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 Some stations take precautions in the wake of terrorism; others feel secure.

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 Frank Beacham tries Samson's new miniaturized series of UHF wireless.

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Radio World

The Newspaper for Radio Managers and Engineers

October 10, 2001

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INTERNET RADIO

▼ Why does Internet radio appear to be stalled, while broadband access continues to grow?



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PRIZES GALORE

▼ Readers win an Inovonics FM 'Relay' Receiver and a Neumann TLM 103 microphone.

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One By One, They Returned to the Air

N.Y. Stations That Lost Facilities on World Trade Center Ponder Longer-Term RF Implications

by Randy J. Stine

NEW YORK Long-term solutions eventually will have to replace short-term fixes for New York City radio broadcasters that lost transmitter sites in the World Trade Center collapse.

Five of the city's FM stations had trans-

mitters and antenna facilities atop the north tower when it crumpled after suicide pilots flew commercial jets into the twin structures on Sept. 11.

FM stations WKTU, WPAT, WKCR, and WNYC lost main transmission facilities, while WQCD lost its auxiliary transmitter.

See N.Y. RADIO, page 6 ▶



Photo by Wayne Gignac, The Show Works

Emergency installation of the WKCR antenna on the Columbia University campus. CE Richard Koziol is installing one-half of a two-bay ERI model LPX antenna on Friday, Sept. 14, permitting WKCR to return to air with about 250 W. The second bay was installed Sept. 20, giving the station 850 W ERP until a more permanent, suitable site is found.

Rules Were Set Aside After 9/11

On Black Tuesday, Stations Overcame Difficulties to Serve As Information Source

by Naina N. Chernoff

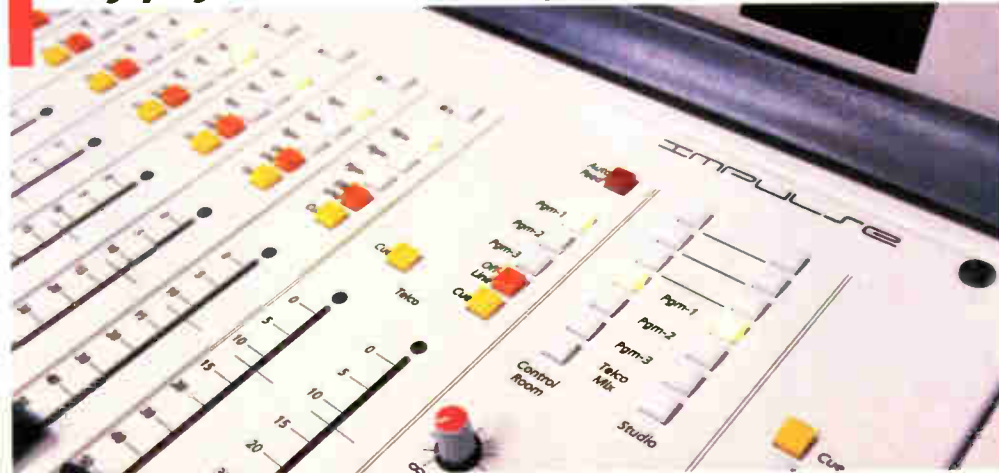
NEW YORK The rules that govern radio programming were amended by many radio stations following the terrorist attacks last month. Nowhere was this more true than in New York.

For the city's residents, radio became one of its most important sources of information following the collapse of the World Trade Center. For one thing, in the crucial hours after the attacks several local television stations were knocked off the air when their transmitters disintegrated with the collapse of the North Tower.

Radio stations located in the city and across the river in New Jersey faced a host of technical challenges in their pursuit to provide up-to-the-minute coverage. Some stations went off the because their transmission equipment was located on top of the

See PROGRAMMING, page 5 ▶

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FCC Says Yes To Satellite STAs

WASHINGTON The FCC has issued special temporary authority to Sirius Satellite Radio and XM Satellite Radio to operate terrestrial repeater networks before the commission issues final repeater rules. But it made clear that local programming is not to be aired on those repeaters.

NAB and several wireless companies fought the STAs, but the commission said the public interest would be served by giving XM and Sirius a temporary way to operate their terrestrial

repeater networks so they can commercialize their services.

It would be unfair, the FCC stated in its order, to penalize the companies "for complying with the required milestone schedule on the one hand but on the other hand force (them) to seriously delay initiation of service because there are no final repeater rules."

Several restrictions apply to the STAs, including: "The repeaters of both companies are restricted to the simultaneous retransmission of the complete programming, and only that programming, transmitted by the satellite directly to subscribers' receivers."

NAB has been worried that repeaters

could be used in the future for local programming, should the business models of XM and Sirius fail.

NAB President/CEO Eddie Fritts stated, "We're pleased the FCC has explicitly barred satellite radio companies from using their extensive high-powered terrestrial repeater network from originating local programming. We expect the final FCC rules authorizing this service will keep this prohibition in place."

Restrictions also apply to satisfy the concerns of wireless phones companies worried about blanketing interference from repeaters with a power level of 2 kW or more.

The commission will more fully address the blanketing interference concerns in its final repeater rules. In the meantime, Sirius and XM must respond immediately to such concerns and either reduce power or turn off a repeater that a wireless company says is causing interference if the problem cannot be quickly corrected.

Additionally, to prevent out-of-band emissions, Sirius and XM proposed, and the FCC agreed to, a more restrictive emissions mask than currently called for.

NAB and other broadcasters argued that Sirius and XM had not supplied enough detail about repeaters with a power level of greater than 2 kW. The FCC said they did, including geographic coordinates, antenna type, antenna orientation, antenna radiation pattern and any applicable vertical downtilt, total Equivalent Isotropically Radiated Power and Height Above Ground Level.

Sirius and XM had until Oct. 2 to decline the conditions. Failure to respond would constitute formal acceptance of the STA.

The STAs will expire on March 18, 2002, or on the date permanent repeater rules are issued, whichever occurs first.

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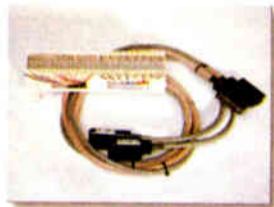
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Cross-Ownership Ban on Its Way Out?

Broadcast-Newspaper Cross-Ownership Review Begins As FCC Prepares to Shuffle Mass Media, Cable Decks

by Leslie Stimson

WASHINGTON The FCC is reviewing regulations that bar companies from owning a radio-newspaper combination or a TV-newspaper combination in the same market. The agency also has made preliminary decisions about its reorganization of the Mass Media Bureau.

The agency is expected to relax or eliminate the cross-ownership rules in the coming months. The restrictions date from 1975, an era in which there were fewer media outlets and the commission was trying to discourage consolidation and preserve a diversity of media voices in markets. Chairman Michael Powell has said the rules are outdated.

"These debates tend to be theoretical. Let's look at newspapers that have waivers in the marketplace," said Powell as the commissioners voted 4-0 on Sept. 13 to review the rules. He said the agency's goal of maintaining a diversity of voices to maintain competition in the marketplace remains the same and the commissioners need to determine the most effective methods of achieving that target.

The agency has asked the public to submit comments by Dec. 3 (MM Docket #96-197, 01-235) on how the changes in the local media marketplace affect broadcast diversity and competition, and whether these changes should affect the newspaper/broadcast cross-ownership rule and waiver policies.

Although has the agency granted waivers of this policy only rarely, some remain.

Approximately 50 grandfathered newspaper/broadcast combinations exist: 26 newspaper-radio, 15 newspaper-TV, and eight newspaper-radio-TV combos.

The FCC has granted four permanent waivers of the cross-ownership rule

since 1975: two newspaper-radio combos and two newspaper-TV combos.

In order to get the cross-ownership restrictions waived, station owners must meet the four criteria for waivers; the FCC regulates only stations, not newspapers. Owners must show they cannot sell the station by itself, or if they can, only at an artificially depressed price. Station owners must show that separate station ownership and operation cannot be supported separately in the market. They must also prove the combination is consistent with the public interest.

The FCC urged commenters to provide specifics about the effects these combinations have had in these markets and detail the public interest benefits or harms these combinations have produced.

In a Notice of Proposed Rulemaking, the FCC asked for comments on a variety of options including keeping the rule as is, modifying geographic coverage areas, changing media covered by the rule, applying a market concentration or market voice count test and eliminating the rule.

Broadcast groups have long pushed to ease rules so they can acquire media across platforms to offer advertisers more choice for their dollars. Those likely to be opposed are public interest groups who believe more, separate owners are better for media competition and a healthy marketplace.

It's a new world

The commission has also been working on a partial reorganization (Radio World, Sept. 26, p. 8).

In March, Powell told congressional budget committees he planned to streamline the FCC and reduce redundancies. The commission has undergone several such reorganizations over the past years and now, it has detailed some key decisions being made about the Mass Media Bureau.

The FCC plans to combine the Mass Media Bureau and many of the functions of the Cable Bureau into what would be called the Media Bureau. The new bureau would handle licensing, video news and entertainment policy.

Several functions being handled separately by the Cable and MM bureaus would be combined, including Equal Employment Opportunity, political programming, AM, FM, Low-Power FM, TV, Low-Power TV, cable policy and Direct Broadcast Satellite post-licensing policy.

Cable Bureau Chief Kenneth Ferree is expected to be named chief of the new Media Bureau.

Within the Media Bureau would be a separate Office of Broadcast License Policy. Current Mass Media Bureau Chief Roy Stewart is expected to take this position.

An Audio Division and a Video Division would be under this office, with functions much like the current Audio Services Division and Video Services Division. The Media Bureau would have a Policy Division, Engineering Division and Industry

Analysis Division.

EAS functions would move to the Office of Engineering and Technology, which remains the same.

As the FCC wants to combine similar functions for radio, TV and cable, it also plans to combine telephone regulation functions into one bureau for both wired and wireless telephones, now called the Common Carrier and Wireless Bureaus respectively.

The changes are about a year away and no staff would be eliminated the way the plan is crafted, said commission officials.

The vote on the broadcast-newspaper cross ownership rules and the details of the reorganization plans were discussed during the first open meeting for three new commissioners, Kathleen Abernathy, Michael Copps and Kevin Martin.

The meeting was held just two days after the terrorist attacks in September.

Trying to regain a sense of normalcy, the commissioners conducted their business wearing purple ribbons to honor the dead from the terrorist attacks.

Chairman Michael Powell said, "Some of our extended FCC family has died, and we have employees who are grieving for loved ones that perished. For them we all pray. ... Our reaction must be to defy these dastardly acts and not cower or be deterred from our



FCC Chairman Michael Powell

duties: to our families, to our friends, and to our countrymen. The flame of the American ideal may flicker, but it will never be extinguished. So we are here today. We will do our small part and press on with our business — solemnly, but resolutely."

One of the victims from the Pentagon attack was a former FCC employee, Karen Kincaid, a telecommunications attorney who had moved on to a position with Wiley Rein & Fielding.

Federal buildings in Washington were on heightened alert after the attacks. Security was increased at the FCC, located across the Potomac River from the Pentagon. A week after the attacks, the building was evacuated briefly while authorities checked unidentified package. Employees were allowed back into the building after about 10 minutes. 🌐



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NEWSWATCH

Myat Acquires Lowpass Prototype

NORWOOD, N.J. RF supplier Myat signed a deal to acquire Lowpass Prototype Inc. of Raymond, Maine.

Lowpass Prototype makes custom filters, multiplexers, power combiner/dividers and couplers for the broadcast and wireless marketplace.

Myat President Philip Cindrich said, "Customers have come to expect from Myat the finest rigid transmission line systems and components available. Now, we are pleased to be able to provide filters and other passive components to these same high standards."

Derek Small, president of Lowpass Prototype, becomes director of filter products with Myat.

Both firms are privately held.

FROM THE EDITOR

Radio: There When It Counted

by Paul J. McLane

I'd like to share with you the experiences of Doreen Bechtol, an actor and director who was in Manhattan on Sept. 11, 2001. On that terrible day, she circulated an e-mail to her friends, letting them know she was all right. It found its way to me.

I was struck by Bechtol's descriptions of the role radio played to the person on the street that day, and asked her to tell me more.

Her e-mail read, "I was about a mile from the scene ... watched both towers come down ... unforgettable. I walked from (the) Canal St. area to 81st and Central Park West. The amount of peo-

ple heading north was amazing and the snippets of conversation ...

"I saw one guy with suit pants and a shirt, nothing else except a coating of white ash — he was just moving as fast as he could go, he stopped for a moment and dumped a bottle of water on his head, then just kept walking. Mothers barefoot in the street holding babies. People practically catatonic, mouths hanging open, being escorted by others.

"At the same time the whole experience was so quiet, even the towers coming down — quiet. Except for the constant drone of sirens and radios blaring news, most folks were struck dumb.

"People stopped their cars, opened doors and blasted their radios for people to listen. Maybe 20 or 30 people crowded around one car. Much camaraderie, you could just feel it.

"After the second tower went, people were just looking at one another, never made eye contact with so many people, nothing to say — just looking."

I asked Bechtol to say more about how people were getting their information on the city streets.

"I watched the towers burning on the corner of Lafayette and Kenmare, listening to a guy who seemed to have some information," she replied.

"That's the thing, no one had any facts other than the sight in front of us, and people were hungry to be in the know. People who just came onto the scene would ask, 'What happened? What do you know? What's going on?'"

"It occurred to me how easy information or misinformation spreads like wildfire. Once I heard any tidbit, I told the next person, who told the next person, etc.

"On my long walk home that day, I followed two guys who had a walkie-talkie, listening to one of them tell stories from the WTC. Stories of the wing of a jet taking out two floors, panels of building falling and crushing folks, a man with a 'V' carved into his

back from fallen debris. I've retold the same story to my friends. The power of communication was unlike anything I've ever witnessed.

"The radio was another example, although quite a different experience. When this car pulled around the corner, opened its doors and started playing the news, people stopped speaking and moved in to listen.

"How surreal to hear the description and watch it unfold. I was struck by the 'act' of listening — everyone moving closer together, shoulder to shoulder, eyes focused downward or on the scene, with one ear poised to the news.

"It was a scene of silence, except for the amplified voice. How strange that we were all buzzing one minute, then still the next. Engaging unknown faces with questions, confirming details — then all hushed, absorbing new information — listening, in effect, to be able to continue communicating with others.

"Strange as it sounds, I felt like I had an important role to play in that little community on that corner, simply because I was taking in information.

"I was standing in the group around the car when the second tower fell. Didn't hear the radio at all. Don't know where that sound went, but it was replaced by this deep, guttural human sound. The group dispersed a bit, everyone looking at one another again — you just can't listen, you have to look.

"Who knows how much time passed, but once again we came back to the radio."

★ ★ ★

The SBE has established a trust fund to assist families of broadcast engineers affected by the tragedy. Please give.

Make your check payable to "Ennes Educational Foundation Trust Fund" and mail it to: SBE, Attention: Broadcast Engineer Relief Fund, 9247 North Meridian Street, Suite 305, Indianapolis, IN 46260.

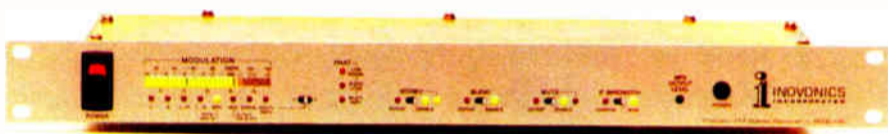
My thanks to Troy Pennington and everyone at SBE. 🌐

I have not one but two prizes to tell you about, because we devoted this space last issue to a moment of reflection for the victims of the 11th of September.

My thanks go to the good folks at Neumann and Inovonics, for sharing this space as a result.

Our first Silver Sweepstakes prize is Neumann's most popular microphone, the TLM 103. This is a world-class cardioid that retails for \$995. Its capsule is based on the one in the U 87. It uses transformerless electronics, and Neumann describes its self-noise as the lowest of any mic in the world. It is suitable for voiceover, on-air and general studio work.

The winner is Mike Bingham, national program director of the Moody Broadcasting Network in West Palm Beach, Fla.



Our second winner is Dewitt Clay Jr. of WFGS(AM) in Grenada, Miss., where lots of folks come to fish at Grenada Dam and where someone caught a 15-pound catfish just the other day. Clay wins an Inovonics Model 630 frequency-agile FM "Relay" Receiver intended for single-channel translator service and for other applications requiring high-quality off-air program pickup.

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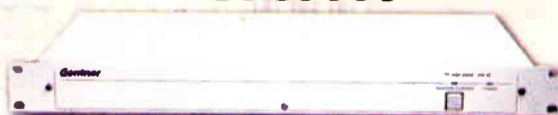
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Programming

► Continued from page 1

building, prompting station engineers to scramble to find alternative sites and buy new equipment to get back on the air.

Many stations opted not to play commercials in the hours and days after the attack.

With the pressure to be a vital source of news and information for traumatized listeners, morning DJs at music stations suddenly became newscasters. Stations without news departments tried to provide as much information as possible on the unfolding events. Programming personnel rushed to arrange for network programming.

Among the stations affected by the disaster was WNYC, an NPR affiliate on both the AM and FM bands. According to Dean Cappello, WNYC's vice president of programming, the station had to overcome several hurdles to cover the breaking events.

The station's transmission equipment for its FM signal was destroyed with the collapse of the North Tower and its staff had to be evacuated on the day of the attack because of the office's close proximity to the World Trade Center.

Wall-to-wall

Despite these problems, Capello said WNYC contributed to NPR's wall-to-wall coverage of the events, with reporters filing reports from various parts of the city. He and one of WNYC's reporters saw the collapse of one of the towers.

"We kind of went on auto-pilot," he said. "Reporters somehow got on air on NPR even though cell phones were not working."

Eventually things stabilized, he said, after WNYC set up a temporary studio at the city's NPR bureau and temporary offices at WNET and other sites within NYC. Soon after the attacks, he said, the station also started broadcasting on a donated FM frequency that belongs to WNYE, the station licensed to the New York Board of Education. Later that week, WNYC personnel also put the station's FM signal back on the air from the Empire State building.

Cappello said WNYC carried NPR programming, which was centered around the tragedy, 24 hours a day for a few days after the attack and then transitioned back. He expected the station would soon return to its normal programming.

He expects there will be some changes to accommodate continuing news about U.S. military activities, and station executives are considering whether to expand the news department to cover the continuing story.

For stations without news departments, the abrupt transition to an all-news format following the terrorist attacks was not easy.

"(The news talk format) was a major adjustment for us. Our jocks aren't specialized in news," said Julia Lopez, programming coordinator and weekend deejay at WKTU(FM) in Jersey City, N.J. "Our station was here to give out the information our listeners were asking for."

One of several stations with transmission equipment on top of the Trade Center, the station went off the air momentarily but switched to its backup site at Times Square.

During that first week, Lopez said the R&B station became a source of talking and healing, taking several calls from listeners and providing information on hotlines and relief funds.

Many stations, even those without a news department, scrapped or reduced their music programming and added news or listener calls into their schedules. Lopez said it was an uncompetitive time for the New York City radio market. She said WKTU could easily

arrange to get network news feeds from CBS and NBC in the hours after the tragedy.

WKTU was not the only station that used network feeds to supplement its local news coverage.

AP Radio provided news feeds to stations across the country, delivering audio news in many forms, said John Jones, marketing communications manager for AP Broadcast. Jones said AP offered subscribers 53 straight hours of news coverage on the events.

Stations also used the AP Radio's wire service for their Web sites, said Jones. AP Radio members who used AP's streaming



Credit: Associated Press Broadcast

AP Radio's Robin Walensky interviewed a woman at the Pentagon whose husband was missing. The two were reunited during the interview.

All News Radio for their Web sites reported thousands of listeners tuning into the service.

In the days after the attacks, programmers for radio groups large and small grappled with what material to present to serve local community needs and tastes. Internet rumors surfaced that Clear Channel Communications had circulated a list of banned songs to its more than 1,200 stations.

Lopez said Clear Channel, WKTU's owner, did not send out any directives to carry certain feeds, make programming changes or refrain from playing certain songs to either WKTU or sister station, WHTZ(FM).

In a statement released on Sept. 18, Clear Channel denied asking program directors to stop playing certain songs, saying decisions about adjusting programming would be made at the individual stations.

Lopez said WKTU chose not to play commercials for two days. When it did transition back to playing music a few days after the attacks, the station played soft rock rather than its normal CHR/rhythmic format to reflect the mood of its listeners, and aired frequent news updates.

Other stations took their cue from their listeners as well.

After getting back on the air 59 hours after the attacks from a backup site on top of the Empire State building, Spanish Broadcasting System's WPAT(FM) went to a commercial-free, all-news talk format.

Because WPAT and its sister station, WSKQ(FM), cater to a Spanish-speaking audience — a population that makes up about one-third of NYC's 5 million listeners — they had the added responsibility of responding to community needs, Davis said.

"Hispanics listen to more radio than watch television," said WSKQ/WPAT GM Carey Davis.

Though they were also unprepared to serve as newscasters, Davis said the WPAT DJs gave out news on the search for the victims, took listeners calls and played the national anthem and "God Bless America."

The station also delved into what Davis calls "inspirational programming" — broadcasting a Catholic mass for the victims on the day President Bush declared as the

national day of mourning. Davis said the station received an overwhelmingly positive response from the listeners, many of whom are Catholic, who were looking for solace.

"People will remember for years how the media handled this story," he said. "The outpouring of gratitude for broadcasting the mass was tremendous."

Back to normal?

A week after the attacks, Davis said the stations were still doing news and traffic updates more often than usual. "We're getting back to normal, but it's anything but normal out there."

WPAT had to reschedule many commercials in its transition back to regular programming. Davis said WPAT lost approximately \$500,000 from being off air from Tuesday after the attacks until Thursday and then not running commercials until after the mass on Friday.

Newstalk station WABC(AM) is an example of how NYC stations not directly affected by the attacks changed their programming as a result of the events.

WABC came out even in terms of ad revenue, said WABC PD Phil Boyce. Some WABC advertisers cancelled spots, but that time was taken by insurance companies and others eager to get their spots on air for families affected by the tragedy.

The station was commercial-free on the day of the attacks and returned to a limited schedule the next day. The station waited six

days to return to a normal schedule.

Boyce said WABC decided to forgo its usual schedule of syndicated programming the week after the attacks to provide wall-to-wall coverage of the events with plenty of live and local programming, including call-in shows hosted by former New York City mayor Ed Koch, terrorism expert Harvey Kushner and members of the clergy.

Boyce said news/talk stations like WABC performed a unique function during the crisis. "In times like this, listeners don't know what to think," he said. "We give them opinions, positions and a chance to think things through."

Boyce said he did foresee some permanent changes to WABC's program schedule in response to the attacks and the possibility of war, but could not discuss them publicly as of late September.

One New York station with transmission equipment on top of the World Trade Center, WKCR(FM), made no changes to its programming. The Columbia University student-run station was knocked off the air on Sept. 11 and did not resume operations for about 80 hours. It then started broadcasting from a low-power transmitter at the school.

Because the station ceased its news operations over the summer and did not plan to start it up again until later in the fall, the station could not provide news updates so the management decided to stick with its usual programming of jazz and classical music, said Joseph Kim, the director of operations and engineering.

Instead, various program hosts informed listeners about relief funds, blood donation opportunities and hotlines. ●

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N.Y. Radio

► Continued from page 1

The financial impact upon the stations is still being measured. WNYC alone lost two 10 kW transmitters, STL receivers, HVAC equipment and power control equipment. Broadcasters' insurance coverage likely will offset some of the losses.

The 360-foot broadcast mast atop the Trade Center also was home to nine television antennas. An RCA BFF master wide-band antenna was built in the mid-1980s and held elements for WNYC, WKTU and WPAT.

Fire up the backup box

On the morning of Sept. 11, Clear Channel's WKTU immediately switched to its full-power backup transmitter at the Conde Nast building in Times Square. The other stations found temporary locations for low-power transmission installations across the city within days of the tragedy.

The FCC issued several Special Temporary Authorizations allowing the stations to make needed arrangements. One engineer said the FCC was "very helpful" and helped cut down on the necessary paperwork normally required for such filings.

The next challenge for the stations will be searching out permanent transmission sites. Options include the Empire State Building, the Conde Nast building and the Alpine Tower in New Jersey.

Electronics 1 kW FM-1C1 transmitter to see the facility through at least early November, when it should be back to full power at 5.4 kW with a permanent home on Empire. WPAT's auxiliary transmission site will be the Shively Master FM antenna at 4 Times Square, Tocco said.

Another affected station, WNYC, licensed to the WNYC Broadcasting Foundation, is considered by some as National Public Radio's most-listened-to station in America. It was off the air for five days after the collapse.

Laura Walker, president of WNYC, stated on the station's Web site that employees were evacuated from WNYC's studios at the New York Municipal Building. The station temporarily broadcast from makeshift studios in an office at NPR's New York bureau.

In the days following the outage, WNYC's programming aired on WNYE at 91.5 MHz, licensed by the Board of Education for New York City.

Ralph Woods, deputy director of operations for NPR distribution, said WNYC's programming originally was routed to NPR's Washington facility via T1, then returned to WNYE in New York by ISDN.

"We eventually figured out a better system. We took signal from the T1 and put it on a spare NPR distribution satellite channel for WNYE to receive," Woods said.

WNYC(AM), which simulcast the FM programming, was forced to use a standard POTS dialup line from NPR's New York Bureau to its transmitter in Kearny, N.J., just north of Newark.

transmitter and ERI two-bay antenna on the Alford backup FM antenna at 1,220 feet atop the Empire State Building. The FM master at Empire has an elevation of 1,360 feet.

Columbia University's WKCR was silent for approximately 80 hours before reestablishing service with temporary transmitting facilities on top of a 10-story dorm building on the school's campus on the upper west side of Manhattan.

New STL

"It just so happens that we have been working with Harris on a new studio build on campus, and were in the process of mounting a new STL on top of the building to hit WTC when it happened," said Roger Koziol, WKCR chief engineer.

Koziol instead mounted one bay of an ERI LPX two-bay antenna to the STL mast, operating at a mere ERP of 250 W, to get the station back on the air.

"We had run a new piece of half-inch transmission line from the tech room to the roof for the STL, so instead I used it to couple the new transmitter to the temporary antenna," Koziol said. WKCR purchased a Quest 1 kW solid-state transmitter from Harris.

Koziol said the new hardware was shipped from Harris' facility in Illinois to New York by truck. The delivery had to be coordinated with FEMA officials, Koziol said.

"It's been so hard to get around in the streets. Security is so tight. The school is probably 10 blocks from where the World Trade Center stood. It was hard getting equipment in," he said.

Koziol said he felt lucky not to have been in the north tower when the plane struck that Tuesday morning. He had made many visits in the preceding weeks, preparing for WKCR's new STL.

"I certainly will miss the people I worked with and saw there so often. But I will also miss the building itself. Because as engineers we get to go into all of the odd places



From Left: Shively's Sean Edwards and Bob Surette adjust the filter for WPAT atop the Empire State Building. After getting a call on Thursday, Sept. 13, Shively found a filter, had it tuned and on a truck by noon Friday. But the transmitter would not operate into the filter Saturday evening. Shively found the filter had changed tuning during the trek to the 85th floor. Edwards soon had the filter on frequency, allowing WPAT to operate into the broadband port of the master antenna combiner.

... the nooks and crannies, so to speak. I think you have a more intimate involvement with a building," Koziol said.

John Lyons, chairman of the master antenna group at Empire and chief engineer for Clear Channel's WAXQ(FM), said the facility at Empire could accommodate additional FM stations.

"We'll be working with ERI to upgrade their system to accommodate more stations," Lyons said. ERI designed and installed the Empire wide-band master antenna and combiner. He said talks between the building's commission and WKTU, WPAT and WNYC for permanent tower space at Empire were continuing.

Lyons said stations could also consider the 52-story Times Square location. With an antenna height of 907 feet, the master FM panel has room for seven additional stations.

"The Alpine Tower in New Jersey is another alternative. That's where the TVs have put all of their emergency stuff for now," he said. The tower is just west of Yonkers across the Hudson River.

With the loss of the World Trade Center

See N.Y. RADIO, page 7 ►

Who They Are

These stations had transmission facilities on the World Trade Center.

	Licensee	Power	Format
WKCR	Columbia Univ.	1 kW	Classical, Jazz
WKTU	Clear Channel	5.4 kW	CHR/Rhythmic
WNYC	WNYC Radio Bdcstg. Found.	10 kW-D, 1 kW-N	News, Classical
WPAT	Spanish Bdcstg. System	5.3 kW	Hispanic AC
WQCD	Emmis	5.3 kW	Smooth Jazz

Mike Tocco, WPAT chief engineer, said the Spanish Broadcasting System station was off the air for nearly 60 hours before finding a Bext 500 W transmitter and tower space on the wide-band port of the master FM antenna at Empire. The station did not have an auxiliary transmission site.

"It was around-the-clock work to basically move and rebuild our station's transmission system in two and a half days," Tocco said.

The station also ordered a Broadcast

Woods said engineering ingenuity was used to improve the AM audio's quality.

"NPR sent out a truck with a Ku-band satellite dish receiver to the AM transmitter site. One of our guys set it up, acquired the signal and put it up on the AM," he said. "The dish rested on a tripod base with sandbags to hold it down."

WNYC's service was restored at 93.9 MHz five days after the terrorist attack, employing a Harris Quest 1 kW solid-state

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Terrorism Attacks Cue EAS Debate

When should the EAS be used? Experts are debating that question because the EAS was not activated nationally or regionally in New York or Washington during the terrorist attacks on the nation in September. Changes are being considered in the way EAS can be activated should a similar event occur.

Richard Rudman, chairman of the EAS National Advisory Committee and the Los Angeles County local emergency committee, said that, since the incident, the EAS National Advisory Committee has recommended to the FCC that changes be made in EAS, which "could save lives if a similar terrorist attack were attempted."

The question of whether an EAS civil warning should have been triggered stirred strong debate among online listserv users and others following the attack on the World Trade Center and the Pentagon building.

Rudman said EAS' job is to alert the public before an actual event occurs, not after the fact. "Some events really do serve as their own alerts and warnings. With the immediate live media coverage, the need for an EAS warning was lessened," Rudman said.

Several broadcast engineers said that issuing an EAS warning after the first plane struck the World Trade Center's north tower might have caused more harm than good.

"I think people would have thought it was a little too late for that ... EAS shouldn't be used as a means to mobilize people after the fact," one said.

Others speculated that there was enough time between the two plane crashes in New York that an EAS alert might have saved additional lives.

EAS was developed in 1994 as a tool for the president of the United States and others to warn the public about emergency situations. President George W. Bush chose to go directly to the media and avoid issuing an Emergency Alert Notification on the day of the destruction. As a result, EAS played no role in alerting the public of the emergency.

"Primary Entry Point stations were prepared and ready if the president had wanted to use them and issue an EAN. PEP is really is a last-ditch effort to get a message out if the president cannot get to the media. Clearly in this case there were other means to carry the message," said Rudman.

Tim Putprush, FEMA's PEP system program manager, said the 34 PEP system stations nationwide were on a "high order of readiness." He described PEP as a national level EAS system.

Mark Manuelian, president of the PEP Advisory Committee, said FEMA officials ordered PEP stations to be on standby in case the president wished to enact an EAN.

"The PEP notification system was not used since normal channels of communication remained open for the president to reach the public," Manuelian said.

As a result of the catastrophe, the FCC moved to allow broadcasters to suspend routine weekly and monthly EAS tests until Oct. 2. The announcement did not prohibit broadcast stations from continued compliance.

The FCC took the action after consulting with FEMA and NWS. FCC and FEMA officials said they wanted to avoid potential public confusion and fear.

"Our initial concern was to make sure the PEP stations suspended tests. A secondary concern was with stations carrying live coverage from the scene having to break in with the EAS tones for a test. We didn't want folks hearing that and becoming overly concerned," Putprush said.

— Randy Stine

N.Y. Radio

► Continued from page 6
master FM antenna, fees for new transmission sites eventually could prove expensive for broadcasters.

"Right now, Empire has frozen their prices where they were before the World Trade Center collapse. Nobody wants to price-gouge anyone. There are some location options left, just fewer than before," Lyons said.

Lyons applauded the New York broadcast engineering community for pulling together and helping other broadcasters restore their signals.

"I think we were all grieving by helping and staying busy. We are a pretty tight-knit group. We all knew the television engineers

who didn't make it down from the 109th and 110th floors," Lyons said.

As of late September, six television technicians were missing from the north tower: Donald DiFranco of WABC; William Steckman of WNBC; Steven Jacobson of WPIX; Gerard "Rod" Coppola of WNET; and Robert Pattison and Isaias Rivera, both of WCBS.

Manufacturers respond

Broadcast equipment suppliers immediately offered assistance to the New York broadcasting community following the attacks.

Scott Beeler, director of worldwide sales for Electronics Research Inc., said the antenna manufacturer worked around the clock on the day of the disaster to finish and rush an order for three two-bay antennas for WPAT, WKCR and WNYC.

"We basically built the things from scratch. Then we tuned them to frequency and put them on the truck," Beeler said.

"We are in discussions with some of those broadcasters affected for long-term solutions," said Matt Leland, FM product line manager for Dielectric. "We also expect broadcasters to pay even more attention now to auxiliary sites."

Leland said one major broadcaster in New York that was not knocked off the air ordered a spare antenna for its backup at one of its stations as a result of the terrorist attack.

It wasn't just RF gear that was rushed to the city.

EZ UP Inc., for instance, helped with the emergency relief in New York. The fold-up canopy maker, whose products are used by broadcasters to cover remote gear, sent 60 canopies to the NYPD to use as emergency shelters. ●

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The following pages contain an overview of new and featured products from the exhibit floor at The NAB Radio Show in New Orleans last month. Contributors to this section include Laura Dely, Scott Fybush, Jeff Johnson, Michele Kramer-Peterson, Paul McLane and Ken R.

Suppliers: If your information did not reach us in time, please e-mail us at radioworld@imaspub.com so we can share it with our readers in a future issue.

Short/cut Holds Half-Day Of Audio

360 Systems promoted recent enhancements to its Short/cut editor and added editing capability to Instant Replay.

The company's popular Short/cut editor now has 12 hours of audio storage and performs editing operations many times faster than the original. The upgrade is available as a retrofit. The Short/Cut also has enhanced file interchange options to interface with DAWs, news servers and automation systems.

The Instant Replay hard-disk audio recorder also has been improved; it offers editing capabilities. Head-and-tail trim, fades and level correction can be accomplished with no cut length limitations.

For information, call the company in California at (818) 991-0360 or visit www.360systems.com.

RCS: New Versions Of Selector, Linker

More than two decades after it introduced Selector software, RCS is offering new features and functions for the music-scheduling program.

RCS President Phillippe Generali said the work that went into the latest version, Selector XV, focused on maintaining the comfort level of existing "power users," many of whom are still using Selector's DOS version.



Selector XV is designed to offer those users a smooth transition to the Windows world, retaining most of the keyboard commands that allow veteran users to "play it like a piano," said Tom Zarecki, RCS spokesman.

Current Windows users will find a redesigned interface, as well as increased capacity and improved customization.

RCS also released Linker XV, the latest

version of the companion software for scheduling promos and liners.

The company also showed Selector Enterprise, which allows group managers to review Selector data from multiple stations and markets.

And RCS released Tracker, digital audio logging software that allows broadcasters to record up to 16 mono or 8 stereo channels at once, at a variety of bandwidths and compression. The stored audio can be accessed by multiple users through Internet and telephone interfaces.

For information contact the company in New York at (914) 428-4600 or visit www.rcsworks.com.

Get Personal With Airdate

Airdate provides a personal ad services to radio, newspapers, Web sites and television stations.

At the NAB Radio Show, the company also launched a wireless application that includes SMS text messaging to reach listeners via cell phone and other mobile devices.

The Airdate database combines 1,500 media partners for users so they can potentially meet anyone in the country, via whatever notification method users chose.

Airdate uses unsold broadcast inventory to generate non-traditional revenue for a station. There is no cost to radio broadcasters who use the Airdate service. The company provides 800 and 900 numbers, marketing materials and customer support service as well as links to Airdate's on-line product.

The company shares revenues with stations whenever listeners purchase at the Airdate store via an automatic payment mechanism.

For more information, contact Michael Moran in Boston toll-free at (800) 266-3283.

BIAfn Debuts Upgraded MAPro

BIA Financial Network released an enhanced version of its MEDIA Access Pro broadcast database software and announced that Arbitron now licenses the MAPro.

The alliance will provide expanded demographic ratings data for its users, according to BIAfn Vice President Mark Fratrik.

"Unlike previous versions of MEDIA Access Pro, this latest version offers a module containing actual shares and number of persons for various demographics for the most popular categories," Fratrik said.



The latest MAPro includes a host of client-customizable features for searching and tracking media personnel, search capabilities for 700-plus fields of data, active e-mail links to station personnel or owners, hyperlinks to radio and television Web sites and easy-to-use download automation. A complimentary one-month subscription is available.

For information, contact the company in Virginia at (703) 818-2425.

CartWorks Shows Live Assist Systems

CartWorks Live Assist digital audio systems replace cart machines. The systems are available in software-only versions or with hardware. Live Assist Workstations range from 20 to 80 GHz hard-drive systems.

Time	Cart	Title	Artist	Length	Intro	End	Type
12:18:32	M1112	Photograph	Cher Leppard	04:54	22	F	MUS
12:18:36	M2174	Friends	Elton John	02:28	86	C	MUS
12:20:36	M1732	Dance The Night	Van Halen	02:47	13	F	MUS
12:23:13	0228	Wipe Out	The Surfers With Van Halen	02:52	17	F	MUS
12:23:25	04156	SPOT SET		03:08	1	C	COM
12:26:29	0211	Jungle / Fast	Janet Jackson	03:08	1	C	MUS
12:26:31	M0713	Listen To Her Heart	Tom Petty	02:48	11	C	MUS
12:26:38	M017	Wipe Out 2	The Surfers With Van Halen	02:52	17	F	MUS
12:28:34	M0214	Black Friday	Sheena Easton	03:48	12	F	MUS
12:33:34	M0015	All Day Music	War	04:04	19	F	MUS
12:37:16	1215	Liner # 10		00:15			LC

The Six Cart Decks software program works as its name suggests; Instant Access software provides rapid fire of 48 preselected

carts. An unlimited number of Instant Access groups permit each DJ to set up his or her favorites.

The system includes professional WAV/MPEG digital audio care for CD-quality sound, and is simultaneous triple play and record capable. Also included is a TTL I/O card for connection to remote buttons or console. When it is connected to a remote button on a console, a user can fire off spot sets as on a cart machine.

Prices: Software only, \$2,495; complete systems range from \$4,995 for a 20 GHz unit to \$5,795 for an 80 GHz unit.

Options include battery backup, eight-track editing software, a mini keyboard and a remote control.

For information contact the company in Mississippi at (601) 856-9080 or visit www.cartworks.com.

Spotdata Electronic Invoicing

Spotdata, a component of Encoda's suite of ad-commerce products, enables elimination of the paperwork and time involved with advertising invoicing.

Working with the broadcaster's traffic system, Spotdata is an electronic invoicing software module that delivers electronic invoices to local and national advertising agencies.

Each normal billing run of the traffic system generates invoice files that are sent to an industry clearinghouse at the Encoda Network Operations Center. Secure digital certificates and passwords are used by ad agencies to download the invoices via the Internet.

To allow any traffic system to be used, Encoda has published an open standard for use of all traffic system vendors.

For information contact Encoda Systems in Colorado at (303) 237-4000 or visit www.encodasystems.com.

Marti Offers Digital Cellcast, New Transmitter

The Marti division of Broadcast Electronics displayed the new Digital Cellcast, capable of operating on the various cellular systems around the world. Included in the lineup are a TDMA unit, a tri-mode system (TDMA, PCS, AMPS) and a GSM model.

MARTI



The new system can also be used with a POTS landline.

In addition to universal connectivity, the Digital Cellcast incorporates a four-channel mixer and four headphone amps. It can be powered from AC, battery or 12 V automotive power.

Added to the recently introduced PlugNPlay line of rack-mount FM transmitters is the PNP 1000, a 1 kW system that incorporates a stereo generator and audio processor.

For information call the company at (217) 224-9600 or visit www.bdcast.com.

APT Launches WorldNet Milano

Audio Processing Technology launched a new digital audio codec, the WorldNet Milano, which replaces the DSM 100 Pro Link and the BCF 256 and 384.

The Milano codec features standard and enhanced apt-X, the company's upgraded data compression algorithm that it says provides enhanced audio quality and reduced delay time.



Milano is intended for broadcast and postproduction use. It can be supplied with or without SMPTE timecode. It features four ISDN interfaces (S or U), which makes it suitable for both U.S. standards or others used around the world.

For information, call the company in Ireland at +44-28-9037-1110, fax to +44-28-9037-1137 or visit www.aptx.com.

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Impressive features aside, it's the sound that will blow you away. No other audio processor sounds as good as Omnia. That's why leading broadcasters the world over choose Omnia to boost ratings and crush the competition.

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

*\$3,880 (US) MSRP for Omnia-3fm model. Prices may be slightly higher outside the U.S. due to duties, freight and other costs.

Energy-Onix STL Has 8-Channel Capacity

Tele-Link is an Internet-based STL that can be configured for two to eight channels, assuming appropriate bandwidth of the station ISP.

With a requirement of 128 kbps for each two audio channels, one Tele-Link terminal can drive five additional terminals. Frequency response is 22 kHz in stereo.

Energy-Onix provides hardware and software as well as the computer interface and there is real time audio and data metering.

One feature of note is that the device offers an automatic restart system and an automatic "fill" from an internal hard disc, which guarantees that there will never be dead air.

Contact Energy-Onix in New York at (518) 758-1690 or visit www.energy-onix.com.

FastChannel Signs Westwood One

With a new three-year contract with Westwood One Radio Networks, FastChannel Network will automate content and ad delivery for WW1's 7,700 stations.

FastChannel's online network provides clients the ability to listen to spots in the approval process and traffic broadcast quality MP2 audio files to stations in the United States and Canada.



The service also automatically provides station recipients e-mail delivery notification and senders receipt confirmation. The compa-

ny's SpotTaxi service provides users with searchable online archiving and media asset management tools.

"One of the most appealing aspects of FastChannel's SpotTaxi application is the ease and flexibility that it affords both senders and receivers," said Conrad Trautmann, Westwood One's vice president, engineering. "Their systems integrate with both the front-end and back-end systems, which saves time and money in the entire production and traffic process."

For information contact Jared Nieuwenhuis in Seattle at (206) 753-3926 or visit www.fastchannel.com.

Harris Hires Williams, Touts New Legacy

Virginia Lee Williams joined Harris this summer as director of radio and systems sales. She is responsible for leading Harris' 40-person sales department for radio transmission equipment, radio and TV systems and integration services, and the Broadcast Sales Center.

Williams has worked recently in the retail and business software solutions industry, and Continued on page 12 ▶

CSS Delivers Custom Studios

Creative Studio Solutions designs, builds, tests and installs customized audio systems and studio equipment for radio and Internet broadcast companies. The company provides an engineering crew for installations or, if a client prefers, CSS will provide instructions for an in-house installation.

CSS also designs custom audio racks, remote broadcast recording packages and remote broadcast vehicles. CEO and Chief Engineer Andrew Rosenberg said the company fills a void.



Casey Fuller and Andrew Rosenberg of CSS pose at the Great Remote Giveaway Booth.

"The industry has few places to turn when it comes to studio design and integration," Rosenberg said. "Our studio designs are customized to meet a client's requirements and are delivered to the client tested and ready for installation and integration."

At the Radio Show, CSS designed and installed a radio studio that hosted four talk shows in three days for the "Great Remote Giveaway."

For information contact the company in Colorado at (303) 425-5005 or visit www.creativestudiosolutions.com.

SAS Offers 32KD Digital Routing System

Sierra Automated Systems promoted its new 32KD Digital Audio Network routing system. This is a 256x256-channel digital domain router in a 6 RU frame. It uses Enhanced Microprocessor Architecture; no one module is a master controller. Hot-swap power supplies and modules add reliability.

Distributed Time Domain Multiplexed bus architecture enhances fault tolerance and minimizes the effect of any single-point failure.

Twenty-one universal card slots provide versatility and interchangeability. Modules provide I/O interconnect options to RJ21, RJ45, DB25 or the SAS Euro high-density connector.

Three basic analog or digital modules of 32 channels in, 32 channels out, or 16 channels in/out are available. The 32KD's processors perform audio functions including routing, mixing, IFB, and sound processing. A/D and D/A conversion and distribution is at 24 bits.

Control may be by means of dedicated hardware control stations or SoftPanel software graphical control panels. Basic modules support the Rio Link, which uses a multichannel encoding process to allow audio I/O signals to be connected to a 1 RU chassis remotely located from the frame.



The remote linked chassis can be located up to 600 feet from the frame through CAT-5 cabling; optionally, optical fiber cabling can be used for distance and isolation benefits.

Administration and programming software have TCP/IP capability for control over a LAN/WAN or Internet.

For information contact the company in California at (818) 840-6749 or visit www.sasaudio.com.

Featured Inovonics Products at the New Orleans Radio Show

Interactive RadioData

Cars being delivered today are equipped with RDS/RBDS radios. The listener can program these radios to seek favorite formats. Don't be skipped over because your station lacks an RDS presence. We can help.

Our Model 711 Encoder (pictured) communicates with station automation to transmit song titles, phone numbers, contest results and promo or advertising messages. It also lets you hoist the "TA flag" to interrupt other program choices - even tapes and CDs - when your station broadcasts a traffic alert.

We also have a dirt-cheap "mini encoder" that sends out all the most important RDS identifiers. Now there's no reason NOT to jump on the RDS bandwagon!



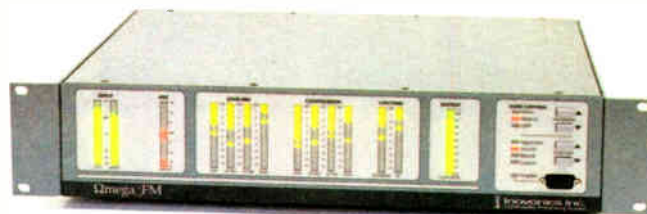
OmegaFM

Omega_FM is a 100%-digital, software-based 'air-chain engine.' It combines the raw number-crunching power of a fast PC with an advanced instruction set to create a comprehensive audio processor/stereo-gen without the need for DSP and other application-specific chips. This different idea in digital processing gives you a short signal path, with its attendant low latency, and a clean, bright, commanding sound, second to none.



Processing functions include gain-riding AGC, three independent parametric equalizers, 4 bands of leveling, compression and EQ, and split-band, distortion-canceling peak control.

Omega_FM is easy to set up and use. It comes with factory presets that can be used right out of the box, or you may connect any PC for unlimited control over all processing parameters. Omega_FM is available now.



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If any digital audio delivery system could have a "trust" button, DAD_{PRO32} is it. Live assist or automation, single radio station or regional cluster, you can trust DAD_{PRO32} to deliver 24/7/365. Put your mind at ease, choose DAD_{PRO32}—from ENCO Systems.

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► Continued from page 10

has radio roots as a news reporter and news director, and as general manager of Learfield Communications' satellite division. She has also worked in sales and management positions for Scientific-Atlantic and International Datacasting Corp.



Virginia Lee Williams

At the NAB Radio Show, Harris also promoted its new Pacific Legacy console, a modular board available in frames of 14, 22 or 30 input modules. A and B inputs accommodate analog and digital sources without the need for reconfiguration.

The Legacy joins the recently introduced BMXdigital, AirWave and Impulse in Harris' family of digital consoles.

For information contact the company in Ohio at (800) 622-0022 or visit www.harris.com.

Gepco V37 Connectors Ideal for Field Use

The V37 connector from Gepco is a durable DT12 connector; the series replaces the company's industry-standard VKC Series.

The V37 Series features a low-profile, all-metal, universal termination design.



Exterior components of the connector are made of hard anodized machined aluminum with reverse threaded backshell and backnut sections. The reverse thread prevents accidental loosening of the backshell.

Crush-resistant, the V37 is a good choice for mobile production work. It has a crack-proof neoprene insulator, gold-plated solder contacts are now standard and the V37 is compatible with existing DT12-type connectors.

For information contact the company in Illinois at (847) 795-9555 or (800) 966-0069 or visit www.gepco.com.

Jampro Does Turnkey

At the Radio Show in New Orleans, Jampro Antennas/RF Systems Inc. stressed its history of providing turnkey antenna systems.

To comply with a particular licensing requirement, Jampro's side-mount or panel antennas can be incorporated into a custom system and tested on its full-scale test range.

An example of such a system is found at Farnsworth Peak, Utah, where 12 FM stations share a master antenna system. The company promoted the durability of its products such as this multichannel system, in service for more than 30 years.

For information call the company in California at (916) 383-1177 or visit www.jampro.com.

Live365 Adds Global Targeting

Live365.com, an Internet radio aggregator and streaming service provider, now offers location-based content insertion.

The IP-based geo-targeting feature was

implemented to serve Live365's network advertisers, but Alan Wallace, Live365's senior vice president of communications, said, "The technology can also be used to insert local weather, news and other location-relevant material into Live365 streams."



While anyone can sign on to Webcast an Internet radio station on a barter basis with Live365, radio stations can take advantage of a suite of streaming subscription service fees that the company launched at the Radio Show.

The company offers a range of streaming service packages for radio, from a \$150-per-month basic package with capacity for 100 simultaneous listeners and 35 MB for file storage, to a \$750 premium package that allows 500 simultaneous listeners and 500 MB of storage.

For information contact the company in California at (650) 345-7400, ext. 130 or visit www.live365.com.

Scott Does the Split

Scott Studios showed a new split-screen feature for its SS32 digital automation system. The enhancement, designed for syndicated host Mancow, allows Scott users to spread the system's controls across two monitor screens for easier access.

Enhancements to the Scott Studios system also include "dynamic" hot keys, which can now appear on-screen in different sizes, allowing access to either a greater number of sounds at once or larger virtual labels on each sound.

The software now can supply copy for live-read events that appears automatically on-screen when the event is activated, a feature developed for New York classical station WQXR(FM).

The company introduced its Scott Sub ad insertion system, which allows production directors to designate spots with a "do not play on Internet" marker that automatically replaces them with alternate audio on a station's Internet feed.

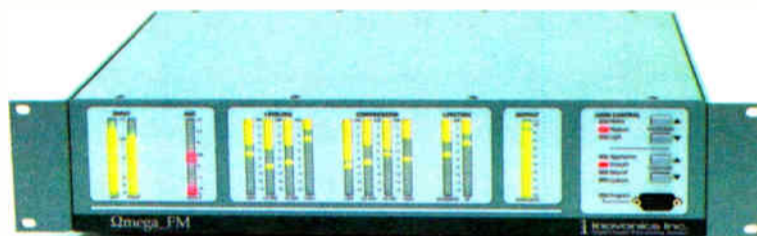
It also showed its new Scott Video system, which is being used at several radio stations to automatically stream music videos in sync with audio on Web sites.

For information contact Scott Studios at (888) GET-SCOTT or www.scottstudios.com.

Omega_FM Features No-Menu Surface

Inovonics' newest digital FM processor allows the user to navigate setup without any drop-down menus.

With Omega_FM, audio is gated and then leveled in three independent frequency bands to normalize program sources.



"It features analog and digital outputs and fast boot-up," said Ben Barber, senior development engineer.

Also from Inovonics is the 711 RDS/RBDS encoder, which is compliant with NRSC and CENELEC radio data standards.

The 711 stores information in non-volatile memory through any PC. The serial interface can be tied directly to station automation for sending song titles, phone numbers, contest results or other messages to the listener's compatible radio.

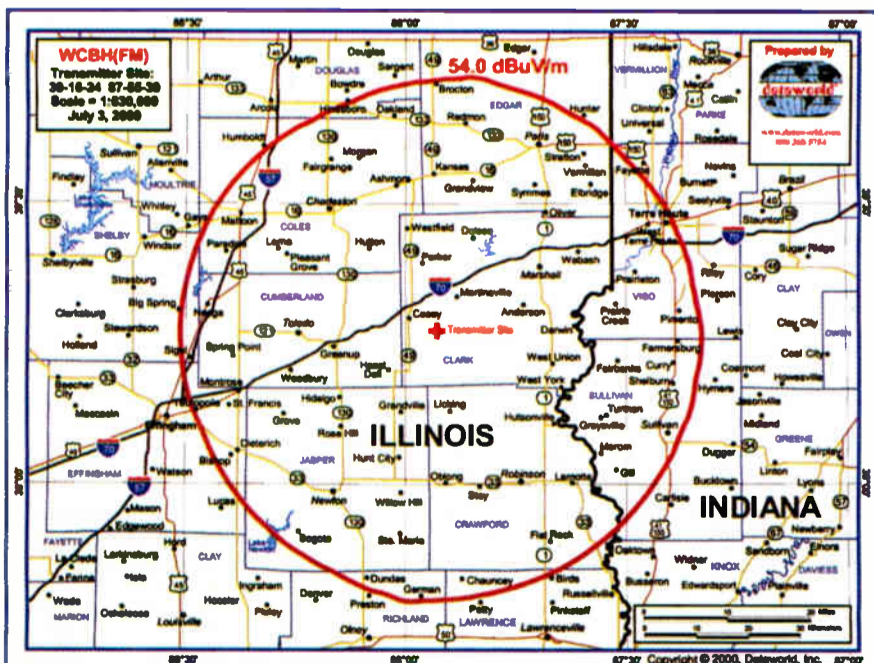
Contact Inovonics in California at (831) 458-0552 or visit www.inovon.com.

DataXpert Available Via Internet

Dataworld's DataXpert software product now is available via the Internet.

Licensed users can retrieve station technical information, audience data, contract information, contour maps and other reports, all of which are updated monthly.

DataXpert supplies AM, FM, TV and LPTV records. Also available is information about translators and wireless MMDS, MDS and ITFS.



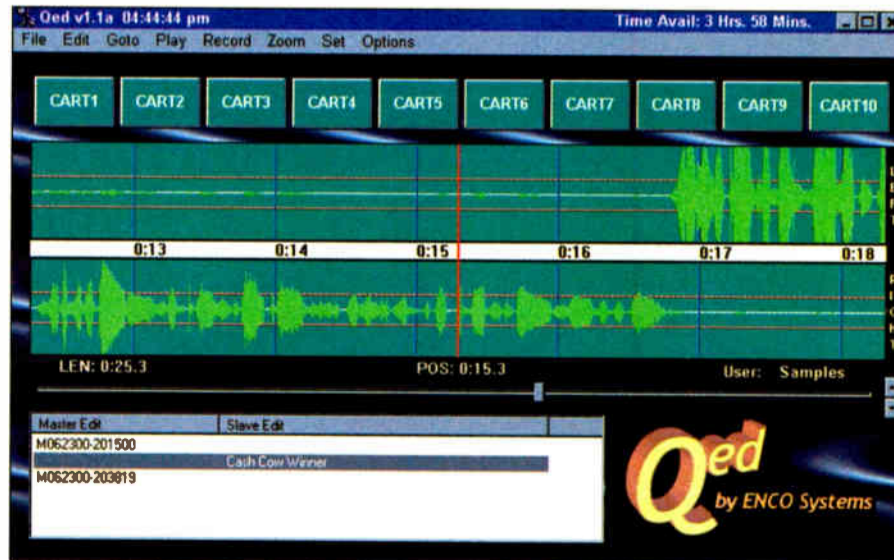
Dataworld also displayed color AM and FM station coverage map books. On each page, all stations of a given frequency are mapped across the United States, giving a visual display of allocations and coverage. The FM books contain an Area-to-Locate Study (ALS) for each channel. This allows users to locate channels available in any given location.

For information, call the company in Maryland at (800) 368-5754 or visit www.dataworld.com.

ENCO Adds Phone Editing Module

The DADpro32 broadcast and administrative software suite from ENCO runs on Windows 2000; the File Servers run on standard operating systems.

With capabilities for automated or live-assist operation, DADpro32 has modules for various recorders, routing switchers, graphic editing and importing audio files from other sources.



The Paperless Studio module can display news, traffic, weather and embedded sound bites. Voice tracking and interfaces for third-party music and spot scheduling software are supported.

A separate product, Qed is a simple two-track phone editor where the caller and host can be modified separately. Input can be analog or digital. This product can work with DADpro32 or as a standalone.

Contact ENCO Systems in Michigan at (800) 362-6797 or (248) 827-4440 or visit www.enco.com.

Rave Reviews!

"Excellent Product" — Doug Walker, Clear Channel, Cincinnati

"Telos has taken two great products [the Zephyr and the Zephyr Express] and made them better. They listened to the customer." — Raul Velez KNBR, KFOG, Susquehanna Broadcasting of San Francisco

"Telos asked us what we wanted and they put it in there... you can't ask for anything more than that."
— Paul Burt, Clear Channel, New Orleans

"It's even easier to use than the original Zephyr."
— Michael Black, WEOS, Geneva, New York (NPR affiliate station)

"The most popular ISDN digital transceiver in the country has a fresh new look... Zephyr Xstream, a slick, updated version of [the] familiar Zephyr."
— Steve Kirsch, Silver Lake Audio, New York

Telos
www.zephyr.com



World Radio History

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MediaTouch has Content Substitution

MediaTouch featured iMediaAdCast streaming media content substitution software, compatible with most digital automation systems. It substitutes alternate Web-only content over anything that is to be broadcast but not Webcast.

An important feature is encoder-side rather than server-side insertion into RealAudio or Microsoft Windows Media formats.

The company says future online music rights issues may arise and says iMediaAdCast was designed to substitute anything in the Web stream in order to avoid such crises.

Also on display was the iMediaTouch \$995 "On-Air" software package that includes On Air, Production, Voice Tracking and Lot Tools for a standalone workstation. iMediaTouch comes with built-in codecs for MP2, MP3,



WMA and ADPCM. The package enables support of any Windows-compatible audio card by means of incorporating efficient software-based encoding and decoding.

The iMediaTouch codecs are optimized for minimum CPU utilization and use a minimum percentage of CPU cycles to ensure skip-free on-air operation.

For information call the company in Tucson, Ariz., at (866) 299-2728 or Winnipeg, Canada, at (888) 665-0501, or visit www.imediatouch.com.

NPR Satellite Services Delivers

NPR Satellite Services launched the first national radio satellite service in 1979 and today features C-band and Ku-band satellite space segments in addition to hardware and uplink/network design assistance.

NPR Satellite Services helped pioneer Single Channel Per Carrier (SCPC) and now Multiple Channels Per Carrier (MCPC) technology.

The organization helps stations use existing equipment or build up a network incorporating Comstream products with the guidance of NPR Satellite Service engineers.

For information call the company in Washington at (202) 513-2613 or visit www.nprss.org.

SWR Model Improves Analog, Digital FM

Systems With Reliability announced a high-performance FM antenna known as Illumatron.

This single-lobe device can provide a quality signal in buildings and tunnels where other FM signals may be hurt by multipath.

Designed for digital broadcasters, the Illumatron also is available for analog installations. SWR promises improved signal quality and coverage, provided Illumatron is purchased with the recommended "Site Specific Engineering." The company offers a one-page questionnaire that will help SWR assess a client's specific needs.

Contact SWR in Pennsylvania at (800) 762-7743 or visit www.swr-rf.com.

Two New Transmitters By RFCast

RFCast unveiled the AT7K5 and AT1K5 AM solid-state transmitters, intended for 5-kW and 1-kW use respectively. These products span the AM extended band, with Class D high efficiency RF amplifiers.

Both units feature an LED diagnostic system for each detectable failure and rugged metal cooling blowers. Both are digital and AM stereo compatible and both also feature a built-in remote control interface.

For more information contact RFCast in Illinois at (630) 208-2200 or distributor Broadcast Richardson at (800) 348-5580.

Spacecom Portable IP Broadband Connections

Spacecom Systems' SpaceLink enables broadband Internet connectivity by bypassing the Net via satellite.

The system solves access problems by providing high-speed IP connectivity where none is available or Internet backup service that bypasses landlines.

SpaceLink combines traditional MPEG delivery with interactive IP and IP multicast. The company says it delivers virtually any format of data content.

Satellite IP connectivity bypasses local infrastructure and enables functions such as multicasting by eliminating router and firewall incompatibility. Rapidly deployable.

Continued on page 16 ►

The Net Effect

Connections to make, places to go: for your sports, music, news, crop reports, any kind of networking you want--through your network to the nation. NPR Satellite Services gives you the down to earth experience and years of engineering savvy to send out your message while keeping your original quality and content in.

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World Radio History

► Continued from page 10

SpaceLink serves data delivery, remote event streaming and emergency IP connection back-up needs by providing, typically, 384 kbps inbound and T1 or better, up to 36 Mbps, outbound data rates.

For information call the company in Oklahoma at (708) 534-2400 or visit www.spacecom.com.

Burk Updates AutoPilot

Burk promoted two products at the Radio Show.

Version 2 of AutoPilot for Windows will be released this fall. AutoPilot allows PC users to monitor and control transmitter

sites that use Burk's ARC-16 remote control system, including automatic logging and fault-recovery systems.

Burk also plans to release the ARC Plus, the next generation of the ARC-16 remote control system.

The ARC Plus will allow users to control 256 channels linked from 16 transmitter sites.

For more information contact the company in Massachusetts at (800) 255-8090 or visit www.burk.com.

which can control a 24x24 digital audio matrix through an E@sy port.

Contact AEQ in Florida at (954) 424-0203 or visit www.aeqbroadcast.com.

StarGuide Touts Universal Audio Server

DG Systems recently merged with StarGuide Digital Networks, and the two are now working on combining their technologies into a single component.

The new Universal Audio Server combines a StarGuide satellite audio receiver and a DGS audio receiver into one box, a combination the company says will allow stations to better manage all their incoming audio, from live network feeds to spot feeds delivered over DGS.

For information contact the company in California at DGS/StarGuide at (858) 452-4920 or visit www.starguidedigital.com.

Prophet Expands NexGen Line

Prophet Systems Innovations showed its new entry-level automation system, NexGen Digital NS. The system includes many of the features of the fully-loaded NexGen Digital Broadcast system,

including VoiceTRAC, which allows talent to record the elements for a four-hour show in as little as 30 minutes; CD/Extractor Pro, for digitally copying audio from CDs in less than real time; and Audio Format Converter, for importing audio in other formats.

The NexGen Digital NS is priced at under \$20,000.

For information call Prophet in Nebraska at (877) 774-1010 or visit www.prophetsys.com.



AEQ Swings Out

AEQ showed a prototype of its Swing portable audio codec, to be released in the spring.

The Swing can accommodate an ISDN line using G.722 protocol and a POTS line simultaneously. When using the POTS line, the Swing incorporates a frequency extender. The Swing includes a port to allow external control from AEQ's E@sy system.

AEQ also showed its Impact switchers,

Studer Highlights Air Console

The Studer On-Air 2000M2 is an ergonomic and intuitive mixing console aimed at medium to large broadcast studios.

The 2000M2 is modular; it can be configured with up to four fader sections, containing six channel faders in each for 4, 12, 18 or 24 fader channels.

Parameter settings, such as equalization, level or balance, are displayed on a touchscreen above



each fader strip. The user can access all configuration possibilities by means of touchscreens.

Snapshots and configurations can be stored and retrieved via memory card (PCMCIA). Stations often use the same console type for on-air and production applications. With the memory card, settings can be loaded to turn a production console into an on-air console and vice versa.

A variety of accessories and options are available for the On-Air 2000M2, including input and output modules, telephone hybrid module, serial interface module and a studio talkback box.

For information call the company in California at (818) 841-4600 or visit www.studer.ch.

Armstrong Makes AES/EBU Exciter Connection

The Armstrong FMX LCD AES/EBU Input Module is available, designed as an option for the company's LCD excitors.

Exciters can be ordered "digital ready" with this module for immediate interface, or in the standard analog style. Armstrong says field upgrades from analog to digital take a qualified engineer less than a half hour to complete using this module.



FM-500LCD Amplifier

Another recent product from Armstrong is the FM-500LCD solid-state amplifier. "The FM-500 features two 300-watt modules for extra reliability, and a soft failure feature to keep you on the air," said Sales Manager Ernie Belanger. "It also has broadband design so it requires no tuning."

Contact Armstrong in New York at (315) 673-1269 or visit armstrongtx.com.

It's All About Personality.

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Makin' Radio More Fun Instant Replay® puts 1,000 of your favorite noises right in front of you, ready for instant playback. No other audio player makes it so easy to be spontaneous and creative. It's fast, it's easy, and it's fun. Here's the deal. One Instant Replay can store over 24 hours of stereo sound. That's 24 hours of sound effects, spots, promos, even entire songs - anything - and you can play any of them back instantly by pressing one of 50 Hot Keys! There's no need for training. It's self-contained and works right out of the box - just push the buttons and go!



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"It's rock solid."

Ron Crider of Radio Colorado Network has some pretty cool things to say about BSI's digital automation...

August 21, 2001

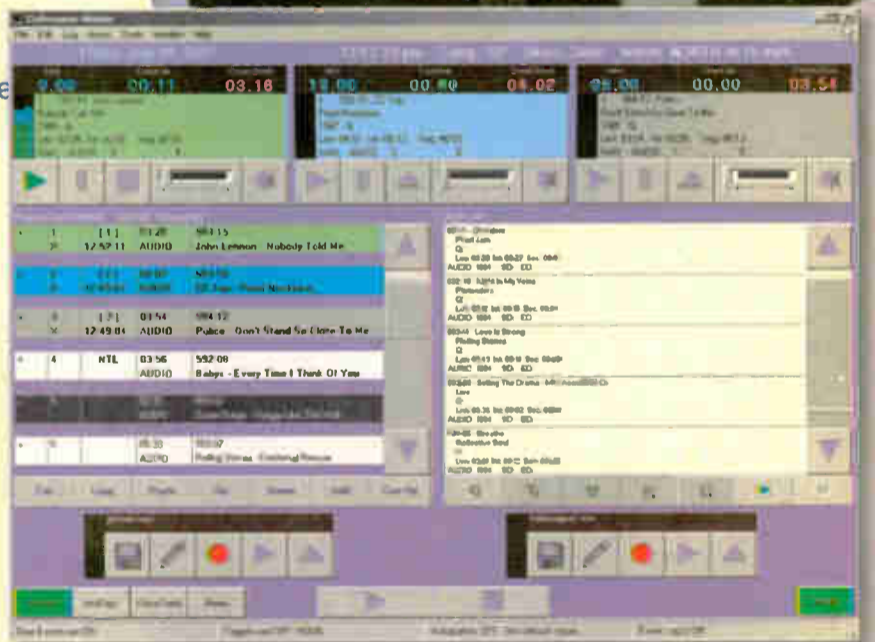
Broadcast Software International
1925 Bailey Hill Road, Suite A
Eugene, Oregon

Seldom do I take the time to write a letter to a manufacturer praising a product. In the case of BSI, this note is long overdue. January of this year, I installed BSI's digital automation to operate AM 1060 KLMO Denver/Longmont. The reliability using Windows 2000, "well it's rock solid". The multi-tasking is the best. We have numerous delayed programs, as well as live joins to 14 different satellite receivers every day. BSI has done a job above and beyond our expectations. The WebConnect permits our Indianapolis News Department to e-mail our weather reports as well as our local news directly into BSI's digital automation program without an operator here in Colorado. The temperature is frequent and always correct. Our imagination seems to be our only limitation to what we can do with BSI's digital automation. Since KLMO coming on line, we have installed another BSI automation program on KWYD Colorado Springs for its Christian format and are now installing BSI's digital automation to operate the entire Radio Colorado Network.

I have been in broadcasting for 40 years. The BSI systems are cutting edge, easy to operate, and reasonably priced.

Thank You BSI.

Ron Crider
President
Radio Colorado Network



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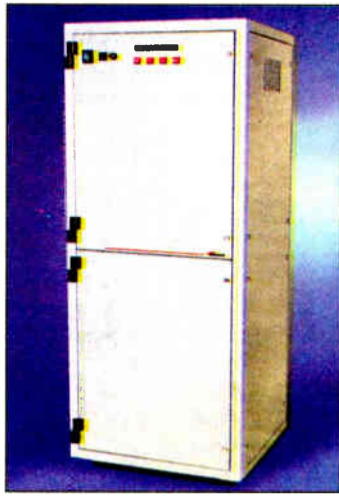
Stay Dry With Andrew

Andrew introduced the NXT2000 DryLine automatic nitrogen membrane dehydrator. The NXT2000 is designed for broadcast system transmission lines from 100 to 1100 cubic feet in volume.

The NXT2000 includes user-programmable functions and automatic regeneration; it requires no external nitrogen tank. Its dehydrator operates only when needed, reducing wear and maintenance requirements.

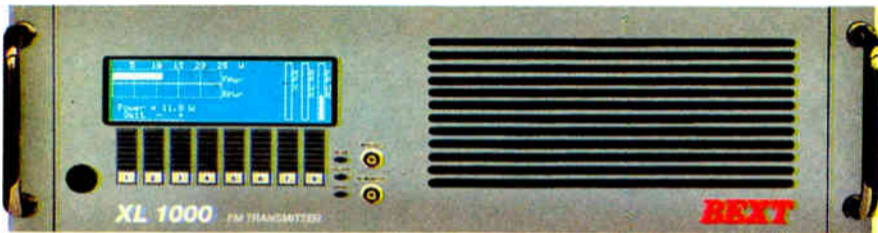
Andrew also showed its new rigid transmission line, available in 4-inch, 50-ohm; 6-inch, 50-ohm and 7-inch, 75-ohm configurations, as well as its VXL series of flexible transmission cables.

For information contact the company in Illinois at (800) 255-1479 or visit www.andrew.com.



Bext Offers XL 1000

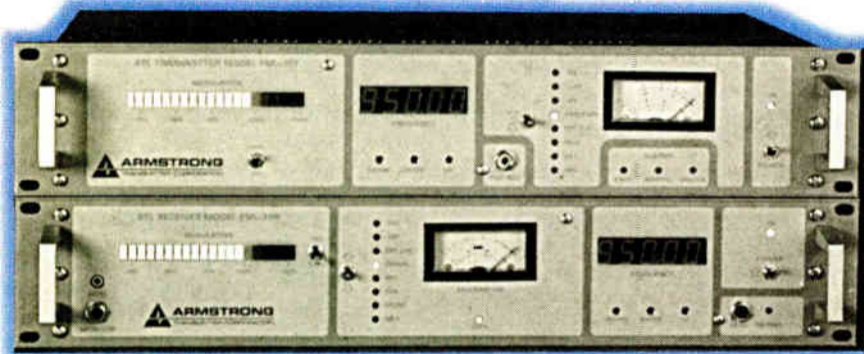
The newest FM transmitter from Bext is frequency agile, covering 87.5 MHz to 108 MHz. The unit includes a low-pass harmonic filter and modular, rear-panel plug-in design. The smaller XL 500 has adjustable power output from 5 to 500 W; the XL 1000 is adjustable from 5 to 1,000 W.



Another new line is the FC 2000, 4000 and 6000 FM broadband MOSFET amplifiers. The numbers refer to the rated output power. The units have automatic gain control providing fixed output power even in case of fluctuating drive power. The products are broadband, with no tuning requirement.

Contact Bext in California at (619) 239-8462 or visit www.bext.com.

Frequency Agile STL Systems



▲ If you are looking to deliver clean, crisp audio to your transmitter via microwave, Armstrong FML-10 STL system offers unsurpassed audio purity in a rock-solid, feature-packed package.

▲ Built to tough manufacturing standards throughout, FML-10 system features microprocessor controllers, advanced PLL circuitry, ultra linear VCO and front panel frequency programmability with digital frequency readout.

▲ Currently in service at over 300 stations in 21 countries, this field proven design is a "rock-solid" STL choice for any station.

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BSI Releases Simian, Two Other Programs

Broadcast Software International hosted a riverboat gathering in New Orleans and announced the release of three digital audio programs.

Simian digital automation can heal itself of errors and will contact BSI if something isn't right. BSI can remotely correct or repair an installation before the user is aware of the problem.

Simian incorporates capabilities for interstation communications and streaming spot substitution. It is touchscreen-enabled and will support tagging and simultaneous multiple playback of professional audio file types.

Simian costs \$499 with a mandatory \$99 per month Preventive Tech Care subscription which includes telephone support and software updates.

TimeShift continuously will record an incoming signal that can be randomly accessed or played back with a time-offset. Broadcasters in any time zone can delay satellite feeds continuously. TimeShift, priced for \$999, can be used to create "best of" shows. It will interface with Simian to combine satellite programming with live broadcast or hard-drive automation. The program can store a year's worth of network programming, including cue tones, so broadcasters can insert local spots. This will eliminate the need to "dub the network feeds" for sports, business or other features.

BSI also touted a new audio capture software system called Skimmer that can record a year of audio, with any minute of any day accessible instantly. It costs \$299.

For information contact the company in Oregon at (541) 338-8588 or visit www.bsiusa.com.

Shively Is Ready for IBOC

An IBOC high-level (i.e., post transmitter) injection filter of the type used for all of the USA Digital Radio test sites requiring filters was displayed by Shively Labs. USADR was a predecessor of iBiquity Digital.

Shively called it the only compatible equipment to be licensed to use iBiquity's trademark.

Additionally, Shively is developing an alternate IBOC technology involving the mounting of two antennas in the same aperture instead of using the filter.

Shively says its antennas use a ring-stub design rendering them particularly suitable for directionally licensed FM stations.

For information call the company in Maine at (207) 647-3327 or visit www.shively.com.



LPB Exhibits Blue; Touts Longer Boom

LPB Communications introduced a longer, 46-inch model of its new Silent Boom studio microphone arm. The Silent Boom minimizes mechanical noise by using twangless flocked springs. It features an extruded aluminum frame that eliminates echoes and accommodates snap-in installation of the mic cable. A Delrin pivot bushing fits into a standard mounting hole or an optional riser.

The Blue 5c console features five stereo channels with 10 inputs, made versatile and modifiable by means of interchangeable Beissel cables. These incorporate inline amplifiers and adapters connected to the board and supplied power by means of RJ45 connectors.



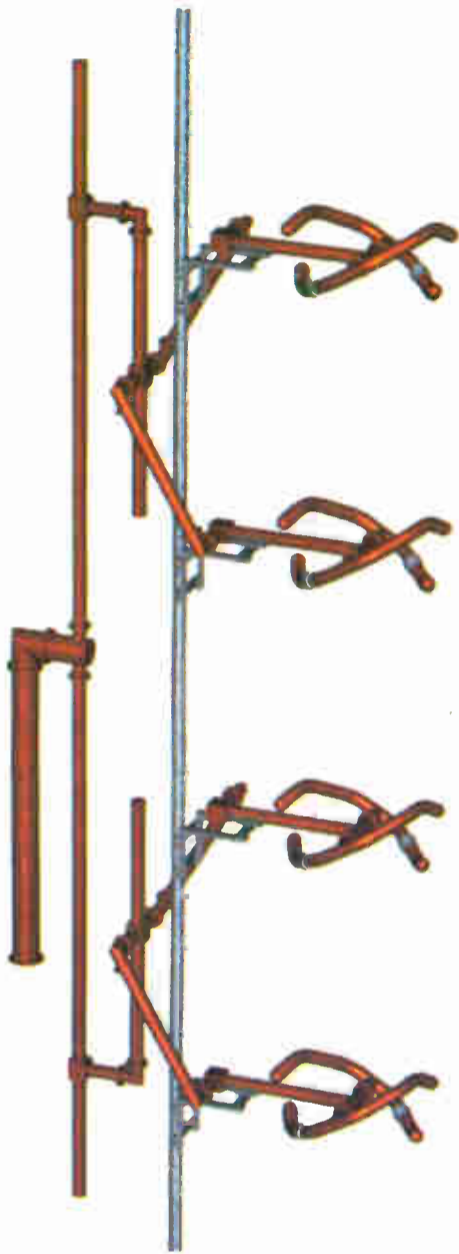
Incorporating two stereo and one mono output busses in addition to remote starts, tally and muting, the Blue 5c is adaptable to various remote and studio applications.

Also recently, LPB acquired the Omnitronix transmitter line, and has renamed it LPB Omni. Featured are AM, MW and SW transmitters. AM transmitters are available in 1 to 50 KW ratings.

For information contact equipment dealers or call the company in Pennsylvania at (610) 825-4100 or visit www.lpbinc.com.

ERI Provides Axiom Solution

ERI told attendees about its Axiom multi-station side-mounted FM antenna. The Axiom can accommodate 10 or more stations. Its design incorporates three-stage transformation, shape-factored elements and feed-point reactance compensation. The Axiom also uses ERI's "continuous solid contact" interbay connection system to eliminate wear-and-tear bullet failures.



Axiom Model 4-92-4S

The Axiom is available in a variety of configurations to satisfy gain and pattern requirements.

Contact ERI in Indiana at (812) 925-6000 or visit www.eriinc.com.

BE Ramps Up for IBOC

Announcing agreement on licensing terms for Ibiqity Digital's in-band, on-channel digital broadcasting technology, Broadcast Electronics said it will integrate Ibiqity technology into a BE line of IBOC transmitters and exciters.

A technology demonstration of a new IBOC exciter emphasized three features of the new design:

- A digital modulator creates a complex signal incorporating analog and digital components feeding a linear RF amplifier stage. BE said the output of the exciter will feed the company's existing line of FM transmitters while operating in the analog only mode
- The digital modulation is direct on-carrier FM.
- The exciter can be controlled from the front panel or through a software interface package.

For information call the company in Illinois at (217) 224-9600 or visit www.bdcast.com.

Continental Adds Dealers, Staff

Continental Electronics named Dave Hultsman as its broadcast channel manager. Hultsman will be responsible for customer relations programs and overseeing its dealers. He previously worked as a domestic sales manager.

The company also named some RF Specialties offices as authorized dealers of its 816R FM transmission products.

Authorized to work as dealers are RF Specialties offices in Seattle; Concord and Santa Barbara, Calif.; Dallas and Amarillo, Texas; Valparaiso, Fla.; and Pittsburgh and Southampton, Pa.

For information contact Continental in Texas at (800) 733-5011 or visit www.contelec.com.

RFS Offers FM Sidemount

The 828 Series FM antennas from Radio Frequency Systems Broadcast are sidemount antennas for circular/mixed polarization. They are available with various power ratings and feature broadband operation to facilitate antenna sharing.

Options include pressurization and additional radomes. The element will tolerate a degree of light icing, but additional radomes are needed for more severe conditions.

The 828LP can be arrayed up to six levels. Other versions can be arrayed in any number of levels. There are three versions: 87.5-98 MHz, 94-104 MHz and 98-108 MHz.

Contact Radio Frequency Systems' broadcast division in Connecticut at (203) 239-3311 or visit www.rfsamericas.com.



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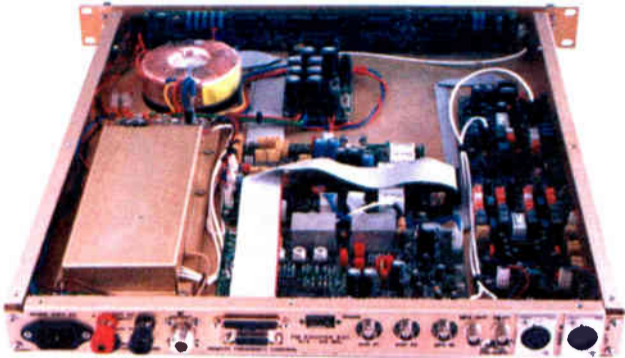
Find out how at 800.231.5870 or www.logitekaudio.com

Logitek

Larcan-TTC Has FM LP Transmitters

A line of low-power, rack-mounted transmitters was introduced by Larcan-TTC at the NAB Radio Show.

Incorporating the components of a complete FM transmitter in one or two rack units, the FMT line offers power levels of 25, 100 and 250 watts. The FMT-25, at 1 RU high, is touted as the most compact all-inclusive transmitter on the market.



Larcan FMT-250

It uses a frequency agile synthesizer and can be set for operation on any FM channel. Inputs may be wideband composite or, optionally, analog audio using a built-in stereo generator. The transmitter can be monitored via an RS-485 telemetry interface.

At 2 RU in height, the FMT-100 and FMT-250 are FM transmitters with 100 and 250 watts output respectively.

Larcan's RX1-RBR FM relay/rebroadcast receiver is designed to be paired with the FMT series transmitters for off-air rebroadcasting purposes such as a translator. It has tracking front-end filters and tracking demodulator to ensure maximum selectivity and audio performance. Failover diversity to another receiver for purposes of redundancy is standard.

For information call the company in Colorado at (303) 665-8000 or visit www.larcan.com.

Comrex Matrix Puts Wireless to Use

Comrex unveiled software that will allow its Matrix codec to work with wireless phones, expanding its existing POTS and ISDN capability.

Wireless use of the Matrix requires a GSM system wireless phone, which can be connected directly to the Matrix's data port, providing 5 kHz audio.

The Matrix includes two mic inputs, one headphone output and one line-level output, as well as a -10 dBu input for a MiniDisc or DAT player.

For information contact the company in Massachusetts at (978) 263-1800 or www.comrex.com.



Dielectric Goes Broadband

Dielectric Communications says its latest product is a response to a request to develop a side-mount antenna with broadband characteristics allowing up to nine FM stations to broadcast simultaneously.

Citing the demands of joint ownership groups desiring multiplexed transmission facilities, Dielectric developed the DCR-Q Broadband FM Antenna. Exhibiting less wind loading than panel antennas, the DCR-Q provides an azimuth pattern characteristic of its side-mount design.

The model can handle nine FM stations with a per-bay power handling capacity of 35



kW, and input line sizes up to a dual 6-1/8-inch configuration. This allows master antenna total input power of 200 kW.

A side-firing helix design of four dipole elements provides true circular polarization. The Dielectric DCR-Q exhibits up to 12 MHz of bandwidth, spanning the FM broadcast spectrum. An interbay spacing of .85 lambda provides minimum radiation in a downward direction.

For information call the company in Maine at (800) 341-9678 or visit www.dielectric.com.

Musicam USA Shows Voyager

Musicam USA showed its Voyager digital audio codec, designed to provide audio quality up to 15 kHz (mono) over a single POTS line.

Voyager offers users very low (100 ms) audio delay and can provide its full audio quality at connection rates as low as 24 kbps.



Audio frequency response degrades smoothly as line connections fall below 24 kbps. Voyager includes a telephone coupler that can provide an analog connection should a digital transmission be impossible.

For information contact the company in New Jersey at (732) 739-5600 or visit www.musicamusa.com.

STS Delivers Net Sound

SRSWOWcast Technologies is promoting a new Internet radio audio processor, the WOWcaster.

It's a small, lightweight unit that fits in any rack. WOWcaster is a server-side processor. It incorporates audio enhancement technologies from parent company SRS Labs. The company said it improves compressed stereo or mono audio quality, delivering the same or better audio at much smaller bit rates.



The SRS WOWcaster Internet Radio Audio Processor

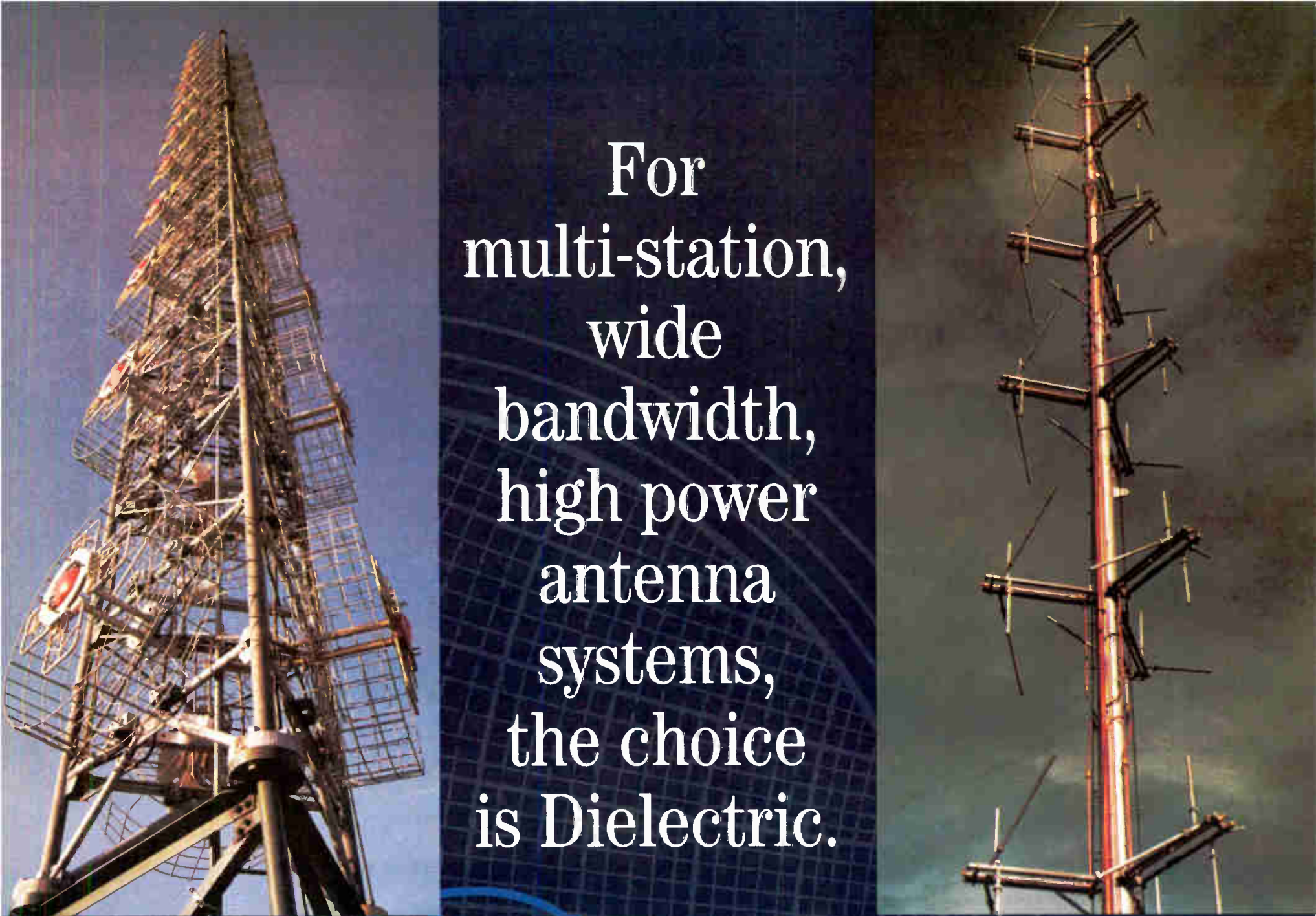
"With our WOW and TruBass audio enhancement technologies, the WOWcaster allows Webcasters to stream at a lower bit rate and so they save money on distribution costs while delivering this great sound," said Jennifer Drescher, vice president of marketing.

The WOWcaster requires no special hardware or other downloads for listeners and is compatible with popular audio encoders and player, including Microsoft Media player, RealPlayer, Quicktime and Music Match.

The annual licensing fee for the WOWcaster starts at \$695, which includes technical support and technology updates. The annual license fee will be based on the number of hours a station streams per month.

A demonstration clip is available at www.srswowcast.com/demo/media/asp/wow96k.asp, where you will hear a 32k music clip processed with the WOWcaster compared with an unprocessed 96k stereo clip.

For information contact SRS Labs in California at (949) 442-1070, ext. 5110 or visit the Web site at the address provided above.



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TieLine America Demonstrates POTS Connectivity

TieLine America showed its i-Mix Intelligent Portable Studio POTS and POTS/ISDN codec and five-channel mixer.

It incorporates low-delay codecs providing 15 kHz audio bandwidth over POTS or ISDN connections. The i-Mix also offers an analog POTS hybrid plus compatibility with G.711 and G.722 standards.

Rather than the modem controlling the connection, reliable connectivity is achieved by means of a custom modem controlled by software. The company says this approach produces great reliability from a POTS connection for "STL-grade stability."

TieLine showed a reconnect duration of 15 seconds after literally pulling the plug of the telephone connection; renegotiation took 1.5 seconds. Also demonstrated, the i-Mix features a connection memory that reestablishes the identical connection automatically after a disruption of any duration, minimizing lost airtime.

Additional features include 12 VDC operation, the ability to control remote mix levels from the studio, automatic gain leveling, intercom between headsets, mix minus, PA outputs and control of studio equipment from the remote location.

For more information, call the company in Indiana at (888) 211-6989 or (317) 259-8000 or visit www.tieline.com.



Cox Radio Chooses Wheatstone Equipment

Cox Radio, among the largest radio broadcasting companies in the United States, contracted with Wheatstone for six audio consoles and seven suites of Preference and Eclipse Series studio furniture for a new, three-station facility in Birmingham, Ala. The stations are WBHJ, WBHK and WAGG.

The consoles purchased included two Wheatstone D-5000 digital audio consoles, three Audioarts Engineering R-60 radio consoles and one MR-40 multitrack production console. The D-5000s are used in the WBHK and WBHJ on-air studios; the R-60s and the MR-40 are used for production and dubbing.



The studio furnishings included the Eclipse series, with plentiful rack space, top and bottom ventilation and a front steel U-beam in the console counter for heavy-duty support.

For information contact the company in North Carolina at (252) 638-7000 or send e-mail to e-mail@wheatstone.com.

BRS Launches Net Radio Service

BRS Media dotFM service offers a turnkey Internet radio service, My Radio.FM, which provides a ".FM" Web address, Web hosting with e-mail and a customized version of AllCast's "peer-to-multi-peer" streaming broadcast software called the AllCast Broadcaster.

The AllCast Broadcaster sends content directly to users where it then directs the content to other users. The result is a significant reduction in bandwidth requirements, which results in lower costs for streaming stations, according to the company.

"For example, a typical radio station might pay up to \$11,000 per month to reach a constant online audience of 200 simultaneous listeners," said George T. Bundy, chairman and CEO of BRS Media Inc. "Using the AllCast Broadcaster, that online audience can be served for starting under \$240 per month."

To hear the AllCast Broadcaster at work, visit www.webcasti.fm/services.html, where the two stations in beta test of the service have "listen live" links.

For information contact BRS Media in San Francisco at (888) 697-2860 or visit www.brsmmedia.com.



PSI Shows FHR, FML Lines

Propagation Systems touted its line of FM antennas, including the FHR Rototiller, a high-power, series-fed design with internal feed point.

The antenna can handle input levels exceeding 60 kW and is suitable for multistation operation.



Low-power FM antennas include the FML series, designed for the budget of the low-power broadcaster.

Lightweight design offers many of the features as the company's full-service antennas at lower cost. The line is available in multi-element arrays and for power levels up to 3 kW.

For information contact the company in Pennsylvania at (814) 472-5540 or send e-mail to sales@psibroadcast.com.

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Rules on ROM, Updated Often

"Keeping up on all the changes in the FCC regulations is a daunting task," said Barbara Vaszil, editor of this series of CD-ROMs available on a subscription basis from Rules Service Co.



There are individual discs covering each category of commission rulings such as experimental radio, public mobile services and cable television relay services; CDs can be purchased in groupings at discount quantity prices.

The company has published print materials since 1950 but recently made CD-ROM versions available as well. The discs are password-protected.

Contact Rules Service Company in Maryland at (301) 424-9402 or visit www.ruleserv.com.

Marantz Exhibits PC Card Recorder With 1 MB Capacity

The Marantz Professional PMD690 records digital audio files that can be transferred into a computer by inserting the recorded PC card into the computer's PC card slot.

The Marantz recorder's Type III PC card slot is compatible with Compact Flash (with an adaptor) and ATA-size PC cards; both media are available at computer and electronics retailers. The slot also accepts IBM MicroDrives. These miniature removable hard drives have capacities as high as 1 MB.

Compressed MP2 digital stereo audio files recorded on the PMD690 can be stored as MP2 files or in the broadcast WAV standard (BWF). The unit also permits uncompressed recording in WAV file format. Price: \$1,499.

For information, contact the company in Illinois at (630) 820-4800 or visit www.super-scope-marantzpro.com.

Audemat Unveils Improved Meter

Audemat SA introduced its FM-MC4 mobile RF field-strength meter and baseband analyzer. The rack-mountable unit is based on the earlier FM-MC3.2, offering broadcasters a way to track signal quality as they drive around their market.

Like the earlier model, the FM-MC4 includes RF metering and audio modulation monitoring capabilities, with the ability to record measurements from moment to moment. They can be replayed, along with actual program audio, upon returning to the office.

The new model adds three selectable IF filters to improve metering performance in high- and low-RF strength areas, as well as an improved software package. Audemat's U.S. Sales Manager, Christophe Poulain, described it as "more ergonomically friendly" than the previous version.

Audemat also showed the latest version of its Goldeneagle FM monitor, which allows remote monitoring via the Internet of up to 40 FM stations in a single market. The monitor provides signal-strength and audio quality measurement via a TCP/IP interface that can be accessed from anywhere world. Users can use Goldeneagle for remote listening to program audio and keep track of transmitter fail-

ures and other technical problems.

And Audemat announced a partnership with StratosAudio, providing the interactive broadcaster with Goldeneagle units to monitor broadcasters' use of its products.

For information contact the company in Virginia at (866) AUDEMAT or visit www.audemat.com.

Gentner on the Line

Gentner promoted its TS612 multi-line telephone hybrid system.

The TS612 includes two internal digital hybrids that can interface with six telephone lines (expandable to 12).

Gentner also showed its ScreenWin Windows-based call-screening software. ScreenWin works with the TS612 to collect and display real-time information for call screeners and talk-show hosts, including which caller is on-air, who is on hold, and how long each caller

has been waiting or talking.

Contact the company in Utah at (800) 945-7730 or visit www.gentner.com.

Superior Electric Has Voltage Controls

WHR Series Stabiline voltage regulators stave off irregularities caused by power demands that in many areas are growing faster than generating capabilities.

"Sags and surges can do damage to equipment worth tens of thousands of dollars," said Ted Gladis, regional sales manager of Superior Electric.

"Impulses, spikes and transients can reach 6,000 volts, and it's important to protect your electrical equipment."

Stabiline voltage regulators can come in single- or three-phase models with a range of power ratings with fast response time.

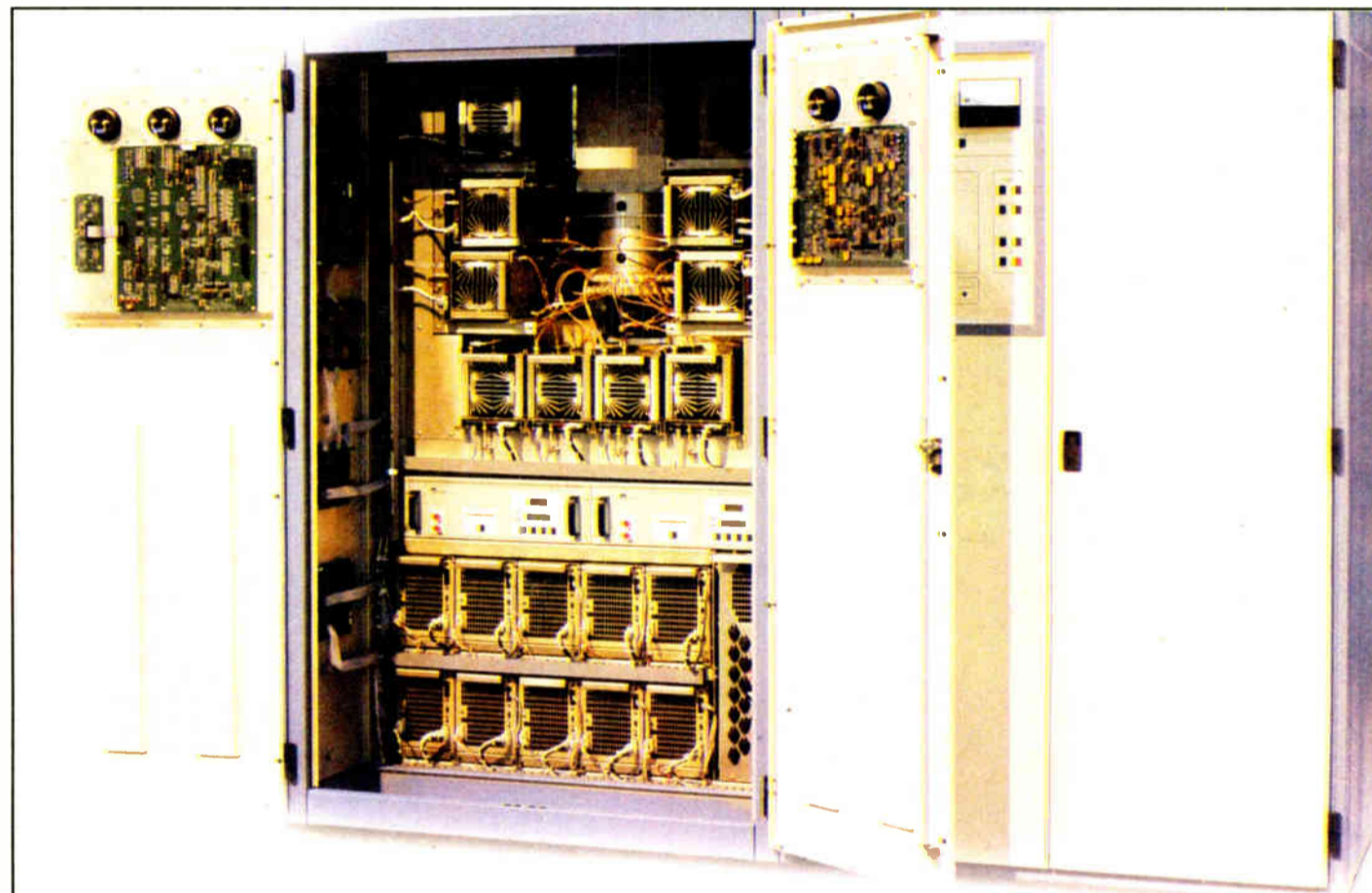


Superior Electric also makes the TVSS line of transient voltage surge suppressors.

"Lightning can actually consist of four to six hits that may be in excess of 200,000 amps," said Gladis. "Our products are designed to function as permanent protection when properly selected, applied and installed."

Models range from the zero-tolerance TVSS300 to the TVSS60.

Contact the company in Connecticut at (860) 585-4556 or visit www.superiorelectric.com.



40,000 Watts Solid State FM Power.

The Nautel Q20/20 comprises two 20 kW stand-alone FM transmitters fully integrated to operate as a 40 kW active reserve transmitter system. For more than 30 years Nautel has built the best radio transmitters by blending solid state technology and innovative engineering design. The Q20/20 provides reliability and peace of mind through built-in redundancies — in all the world you won't find its equal.

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Juggling Too Much? Harris Can Help!

Taking care of today's broadcasting needs while moving toward a digital future is a tough juggling act. You need to maintain and, perhaps, upgrade current systems. Maybe you're even contemplating complete station makeovers. Fortunately there's a company with the resources and dexterity to help you maintain your balance: Harris.

Automation

Whether you need single-channel, multi-channel, or news solutions, Harris has a scalable automation solution to fit your precise requirements.

Transmission

Harris has everything from replacement parts for your current transmitter to a new analog or digital transmission system.

- TV - UHF, VHF, DTV, DVB-T
- Radio - AM, FM, IBOC, DAB
- STL - single to multiple site linking

Systems

Who but Harris offers everything from a single console to the design and installation of entire radio, TV, and mobile studios? Come see our line of DTV products to help you manage your entire system.

Service

Harris installs, maintains and repairs everything it sells. And our broadcast training centers are available to make your team as self-reliant as possible.

Don't Drop the Ball

Let us show you our newest solutions. Come to our booth to discuss your particular balancing act. You'll find us in booth L5023, ready to help.

next level solutions

SERVICE

SYSTEMS

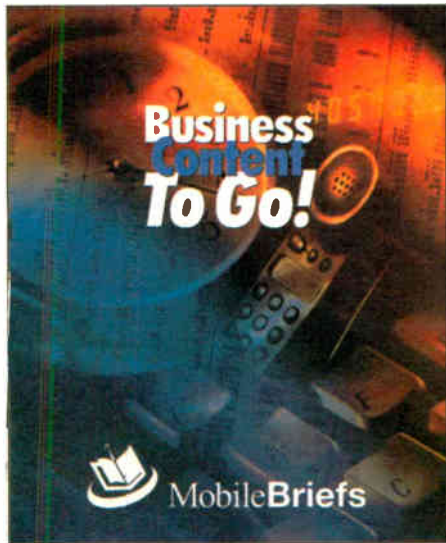
AUTOMATION

TRANSMISSION

Professionals' Custom Business News

MobileBriefs provides customized business reports for a radio broadcaster's Web site visitors.

The company draws from a base of business book summaries, industry-specific magazines, business news and best practices that allow listeners to create a personalized broadcast profile from a section of a station's Web site hosted by MobileBriefs.



A user inputs her "Personalized Broadcast" profile and commute time in the MobileBriefs section, which looks and feels like the station's site, then transfers her show from the Internet to the device of her choice (Palm Pilot, Handspring, Blackberry, MP3 player). The service is compatible with most major wireless devices.

"Most people have poor or limited selections of business audio while commuting," said Doug Jones, director of sales, MobileBriefs. "This is especially true of audio books and news within their industry and job function."

For information call Doug Jones in Georgia at (678) 523-9582 or visit www.mobilebriefs.com.

RDS Touts Replicator

Register Data Systems demonstrated its program delay and automation replication system, which it says is unique in the market.

The Replicator captures programming, including automation signaling, and reproduces it at any later time, repeating relay closures triggering outboard automation systems exactly as originally received.

Program sources can include almost anything, from satellite receivers to telephone auto-couplers. Automated delay is useful for program elements such as church services to network fed newsbreaks.

An optional switcher accomplishes selection of sources. One stereo or two mono programs may be recording while airing another program. Playback may begin before the recording is complete.

RDS also demonstrated an enhancement to its Phantom digital automation system. Known as a SNAP server, the device functions as a plug-in audio file server, adding hundreds of hours of storage space to the Phantom's capabilities.

The capacity is determined by the hard-drive size chosen for the SNAP server. The server has no control interface of its own, and simply "snaps in" gigabytes of storage.

For information, call the company in Georgia at (800) 521-5222 or visit www.registerdata.com



Nautel Shows Q Series

With up to 44 kW in a dual transmitter or up to 22 kW in a single transmitter, the Q Series line from Nautel saves floor space and adds redundancy to traditional transmitter design.

"It's on-air serviceable, and you can get four parallel redundant rectifiers," said Gary Manteuffel, manager of broadcast sales.

The Q series includes an AC Line Protection Unit, which provides first-level phase-to-ground protection for the site, equipment and personnel. The input terminal incorporates second-level phase-to-phase MOV protection devices. Third-level protection comes from six MOVs, which are installed across each rectifier. After the rectifiers, the low-pass filter of the AC/DC power supply adds a fourth level of transient protection.

Contact Nautel in Nova Scotia, Canada, at (902) 823-2233 or visit www.nautel.com.

Logitek Offers Ergonomic, Modular Console

The Logitek Numix Digital Console has a low, narrow appearance designed to help air talent see each other more easily. The layout allows video screens to be placed within easy reach and where they are clearly visible.

A Selector Wedge is a section that has been redesigned to include 12 large user-programmable buttons plus a number of other function buttons. The small LCD displays have been replaced with a large, full-color display with room for graphics and text messages from hard-disk systems.



Logitek also unveiled a 24-button Wedge that can be used to program transport controls for recorders, channel selectors for satellite receivers or phone system line selectors.

Contact the company in Texas at (800) 231-5870 or visit www.logitekaudio.com.

Orban Takes to the Field

The Sountainer from Orban is a portable, real-time MP3 recorder designed for professional audio field recording.

Users can select from four audio quality standards: CD, FM, long play and voice. Audio is stored on standard multimedia cards.

The Sountainer is no larger than a deck of cards, measuring 2.44 by 4.33 by 0.94 inches. It weighs less than 1/3 of a pound. The display is an easy-to-read LCD.

Using standard AA batteries, operating time is 4 hours in recording mode and 8 hours in playback mode. Recording capacity is 16 to 256 MB, stored on multimedia cards (MMC); two separate slots are available.

Interfaces include 3.5 mm stereo mini jack and Universal Serial Bus (USB). Price: \$599.

For information contact the company in California at (510) 351-3500 or visit www.orban.com.



Questions to ask before you buy a transmitter

1. How much power do I need?
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SBE NEWS

Perpetual Motion Education Machine

Terry Baun, CPBE

The author is chair of the SBE Certification Committee.

I think every engineer at one time or another has considered seriously the possibility of perpetual motion.

It seems so logical: Connect a motor to a generator that provides the power that drives the motor that drives the generator that provides the power that drives the motor that drives the generator ... Well, you get the idea.

But the simple truth is that the application of outside energy is required in order to accomplish any task. Nothing is truly self-sufficient. After all, perpetual motion is only an unrealizable concept.

Demand

And so it is with engineering education. At one time, we in the SBE thought that by setting standards and administering tests, we could not only benchmark the achievements of our members, but also provide the stimulus that would create additional educational opportunities for the broadcast industry.

Unfortunately, that idea turned out to be just another perpetual-motion dream. While it is critical that we recognize the educational achievements of broadcast engineers by offering certifications, we don't see how that effort directly promotes additional engineering education. We seem to be missing a piece of the puzzle.

Our educational system is based completely on the free-enterprise model — that is, schools provide educational training to those who wish to enter certain fields of endeavor based on the demand for that training and the expected job satisfaction and financial rewards that come from the desired profession.

If you think about the profession of broadcast engineering in those terms, it is easy to see why there are so few educational opportunities offered. Yet our industry continues to demand trained people.

Where is that basic and continuing education going to come from?

About 18 months ago, the SBE

Certification Committee and Certification Director (and new SBE Fellow!) Linda Godby came up with a plan to begin to offer educational programming as part of the certification effort. This concept marked a significant departure from our earlier view of the Certification Program as primarily a standards-setting and benchmarking effort.

Our plan was to offer a one-day training seminar for the new Certified Broadcast Networking Technologist Certification, which would be followed by administration of the examination. Thus, in one day of effort, engineers could become trained and certified in this most important area of hardware support for broadcast computer networks.

Two of the real benefits of the tutorial approach are its availability and affordability, made possible by our association with the state broadcasters.

And if there is one message that we have gotten "loud and clear" from the state broadcasters, it is that there is a definite need for more qualified engineering help and that the tutorials we are offering are seen as responsive to that need.

New offerings

Of course, being responsive means being sensitive to the needs of everyone in the industry: engineers, stations, management, ownership and regulatory agencies.

So, based on the success of the CBNT tutorials, another tutorial was



is just for engineers? In today's consolidated communications marketplace, it is essential that station ownership and management understand and appreciate the unique work that broadcast engineers accomplish.

A tutorial called "Engineering for Managers" is being developed to address this issue, and the first presentation will be made to the Ohio Association of Broadcasters meeting this fall.

Good investment

We may not turn managers into engineers, but we certainly can bring to them a greater appreciation of the real value that effective engineering brings to their stations, as well as promote the idea that an investment in continuing education/training for broadcast engineers is a wise business decision.

As engineers, we all know that perpetual motion is a practical impossibility. But by continuing these targeted and effective educational efforts, the Society of Broadcast Engineers is providing the external energy that just may set the wheels of broadcast education back into motion.

And that will go a long way toward not only benchmarking the achievements of our membership but also advancing their value to their employers and clients. And that will lead to better salaries for engineers, which will lead to more educational opportunities, which will lead to more qualified engineers, which will lead to better engineering, which will lead to better station profitability, which will lead to better salaries, which will lead to ...

You know, maybe it's time we rethink that perpetual-motion idea.

Radio World welcomes other points of view.

We are developing a third program, designed as a basic review of RF technology.

After beta-testing the tutorial at the NPR Engineering Conference in 2000, we presented the concept to the Broadcast Executive Directors Association. Our thinking was that a liaison with the state associations was perhaps the most efficient way of getting this training to the engineers who might be unable to attend the major broadcast conventions.

The results?

- Twenty tutorials presented at 15 state broadcast association meetings since February 2001;
- More than 150 hours of actual instructional time given to members across the country;
- More than 200 new members brought into the SBE;
- More than 300 new CBNT certifications this year;
- Development of a continuing partnership between SBE chapters and their state broadcast associations.

developed, designed to train Designated Chief Operators in their required duties in preparation for station participation in the FCC Alternative Inspection Program administered by the state associations.

This effort has not only clarified the sometimes-confusing FCC rules for many, but we feel it has also raised the level of compliance with FCC rules in states where the tutorial has been presented.

And we're not done yet! As a result of feedback from our tutorial participants, we are developing a third program, this one designed as a basic review of RF technology.

This should serve as a primer for new engineers entering the profession as well as studio and IT engineers who wish to expand their knowledge base. We intend that digital TV and radio transmission theory will be an integral part of this presentation.

But who says engineering education

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World Radio History

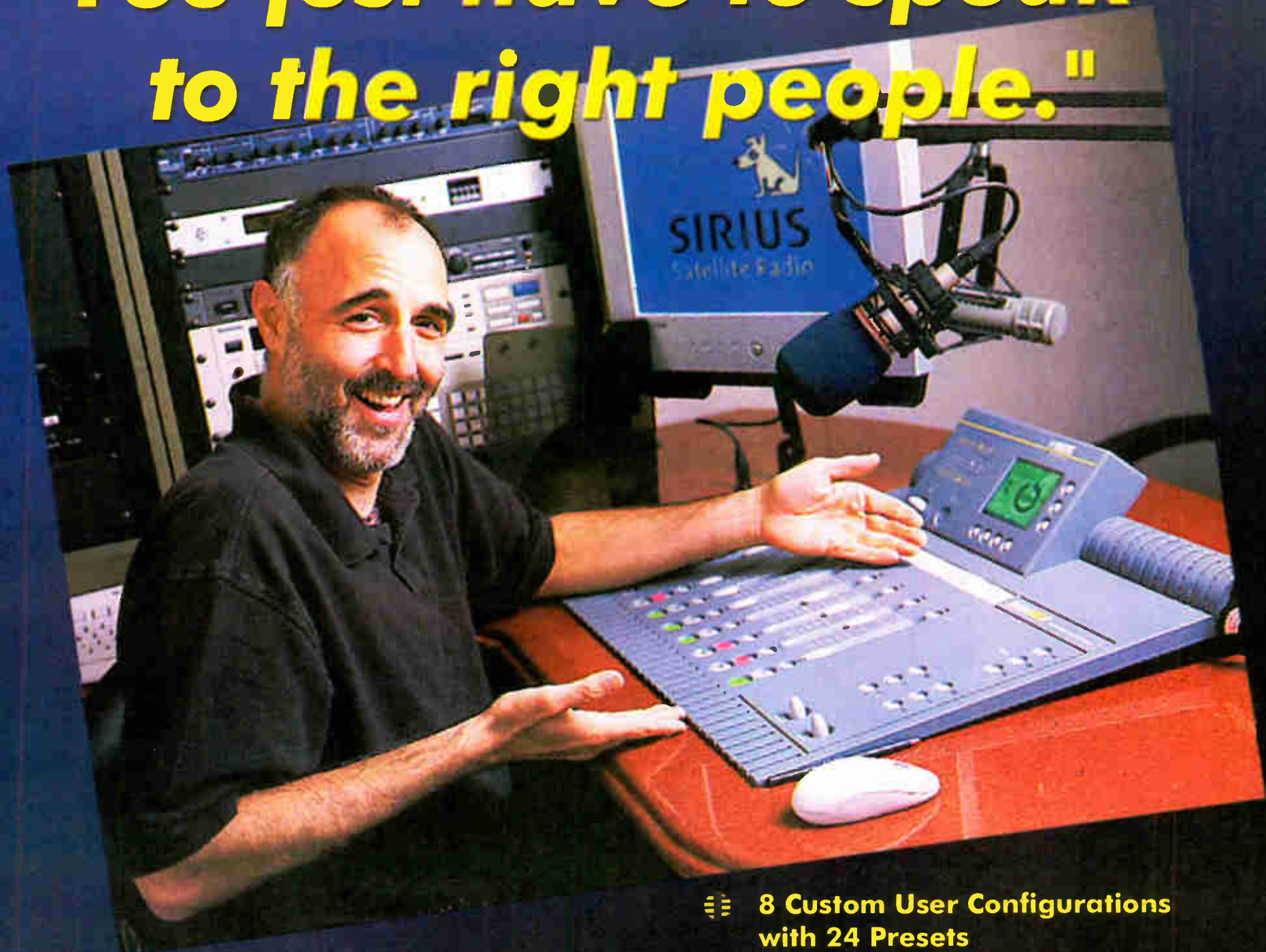
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"This board is an 11! Even though the faders only go to 10..." *Lenny Bloch, Program Manager, Sirius Satellite Radio*

KLOTZ DIGITAL's Paradigm sets the new digital audio standard for radio on-air consoles. Easily integrated into your existing control room/facility, this compact and durable 24 input console boasts more features than any other in its price range! Expandable to 48 inputs, the Paradigm digital console provides operators with a standard and intuitive control surface and offers the ultimate in flexibility and digital audio quality. That's why the most sophisticated and technologically advanced facilities throughout the world choose KLOTZ DIGITAL.

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"Feature-rich and flexible"

Steve Runck of the Northwestern Radio Group has this to say about BSI's digital automation:



August 22, 2001

When we started down the road with BSI's digital automation in 1996, our immediate need was for a good satellite controller. We also had been fighting to keep an old analog automation system on the air on our AM station. Today we use BSI's automation not only as a satellite controller, but also as our FM automation system.

We also use BSI's software to automate our AM schedule, including music on hard drive. We use a third system for satellite store-and-forward duties. The import routines make it a snap to integrate music and spots from your scheduling software with your BSI logs, and the voice-track editor's drag-and-drop capabilities make having a great hosted sound so easy that any jock will be able to quickly learn it.

The really great part about BSI's digital automation is that you can design as simple or complex of a system as you need in an economical, non-proprietary software and hardware environment. BSI's automation is so feature-rich and flexible that we will never run out of new possibilities for implementing our broadcasting mission. And if you really need a feature that's not already there, chances are good the BSI team will respond to that need in a future release. Where we started with a single PC running BSI's digital automation, the Northwestern Radio Group now employs approximately 17 automation programs at our stations in the Upper Midwest and Florida. KFNW is now down to 12-hour days for manned operation, and our staff is finding more time to be creative, both in the production room and out in the community.

We always like to think we will never need tech support, but I've always been thankful for BSI's 24/7 commitment to us when we DO have a problem. I've even gotten some of those poor guys out of bed in the middle of the night, and they've always gotten us back up and running within a reasonable amount of time. They've even helped us when the problem was hardware-related, and not software.

Yes, we like BSI's digital automation too!

Steve Runck
Staff Engineer
KFNW AM-FM, Fargo, ND

What did we do to inspire this kind of loyalty?
Download our software and try it for yourself.

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Workbench

Radio World, October 10, 2001

Infrared Finds Your Hot Spots

John Bisset

If you maintain stations and are planning your budget, visit the Web site of Mid-Atlantic Infrared, at www.midatlanticinfrared.com.

Infrared imaging can be useful for

corroded.

The inset photo above it shows excessive heat displayed on the right one-third of the coil.

Because this was a stable array, the phasor controls were barely touched. The roller contact on the coil was

heat through a transfer switch, by viewing the output ports.

The process is not cheap, but it's great insurance to prevent catastrophic failure.

★ ★ ★

credits, reductions or rebates if the utility is allowed to control loads at a business during times of energy shortages. On the average, these load management events occur three to four times a month for periods of two to three hours.

The utility will install, free of charge, a device called a Load Control Receiver. The LCR normally is controlled by a paging-type radio signal

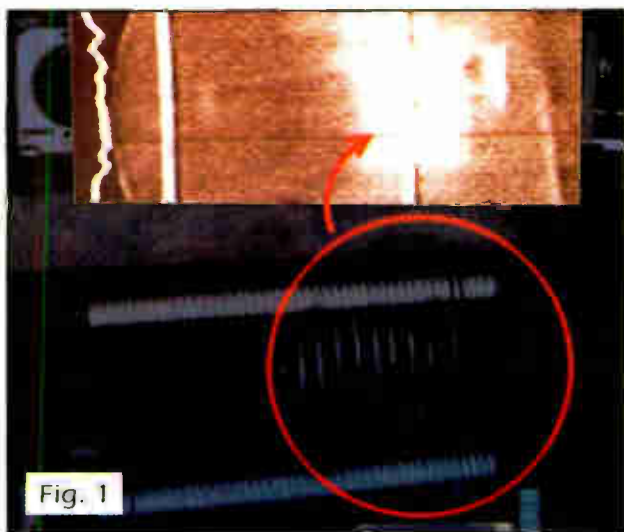


Fig. 1 The rotary wheel that taps this phasor's variable coil has corroded. The inset shows the excessive heat displayed.

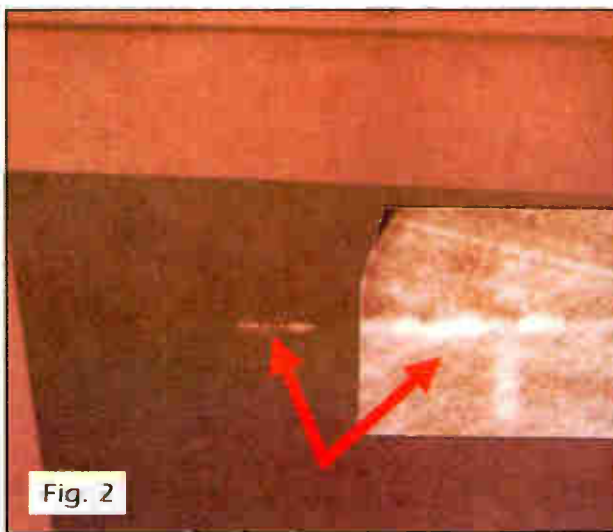


Fig. 2 The barrel connection on this line has overheated.

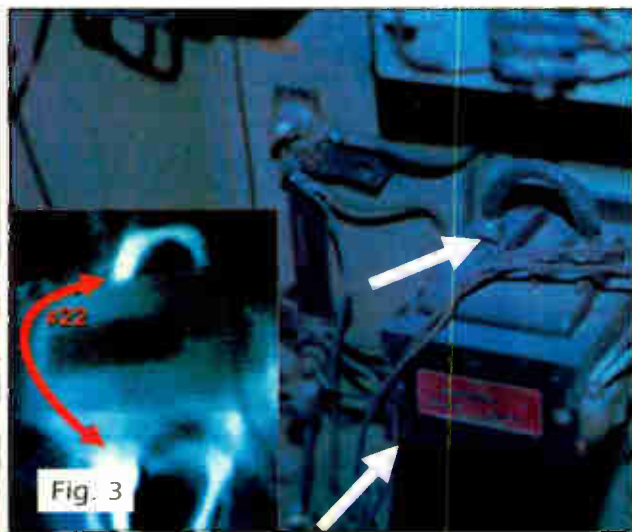


Fig. 3 Infrared can detect loose terminals on a transformer and help avoid failures.

radio. An infrared camera can detect head-related maintenance problems.

Thermal imaging is a visual display of temperature differentials, providing a pictorial presentation of infrared emissions.

These hot spots can give an early warning of impending failure and provide the broadcast engineer with a great diagnostic tool.

Photos from a session in which I was involved demonstrate the effectiveness of infrared imaging. Fig. 1 shows a variable coil inside a phasor. The rotary wheel that taps the coil has

replaced before damage occurred.

Fig. 2 shows a barrel connection on a line that has overheated. The line was spliced at this point. Even though it's carrying only 1 kilowatt of RF energy, the image is clear.

Fig. 3 shows that we can spot problems inside transmitters. In this image, loose terminals on the transformer show the potential for failure and fire.

Thermal imaging can be used on rigid transmission lines, spotting split bullets, weak inner connections or bad elbows. We can even see abnormal

As budget time approaches, here's a win-win deal for the broadcast engineer, the radio station and the local power utility, offered by Dean Sever.

In addition to doing contract engineering, Sever is an electrical engineer with his local power utility. His proposal requires little or no expense for the station, and can be used as good PR promotion in helping with the energy crunch.

Most power utilities have programs under the name of load management or interruptible rates that offer utility bill

that originates from the utility, although leased-line, satellite and FM subcarrier signals can be used.

This device provides a momentary or latching relay that will disconnect a load or source. We're probably most familiar with the use of these devices on home water heaters.

The LCR also can be used to trigger a transfer switch on a generator. Herein lies the benefit for the radio station.

When connected to the generator transfer switch, the generator can be energized and "tested" online

See WORKBENCH, page 30 ▶

NEW

Is "Processor Delay" driving your DJ **CRAZY?**

Use **MoniSwitch** to eliminate it!

MoniSwitch is a special audio switcher that automatically switches the DJ's headphones from "air" to "local" when the mic is on. Those weird echoes and flanging effects are gone!

Quick and easy installation... works with any console's Mic Tally output.

MoniSwitch is IN STOCK at all Henry Engineering dealers.



For detailed info, visit www.henryeng.com Tel: 626.355.3656 Fax: 626.355.0077

We Build Solutions



Six popular radio stations in Switzerland used **Telos Systems** Zephyr Xstream products to retransmit a daily half-hour program with interviews and songs from the **Montreux Jazz Festival** this summer.

The Zephyr Xstream uses MPEG 2 AAC/MPEG4 AAC low-delay coding. The company calls it the first codec to host MPEG2 AAC and the only coding

system to fulfill the ITU-R/EBU requirements for indistinguishable quality at 128 kbps/stereo.

Separately, **KTCU(FM)** at Texas Christian University in Fort Worth, Texas, purchased two Zephyr Xstream codecs and planned to use them for broadcasts of the annual Van Cliburn music competition and play-by-play coverage of football and other sporting event. Also, **Radio One** bought a Telos Series 2101 Multi-Studio Talkshow System to route digital phone lines for studios of its flagship Washington four-station cluster; and sister company **Omnia** added **Radio One Jakarta** in Indonesia to its list of audio processing clients. ...

K-LOVE Radio Network chose **Dawning Technologies Inc.**'s interface products to automate reporting requirements.

K-LOVE will use the Secure Network Interface in the collection and review of EAS activity logs.

Dawning says its SNI solves a problem raised by regulations requiring that EAS activity logs be reviewed weekly. K-LOVE will use the configurable serial output on its Sage Endec Encoder/De-

coder as a connection point to the SNI. When a message is received or transmitted by the Endec, the log of the event is sent to the SNI, which signals a proxy server that it needs a network connection.

The server dials an ISP and makes an Internet connection. Once the SNI determines the network connection is present, it uses FTP to transmit the log to a file server. The proxy server terminates the dial-up connection, and the file is available for review via a standard Web browser.

Joe Torsitano, K-LOVE Engineer, said the network would deploy the system in 20 sites. ...

Gepco said **RDA Systems** has made its digital cables a regular component of recent installations, includ-

ing the **Clear Channel** project in Denver, one of the world's largest digital radio facilities.

That project involved seven stations, 28 studios and four rack rooms, all wired with Gepco digital audio cable.

In Denver, RDA used a new type of termination block that works well with digital cables such as Gepco's 5526 series. ...

WorldSpace Corp. and the **Radio Republic of Indonesia** signed a Lease Capacity Agreement that will enable RRI to air programming over the WorldSpace digital audio broadcasting system.

RRI is sending 24-hour broadcasts of news, music and information via the See WBW, page 31 ▶



Telos Systems Zephyr Xstream codecs were in use at the Montreux Jazz Festival.

Workbench

▶ Continued from page 29

periodically during heavy load periods.

The service is free; the engineer benefits from periodic full-load testing of his generator; and the station receives a credit on its power bill while helping with the energy crunch.

★ ★ ★

Dan Case, director of engineering for Citadel Little Rock, was refurbishing some yellowed telephone sets and sought a way to restore the plastic housings to their original white.

Querying Dave Biondi's Radio-Tech listserv at radio-tech@broadcast.net brought a suggestion to try CLR Cleaner brand, found at Wal-Mart or similar stores.

Aaron Read, an associate Webcast producer, says this cleaner will clean almost anything. Its ingredients include a mild acid, so use caution, but it's just the answer for removing this kind of grime.

Read recommends you rinse the plastic housing thoroughly, and use the product in a well-ventilated area.

★ ★ ★

Speaking of telephones and related devices, Ray Vaughn is a ham and a CBTE. He offered the follow-

ing Web site to Radio-Tech readers. We'd like to share it with readers of *Workbench* who are looking for some interesting telephone related devices.

It's www.vikingelectronics.com. You'll find a variety of telephone accessories including an inexpensive voice coupler, the RAD-1.

★ ★ ★

Awhile back, I wrote about the Nigerian scams — remember, "Send us your bank account so we can wire transfer large sums of money to you," meantime they wipe out your bank account!

Steven Dahlman, who spent 15 years in radio before moving into software development and photography (www.dcmsoft.com and www.dcmsoft.com/photo) has a site that exposes these Nigerian scams.

Steven writes that it's bigger than we think! The site can be reached at www.tankozuba.com. As an aside, he still reads Radio World — proof you'll never get radio out of your system.

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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WBW

► Continued from page 30

South beam of the WorldSpace AsiaStar satellite throughout Indonesia and the surrounding Southeast Asia countries.

WorldSpace said the deal also lets it promote its system and satellite receivers over the terrestrial airwaves of RRI's 52 stations in Indonesia, which reach 76 percent of the population of that country. ...

Activate, a Webcasting services company based in Seattle, selected Symetrix equipment to manage audio signal levels for what is described as the industry's largest digital content facility, "Activate Grand Central."

The facility can manage and stream thousands of audio and video signals over the Internet at once. It uses hundreds of Symetrix 422 Automatic Gain Control levelers to optimize signal levels without introducing unwanted noise, compressing background sound and increasing the level of quiet signals.

Doyle Technology Consultants Inc., a systems integration firm, worked with Activate to convert a historic 1914 building into an advanced digital content facility designed for Internet media, including equipment installation and integration. ...

AP Radio inked on-air or online content deals with **Salem station KCBQ** in San Diego and **Curtis Media Group's WPTF** in Raleigh, N.C. ...

Glenn Fisher Entertainment Corp., a subsidiary of NBG Radio Network, cleared **WXRK(FM)** in New York for the Wireless Flash prep service. **K-Rock** is the flagship for "The Howard Stern Show." It also signed **WKQX(FM)** in Chicago.

Wireless Flash provides "off-edge pop culture" news and entertainment content to broadcast outlets, newspapers and Web sites. ...

RDA Systems Inc. completed a radio studio consolidation project for **Hispanic Broadcasting Corp.** in Miami. The project consisted of the design, wiring and installation of a four-station, 15-studio facility.

The complex has a Technical Operations Center with 15 racks, as well as four control rooms, three AM talk studios, six production rooms and two editing booths.

Two more racks are in the penthouse TOC, in a separate building of the Coral Gables building complex.

The radio stations moved were **WRTO(FM)**, **WAMR(FM)**, **WQBA(AM)** and **WAQI(AM)**.

RDA installed four new **Harris BMX III-26** consoles for the control rooms and three **PMX-20s** for the large production rooms, as well as an **SAS 64000** router in the TOC. Studio furniture was by **Mager Systems**.

The furniture was delivered to RDA Systems, and the studios were prepared in St. Louis.

Separately, RDA Systems also assisted Radio One radio stations **WENZ(FM)** and **WZAK(FM)** in Cleveland with an upgrade to digital

consoles.

Chief Engineer **Rocco Bennett** said the stations purchased **Airwave** consoles, furniture and wiring solutions from **Harris Corp.**

"Who's Buying What" is printed as a service to our readers who are interested in how their peers choose equipment and services. Information is provided by suppliers.

Companies with news of unusual or prominent sales should send information and photos to: Radio World Managing Editor, P.O. Box 1214, Falls Church, VA 22041.



Celebrating the HBC project in Miami are, from left, HBC Project Manager Julian Vega; Mike Triay Jr.; RDA Project Supervisor Joe Carollo; HBC Miami CE Mike Triay Sr.

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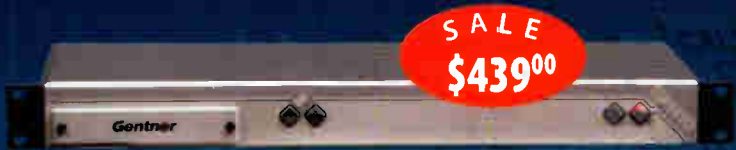
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The DH22 provides an inexpensive conference connection for two telephone lines in a single hybrid. In addition to including all features of the DH20, it provides two balanced caller outputs for separate caller connections to the console. If desired, a single DIP switch will mix both callers to a single output. Automatic Gain Control adapts every call to ensure the best quality audio.

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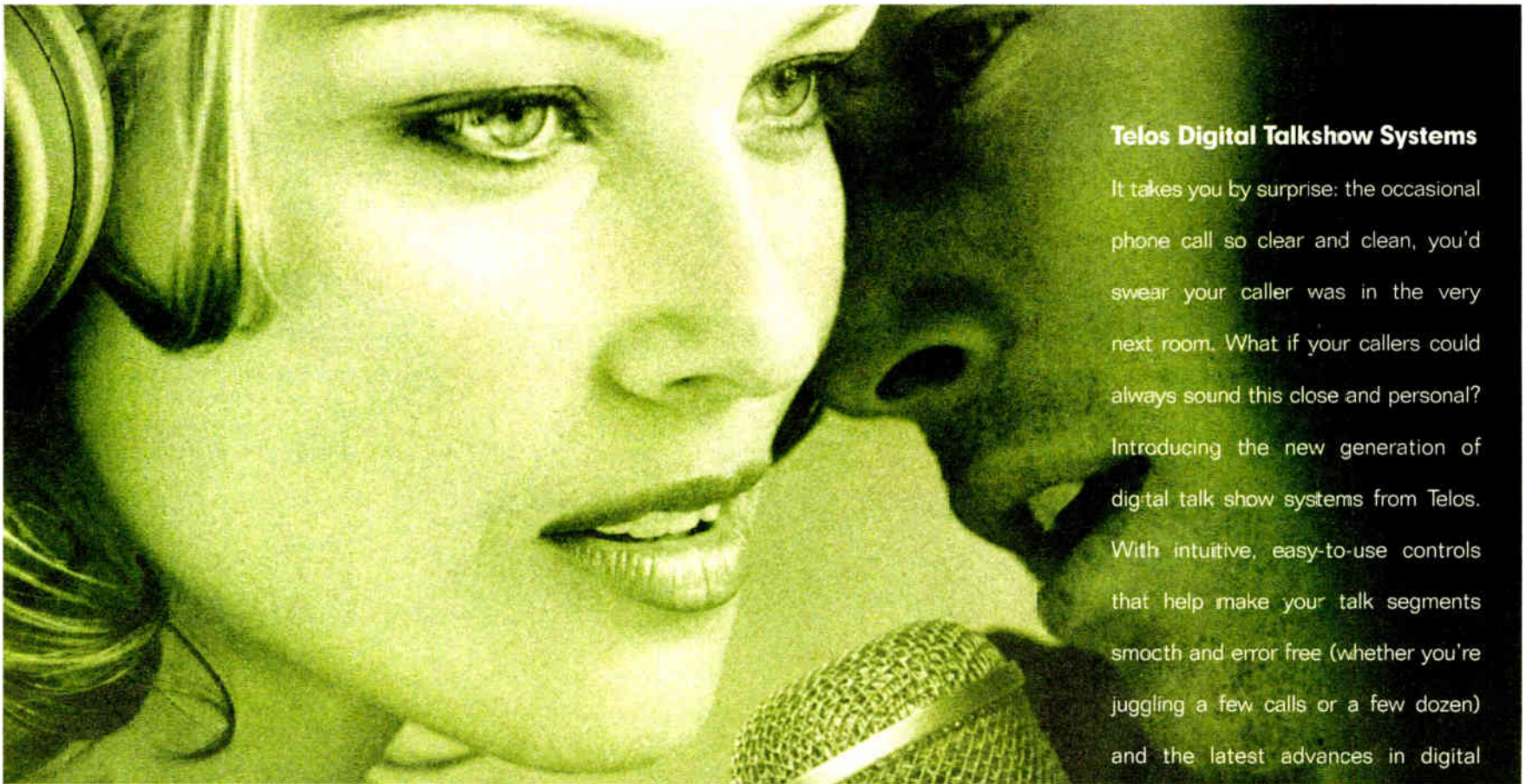
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U.S. Radio Stations Review Security

Ken R.

As a major source of news and entertainment for millions of Americans, could radio stations and their towers be targets of a terrorist attack?

Radio World spoke to general managers, programmers and security experts following the terrorist strikes in New York and Washington. Few

"It all just kind of happened and we were ready to go," Kandy Smith, Infinity's Memphis cluster general manager said. "It's more a programming than a security issue. We're all going to be wearing name badges, but no drastic security measures have been taken."

At WOR(AM), in the heart of Times Square, New York City, there will be changes.



AP reporter Tony Winton works at the scene of the Pentagon crash.

were beefing up security or taking extra precautions. Most preferred to talk about programming changes and community efforts that sprang up spontaneously.

The Infinity cluster in Memphis, Tenn., includes sports/talk WMC(AM), adult contemporary WMC(FM) and alternative rock WMFS(FM).

"Now you can't get into the building without a pass that you show at the ground floor security desk," said David Bernstein, WOR program director. "And you will need an electronic key card to open our new security doors we've just installed on the 23rd floor, where the WOR studios and offices are. No one

See SECURITY, page 40 ▶

Radio Space Pioneer Retires

When the space shuttle Discovery returned here to Cape Canaveral, Fla., on Aug. 22, it marked the end of more than 40 years of space coverage for ABC News Radio's Jim Slade, who's said it's time for something else.

Slade told Radio World, "This is a good time to leave. I don't think I want to wait around for (NASA) to go back to the moon or on to Mars."

Instead, he'll write books, complete a project on the 100th anniversary of the Wright brothers' first flight and "just have some fun."

Slade said, "I couldn't have chosen a more exciting or rewarding way to spend those 40 years." He also covered NASA for Westinghouse, Mutual and NBC Radio.

"My tenure's been a lot longer than any president's and you can't beat that with a stick!"

ABC News Radio Vice President Chris Berry called Slade "an excellent and unflappable broadcaster. I have a feeling he'll be back (on ABC Radio) from time to time."

— Peter King



Jim Slade



Shown is the ABC News facility at the Cape, where Slade worked out of the trailer on the bottom level and went up to the second-story balcony for launches.

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World Radio History

Mentors Lend Help Up, Down

Ken R.

Mentors are people who provide inspiration, connections and career guidance, but they can also help by setting a bad example, sometimes unknowingly.

"When I applied for my first job in radio, the sales manager of the station said I was perfect for the position, but he didn't want to hire me because he believed women were 'too much trouble,'" said Joan E. Gerberding, president of Nassau Media Partners. "Finally he gave in and hired me. Six months later I had his job. That was a valuable lesson."

Gerberding moderated a panel at the NAB Radio Show in New Orleans that focused on the need for mentors in the radio industry.

Mentoring is even more important for women and minorities who are determined to rise to the top.

Ownership

Out of the 12,000-plus commercial radio stations in the United States, women own only about 5 percent, Hispanics and African Americans 2 percent each. Hispanics and blacks make up about 29 percent of the general population and women represent 53 percent.

Abe Thompson, serves as president of WUBU(FM), in Mishawaka, Ind. He said that within the industry and specifically within his company, there are many changes are occurring.

"The old leaders were a little bit more like drill sergeants and the new managers are more like master motivators," said



Joan Gerberding with a few mentorees at Nassau Media Partners, who took her out on her birthday. From left: Frank Brunke, Michael Panebianco, Gerberding and Bob Minogue.

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World Radio History

Thompson. "The old top-down management style is being replaced by empowerment, which helps people feel more involved."

Julie Lomax Brauff, Breakthrough Marketing CEO in Bellevue, Wash., said part of selecting the right mentor is first deciding where your career path should lead.

"Write down specifics including realistic goals for the short and long term," said Lomax Brauff. "Be assertive and speak up. Then contact someone you want to emulate."

After you've had help, you need to go back and help someone else. It's like a chain.

— Abe Thompson

Mac Tichenor, president/CEO of Hispanic Broadcasting in Dallas, said the mentoring process doesn't have to be a formal corporate program.

"Mentors don't have to even be people in your own company and certainly don't have to be your boss," said Tichenor. "You can often have a more honest relationship with someone you admire from another company. But you must take the initiative to find that mentor."

Gerberding said one of her biggest mentors is her father.

"He was president of a bank and he was very upfront with people," said Gerberding. "He made time for people and let them have access to him in his office."

Thompson stressed that while finding a mentor is important in the early stages of one's career, mentoring is a process that must work both ways.

"After you've had help, you need to go back and help someone else," said Thompson. "It's like a chain reaction because you keep giving back to more and more people." ●



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NAB Honors Marconi Winners

KNIX(FM), KGO(AM) and Rick Dees were among the big winners of this year's Marconis, announced last month at the NAB Radio Show.

The Marconi Awards recognize radio's outstanding personalities and stations in 22 categories. GMs and PDs from NAB member radio stations voted for the winners and the accounting firm KPMG tabulated the votes.

Here is the complete list of this year's winners:

Legendary Station of the Year
KNIX(FM), Phoenix

Network/Syndicated Personality of the Year

Rick Dees, Premiere Radio Networks

Major Market Station of the Year
KGO(AM), San Francisco

Large Market Station of the Year
KOGO(AM), San Diego

Medium Market Station of the Year
WGY(AM), Albany, N.Y.

Small Market Station of the Year
WICO(FM), Salisbury, Md.

Major Market Personality of the Year
Matt Siegel, WXKS(FM), Boston

Large Market Personality of the Year
Bill Cunningham, WLW(AM), Cincinnati

Medium Market Personality of the Year
Mark Belling, WISN(AM), Milwaukee

Small Market Personality of the Year

Brian Scott, KTWO(AM), Casper, Wyo.

AC Station of the Year
WALK(FM), Nassau/Suffolk, N.Y.

Adult Standards Station of the Year
WMMB(AM), Melbourne, Fla.

CHR Station of the Year
KIIS(FM), Los Angeles

Classical Station of the Year
WGMS(FM), Washington

Country Station of the Year
KPLX(FM), Dallas

NAC/Jazz Station of the Year
WNWV(FM), Cleveland

News/Talk/Sports Station of the Year
KKOB(AM), Albuquerque, N.M.

Oldies Station of the Year
KCMO(FM), Kansas City, Mo.

Religious Station of the Year
WMHK(FM), Columbia, S.C.

Rock Station of the Year
WEBN(FM), Cincinnati

Spanish Station of the Year
KLNO(FM), Dallas

Urban Station of the Year
KPRS(FM), Kansas City, Mo.

On Sept. 11, Listeners Dialed Up the Radio

But They Switched to TV in Droves Once They Arrived Home on Day of Terrorist Strikes

Arbitron had a quick reading of radio and television in the Wilmington, Del., market on the day of the terrorist strikes, thanks to its experimental Portable People Meter.

Wilmington is the beta-test market for the PPM, a pager-sized device that records an inaudible ID tone that broadcasters insert into their signals.

Survey participants wear the PPM and download its report each night.

The results for radio and TV in Wilmington the day of the disaster show an "extraordinary peak (for radio) between 11 a.m. and noon," according to Thom Mocarsky, Arbitron's vice president, communications.

"Our initial assumption is that this peak reflects unusual in-car listening as many people left their workplace and headed home early."

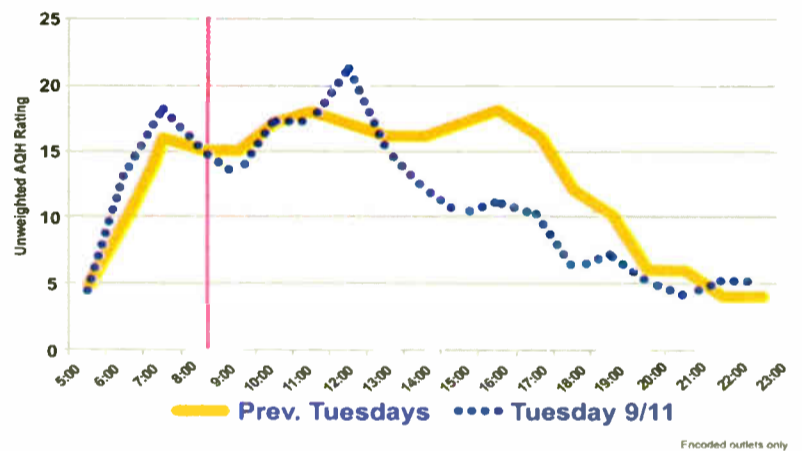
The chart shows the hour-by-hour radio and TV audiences in the Arbitron Wilmington PPM panel for Tuesday, Sept. 11 and compares those audiences' typical levels on previous Tuesdays.

TV viewing rose rapidly starting at 8:30 a.m. and did not return to typical levels until 11 p.m.

"We assume that part of the increase is an unusual level of in-the-workplace TV viewing that the PPM can track," Mocarsky said.

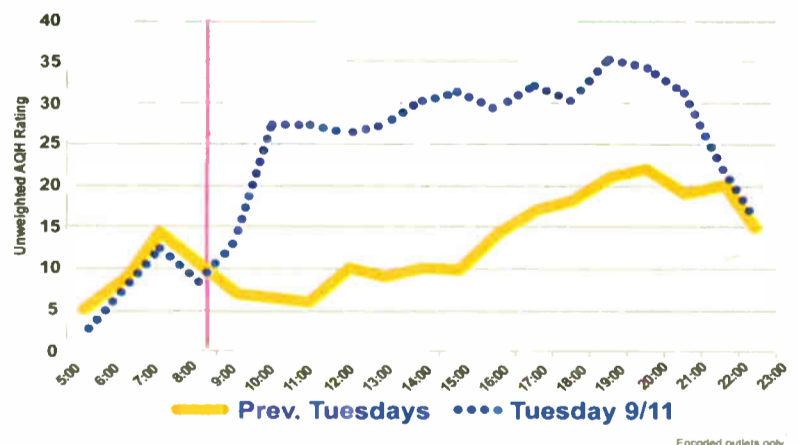
Total Radio Portable People Meter AQH Ratings

Wilmington Metro, Persons 6+
Tuesday 7/31/ 8/7, 8/14, 8/21 versus Tuesday 9/11



Total Broadcast TV Portable People Meter AQH Ratings

Wilmington Metro, Persons 6+
Tuesday 7/31/ 8/7, 8/14, 8/21 versus Tuesday 9/11



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Security

► Continued from page 35 gets in without that card."

The terrorist strike in New York moved the station to implement security measures that it had planned for months. WOR is host to several controversial talk show hosts, including Bob Grant and Joan Rivers. Bernstein said talk stations

should have security measures because there is no way to anticipate how listeners may react to what radio personalities and host say on air.

"You don't know what they're hearing — how they perceive what they're hearing," Bernstein said.

Steve Allan is program director at WASH(FM), a Clear Channel property in Washington.

"We all walked out of the building on Tuesday when it happened," Allan



The Memphis, Tenn., Infinity three-station cluster raised \$48,000 for attack victims in just a few hours on the street in front of their studios.

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said. "But we're not going to change any security procedures at this point."

Allan combined his staff with Clear Channel's Washington sister station, WBIG(FM), to simulcast live coverage of the horrific events. WASH is an adult contemporary station and WBIG normally plays oldies — regular programming was suspended on both radio stations.

When terrorists strike in other countries, broadcast facilities often are targeted. Could that happen here?

Symbolic targets

"Maybe they'll try to get on CNN," said Allan. "I can't get into the mind of a terrorist, but I think the World Trade Center and the Pentagon are a lot more important than a couple of radio towers."

WMAL(AM), a news/talk outlet owned by ABC Radio, carries "The Rush Limbaugh Show."

David Sproul is CE and head of security for ABC's Washington stations, which also include WRQX(FM) and WJZW(FM). He thought that the Limbaugh show might attract some crazies.

"It turned out not to be a factor at all," Sproul said. "Not much is changing around here."

Sproul believes that terrorist targets are more likely to be one-of-a-kind destinations rather than broadcast facilities.

"Buildings like the (U.S.) Capitol would be more vulnerable," Sproul said. "I think that biological boat bombs and truck bombs exist which could hit, so to be worried about the risk to a tower from a 757 is tragically narrow-minded."

"We're thinking more about the victims than security," said Laura Danis, Internet content manager for WASH and WBIG. "Listeners want to know how they can help so we talked to FEMA and arranged local blood drives and let them know where donations could be sent on the Web sites."

The Associated Press' broadcast arm is AP All-News Radio, a live 24-hour news and information format.

Stations can receive a streaming news service over the Internet via satellite.

"We are used to handling security issues because we have people in hot spots all over the world," said Brad Kalbfeld, managing editor of AP Broadcast. "We cope all the time with what Americans are facing now and safety always comes first."

While declining to discuss specific security measures, Kalbfeld stressed that his organization was focused on keeping employees safe while delivering news in a factual and timely manner.

"We were already thinking about this sort of security because of the recent World Trade Organization talks, so we are always conscious of these threats," Kalbfeld said.

While most broadcasters don't seem to fear that their physical plants are at risk from terrorists, WISL(AM/FM), Shamokin, Pa., has a different concern.

"We are very close to Three Mile Island (nuclear reactor) and I'm a little leery of that," said Mick Hagerty, general manager of the MJR Media Inc. stations.

"We keep our doors locked here, but really, I think (security) will be more of a problem where power plants and big communications are involved."

Hagerty stressed that his big concerns were more programming-oriented, such as announcing local prayer vigils and other public service announcements in the days immediately following Sept. 11.

In Chicago, an FM announcer who didn't want to be quoted by name said taller structures in the Windy City such as the Sears Tower, Prudential and Standard Oil buildings would be more likely terrorist targets than his radio station.

However, WISL takes security issues seriously.

"Do I think that more terrorist attacks could come?" asked Hagerty. "You bet."

Ken R. is a former broadcaster who now writes full time. Reach him via e-mail to KenR5367@aol.com.

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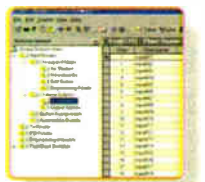
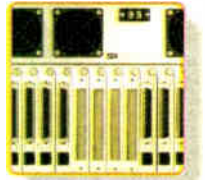
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Page 46

Radio World

How to Succeed in the Dot-Com World

October 10, 2001

WEB WATCH

Net Radio Audience Ready for More

Craig Johnston

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

This Web Watcher is confused: Why does Internet radio appear to be stalled, while broadband access continues to

The NAB Radio Show last month, 64 percent of those with broadband connections are at least monthly Internet radio users as opposed to just 43 percent of dial-up users.

"One (common) assumption about broadband access is that it increases media experience. Another 13 percent (of survey participants) plan to get

This number may be similar to trying but not inhaling, as the study also shows only 12 percent of Internet users say they have listened to Internet-only audio channels and radio station Webcasts on a monthly basis.

And consider that the FCC, too, reports that broadband access has seen healthy growth. Its figures show that the number of high-speed connections grew 63 percent in the second half of last year.

Of the 7.1 million high-speed lines, 5.2 million were connections to homes and small businesses. About 4.3 million of those lines provided service at speeds over 200 kbps in both directions. The total number of DSL phone lines swelled to 2 million, compared with the 3.6 million cable-modem connections. (DSL uses traditional phone lines, while cable modems use cable-



television lines.)

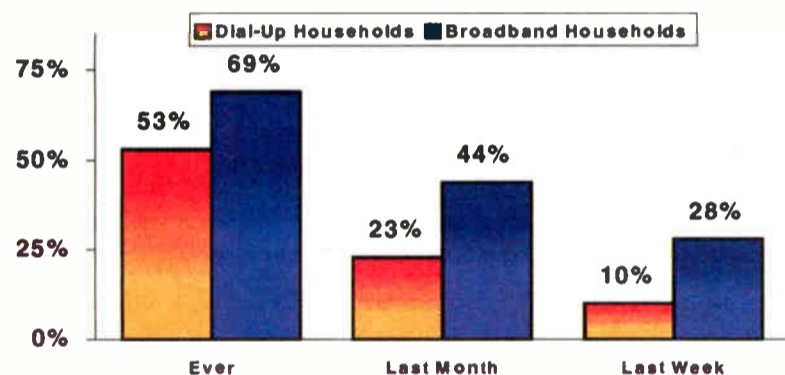
And the total time spent listening at the end of August had more than doubled since the first of the year, according to MeasureCast Inc. This increase came in spite of the fact the measurement occurred over a time when many workers are traditionally on vacation.

So why is Internet radio stuck?

See WEB WATCH, page 44

Broadband Accelerates Use of Streaming Media

% of Those Online Who Have Watched or Listened to Streaming Media...



ARBITRON

Base: Currently Access the Internet

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grow and other online media metrics continue to report increased online listening? How can this be?

Check this

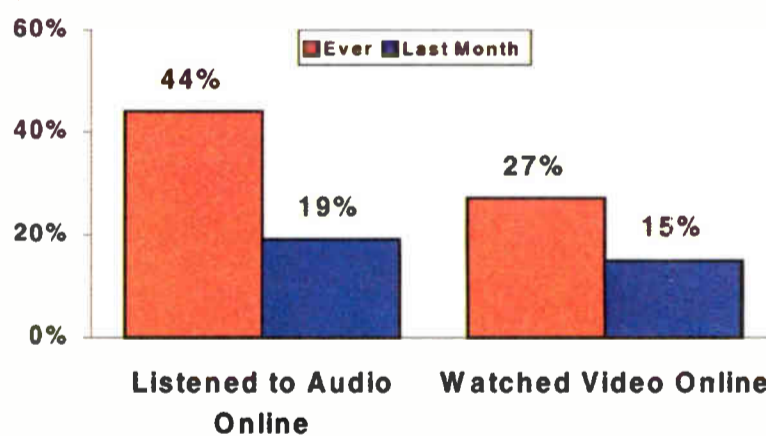
For example, according to the latest Internet radio study from Arbitron and Edison Media Research, although broadband access has been less widespread than originally projected, it continues to be a consumer catalyst for streaming media.

According to the study, released at

broadband access in the next year, in addition to the 18 percent that already have broadband. That is a significant number," said Bill Rose, Arbitron's Webcast Services vice president and general manager.

Also, more than half of Americans online have at least tried audio or video streaming media, according to the Arbitron and Edison study. That 52 percent is up from 44 percent from the first of the year and amounts to some 78 million people.

More Online Americans Listen to Audio Webcasts Than Watch Video Webcasts



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Web Watch

► Continued from page 43

Two-thirds of listeners reported that they were "very" or "somewhat" upset that radio stations they listen to online stopped streaming, according to the new Arbitron/Edison study.

Rose said there is a danger for terrestrial broadcasters in silencing their streams.

"Stations are at risk of losing these listeners to Net-only Webcasters who are available online despite legal and regulatory challenges facing them," said Rose.

"Over half (55 percent) of all online listeners say they have found other sources of Internet audio to listen to in its place," he said.

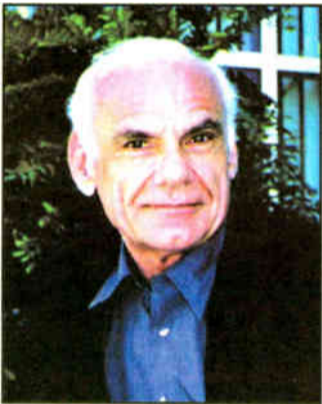
Listeners on the rise

Rose said the study found that, for the first time, Internet-only stations have equaled streaming radio stations in number of listeners.

"It appears that the head start that radio stations enjoyed in this arena has been lost," Rose said.

The Arbitron and Edison study found strong consumer interest in subscription services to gain access to content that is only available online.

"There is another model out there," Rose said. "There is a willingness to pay for unique and compelling streamed content, as there continues to be for cable pay channels and pay-per-view. Broadcasters should



Dr. Larry Roberts

consider a mix of ad-supported and subscription-based revenue," Rose said.

Topping the list of kinds of content that Net-radio users would pay for are concerts and performances by favorite artists, followed by sports events. Rose pointed to the success of this summer's Major League Baseball subscription deal with RealNetworks Inc., providing audio streams of MLB games for a fee, as an example.

In September, some terrestrial broadcasters began to stream again, including Clear Channel's KIIS(FM) in Los Angeles and New Wave Broadcasting's KPIG(FM) in Santa Cruz, Calif.

KIIS was the first Clear Channel station to go back to Webcasting, but the company said it would soon follow with many others. With a new partnership with the ad-insertion company Hiwire, the media giant appears ready to comply with AFTRA's triple-rate online fees by using only non-union, local talent and music beds in place of national inventory.

On the ratings front, 45 stations appeared in both the July and August ratings from MeasureCast. Of those same stations, 8.5 percent streamed more hours in August than in the previous month.

But the comparable Internet-only stations streamed 1 percent fewer hours in August than they did in July, while the comparable terrestrial stations streamed 30.5 percent more hours in August than they did in July. (There are

still many more Internet-only stations in the top-50 ratings since the AFTRA move in April.)

MEDIAmazing.com once again took the No. 1 spot in the MeasureCast ratings, which it has held for the past six months. MEDIAmazing is a listener-formatted, Internet-only Webcaster that allows its listeners to chose their formats.

In Arbitron's latest Webcast ratings, for March 2001, Launch.com's Launch Media joined the pack in the No. 7 position. NetRadio.com's NetRadio remained in first place, with more than four million aggregate tuning hours. The company has maintained its leading position since Arbitron began reporting network ratings in October of last year.

Live365.com held fast in the No. 2 spot with more than 3.5 million ATH, a number that has doubled in the four months since the December 2000 network ratings report. ABC Radio Networks ranked No. 3 with more than 2.1 million ATH.

Arbitron defines Webcast networks as radio station owners who stream their content online or companies that aggregate online audio programming.

Total Internet traffic growth exceeds that in previous years, according to a study done by Dr. Larry Roberts, CTO at Caspian Networks. (Caspian designs and builds Internet and network infrastructure equipment.)

With figures supplied by 19 U.S. Internet service providers, he found Web traffic increased by a factor of 3.75 times this year.

Conclusions

Among his conclusions, he predicts that increased demand will mean carriers will no longer be operating with a surplus of ports. He said they will rapidly approach the point where their networks will begin to show blocking of traffic unless more infrastructure is built.

Roberts' scenario reminds this Web Watcher of what happened when AOL began to offer unlimited access in early 1997. For months to follow, AOL dialups more often than not resulted in a busy signal.

Broadcasters should consider a mix of ad-supported and subscription-based revenue, as there is a willingness to pay for unique and compelling streamed content.

— Bill Rose

Audio advertising via Internet streaming increased brand awareness in a study done by Lightningcast and Diameter, the research division of DoubleClick Inc. The Web ads, done for a major cellular carrier whose identity the companies said is confidential, showed an ad awareness increase of 64 percent and an ad tagline recall

ACCU WEATHER

The World's Weather Authority

Yahoo! will stream AccuWeather's 'Shoot the Breeze.'

increase of 60 percent.

The study compared brand awareness of the cellular carrier's audio ad among a randomly sampled target group of 560 Web users on Internet radio, where roughly half of the study's participants were exposed to a 6-second audio ad while the rest formed the control group that did not.

"For some time, brand marketers have been wondering when and if the Web would satisfy their requirements as an advertising medium. This case study indicates that their wait is over," said Karl Spangenberg, Lightningcast president and CEO.

DiscJockey.com, a Webcaster that provided live and on-demand channels

DiscJockey.com revised its business model last September when it introduced a subscription-based, commercial-free "Gold" service.

That was followed less than a month later by a 50-percent staff reduction.

Domain names DiscJockey.com, DiscJockeyGold.com and DiscJockeyPlus.com were put up for sale.

Mobile Internet radio lost an enabler when Metricom, a wireless Internet access company, shut down their network in August. This followed a Chapter 11 bankruptcy filing for the company that offered wireless access of up to 128k in 15 cities in the United States. Metricom stranded more than 40,000 users and left a billion dollars in debt.

Live365, whose wireless MP3 player system was capable of using either Metricom's modem or mobile phones, said the Metricom system was far and away the fastest connection. According to Live365's Alan Wallace, the loss of Metricom represents a hiccup in their plans, but that the company is still distributing Metricom's software via download on the Live365 Website.

Hope

He said the G 2.5 and G 3 cell phone services offer additional promise for wireless Internet radio. (Live365 is also hopeful someone will revive Metricom.)

Live365 had big news at The NAB Radio Show: It added IP-based Geo-targeting to its services. Advertisers and broadcasters will be able to insert local ads into their global streams that will target listeners wherever they are.

"We have always said that buyers should look at advertising on Live365

See WEB WATCH, page 45 ►

Web Watch

► Continued from page 44
as they would as local radio campaign," said Paul Adams, Live365's vice president, advertising sales. "Thanks to geo-targeting, we can not only deliver advertising by market, but also provide the advertiser with the reports that deliver real results."

SiteShell Corp., which offers services that help radio stations keep their Web sites up to date, confirms that it is in discussions with other companies regarding topics ranging from outright acquisition to indirect support for a major financing, which would keep the company independent.

The company has 165 live local radio station Web sites and about 250 affiliated stations.

No. 1 needs help

NetRadio may be the top Webcaster by Arbitron's count, but the company has signed on a new president and CEO: turnaround specialist Cary L. Deacon.

Deacon succeeds Eric Paulson, who has served as interim CEO. Paulson will remain as chairman.

Prior to joining NetRadio, Deacon served as president and COO of SkyMall, the struggling in-flight and e-commerce retailer he prepped for sale this summer to Gemstar-TV Guide International.

Topping the list of kinds of content that Net-radio users would pay for are concerts and performances by favorite artists, followed by sports events.

He has a 26-year background in cable and retail marketing.

To allow listeners access to NetRadio channels away from a PC, the company also announced an agreement with **OpenGlobe**, which specializes in bringing Internet radio to entertainment devices other than personal computers.

Mobile

"Our agreement with OpenGlobe is another significant step towards extending the delivery of NetRadio's content beyond the reach of the PC by allowing listeners to access it in their homes, while shopping in malls, retail stores, in corporate private networks and eventually in the car and on portable devices," said Steve Holderman, executive vice president of marketing and sales, NetRadio.

Through this agreement with OpenGlobe, NetRadio's channels will be streamed on the Compaq iPAQ

Music Center, Kenwood Sovereign Entre and others yet to be announced. (OpenGlobe announced a similar partnership with **Radio Free Virgin** two months earlier.)

AccuWeather.com teamed with **Yahoo!** to introduce "Shoot the Breeze," a weekly, interactive talk show that focuses on different weather-related topics. According to the companies, weather is the No. 1 topic on the Internet.

The program will feature AccuWeather's expert meteorologists for live feedback during the show, which is Webcast at 7 p.m. EST Thursdays from www.accuweather.com.

FM stations that are still shopping for tools to begin streaming their signals may be interested in **BRS Media's "My Radio.FM."**

According to **George T. Bundy**, chairman and CEO, the service provides a ".FM" Web address, Web hosting that includes e-mail and a customized version of AllCast's streaming broadcast software called the "AllCast Broadcaster."

Bundy said the AllCast streaming software considerably reduces bandwidth costs for broadcasters as it employs a "peer-to-multi-peer" technique.

"With this method, users distribute the content to each other rather than receiving it all from one central place and so it reduces bandwidth requirement and with it the cost of Webcasting," Bundy said.

The fee for the My Radio.FM starts at \$19.95 per month, according to Bundy.

iBEAM, a streaming services provider, received a \$30 million invest-

ment from **Williams Communications** in addition to \$10 million from unnamed investors. Williams, a broadband content distributor, will own 49 percent of the company.

Now iBEAM will have access to Williams' growing fiber optic network.

Loudeye Technologies Inc., launched its "Loudeye Radio" service at The NAB Radio Show. The company, which holds licensing agreements with the five major music labels as well as approximately 800 independent labels, will now offer custom programming based on that authorized content, "personalities" to host programs, geographically-targeted ad insertion and verification, a national sales team, syndication services and a customized radio player.

See WEB WATCH, page 46 ►

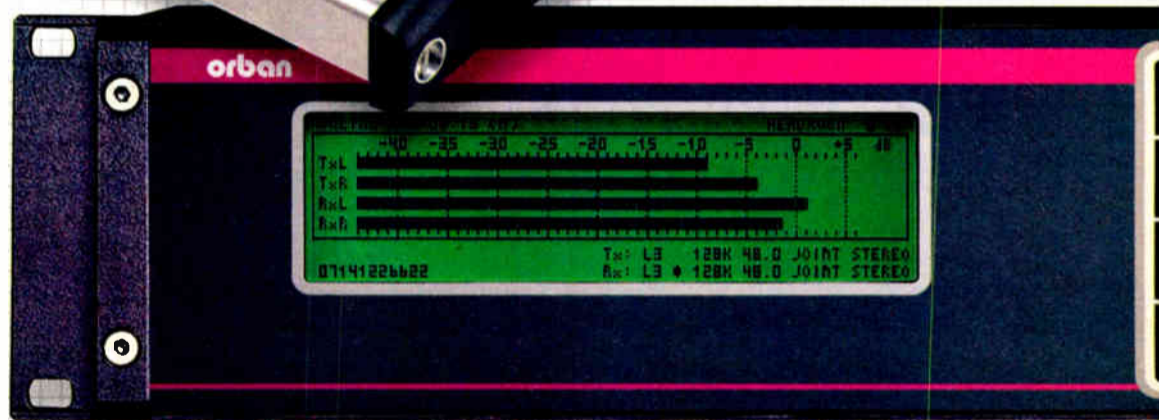
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Web Watch

► Continued from page 45

"Loudeye Radio represents what we believe to be the next generation of Internet radio and signifies the first time the industry has realized a complete Internet radio solution from one company," said Joel McConaughy, Loudeye's chief technology officer.

Fingerprinting

The Radio Show launch followed Loudeye's announcement that it will provide song identification and metadata for Napster's upcoming file sharing service. Loudeye will generate digital signatures, or fingerprints, for Napster's songs.



Joel McConaughy

made several strategic Internet radio acquisitions in the past five months, is making a play to own the Internet radio arena.

This is going to be hard to believe, but those additional windows called pop-up screens that open while viewing some Internet pages are annoying, according to psychologist Susan Weinschenk, Ph.D.

"In our lab, we see users closing pop-up screens as quickly as possible, even before the pop-ups finish loading," said Weinschenk, who heads Weinschenk Consulting Group.

"They're definitely annoyed — and annoyed people leave a site sooner and are less likely to return. Furthermore, the pop-up screen distracts them from their task, said Weinschenk. "They might have been trying to purchase something."

She warns that people who feel pestered at a Web site transfer their annoyance to the company that appears responsible.

"Consequently, pop-up screens are not a plus for your image," Weinschenk.

Craig Johnston is an Internet and multimedia producer in Seattle and is a frequent contributor to RW.

Contact him via e-mail to Craig@CraigJohnston.com.

'This is going to be hard to believe, but pop-up screens that open while viewing some Internet pages are annoying.'

The service is necessary to allow Napster to identify songs that must be filtered out, as ruled by a court decision earlier this year. This requirement has been a continued challenge for Napster.

It's Loudeye's music label-authorized catalog that enables this deal. It seems that the company, which has

NET-ONLY WEBCASTERS DIP SLIGHTLY IN AUGUST

MEDIAmazing.com held onto its No. 1 spot in MeasureCast's August Top 50 Internet radio stations ratings.

The Internet-only Webcaster is a "listener-formatted" service that has topped the MeasureCast ratings for the past six months. And just as they were in the July MeasureCast ratings, London-based Virgin Radio, ESPNRadio.com and RadioMargaritaville.com placed second, third and fourth respectively.

Arbitron's Webcast network ratings for March, released in August, still reflect the online world before radio groups pulled much of their online programming this spring.

NetRadio.com, an Internet aggregator that provides original programming for approximately 100 channels, was No. 1, while Live365, a service that allows consumers, radio stations and business organizations to create their own Webcast station, was second.

Arbitron stated that NetRadio has led the network ratings since Arbitron began the service

in October last year.

Clear Channel, whose stations' Webcasts have been silent since spring appeared in Arbitron's top 10, taking the No. 10 spot in the March ratings. The radio giant had been No. 7 the month before.

MEDIAmazing moved up three slots in the Arbitron ratings, to the No. 12 position.

MeasureCast also reported a slight rebound for terrestrial stations online vs. Net-only Webcasters, which streamed 1 percent fewer hours in August than they did in July.

In September, Clear Channel's KIIS(FM) and New Wave Broadcasting's KPIG(FM) returned to streaming. Clear Channel stated that it would resume streaming many more stations "soon." No doubt as more traditional radio broadcasters resolve copyright and AFTRA issues and return to Webcasting, they will also resume their former dominant place in the Internet radio ratings.

— Laura Dely

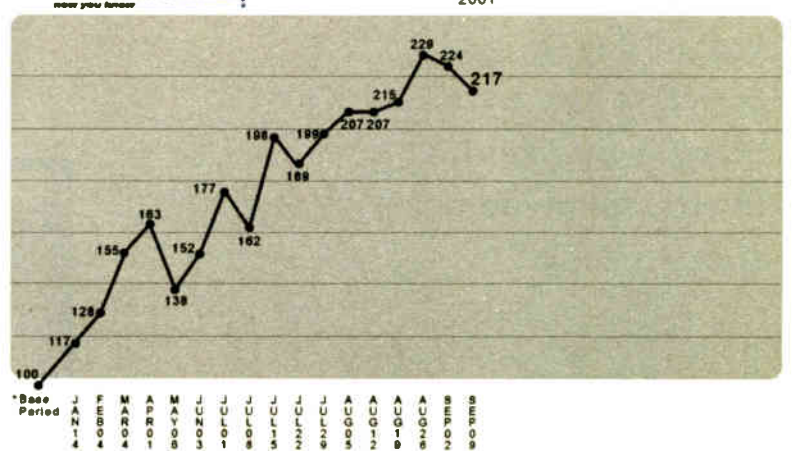
The MeasureCast Top 10 — August 2001

Stations are rated by TTSL — the number of hours streamed by the broadcaster in the reported time period.

JUL	AUG	Station/Format	Owner	URL	TTSL
1.	1.	MEDIAmazing/Listener-Formatted	MEDIAmazing	www.mediamaizing.com	634,405
2.	2.	Virgin Radio/Adult Alternative	Virgin Radio New Media	www.virginradio.co.uk	511,572
3.	3.	ESPN Radio/Sports Talk	Walt Disney Internet Group	www.espnradio1250.com	441,755
4.	4.	Radio Margaritaville/Classic Rock	Radio Margaritaville	www.radiomargaritaville.com	319,156
7.	5.	WFXZ(FM)93.7/Classic Rock	Sea-Comm Media/Warp Radio	www.937thebone.com	227,038
11.	6.	Cablemusic/Jazz	Cablemusic.com	www.cablemusic.com	160,216
5.	7.	3WK Underground/Alternative Rock	3WK	www.3wk.com	152,646
8.	8.	Alice New Media/Miscellaneous	Alice New Media	www.aliceonair.com	141,268
14.	9.	Cablemusic/Country	Cablemusic.com	www.cablemusic.com	140,675
12.	10.	Be On Air/Rock	BeOnAir.com	www.rock.beonair.com	138,807

measurecast

MeasureCast Internet Radio Index™ 2001



* The 10 week Base Period is an average of the weekly Total Time Spent Listening (TTSL) from OCT 30, 2000 through JAN 07, 2001.
** Index values are for an entire week ending on the date listed above.

Arbitron Webcast Ratings Top-10 Report — March 2001

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

Network	Owner	URL	March ATH
1. NetRadio.com	NetRadio Corp.	www.netradio.com	4,098,600
2. Live365	Nanoscosm Inc.	www.live365.com	3,585,200
3. ABC	Radio Networks	www.abcradio.com	2,149,800
4. RadioWave	Motorola et al *	www.radiowave.com	1,200,900
5. CableMusic Networks	CableMusic Networks	www.cablemusic.com	791,800
6. Corus Entertainment	Corus Entertainment	www.corusentertainment.com	777,300
7. Launch Media	Launch Media Inc.	www.launch.com	636,800
8. Public Interactive	Public Interactive	**	534,900
9. BigRadio.com Inc.	DigaCast Inc.	www.bigradio.tv.com	466,300
10. Clear Channel	Clear Channel	www.clearchannel.com	414,300

* In addition to Motorola, RadioWave investors include Intel, FBR Technologies, Susquehanna Radio and Warburg Pincus.
** Some of the 50 public stations that PI streams are found at www.wcpn.org, www.wmyc.org, www.kera.org and www.wbur.org



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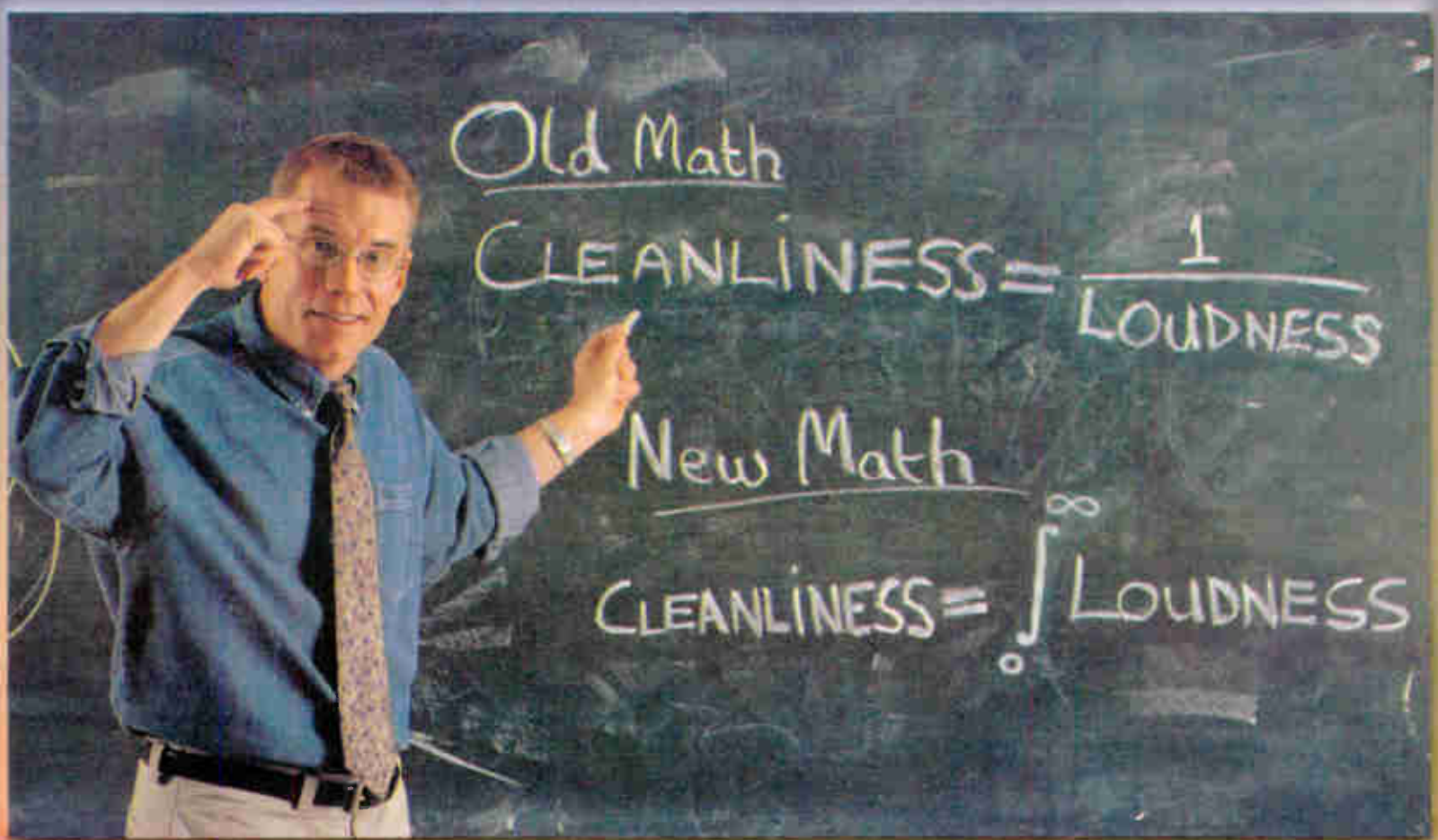


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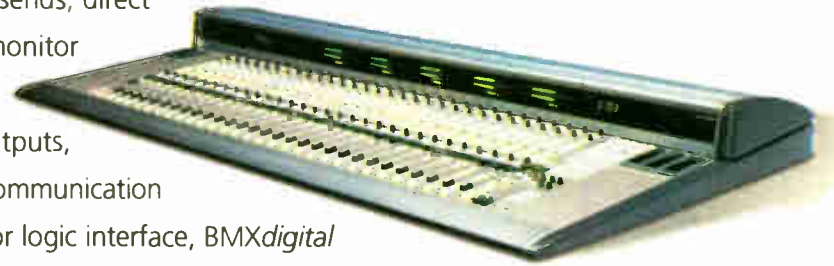
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TIPS AND TRICKS

More Tips, Tricks for MD

Paul Kaminski

Since my original article on MiniDisc tips and tricks was published in the May 9 issue of Radio World, I have received some e-mails and comments, some of which I would like to share. I hope they will illustrate concepts that will help you get the most out of the MD format.

Microphone wiring

Most of the e-mail I received concerned my explanation of how to custom wire a piece of starquad micro-

phone cable for use with a miniplug jack. In the majority of professional applications — and with most professional dynamic microphones — Pin 2 on the XLR connection is positive (in relation to phase).

Basically, when wiring a connector to record to the microphone input on a portable MD recorder, one must combine the Tip and Ring signals (that would come from the mini-plug that connects to the input) to Pin 2.

The Sleeve signal would go to Pin 3 (negative in relation to phase). The shield is connected to Pin 1, and the

appropriate connector (sleeve) on the mini plug.

Another conversation I had was with a radio reporter who wondered if using a MD recorder to feed a wrap — a complete news item, including introduction, soundbites and a summation — would be as quick as using two cassette machines.

That's a good question; one that deserves a nuts-and-bolts, how-to answer with more detail than I gave in the original article.

Producing and feeding a wrap in the field using one MD recorder is basically a 10-step process (see sidebar, right).

See TIPS, page 50 ▶

It's a Wrap: MD Field Basics

1. Record the interview and select a soundbite.
2. Place the soundbite into a separate track.
3. Record the introduction as a separate track.
4. Record the summation as a separate track.
5. Move the introduction track to the end of the MD.
6. Move the soundbite track to the end of the MD.
7. Move the summation track to the end of the MD.
8. Find the introduction track and put the MD recorder in pause mode. That backs up two tracks from the end of the MD, and when the play button is pressed, the introduction track plays, followed without a break by the track containing the actuality, followed without a break by the soundbite and the summation.
9. Connect the line output or headphone output of the MD recorder to the equipment being used to feed the audio back to the studio.
10. Once connected, and the levels are set, find the introduction track (the one paused in step No. 8) and play out the three tracks as one continuous piece of sound.

PERSONAL BROADCASTER

Run'n'Gun News By Samson Micro

Frank Beacham

You know the drill. The event is set in a crowded space and it is a big media free-for-all. Of course, nobody remembered to bring a multibox. There is just a lectern, 20 microphones, a boomy PA system and a mile of tangled wire.

Whether the occasion is a political speech, news conference or seminar, the challenge of recording broadcast-quality location sound in such a chaotic situation is always difficult.

Get close

Veterans of the game know that the first rule is to get your microphone in close to the subject. This tight miking means one of three things: placing your recording equipment unattended at the lectern and hoping that it all works out well, running a mic cable from the lectern to your seat and hoping that no one trips over it or using a wireless microphone.

The most attractive solution is the wireless mic. This way you can comfortably monitor sound at your seat and mark signifi-

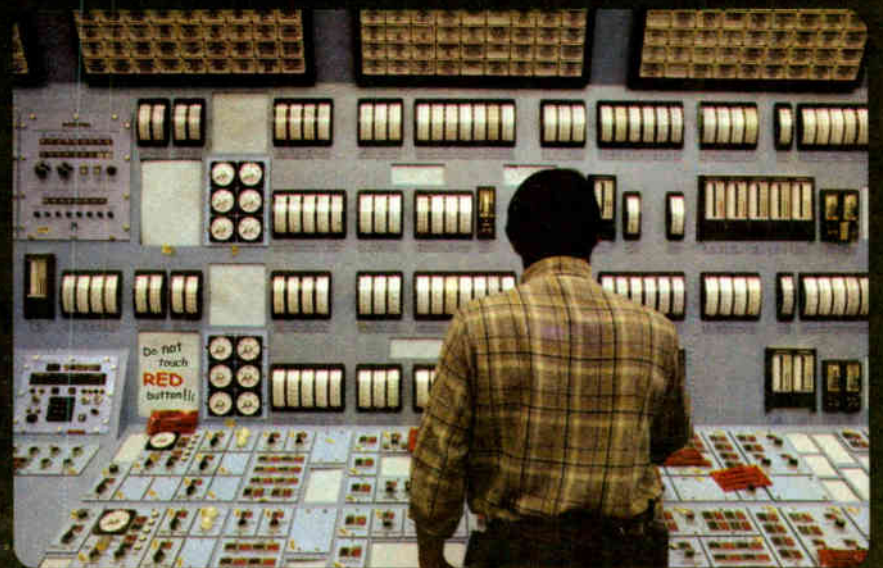
cant segments for quick retrieval on your MiniDisc or DAT recorder.

Until recently, however, I could never put together the perfect wireless mic system for this kind of job. Pro-quality wireless systems were never

See SAMSON, page 57 ▶



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Tips

► Continued from page 49

This same trick will work for a report with multiple soundbites, just as easily. Simply fill the tracks between the introduction and the summation with soundbites and narration, arrange them in order at the end of the MD and press play.

Assembly

Depending on the time you have, you can use as many cuts of actuality as will fit the time you are allowed for each wrap. The formula here is to record a track with an open, a track of actuality, a track of bridge narration, another track of actuality (repeating

the process as desired) and then the track with the lockout.

The report could also be assembled

Start with the summation track and combine the soundbite with it. Then combine that new track with the intro-

combine soundbites with narration, but sometimes news does not happen slowly enough to spend a lot of time with an editing program.

The editing functions of most MD recorders can, however, help users produce better audio by editing out breaths and make a fully edited piece right on a single MD.

Working with random access digital audio is faster and easier than working with two cassette decks, every time. In fact, editing with MDs helped me learn how to use a digital editing program much more quickly than I would have if I had stayed in the analog domain with cassettes and reel-to-reel.

Another helpful hint for reporters in the field is to get the remote control for the MD recorder and make good use of the pause button when recording a news conference or interview.

When the machine is paused and then restarted, a new track is recorded. This will save time when looking for actualities.

But how often is the MiniDisc being used for news and sports?

Well, at the July Championship Auto Racing Teams (CART) series at the Michigan International Speedway, I saw only one cassette deck plugged into the speedway multibox. All the other recorders were MD decks.

At NASCAR races, a few more cassette recorders are to be seen, but the reporters who cover the motor sports beat are using MDs.

I have also heard griping from some reporters who have had bad experiences when they first tried MDs.

First-time users should really read the instruction manual in advance.

Good habits

A few good habits will help improve the MiniDisc experience.

Always hit "End Search" whenever a MD is placed in the portable recorder.

Use a good quality microphone connected with an adapter cord appropriate for portable use, not a studio XLR microphone cable.

If there is any reason to worry about battery life, change the batteries before beginning an important recording.

Alkaline batteries are more robust than carbon-zinc dry cells. The price difference is worth paying.

I have used MD many times, but whenever I had a problem it was usually due to failing to cultivate one of these three good habits.

Paul Kaminski is the news director for the Motor Sports Radio Network and hosts its "Race-Talk" and "Radio-Road-Test" programs.

He also contributes reports to CBS Radio News. His e-mail address is motorsportsradio@compuserve.com.

At the July CART series, I saw only one cassette deck plugged into the speedway multibox. The other recorders were MD decks.

by combining all the tracks into a single track via the combine function of the MD recorder.

duction track.

Obviously, this is not as smooth as using a digital editing program to

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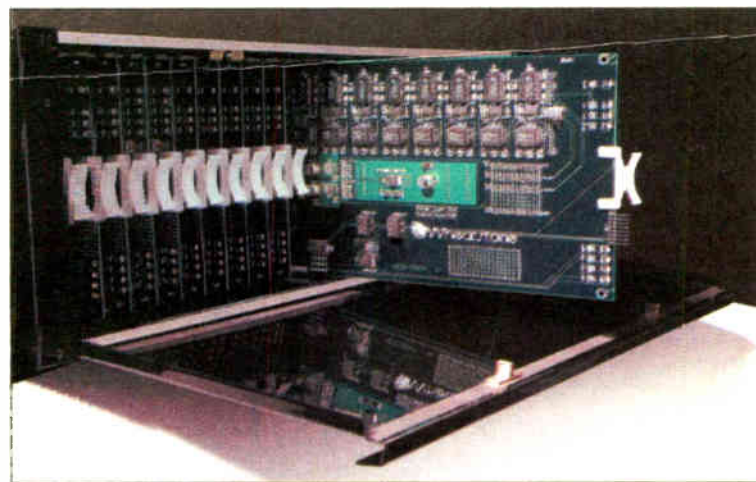
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PRODUCT EVALUATION

The WinBook Z1 as a Portable DAW

Carl Lindemann

Are you considering a new PC audio workstation? Consider getting a laptop instead of a desktop.

What do you gain over a standard DAW with such a setup? Adding portable potential may be the best reason for getting a new system as tests of the new WinBook Z1 1 GHz showed.

In case you missed it, there has been an enormous flattening of the computer marketplace. Basically, the machines are so fast already that the next-generation systems really do not do a whole lot more than what is available.

At the same time, laptops now are able to handle most any PC production task.

The WinBook Z1 is part of the latest crop driven by the Intel 1 GHz Pentium III CPU. WinBook Corp. is one of the few reputable second-tier PC manufacturers. The Z1 is the first WinBook I have put through its paces.

The fit and finish of the unit were excellent; support on the company Web site is solid.

But why not opt for the latest from Compaq, IBM or Dell? Price. A similarly equipped unit from these manufacturers costs \$1,000 more than the modest \$2,400 sticker on the Z1.

The test system came equipped with Windows 2000 (upgraded to Service Pack 1), a 20 GB IBM TravelStar DSJ-230 4,200 RPM hard drive, 128 MB RAM, a DVD-ROM drive and a hi-res 15-inch Samsung SXGA+ (1,400 x 1,050) display driven by a 16 MB videocard.

Instead of a pointing stick, the Z1 has a Synaptics Glidepad. The whole package weighs in at 7.4 pounds.

Holds its own

Tests with a number of audio production benchmarks showed the Z1 to be a close match for my desktop DAW. For pure horsepower, few tasks are as CPU-intensive as crunching a WAV file into MP3. Compressing a 100 MB test file (about 10 minutes recorded) to 128 kbps took 45 seconds in Sound Forge 5.0 — a dead heat with my PIII 800.

The disc read test with the IQS Speedtest32 utility scored around 11 Mbps, enough to do plenty of heavy lifting with a multitracker. If that is not enough, upgrade to IBM's latest 5,400 RPM 32 GB drive to get higher

scores yet. Also, adding more RAM (up to 512 MB) will increase overall performance a few percentage points.

As far as general usability, the full-size keyboard, enormous TFT screen and trackpad pointing device offer close to the same amenities found on the desktop.

The real showstopper is the screen. The 15-inch LCD is just a shade smaller than my 17-inch CRT. The major difference here is that the CRT hogs a good chunk of my workspace and



weighs several times what the Z1 does.

The native resolution of the Z1 is, in fact, a bit too much for my eyes. Ratcheting it down to XGA (1,024 x 768) yielded somewhat less crispness to the images.

This really isn't so much an issue for using production packages. It is more of a matter of rendering larger fonts when working with text. Either way, the flicker-free TFT likely will reduce eyestrain over lengthy production projects.

Another important bonus is the unit's quiet operation. While most DAWs generate problematic noise from whirring cooling fans and spinning hard drives, laptops tend to be quieter, relying more on heatsinks.

The 1 GHz CPU throws off considerable heat. A relatively quiet internal fan kicks in periodically. Even at its noisiest, this creates far less background noise than a typical desktop.

One peculiar quality of the Z1 is the considerable flexure in the case and keyboard. Though hardly rubbery, there is a good deal of give to the

graphite reinforced plastic case. It does not seem fragile, but it is not rigid in the way titanium- or magnesium-cased systems are.

With rare exceptions, such as the Panasonic Toughbooks line, none of these are designed to survive dropping. Also, the virtue of portability can be a liability. Laptops can walk easily. A security cable is a necessary accessory for any system left around the studio.

The greatest challenge for any laptop-based production setup is an adequate audio I/O. As expected, the Maestro integrated audio system here is hopelessly inadequate. Recording quality is on a par with most Soundblaster-type consumer audio.

Serious contender

Playback through the integrated speakers is tiny; an external box or card has to be attached through the PC Card slot or USB-connectors. At present, the best, most cost-effective profes-

sional solution is Digigram's excellent VXPocket card.

Another serious contender is the forthcoming USB-based soundcard from Digital Audio Labs. Like the VXPocket, it offers balanced analog connectors, as well as S/PDIF scheduled for release early next year.

With the addition of a small mixing board and powered monitors, it is possible to have a complete portable production facility that weighs less than 40 pounds. That weight can be cut considerably by trading the monitors for headphones.

Product Capsule:

WinBook Z1 1 GHz Laptop Computer



Thumbs Up

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- ✓ Speedy
- ✓ Reasonable price
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Thumbs Down

- ✓ Somewhat heavy for a notebook
- ✓ Limited I/O for pro audio cards.

Retail Price: \$2,400

For information contact the company at (800) 254-7806, visit winbook.com or send e-mail to winsales@winbook.com.

If the audio recording is likely to take place in a single location, having a docking station can make life easy. The WinBook offers an "advanced port replicator" (\$199) that can save a whole lot of time reconnecting cable back in the studio.

In addition to the LAN port, it also has an S/PDIF RCA jack. The usual plethora of USB, parallel, serial and keyboard ports are also present. It is possible to use the Z1 as the heart of a fixed setup with an external monitor, keyboard and mouse.

The WinBook Z1 offers radio producers the necessary power to trade workstation for laptop.

For some, this adds indispensable remote production capabilities. For others, it is a chance to work out of the office. Although bringing work home is not something to get excited about, having the opportunity to work from home will have appeal for some. In any case, the Z1's many amenities make for a portable production setup with no sacrifices.

Carl Lindemann is an independent public radio producer, and consults professionally on new media issues.

New Dates for AES

New dates for the AES 111th Convention in New York City are Friday Nov. 30 to Monday Dec. 3.

The show had been scheduled for September but was postponed after the terrorist attacks of Sept. 11.

According to the Audio Engineering Society, the Mayor's Office of Emergency Management and the Federal Emergency Management Agency had taken over large portions of the Javits Center for use in coordinating emergency services.

FEMA had control of the space and any other areas deemed necessary for an undetermined period. Rather than cancel the convention, AES rescheduled it.

In its official statement regarding the rescheduling, the Audio Engineering Society thanked those who took time and trouble to inquire about the safety of the staff in its New York office.

For information, contact the AES in New York at (212) 661-8528 or fax (212) 682-0477.

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April 2000

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-Recording Magazine
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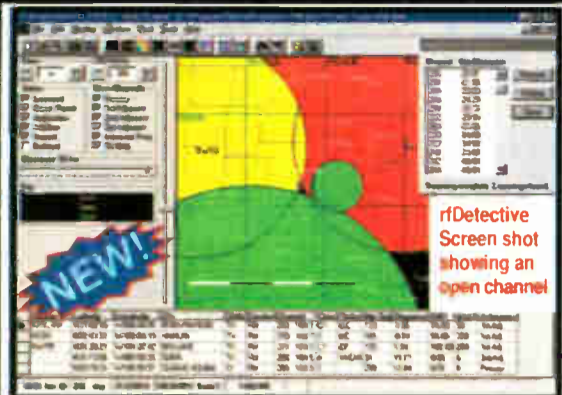
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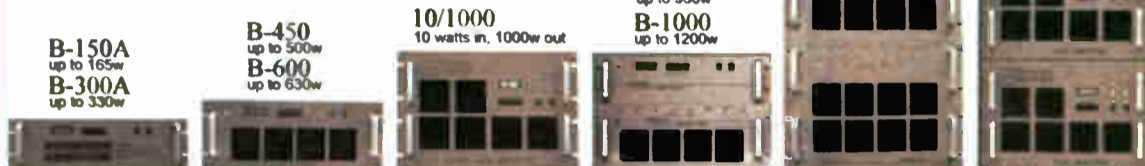
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◆ PRODUCT GUIDE ◆

Products for Radio Air & Production Studios

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New Company CSS Designs Facilities for Broadcasters

Creative Studio Solutions is a new company that designs custom facilities for traditional and Internet broadcasters.

CSS is certified by several manufacturers including Aphex, Comrex, Symetrix, Lighthouse Digital and Wheatstone to provide turnkey studios.

CSS designs, builds and tests studio equipment at its Colorado facility and ships the equipment to the site for installation by a CSS engineering crew or the client's staff.

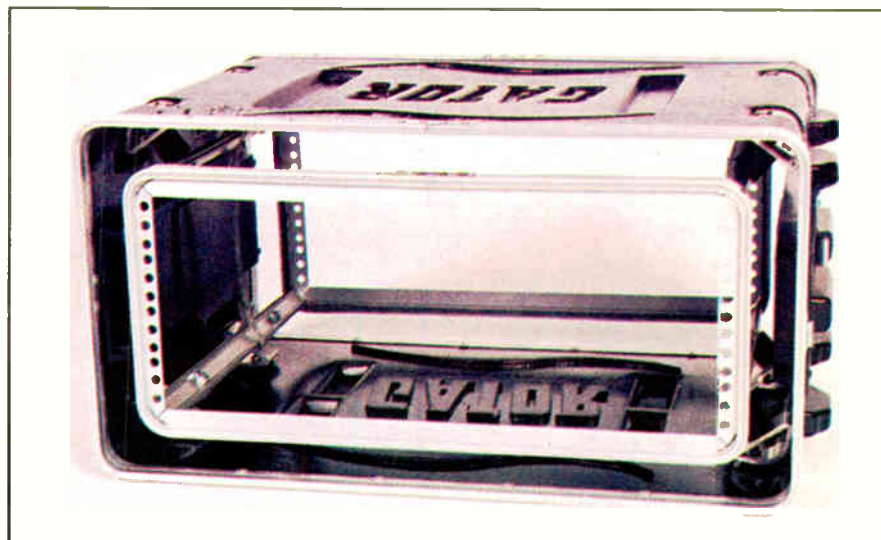
The firm also designs custom audio racks, remote-broadcast recording packages and remote broadcast vehicles.

For more information contact Creative Studio Solutions in Colorado at (303) 425-5004 or visit the company Web site at info@creativestudiosolutions.com.



Gator Cases Provide Shock Protection

Gator Cases makes shock racks. Internal frames have heavy-duty rubber mounted shocks to allow the internal frame to move during impact and absorb severe shock.



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With the adjustable rear rack rail mounts, every piece of gear mounted in the rack can be supported via the rear rack rail.

The Gator Cases' racks are constructed of a lightweight, polyethylene material. Large, industrial-style twist latches hold lids securely during travel. The racks stack compatibly with Gator and other manufacturers' rack cases.

Price: 4 RU \$249.99; 8 RU \$299.99; and 12 RU \$349.99.

For more information contact Gator Cases in Florida at (813) 221-4191 or visit the company Web site at www.gatorcases.com.

Lexicon's Affordable Signal Processor

The MPX-200 from Lexicon, a Harman International company, is a stereo, 24-bit dual-channel processor with 24-bit A/D-D/A and S/PDIF digital inputs and outputs that support 44.1 kHz.

The 19-inch, 1-RU processor is powered by Lexicon's Lexichip.

There are 240 presets with reverb programs such as Ambience, Plate, Chamber and Inverse, as well as Tremolo, Rotary, Chorus, Flange, Pitch, Detune, 5.5 second Delay and Echo.

Sixty-four user locations are available.

The MPX-200's front panel features function controls including input level, program load, program edit, compressor, store, multifunction adjust, bypass and tempo tap.

Easy-to-read LED displays indicate compression gain, input level (left and right channels) effects and routing.

Price: \$399.99.

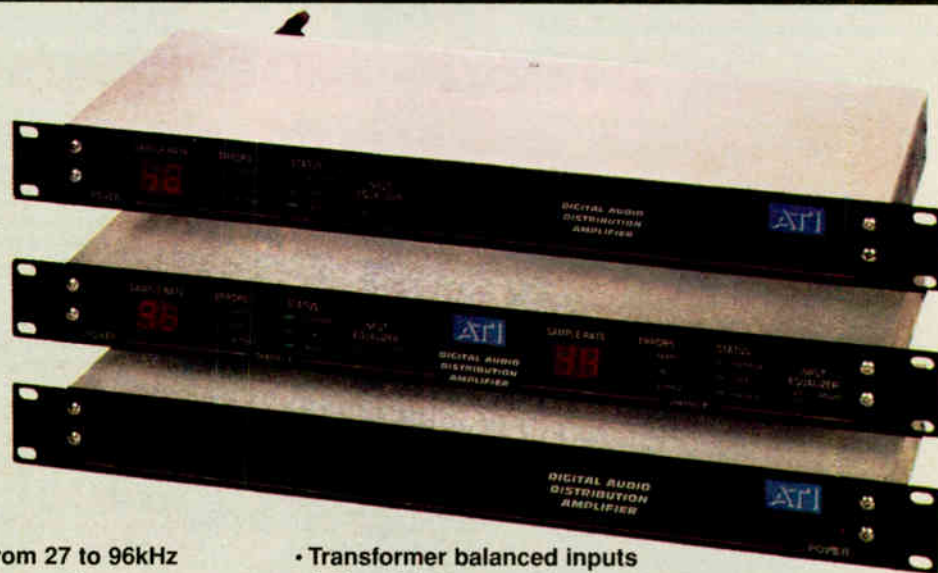
For more information contact Lexicon in Massachusetts at (781) 280-0300 or e-mail info@lexicon.com.



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STUDIO SESSIONS

Samson

► Continued from page 49

small enough or portable enough.

I wanted both a supercompact transmitter and receiver, with long runtimes on common batteries. I wanted a minimum of wire to avoid the spaghetti tangle that always seems to grow in my gear bag. And, I wanted reliable operation and good sound quality.

Out of the blue, I stumbled into what I think is an excellent solution for the run'n'gun news event. It is a unique combination of wireless components from two product lines made by Samson Technologies.



The breakthrough component in my portable news system is the Samson AL1 Presentation Transmitter, a tiny matchbox-size device that includes an internal microphone and operates for up to 14 hours on a single AAA battery. The AL1 is part of Samson's new miniaturized Airline series of UHF wireless transmitters.

On the other side is the Samson UM1 Micro Diversity Receiver, a lightweight ENG-style device about the size of a pack of cigarettes that runs for 12 hours on a single 9V battery.

Together, this pair makes up the smallest, most hassle-free pro-quality UHF wireless system I have ever used. After recording several events flawlessly with this system in New York City — the RF gridlock capital of the world — I was impressed and surprised by its excellent performance.

As a non-engineer who simply wants to bring home good audio with a minimum effort, I found the Samson system an ideal companion to the standard recording tools in a reporter's sound kit.

Beyond working well, it is the little things that make this system special. The AL1 transmitter — which feels almost weightless — is self-contained. It has an external microphone mini jack that can provide 2.7 V of phantom power, but you don't need an external mic. The internal unidirectional electret condenser microphone with metal windscreen works just fine by itself.

The AL1, measuring 2 by 1.5 by 0.5 inches, clips on a pocket, microphone cable or lectern light. It can also stand alone, as its appended spring clip also serves as a built-in stand. On the case are a power switch, power/battery LED, gain control and mute switch. A thin, 3-inch wire antenna drops from the bottom.

The whole transmitter unit is so light you can secure it on a lectern with a piece of Scotch tape. But beware: The AL1's minuscule size also makes it almost invisible. Like a tiny pager, it is easy to forget or misplace.

You'll normally see photos of the UM1 receiver mounted on the back of a video camera, but the same

attributes that make it ideal for television ENG use make it useful as an audio receiver for radio applications.

Only 4 by 2.5 by 1 inch, this pint-sized receiver fits easily into any gear bag. A pair of 3-inch antennas fold out like ears for signal reception. For its diminutive size, this receiver has what is needed to do the job. There are A/B receiver LEDs, a squelch level control and a meter indicating either battery power or the strength of the incoming RF signal.

The receiver is equipped with balanced and unbalanced output connectors, a headphone jack and volume control. A flexible audio output level switch matches the signal to just about any audio device.

A mini jack can feed consumer-type recorders directly. A 600-ohm mini-XLR jack (and an included adapter cable with full-size XLR connector) allows connection with pro gear.

I used a garden-variety mini-to-mini mono cable to connect the UM1 receiver to my Sony MZ-B3 MiniDisc recorder. As for setup, it took only minutes to match and optimize the levels between the transmitter and receiver. Samson provides simple instructions and I found that doing it once was all that was needed.

The main caveat to using this micro wireless system is that it operates on a single, factory preset channel. There is no way to switch to an alternative channel if interference is encountered.

Tradeoffs

Of the six channels Samson offers with the Airline system (in the 801-805 MHz UHF frequency range), I used U1 (801.375 MHz). Although I encountered no interference during my limited tests, the tradeoff here is there might be certain locations where the preselected channel will not work. In that case, you are out of luck with this system and will have to revert to a wired recording method.

In addition to the presentation transmitter, Samson is offering its Airline technology in a vocalist mic plug-in module, headworn microphone, guitar plug-in and clip-on wind instrument pickup. These tiny transmitters are packaged with a range of receivers, both AC- and battery-powered models. Street prices, depending on the configuration, range from \$270 to \$500.

For more on the Airline system visit www.samsontech.com/wireless/products_airline.html. For information on Samson in New York, call (516) 364-2244.

Frank Beacham is a New York City-based writer and producer. His Web site is www.beacham.com. Reach him via e-mail to frank@beacham.com.

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EAS and the Events Of Sept. 11, 2001

by Richard Rudman and Al Kenyon

The authors are the chair and vice-chair of the FCC's EAS National Advisory Committee.

Radio World has over the years become a source of accurate and balanced information on many controversial issues in our profession. Compliments are due to Radio World on how it is handling this story.

If there is a short answer to why EAS was not used on Sept. 11, it is a variation of the answer on why EAS was not used when the Northridge earthquake hit Los Angeles in 1994 at 4:31 a.m. Many "Short Fuse" events serve as their own dramatic and very effective warnings.

The mission of EAS, a warning system, should be to notify those who are not tuned in to do so at once. However before you tell people to "head for the hills," you have to know in what direction to tell them to head, and what to run from. A warning not backed by solid information may well be worse than no warning at all. The reality: We really did not have the proper sort of plans in place that week to deliver credible timely EAS warnings, national or local.

The fact remains that once we knew something bad had happened, we all tuned in to the existing news infrastructure which was, for the most part, intact. As information developed, we became better informed. We received information we needed to protect ourselves. We received reassurance on what was being done to protect us. The system worked.

Media access

Normally, the president is plugged in to the day-to-day communications infrastructure through the established national press corps. If this infrastructure is intact, it is far better to use it rather than a backup "audio only" system. It is then up to the president and his people to supply solid information and realistic reassurance.

When the president moved around the country on Sept. 11 ahead of the Washington press corps, he still had near-instant access to all terrestrial electronic media through national-level EAS.

We serve on the PEP Advisory Committee. Both of us have no doubt that the national level of EAS would have fulfilled its mission if it had been called upon. Without going into details, the national level of activation built into all type-accepted EAS devices works differently than local EAS, provided the devices are wired into the active audio program path.

The critical issue then becomes the time

interval between identifying a clear and present danger to life and limb and the arrival of that danger. In the case of what happened in September, there may well have been some warning time before the second plane hit the World Trade Center, and the plane crashed into the Pentagon, assuming someone knew their targets.

Without foreknowledge of the targets, an alert requesting immediate general evacuation of Manhattan and the core of the District of Columbia could have created panic, and hurt more people than it would have helped.

Missing link

There was a missing link, however, and it lies in the inability of those who might have had specific information to make a decision to issue a warning in some form that might have allowed more people to get out alive. A phone call or EAS warning from air traffic control to WTC building security about a second rogue airliner might have saved lives. The likelihood of such a call getting through under the circumstances was very small.

Would building occupants hear or heed an EAS warning? We cannot answer that question unless and until threat warnings can propagate to security people in target buildings. The NAC, along with other entities reviewing preparedness and security issues, has already begun to look at various ways to rapidly provide threat warnings to people who can order immediate evacuations.

The common denominator for major quakes and what happened on 9/11 was fear, compounded by fear of the unknown. At "time zero" we all started from that perspective. Good emergency public information at times like this should bring people from fear of the unknown to timely and accurate knowledge of what we do know.

With timely and accurate knowledge, fear and terror are mitigated. Our leaders and emergency managers were in the same mental place and experienced the same fears as the rest of us. We were all in the same emotional boat. On Sept. 11, that boat was on uncharted waters. The sad fact is that while we have planned for many emergencies, we did not do enough planning to deal with this one.

In an e-mail message widely circulated soon after the horror of that day, Richard Rudman said, "Due to time of day and many other factors, it is not clear to me at this time if any type of EAS activation on Tuesday would have served any useful purpose."

Based on what we know now through hindsight, we should look at placing EAS origination equipment in air traffic control

When 9/11 Came, EAS Was Mute

"The EAS is designed to provide the President with a means to address the American people in the event of a national emergency."

So proclaims www.fcc.gov/eb/easfact.html regarding the Emergency Alert System. But on the morning of Tuesday, Sept. 11, 2001, decoders in New York and Washington remained mute.

Many broadcasters in these cities waited for some kind of activation from the government or an official agency in their jurisdictions. The highest alert, a national EAS activation or EAN, probably was inappropriate given that the true nature of the attacks was not yet known. But an LAE or local area emergency in both cities certainly was taking place.

FCC EAS NAC Chair Richard Rudman wrote, "Due to time of day and many other factors, it is not clear to me at this time if any type of EAS activation on Tuesday would have served any useful purpose. In fact, my friends in the emergency management community and specialists on emergency public information would probably agree with me that an EAS warning without adequate information to support would be worse than no warning at all."

Which gives us pause to wonder: If a foreign attack on America's two greatest cities does not warrant an alert, what does?

We agree that, by the time the disaster was underway, many Americans were tuned in via radio and TV, very well aware of the unfolding drama. Broadcasters did their jobs well that day.

But does that mean an alert was completely unnecessary? Was there not ample reason to inform people in Washington and New York whether to go home, to fetch their children, to stay at work, to avoid certain roads so that emergency vehicles could pass?

Much like emergency medical techniques and rescue operations, the EAS structure was not designed to anticipate a disaster of such unthinkable magnitude. As much as we might wish for one now, there is no button marked "terrorist" on the encoder box.

The situation is being addressed and will be rectified. Rudman states, "The discipline of emergency management rests on a continuous cycle that makes improvements based on lessons learned. We will be learning a lot from the lessons of (Sept. 11) that go far beyond EAS."

We agree that improvements are necessary. From an engineering standpoint, EAS is a work of art. In practical terms, except for weather alerts (in which it excels), it remains a Rubik's Cube both for operators and those entrusted to activate it.

The current model is constrained by layers of headers, codes, subcodes and rules that the typical board-op or air talent cannot always comprehend. Encoder controls can be awkward and on-air tests often are done incorrectly. Managers complain of EAS activations for weather events miles from their listening areas. And as seen in New York and Washington, there remains a hesitancy to call out for a real emergency.

Since the days of CONELRAD and EBS, broadcasters have been on guard to relay emergency news and messages in times of crisis. Well, the real test finally came, and nothing happened.

Given the actions of 9/11/01, radio has to have a simple, uncomplicated and dependable EAS system, along with the proper civil agencies that know how and when to activate it. And radio needs it right now.

—RW

centers. These centers then become part of existing EAS Local and State Emergency Communications Plans. We should also identify other elements of our critical infrastructure that should also be connected to EAS.

At the LECC and SECC level, we should redouble our efforts to build robust partnerships with our local emergency managers where they do not exist now.

Review and verify

We should also follow the excellent advice given by Clay Freinwald, chair of the SBE's EAS Committee: LECC and SECCs should review their plans, and radio, TV and cable systems should verify that their operators are properly trained.

The goal must be to have the capability to reach out to people who need and want emergency information — even those who are not tuned in to radio or TV. In fact, the goal of a truly advanced warning system should be to get everyone to monitor the

breaking news situation — literally the story of the emergency.

Long-term, the EAS protocol can support far more than we have asked it to support so far. EAS can and will be adapted to provide better warnings to the general public as well as the sight- and hearing-impaired. It ultimately will let warnings awaken from a sound sleep those of us who choose that option. The FCC's EAS National Advisory Committee (NAC) has had a subcommittee in place for more than a year that is looking at ways to build on the EAS infrastructure to create an advanced warning system.

Can we do better? Of course. The discipline of emergency management as well as real life rests on a continuous cycle that makes improvements based on lessons learned. We will learn a lot from the lessons of Sept. 11 that go far beyond EAS. We will be better prepared tomorrow than we are today. 🌐

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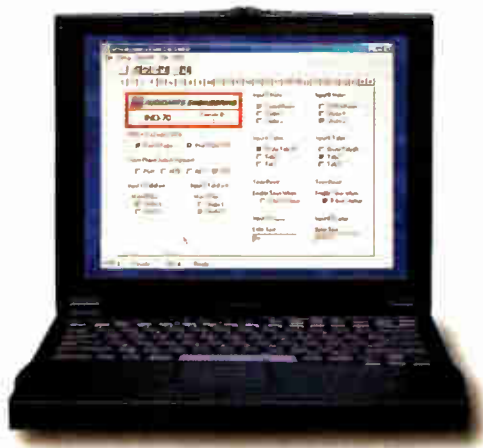
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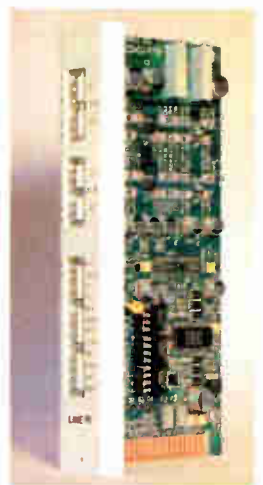
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