Approval

by Leslie Stimson

The FCC hopes to make it easier for companies to receive agency authorization to deploy certain types of products that perform several functions — for example, devices that act as a cell phone that can be reprogrammed to act as a Palm Pilot.

In the future, manufacturers could add capabilities to these devices, including FM reception.

These devices under development are called software-defined radios. The commission considers them spectrum-efficient because SDRs look for portions of the spectrum authorized for use but unused at that moment.

In a software-defined radio, functions that were formerly carried out solely in hardware, such as the generation of a transmitted signal and the tuning of the received signal, are performed by software contained in high-speed digital signal processors.

Lee Hamilton, president and chief executive of AirNet, which manufactures base stations for cell phones, said SDRs "make the FCC's job easier, because you don't have to deal with legacy equipment out there when moving to a new application." He said his company has been shipping SDRs to clients for three years and other manufacturers, such as Motorola and Ericsson, have the devices in development.

At present, if a manufacturer wants to make changes to the frequency, power or type of modulation for an approved transmitter, the company must receive a new approval from the commission and the gear must be re-labeled with a new identification number. The current process also assumes parameters of any piece of gear are fixed, which is not the case with SDRs.

The commission in December 2000 proposed ways to speed up the authorization process for SDRs. FCC officials said the current equipment authorization process takes about 30 days for any piece of equipment; they'd like to cut that time in half.

The FCC solicited public comments on SDRs, which must be submitted by March 19.

The commission in December 2000 proposed ways to speed up the authorization process for SDRs.

AirSite Base Station on an antenna tower

Marti Electronics Moves Manufacturing

CLEBURNE, Texas Marti Electronics, a division of Broadcast Electronics, will move its assembly operations from Cleburne, Texas, to BE's Quincy, Ill., headquarters.

Customer support, sales and service departments of Marti will remain in Texas. The transfer will be completed during the first quarter of this year.

John Pedlow

John Pedlow, president and CEO of Broadcast Electronics, said the reason for the move was to improve manufacturing logistics and efficiencies.

"This will have no effect on our customers," said Pedlow. "We are keeping the rest of the Marti operations in Texas because we have a good pool of skilled technicians and support people down there. That's important to maintain."

Jim Godfrey

Up to 15 manufacturing employees in Texas will lose their jobs. The company may add employees at the Quincy location. Jim Godfrey, president of Marti Electronics, will continue to have overall responsibility for the division's operations.

Broadcast Electronics designs, makes and sells broadcast automation systems, RF transmitters and remote equipment. The company was founded in 1959 and acquired Marti Electronics in 1994.

Marti Electronics, founded by George Marti in 1965, is known for its remote pickup units, studio transmitter links, exciters, telephony products and antennas.

"Marti is not going away," said Pedlow, "in fact, they have recently introduced a new line of 'Plug N Play' FM transmitters and have future introductions in the works."

The Plug N Play (PNP 150) is an FM transmitter designed for "value" applications. It accepts analog or digital audio from an STL, ISDN or direct feed, and is priced below $5,000.

— Ken R.

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World Radio History

Engineer Hams Launch BEAN

Who is even more impassioned than a radio engineer? An amateur radio buff, of course. And when you combine the two, you get a dedicated, enthusiastic crowd.

A new organization called the Broadcast Engineers Amateur Radio Network, or BEAN, has sprung up to address the specific interests of engineer hams. It's the brainchild of Ken Locke, an engineer at Northern Christian Radio, WPHN(FM) and WOLW(FM), in Gaylord, Mich., who had the idea while chatting on *broadcast.net*

What could be more natural than an organization for broadcast engineers who are interested in amateur radio?

"I one day was reading e-mail in the radio engineering list server and out of plain curiosity asked all of the engineers if any of them were amateur radio operators," Locke told me.

"You would not believe how many responses I got. I then asked if there would be any interest in starting a group of engineers who also were amateurs."

Locke said the response was tremendous.

"We now have almost 150 to 200 members or interested parties. We have our own remailer at *BEAN@broadcast.net*. We are also in the process of setting up a live chat room for members to use."

Locke has dreams for BEAN.

"Some of the other things we are trying to do is get a booth at a future NAB show, start a weekly HF (high frequency) Net, help with nationwide communications during emergencies and get discounts on ham gear and services for our members."

Engineers and hobbyists will be able to share knowledge. Membership is open to anyone.

"We also could help people who are not hams yet," Locke said. "The FCC has just made it easier to get into ham radio. No code is necessary to get into the hobby, and to get the highest license in ham radio you only need 5 WPM code instead of 20 WPM. Easy for most people."

Locke, whose call sign is N8PJN, lives in northern lower Michigan. He said he would like help anyone get into ham radio or join BEAN. Contact him via e-mail to *kenlocke@ncradio.org* with "BEAN" in the subject field, or register to be on the BEAN e-mail list server at *www.broadcast.net*. Click "list servers" and select "subscribe/unsubscribe to BEAN."

★ ★ ★

Radio World Sales Manager John Casey has added the position of associate publisher to his duties here.

Many readers know John not only for his work at RW, but from his days in sales and marketing for Telos Systems and Denon. His is a familiar face at radio stations, at equipment suppliers and at industry organizations like the NRSC.

He will take an even more active role in running the business of our publication. John's energy, ideas and enthusiasm are a big part of our paper's success.

★ ★ ★

Got an opinion about — well, anything?

Radio World is the industry's biggest marketplace of ideas. Tell us your thoughts via e-mail to *radioworld@imaspub.com* for possible publication on our Opinion page.

From the Editor

Paul J. McLane

Congratulations to Martin Stabbert, the first winner in our 25th Anniversary Silver Sweepstakes.

Stabbert, vice president and regional engineer for Citadel Communications Corp. in Reno, Nev., wins a Marti RPT-15. This is a 15-watt dual-frequency, continuous-output transmitter designed for portable, mobile and aircraft use. It is AC- or battery-operated and available in UHF and VHF bands. Retail value: $1,495.

And of course it's made by the friendly folks at Marti. You'd be hard-pressed to come up with a name that is more well known or respected in the radio industry. We thank the folks there for providing the first of our 25 prizes.

Stabbert was eligible because he registered on our Web site and took two minutes to fill out the simple form. There are many more super prizes coming. Don't miss your chance to win. Visit *www.rwonline.com* as soon as you can!

Marti RPT-15

¿Habla Español?

Transmitter Remote Control Now In Spanish

Designed specifically to meet the needs of Spanish speaking operators and engineers, the new ARC-16 ESP from Burk Technology will:

- let you read messages and alarms in Spanish right on the front panel, and,
- listen to your readings in clear, fluent Spanish using an optional Spanish speech interface.

With Spanish language manuals and our bilingual technical support, Burk Technology can provide you with the products and support you need.

Order a new ARC-16ESP today, or ask about simple conversion for your existing ARC-16. Your staff will be saying, "*Gracias.*"

World Radio History

GUEST COMMENTARY

AM Signals *Can* Sound Good

Author Decries 'Ignorance and Bogus Information' In Debate Over Better AM Radio Listening

by Larry Langford

The following is another reply to a Guest Commentary by Jon GrosJean that appeared Oct. 11, 2000. He wrote about the impracticality of making AM receivers that have the audio quality of FM receivers.

RW published several rebuttals in the Jan. 3 issue.

While I respect the credentials of Mr. Jon GrosJean, I cannot help but look at his article concerning AM as being the same as an engineer who states that based on body size and wing area, a bumblebee cannot fly!

I think there is a big difference between what Mr. GrosJean is stating and the real world. He states that anyone who thinks a practical AM radio can be designed to sound as good as FM is living in a dream world.

GE Superadio

If that is the case, then the General Electric Superadio must be like the bumblebee that supposedly cannot fly. The GE should not be able to produce good AM sound but does so, and is practical.

If you use the GE to listen to an AM station that has a good transmitter and proper processing, music on the GE does sound as good as FM. Today's typical boom box has AM audio down 5 dB at 3 kHz and 12 dB at 5 kHz. Does Mr. GrosJean think this is acceptable as an entertainment device?

Minimum standards

Since so many manufacturers are cranking out such poorly designed AM sections on even high-priced receivers, we AM broadcasters feel we need FCC intervention to set some kind of minimum standards. Is Mr. GrosJean against any standards at all?

For years, broadcasters had to do proof of performance. Is it so strange an idea to have receiver makers have minimum standards to better echo the standards that the stations themselves are held to? In the end, it is supposed to be about quality service to the public.

Mr. GrosJean talks as if the National Radio Systems Committee sessions of the 1980s never occurred. The problem has really not been one of design possibility or impossibility but rather implementation. The committee developed a plan that made sense. Is Mr. GrosJean better aware than the committee of what can and cannot work?

The NRSC standard would give us radios that would be reasonably flat. While still short of absolute true FM sound, the NRSC standard would make a vast difference in the perceived fidelity of AM. But manufacturers never implemented the NRSC standard.

Instead of AM receivers getting better with the improvement in filter skirt design, the receiver bandwidth has been shrinking over the past 20 years. AM congestion has lessened thanks to expanded station band and revised FCC overlap requirements.

The problem has really not been one of design possibility or impossibility but rather implementation.

Room for better

Since most AM listening is to stations that are local and come in at higher than say 2 or 3 millivolts, there is plenty of room for improvement of local signal reception. If receiver makers have a concern for what happens at levels lower than 2 millivolts they can simply add a circuit to switch to current narrow mode for such conditions.

FM receivers have for years switched to mono when the received signal degrades below what will provide good stereo, so why not have AM radios produce wider band stereo but automatically switch to tight narrow if needed?

Why penalize those listeners, who are for the most part, in high signal areas by treating them as if they are trying to hear a station operating at 1 kW 60 miles away? While I will not say there is a dark conspiracy, there is a lot of ignorance and bogus information.

I would challenge Mr. GrosJean to help us light a candle rather than try to convince us that the dark is acceptable.

Larry Langford is chief engineer and owner of WGTO(AM) in Cassopolis, Mich.

RW welcomes other points of view.

Canada

▶ Continued from page 1

radio because receiver uptake has been slow. Home or car digital radio receivers cost the equivalent of hundreds of U.S. dollars. "Early adopters" may be willing to pay that price, but most consumers are not.

As a result, Canadian broadcasters are forced to play a waiting game. While their signals are broadcast in the L-band, they must wait for receiver prices to drop, consumers begin to demand the technology and receiver sales increase.

This year?

Participants are hopeful that 2001 will be the year.

"The new cheaper second-generation (digital radio) chip will take hold in Japanese and European receivers in 2001," said Duff Roman, president of Digital Radio Roll Out Inc., which is leading promotion for the Canada DAB launch.

Roman said he has seen some affordable DAB receivers recently produced in Asia.

These include home receivers priced under roughly $130, and a digital radio "black box" that interfaces with a conventional AM/FM car radio for about $68. He also said General Motors plans to begin offering AM/FM/digital radios in Canadian cars in 2002.

Pioneer Electronics of Canada reduced prices DAB receivers to roughly $400 at the end of November 2000.

Steve Edwards, vice president of corporate engineering and technology for Rogers Broadcasting, believes digital radio is a natural for portable devices such as Sony Walkman-type players.

'Best route'

He based this conclusion on conversations with equipment manufacturers, who are trying to find the "best route to the mass market" for DAB.

DAB Digital Audio Broadcasting

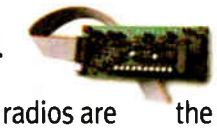
However, Edwards said, battery consumption is a real concern for portable DAB receivers. Fortunately, "a digital radio chipset has just been announced that can deliver eight to 10 hours of digital radio from a set of rechargeable batteries," he said.

Canadian broadcasters have long anticipated the arrival of mass-market digital radios and are unlikely to give up on DAB.

The Canadian federal government gave broadcasters the L-band for free, and these days such spectrum is worth a lot of money — about $33 billion, according to Roman.

Simplicity

Quality, Value, Dependability

This I understand.  If it burns out, I screw in a new one. My son's radios are the same way - everything inside is made so you can just put in a new one. He never said it wouldn't break! But, if it does, you can fix it in a jiffy. Such a bright boy! Now if only he could figure out a way to remember to call his mother once in a while!

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World Radio History

GUEST COMMENTARY

LPFM: Bad Script for Grandfathers

by Alan Jurison

The controversy continues inside the pages of Radio World and across the nation of the predicted impact of low-power FM stations. Despite legislation passed by Congress in December 2000 scaling back LPFM, like it or not, the service is in some form a reality.

Both the FCC Report and Order issued in January of 2000 and the Memorandum Opinion and Order released in September did a reasonable job catering to both interests.

However, a fundamental flaw still exists in the commission's distance separation tables in regard to grandfathered superpowered station protection. Last February, I filed a Petition for Reconsideration to address this issue, to which the FCC responded that it does not feel special protection is necessary.

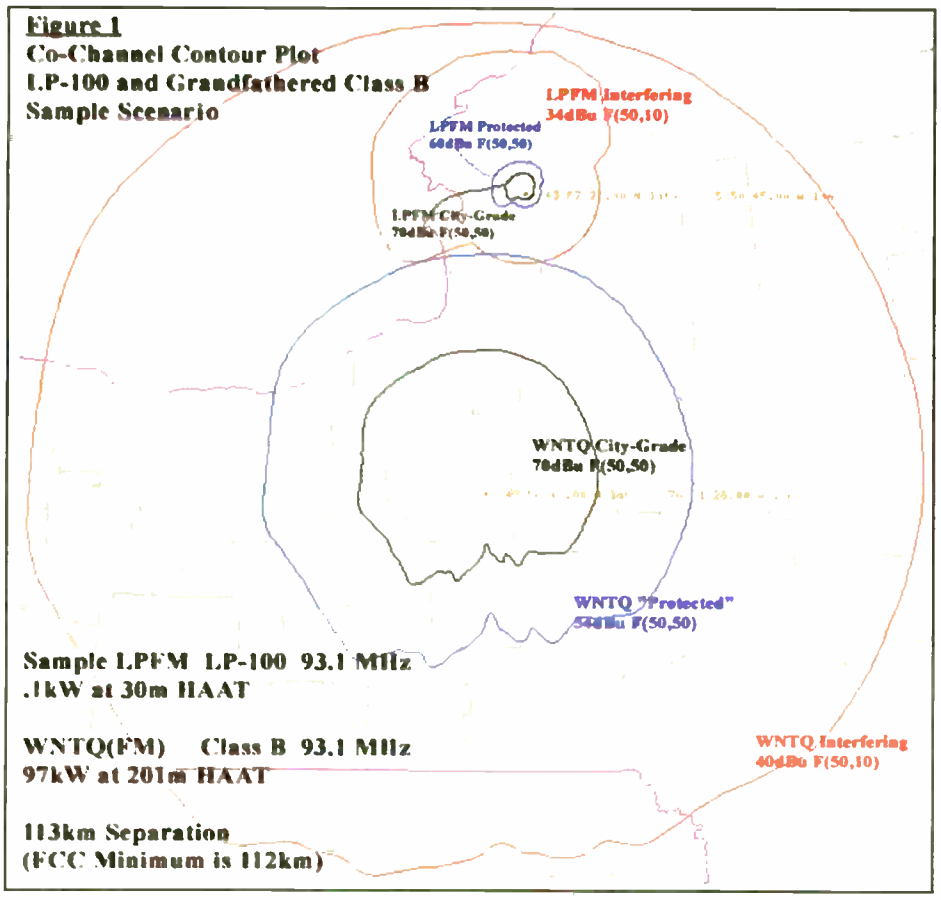

Fig. 1

I'm making my case to the industry and future LPFM operators because the agency seems to believe this situation does not warrant action. See if you agree.

A grandfathered superpowered station operates with a power and/or height combination that exceeds its licensed class. These stations typically were the first few FM stations on the air and were created before the current class structure was formed. Their geographic locations vary, but are primarily located in zones I and I-A (congested areas of the Northeast and Midwest as well as California) where Class C stations are prohibited.

Inexperienced decision makers

The FCC outlines that grandfathered superpowered stations operating in the reserved (noncommercial) band will receive protection to "distance separations for the class of station that most closely approximates its facilities."

However, for the non-reserved (commercial) band, it does not provide adequate spacing to prevent interference to and from many superpowered stations.

In the MO&O, the agency abandons its responsibility of preventing interference between stations by shifting the decision to uninformed LPFM applicants. "It will be the LPFM applicant's responsibility to consider the facilities of nearby superpowered stations when considering its choices for site and/or frequency."

Most LPFM applicants are unfamiliar with the technical side of broadcasting and will most likely be unable to identify, much less understand, the consequences of locating near a grandfathered superpowered station.

An LPFM station will receive large amounts of interference if permitted to operate in the shadow of many of these superpowered stations, as the current rules permit.

The commission is misleading LPFM applicants by granting a license in such situations. A simple engineering analysis clearly indicates that the interference received by the LPFM station will be intolerable.

I performed a contour analysis based on the current LPFM rules. I thought I'd relate rules to a station I am intimately familiar with, WNTQ(FM) in Syracuse, N.Y. WNTQ is a grandfathered Class B station with an effective radiated power of 97 kW and height above average terrain of 201 meters. Keep in mind, a Class B maximum facility has an ERP of 50 kW and HAAT of 150 meters.

Because the FCC doesn't recognize commercial grandfathered facilities in the LPFM rules, the minimum distance separation required for a co-channel (same frequency) 100-watt LPFM station to any Class B station is 112 km, or about 70 miles.

For WNTQ, I knew that was way too close for comfort because you can easily hear it 70 miles away to the north and it has no problem scanning on a car radio. So I picked a site 113 km or 71 miles away and performed a contour analysis. (See Fig. 1.)

In Fig. 1, the 40 dBu F (50,10) interfering contour of WNTQ (marked in red) should not cross the 60 dBu F (50,50) protected contour of the LP-100 station (marked in blue). The analysis showed the interfering contour of WNTQ doesn't just cross slightly into the service area of the LP-100's blue contour, but it completely passes it by over 40 miles! The LPFM station will be trampled by WNTQ.

Big example

Likewise, the 34 dBu F (50,10) interfering contour of the LP-100 station (marked in red) should not cross the 54 dBu F (50,50) "protected" contour of WNTQ (marked in blue).

I use "protected" loosely because the FCC only considers grandfathered facilities to be protected to the maximum distance allowed by a regular station of its class, in this case, a Class B station, 65.1 km or about 40 miles. Yes, there will be interference in the outer fringe coverage of WNTQ, but very limited compared to the drastic effect WNTQ will have on the LPFM station.

In reality, the site I picked cannot fit an LP-100 station because of other adjacent-channel issues. However, if those adjacent stations were not there, FCC rules would permit an LP-100 station at this location.

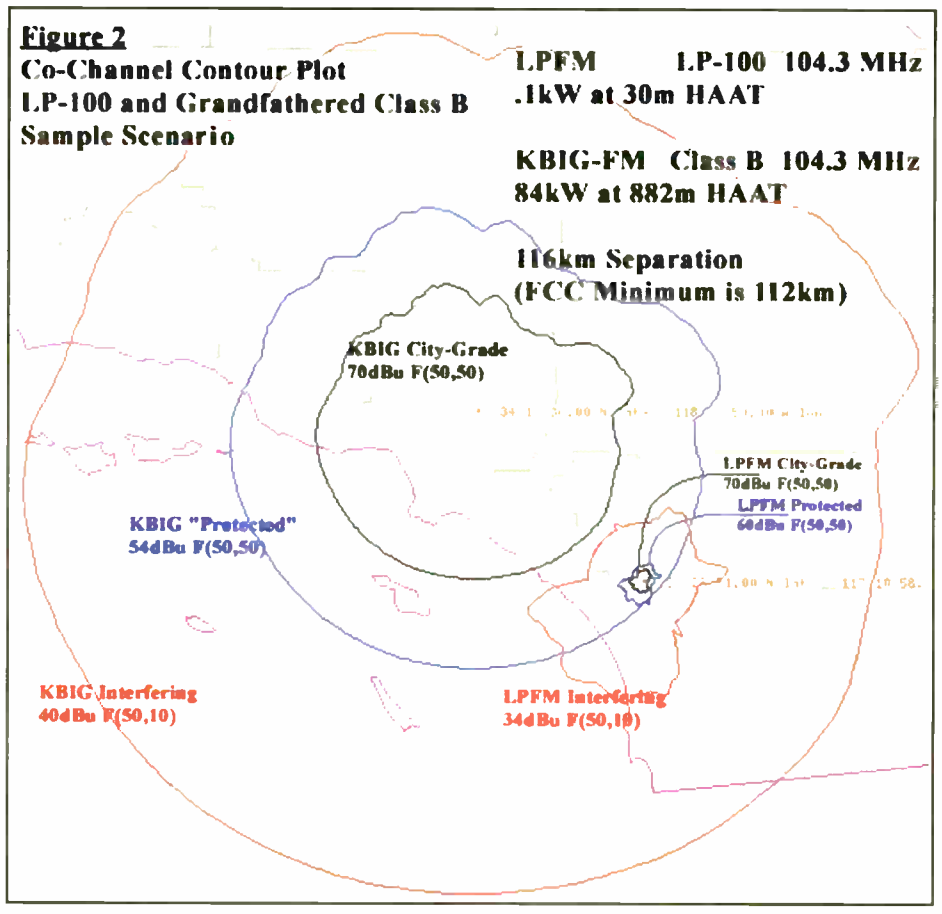

Fig. 2

So naturally, after being able to relate to this scenario, I had to dig and find a better example. I looked around and came across KBIG(FM) in Los Angeles, and *big* it is. KBIG is a grandfathered Class B station with an ERP of 84 kW and HAAT of 882 meters. While KBIG is a Class B station, its facilities actually exceed a full Class C.

Then I found a site that fit the spacing requirements to KBIG that was 116 km (72 miles) on the same frequency. While

Alan Jurison

I didn't do a spacing study to other adjacent stations, look at what the FCC rules would permit assuming there are no other spacing issues. (See Fig. 2.)

The majority of the LPFM station's 60 dBu protected contour (blue) is *inside* the KBIG "protected" 54 dBu contour (blue). The 40 dBu interfering contour (red) of KBIG extends an additional 70 miles past the LP-100 station. The 34 dBu interfering contour (red) of the LP-100 station not only crosses the KBIG protected contour, but also comes close to its predicted 70 dBu city-grade contour (black).

These two examples *clearly* show that the FCC distance separation tables for LPFM stations cannot be used when a grandfathered facility is in the equation. The FCC needs to extend protection to *all* grandfathered superpowered stations. Both stations used in the examples above should be protected as Class C stations in regard to LPFM allocations. Not protecting grandfathered superpowered stations from LPFM stations and vice versa is simply bad engineering practice.

The laws of physics will prevail; interference will happen whether the signal is commercial or noncommercial.

One of the primary duties of the FCC is to prevent interference, yet it is refusing to accept an active role in regard to these commercial superpowered stations. The agency has made special provisions for more than 200 stations carrying radio-reading services as well as 23-grandfathered superpowered noncommercial stations.

See GUEST, page 7 ▶

World Radio History

London DAB Group Complete

CE Digital Completes Nine-Station Digital Radio Multiplex in Greater London

by Dave Calhoun

LONDON New station Century London has gone on the air, completing a nine-channel lineup on the first digital multiplex here. Almost 40 digital radio services are now available in London.

This first multiplex license for London was awarded in 1999 to CE Digital, a joint venture between Capital Radio PLC and Emap Radio.

Capital bought Century from Border Television in early 2000 for roughly $219 million, with the aim of extending the Century brand to London.

Music-intensive service

The deal reflects a more general expansionist policy for Capital. It bought a Scottish station last summer, giving Capital the ability to broadcast to 58 percent of the adult U.K. population.

"While our digital station will be a hotter and more music-intensive service than its analog counterpart, it gives us the opportunity to introduce one of our key brands into the London market where frequencies, whether they be digital or analog, are scarce," said Sally Oldham, strategy and development director at Capital Radio.

Century is the ninth and final station on the CE Digital London multiplex. CE Digital is one of three companies that applied for the London digital multiplex license, the other two being MXR London and Switchdigital.

The Radio Authority regulatory body advertised the licenses in 1999 as part of a long-term goal of providing local Eureka 147 digital services to the main population centers of the United Kingdom during the next two to three years.

12-year license

At the time, the authority had already advertised licenses for Birmingham and Manchester, and it was advertising one local license every month. Both the Birmingham and Manchester licenses eventually went to CE Digital too.

The CE Digital license will run initially for 12 years for an annual license fee of roughly $12,000. The CE Digital application proposed a predominantly music-oriented nine-channel service,

See ENGLAND, page 10 ▶

Guest

▶ Continued from page 6

With fewer than 160 of these superpowered stations on the commercial side, the commission would not be burdened by protecting the service areas of the grandfathered station or the inappropriately short-spaced LPFM station. In its effort to provide a "stable and enduring" LPFM service, the FCC is leading some LPFM applicants on the road to disaster. The commission should not permit such imprudent authorizations.

What now?

Owners of commercial grandfathered superpowered stations need to speak up. All of the large broadcasting companies own at least one of these stations and they have a very powerful voice in Washington. Frankly, I'm surprised that broadcasters haven't noticed this issue, as many of these stations are located in large markets. A lot of listeners can be affected by this lapse in the rules. Protect your turf.

Those applying for LPFM stations should keep this point in mind, too. Tell the commission that you want to be protected from this interference. Let your voices be heard. While a large grandfathered station suffers to lose a small percentage of its listeners because of this gap in the rules, an LPFM station that signs on won't be heard down the block.

My advice when applying for LPFM channels is to find an experienced engineer who can perform a detailed contour analysis so you know what you're getting into. Specifically state that you want to make sure you're not in the shadow of a superpowered station. Failing to do so will cause more harm to you and will make the difference between the success and failure of your station.

There are many other issues to the LPFM debate. However, I think all sides can agree that the FCC needs to make provisions and protect LPFM stations from commercial superpowered facilities. While options of legal recourse are becoming scarce, it is still not too late to let your comments be known. Time is running out.

Alan Jurison is an engineer and information systems manager at Citadel's WNTQ(FM), WAQX(FM), WLTI(FM) and WNSS(AM) in Syracuse, N.Y. Reach him via e-mail at alan.jurison@citcomm.com *More details on his viewpoint can be accessed via the Internet at* http://web.syr.edu/~awjuriso

RW welcomes other points of view.

World Radio History

Telecom

▶ Continued from page 1

and CBS would have predicted they'd still be in radio five years later.

Instead, they succumbed to the "eat or be eaten" mentality of the years that followed the Telecom Act. Today, almost every station that belonged to any of those top 20 companies five years ago answers its phones with either "Clear Channel" or "Infinity."

What happened? Put the credit, or the blame, on two of the biggest provisions of the Telecom Act: the elimination of the national ownership cap on radio, and the gradual raising of the local ownership cap from one AM and one FM per owner, to two of each, to as many as eight stations per owner in the biggest markets.

Building the clusters

The changes in the local ownership cap made their impact known first.

Even before passage of the Telecom Act, companies such as Evergreen were creating the first duopolies in larger markets. As duopoly gave way to clusters in 1996, the slow pace of station sales accelerated into a high-speed race. By 1997, CBS had acquired Infinity (though the Infinity name would later return for all of CBS' radio operations), then swallowed American Radio Systems to create what appeared to be the largest group ever.

Investment firm Hicks, Muse and Co., parent to Chancellor, began expanding on two fronts. While Chancellor slowly added stations in major markets, notably through the 1997 purchase of Evergreen Media, a new sister company called Capstar started buying dozens of stations in smaller markets, accumulating clusters that dominated individual markets.

Over in Kentucky, Randy Michaels' Jacor ballooned from 20 stations in 1995 to nearly 200 in 1997 before being consumed by Clear Channel, itself totaling almost 200 stations by then.

And once the big groups had built their local clusters as large as possible, they began swallowing each other. In 1998, Chancellor and Capstar merged operations as AMFM. A year later, Clear Channel paid $56 billion for AMFM, creating the first group to top 1,000 radio stations.

While that may have been the largest radio transaction ever, there was plenty of action below the level of the giants. Cumulus didn't even exist in 1995; by 2000 it had 226 stations, second only to the Clear Channel empire. Citadel had just 19 stations five years ago; today it has 210 and more than $330 million in revenues.

Ask the big broadcasters and their allies, and there's little question the consolidation boom was good for radio.

"It has resulted in more program diversity," said NAB spokesman Dennis Wharton. "It has strengthened the industry financially."

Radio revenues shared in the economic boom of the late 1990s, with some major markets nearly doubling between 1996 and 2000. Those revenues were spread across far fewer owners, though: while the number of stations in Arbitron-rated markets grew by only 200 in those years (largely due to the addition of 20 new markets), the total number of station owners in those markets plunged from 3,100 to fewer than 1,837.

"Critics of the act will point to the fact that there has been rapid consolidation and that it has hurt diversity," said Ken Johnson, spokesman for U.S. Rep. "Billy" Tauzin, R-La., one of the act's key supporters and chairman of the re-named House Energy and Commerce Committee. "Our argument is, show us."

"Is there more attention to community needs?" said Andrew Schwartzman of the Media Access Project, one of the act's opponents. "Not with commonly-owned (by CBS/Viacom) Shadow and Metro Networks providing much of the news to many markets."

Outside the big markets, though, Wharton says there's still plenty of diversity to be found on the dial.

"The fact is, there are still over 3,000 owners of radio stations in the U.S. That's a number that would surprise people, given all the stories about consolidation," Wharton said. "I would venture to guess that there are not over 3,000 owners of TV stations, telephone companies or newspapers in the U.S."

Some of the consolidation may even have solved the problems created by an earlier regulatory change, the explosion in new FM facilities brought on in the 1980s and early '90s by FCC Docket 80-90.

"There were a lot of smaller, struggling owners who were handcuffed into facilities that couldn't serve the entire community," said analyst Mark O'Brien of BIA.

O'Brien also believes the advent of the big groups made it possible for radio to better compete with other media for advertising dollars.

"TV ... was used to competing with mom-and-pop operations," O'Brien said, "but instead of Herb Tarlek out on the streets, they were now dealing with well-educated spokesmen for radio." Tarlek was the stereotypical 1970s ad salesman at television's fictional radio station WKRP in Cincinnati.

Supporters of the act say there's been one big frustration in the five years since its passage: the actions, or lack thereof, taken by the FCC.

"We have a horse-and-buggy agency trying to regulate a supersonic industry," said Johnson.

The NAB, too, believes the FCC, and Chairman William Kennard in particular, has blocked some of the reforms promised by the act. By flagging many of the consolidation deals for market-concentration concerns, they say, the commission slowed down several sales and halted a few outright.

"The FCC has been a roadblock to some of these mergers," said Wharton.

Industry leaders say that will change quickly under the George W. Bush administration.

"There's certainly the expectation of many industry watchers that with the change of administration, there will be a less regulatory mentality," Wharton said.

Among issues that could be treated differently in a post-Kennard FCC is LPFM.

"Consolidation is what burnished the zeal and provided the need for LPFM," said Schwartzman of the Media Access Project.

Despite strong support from Kennard, the service was weakened with the passage of legislation in December 2000 that requires LPFM stations to observe the same third-adjacent spacing requirements as full-power stations, thus limiting the number of stations able to begin the service.

Without Kennard at the FCC's helm, few in the industry expect the congressionally-mandated tests of LPFM interference to result in any modification of the new rules.

As the Telecom Act celebrates its fifth birthday, its provisions enjoy strong support on Capitol Hill and in the White House. Almost nobody who spoke to RW expects any major modification to the act in the near future, though a few opponents continue to hold out hope.

"I'd be perfectly happy to repeal the ownership provisions," said Schwartzman, "but that's not going to happen."

The bigger prospects for change come from outside the industry. Republican Larry Pressler, the former South Dakota senator who chaired the Senate Commerce Committee when the bill passed, says there were some things lawmakers couldn't anticipate five years ago.

"We didn't foresee the size of the Internet in 1994 or 1995," he said, noting that the portions of the act that address online media may require modification in the years to come.

There's one more piece of unfinished business where consolidation is concerned: how all those mergers will be paid off.

Most of the groups that expanded after the Telecom Act did so with the help of stock prices boosted by the overall boom in the market. With the market down recently from its historic highs, many of those groups are coping with debt service from stations they bought at high multiples of revenue, while at the same time facing a decline in revenue as all those dot-com ads disappear.

"Certainly Wall Street doesn't seem to be particularly sanguine about the media business right now," said Schwartzman.

Top Groups by Revenue in 1995 ...

	Revenues $000	# Stations
1. CBS	495,750	39
2. Infinity	403,750	34
3. Evergreen	274,500	35
4. Walt Disney/ABC	269,800	21
5. Chancellor	177,950	33
6. Cox	138,300	18
7. Clear Channel	137,200	36
8. Jacor	124,250	20
9. Viacom	121,500	12
10. Bonneville	119,400	17

... and in 2000

	Revenues $000	# Stations	# Markets
1. Clear Channel	3,187,918	1157	190
2. Infinity	2,127,350	181	41
3. ABC	411,625	55	27
4. Cox	380,855	81	18
5. Entercom	353,700	96	18
6. Citadel	330,550	210	42
7. Emmis	254,200	24	8
8. Radio One	235,750	48	18
9. Susquehanna	221,550	29	8
10. Hispanic Brdcst.	214,625	45	13

Background photo of WTVN(AM), Columbus, Ohio, courtesy of J.T. Anderton

NEWSWATCH

▶ Continued from page 2

Gentner Forms European Subsidiary

SALT LAKE CITY Gentner Communications Corp. (NASDAQ: GTNR) has formed Gentner Communications EuMEA GmbH, a wholly owned subsidiary headquartered in Nuremberg, Germany.

Gentner EuMEA will serve Europe, the Middle East and northern Africa and will focus on increasing local distribution of Gentner's products and on identifying new, geographically unique market opportunities.

"Establishing an in-market office to service the EuMEA region highlights our commitment to international growth," said Fran Flood, president and chief executive officer of Gentner.

In addition to providing timelier product delivery and technical support, Gentner EuMEA will support international dealers with training on Gentner's line of products.

SBE to Hire National Frequency Coordinator

INDIANAPOLIS The SBE intends to add a national frequency coordinator to its staff.

SBE President Andy Butler said the coordinator would help TV implement the 2 GHz broadcast aux service transition. The SBE National Frequency Coordination director will also oversee the society's frequency coordination event management programs, including game day coordinator with the NFL.

World Radio History

HOW TO BE A MAJOR MARKET SUCCESS

New York, Los Angeles, Paris and London are the most competitive radio markets in the world. You don't make it to the top in these cities without chops, talent and know-how. Being late to the best ideas and the cutting edge gear is not an option. That's why the world's leading broadcasters have made Omnia the number one audio processor.

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World Radio History

He Helped Build Hawaii Radio

by Stephen Jess

HONOLULU In the mid-1970s, Clayton F. Caughill left the United States mainland, and a radio engineering career, to pursue a modular housing project in Hawaii.

The project did not work out, and today many broadcasters throughout the islands are grateful for that.

Caughill died Nov. 10, 2000, at age 59 of complications following stomach surgery. He is remembered in Hawaii radio because he returned to broadcast engineering after the housing venture failed. After several years of working for others, he started his own broadcast engineering firm in Honolulu in 1987 with business partner Bob Palitz.

Caughill-Palitz Inc. grew to become one of the leading contract engineering companies in Hawaii.

Hawaii to Hong Kong

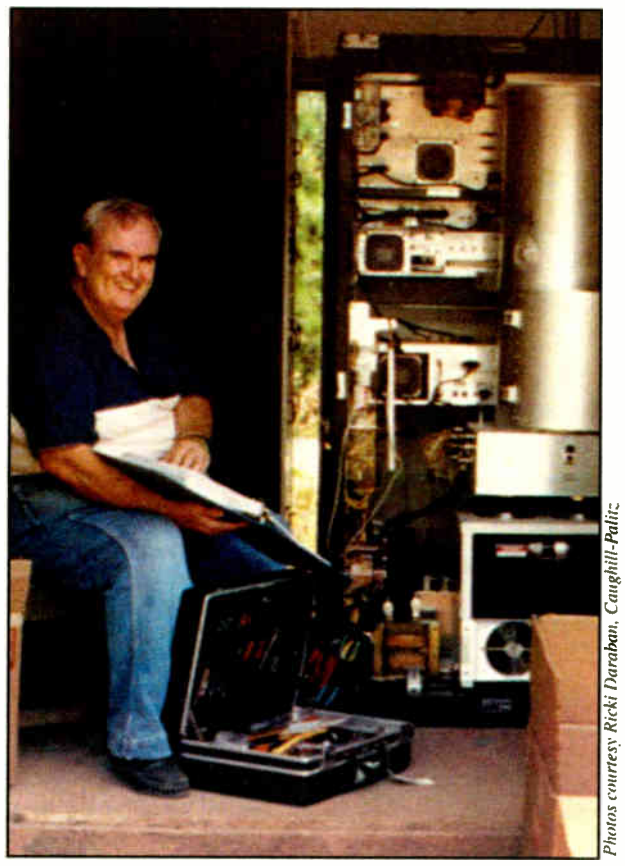
Caughill's engineering work was not limited to the 50th state. A list of the company's projects over the past few years includes several FM stations in Tahiti, and Voice of America studios in Hong Kong.

Among its ongoing projects are three new or upgraded transmitter facilities in Hawaii, including one accessible only by helicopter, and a new automated FM in Tahiti.

Those who knew him say Caughill did not just build studios and transmitter sites but also productive relationships with manufacturers and with his fellow engineers.

Earl Tolley, chief engineer for Pacific Radio Group's six stations on the island of Maui, handled the tower work for several of Caughill's projects. He said Caughill "upgraded the quality of engineering in Hawaii. He brought mainland standards. He tended to be kind of a benchmark."

Tolley said Caughill freely assisted other engineers who needed help.



Photos courtesy Ricki Darahan, Caughill-Palitz

Clayton Caughill is shown installing a Broadcast Electronics FM5B FM transmitter for Radio1 in Tahiti, October 1993

"I called him our file server," Tolley said, laughing. "He'd share anything he had with anybody. He would have had a hell of a lot more money if he had charged for some of the stuff he gave away."

His widow, Rita Caughill, said her husband did not hesitate to suggest improvements in the products he was installing for clients. In 1991, Caughill built new studios for Metro Broadcasting in Hong Kong.

"(Metro) wanted the most advanced, best technology available at the time," she said. "We gave it to them. Some of it we had to invent."

Combining expertise

She said Metro planned to use an early version of Broadcast Electronics' AudioVault, but it had no provision for automating CD playback. "We asked (BE) to do that and they did."

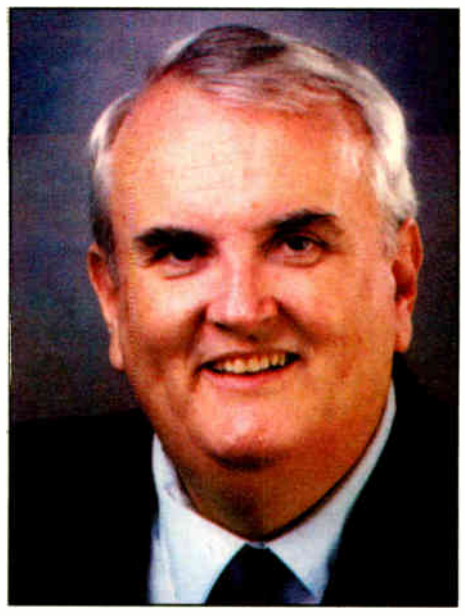
In Hawaii, where land is expensive and pristine mountaintops part of the tropical scenery, Tolley said one of Caughill's specialties was fitting multiple transmitters on a single site with a combined antenna.

One such case occurred in 1995 on the island of Kauai, where Caughill chartered a plane to look for potential sites for a friend who had two FM construction permits.

"He saw a place where three ridges come together. It looked like a chicken's foot," Tolley said. "We had to dig out the anchor points (for the tower) by hand. Every day we went to work by helicopter." Today, the site Caughill found hosts four FM stations and a cell phone transmitter.

The company, with its six employees, will go on despite the death of its founder. Rita Caughill said plans are in place to install their son, Cris Caughill, as the company president. "Our son is carrying on the business. We're going to be okay," she said.

But the future of Hawaii's chapter of the Society of Broadcast Engineers is less clear. Caughill was president of the chapter, and encouraged engineers to gather for its three or four meetings a year. The isolation of engineers working on separate islands made it harder to build a sense of community.



Clayton Caughill

Engineering fraternity

"It's pretty different out here, not like the mainland," Tolley said. "Here you've got two engineers on the big island, one on Maui, one on Kauai, and it costs $140 to fly to a meeting. It's quite an investment." Tolley said Caughill "held the engineers together out here."

In 2000, as her husband's health failed due to stomach problems, Rita Caughill said he was not able to continue to run the SBE chapter.

"My husband was a very kind and considerate person," Mrs. Caughill said. "He had a good heart. I've had so many people tell me he touched their lives in many different ways."

As Caughill-Palitz grew, Clayton Caughill spent more time in the office handling construction permits and maintaining relationships with his clients and suppliers. Eventually, Mrs. Caughill said, her husband probably would have gone exclusively into consulting. "He said he was never going to retire."

Webcasting? WebCaster!

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England

Continued from page 7

which was to include Capital-owned stations Capital FM and Capital Gold, as well as Emap-owned stations Kiss 100 and Magic.

CE Digital estimated that by using eight transmitters from the outset, it would be able to provide outdoor coverage of 90 percent of the adult population of the greater London area.

In announcing the award, Peter Gibbings, then chairman of the Radio Authority, said, "The award of this local digital multiplex license, the only digital license to be contested to date, has been an important one involving three strong and contrasting applicants."

At the same time, the Radio Authority said it would advertise two additional digital multiplex licenses for Greater London. In April, it awarded the second London license to Switchdigital, headed by The Wireless Group and the U.K. subsidiary of U.S.-based Clear Channel Communications, called Clear Channel International, with Ginger Media Group and Carphone Warehouse.

The Switchdigital channel went live the same day as Century London.

The Switchdigital package includes three existing London stations and six new, digital-only broadcasts.

Best city

At the launch, Switchdigital Chairman Kelvin MacKenzie said: "Today's public launch makes London the best city in the world for radio listeners, radio broadcasters and the advertising industry.

"Switchdigital is bringing a brand new sound to London's airwaves, and provides more opportunities for advertisers to reach listeners via a rapidly developing technology. It is a momentous day," MacKenzie said.

The launch of Switchdigital and CE Digital means almost 40 digital radio services are available in London. This is a mix of digital simulcasts of established stations with new, exclusively digital stations.

These London licenses are in addition to a national digital multiplex license — which also covers the Greater London area — that was awarded to Digital One before the Radio Authority even advertised the local licenses.

World Radio History

On The Air

A Monthly Newsletter from Broadcast Software International Issue 1

Quote of the Month

"Wavestation has been running nonstop for nearly nine months. We are very happy."

John Spring
MedioFrame gmbh

Calendar

Feb 1st, WaveStation test has been running for 84 days without reboot or error.

Feb 7th-9th, WaveStation Weekend

Birthdays:
Feb 4th 1948 - Alice Cooper
Feb 4th 1947 - Dan Quayle

News

BSI Announces Ultimate Turnkey

The BSI Series 300 is a complete turnkey digital automation, VoiceTracking and production system for medium to large broadcast facilities. It is expandable, allowing you to easily add an unlimited number of additional Air Studio or Production Studio workstations. Digital hard drive automation, satellite interface, multi-studio VoiceTracking, 64-track production, backup, remote access and control are all included. A complete two-studio turnkey system, including both workstations, is only $26,999.

The Series 300 digital broadcast workstations are built around enterprise quality Dell PowerEdge 2450 components, AudioScience audio hardware and Microsoft Windows 2000 Pro. Each Series 300 system begins its life at Dell and then receives final assembly and testing at the BSI HQ in Eugene, Oregon.

This is a beautiful system with tremendous reliability, amazing capabilities and excellent specifications. From the Dell 2450 rack mount CPU to the high-resolution 18-inch flat screen monitors, this system is unmatched in technical capability and power-for-price. More than 36 gigabytes of hot-swappable hard drives and dual redundant power supplies mean downtime is virtually non-existent.

The Series 300 systems include BSI's WaveStation digital automation, WaveCart cart machine replacement,STINGER instant playback software, WebConnect Pro remote access program and the award-winning Cool Edit Pro 64-track digital editing software. Hardware accessories include the MixMax audio mixer/switcher and an Iomega JAZ drive. Users can also add additional Series 300 Production or Air Studio workstations as needed.

Tip

Macro Power

WaveStation does more than just play audio. Its macro language lets you command relays, mixes, ports and even run other applications. You can group macros along with audio in a cart to create complex sequences that look simple to the operator. For example, a cart called "GoToNet" could include a music fade, Legal ID and fade up network sequence. Carts can be randomized, nested and emailed.

User File

WYXI - Bob Ketchersid

Bob Ketchersid says, "WaveStation has really freed me." After 15 years at WYXI in Athens, Tennessee, Bob decided it was time to look into an automation system. He asked around and heard a lot of great things about BSI's $1499 WaveStation.

Bob now uses WaveStation in live-assist and automated modes, complete with satellite switching.

Bob also has great words about BSI's tech support team. "One time I left an emergency message at 1am. Leo called back within 5 minutes. He said 'Don't worry, we'll have you up and running in a couple of minutes'... And he did. They're great."

What does Bob have to say to anyone considering an automation system? "If you want to have a system that sounds like you actually have somebody running the board, at an economical price, that can do anything you could think of that you'd want something to be able to do, then WaveStation is the way to go," says Bob. "I've not seen any of the expensive systems do something that WaveStation can't do. We are very pleased. WaveStation has improved our on-air sound. It's saved us time and made us money."

Send us your User File story.

Dave... I am sorry to bother you at home, but I've detected a fault in spot number 321. It may be missing. Perhaps you should look into it.

WaveStation 3.0 with WebConnect

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WebConnect is a powerful accessory to BSI's $1499 WaveStation digital automation software. It keeps you connected and in control of your station. WebConnect identifies problems and automatically alerts you via e-mail or pager. You can even resolve many problems by sending a reply e-mail to WebConnect. And for only $299, we promise... it will never eject you into deep space.

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World Radio History

Good Wood: Tips From Furniture Makers

Ken R.

Comedian Steven Wright said the problem with having everything in the world is "where do you put it?"

While the focus in the last few years has been on studio computers and gadgets, the cabinetry that houses it all can make a huge difference in how a station or cluster functions.

This studio furniture by Wheatstone shows features like rounded corners and space-efficient modules that are in demand

The design possibilities can run all the way from ordering a few prefab racks and boxes to designing a custom-built showcase room costing tens of thousands of dollars.

Radio World talked to several experts in custom wood, to learn about trends in this area of studio design and to glean tips for readers planning to buy furniture this year.

Studio Technology made this cabinetry at WARW(FM) near Washington

A small number of national firms have grown to serve the special requirements of radio stations. They often compete not just with each other, but with local suppliers.

That local option can save on shipping costs and might be attractive to a manager at first glance. But there are other factors to consider.

"There are a number of issues the local cabinet maker might not be familiar with," said Vince Fiola, president of Studio Technology, based in Malvern, Pa. "He might not know about rack space heights, equipment weight and where to put the holes in the countertop."

Another big reason for choosing a company that specializes in studio furniture, he said, is the savings in time for the engineer and other management.

"If you have to explain everything, it defeats the purpose."

Paul Alsing, systems engineer for Harris Corp., headquartered in Ohio, believes radio furniture presents unique demands.

"It's tribal knowledge about what goes on in a cabinet as opposed to just how it looks on the outside," said Alsing. "It's stuff like cable passes and knowing to ask how many guests will be visiting that morning talk show."

Alsing agreed that a local practitioner might not know how to quote the job properly. "Some of these guys will bid it low because they think it's going to be easy, but it really isn't."

Another aspect of studio cabinetry that doesn't translate to other furniture applications is the concept of sight lines.

Mager Systems created this custom suite for WAMR(FM) in Miami

"The host has to be able to see the guests, and the ergonomics of cabinets are not common knowledge to people outside our industry," said Alsing. "In the big picture, the cabinet itself is a small percentage of the design."

Specific needs

Phil Owens, sales engineer at Wheatstone Corp. in North Carolina, gave an example of this specialized knowledge.

Spacewise Broadcast Furniture offers the Delux Radial system

"An engineer says he needs a 48-inch right return with 32 rack units of space beneath it," said Owens.

Will the local supplier, who may have more experience building kitchens than studios, understand the exacting nature of those specifications?

"You're also going to have to educate that local cabinet guy about the abuse the furniture will probably take."

Mager Kizziah, president and founder of Mager Systems in Phoenix, said, "What about the effect that equipment heat has on different materials including glues and contact cements? Broadcast knowledge is essential."

So what is the right price to pay for furniture? The answer: that depends.

"Our company has several furniture series and they're all large-scale modular," said Peter Palagonia, president of Spacewise Furniture, Tucson, Ariz. "We have room systems in the $2,500 to $3,500 range and they come in eight preassembled pieces plus the countertops."

Spacewise is also developing a newer and less expensive line that will ship flat to compete with local bids.

"We are in the low to middle price range, but our quality is very good," said Palagonia.

Studio Technology's furniture, which is customized, might cost anywhere from $3,900 to $39,000 for a room.

"We believe that 'off-the-shelf' solutions don't always work because you might end up with a 12-inch bridging panel stuck between the module and the wall," said Fiola. "That's why we offer more custom-designed work."

Mager Systems has room prices ranging from $5,000 to $35,000.

"Everything we do is custom built," said Kizziah. "That's what we are known for."

Wheatstone handles both standardized and custom cabinetry. "Where room design allows it, we try to work with standard counters, but we can also accommodate specialized shapes and sizes, too," said Owens.

Avoid delays

Harris Corp, which manufactures most of its furniture in California, offers several price ranges. Its Quikbilt line is priced at $2,000-$4,000 per room, Primeline goes from $4,000 to $9,000 and custom cabinets can range from $2,500 up to $35,000 per room.

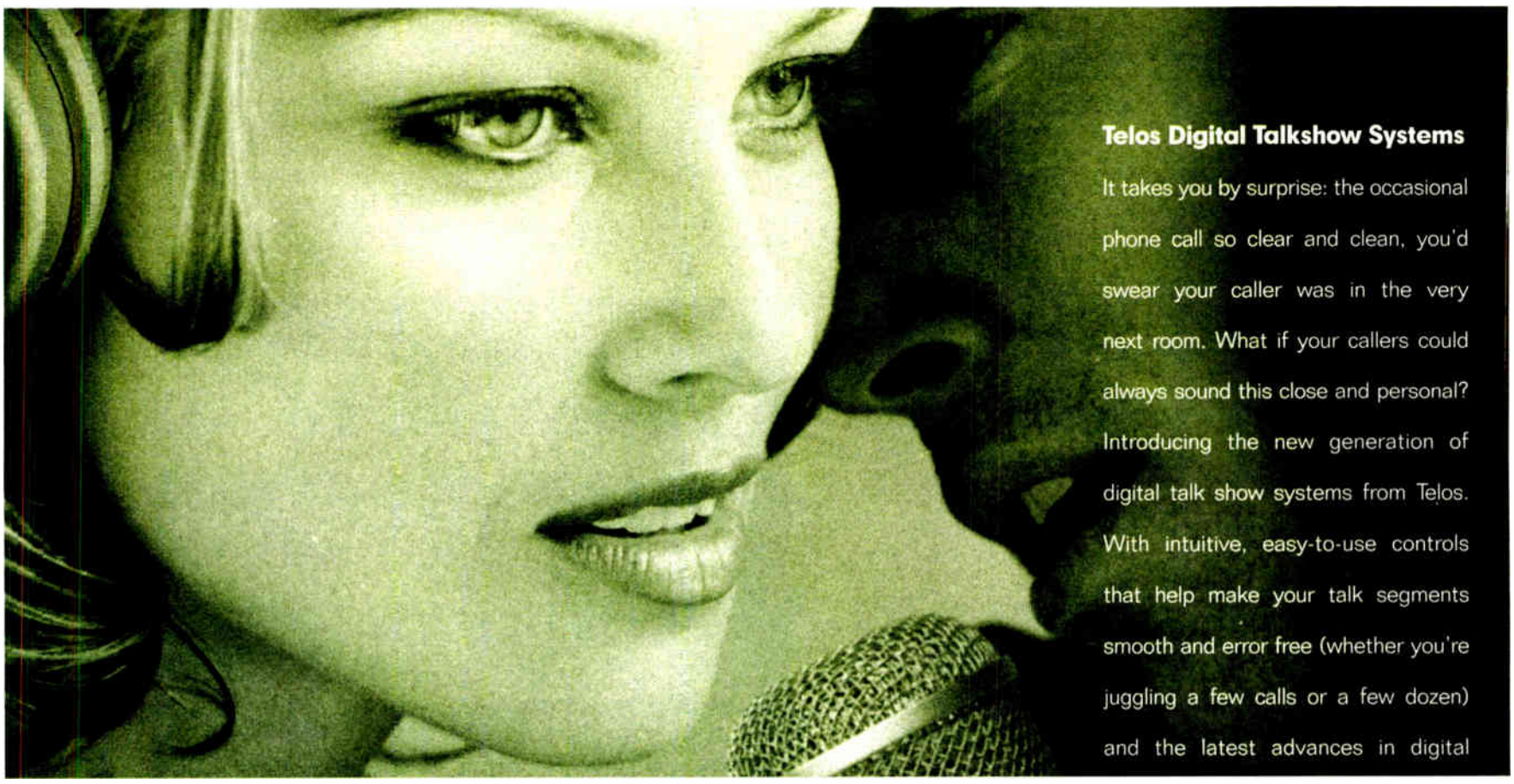
"We have built major-market 'flash' studios for ABC and NBC. We designed and installed studios for Howard Stern, Mark and Brian, Rush Limbaugh, Tom Joyner, Rick Dees and several high-profile specialty rooms for Disney and Universal Studios," said Alsing.

Sometimes a furniture installation can be sabotaged before a stick of wood is even shipped.

"People wait too long," said Fiola.

See WOOD, page 18 ▶

World Radio History



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World Radio History

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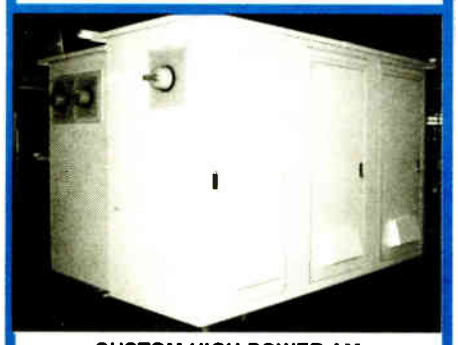

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FEED LINE

New AM: Should You Build or Share?

W.C. Alexander

This article is one in a series on shared use of transmitter sites. The previous part appeared in the Jan. 3 issue.

In the last few installments of this series, we have focused on sharing FM/TV sites with other FM/TV and wireless users, sharing AM sites between AM stations, and using an existing AM tower for FM, TV or wireless.

These are by far the most common types of co-location.

But what about those cases in which a home is needed for a non-directional AM transmitter, and an FM, TV or wireless tower exists nearby? There are a couple of initial considerations. One, is it possible from land, regulatory and financial standpoints to construct a new AM tower in the desired location; and two, if the AM tower were constructed near the FM, TV or wireless tower, would that nearby tower produce unacceptable distortions in the AM's non-directional radiation pattern?

Efficiencies

The answers to these questions are the starting point from which it can be determined whether it would be worthwhile to explore using the existing non-AM tower as an AM radiator.

For the sake of this discussion, let's assume that because of community of license coverage requirements, the AM station's permissible area-to-locate is in an urban environment, making it difficult if not impossible to construct a new tower.

Further, let's assume there is an existing FM tower in this permissible area. Co-location would certainly make a lot of sense if a few basic conditions can be met.

For a particular tower to be an efficient radiator at a given AM frequency, it must be of acceptable electrical length at the AM frequency. Because the goal in the case of most FM and TV transmission systems is to maximize coverage from a particular site, low tower height will be a factor in only rare cases, for instance where the AM frequency is very low and a short tower is used from a high-elevation site.

A typical Class A FM site, for example, will employ a tower height in the neighborhood of 300 feet. This presents an acceptable electrical length at AM frequencies down to about 600 kHz.

Ideally, a tower will be between 60 and 225 electrical degrees tall to work well as an AM radiator. Anything shorter than about 60 degrees will have unacceptably high losses and low efficiency. Towers greater than 225 electrical degrees have their own set of problems, including skywave lobes and unpredictable impedances.

Neither a too-short or too-tall electrical length will absolutely make a particular tower unusable as an AM radiator. There are remedies that can be employed to "lengthen" or "shorten" the tower at the AM frequency while not changing its physical height.

A tower can, for example, be "lengthened" electrically by top loading it. This usually is done by shorting the top segment of the top set of guy wires to the tower, bonding them together at the first set of insulators (and perhaps at an intermediate point as well), creating a "spider web" effect. The result of such top loading alters the current distribution on the tower, raising the loop resistance of the tower and thus lowering its radiation loss while at the same time increasing its efficiency.

This skirted DA tower is part of the three-stick array of KKPZ(AM) on Mt. Scott in Portland, Ore. It supports an FM antenna for KUPL(FM).

A tower that is too tall can be "shortened" by adding skirt wires to and detuning the top portion of the tower, making it "invisible" at the AM frequency. Both these techniques, while relatively simple, add considerably to the cost of co-location and must be considered carefully in the early planning stages.

Ground system

To work properly, an AM antenna requires a ground system to work against. This ideally consists of 120 quarter-wavelength radial wires buried at three-degree intervals around the tower base along with shorter interspersed radials or a copper mat or screen close in to the tower base.

Such a radial ground system is fairly easy to install when a tower is being constructed and there is nothing on the tower site but dirt. However, in the case of an existing tower, particularly one in an urban or developed area, buildings, streets, parking lots and other obstacles may make it impractical to install a proper ground system.

While the FCC prescribes the general configuration of an AM antenna's ground system, it has in recent years granted a great deal of latitude where practical limitations prohibit a full ground system. There is no hard and fast rule that I know of as to what will and will not be allowed.

Rather, one who is contemplating an abbreviated ground system will have to take a hard and careful look at the type of ground system that can be installed in the available space. A consulting engineer then can model the antenna with the abbreviated ground system to determine whether acceptable efficiency and performance can be achieved.

A showing will have to be made along with the FCC application engineering data, and the FCC likely will require specific measurements to be made and the results filed as a condition of the construction permit. These measurements likely will take the form of close-in field strength measurements on eight or more radials.

The results of such measurements are then plotted and graphically analyzed to determine the inverse distance field (IDF) of the antenna on each radial. From this, an RMS can be calculated, proving the efficiency of the radiator. The non-directionality of the radiator also is proven by such measurements.

I was involved in one such case in a number of years ago. The TV tower being employed was situated on a completely developed piece of property. The best ground system that could be achieved was a solid earth ground at the tower base and three radial wires, one under each guy wire path. Measurements showed that while the radiator efficiency was far from what it should be with an ideal ground system, it did meet minimum standards. That site is licensed and operating today.

Some consulting engineers have experimented with what is essentially no ground system AM radiators. In these cases, well casings and other deep-earth grounds were substituted for radial ground systems. The results varied, but in some cases acceptable results have been achieved.

In short, a full 120-radial quarter-wavelength ground system is ideal. But if such a system is impractical at a given site, that tower could possibly still be used as an AM radiator. Some creative engineering may be called for to find the solution.

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

Cris Alexander is director of engineering for Crawford Broadcasting.

World Radio History

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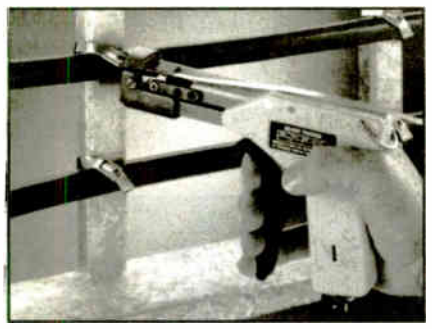
For information contact the company in Pennsylvania at (610) 687-5550, send e-mail to sales@belar.com *or visit* www.belar.com

Panduit Expands Lineup

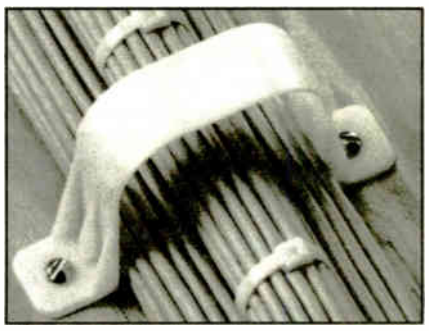
Panduit has several new products to help manage your wiring.

No-Slip Self-Locking Stainless Steel Ties have a low-insertion-force head design that keeps the tie locked regardless of orientation. They're suitable for difficult environments where long service life is important. The Wave-Ty variety has a wave-form spring action that combines the strength of steel and the high tension of a steel spring.



No-Slip Stainless Steel Ties

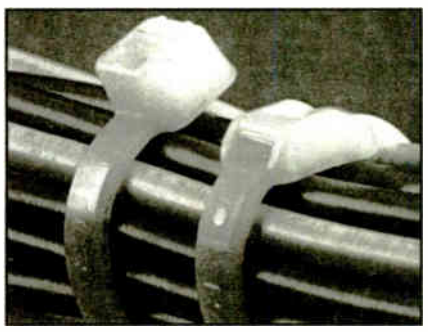
Also from Panduit, a new Wire Bundle Strap is available. It has two mounting holes to permit installation on wood or other surfaces using standard screws or nails. The holes use EIA spacing, so the strap can be used on equipment racks. Rounded surfaces prevent damage to soft wire jackets.



Wire Bundle Strap

And new Belt-Ty In-Line Cable Ties are out. These feature a low-profile, parallel head design that eliminates protrusions at the tie cut-off. They are available in various lengths and bundle capacities.

For information contact Panduit in Illinois at (888) 506-5400, ext. 1483, send e-mail to info@panduit.com *or visit* www.panduit.com



Belt-Ty In-Line Cable Tie, at right, has a lower profile

TTL Knows AES

An AES digital audio device by Titus Technological Laboratories integrates a two-input AES-3 switcher and a 24-bit stereo A/D converter into one package.

The TTL 3DRX is a digital audio repeater and crosspoint switcher. It has three inputs and one output. The first two inputs are digital audio inputs. They can be either AES-3 balanced, XLR type inputs or AES-3ID BNC type inputs. They can also be terminating or bridging inputs, allowing sampling of an existing serial digital audio data channel.

The third input to the 3DRX is a stereo analog audio input. The serial digital output conforms to both AES-3 and AES-3ID standards.

The unit will switch automatically to the secondary digital input if the primary digital source fails, in cases such as loss of lock or data error. A tertiary stereo analog source will be switched to automatically if the two stereo digital streams fail. The stereo analog inputs are digitized in the AES/EBU format at 24 bits and either 32, 44.1 or 48 kHz sample rate, user selectable.

The 3DRX can be controlled by remote control, allowing the user to select the active source remotely, or from the front-panel push button controls in either a manual or an automatic mode.

Front and rear views of the TTL 3DRX

This unit also functions as a digital serial audio repeater when used in a "transparent" operating mode, AES in to AES out. The digital signal in this mode is not decoded into analog but remains in the digital domain. When the 3DRX is operating in this mode and inserted into any digital serial audio cable run, the length of the cable can be effectively lengthened. Titus says this is an active repeater and not simply a direct "hardwire switch" path and as such can be used to effectively extend cable lengths.

The 3DRX operates up to 24-bit, 96-kHz stereo digital audio for all digital inputs and outputs. In case of a power failure an internal direct relay bypass is provided to connect the digital AES input 1 to the AES output bypassing the unit.

For information contact Titus Technological Laboratories in Connecticut at (860) 633-5472, write to info@tituslabs.com *or visit* www.tituslabs.com

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The Sound Way to FM Signal Quality

Tom Osenkowsky

There are many ways to deliver an optimum FM signal to your audience.

A number of factors affect how well a station serves its intended audience. The first step in plant improvement is to define that audience.

The FCC mandates that your station provide a 70 dBu or 3.16 mV/m primary contour signal over the city of license. The city of license, however, may not be where the greatest amount of advertising revenue is generated or where the greatest listener potential resides.

Careful selection of transmitter site is important here. Where an FM station locates its antenna is based on a number of criteria such as the ability to provide the FCC required city of license coverage, achieve full FCC class status while affording required protection to co-channel and adjacent channel neighboring stations, comply with I.F. spacing rules where applicable, afford adequate coverage to outlying areas and comply with any FAA-imposed height restrictions.

Honest evaluation

The next step is to examine your facility.

Has your present antenna been well maintained? Has it been inspected by a competent, knowledgeable engineer or tower rigger? How about the transmission line? Does your antenna and transmission line hold nitrogen pressure? Is the antenna system VSWR low? Has the transmitter been tuned for best performance?

Many questions, the answers to which greatly influence the quality of signal delivered to your audience. Remember, the best digital audio processor or control board cannot make up for deficiencies in the transmission system.

Let us examine audio quality. Good, clean, loud audio must start at the source.

Most music today is obtained from a CD source. Most stations employ a digital storage and delivery system. A CD is not compressed. Compression in this case refers not to audio compression as provided by audio processors but rather digital compression where the source material (music) is modified in such a way that the required amount of storage space on the internal hard drive is reduced by an algorithm (MPEG, etc.) that is, arguably, inaudible.

While the various compression algorithms and their merits are beyond the scope of this article, I point out CDs and DAT tapes are uncompressed whereas MiniDiscs, digital cassettesand digital storage system hard drives are compressed.

Selection of the compression algorithm and reduction ratio usually is at the user's discretion in most digital systems. It is highly inadvisable to mix compressed material, i.e. dub from a MiniDisc to a digital system, because the audio will suffer from compounded compression. Some digital STLs are also compressed. Care must be taken to avoid multiple, dueling compression algorithms as these combinations will deliver undesirable sounding audio, which no processor can compensate for.

Establishing a 'station sound' must be a cooperative effort between the chief engineer and program director.

Digital audio processors may produce a wide range of "station sound." The main advantage of a digital processor is the ability to return to a previously known setting. No marking of pots with a grease pencil on the front panel, etc. Most digital processors start off with a bank of factory-defined presets. The user may then alter various parameters to establish their signature sound. The initial factory presets themselves are stored in ROM and cannot be altered.

Establishing a "station sound" must be a cooperative effort between the chief engineer and program director. Remember, no processor can make up for inadequacies elsewhere in the audio or transmission system.

In a subsequent article, we will examine specifics in the RF transmission system to ensure your FM station can deliver the optimum signal to the maximum number of listeners in the desired coverage area.

Tom Osenkowsky, CPBE, is a NARTE First Class Certified Engineer with Master RF Radiating Endorsement and a senior member of IEEE, SBE and NARTE.

Sears & Roebuck will promote **XM Satellite Radio** products and services at Sears stores.

"Retail car stereo sales are the keystone to building a mass-market subscription base as XM begins satellite radio service this summer," said Steve Cook, XM's senior vice president for sales and marketing.

Beginning this summer, Sears will offer XM-ready radios in its full-line stores that carry auto sound electronics. XM said it has boosted its retail reach to more than 2,200 outlets. It signed earlier agreements with other retailers including **Circuit City Stores** and **Best Buy**. ...

NBG Solutions Inc., a subsidiary of **NBG Radio Network**, is working for the federal **General Services Administration** under a contract to bring services to the public via computer kiosks.The original contract, signed in April 2000, called for a minimum of 25 custom kiosks throughout the country.To date, 53 have been purchased.

NBG is providing software, equipment, hardware and the enclosure. The GSA is acquiring the kiosks to deliver government services through an Internet-based mechanism. Kiosks are located in public spots such as federal buildings, malls, department/discount stores, libraries and grocery stores. ...

Aphex Systems has supplied a Model 1100 Discrete Class-A Tube Mic Pre-amplifier to producer **Stan Sollars** for use at Ball State University in high-quality recording sessions. In addition to serving as an instructor in the school's Department of Telecommunication, Sollars was producer of the recent National Public Radio series "Rock&Roll America," recorded at Ball State's Indiana Public Radio. ...

A mixing suite at Sonic Arts

Insurance firm **Germania Insurance** chose **NSN Network Services** to provide Wide Area Network connectivity via satellite.NSN said it integrated itstheir WAN/PS service capabilities into the Germania "Mobile Command Post" vehicle. The insurer gets voice and data connectivity with itstheir central office, to help with the processing of claims and client requests in times of catastrophe or natural disaster, when speed is critical to those Germania serves. ...

Sonic Arts, an audio post and sound design facility in Cincinnati, created a new base of operations with the architectural and acoustical design help of **Russ Berger Design Group**. The six-month project is seen as part of a regentrification of downtown Cincinnati and involved a site that was built in the early 1900s. ...

Jones Broadcast Programming said its "Delilah" program debuted in Chicago on Clear Channel's **WLIT(FM)** in December.

Jim LaMarca of BP said, "This station was where Viacom started soft AC before they took it to New York. Delilah is going to be a wonderful fit on a wonderful station with great heritage." Jones also said its "Weissbach" nighttime talk show, hosted by Peter Weissbach, would begin airing on **KCMO(AM)** Kansas City. ...

Itelco installed several transmitters equipped with its ISS Itelco Supervisory System in recent months, including facilities in Thailand and Malaysia; in Indonesia, where a 80 kW IOT (40+40) system will be managed and controlled by the system; and in the Philippine Islands, where the ISS will supervise an Itelco 40 kW IOT.

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FIRST PERSON

Panic in the Railroad Office

Ed Montgomery

The recent summer Olympics in Australia reminded me of another Olympics in another time.

Back in 1972 I was attending graduate school at a university in Ohio. I had done some radio work in the past and had the revered First Phone license. Remember those days? The "ticket" and a reasonably good voice could get you a job in almost any market.

Well, it happened just that way in the summer of '72. I was driving through town one afternoon when I noticed a guy in my rear-view mirror blowing his horn and waving. It was someone I had worked with at the university in the graduate assistant program.

It seems that the local AM country station needed help. Several people had quit.

Well, what did I have to lose?

Alice at the station

I stopped off at the station's offices on North Main Street. Not too bad-looking a place, with a small studio setup connected to the transmitter by an STL. The station itself was another story.

It was about 15 miles away and really was in a station — a former railroad station. Outside, the building hadn't seen a paintbrush in at least 20 years. The interior looked a little better. The actual studio was the former agent or stationmaster's office. The record library was in the old waiting room and the transmitter and phasor were in the baggage/express room.

There was also a Harris automation system. Four open-reel playback machines, three cartridge carousels and a tape cartridge clock system. Controlling the whole thing: a manually set programmer that had to be updated every three or four hours depending on the program and commercial load. They called it "Alice."

I took one look and thought, "What a great job! There's hardly any work to do here." I envisioned programming this system, turning down all the monitors and studying.

It didn't work out that way. After taking the job, I was told about doing news every hour and taping my own "show," which would run during the afternoon.

The 1972 Olympics were important to the university town because a student was one of the U.S. track stars and became a gold medallist. We were airing live sportscasts prepared by the sports editor of the local newspaper. He would walk around the corner from his office and file his story from the small studio in the station's office.

We had a lot of coverage about the student's progress and other local sports. I would bring up the fader on Gates Executive to air the STL signal. It went this way for weeks. This was the high point of our sports coverage that summer.

Otherwise I saw myself at the last link of the communications chain, ripping and reading the news off an AP machine.

I came to work one afternoon anticipating another easy day. The old Gates BC1 was humming along with its four 833s looking great. Life was good.

Then it hit. The program director was leaving and asked me to replace the fader on the board. It was bound up and would hardly turn. UPS had delivered a new one, and I was asked to put it in.

I looked over the situation and thought it would be a piece of cake. I started to take the old fader out, documenting where the wires went. However, I had breaks for news every hour requiring me to close the board, then reopen the board to continue changing out the fader.

After two news breaks, I must have lost my train of thought. I forgot to document all the disconnected wires. All of a sudden I didn't know what I was doing. I couldn't find the manual for the board anywhere and time was running out. Three o'clock came around, and I had to call the office to say I couldn't run the sports feed. The same happened at 4 p.m.

Sinking feeling

There was no patch bay to route the STL to another board input. Now I was getting that clammy, sweaty feeling, realizing the mess I was in. The office called and told me the 5 p.m. sports *had* to run! I wired the thing together the way I thought it should go.

It didn't work.

Panic set in. There I was, all alone in this old railroad station, wondering what to do.

I finally shouted, "God fix this thing!"

Well, *something* happened. The Almighty must indeed have stepped in because, when I closed up the board, the fader worked. And it continued working for another year or so, until Harris came and repossessed the whole studio and automation system. (That's another story.)

I have thought about this incident for years. I should have just connected the STL to another input on the board. Several weren't in use.

But I thought I could handle running the station and doing maintenance on the main console while the automation ran the station. This is always a bad idea. Trying to make the program director happy, and do more than what was practical, got me in a mess that I will never forget.

Ed Montgomery is the video technology and communications lab director at Thomas Jefferson High School for Science and Technology, Fairfax County, Va. He has worked as a broadcast engineer and college-level instructor. Reach him via e-mail at emontgom@lan.tjhsst.edu

Radio World welcomes your radio recollections.

Wood

▶ Continued from page 12

"Furniture needs to be thought about when you're deciding the room sizes, when you first talk to the architect."

Kizziah seconds that emotion.

"Poor planning and scheduling are the main problems," said Kizziah. "If I get an equipment list but there's stuff that's missing, we have to try to fix it later and we end up with boxes piled all over the studio. Everything should be in its place." Phil Owens said sometimes discrepancies occur between the way plans are drawn and the way the contractor builds the rooms.

Talk to each other

"We often find we have less space to work with, or even worse, a detail which seems inconsequential to the guy who is putting up drywall can cause problems. If a conduit is supposed to break out at 12 inches and it ends up at 18 inches, we have an opening that's supposed to interface with the conduit and it's off."

Alsing believes the biggest mistakes come from poor communication.

"We have to know everything. Some of these guys like to change their minds after the wiring harness has already been built," he said. "We have everyone sign off on all our cabinet drawings and we won't start until that happens."

Alsing has a 30-question checklist for his customers requesting details such as where the wires come in, whether it is a stand-up or sit-down operation and how many monitors are in the room.

"It gets them thinking about things they might not have considered."

The onset of live-assist and other digital technology is reflected in studio designs today.

"We have PC pedestals now where stations can locate their computer towers, and we can soundproof some of these computer cabinets," said Palagonia.

Owens said Wheatstone is getting more requests lately for open counter space and overbridges to make room for all those computer screens.

"Some of these studios have up to nine monitors for various things, and you still need good sight lines." He also cited flexibility as an important attribute of newer studios.

Harris cabinetry is used on the set of the TV show "Frasier"

"A room might serve as be a 'morning zoo' at 7 a.m. and a production room later in the day."

Alsing sees a lot requests for VESA-complaint arms that allow monitors to float above the countertops with no need for a shelf. VESA, the Video Electronics Standards Association, is a non-profit organization based in Milpetas, Calif.

Consolidation

"And these morning shows are using those little boxes like the Instant Replay made by 360 Systems. We have to stay current with the dimensions of all the new toys."

Consolidation of ownership groups has had its impact on woodmakers, as it has elsewhere in radio.

"It's been great for us," said Fiola of Studio Technology. "You can build a relationship with a group and they will come back again and again."

Kizziah said consolidation has been "berry, berry good" for the furniture industry.

"The energy that we used to put into one sale now will yield up to 25 installations, and it also helps the customer get better prices," he said. "If the planning is done properly, we can clone a successful production room design six times in one building." .

The downside of consolidation is that it forces shorter and shorter lead times, according to Owens at Wheatstone.

"These schedules are silly. It takes so much time to get approvals from the various layers of management that by the time you get the order placed, you discover the client needs it in 30 days, which is not enough time."

With respect to new buildouts, Alsing said there are a few bad contractors out there who are usually "overly optimistic" about their timetables. As always, caveat emptor.

"The customer has to demand that the contractor perform as promised or the station will get walked all over," he said.

Have you solved a studio problem with clever furniture design? Tell us about it at radioworld@imaspub.com

World Radio History

Workbench

Radio World, February 1, 2001

Toot Your Own Horn for a Change!

John Bisset

It's not too late to set a resolution for 2001. Vow to uncover and report, preferably at your weekly manager's meeting, at least one way engineering saved the station money.

It can be as simple as performing the routine testing of air pressurized lines (on the ground, of course) to tube filament voltage maintenance, which will increase tube life.

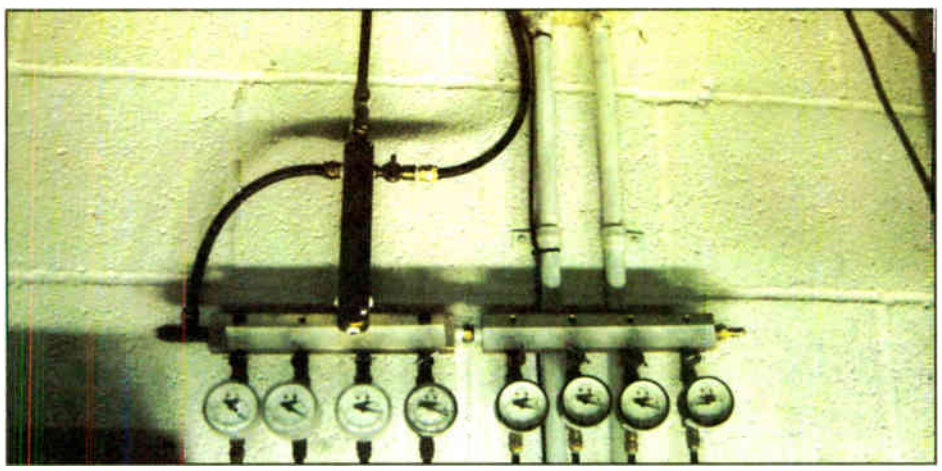

Fig. 1: Check that all nitrogen gauges are working and indicating adequate pressure for the line.

The point is to make it known. Toot your own horn for a change. I know this is new behavior for most engineers, but your management will appreciate it.

Here's an example. For years I have listened to managers skeptically question why an engineer must visit the transmitter site. You'd think we had a pool table, bar and babes waiting there for us!

Of course, nothing could be further from the truth. But how do you get the point across?

Try this: After your next maintenance session, bring back some souvenirs of your trip. How about some snake skins, a bee's nest from the satellite dish, or corroded parts that you caught before they took you off the air?

I am here to tell you, those black snakeskins will earn you a ton of respect.

★ ★ ★

Remember that building a few miles out of town? The one that houses your transmitter?

Most broadcasting equipment has gotten so reliable that weekly visits are a thing of the past. During winter months, though, set aside time for a weekly or twice-monthly visit. It's good insurance. The idea is to spot trouble before it puts you off the air.

If you manage FM or high-power AM sites, your transmission lines may be under pressure. Air dielectric lines must remain pressurized to prevent moisture from forming inside the line. Increased reflected power — or even worse, a flashover — can occur. Check your manifold pressure gauges.

In the manifold in Figure 1, each gauge has a valve, preventing the compromising of all the lines, should one fail. Remember not to over-pressurize; only a couple pounds of pressure are needed to prevent moisture from entering the line.

If your dehydrator runs all the time, or your nitrogen tank volume is depleted quickly, a leak may be the cause. Apply a soap-suds solution such as Leak-Tec, as seen in Figure 2, or simple dishwashing liquid, Formula 409 or children's bubble soap to joints and connections to ferret out the leak. The solution will begin bubbling when the leak is found.

Many times the problem is simply a loose connection, bad regulator or a pinhole in the connecting hose. Check for the problem yourself before heading up the tower. If you found the problem, tell your manager how you saved him money by not needing to call in the tower riggers to check for a leak on the tower.

★ ★ ★

Fig. 2: Use a soap-suds solution to locate leaks.

Have you inspected your building at night? In addition to determining that night-sensitive lighting is operating properly, you can also check motion-sensor

See WORKBENCH, page 20 ▶

Fig. 3: The roof is sealed but the unused vent lets water through.

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World Radio History

Raceways, Wireways and the NEC

Charles S. Fitch

This is one in a series of articles about the National Electrical Code. The articles are available at www.rwonline.com *in the reference section.*

Let's leave the topic of generators, and return to our earlier discussions of wires and wiring methods.

Suitable wires are the foundation, the very core of reliability for any electrical system.

The NEC generally treats wire for power in two forms: single wires and cables. The latter are insulated wires gathered in functional groups within an overall covering.

Each alternative — wires or cable — has its place in the electrical scheme of things. Each approach offers appropriate uses based on the application, circumstances and their respective qualities.

Most electrical systems in business locations, such as your radio station, have unique needs and require wiring flexibility. It's usually best to avoid wiring with a plethora of standard cable types — romex or BX or AC carrying individual circuits, running helter skelter, hither and yon. The word "spaghetti" comes to mind.

Similarly, running individual wires out in the open, from power source to point of use or control and onward, would be a housekeeping nightmare, a violation in most cases, reminiscent of turn-of-the-century wiring methods like "knob and tube." (We mean turn of the *previous* century!)

Most electrical contractors will satisfy your need for elegance and flexibility by running multiple single wires in a raceway system. This usually is some variety of conduit. The contractor will select the conduit to match the installation circumstances, such as the count and size of wires it must contain and the environment it must travel through.

Conduit typically is round in shape and made to be either conductive (metal) or non-conductive (plastic or eq). A tremendous variety of choices exist for both.

Conductive metal conduit varies from light-gauge Electrical Metallic Tubing (EMT-Article 348) to very Rigid Metal Conduit (RMC-Article 346), of which the most ubiquitous variety is Heavy Wall, or HW. It affords substantial protection of the wires contained therein. If properly installed, this conductive metallic conduit provides the safety/bonding ground for the circuits enclosed.

More than a million miles of cost-effective EMT has been installed. It is bent easily on site to form-fit the surface over which it runs. Additionally, it is available off the shelf in sizes from a nominal 1/2-inch to 4-inch diameters.

Every variety of connection accessory exists for EMT. The latest code changes even allow EMT outside as long as you use raintight fittings.

For increase durability, heavier wall varieties are available. But these are more difficult to bend and are connected via pipe thread. Both circumstances require a notable investment in special fabrication equipment.

Rigid Non-metallic Conduit (RNC-Article 347), usually a variety of PVC pipe, can be worked with regular toolbox tools and is available in a range of trade sizes. A downside is that you need to run separate safety/bonding ground wires inside the conduit. Non-metallic conduit provides no electrical shielding for the circuits inside, which is a consideration in broadcast and production facilities. You also must make special allowance for thermal expansion and contraction.

Use the table

Take care not only in the selection of the type of conduit but also the minimum diameter specified. Several factors determine the minimum diameter, including the type and gage of each wire; the total count of each wire size; the use of that wire; and derating factors for heat associated with the current demands of each circuit.

The NEC provides a plethora of tables to assist in selection of conduits and the wires contained therein, as well as formulas for complicated or exotic circumstances.

Let's consider a quick example of the selection process.

Your group has just bought a new FM station in your market and it wants to move the transmitter to the best site, which coincidentally you already own. After the requisite studies and approvals,

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Workbench

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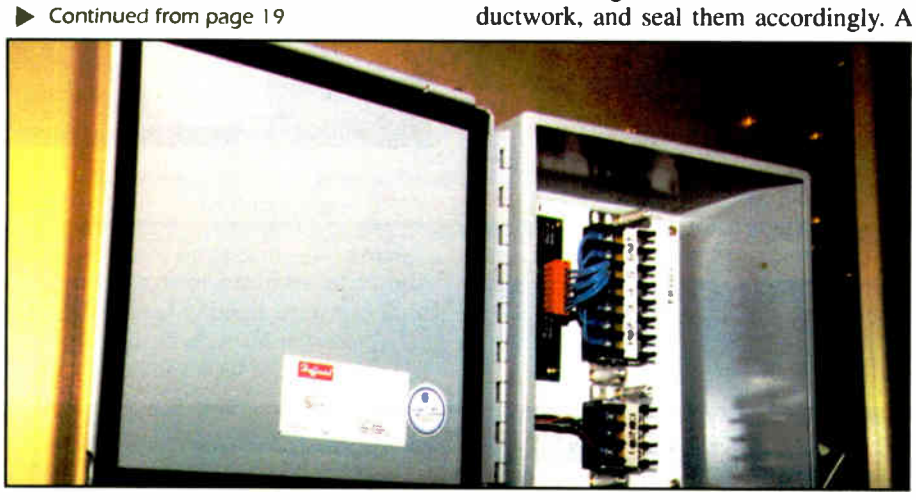

Fig. 4: An externally mounted electric and control cable junction box.

security lighting. Night is a good time to check that your building is weathertight. Turn on the inside lights, close the door and walk around the outside looking for light leaks. Caulk or seal any openings, especially where the roof meets the building walls.

While you are inspecting, check for obvious water leaks. Figure 3 shows a sealed transmitter building roof, but also an unused vent with resultant water damage.

If you have air handlers on the roof, check for light leaks in the associated ductwork, and seal them accordingly. A gash in the ductwork 3 inches up one side can direct 6 inches of melting snow inside your building.

★ ★ ★

Although this is not the time of year to be doing outside electrical work, if you are forced to deal with old replacement electrical wiring or control cabling, take a hint from the phasor folks at Harris' Phasor/ATU factory. Electrical and control wiring access can be optionally installed on the outside of your coupling network, in a weathertight box.

The advantage of adding a box outside the ATU — the Antenna Tuning Unit, or doghouse — is that you can access the wiring without having to enter the RF coupling unit. This keeps the station on the air, and minimizes RF exposure or shocks — especially if the electrical box is mounted on the opposite side of the tower feed.

If you've ever had to troubleshoot tower light wiring inside an ATU on a cold wintry night, you'll appreciate the convenience an external box can provide. As seen in Figure 4, the box is mounted, with holes for control and AC lines drilled through. The rubber gasket keeps out the moisture.

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

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NEC

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it's time to install the extra transmitters and associated gear in your existing transmitter building.

The old storeroom is just big enough to put in a pair of 3.5 kW FM transmitters and an equipment rack. You need to send over, from the existing main panel, two single-phase, 60-amp, 208-volt circuits and three 20-amp, 120-volt circuits for this gear. The wire distance is less than 50 feet, breaker panel to appliances, so you can use the ampacity wire sizes directly from the NEC tables with derating.

(Note, where commercial circuits could become fully loaded at any time, the generally accepted practice is to increase circuit wires one size for every 100 feet of wire distance. In fact, this is a good idea for all circuits.)

Our total wire count thus will be 4x #6 THHNs and 6x #12 THHNs. This is a perfect application for EMT in the main run.

We can proceed in one of two ways. We can extrapolate from Table C1 in Appendix C of the NEC, which contains conduit fill charts for EMT, or we can actually calculate the conduit size needed. Let's do both.

It would be a good idea to pull down your 1999 copy of the NEC and follow along. But if it is not nearby, just review the calculations as we come to them.

In Table C1, let's drop down to fill related to THHN wire. Because those #6 wires are our largest, we'll begin by checking out the maximum count of #6 wires per size diameter. A little like Goldilocks sampling the porridge, 1/2-inch allows only 2x #6 wires.

Similarly 3/4-inch allows the minimum we need of 4x #6 wires. However, 1 inch permits 7x #6 wires. In round numbers we have 3/7ths of the fill space left for our #12s.

Going up the chart to #12s, a 1-inch EMT conduit can accommodate 26x #12 THHN wires; 3/7ths of that conduit could allow 11x #12s. This is five more than needed, so, as a minimum, from the table, a 1-inch EMT conduit can handle our 4x #6s and the 6x #12s that we need.

For calculating the minimum EMT conduit size by area formulas instead, we must gather some numbers.

From Chapter 9 Table 5 of the NEC, the area of a THHN #12 is 0.0133 square inch and for a #6 it is 0.0507 square inch.

The useful areas of various trade size conduits are listed earlier in this chapter in Table 4. Because we considered three sizes of EMT above — 1/2 inch, 3/4 inch and 1 inch — let's note the fill area allowable for multiple wires for these, which are 0.122, 0.213 and 0.346 square inches respectively.

Now total our wire sizes: 6 times 0.0133 plus 4 times 0.0507 equals the total wire volume that we have to accommodate, which is 0.2826 sq. inch.A 1/2 inch at 0.122 and 3/4-inch at 0.213 are too small.

So by the numbers, 1 inch is our first allowable minimum (0.2826 is less than 0.346).

Is it wise to allow for future expansion? Yes, in particular in a material and labor situation such as electrical contracting where material is the smaller part of the total cost.

All factors being equal, spend a little more and put in 1-1/4-inch conduit to simplify expansion and changes later.

Ordinarily, the conduit system is installed, then the wires are pulled through with a "fish" line. Bends and turns in the run create resistance to this pulling process and can stretch or damage the wire.

The NEC recognizes this and forbids that any conduit be installed or wire pulled through more than a 360-degree series of direction alterations without a pull box/appearance.

Unless your conduit system is traveling vertically (see the NEC article on tower lighting), there is no limit to how far you can pull in a straight line. Most ordinary "fish" tapes are just slightly over 100 feet, so most electricians have a pull box at no more than 100-foot distances as a practical measure.

Next time we'll look at two other types of wireway/raceway, troughs and cable tray. We'll also touch on an aspect of the NEC that is frequently overlooked and may be the most common code violation: wire "box fill."

For the co-sharing of space by AV, data, signal, audio and other cables as well as a parallel discussion on wire fill in conduit for signal cables, see Steve Lampen's excellent series on AV wires in the May/June 2000 issues of RW, which also are available in the reference room of the RW Web site.

More than a million miles of EMT has been installed. It is easily bent and available in a range of sizes.

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GM Journal

Radio World — Resource for Business, Programming & Sales — February 1, 2001

Live Hispanic Events

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Wanted: Classified Business

RegionalHelpWanted.com Aims to Help Stations Challenge Newspapers for Classified Revenue

Bill Mann

Want to beat newspapers at their own game and get a piece of the local and lucrative classified ads business, traditionally a profit center for print?

Eric Straus serves as the president of RegionalHelpWanted.com, based in Poughkeepsie, N.Y. He said he's achieved this with his company. Launched in May 1999, Straus has a growing list of radio station clients. And he has testimonials from managers to prove it.

Stations that are normally direct competitors are banding together in markets across the country under Straus' turnkey operation to focus in help-wanted ads — big business in today's tight labor market.

Join to beat

"We need 70 percent cume in a market to make this work and to hurt the newspapers," said Straus. "We normally average about seven to eight stations per market, but there is no limit on the number of stations in each market."

Straus, speaking to a group of radio managers in San Francisco, cited a Salomon Smith Barney study. "It reports that 50 percent of all classified advertising will be online within the next five years."

Under Straus' customized regional setups, participating broadcasters in any given geographic area his company services get a customized job site (example: HudsonValleyHelpWanted.com). In exchange, the stations agree to air 24 weekly 60-second spots per station (Sunday to Wednesday on a 24-hour rotation) to promote the local help-wanted online classifieds that RegionalHelpWanted created for the broadcasters' region.

The company gives local broadcasters a 70-percent share of the Net classified revenues — it keeps 30 percent. Employers who post the ads pay for them.

"Employers hear our radio ads and go to the site to place a help-wanted ad. They type in the ad themselves and place their credit-card info, or request an invoice," Straus said. "Once they place an ad, they can then search the database of local, recent resumes at no additional charge."

New Orleans broadcasters participate in a local RegionalHelpWanted.com site

"A listener hears the ads, goes to the site — it can be linked from your station's Web page, of course — and looks through the ads. The listener can also post his/her resume on the site free of charge," Straus said.

Straus stresses, "These are dollars your daily newspaper now *owns*!"

Straus said that in his turnkey operation, Dick Orkin's Radio Ranch — the well-established Orkin owns a piece of Straus'

See CLASSIFIEDS, page 28 ▶

BROADCAST LAW REVIEW

Lobbying the FCC: No More Parties?

Barry D. Umansky

So, you've filed an application at the FCC and you're not sure whether it's been granted or if it's being held up for further information and/or because of a problem in the application.

Or you've filed comments in an FCC rulemaking and you feel so strongly about the issue that you want to call someone at the FCC. And maybe you plan on visiting the FCC in Washington to talk with someone about your application or discuss the pitch you made in your comments in the rulemaking.

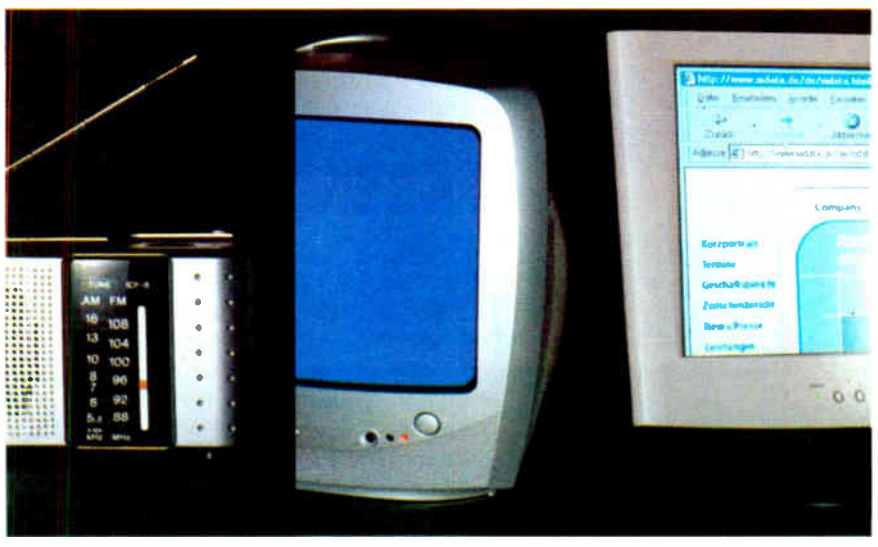
So, what can and what can't you do in contacting the FCC? And, even if it's OK to contact the FCC directly, is that really a good idea or even necessary? The answer lies partly in common sense. But, the commission's "*ex parte*" rules are what really govern the matter.

Ex parte

The law dictionary defines "*ex parte*" as "on one side only; by or for one party; done for, in behalf of, or on the application of, one party only." To the layman, "*ex parte*" sounds like "no more parties." Well, each definition is accurate.

Back when your author graduated from law school and began work in communications law, personal access to government officials and government information was far less regulated than

See UMANSKY, page 24 ▶



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Umansky

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it is today.

When I was working in the 1970s as an attorney on staff at the commission, the hallways often were crowded with private practice attorneys and other broadcaster representatives seeking to gain information and influence the outcome of rulemakings or application processes.

While that phenomenon is not totally a thing of the past, there are some significant, present-day limits on whether and when you may contact a government official and what you can and cannot say or present during that contact. Compared to the relatively wide-open exchanges — social and business — between government officials and broadcasters and their legal counsel in the past — the "party" now *is* over.

But that isn't necessarily bad. The "*ex parte*" rules better ensure the fairness of FCC proceedings and generally insulate the FCC's decision-making processes from "off-the-record" and certain other contacts and discussions. In some cases, the rules allow no contact whatsoever. In other cases, there must be a publicly available record of that contact.

Although access to government officials now is more restricted, there is greatly *increased* access to FCC information, particularly over the Internet. The FCC Web site often can provide you with what you might otherwise be seeking over the phone, by correspondence with the FCC or by a personal visit.

For radio broadcasters, the FCC's Web site at *www.fcc.gov* — particularly the "subsites" of the Mass Media Bureau and its Audio Services Division — provides all kinds of information. If you haven't used the FCC's site, do it today. You'll be amazed at how much information is there.

Clicking, not calling

If it's information you are seeking, you may find all that you need right on your computer screen. The commission's Web site has tons of usually up-to-date information for your access on a 24/7 basis.

For information on your application or that of someone else, try the Mass Media Bureau's Consolidated Database System (CDBS) electronic filing system for broadcast station application forms. You can access copies of old and new applications (yours or anyone else's) filed at the FCC and get a great deal of other information about stations over the CDBS. The CDBS can be accessed at: *http://svartifoss.fcc.gov/mmb*

To see where your or any other station application stands in the FCC processing line, you can check the lists maintained by the Mass Media Bureau's Audio Services division. These are the division's bi-monthly status reports on radio license applications awaiting review and construction permit modifications that are pending. These reports may be accessed at *www.fcc.gov/mmb/asd/welcome.html*

To see what comments or other filings other parties have submitted in rulemaking and inquiry proceedings, just key in the docket number over the commission's Electronic Comment Filing System (ECFS) and you can read and print out each and every one of these pleadings. You can access the ECFS at: *www.fcc.gov/e-file/ecfs*

For a list of the rulemaking and inquiry proceedings that are pending, you can access the commission's "open proceedings" document at *www.fcc.gov/Bureaus/Miscellaneous/Open Proceedings*

Also, the Mass Media Bureau's Policy and Rules division maintains lists of pending and recently concluded broadcast-related proceedings, at *www.fcc.gov/Bureaus/Mass Media/Notices* and *www.fcc.gov/Bureau/Mass Media/Orders* respectively.

Application issues

In situation where you want to find out the status of an application or perhaps advocate or oppose the grant of a particular application, the rules are pretty clear. If your application is unopposed, there is no "other party." Thus, any presentation to an FCC employee would be lawful.

But where there is more than one party in an application proceeding (*e.g.* your application is opposed by someone else), all parties must be served with any written communication and no oral contact may be made unless all parties are given the opportunity to be present during the exchange.

General rulemaking proceedings, such as when the FCC is proposing to add or change a rule of wide applicability to broadcasters, are subject to a "permit but disclose" standard. Your comments or reply comments wind up in the public record of the FCC docketed proceeding.

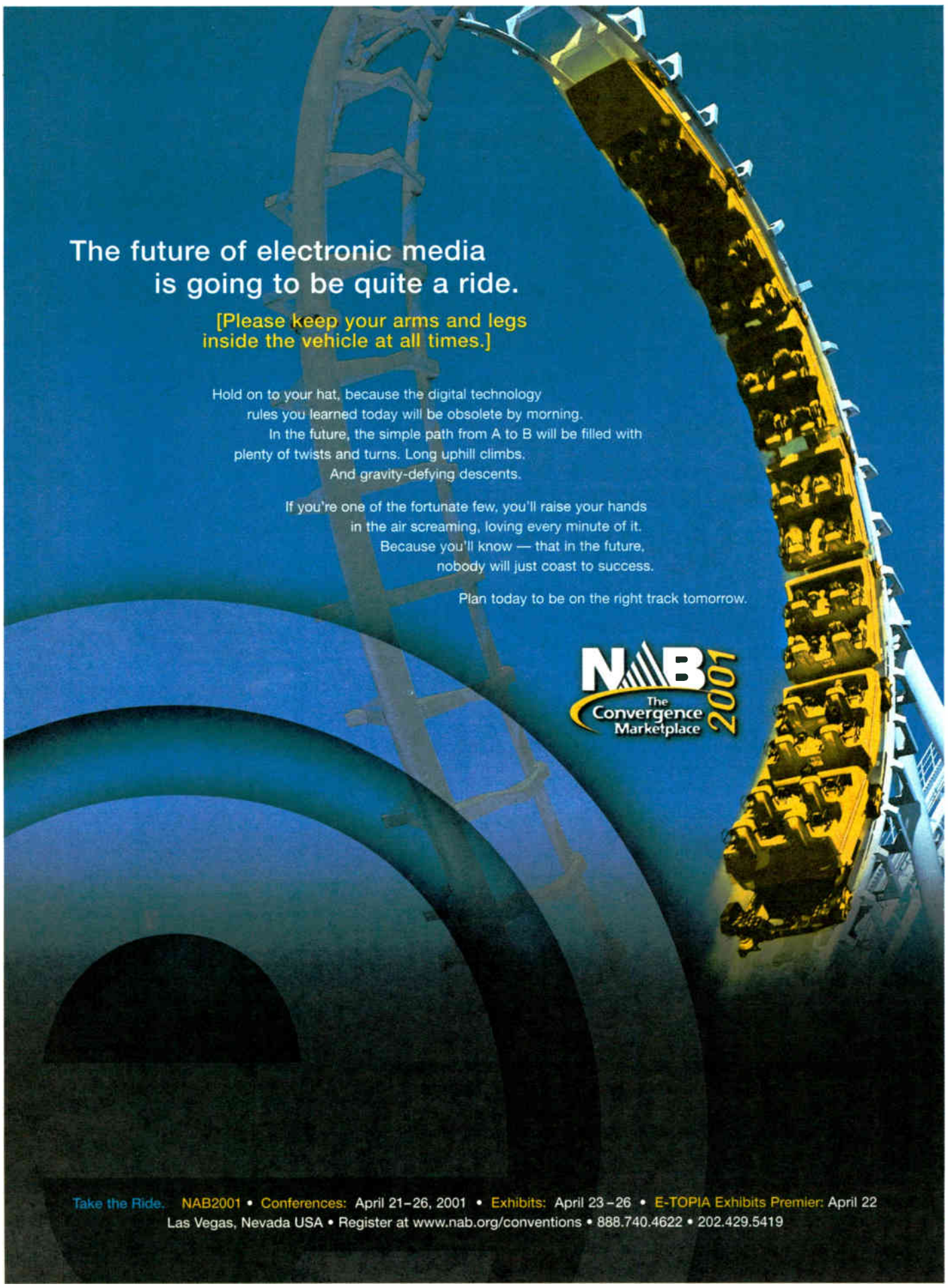
And if you choose to speak to FCC employees or send them correspondence concerning the matters addressed in the rulemaking proceeding, the "*ex parte*" rules ensure that the public record contains documentation of that contact.

Any written materials shown FCC personnel must be filed with the secretary of the FCC (Ms. Magalie Roman Salas, Secretary, Federal Communications Commission, 445 12th Street S.W., Room TW-204B, Washington, D.C. 20554). That document will be placed in the public, docketed record.

If you make a *written ex parte* presentation, you must, no later than the next business day after the presentation, submit two copies of the presentation to the commission's secretary, with a separate cover letter. The presentation (and cover letter) must clearly identify (*e.g.* list the docket number) the proceeding to which it pertains.

The cover letter must indicate that two

See UMANSKY, page 25 ▶



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copies have been filed with the secretary; and you have to place the words "*ex parte* presentation" prominently on the first page of the cover letter. If the presentation addresses more than one FCC proceeding, two copies must be filed for each proceeding.

On the other hand, if you make an *oral ex parte* presentation, you must submit an *ex parte* memo to the FCC secretary's office *if* your oral presentation included data or arguments not already reflected in your written comments or your other filings in the proceeding.

If your presentation did go beyond the contents of the materials you already filed in the proceeding, no later than the next business day after the presentation you'll have submit to the commission's secretary, with copies to the commissioners or commission employees involved in the oral presentation, an original and one copy of a memorandum which summarizes the new data or arguments.

The subject matter of the presentation must be disclosed "fully." The FCC says that a mere listing of the subjects discussed is not sufficient, and that more than a one or two sentence description of the views and arguments presented is required.

The memorandum (and cover letter) also must clearly identify the proceeding and must indicate that an original and one copy have been submitted to the secretary. It also has to have the "*ex parte* presentation" label on the first page. If the presentation relates to more than one proceeding, two copies of the memorandum (or an original and one copy) must be filed for each proceeding.

If the FCC proceeding about which you make a presentation is only an "inquiry" proceeding (initiated by a *Notice of Inquiry* rather than by a *Notice of Proposed Rulemaking*), there are no restrictions on your contacts with FCC personnel.

The same applies to any contact you make with the FCC regarding a "petition for rulemaking," except for a petition that requests the allotment of a broadcast channel to a particular community. The exemption applies where the petition seeks adoption of a new or revised FCC rule of general applicability and that FCC has yet to initiate a rulemaking proceeding (asking for formal comments of interested parties).

Congress calling

Sometimes you might feel compelled to enlist the aid of your congressperson or senator to support your cause at the FCC. While the ground rules for having your congresspeople contact the FCC are very much along the same lines as those governing your personal contacts, there are some differences. Also, while seeking congressional help may seem like a good idea, there are some significant downsides to taking that route.

Ex parte presentations by members of Congress or their staffs and other federal agencies or their staffs need be disclosed only if they are of "substantial significance" and if they "clearly" are intended to affect the ultimate decision in the proceeding.

However, the commission's staff often will disclose *ex parte* presentations made by members of Congress on a broadcaster's behalf. The same holds true when other federal agencies and their staffs make such pleas to the commission at the behest of a broadcaster.

Think first

There clearly have been situations where having a senator or house member contact the FCC has expedited an application grant or has resulted in a favorable rulemaking decision. However, there are some negative consequences to consider.

Asking your congressman to intercede on your behalf may actually slow down your application process.

For one, it's more than likely that a congressional inquiry will be routed to the very FCC staff member who is processing the application you're interested in, or is drafting a proposed FCC decision in the rulemaking proceeding that would affect you.

If your goal is to speed up the grant of an application, the FCC staffer may be delayed in completing that task as he or she drafts an answer to the congressional inquiry.

Also, and this can be said from personal experience, nothing is more irritating to an FCC staff member than to have to prepare answers to a flood of congressional inquiries. And that ire sometimes later may be reflected in the outcome of the FCC rulemaking proceeding or application process.

Government sunscreen

Nearly every month the commission issues a public notice — the so-called "Sunshine Agenda," as required by the government in Sunshine laws — indicating that certain matters will be considered at a formal commission meeting to be held the following week. These generally are rulemaking matters; but application matters also are addressed at some "open" meetings of the FCC commissioners.

From the moment the Sunshine Agenda is issued, all FCC contacts concerning these matters are prohibited. That is, while the sunshine period prohibition is in effect, all presentations to decision-makers concerning matters listed on a Sunshine Agenda, whether *ex parte* or not, are prohibited, unless they fall within certain exceptions.

Such exceptions include contacts that occur in the course of a widely attended speech or panel discussion and concern a commission action in an exempt or a permit-but-disclose rulemaking proceeding where an FCC ruling has been adopted.

The sunshine period prohibition applies from the release of a public notice that a matter has been placed on the Sunshine Agenda until the commission releases the text of a decision or order relating to the matter, issues a public notice stating that the matter has been deleted from the Sunshine Agenda, or issues a public notice stating that the matter has been returned to the staff for further consideration, whichever occurs first.

Unlike the regime that existed in a bygone era, there are now strict limits on any gifts or other things of value that a broadcaster (or other entity regulated by the commission) may give to an FCC employee.

Federal employees may not solicit or accept gifts that are given to them because of their official positions in the government or that come from what are termed "prohibited sources." A "prohibited source" is defined — in the FCC context — as anyone who is doing business with or who is regulated by the FCC, or who has interests that would be substantially affected by the performance of the official duties of the employees who have been offered the gifts.

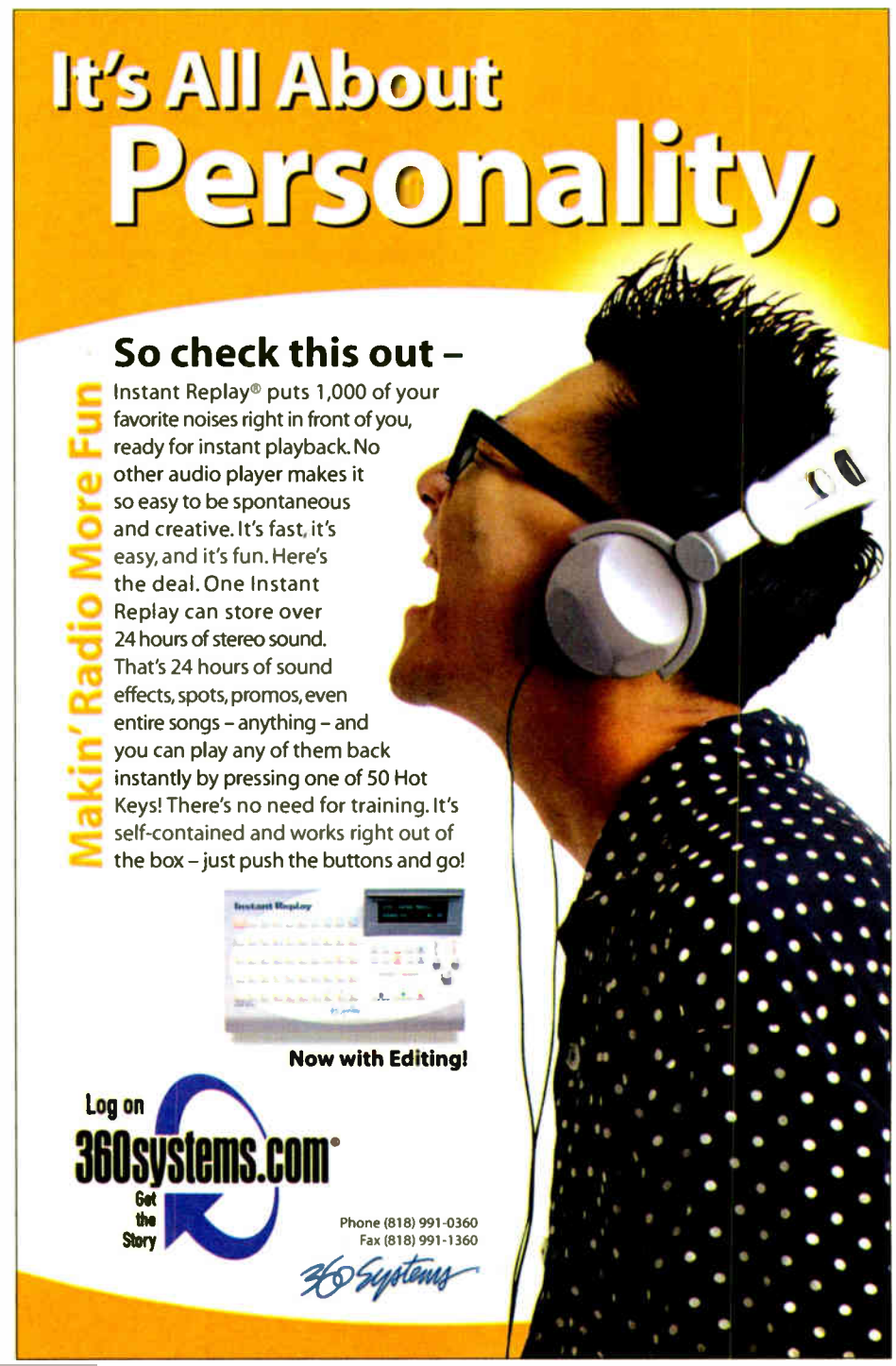
The term "gift" in the FCC employee standards of conduct is defined to include almost anything of monetary value. There are some exceptions to this general gift acceptance prohibition. Such exceptions include unsolicited items with a minimal market value ($20 or less), or gifts that are clearly motivated by a family relationship or personal friendship between the giver of the gift and the employee who receives it.

In addition, with the prior approval of the commission's legal officials, employees are permitted to accept invitations to widely attended events, where it has been determined that their presence is in the interests of the FCC because it will advance the commission's programs or operations.

Consult

Again, lobbying or otherwise contacting the FCC surely can be done, in most circumstances. Here I've given you only general guidance on how to gain FCC information and advocate your cause. But, when it comes to your actual contact with the FCC on such matters, it's essential that you be guided by your own communications counsel who may establish a lawyer/client relationship on these sometimes tricky issues.

Barry D. Umansky, the former deputy general counsel of the National Association of Broadcasters, is with the communications practice group at Vorys, Sater, Seymour and Pease LLP in Washington. Reach him at (202) 467-8822 or via e-mail at bdumansky@vssp.com



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RW NEWS BYTES

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from the editors of Radio World

MANAGEMENT CORNER

Embrace the Net to Excel in 2001

Vincent M. Ditingo

The early months of the year are appropriate to set a roadmap for radio's future by examining recent trends.

And these examinations have unearthed one principal tenet: to overcome competitive and marketing challenges, such as the soon-to-be launched satellite radio systems of Sirius and XM and a suddenly sluggish media advertising environment, radio broadcast executives must adapt to change and fully embrace new technology.

In 2001, that translates to embracing e-commerce technology. By doing so, radio will maintain its newly crowned status among marketers as *the* hot medium to buy.

Sluggish climate

Recent sales figures have been more modest than those earlier in this record-setting year. For example, according to the Radio Advertising Bureau, the month of October 2000 registered only a 3-percent increase in local — and a 5-percent *decline* in national — sales compared to the same time frame the previous year.

However, fueled by outstanding ad performances earlier in the year, sales in the first three quarters of 2000 for local and national combined were up 16 percent over the same period in 1999, with many in the industry predicting the year would finish with increases of 13 to 16 percent in combined local and national sales over 1999.

Many station executives, meanwhile, are sure to point to the drop in the flurry of dot-com advertising dollars that had permeated the national and network radio marketplaces as a primary reason for the medium's third-quarter slippage and, consequently, a major factor for lower broadcast stock prices.

But a Chase Securities analysis shows that national radio advertising growth in 1999, for example, would have registered a modest increase even without dot-com advertisers.

The Chase report, which puts national radio growth at 16 percent for 1999, notes that national spot would have grown roughly 7.2 percent excluding dot-com advertising. This means national radio accounted for some 9 percent of total Internet advertising spending during 1999 with network radio capturing considerably less of that pie. (It is interesting to note that magazines, at 21.7 percent, secured the most Internet ad business in 1999.)

That leads us to even better news: Through this current trough in advertising, radio pricing has remained unscathed and pricing leverage among stations in top-10 markets continues to show substantial growth.

According to a recent broadcast equity research report from Chase Securities, cost-per-thousand (CPM) unit rates for stations in the top-10 markets during third quarter 2000 are projected to have grown an average of 24.6 percent over third quarter 1999. A large measure of that growth, 29.1 percent, is in morning-drive daypart. (Data represents asking rates and does not reflect discounts given to advertisers. See accompanying chart.)

Radio Cost Per Thousand (CPM)

Percentage Change
Q3, 1999/2000
TOP 10 MARKETS

DAYPART	% Change
Morning	29.1
Midday	23.2
Evening Drive	22.4
Evening	23.6
Average	24.6

Sources: Chase, Interep

And these large markets were not alone. The average CPM growth for stations in markets 51 to 60 (first quarter 1999 vs. first quarter 2000) is estimated at 18.3 percent.

One key factor for these increases is a high level of advanced bookings.

Content's the thing

So what does all this data reveal?

Although radio's fundamentals remain very strong, in order to secure additional advertising dollars and successfully stunt any new marketing pressures in 2001, the time was *yesterday* for station group owners and managers to extend the brand awareness of their station/programming via the Internet.

Without question, to attract more of a station's loyal listener base as well as new listeners to a station's Web site will ultimately lead to more banner ad sales for existing and new advertisers, and therefore steady incremental ad dollar increases.

But the primary reason for such a move is simple. Straight spot campaigns will yield only marginal, if any, growth over the long term. However, just like a radio format, success to any Web site venture lies in its content.

But, according to an analysis by Arbitron and Edison Media Research released in late November 2000, most radio stations, especially music outlets, are still not giving their Web site visitors what they want.

For instance, the most popular Web site feature is "the ability to listen to the radio station." Yet the analysis reports that only 59 percent of radio station Web sites stream their audio, allowing people to listen to live broadcasts.

Meanwhile, the second-most-popular feature, "information about local concerts," was found in only 50 percent of Web sites while the third most desired content feature, "titles and artists of songs recently played on the station" existed in only 6 percent of radio Web sites.

But according to the analysis, "people who listen to a radio station online visit that station's Web site more often and spend more time on that site when they do visit." Simply put, a recent Arbitron/Edison Web site Internet report states that when it comes to streaming

See DITINGO, page 29 ▶

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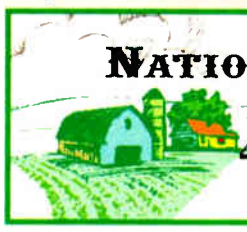

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World Radio History

Hispanic Events Draw Big Crowds

Listeners Flock to Station-Sponsored Events — Making Advertisers Happy and Broadcasters Richer

Scott Fybush

Trying to reach a Hispanic audience? There's no better way than to bring them together for a station event, according to the stations and marketers who've tried it.

Southern California's 'Fiesta Broadway,' May 2000

"Sponsors have told me over the last 10 years that they really want to get closer to the consumer," said Peter Bellas, the promoter responsible for Southern California's "Fiesta Broadway" and other Hispanic-targeted events.

As general manager of San Francisco's KSOL(FM), Ally Shephard has seen the results firsthand, thanks to the station's "Fiesta del Sol" events.

Moderating a panel discussion at last fall's NAB Radio Show, Shephard admitted she was a bit nervous the first time the station held the event, with no promotion except on-air mentions.

"It's kind of like throwing a huge party and nobody RSVPs," she said. Her nerves became even more intense when it began raining the morning of the Fiesta.

"By 9:30, people started showing up in line," she said. "We opened the doors at noon and closed them at 2 p.m." after drawing 52,000 listeners.

The opportunities for marketing to Hispanics are expected to grow dramatically in the next few years. Approximately 68 percent of Hispanics are under the age of 35, said Raul Dominguez of Mission Foods Corp., and the products they consume are finding a receptive audience among other cultures as well.

"Tortillas in northern California represent more than $300 million in sales ... and that's not just Hispanics consuming them," Dominguez said.

Bellas credits the recent Latin music phenomenon for some of that growth, especially Ricky Martin's 1999 Grammy performance.

"He did more in three minutes than I've done in 21 years to convince advertisers to be involved in the Hispanic market," Bellas said.

But selling to Hispanic audiences still requires a somewhat different approach from English-language mass marketing, the panelists said. Dominguez cited General Motors' famous 1970s debacle, in which the company tried to sell the Chevy Nova in Mexico without realizing that "no va" in Spanish means "doesn't go."

Singer Veronica Castro and Univision TV's Tony Dandrades were among the stars who performed at 'Fiesta Broadway 2000'

Mobile

"We couldn't go out there with a DSL product when they haven't even bought a computer yet," said Pacific Bell marketer Walter Farfan of his company's attempts to sell to Hispanics.

That's where event marketing came in for the phone company, which built a mobile unit to drive to events and demonstrate the company's new services.

Farfan worked with several southern California stations to park the unit at

See HISPANIC, page 29 ▶

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Classifieds

▶ Continued from page 23

company — will provide the commercials, customized for each market. Straus played a few of them for a session at The NAB Radio Show last fall.

One ad aimed at employees begins, "Finding a job just got easier." The one aimed at employers/prospective clients begins, "Job recruitment just got easier."

"RegionalHelpWanted takes care of everything — maintaining the local site, billings and collections," Straus said.

One client, Marty Schibbelhut, general station manager of WSBT Radio Group in South Bend, Ind., sings the praises of Straus' online approach: "In just two short weeks we've added more than 50 new advertisers to our advertising family ... clients who never thought of using us for their recruitment. We love the turnkey aspect and the zero involvement from our sales staff."

To demonstrate how much money is at stake, Straus displayed a memo from John F. Kelly, president and general manager of Albany Broadcasting in New York, that cites "an estimated $400,000 per *week* is spent on recruitment in the Albany market."

Straus provided a large-screen demo of one of his regional Web sites.

"As a potential employee hears our ad on the radio, he's encouraged to go to the Web site and click on the View Ads."

Straus discusses the types of jobs that appear in online ads: "People think that Net job postings are for high-tech jobs. Not true. The meat-and-potatoes of this are $8- to 10-per-hour jobs."

A testimonial comes from a second RegionalHelpWanted affiliate, Kevin Legrett, GM of Infinity's stations in Rochester, N.Y. "I admit I was skeptical when it was proposed that Infinity participate in this program with other radio groups in the market. It isn't often that we participate in a strategic alliance with one of our direct competitors. Still, we've had terrific results and I believe RochesterHelpWanted.com can truly become a major competitor to the local newspaper. You've finally developed a workable plan for radio to capture a significant share of the newspaper's classified-ad revenues — a category that was previously untouchable."

Eric Straus

Unlike other Net/radio partnerships like UncleWebster.com (RW, July 5, 2000), RegionalHelpWanted is narrowly focused, concentrating only on using radio to promote an online classifieds site. Straus said he doesn't encourage display ads on his sites, "but we'll accommodate employers who want them."

"The cost to advertisers is typically $138" to place an online employment ad for 30 days. Employers can also place ads by phone, Straus said. "Potential employees are the bait for them."

"It's all driven by the power of radio to get people to the Web site," said Straus, who said "we're in 92 markets right now." He added that all job listings are local and exclusive to each market.

A job seeker clicking on listings will find the three most recent job openings displayed, he said.

Straus said, "We strongly recommend to radio managers that they work with other broadcasters in their area. If you refuse to, we will consider working with you on a 65/35 split instead of our usual 70/30."

He said that "the better the ratings of a station are, generally, the less good the times our ads run are. We get a lot of overnight spots on some big stations." He also said that "bigger stations want a bigger piece of the pie, so we don't use Arbitron's ratings."

Straus said, "Our business is growing an average of 31 percent per quarter. It's beginning to snowball. The first two weeks we go into a market, we try to run lots of ads to build momentum."

If you'd like more information, visit *www.RegionalHelpWanted.com*

World Radio History

Ditingo

▶ Continued from page 26

audio, "the interest is there, but the opportunity often is not."

(The content analysis portion of the Radio Station Web Site Content study, an-depth chapter of Arbitron/Edison's Internet Study V, was conducted among 412 radio station Web sites culled from 30 markets nationwide between July and September 2000.)

Myth and reality temper the relationship between conventional radio broadcasting and the Internet.

The myth of audio entertainment on the Internet, and of any other new technological entrant to the media marketplace, is that somehow it will one day replace the existing terrestrial radio broadcasting structure.

History has shown us time and time again that a free, over-the-air broadcasting business model will never be replaced.

Cable television, for example, never replaced broadcast television. It just made broadcast TV executives more savvy on how to program and market their products. In fact, the majority of cable viewers continue to watch those channels that belong to one of the four big TV networks (ABC, CBS, NBC, Fox).

The reality of the electronic marketplace is that it provides radio with a new marketing and merchandising platform, the latter involving selling station caps, mugs and T-shirts, for example.

That is why more radio stations need to adopt this technology even though it will be a continuing learning process for new professionals entering radio and traditional radio spot sellers alike.

As broadband technology continues to evolve, an initial investment in streaming audio must top any long-range strategic plan. The initial costs can range from $50,000 to $100,000 or more, according to my informal sampling of radio executives.

To determine a proper cost range depends upon a number of variables such as market size and the fact that some streaming audio providers offer their service in exchange for a portion of prime advertising inventory.

A major part of this learning curve is to understand the ever-increasing Internet lexicon. To that end, many radio companies are training their sellers on Internet usage by both consumers and advertisers.

One such company, Interep, has just released a 28-page "Radio Seller's Guide to On-Line Advertising." It includes explanations of the most commonly used online research metrics such as unique visitors, ad views and impressions.

"At some point, everyone will have access to broadband and wireless Internet," said Mark O'Brien, executive VP for the BIA Financial Network, who believes that, although a significant investment, Internet technology will help stations build listeners and ad dollars.

"Then radio broadcasters will one day find that they are in a new (distribution) business."

One final thought: Radio has always adopted well to change, especially with the advent of television. This should be no exception.

Vincent M. Ditingo is an assistant professor of communication arts and coordinator of the radio program at the New York Institute of Technology. Contact him via e-mail to vditingo@aol.com

Hispanic

▶ Continued from page 28

grocery stores in Hispanic neighborhoods, where Spanish-language DJs demonstrated caller ID to listeners.

"We were selling caller ID left and right. We had tremendous success there," he recalls.

Successful event marketing doesn't require big-market promotional money, either. Panelists said even in the smallest markets, local Hispanic performers are often eager to perform for little or no money, and can still draw a substantial audience.

Likewise, successful advertising campaigns don't always mean buying the station with the highest ratings.

"The smaller stations you can use for micro-marketing," said Mission Foods' Dominguez.

He cites the example of San Jose's KAZA(AM), whose signal lacks the Bay Area reach of larger competitors like KSOL(FM).

"At home in San Jose, though, they're very strong in the community," he said.

Scott Fybush is the editor of NorthEast Radio Watch and a frequent contributor to RW.

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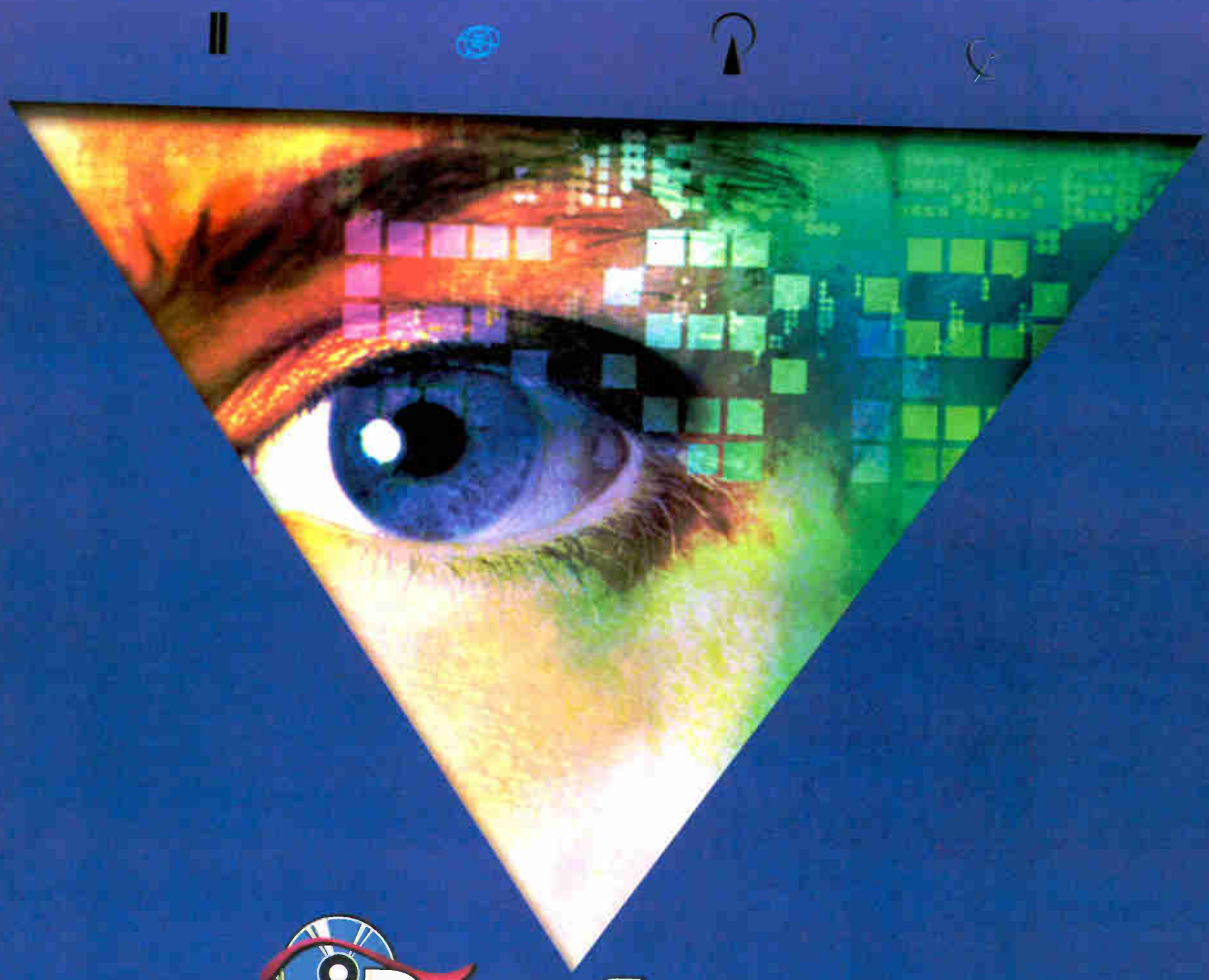

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Internet Radio

RAB's Net Gurus
See Page 39

Dos, Don'ts Of Selling The Web

Sandy Wells

There are more "dos" than "don'ts" when it comes to selling the Web, but one thing a broadcaster must not "do" is ignore the importance of the Web to radio's financial future.

If a listener logs on and buys a hundred dollars worth of stuff, the station gets 2 percent of that.

— Dave Casper

The explosive first wave of dot-coms revealed to account executives how much the newest medium values the oldest electronic medium for its ability to drive traffic to their Web sites with on-air spots. But when it comes to finding ways for stations to develop moneymaking sites, the answers aren't so clear.

"You need to be a student of the Net," said the Radio Advertising Bureau's Senior VP of Services Dave

See WEB, page 40 ▶

BroadcastAmerica Stations Silent

Scott Fybush

It was the kind of holiday "gift" no radio station wanted in its stocking: Just days before Christmas, BroadcastAmerica.com, the Maine-based streamer of more than 700 stations, abruptly cut off its service.

The two-year-old company filed for Chapter 11 bankruptcy in December, remaining in business with a shoestring staff of managers and executives working without pay while the company sought a buyer to rescue it from a conversion to Chapter 7, which would force the liquidation of BroadcastAmerica's remaining assets.

Meanwhile, Judge James Haines of U.S. Bankruptcy Court in Portland, Maine, gave Worldcom and RealNetworks, which supplied the streaming connections for BroadcastAmerica's clients, permission to cut off service beginning Dec. 16. Within days, stations from Europe to California that had used BroadcastAmerica's services found themselves without an audio feed to Net listeners.

Transplants angry

Even the station just down the street from BroadcastAmerica's Portland headquarters was caught by surprise.

"They hadn't said anything to us at all," said J. J. Jeffrey, owner of Portland sports station WJAE(AM), which had been streaming with BroadcastAmerica for more than a year.

Jeffrey said the streaming audio WJAE offered was popular among Mainers spending the winter in warmer climates.

"I'm getting a lot of heat from some of the transplants," he said.

Across the country at KVON(AM) and KVYN(FM) in Napa, Calif., Chief Engineer Mike Martindale was also in the dark about the shutdown.

"They didn't tell us anything," he said. "I just received a note from my program director that BroadcastAmerica was no longer streaming."

KVON and KVYN had been streaming since February 2000, averaging about 3,000 hits a month and average listening times of 15 to 20 minutes.

John Brier

"We were getting listeners from South America, Europe; there was a gal up in Canada who enjoyed sitting at her computer listening to us and sending us e-mails," Martindale said.

For KVON, the audio stream brought its signal south to the San Francisco Bay Area, where many of its listeners commute daily. Martindale said the station's weekend auto-repair show, in particular, was beginning to develop a following in Silicon Valley.

Martindale said he had doubts about BroadcastAmerica's business model as soon as KVON and KVYN hooked up with the company.

"They must have been a very expensive company to run," he said, "because they provided the T-1 line, they paid for it, they provided the servers."

Out in the Midwest, one group of stations had an early sign of problems at the company.

"They had installed a T-1 line, and they were going to give us five computers so we could stream all five stations," said Sean Mattingly, director of technical operations at Indiana Radio Partners in Muncie and Anderson, Ind.

While one of Mattingly's stations, WHBU(AM), was listed on BroadcastAmerica's Web site, Mattingly said the computers that were to handle the streaming never arrived from Portland, leaving him with a T-1 line and nothing attached — and leaving would-be WHBU listeners disappointed.

"We have people outside the area who wanted to listen," Mattingly said.

Stations that were already online with BroadcastAmerica described the company as being friendly and professional in its dealings with stations.

See SILENT, page 43 ▶

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Beyer DT231 lightweight, closed ear headphones perfectly compliment the Roland audio recorder/workstation. They offer excellent bass response and brilliant sound. Soft ear pads ensure long-term comfort. Includes stereo mini-jack and 1/4" adaptor.
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Alesis Monitor Two is a compact near-field reference speaker with wide frequency response, accurate transient reproduction, clear imaging and high power handling capability. Alesis' exclusive SuperPort™ technology and proprietary 10" mineral-filled low frequency driver give Monitor Two solid high-power bass transients and low frequency response that outperforms comparable near-field monitors. Its 3-way design and 1" silk-dome high frequency driver adds exceptional mid-frequency detail and accurate high-end to the system.
Alesis MONITOR2 List $699.00 **Only $429.95**

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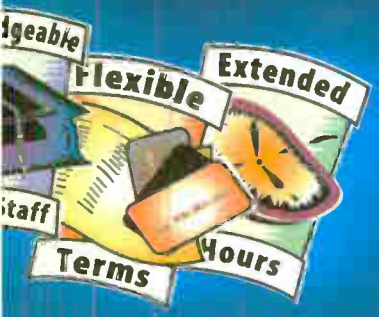

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Sonic Foundry SFAM4000
List $249.00 **Only $39.99**

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Arrakis DigiLink IV allows you to store programming on hard disk and to automate audio playback as well as control satellite feeds and live broadcasts with the help of your PC computer.

The DL4-SAT1 package combines the DigiLink IV hard disk recorder and DL4-AUTO software along with two 7-channel extended switchers (for satellite and live automation control).

Hard disk recorder features: 2 GB hard drive; triple play with simultaneous record; separate outputs for each playback with console start-stop; XLR analog and AES/EBU digital I/O; SCSI expansion ports for additional storage and multiple RS422/RS232 ports allowing control from various controller options and from multiple sites.

DL4-AUTO software features: simple play log style interface, complete control over recorded audio tracks as well as full satellite automation, timed posts with fade; overscheduling with drop events, segue and voice-over editing and compatibility with major third-party traffic and music scheduling software.

Arrakis DL4-SAT1 – full satellite automation with DL4 hard drive List $6,729.00 **Only $5,895.00**

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The Q20™ professional 20-bit master effects processor offers incredibly versatile reverb and multi-effects for broadcasters. Its 24-bit DSP chip can produce up to eight effects at once. Features: 20-bit, 256 times oversampling A/D and D/A converters; graphical display; 50 different effect types include reverb, graphic and parametric EQ, flanging, delay/modulation, pitch and more; balanced XLR and 1/4" TRS analog I/O; ADAT and S/PDIF digital I/O.

Alesis Q20 List $999.00 **Only $589.00**

WEB WATCH

Year-End Quakes Shake Net Radio

Carl Lindemann

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

Wondering what caused the dot-com meltdown? Did the sobering realities of bankrolling profitless ventures spook investors once the "irrational exuberance" passed? Reuters reports that New Age guru **Deepak Chopra** has an unusual insight into the matter.

The problem, claims Chopra, rests with employee loyalty. Most dot-com employees were lured to the industry by the prospect of easy money — stock-market-driven, multi-million dollar paydays. Once it became clear that they were going to have to earn a living like everyone else, they fled. The companies collapsed in the wake of this exodus.

The scramble

Visions of making money **Mark Cuban-style** certainly fueled recruitment at companies like **BroadcastAmerica** and **GlobalMedia**. But can we blame their difficulties on employee greed? On Dec. 16, 2000, the remaining staff of BroadcastAmerica was offered a chance to demonstrate Chopra-style loyalty.

Those who managed to survive the 40-percent staff cut at Thanksgiving could continue to work but would no longer get paid. Despite a deal with **SurferNetwork** to bail out the ailing streaming media provider, the company was caught in complications from bankruptcy proceedings.

Outstanding obligations to **RealNetworks** and **Worldcom** had to be met. The following week, some 700 broadcasters who were signed on at BroadcastAmerica found their service cut.

This left many wondering what to do while BroadcastAmerica sorted itself out.

Garry Hoppe, GM at **WHMH(FM)** in Saulk Rapids/St. Cloud, Minn., has had his station's signal streamed by the company since it was **BroadcastMusic.com**.

"It was a no-brainer for a broadcaster to go with them. It's very expensive to stream at the quality they provided. And it took no hard cash to do it," he said.

The service disruption came unexpectedly to Hoppe. "We heard nothing from them. We'd heard they were in Chapter 11, under reorganization. Seems the service was cut on Wednesday (Dec. 20). We'd had temporary outages before. By Friday we knew something was wrong."

Subsequently, e-mail sent by the company promised another investor in the wings. In the missive, company president John Brier shared what may well be the epitaph for the fledgling industry:

"(If) things had gone a little differently, we'd be a great success story — we still might be." However things turn out, Brier should be ready for a visit to the **Chopra Center for Well Being** before long.

While the BroadcastAmerica-SurferNetwork deal was near death came word that New Jersey-based Surfer has signed a letter of intent to acquire GlobalMedia's broadcast contracts and related assets.

One day, when this industry matures, it will seem incredible that the whole thing could have collapsed as it has these past few months.

"We're leaving the streaming space for terrestrial radio," said GlobalMedia CEO **Jeff Mandelbaum**. "We've notified all of our key customs that we will transition them effectively and there will be no disruption of service." Of the 500-plus stations signed on with GlobalMedia, some 150 are up and running online.

"We had multiple suitors for this side of our business," said Mandelbaum, "We felt that SurferNetwork would make a good home for our clients. We feel they can service our customers over the long term."

At press time, the reality of this remained elusive. GlobalMedia was due to run out of cash by the end of 2000. It released an announcement about the "deal" on Dec. 29.

However, attempts to confirm this from Surfer indicate that GlobalMedia may have jumped the gun. Negotiations were underway, Kay Richardson at Surfer said, but this was far from a done deal.

Sound confusing?

However the current tumult settles, at the very best it is going to take a long while for these companies to restore confidence. One day, when this industry matures, it will seem incredible that the whole thing could have collapsed as it has these past few months.

Audio beige-box drops

Despite these uncertainties, online listening habits are becoming clearer. **MeasureCast** reported a significant dip in listenership during the holidays. This isn't surprising given the importance of the in-office audience. As people spend more time out of the office at year's end, listening decreases. Despite this, **ABC Radio** stations managed to hold down eight of the top-10 streams.

Of these, five were talk or news/talk formats in major markets including San Francisco's **KSFO(AM)** and **KGO(AM)**, Dallas/Ft. Worth's **WBAP(AM)**, and Chicago's **WLS(AM)**. New York's **WABC(AM)** was at the top of the heap with nearly twice the TSL and listeners over the nearest competitor.

This makes sense given the difficulties of getting clear reception through the skyscraper-strewn city and the high percentage of offices with high-speed Internet hookups.

This isn't encouraging for those predicting the revolutionary overthrow of traditional broadcasters by new media. The success here isn't in operating a stream as an independent broadcast entity but as an enhancement to improve service to the traditional terrestrial audience.

What remains to be seen is the cost-effectiveness of such enhancements. As reported earlier, streaming costs are soon to be matched by fees for performance rights.

It isn't just the **Recording Industry Association of America** that's looking for a cut of the action. The **National Music Publisher's Association** has filed a petition with the **U.S. Copyright Office** to establish statutory royalty rates for downloading and streaming music online.

The **NMPA** filing comes after failed negotiations with the **RIAA** to create the same kind of working

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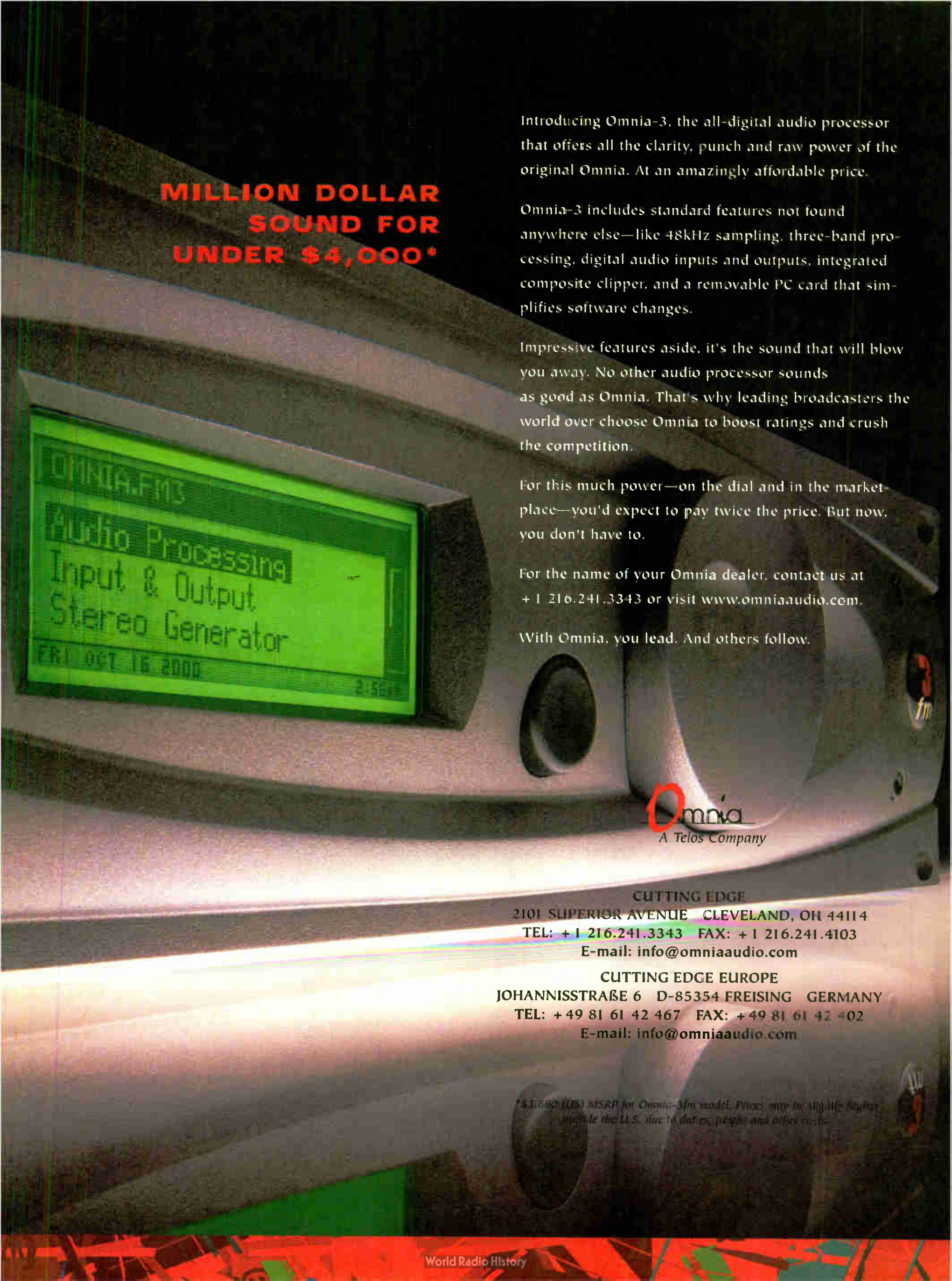
World Radio History



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World Radio History

The Net Radio Ratings Race Is On

Laura Dely

Both Arbitron and MeasureCast released Internet radio ratings in early January, reporting somewhat different findings.

MeasureCast said its No. 1 station in its monthly report for December 2000 was talker WABC(AM).

Mediamazing, a listener-formatted Internet-only radio station, held the No. 17 slot in MeasureCast's monthly report. MeasureCast defines "listener-formatted" stations as those that allow audience members to customize their music playlists online.

An Internet-only broadcaster, NetRadio, held six of the top 10 positions in the Arbitron ratings. Its smooth jazz channel was No. 1; its '80s hits channel was No. 2 and its "Hits" channel held the third spot.

WABC(AM) held fourth place in the October Arbitron ratings.

Internet radio listening dropped during the year-end holidays, but rebounded in the first week of January, MeasureCast reported.

MeasureCast also said that 26 percent of Internet radio listeners were aged 25 to 34, followed by 35-to-44-year-olds (24 percent), 18-to-24-year-olds (18 percent), 45-to-54-year-olds (17 percent), 13-to-17-year-olds (8 percent), 55-to-64-year-olds (6 percent), and people 65 and older (2 percent).

Both ratings services use "server-side technology," which collects the number of requests for a stream served by a broadcaster's streaming service.

Arbitron reports "aggregate tuning hours" — the total of all hours that listeners tune to a given channel.

The company rates more than 2,200 Internet radio channels.

MeasureCast reports "total time spent listening" — the sum of the length of all listening "events" in the period that a broadcaster is streaming content.

In its December monthly report, MeasureCast monitored 984 stations. MeasureCast also produces weekly reports and for its individual subscribers, reports that are available within 24 hours of a station's Webcast.

The charts below provide the most recent monthly top-25 reports of each ratings service.

The companies' full reports are available online at *www.Arbitron.com* and *www.MeasureCast.com*

MeasureCast Top 25, December 2000

measurecast

Stations are rated by TTSL hours — total time spent listening — or the sum of the length of all listening "events" in the period that a broadcaster is streaming content.

Rank	Station	Format	Owner	URL	Internet Service	Total TSL (in hours)
1	WABC(AM)	Talk	ABC Radio	www.wabcradio.com	Real Broadcast Network	314,207
2	KSFO(AM)	Talk	ABC Radio	www.ksfo.com	RBN	160,177
3	The Beat LA	Urban R&B	Radio One	www.thebeatla.com	CyberAxis	148,955
4	WBAP(AM)	News / Talk	ABC Radio	www.wbap.com	RBN	146,616
5	WLS(AM)	News / Talk	ABC Radio	www.wlsam.com	RBN	125,985
6	WPLJ(FM)	CHR / Top-40	ABC Radio	www.wplj.com	RBN	114,539
7	Radio Margaritaville (Internet-only)	Classic Rock	Radio Margaritaville	www.radiomargaritaville.com	RBN	114,403
8	KGO(AM)	News / Talk	ABC Radio	www.kgoam810.com	RBN	113,080
9	KABC(AM)	Talk	ABC Radio	www.kabc.com	RBN	98,446
10	KQRS(FM)	Classic Rock	ABC Radio	www.kqrs.com	RBN	93,112
11	KLOS(FM)	Classic Rock	ABC Radio	www.955klos.com	RBN	84,498
12	3WK Undergroundradio (Internet-only)	Alternative Rock	3WK	www.3wk.com	Intira	79,472
13	HardRadio (Internet-only)	Album-oriented Rock	Asgaard Interactive Multimedia	www.hardradio.com	Internet America	69,754
14	WJZW(FM)	Jazz	ABC Radio	www.smoothjazz1059.com	RBN	64,162
15	WRQX(FM)	CHR / Top-40	ABC Radio	www.mix1073fm.com	RBN	61,372
16	Star 98.7	Adult Contemporary	Radio One	www.star987.com	CyberAxis	60,007
17	MEDIAmazing (Internet-only)	Listener Formatted	Callie Enterprises	www.mediamazing.com	MEDIAmazing	58,786
18	Black Gospel Network (Internet-only)	Gospel	Salem Corp.	www.blackgospelnetwork.com	RBN	52,830
19	WMAL(AM)	News / Talk	ABC Radio	www.wmal.com	RBN	52,791
20	WBLS(FM)	Urban R&B	Inner City	www.wbls.com	GlobalMedia	51,831
21	KBLX(FM)	Adult Contemporary	Inner City	www.kblx.com	Global Media	50,481
22	bluesboymusic.com (Internet-only)	Blues	Evolve One	www.bluesboymusic.com	The Broadcast Web.com	39,688
23	KMEO(FM)	Oldies	ABC Radio	www.kmeo.com	RBN	38,945
24	KXXR(FM)	Rock	ABC Radio	www.93x.com	RBN	38,728
25	CKZZ(FM)	CHR / Top-40	The Broadcast Web.com	www.z95.com	GlobalMedia	33,783

Arbitron Webcast Ratings October 2000

ARBITRON
A Ceridian Company

Stations are rated by ATH — aggregate tuning hours — the sum total of all hours that listeners tune to an Internet channel.

Rank	Station	Format	Owner	URL	Internet Services	ATH
1	NetRadio - Smooth Jazz	New AC / Smooth Jazz	NetRadio Corp.	www.netradio.com	Akamai, iBEAM	289,100
2	NetRadio - 80s Hits	Contemporary Hit Radio	NetRadio Corp.	www.netradio.com	Akamai, iBEAM	269,400
3	NetRadio - Hits	Contemporary Hits	NetRadio Corp.	www.netradio.com	Akamai, iBEAM	267,900
4	WABC(AM)	News Talk Information	ABC radio	www.wabcradio.com	RBN	266,000
5	KING(FM)	Classical	Classic Radio, Inc.	www.king.org	RBN	242,500
6	Groove Radio	Electronica	Enigma Digital	www.grooveradio.com	Akamai	240,100
7	NetRadio - Quiet Classics	Classical	NetRadio	www.netradio.com	Akamai, iBEAM	237,000
8	NetRadio - Vintage Rock	Classic Rock	NetRadio	www.netradio.com	Akamai, iBEAM	230,100
9	NetRadio - Route 1 Country	Country	NetRadio Corp.	www.netradio.com	Akamai, iBEAM	224,300
10	KNAC.com Pure Rock	Album Oriented Rock	Enigma Digital	www.knac.com	Akamai	221,100
11	NetRadio - The X	Alternative	NetRadio Corp.	www.netradio.com	Akamai, iBEAM	219,600
12	Virgin Radio	Hot Adult Contemporary	Scottish Media Group	www.virginradio.co.uk	Ginger Online	216,700
13	NetRadio - Cafe Jazz	Jazz	NetRadio Corp.	www.netradio.com	Akamai, iBEAM	185,900
14	CFNY(FM)	New Rock	Corus Entertainment	www.edge102.com	Activate	179,800
15	NetRadio - Lite Hits	Easy Listening	NetRadio Corp.	www.netradio.com	Akamai, iBEAM	158,400
16	KVI(AM)	News Talk Information	Fisher Broadcasting	www.570kvi.com	Activate	147,400
17	KPLU(FM)	Jazz	Pacific Lutheran University	www.kplu.org	Activate	145,700
18	KPIG(FM)	Album Adult Alternative	New Wave Broadcasting	www.kpig.com	Activate, Global Media	140,800
19	NetRadio - New Age	New Age	NetRadio Corp.	www.netradio.com	Akamai, iBEAM	135,700
20	WPLJ(FM)	Hot Adult Contemporary	ABC Radio	www.wplj.com	RBN	134,700
21	NetRadio - SmoothUrban	Urban Contemporary	NetRadio Corp.	www.netradio.com	Akamai, iBEAM	133,700
22	NetRadio - 60s Country	Country	NetRadio Corp.	www.netradio.com	Akamai, iBEAM	131,200
23	KQRS(FM)	Classic rock	ABC Radio	www.92kqrs.com	RBN	130,900
24	KKBT(FM)	Urban Contemporary	Radio One	www.thebeatla.com	CyberAxis, SyncCast	128,500
25	Tom Joyner Morning Show	Talk / Personality	ABC Radio	www.tomjoyner.com	RBN	118,200

World Radio History

"Our web clients rely on us to deliver the highest quality streaming audio. That's why we chose the Aphex 2020."

Andrew Rosenberg - Director of Studio Engineering
John Patti - Director of Audio/Video Services
Casey Fuller - Assistant Audio Engineer
Westwind Media.com – Denver, CO

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World Radio History

Web Watch

▶ Continued from page 34

relationship they enjoy offline. Once again, it seems that the RIAA is taking a winner-take-all approach to achieving control online.

Edward P. Murphy

"This is a very disappointing turn of events especially after two decades of harmonious dealings with the recording industry," said **Edward P. Murphy**, NMPA's president and CEO.

For all the gloom and doom, not all the news is negative. The B2B online audio business may bring MP3.com the cash needed to pay off the pricey settlements they've been forced to make with music moguls.

Pet store retail giant PETCO will be featuring MP3.com music in place of the usual Muzak. With more than 530 pet stores in the United States, obscure MP3.com artists will be getting greater exposure.

Niko Bolas

Whether that will translate to greater recognition is unclear. Also uncertain is how shoppers will respond to the mystery music. Will roaming the aisles be as pleasurable minus Muzak remakes of **Beatles classics?**

Deals and strategic alliances, too, seem to be happening despite the shakeout. **Sonicbox** has partnered with **Katz Interactive Marketing** to give the online audio service exposure to major advertising agencies.

In the exclusive deal, Katz becomes the sales agent for the Sonicbox **"iM" tuning services** — an easy interface to access online audio.

"Partnering with Katz Interactive Marketing enables us to build name recognition for our ad insertion system that is very flexible and highly targeted," said **Niko Bolas**, Sonicbox's co-founder and chairman.

Gerry Boehme, president of Katz Interactive Marketing, sees Sonicbox as the vehicle to introduce mainstream audiences to Internet audio while adding all the interactive amenities "(to) bring the consumer into a one-on-one relationship with the advertiser — offering specific targeting and immediate audience feedback, which is what advertisers want most."

Of course, what advertisers *really* want most is some reasonable return for their advertising investment. Like the dot-com investors, they're only likely to pour money into Net radio for the promise of such interactive marketing for so long.

Other noteworthy arrangements include **AudioBasket's** agreement with **AOL's Spinner.com**. AudioBasket's customizable on-demand news and information adds depth to the Spinner.com online jukebox.

Thierry d'Allant

For AudioBasket, being added to Spinner.com's repertoire should have a major impact on listenership. "We believe that AOL's Spinner is the perfect vehicle for introducing personalized audio news to a larger audience," said **Thierry d'Allant**, AudioBasket's chief partnership officer.

Incidentally, as the **AOL/TimeWarner** deal goes through, it's interesting to speculate how AOL's fortunes might be faring if they hadn't made the move on the traditional media conglomerate before the dot-com debacle.

Now that the Third Millennium has arrived, wireless wonders will soon abound. **Mobilee**, a wireless Internet infrastructure company announced their "phonecasting" initiative. The service allows broadcasters with or without online audio to reach listeners through wired and wireless phones anywhere.

While "phonecasting" is a novel concept here, success overseas could translate to new markets here.

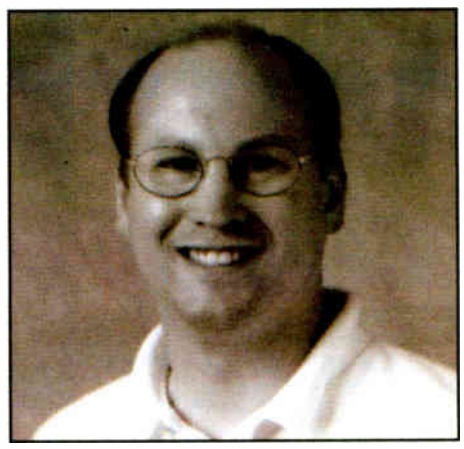
"Experience in Japan with wireless Internet delivery indicates the key driver of explosive growth is in entertainment programming," said Mobilee President and CEO **Jacob Guedalia**.

"We believe the new Mobilee phonecasting program that is bringing streaming digital audio to the phone will cause a similar explosion among wireless users worldwide," he said.

Of course, "experience in Japan" is just that. So far, Japanese mania for in-car GPS navigation and the widespread popularity of MD have not translated to much more than niche markets here.

Still, Mobilee isn't the only company making a bid for the "phonecasting" audience. **PenguinRadio**, a soon-to-be released Internet radio portal designed to be accessed directly by home stereos, has also announced that **Webversa**, a "Voice-to-Enterprise" (V2E) technology provider, will also connect listeners via telephone.

If Thoreau were alive today, he might update his famous warning to "Beware of all enterprises that require new acronyms."



Mike Behlke

There's a more obvious need for what **Singingfish** offers. Despite the peculiar name, Singingfish is a technology provider that addresses what has become a major issue with online audio — how do you search for content? Perhaps more amazing is that this requires *no* new acronym – just a simple explanation.

Internet audiences are accustomed to the kind of convenience had doing text searches through online search engines. Looking for an audio clip is a different kettle of fish, so to speak.

What Singingfish offers Web portals, news sites and other online audio outfits is the ability to index content so that listeners can sift through offerings easily.

"There's an unbelievable amount of multimedia content available online. The problem is that it can be extremely hard to find — that's where our technology can step in as a solution," said Singingfish President **Mike Behlke**.

Behlke estimates that 8 million streams are already indexed through his company's service. As anyone who's fumbled through an audio archive knows, finding a particular clip can be challenging. This makes for a great value-add for news organizations with archives of audio.

Again, most new media technology isn't enabling the death of traditional audio listening. Instead, it improves the Internet's power as a research tool. Imagine if all the hype over the "Internet Revolution" had been tempered with such a common-sense understanding of the possibilities for the new medium?

Instead of the past year's manic/depressive episode, the industry would be enjoying slow and steady growth instead of this insanity and instability.

Carl Lindemann is a frequent contributor to RW. He has worked in radio as a field reporter and production director. He consults on radio/new media projects and writes extensively on these subjects.

Reach Carl via e-mail to carl@cyberscene.com

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World Radio History

How to Manage Your Web Site

Lyssa Graham

In the opinion of Sandhi Kozsuch, Managing your Web site is simple:

"Hire somebody to do it for you."

Whether you use a station staffer or hire an outside company, your station's Web site is as important as the radio station itself and you should treat it that way, according to Kozsuch. His company, World Now, offers Web site development and management for media companies.

Kozsuch has an answer for a lament he has heard from many broadcasters hesitant to stream their station into cyberspace.

He said building a strong Web presence will "extend your brand rather than duplicate your on-air product."

"The Internet seems simple, but it isn't just like radio," Kozsuch. "The general public sees no reason to go to a radio station Web site, so you have to change that perception."

His tips for how to do that are provided in the "Nine Ways to Be a Hit on the Net" chart, left. These are steps to take that will help you generate regular listener visits and build your NTR, Kozsuch said.

A strong Web presence will extend your brand rather than duplicate your on-air product.

— Sandhi Kozsuch

He also believes that offering a variety of information will create a Web site that becomes a daily habit for your listener.

The difference

"Success will come from using compelling content to build on your brand's strength."

Kozsuch has worked with Cox Interactive Media in Charlotte, N.C., where he developed Web sites for five Infinity stations there.

Kozsuch offers some basic lessons based on his experience with these radio stations.

Tina Mastromico, electronic marketing manager at KFRG(FM) in San Bernadino, Calif., is the force behind the K-Frog Web site. She said running a Web site in-house is not difficult.

Mastromico advises station managers to use information and personnel already available as well as local news sources.

Both Mastromico and Kozsuch suggest using your station's Web site to create a portal for local information relevant to your listeners.

Mastromico also points out the benefit of using your Web site as a way to build a database of your listeners' preferences and information through polls and giveaways.

"Use your e-mail database to create listener loyalty and brand them," she said.

Web site shells

Jim Champlin, president and CEO of SiteShell.com, joined Mastromico and Kozsuch at a session at the recent NAB Radio Show. He promotes the idea of outsourcing station Web site responsibilities.

Champlin's company offers a free service to radio stations that includes set-up, management and maintenance for a station's Web site.

SiteShell's profit comes from a 50/50 revenue split on income generated through a station's Web site.

SiteShell operates under the premise that "Radio provides the audience, SiteShell.com provides the information," said Champlin.

His service aims to "keep site viewers as tightly as radio keeps its listeners."

Whether or not you choose to use a service to manage your Web site, such as those provided by Kozsuch and Champlin, or hire your own, the central message from these Web management experts is the same: Devote as much time to managing your Web site as you would to any other aspect of your radio station. Your Web site can be a source of profit and listener branding if managed correctly.

Nine Ways To be a Hit On the Net

1. The Internet must be totally integrated within your station and your station integrated within your Web site.

2. Make your Web site a daily habit for your listeners. View it as a small gift for your listeners — always add what you can't do on air to your Web site.

3. When you talk about a promotion, include the URL. Put it on everything from your vans to your cars — in every way that you promote your station.

4. Make your Web site interactive and functional.

5. Build on your brand's strengths: Think community, immediacy, promotions and sponsorships, but resist just taking your radio product and putting it online.

6. Resist the urge to be an editor or a producer. The Web is about freedom. Put a lot of information out there and let the audience choose.

7. Ask yourself, "If we build it, will they come in large numbers and can we sell it?" Think it through and have a good, solid business plan.

8. Avoid the trap of making your Web site just a promotional brochure — people will not come back for that.

9. Accept that the Internet is going to be just as important in the future as that radio station is to you now. Embrace it now and start working with it and understanding it.

— Sandhi Kozsuch

WEB WINS

Carpe Diem, the Internet Is Here!

Dave Casper & Mike Mahone

Web Wins *is a new column that will appear every other month in the new Internet Radio section of Radio World.*

Written by the Radio Advertising Bureau's Internet sales and strategy experts Dave Casper and Mike Mahone, Web Wins *will provide tips and ideas to build your radio station Web site into a new revenue river.*

In his book, "Business at the Speed of Thought," Microsoft founder Bill Gates insightfully points out that American business almost always overestimates the short-term effect and severely underestimates the long-term effects of major shifts in technology.

The squeeze

The Internet is most assuredly one of the major shifts in technology to which Mr. Gates refers. It's the fastest-growing medium in history. Almost 50 percent of the U.S. population has Internet access and it is estimated that each day, worldwide, seven new users log on to the Net every *second.*

Make no mistake about it — the Internet is suffering growing pains. Wall Street has frowned on Internet companies and venture capital-support for Internet start-ups has slowed to a trickle. Hundreds companies have closed their doors.

The tidal wave of advertising dollars from dot-coms is just about dried up completely and many people who left our business to make their fortune on the Internet are coming back to radio.

However, it's important that we don't equate the failure of some of the first wave of Internet start-ups, those companies who overestimated the short-term impact of the Net, with an overall failure of the medium.

Dave Casper and Mike Mahone

The Internet has not failed — it's just suffering growing pains. And despite all the initial problems, the Internet still represents the biggest threat and the greatest opportunity in the history of our medium.

Rest assured that the technological issues that have thus far limited growth of the Net will disappear. Soon bandwidth will not be an issue, so audio and video will be delivered with unparalleled quality and speed.

More than 500 new competitors are Webcasting on the Internet. Most are streaming multiple channels of highly targeted formats. Many are offering listeners the opportunity to completely customize their listening experience.

Additionally, portals like AOL, music sites like MTV, aggregators like Broadcast.com, record companies like Sony and even retailers like the GAP are

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World Radio History

Web

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Casper, who has created Web sites for nine years.

"Don't be complacent. Don't think the Web is CB radio and eight-track tapes. Only a small percentage of dot-coms have failed, although the press likes to talk about the failures."

When it comes to developing Web sites as revenue streams, the past is strewn with many bold ventures heading down dead-end paths. Early sites that stations threw up in the mid-'90s were more like electronic billboards or HTML versions of the record surveys that used to litter the counters of local record stores.

Replete with pictures of personalities, bios, logos and other fun images, the sites too often failed to offer the radio listener-turned Web surfer any incentive to come back for another visit.

Today, the idea of the Web as community portal is catching on. Out of some 10,000 commercial radio stations in the country, more than 4,600 have some presence on the Web.

Of those, most are striving in some way to enhance the value of on-air brands, extend the scope of service offerings and develop new sources of revenue.

A link to an advertiser's Web page is like taking the listener's hand and walking them into the advertiser's storefront.

— Dave Casper

"Nobody knows where the revenue from the Web is going to come from," admits Casper. "But lots of stations are trying lots of different things, from Webcasting to banner ads to data base building."

While experimenting and trying different approaches, Casper said stations must avoid the trap of trying to do everything at once. It's best to start out small and build slowly on small successes.

"Often stations get into a quagmire of opportunities. They should focus on two or three things that they can do well. For instance they might start with banner ads and then move onto text links, then onto other products."

One essential "do," often overlooked because the Web is still perceived as experimental, is to get paid for driving business to your advertiser's site.

"Absolutely price your Web site product, don't give it away!" said Casper.

According to Arbitron research, 48 percent of U.S. households have Internet access. Worldwide, seven new users are estimated to log on every seven seconds. The Internet is expected to add another 20 million users in the next 12 months. These facts won't fall on deaf ears when presented to a prospect.

Database — build one

Another important "do" is to build a database to capture information about the individuals visiting your Web site. Gathering valuable consumer data through e-mails is an important step toward proving to clients that you can help them build their business.

This is an area where the RAB's Casper and Executive Vice President of Services Mike Mahone have worked to create answers. It's particularly helpful for smaller stations that may feel overwhelmed by the complexity of the Web and by marketing power of the larger station groups.

One effective way to build up the database is by linking on air station contests to the station's Web site.

Casper said that the RAB has been focused on Internet strategy for about two and a half years.

"Our 'Proposal Wizard' is a data-driven online application designed to help sales people with problem solving proposals. Stations need a lot of help with gathering database and user information."

Casper also helped to design a product to aid smaller stations.

"We rolled out the 'RAB eCom Solution' 14 months ago. It's a three-tier system and a really inexpensive program for helping stations sell their Web sites."

Casper offers an example of how a small- or medium-market operation or a standalone in a major market can earn dollars through its existing advertisers on the Net.

"Maybe start with an advertiser index of advertisers that spend more than $500 a month. Begin with the text link, then the jump page, and then a direct link to the advertiser home page. The listing can be free, (but) for a hundred dollars, you can add the jump page with a phone number and include any offer being advertised (by the client) on the station."

The third step takes the listener/surfer directly to the advertiser's Web page.

"This is like taking the listener's hand and walking them into the advertiser's storefront."

If you consider the growing number of people who listen to the radio while on their computers at home or work, the power of radio to take a potential customer directly to the client's site cannot be underrated. It should be viewed in the same way as when a car listener turns the corner and decides to check out a sale at a "brick-and-mortar establishment" or a person at home picks up the phone and calls to order a product or service.

For that reason, said Casper, an important "do" is to set rates. That can be accomplished by analyzing the competition, consider the station Cost Per Million model and then establish pricing based on criteria such as placement, ad type and length of schedule.

"If a listener logs on and buys $100 worth of stuff, the station gets 2 percent of that," said Casper, in citing one example of how a station can money by linking its site to the Web pages of a national retailer.

"(However) where the money is, is in local markets."

If it's still true that radio is at its best as a local medium, then bringing local merchants into partnership through a station's Web site ought to be at the top of every general station manager's "to do" list.

Bringing local merchants into partnership through a station's Web site ought to be at the top of every general station manager's "to do" list.

Make Your Web Site A Money Maker

Peggy Miles, president of Intervox Communications, has followed Webcasting closely since its beginning. She is familiar with the opportunities and pitfalls of this medium as it applies to radio.

Here she offers 10 tips to help you develop your Web site as an important source of revenue:

Peggy Miles

1.) Make everything on your site easy to find using a search engine. Never make the customer go hunting for your clients, sponsors and specials.

2.) Set up a special button that says "Advertisers' Specials" to help visitors know where to find the advertised events, and promotions. And keep it in the same place. Consistency is everything!

3.) Buy a digital camera for every salesperson to take to client's stores, calls and promotions, put up the photos on the Web site. It's a cheap investment and great for clients. If you can't afford one for every salesperson yet, buy two or three (they are getting cheaper) and give it to top Web sales folks.

4.) Provide an e-mail link under each advertiser listing and a "Comments" box. The text of the messages can be a great testimonial for the sales folks to take out on calls.

5.) Set up "Web tracking software" to find out where folks are going on the Web site and read the statistics every month. Use these statistics to help you design your sales promotion's placement.

6.) Make the Webcast channels easy to find on your Web page. Put a button that is easy to read, such as "*Listen Now*" or "*Now Playing On-air Live*" and "*Click Here*" on the top left of your Web page. That's where most people start reading a Web page.

7.) In shared revenue schemes, don't give away all your Web advertising for a long period of time. Have contracts include an out-clause.

8.) Assign a sales manager for the Web site who works with promotions, or assign Web site master(s), to set a business plan and monthly goals for the Web site. Provide incentives if goals are reached.

9.) Remember that your station's content and the content of Web site are what draw the sales.

10.) Make sure that a complete advertiser directory is on your Web site listed alphabetically and by type of business.

See you on the Net!

Peggy

World Radio History

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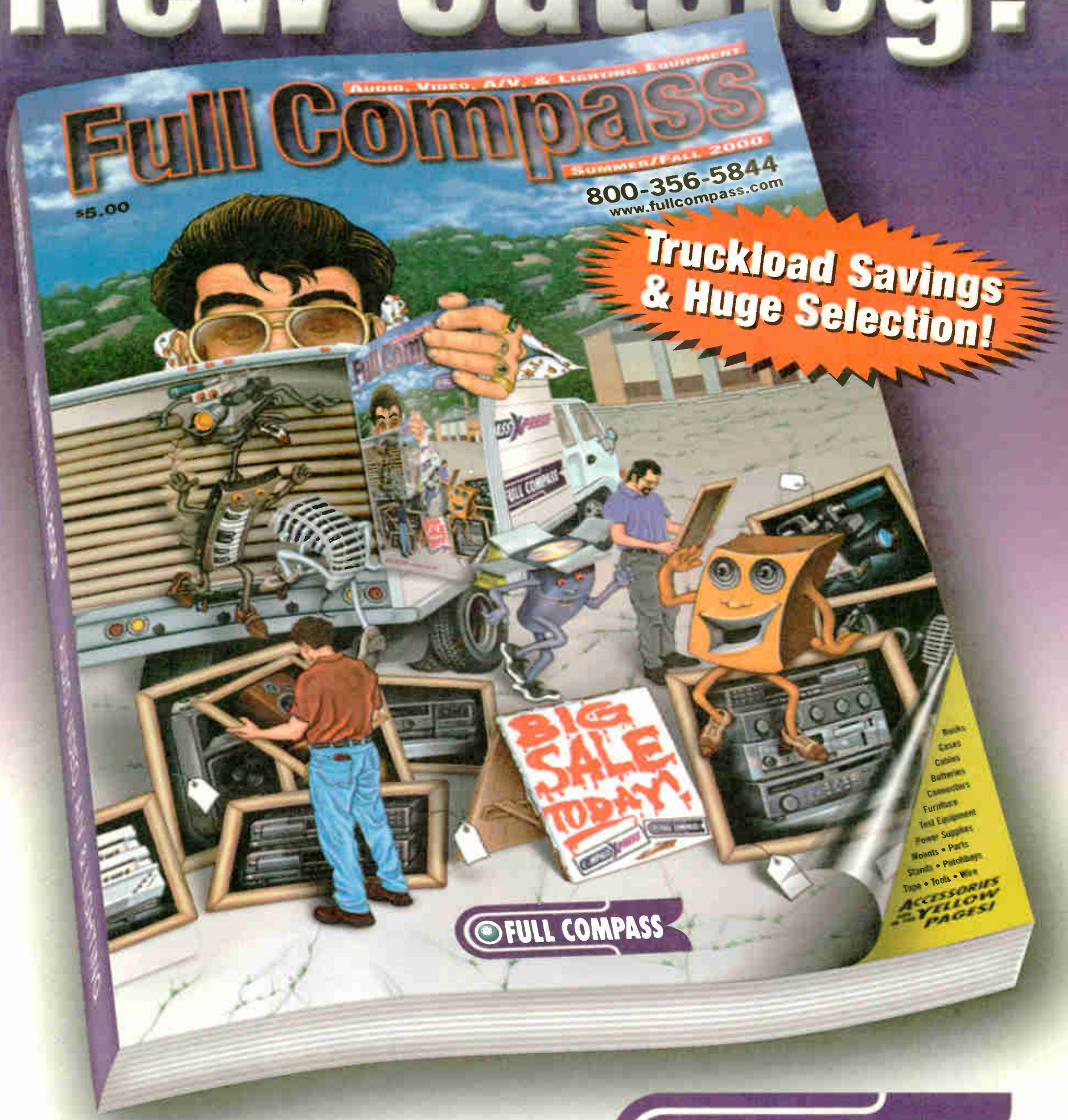

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World Radio History

Silent

▶ Continued from page 31

"It was a very easy relationship," said WJAE's Jeffrey.

"BroadcastAmerica was pretty good to work with, I didn't have any problems from the standpoint of customer service," said KVON's Martindale.

Edison Media Research and Arbitron have been studying streaming media every six months for the last three years. Edison's president said the collapse of Broadcast-America reflects a common pattern.

Global players

"A lot of companies go out of business when a new technology comes along," said Larry Rosin. "The analogy I have a lot of people making is the car business — in the 1910s there were 75 auto companies, and now there are four global players."

Another major factor, Rosin said, was the stock market decline of 2000, especially in the high-technology sector.

"There's a lot of people who got a lot of funding and who saw an endless pool of funding and thought, we'll build our revenue later," he said.

BroadcastAmerica's business plan followed just such a strategy, providing streaming service to stations at no charge in exchange for a barter agreement that gave the company spot time on the stations to sell or use for its own promotions.

Meanwhile, the company expanded at a rapid pace, adding numerous specialty sites. Hockey star Mark Messier signed on as a spokesman for BroadcastSports.com, and Dick Clark was an early investor through his United Stations Radio Network.

As late as September, BroadcastAmerica representatives at The NAB Radio Show were promoting new additions offering streams of urban and religious stations.

No one home

BroadcastAmerica's phones went unanswered during the holidays and after the New Year, but company leaders had been widely quoted earlier as saying they didn't expect to turn a profit until the end of 2001.

At press time, BroadcastAmerica's lawyer, Roger A. Clement Jr., told reporters he planned to ask Judge Haines to order a court-supervised auction of the company.

An attempt in early January to find cash infusion from Alabama-based Bowman Investments was unsuccessful. In addition, BroadcastAmerica was fighting a foreclosure attempt by BA Funding, a company affiliated with rival streamer SurferNetwork, which pulled out of a proposed partnership in November.

As late as early January, SurferNetwork press releases said that company still hoped to acquire BroadcastAmerica.

For the stations that had been streaming with BroadcastAmerica, the court wrangling was of little concern. Instead, they're focusing on finding a replacement for the service BroadcastAmerica provided.

"We have to go shopping," said WHBU's Mattingly.

While KVON's Web site announced, "Our Webcast is temporarily offline. Sorry for the inconvenience," the station was already hearing from other would-be Webcast providers.

"They're contacting me," said Martindale. "I haven't even had to pick up the phone."

Among the companies offering replacement service to former BroadcastAmerica clients are California-based Chaincast.com, which uses a proprietary player that it claims offers superior audio quality, and Colorado-based WarpRadio.com.

Despite the difficulties with BroadcastAmerica, Martindale said there's no question KVON and KVYN will go back on the Web.

"We've decided that the streaming is a good thing, and does benefit us."

At the KVON(AM) and KVYN(FM) studios in Napa, Calif., they're looking for a new service to stream Webcasts

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World Radio History

RAB

▶ Continued from page 39

in the business of broadcasting audio on the Internet.

And our traditional competitors — newspaper, TV, direct mail — are all offering new and compelling audio options to their Internet audiences.

The good news for radio is that ultimately — over the long term — the consumer is not going to care if the programming to which he or she is listening is coming to them via the Internet, via terrestrial signal, via cable, via satellite or through some wireless technology.

What they will care about it content! What they will want — better make that *demand* — is programming that is entertaining, compelling, and targeted to their individual interests and desires.

Radio has the potential to maintain our position as the "king of content" if we are willing to quickly focus a portion of our attention, talents and resources to mastering this dynamic new medium.

On the revenue side, Arbitron and Edison Media Research reviewed more than 400 Radio station Web sites and reported the results in "Internet Study V" (available at *www.arbitron.com*).

Their conclusion: "Most radio stations still lack revenue-generating opportunities." The fact remains that a large number of stations still haven't defined an Internet revenue strategy.

Some Internet-savvy radio stations are generating small, but ever-growing revenue streams through sponsorships, banners, links, jump pages, classifieds, coupons, e-mail, music sales, merchandising and e-commerce. Still others aren't even sure where to begin.

Here are a few suggestions:

Learn all you can about the Internet — Reading articles like this is a great place to start, but also consider magazines like Wired and Fast Company, workshops like those offered by Radio Advertising Bureau and perhaps most important, devote a little time each week to surfing the Net.

Explore other media-related sites and see how their e-business strategies compare to yours.

Build a great station Web site — As we just mentioned, the Web is a content-driven medium. People visit Web sites because they're fun, informative or a little bit of both.

If you want your Internet revenue strategy to be successful, you'll need enough site traffic to make your online marketing options a worthwhile investment. That traffic comes from building a great, super-sticky, content-driven, locally oriented station Web site.

Establish your station site as a local portal — How to build more site traffic? Begin positioning your site a local portal — that place on the Internet where your listeners begin their Web surfing experience each time they log on.

The key here is *local content*. Just like your station, no one on the Net can reflect your community like you.

This is also true of your station Web site. Leverage that unique quality and make your site an indispensable part of the community you serve.

Set rates for every Web opportunity — Please ... absolutely, positively, don't give it away. Your Internet marketing options *are not* value-added! Don't make the same mistake we've made with promotions and creative.

It has value. If it didn't, why would you sell it? And more importantly, why would your clients want it.

Offer solutions based on client needs — Similar to your radio marketing, clients could care less about your Web site.

Yes, more than likely, they will want to see it, but your clients have marketing problems. Position your Internet marketing options as a solution based on the needs of your client.

Consider promotions and non-spot options — Remember, the Web is an effective marketing medium all in itself. Yes, it works best when Internet marketing is deployed in tandem with a strong offline campaign.

However, not every Internet marketing effort needs a corresponding spot schedule. Consider supporting online campaigns with liners or other station promotional tools, especially when ad inventory is tight.

Promote your site on the air — Study after study proves that radio is the best way to drive traffic to the Web. Not only is this great news for your advertisers, it's also a fact your station can use to build traffic partners across your own Web site.

Act now

Here's the bottom line: The Internet is not going to go away. As it continues its dynamic and unprecedented growth, it can become a profitable and complementary component of our business, or the Internet can become a competitive nightmare.

It's your choice.

Dave Casper is senior VP of services and Mike Mahone is executive vice president of services at the RAB. For the last two years, they have toured the country helping stations discover revenue opportunities by combining Internet and the radio.

Contact them at (972) 753-6743 or via e-mail to DCasper@RAB.com or MMAHONE@RAB.com *or visit the Web site at* www.RAB.com

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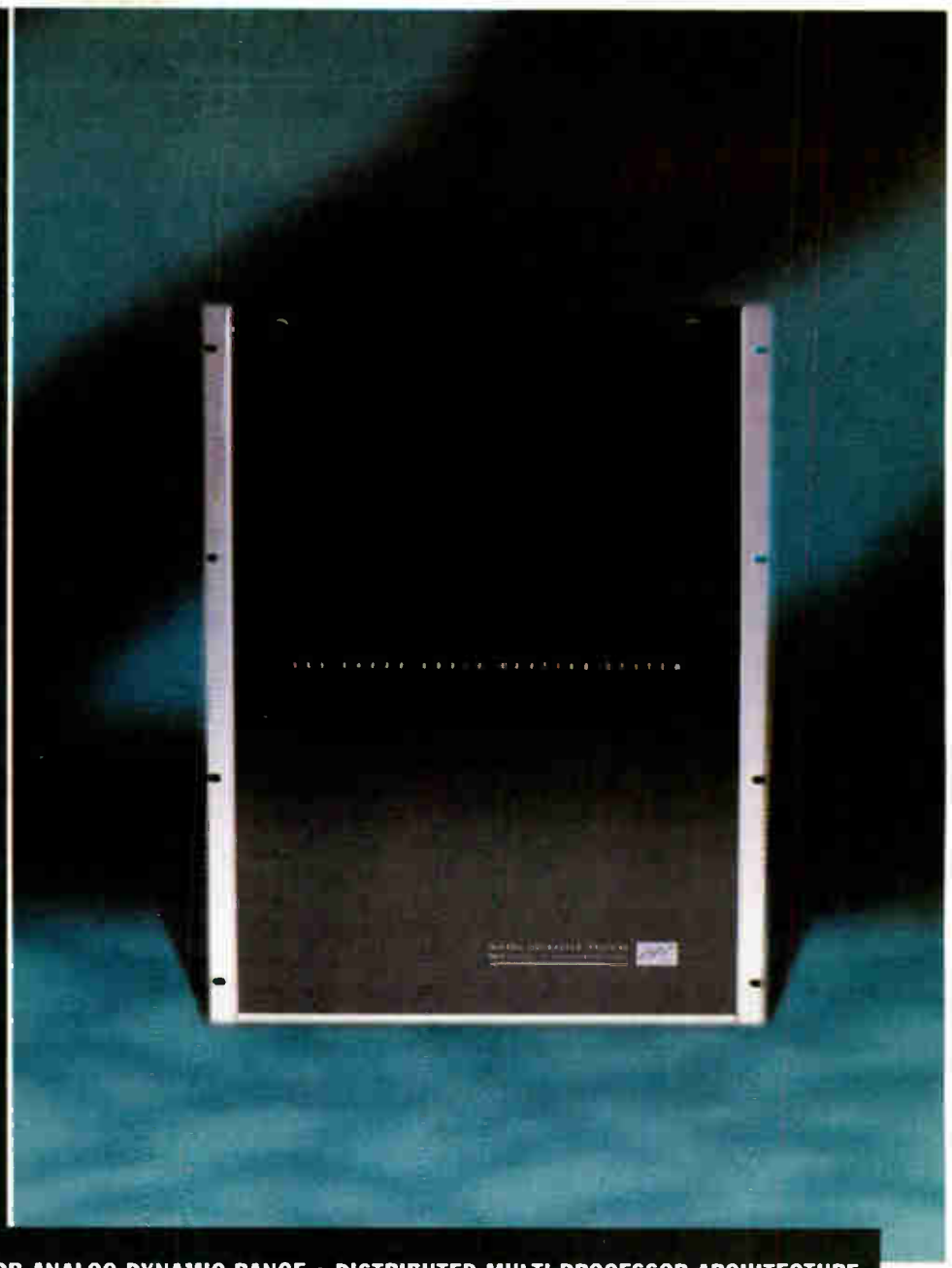

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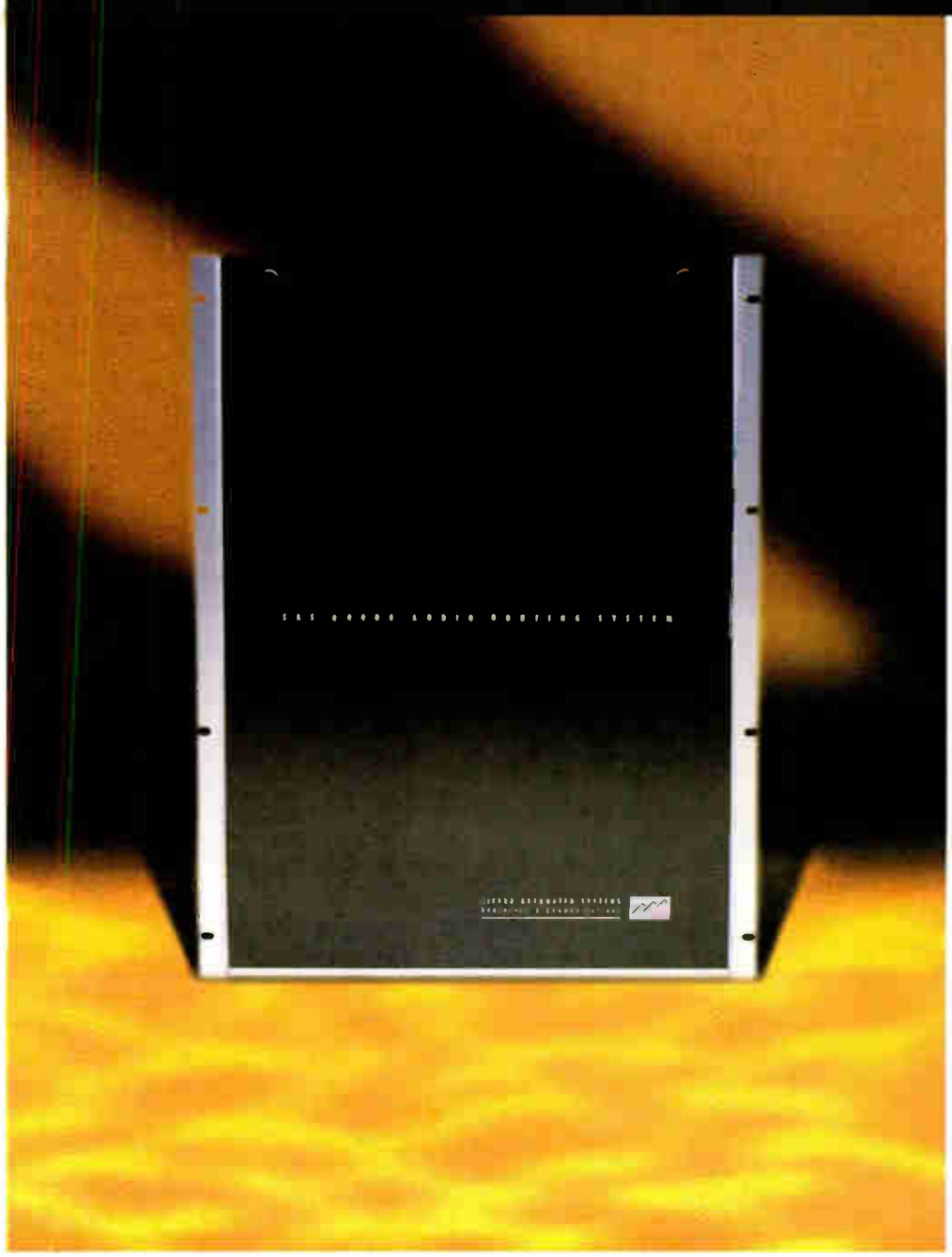

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World Radio History

Studio Sessions

PRODUCER PROFILE

Follow the Prevailing West Winds

Westwind Media Offers Broadcasters One More Tool on the Way to the Wonderful World of the Web

Tom Vernon

Not so long ago, many radio stations jumped into Internet broadcasting only out of a fear of being left behind. Today, streaming media has taken on a life of its own and broadcasters and non-broadcasters alike have discovered that the Internet is a great way to extend their brand.

Audio Master Control Center. Left, Andrew Rosenberg, director of studio engineering; right, Casey Fuller, assistant engineer

A new breed of companies is meeting this evolving need for business, marketing and streaming media expertise and most offer a turnkey approach to streaming media.

One company that heeded the call was Westwind Media, a Colorado-based operation offering custom content to such clients as Lycos, The Street.com, iVillage.com and Fidelity Investments.

Westwind broadcasts from its operations center in Denver. It has five on-air broadcast studios and a master control room located on the 17th floor of the Denver Place Building.

The radio programming streams are sent to the server room, located on the 14th floor, via an internal fiber optic network. The server room is equipped with both Windows Media and Real Servers.

These streams are encoded and sent over the Internet via the Akamai network. This relationship between Westwind and Akamai is what enables the Colorado operation to support a high number of end users.

Radio Operations has a staff of 16 full- and part-time people who cover 15 formats. Radio Ops creates liners — identifiers for radio stations. These promos are maintained weekly or monthly, depending on contracts.

"The news department is a 24/7 operation which delivers both customized news models for individual clients, as well as a syndicated radio news model which provides six different categories of reports three to five minutes long: news headlines, sports, technology, health, business and entertainment," said Keith Cox, director of editorial services.

"From a Westwind player box, users can select which of the services to listen to. Once a listener has made a selection he or she can minimize the box and continue listening while doing other things on the Net. Ten full-time and five part-time employees keep it all humming."

Supporting the village

Network Operations has a staff of six. Each is a specialist in a particular field, including Windows Media, Real Media, QuickTime, NT, Linux, UNIX and Solaris.

Each staff member has an industry certification. They support 244 server systems within the Westwind data center. System reliability is critical, and the company strives to maintain 100 percent up time with zero packet loss.

Drew Decker, director of network operations, said, "We're a custom house, so you can come in with a concept and walk out with a product.

"Many times, though, the client will come up with something totally innovative and there's just not a product out there to satisfy their needs."

For example, iVillage — a women's-focused Internet community — needed a way to verify listenership traffic and trends on the three stations that constitute the iVillage Music Network.

Information needed to be gathered and reported daily so that advertising could

See WESTWIND, page 47 ▶

PRODUCT EVALUATION

CD Burner With Dual Functions

Bruce Rogow

Where I work at KPBS(FM) in San Diego, CD recorders were once considered an expensive luxury.

In 1997, the first studio unit my station bought was a $3,000 Marantz CDR620. It was audio only, fairly complicated to operate and more popular with student assistants copying CDs than with the regular staff because it recorded in real time and tied up a control room.

Now CD-Rs have become the preferred method for archiving news stories and talk shows.

When the opportunity to test the Microboards AudioWrite Pro 8 CD recorder came along, I was looking for something really different. I got what I wanted.

Forget the rack

The first thing I noticed about this standalone recorder is its size. The unit is just large enough to house the CD unit and the power supply.

Joe Alfonsi, division manager at Microboards, the company that markets the AudioWrite Pro 8, said the size of the unit was important when designing it. The unit is small enough to throw in a shoulder bag and take anywhere.

"It's perfect for one-time recording on location of church events and live

See AUDIOWRITE, page 56 ▶

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World Radio History

Westwind

▶ Continued from page 46

be sold effectively. None of the commercial Web tracking programs fit the bill.

"We found that many of the Web analysis tools out there could not handle streaming analysis. None could provide the type of targeted ad reporting capability that our clients demanded. Therefore, we've had to develop our own system and proprietary software," said Decker.

Westwind's streaming analysis tools are currently in beta stage with iVillage, and the company plans to offer them to other clients.

Additions to the old guard

The company has also developed software that allows clients to synchronize ads on the audio stream with banner ads that appear on the computer screen. iVillage and BET.com use this technology.

BET is getting more than 1 million hits a day; almost 65 percent of those people are going straight to a music page that contains pop-ups and banner ads.

Not all of Westwind's clients are new to broadcasting. Many radio stations come to Westwind for help repackaging content for an Internet audience, and their needs have led to more products.

Stream Director is a blackout management tool that allows stations to substitute different content on the Web stream than what is being broadcast over the air.

"It's an opportunity for terrestrial radio stations to promote themselves or events at the station. Special promotion for Internet users that allows them to build a brand around their offering that normal car and home listeners wouldn't get the benefit from," said Decker.

Currently, the least amount of time that Stream Manager can black out is three minutes, but development is underway on a version that can work with one-minute intervals, opening the door for regionally targeted ads on the Internet.

"We're looking at relationships with several companies," Decker said, "to be able to pinpoint ads to their specific region, which will allow for even more targeted ad dollars."

When Westwind needed a media asset management system to track the numerous audio and video files they have created and stored, the company designed a solution.

As Decker explained, "Many times when you look at the media software companies, they're all doing similar things and not focusing on the future in broadband. We're trying to be as progressive as we can be without riding that bleeding edge, and that necessitated the development of our system in-house."

Westwind Studio C

Westwind Studio D

The company maintains relationships with broadcast equipment manufacturers, evaluating new equipment for the still-developing field of streaming media.

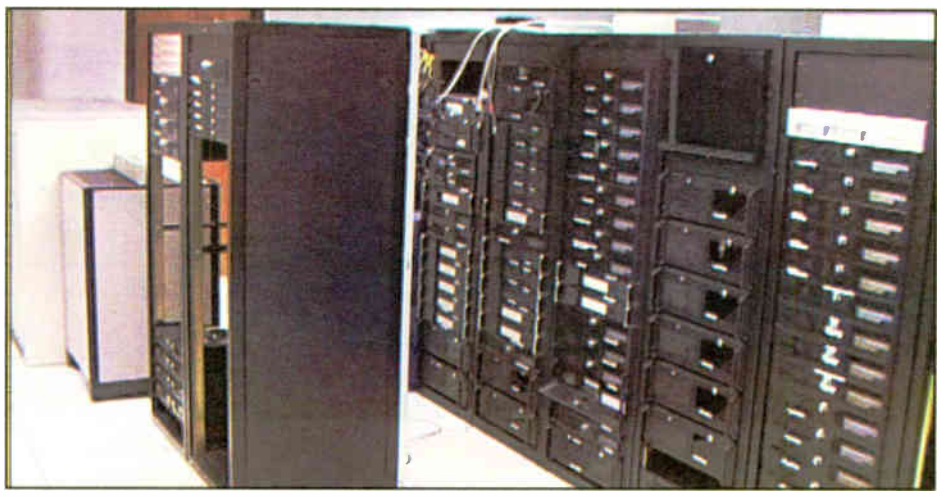
Rosenberg said, "We've had to do quite a bit of R&D on audio processing of our content for the Internet.

"With the large variations in streaming schemes, we had to do a lot of the research for the new and undefined world of Net processing ourselves because it's so different than traditional broadcast processing. Working with Aphex, we're developing the best scheme for high-quality streaming media."

The company has partnerships with other broadcast equipment manufacturers including Wheatstone, Comrex, Musicam USA, Symetrix and A/VR Patching Systems.

Westwind not only considers itself an innovator in the area of technology, but also with the programming content of its radio stations.

The opportunity and challenge to new media broadcasters such as Westwind is to provide an alternative to traditional radio. Many feel that the industry's consolidation has led to playlists of fewer songs that are tailored to the mass market instead of diverse markets.



Network Operations Center

Scott Boylan, director of radio operations, elaborated, "We don't allow 75 people to decide what 350 songs we're going to play. We've expanded our library a bit because we remember that bands like Cheap Trick had more than two songs."

A result of this philosophy is cooperation between programmers from different formats and types of music. This approach can be something difficult to imagine in the commercial broadcast environment.

News is also handled differently at Westwind.

The end user can choose the newscasts that he or she wants and listen to them at any time. This makes for a more efficient way to get information to the listener than the traditional all-news format.

While the end result of the fusion of broadcasting and the Internet may be difficult to guess, the efforts of companies such as Westwind suggest that there may be some truth in the old adage that the best way to understand the future is to invent it yourself.

Tom Vernon is a multimedia consultant working in Philadelphia. E-mail him at tlvernon@blazenet.net *or call (717) 367-5595.*

World Radio History

PRODUCT EVALUATION

The Preamp That Does It All

RW Puts the Focusrite Platinum VoiceMaster Mic Preamp/Vocal Processor Through Its Paces

Bruce Bartlett

Many of us are recording without a mixing console, direct to tape through a mic preamp. A small number of these preamps offer some signal tailoring.

The Focusrite VoiceMaster has a wide range of signal processing that is specially tailored for vocals. It provides — all in one rack space — a noise gate/expander, saturator (distortion), compression, EQ and a de-esser. The unit is intended mainly for vocal use but can be used on any signal.

The setup of the unit is rather intuitive; thereby making it is easy to tell what it does and how to hook it up. The controls are clearly organized in groups according to function.

The controls have rubber coverings lending to a feeling that is pleasant and secure for adjustments. Pushbuttons light up when engaged. Unfortunately, the control label font is small and thin, making the labels hard to read in dim studio lighting.

Ins and outs

Connections to the VoiceMaster are flexible. The processor can be used with a mic signal or a line-level signal from tape or sound card. As a result, the audio processing can occur during mix-down as well as during recording.

On the back, an insert jack allows the user to insert another processor (for example, a favorite EQ or compressor) between the VoiceMaster mic preamplifier and the rest of its processor blocks.

The unit handles both -10 dBV and +4 dBu levels in and out, as well as balanced or unbalanced signals. The XLR connectors and phone jacks make it easy to hook up.

Each processor section can be switched in or out.

The Discrete Transistor Input is the input gain stage, which accommodates a wide range of levels. Signal-presence and overload LEDs help users set the level correctly. VoiceMaster incorporates a Class A mic amp design, a major sonic benefit at this price.

A sweepable highpass filter can be used to reduce rumble or microphone proximity effect. Also included are a polarity-reverse switch and a phantom-power switch.

The Noise Reducing Expander drops the volume of quiet parts of the performance. Use it to reduce leakage, tape hiss, air conditioning and so on.

Controls include Threshold, which is the level where noise reduction begins; Depth, or the amount of reduction and Gate, which is more abrupt than the expander. An LED meter shows the amount of gain reduction.

The Vocal Saturator, according to Focusrite, simulates tube and tape distortion. A drive control varies the sound from clean to distorted, while a tuning knob varies which frequencies are saturated. The "full bandwidth" switch allows saturation of the entire audio band.

Optimum sound

The Opto-Compressor rides the gain on vocals, keeping them at a more constant level. Controls include Threshold, Release Time, Output (where gain is made up), Fast/Slow Attack, Hard/Soft Compression Ratio and Treble.

The latter control restores the highs that compression seems to attenuate. An

The audio processing can occur during mix-down as well as during recording.

With the Voice Optimized EQ users will find sweepable low-frequency EQ and fixed-frequency mid and high EQ. The frequencies are chosen to work well with voice. An "Absence" knob reduces vocal harshness by attenuating the upper mids.

The Opto De-Esser acts as a compressor for high-frequency sibilance. The De-Esser removes overly strong "s" and "sh" sounds from vocals.

At the end of the chain is the master volume control, which matches the unit's output level to the input level of the device it is feeding. A peak output level meter completes the package.

Crisp, clean and no sibilance

I connected the VoiceMaster to a clean headphone amp and plugged in a mic. After setting levels I began to experiment. The VoiceMaster sounds clean and neutral. All the controls worked silently. The range of control adjustment is well chosen and can handle any situation.

The unit's sweepable low-cut filter is more useful than the fixed low-cut filter (or no filter) found in many mixers.

The noise-reducing expander works very well, gently bringing the gain down during pauses, but letting fast attacks through without pops, clicks, or missed speech. The expander effectively removes foot taps and room noise whenever the singer or talent stops.

The vocal saturator is fun to play with. With the twist of a knob, I could add some grunge to just the mids or highs, or the entire range. The saturator makes it possible to create the sound of an overdriven tube mic even if the vocal mic used is solid state.

Compression is frequently needed on vocals and the opto-compressor in the VoiceMaster does a fine job. The effect can be varied anywhere from subtle to outrageous. A nice feature is the treble knob, which brings back the highs lost during compression.

As for the Voice-Optimized EQ section, it acts much like console EQ with sweepable lows/warmth, fixed-frequency mids/presence and highs/breath. Focusrite included the useful "Absence" switch, which cuts the upper mids a little to reduce harshness.

My favorite feature is the Opto De-Esser. This feature tames those harsh "s" and "sh" sounds without dulling the tone, as a high-frequency EQ cut can do.

I have recorded many singers whose voice needed a high-frequency boost to stand out over an instrumental background, but most boosts often caused too much sibilance. The De-Esser lets you hold down the sibilance without losing high-frequency clarity.

I found the manual to be excellent — easy-to-understand, full of useful tips and well-illustrated. In fact, it borrowed an illustration and some text from one of my books!

Summing up, the Focusrite Platinum VoiceMaster is a powerful, flexible processor that offers fine sound and great creative potential. With a list price of $675, plug it in and have fun!

Bruce Bartlett is an audio journalist, recording engineer and Crown microphone engineer.

Product Capsule: Focusrite Platinum VoiceMaster

Thumbs Up
- ✓ Adaptable to any situation
- ✓ Very effective processing
- ✓ Intuitive and clean control and interface layout

Thumbs Down
- ✓ Display may be hard to read

For more information contact Focusrite Audio Engineering Ltd in England +44 (0) 1494 462246, fax +44 (0) 1494 459920 or visit the Web site at www.focusrite.com

For the U.S. distributor contact Digidesign in California at (650) 842-7900, fax (650) 842-7999 or visit the Web site at www.digidesign.com

PRODUCT GUIDE

Westlake Releases Vertical Mount Speakers

Put these speakers on your wish list for that high-end studio buildout or specialty project.

Westlake Lc3w12V monitor

The Lc3w12V from Westlake Audio is a three-way monitor speaker system. The monitor is housed in a bass-reflex enclosure and has integrated passive crossover for single or bi-amp operation.

The system is designed to offer electro-mechanical-acoustical dampening and for use in multi-channel operation. The unit consists of a 12-inch woofer, a 6.5-inch midrange and a 1-inch soft dome tweeter. The frequency response is 40 Hz to 18 kHz with an impedance level of 4 ohms nominal to 3 ohms minimum.

Amplifier inputs are dual-banana, five-way binding posts with bi-wire/bi-amp capability. The speaker weighs 102 pounds, finished in a black utility paint, has a one-year warranty and retails for $3,799 per pair.

For information contact Westlake Audio at (805) 499-3686, fax (805) 498-2571 or visit the Web site at www.westlakeaudio.com

World Radio History

Now Orville Has A Family

Introducing Eve/Net -

The Eve/Net™ Network Remote Control System provides flexible, total remote control for the Orville™ Harmonizer® processor family - without the overcomplications and high costs of other multi-channel effects processor controllers. And perhaps best of all, there's no steep learning curve. The Eve/Net system links one or more Eve/Net remote controllers with multiple Orville or DSP7000/7500 processors in any combination.

Introducing Orville/R -

Face it. If there's an Eve/Net remote sitting conveniently on your console, or if perhaps you've installed multiple Orville processors in a central machine room, you may never use the Orville's own front panel controls. So why pay for them? Eventide's new "no faceplate controls" Orville/R model has all the capabilities of the standard Orville, but is designed for use exclusively with Eve/Net. You can mix and match standard Orville and Orville/R processors. You could pay many $1000s more for a competitor's multi-channel processor system and still not equal the versatility, quality and ease-of-use of Eventide's Orville system.

Introducing the DSP7000 -

Eventide hasn't forgotten that when it comes to music, it's still very much a stereo world. We're proud to introduce the DSP7000 Ultra-Harmonizer® Stereo Effects Processor. The DSP7000 is a major upgrade of Eventide's legendary DSP4000-series, featuring up to four times the processing power for higher effects density and superior audio performance. 24-bit conversion at 96kHz of course. It features hundreds of exciting preset programs including your favorites from the DSP4000 line, and it's even easier to use than the DSP4000.

Introducing the DSP7500 -

A long-standing Eventide tradition is our "500" model series. The "500" models offer all the standard Ultra-Harmonizer processor features and then some, and are priced to be exceptional values. The new DSP7500 Stereo Ultra-Harmonizer® Effects Processor upholds that tradition beautifully. It's a DSP7000 to-the-max, featuring hundreds of additional presets especially useful in post-production and broadcast applications, plus a 174 second (mono) / 87 second (stereo) sampler with special preset programs which make it one of the most versatile samplers you've ever used. You'll never run out of ways to use the extra capabilities of the DSP7500 processor.

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World Radio History

PRODUCT EVALUATION

MediaForm: To CD or Not to CD

CD2CDPro Line of Duplicators Adds Dubbing Power for Audio Production Facilities

Ken R.

When your production department is asked to make an important audio presentation featuring a montage of your station's broadcast day, do you play your final product on a discount quality cassette, complete with hiss and dropout? Not terribly impressive in this age of digital perfection.

When it comes time to archive this month's production, do you do so onto a DAT tape that might get eaten in the door of your machine at any moment?

End of tape

When you spend hours preparing those "Beatles Weekend Promos" that you know will be needed again in six months, do you save them on an old reel of spliced tape which will probably be bulk erased or lost? Or do you clog up your hard drive with all this stuff for months until you finally need the storage room for something else?

Consider the CD. By all accounts, it is more enduring than any other affordable medium currently available. A CD takes up little space and random access means no lengthy shuttle time to find exactly what is needed.

Most important, almost everyone has a CD player and is likely to have one for some time. As CD burners are highly affordable, there really is no excuse left.

A CD takes up little space and random access means no lengthy shuttle time to find exactly what is needed.

But how do you make quick CD copies without tying up production facilities? The CD2CDPro line of duplicators from MediaForm is designed to solve this problem.

The simple concept is this: Put your master CD to be copied in the top drawer of the unit; load up blank media in the other drawers; push a few buttons and *zap*, instant clones in up to 1/12 real time.

The system can be ordered with as few as two slave recorders (CD-5400L-2W) or as many as 16 (CD-5916). MediaForm also has clever auto-loading devices such as the 3706NT, which combines unattended duplication with custom-label printing.

MediaForm devices use a 12x SmartDrive that provides cool features like electronic watermarking, which ensures the ability to trace every CD recorded. With the copy protection feature you can copy-protect your clones as well, depending on your level of paranoia.

MediaForm is due to release a 16x version of SmartDrive on Feb. 1.

Our small studio already owned a two-slave unit MediaForm CD-4004 purchased in 1998. The unit worked as advertised and we were happy with it.

Mirrored multiples

The only problem was that we soon found ourselves with 150 different CD products to be copied for our clients around the world. We needed to purchase a little additional dubbing power, so within the last several weeks we added the CD-5908, an eight-slave unit. At $6,799, this is not an impulse-buy item.

This is a manual, standalone machine, which is so simple to operate that *I* can even do it. Actually, my secretary Brooke usually handles duplication, and while the copies are merrily spinning away, she makes labels, processes orders or corrects my many administrative errors.

Operation could not be simpler. Once the device is plugged in — very important — load the master and blank CDs, select "CD to CD copy" from the display window and the system is off and running.

If users prefer, the disc can be copied to the internal hard drive, which then allows the user to remove the master and make eight copies at once.

The machine runs a program called "analyzing format" before sharing its data with the slaves. The more CD indexes your master has, the longer this process takes.

When this step is complete, a little bar graph appears in the window illustrating how much of the copying job is done. Also appearing in the window is a countdown clock indicating how long until the dubs are done. This feature is handy for planning office activities and is an attribute our older model does not offer.

When the CDs are done cooking, the slave decks pop out successful copies and the unit beeps plaintively until the user presses the button to make it stop. Any discs that did not copy properly will not pop out, simplifying troubleshooting. When this happened to me, it was my fault as I put a recorded CD in one of the slave slots by mistake.

Smart features

To be frank, while I appreciate the extra features offered by the CD-5908 — copy protection, electronic watermarking and a couple of others called SmartStamp and SmartMedia, both of the latter controlling the use the copies — I have not had occasion to use them. This unit can also duplicate several formats of CDs, but we only call on it to copy audio-only products.

The copying occurs faster than real time, but the exact speed is determined by three factors: the CD-R rated speed, the speed of the copying drives, and the number of indexes on your master.

For example, if the machine is rated at 4x but your blank media are only rated at 2x, 2x is the fastest it can go. Users need not worry about setting this feature, as the machine knows what to do all by itself.

Unlike the smaller unit we purchased two years ago, this one came with a real instruction manual that was well written and illustrated.

To CD or not to CD ... that is the question now.

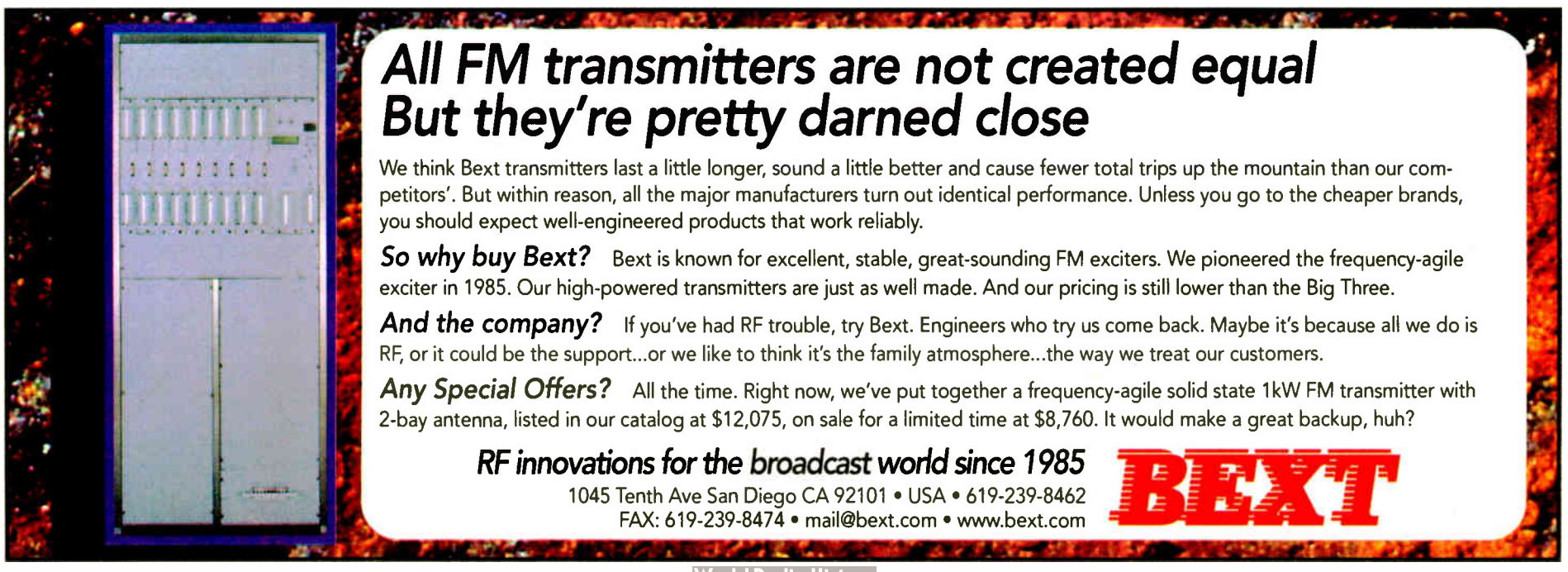
Ken R. is a former broadcaster and jingle producer who now devotes full time to writing.

Product Capsule: MediaForm CD-5908

Thumbs Up
- ✓ Stand-alone unit, no extra computer needed
- ✓ Lots of features including anti-piracy tools
- ✓ Reliable copying

Thumbs Down
- ✓ CDs with many indexes take a long time to copy
- ✓ A bit pricey at $6,799 manufacturer list

For more information contact MediaForm Inc. in Pennsylvania at (800) 220-1215, fax (610) 458-9554, e-mail info@mediaform.com or visit the Web site at www.mediaform.com



World Radio History

Oldies 101.5
WMJZ fm GAYLORD

WSNQ
AM 900
GAYLORD

May 10, 2000

Mr. Rafael Arreaza
OMB America
3100 N.W. 72nd Ave.
Miami, FL 33122

Dear Rafael:

I writing to tell you how happy we are with **our new OMB 10,000** watt transmitter and OMB antenna system. **It is fantastic!**

I have owned many brands of transmitters and antennas in the past. Some have worked better then others. The performance of your OMB transmitter, exciter and antenna has been as good or better then any other equipment I've ever owned.

The transmitter has been rock solid, we set it and it does not deviate, it works great. The same can be said for the exciter and power amplifier. Your antenna system also works great and provides fantastic coverage for our listeners.

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

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

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

Thanks for all your help and your great products.

Sincerely,

Kent D. Smith
President
Darby Advertising Inc.

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Honkin' Harry's On the Air at ATR

Alan R. Peterson

I have bad news and good news and bad news and good news.

The bad news is that ATR 1170 — the little Part 15 AM radio station in my basement — is off the air for a good part of the winter until I can iron out all the technical bugs I explained a couple of installments ago. The frequency may be in question and my phone lines are soaking up the signal like a thirsty clam.

Punchline

The good news is that I now have a new voice to flesh out my one-man on-air lineup.

The bad news is he is synthetic.

But the good news is I don't have to pay him.

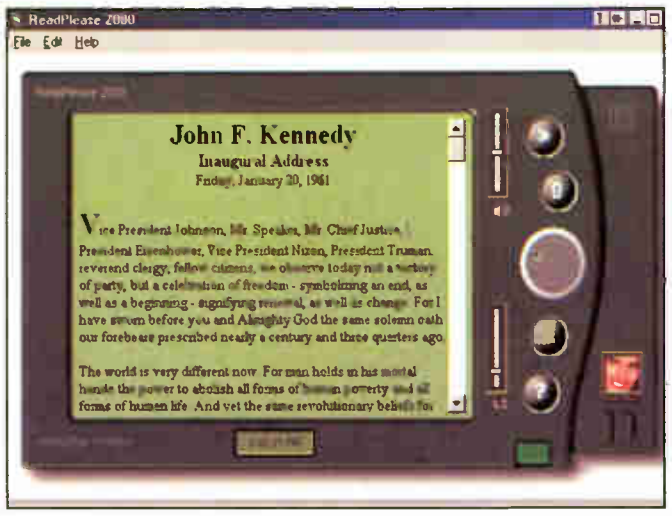
Before the rest of this piece becomes a bad-news, good-news vaudeville act, let me just start at the beginning.

Right around the time I got the earlier incarnation of my license-free AMer up and running, I became concerned that my voice was the only one heard between songs. Just as stations everywhere have out-of-market voices acting as "liner guys," I knew ATR needed the same.

Yet I also knew I could not approach some of the more notable voice talents in the industry and beg for freebie cuts that could only be heard for four blocks. I'd be laughed off the air.

Many of the new breed of liner guys making their presence known on the broadcast newsgroups are likewise out of the question: several are not that good and some use bleeps and zaps that are about 10 years out of date.

Besides, ATR is not "just another station" and I believe deserves something a little off the beaten path. The typical lasers and hip-hop beds used everywhere would seem awkwardly out of place here. And the expense of a polished liner-guy voice could not be justified.



Meet one incarnation of ATR's Honkin' Harry — the ReadPlease 2000 text-to-speech converter, available free over the Internet

Happily, thanks to the Internet, I came across a solution that is just goinky enough to work for me and still sound somewhat refined for air on AM radio — speech synthesis, or "text-to-speech" technology.

Yep, I am talking about the same, hard-to-listen-to, mechanized drone heard now on NOAA weather radio, wristwatches, Web pages that speak, ham radio repeaters, electronic educational toys and talking microwave ovens.

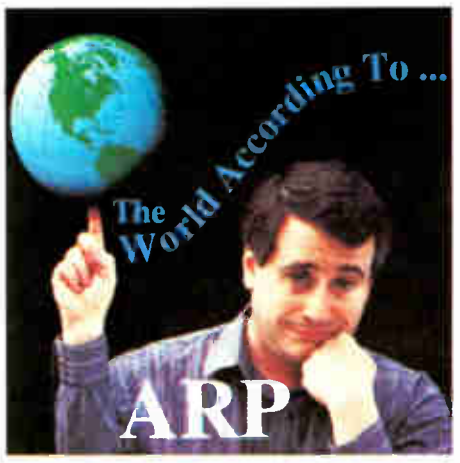
But before you groan, hear me out. Text-to-speech (TTS) technology has earned its prestigious position as the official ATR Liner Guy because of its proud heritage.

If the TTS circuit in the Texas Instruments Speak-And-Spell didn't exist, countless children may not have learned to read during the early 1980s. We would never know the true genius in the words of Professor Stephen Hawking without hearing them for ourselves through his speech generator.

Speak N Spell

We would not today have Kurzweil musical keyboards and its related technologies, as the company earned its early reputation with scanning devices that could read books and correspondence out loud.

And no matter how you feel about NOAA's automated "Perfect Paul" digitized weathercaster, if it has saved one life during stormy conditions, it has done its job.



With such an impressive résumé going for it, it is only natural that the next great step toward eternal glory for

See ARP, page 53 ▶

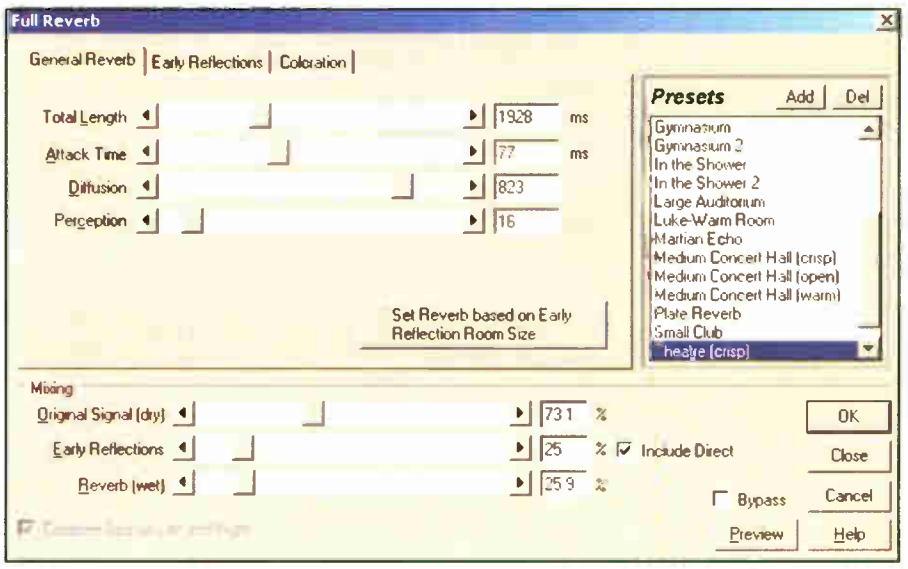
PRODUCT GUIDE

Syntrillium's Two New Plug-ins for CE2K

Syntrillium Software released the Phat Pack plug-in and the Tweakin' Toys plug-in for $49 each. Both can be used with Cool Edit 2000.

The Phat Pack adds four delay-based effects including a full reverb, multitap delay, chorus and sweeping phaser. The reverb can recreate the ambience of any acoustic space.

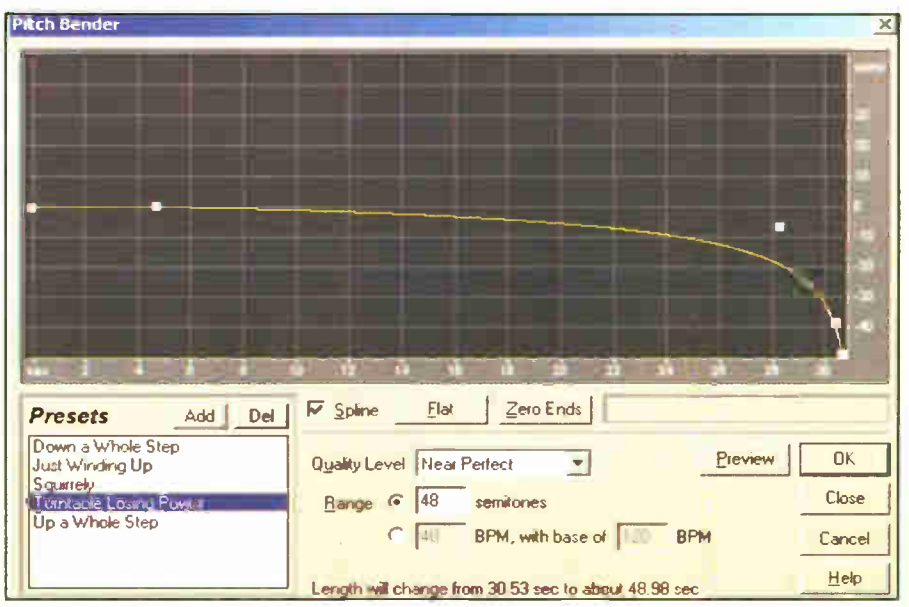
Tweakin' Toys offers four special effect and mastering tools: hard limiter, pan/expander, pitch bender and convolution. Convolution uses impulse-sampling to recreate the sound of actual places and the pan/expander widens the field on stereo recordings.



Cool Edit 2000 Full Reverb plug-in

A demo version is available on Syntrillium's Web site at *www.syntrillium.com/cooledit* Through the end of the year, purchasing one of the plug-ins gets the other one free.

Download Tweakin' Toys direct from www.syntrillium.com/download.html?031 *and Phat Pack from* www.syntrillium.com/download.html?032



Cool Edit 2000 Pitch Bender plug-in

Get Focused.

24-bit Analog I/O • 24/96 Digital I/O
Balanced XLR Connections

"Sonically, the LynxONE is top quality. Easy install and crash free operation... offers I/O and sync options professionals expect. One could use this card for a big-buck master session or block-buster movie without any reservations."
- Pro Audio Review April 2000

"It's extremely clean, very clear, and amazingly accurate. Rock solid with a wide range of programs."
-Recording Magazine February 2000

"The LynxONE is an excellent mastering card in terms of sound quality and flexibility. Suitable for today's professional studio."
AUDIO QUALITY: 5 (out of 5!)
-Electronic Musician August 1999

LynxONE

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World Radio History

ARP

▶ Continued from page 52

TTS technology should be to become the official voice for "ATR 1170, the crappy little station with the crappy little sound."

Ladies and gentlemen, you already know Perfect Paul. Meet his illegitimate cousin, Honkin' Harry.

Actually, Harry is an amalgam of several speech-generation programs that are free for the taking and using.

There are many that I have tried and only a few that I use, and among my favorites are ReadPlease 2000, a freeware TTS program that is available from many shareware sites or downloadable from its parent company, *ReadPlease.Com*. The speech is fairly good and there are four character voices to choose from and modify to your liking.

Unfortunately, ReadPlease 2000 can only talk; it is quite impossible to record the voice or save it as a WAV file, which is what ATR 1170 needs to drop between songs or to talk up breaks. It becomes necessary to record it off to other media (DAT, MD), then record it back into the PC via an audio editing program.

Some soundcards come with a utility that allows the recording of whatever audio is being played by the card, essentially capturing its own performance to disk in real time. Mine doesn't. That's what I get for going the cheapie route.

My second software choice is not software at all, but the interactive Web site at Bell Laboratories. Here, you can try out the latest TTS technology offered by Bell and Lucent Technologies by typing in a desired phrase and hitting "Submit." The Bell server then "reads" the text and immediately downloads a WAV or AU file to your computer.

I love this site because it will let you go in up to 40 times per day and pull down phrases of up to 30 words each, delivered as WAV files and ready for air. Not many stations these days let their jocks say much more than that anyway. Plus, the speech is very clear, well-modulated and sounds less robotic than many other previous programs.

Batty about Atty

There is a problem with character spacing and the interpretation of "ATR," however. Even with spaces or periods between the letters, the "A" is pronounced as it is in "c*a*t" rather than "K*a*te."

So according to Bell Labs, Harry says, *"You are listening to Atty-Are, One-One-Seven-Zero."* If you try this site yourself, be particular in the way you write your desired text.

To get Harry to speak on the air, it is necessary to first come up with what is desired he say. That could be a bumper, a liner, the official on-hour ID, or even a joke.

Hearing the bland, emotionless way Harry cracks a joke is by itself quite funny. You're not sure whether you missed the punchline, or you are being left out of an "in" joke. Either way, the humor does not come from the joke, but in the reaction felt from the delivery or lack thereof.

Once the break is decided, text is entered and the speech output is recorded as a WAV that gets inserted into the automation playlist. At the proper time, the WAV file is played back in sequence.

There might be a way to enter text only, then automatically launch a TTS plug-in that lets Harry perform "live" instead of writing and recording it first. It would be a huge timesaver, and such technology already exists for creating "talking" Web pages. But it's not a big priority for me.

On top of everything else, I cannot always trust Honkin' Harry with pronunciation or proper inflection. Depending on the program I use, simple phrases can get badly mangled.

Take a simple PSA:

"Do you like pancakes? Nothing's better in the tummy on cold winter mornings, and the Annandale Volunteer Fire Department has a tasty pancake breakfast coming up on the 23rd at the headquarters on Maple Avenue."

Besides the *inflection?* ending up *in? the wrong places?*, such a PSA occasionally can turn out like:

"Nothing's better in the *t'm-eye* on cold winter mornings and the *An-NAN-dale Vol-lun-TEE-YUR* Fire Department has a *tass-tie* pancake *brake fast* coming up on the *two-three-rud* at the head-*QUAR*-ters on *May-PUHL* Avenue."

Once ATR officially relaunches following some technical corrections (I really want to keep this thing legal), Honkin' Harry will have been given additional responsibilities and may even sport a new voice, assuming improvements made in the TTS field.

If you wish to mess around with some TTS speech on the air, be aware that many sites do not allow for commercial use of the output of its TTS products unless you purchase them. You will find out which ones are out there and which ones charge if you do a Google search *(www.google.com)* using the criteria "text-to-speech."

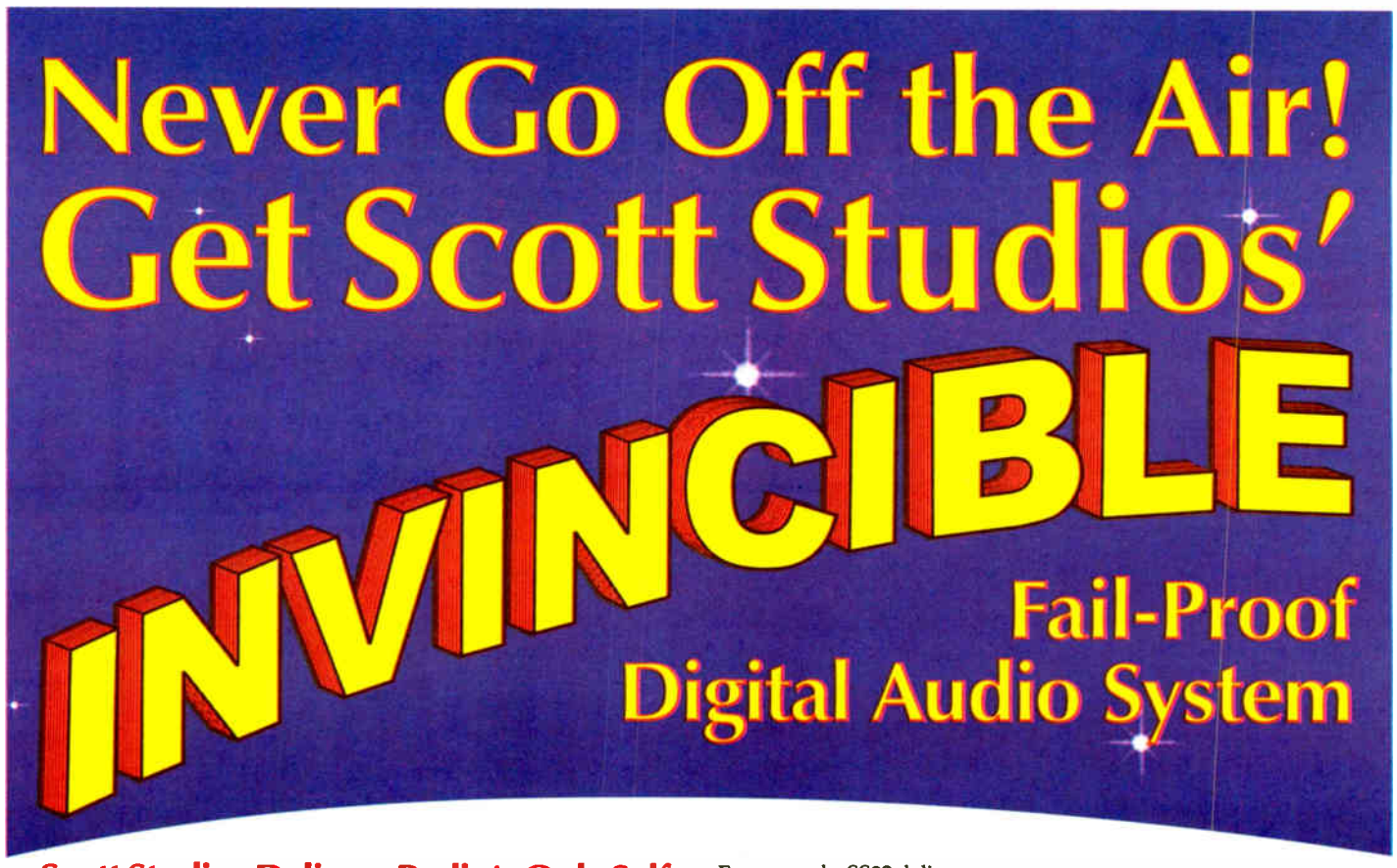
To try the Bell Labs TTS generator, visit *www.bell-labs.com/project/tts.voices.html*

ReadPlease 2000 is available as a free download at *readplease.com*

Now if you will excuse me, I have a tass-tie brake fast to attend to.

Hear a sample of Honkin' Harry's performance along with his siblings in Windows Streaming Media on ***RW Online****. Go to* www.rwonline.com *and click the "World According to ARP" logo.*

Alan Peterson teaches radio and TV at the Connecticut School of Broadcasting, Washington campus, and is a master control technician for Radio Free Asia in Washington. He can be reached at alanpeterson@earthlink.net



Scott Studios Delivers Radio's Only Self-Healing Redundant Digital System

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

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

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

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

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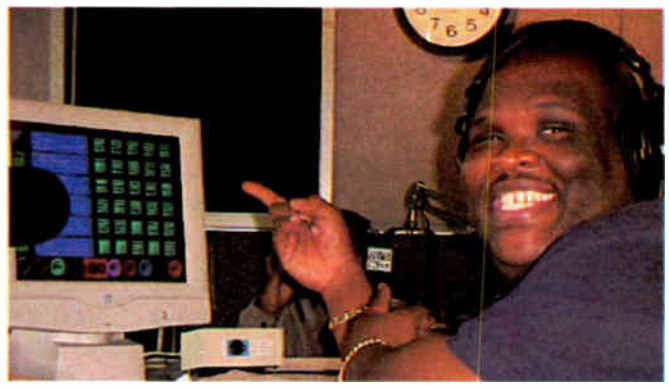
For example, SS32 delivers:
- 30 sets of 30 hot keys for instant play of jingles and effects.
- Cart walls that play song requests within 1 to 3 seconds.
- Display of last play and next scheduled play dates/times.
- Ripper puts CD music on hard disk digitally in 18 to 28 seconds!
- Easy voice tracking in context in air or production studios.
- Fast "no-dub" production uploads from Sound Forge.
- Phone recorder with audible scrub and waveform editing.
- SS Enterprise supervises 24 stations over the Internet!

For details about SS32 ***Invincible***, go to ss32.com or call toll-free at 1-888-GET-SCOTT.



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

Scott Studios Corp.
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Network Control Made Simple!!

THE NEW SEN-6

The SEN-6 is a single channel encoder with integral audio filtering that can produce 25Hz, 35Hz and combination tones from external closures. A special test mode and output lets you set tone insertion level without sending the tones over the regular program path.

Finally! A professional Subaudible Encoder that you can really use!
- Encodes 25, 35 & 25/35 combination tones (can also generate 50 & 75Hz *).
- Tunable notch filters remove subaudible content from program material prior to tone insertion.
- LED indicators for power, input set, output clipping and tone generation.
- Primary control & Status connections are duplicated on both screw terminals & a DB-9.
- Jumper-set precise tone duration.
- Suggested List Price only $399.00

* 50 & 75 Hz tones may require external input filtering to avoid false tripping.

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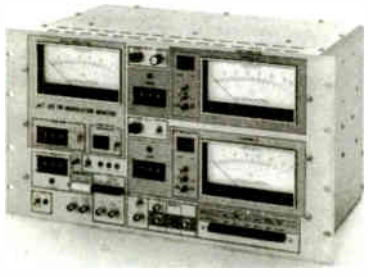

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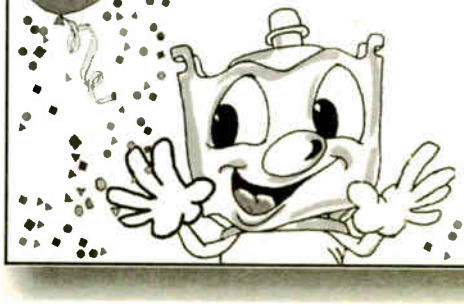


World Radio History

AudioWrite

▶ Continued from page 46

bands," Alfonsi said.

This unit has two personalities. It can convert an analog signal and burn it to a CD-R. The -10 dB RCA jacks for input and output make it a great substitute for a cassette recorder. The front-panel interface has familiar buttons — Stop, Play, Reverse, Fast Forward, Record and Finalize.

However, the RCA jacks were not marked on the back panel and I needed the manual to determine which set of jacks were the inputs and the outputs. Balanced audio was left out to keep the price low ($499 list).

The unit has a two-digit display that uses the decimal points as left and right peak audio level detectors.

The other personality of this unit is as an audio and data recorder through the SCSI port. It can easily be added to a PC or Mac computer.

The unit comes with a PCI SCSI card, cable and several pieces of software. The SCSI address selector switch on the back panel and internal termination make it fairly easy to hook up.

As part of this dual functionality, the unit records at 8x when connected to the PC, but obviously only records in real time or 1x when hooked up to an analog source through the RCA inputs.

LPs to CDs

My first test was to record some of my old record albums onto CD.

I was also interested in how well the unit worked with cheap CD-Rs that are sold in bulk, as I have found severe problems with certain brands of CD-Rs in our PC-mounted Hewlett-Packard recorders.

In the standalone configuration, I hooked it up like a cassette machine to my ordinary stereo receiver. All I had to do is press Record on the front panel and put the needle on the vinyl disk. The unit stores the incoming audio in a buffer while it spins up the CD-R.

The only feature missing was an auto-sensor for indexing. I had to press Stop after each song and re-start the recording again in order to advance the track number. A silent auto sense would have been nice as this is a common feature on some other CD recorders.

Once I was through recording, I just pressed the Finalize button. Within a few seconds, it spit out the finished CD.

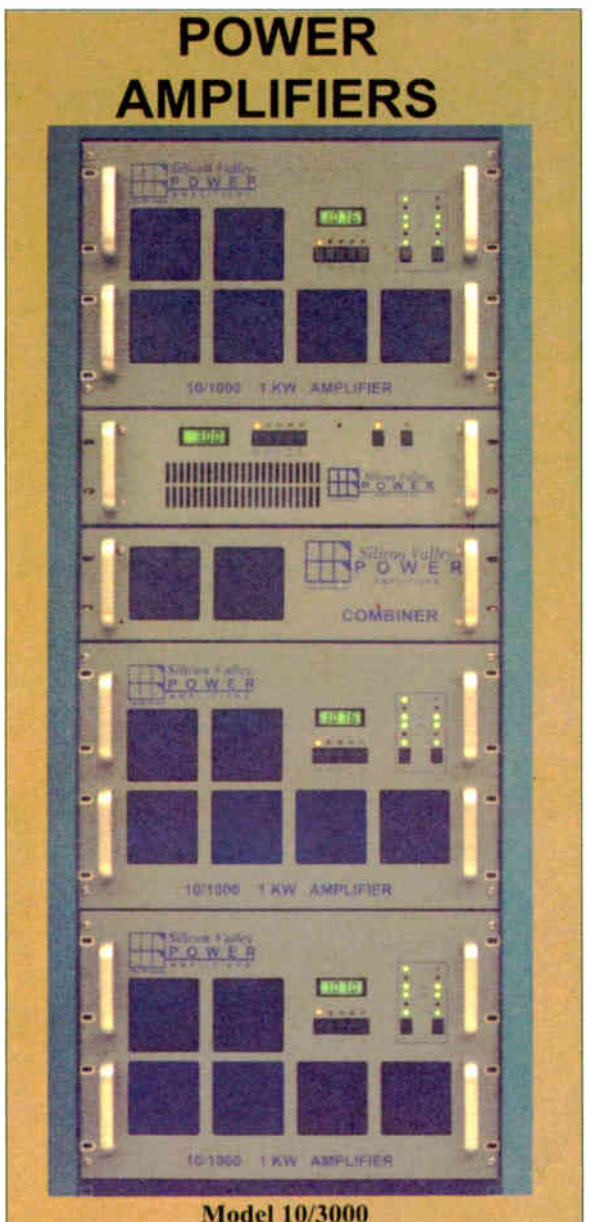
The unit performed well on all the different brands of CD-Rs tried.

The only problem I had was when the Finalize button actually fell into the unit. I

See AUDIOWRITE, page 57 ▶

Products & Services Showcase

POWER AMPLIFIERS



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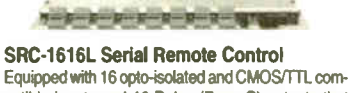

DC-8A Dial-Up Remote Control
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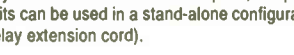

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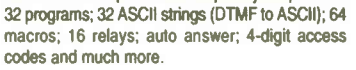

MC-16 Telephone Hybrid/Coupler
Full featured telephone line coupler/hybrid provides 32 programs; 32 ASCII strings (DTMF to ASCII); 64 macros; 16 relays; auto answer; 4-digit access codes and much more.

BOS, ROS & PBB-24 Switch Panels
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World Radio History

AudioWrite

▶ Continued from page 56

had to disassemble the case and re-mount the switch. The momentary push switches behind the front panel are a bit flimsy.

Next I decided to give it the torture test.

John Johnson, my assistant CE, is not easily impressed with technology. His lifetime has been marked by technological breakthroughs every six months, so it takes something special to get a rise out of him.

He tried the PC-based software and got mixed results.

John installed the SCSI PCI interface card in his desktop PC using a Pentium III 600 MHz processor with an Intel motherboard and 128 MB of RAM.

John found the SCSI interface was unreliable on boot-up of the computer. The two-digit display on the unit showed Error Message 87, which means the controller has halted after detecting host computer activity on the SCSI bus.

The SCSI cable had to be disconnected and the unit power-cycled to clear the error. John also found the Hot Burn Software included with the unit had a CD-R check feature that also cleared the error.

However, the unit burned fine with the error message showing. Once past the SCSI bus trouble, John made several recordings with no problems from WAV and MP3 files.

The unit comes with several pieces of software for a PC. The PlayWrite program converts MP3 files to a standard Red Book audio CD. The Hotburn program backs up data. Sound Forge XP and CD Architect from Sonic Foundry also came with the unit. For Macs, Peak LE software is included.

This unit offers comprehensive mastering capability far beyond a standalone unit.

Johnson said that the PlayWrite MP3 software did a good job of converting MP3 files to WAV files. But after it is done converting, a virtual button has to be pushed to start the burn, meaning you have to be near the computer for both steps. The Hotburn software was nice and he did like the unit.

I also liked it. It is relatively inexpensive, has multiple uses and works with cheap CD-Rs. Tied to a PC, it is a powerful CD mastering drive.

Product Capsule:
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- ✓ Good price
- ✓ Easy to use
- ✓ Works with cheap CD-Rs
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- ✓ Flaky SCSI controller
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PRODUCT GUIDE

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IAC Quad Series acoustic rooms

of the room.

Ken DeLasho, vice president of architectural products at IAC, said, "By adding more absorptive material, the room can attain qualities more suitable for voice-overs. Brighter acoustic room characteristics might be more desirable for certain music recordings or music practice situations."

The Quad Series acoustic rooms are available in a range of sizes and typically take eight weeks for delivery. The product can be customized to meet length, width or height requirements.

For more information contact IAC in New York at (718) 931-8000 or visit the company Web site at www.industrialacoustics.com

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RCA BTF-5-E1 5KW single phase FM. Continental Communications. 314-664-4497. Email: contcomm@fiastl.net.

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QEI 695T 3.5KW FM transmitter, BO. Max Latham, KMRL, POB 1307, Buras LA 70041. 504-657-7003.

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Creative & ambitious female seeking FT employment. BA in English/creative writing & broadcasting school graduate. Experience on-air with production & promotions. Willing to travel. Alison, 405-579-4937 or alisongarrison@hotmail.com.

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ACTION-GRAM

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World Radio History

◆READER'S FORUM◆

Hometown broadcaster

Dear RW,

This letter is in regard to the Oct. 25, 2000, article "Radio's Longest-Running Broadcaster."

I have had the pleasure of knowing Clint Formby since I was "knee high to a grasshopper," as we say in Texas. Clint is the epitome of the hometown broadcaster. He and his Uncle Marshall Formby constructed KPAN, Hereford, in the late 1940s and Clint has operated the station for the past 50-plus years.

During this time he has had a full complement of stations in Texas in many of the smaller markets. He has always put the needs of the communities he has served at the top of the list for his stations.

Clint has been very active in the Texas Association of Broadcasters and the NAB, having served on the radio board and as chairman of the radio board for many years. He has also given freely of his service to the AP Broadcasters Association and most others in the industry.

He is truly a "Hometown Broadcaster."

J. S. Sellmeyer, P. E.
Consulting Engineer
McKinney, Texas

The TC Act happened

Dear RW,

I had been in the radio industry for 16 years. I was 17 years old and I thought, "This is what I want to do for the rest of my life."

What happened? I became a PD at an early age. I was good loved it. What happened? I was a PD more than once, I helped start stations and put them on the air. They were successful.

What happened? The Telecommunications Act of 1996, that's what happened.

Since the Telecom Act, all these big conglomerates have purchased everything that they can get their hands on and have totally ruined the radio industry as we know it. Guys like me have had enough of being replaced by a computer. I got out of radio in 1998 because radio just wasn't fun anymore.

I agree with what Dusty Baker, owner of Hilltop Productions, said in his letter about TSL decreases (Sept. 27, 2000). He said he hoped these big guys would get a clue and move back to allowing their operations to be more local, getting that "hometown" radio feeling again.

We all know that the industry has changed over the years, and some of the technological advances have been great, but when did radio stop having a personality? When is it going to be enough? What has radio become?

David Hoy
Amarillo, Texas

Wayne Mack departs

Dear RW,

Thanks for the nice piece about Wayne Mack (Nov. 8, 2000).

It's sad to see the history of radio diminishing, one person at a time.

Robert E. Richer
President
Crossed Field Antennas Ltd.
Farmington, Conn.

Wayne Mack

ATR 1170

Dear RW,

I've enjoyed Alan Peterson's series on ATR 1170. I've done something similar myself since the 1970s. I prefer the AM band as there is more of a technical challenge than FM, where the biggest obstacle is the funding of such an operation and getting the antenna as high as possible.

In my years as a micro-broadcaster and ham operator, I have encountered folks who like to interpret Part 15 and other FCC rules to what they think they should be, but not knowing the specs for the particular frequency in question.

These people often have lofty sounding titles and good intentions but lack an understanding of what they are saying — especially people who think Part 15 AM transmitters are limited to 250 feet of coverage.

The FCC maintains a list of Part 15 bands and specs for each band. I don't recall any spec listing limiting a non-licensable signal to any specific distance. Most specify emission type, electrical field strength, use and perhaps some antenna limitations.

My AM was built from a kit and sounds better than many commercial units. With a 10-foot-tall, 3/4-inch copper pipe, I average a few thousand feet of coverage during the day and almost nothing at night.

"Radio Greg" is automated and carries satellite programming and programs produced locally by neighborhood teens. The hourly ID is done by a recorder IC and a Radio Shack talking clock. The automation system is an X-10 system controlled by a Mac SE-30 that also has my IDs as sound files.

There is also a five-channel Sparta board, two satellite receivers, three dishes, MD, VHS-HIFI, two 100-CD changers, an Alesis compressor, a homebrew limiter, phonepatch and lots of CDs.

Radio Greg offers airtime to everyone in my neighborhood and rebroadcasts NWS radio during severe weather.

Greg Stoddard
Syracuse, Ind.

Alan Peterson responds: 47 CFR Sections 15.207, 15.209, 15.219, and 15.221 show criteria regarding the operational distance of unlicensed AM devices. Oddly enough, the human voice can shout farther than the coverage offered by a Part 15 transmitter under these restrictions.

Radio Revenue Rises

More experts are predicting a good — but not spectacular — year for radio. The latest numbers are from Duncan's American Radio, which expects the industry to show a nearly 7-percent increase in revenue this year.

"The radio industry has had a stellar, two-year run of double-digit growth," stated radio industry analyst James H. Duncan, referring to 1998-99; and the final numbers for 2000 are likely to make three in a row of double-digit growth. But that streak will likely stop there.

Duncan's projection of 6.9 percent for 2001 is based on a combination of factors. Researchers went to radio managers and owners in more than 170 markets for their input on how their stations did and their expectations for 2001. Duncan's also factored in radio's record performance over the last several years to come up with the revenue figure.

Duncan's final tallies for 2000 won't be in for a while, but it estimates growth at 10 percent last year.

"Our estimate for 2001 is somewhat lower," said senior analyst Tony Sanders. "But it's still a strong healthy growth rate."

Sanders said the forecast is much closer to an average year for radio. Duncan's preliminary estimate would translate to another $1.2 billion in ad revenue for the industry — breaking through the $18 billion mark.

The last few years of consolidation have taught group owners a lot more about selling stations in combination, according to Sanders — a good lesson for the industry, as the nation faces its first economic slowdown in a decade.

Managers are encouraged to take advantage of radio's years of success during such periods — a trend other media can't touch.

Radio has always proven itself to be a less-expensive vehicle for getting the advertisers' message out to consumers. Combine that with our medium's immediacy factor and, according to Sanders, "all those TV dollars looking for a cost-effective way to reach consumers will find their way over to radio when times are tougher."

— RW

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Radio World
Vol. 25, No. 3 February 1, 2001

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NEXT ISSUE OF RADIO WORLD FEBRUARY 14, 2001

For address changes, send current and new address to RW a month in advance at P.O. Box 1214, Falls Church, VA 22041. Unsolicited manuscripts are welcomed for review: send to the attention of the appropriate editor.

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Radio World (ISSN: 0274-8541) is published bi-weekly by IMAS Publishing (USA), Inc., P.O. Box 1214, Falls Church, VA 22041. Phone: (703) 998-7600, Fax: (703) 998-2966. Periodicals postage rates are paid at Falls Church VA 22046 and additional mailing offices. POSTMASTER: Send address changes to Radio World, P.O Box 1214, Falls Church VA 22041. REPRINTS: Reprints of all articles in this issue are available. Call or write Michelle Inderrieden, P.O Box 1214, Falls Church, VA 22041, (703) 998-7600, Fax: (703) 998-2966. Copyright 2001 by IMAS Publishing (USA), Inc. All rights reserved

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