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LPFM Audio Anarchy?

Reader letters pour in on the red-hot LPFM fight.

'FCC Smear Campaign'

Lynn Claudy of NAB and Kevin Klose of NPR explain their stances on low-power FM in separate commentaries.

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Radio World

The Newspaper for Radio Managers and Engineers

April 26, 2000

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Visit RW Online at www.rwonline.com

NEWS MAKER

ABC Radio's Bryant — One of a Kind

by Randy J. Stine

DALLAS She's been teased about being the "broad" in broadcast engineering, but it hasn't hurt Margaret Bryant's feelings.

"I can take it," said Bryant. "In fact, I was the one who coined the phrase."

As director of engineering and technical operations in Dallas for ABC Radio Networks, Bryant is one of a handful of female radio engineers ever to reach the top of their profession.

She oversees an operation with 32 on-air and production studios and a staff of five engineers at the Dallas complex.

See BRYANT, page 8 ▶



Margaret Bryant

Photo by Uniqur Photography

NEWS ANALYSIS

Sirius, XM Cooperate As Launches Draw Near

by Leslie Stimson

As they approach their target launch dates, the competitors developing satellite-delivered digital audio broadcasting are positioning themselves to fight traditional radio more than they have been racing with each other.

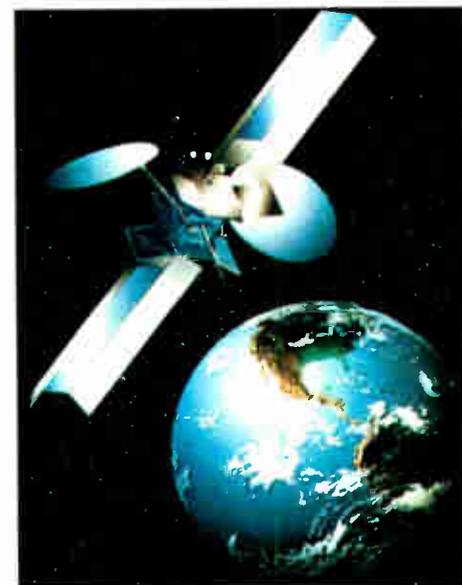
In recent months, the companies said they are working toward a single receiver standard.

They have pledged not to sign exclusive receiver deals in the future. A lawsuit has been dropped. And they've even agreed to provide backup technical services for each other.

Sirius Satellite Radio expects its subscription service to begin by the end of this year; XM Satellite Radio expects to be operational by the second quarter of 2001.

Meanwhile, receiver manufacturers working with both companies say some receivers may be available by the end of 2000, but it is more likely that large commercial quantities of product would reach retailers in the second quarter of next year, with sales picking up in the third quarter as consumer awareness grows.

By 2012, as many as 49 million people may subscribe to satellite radio, a

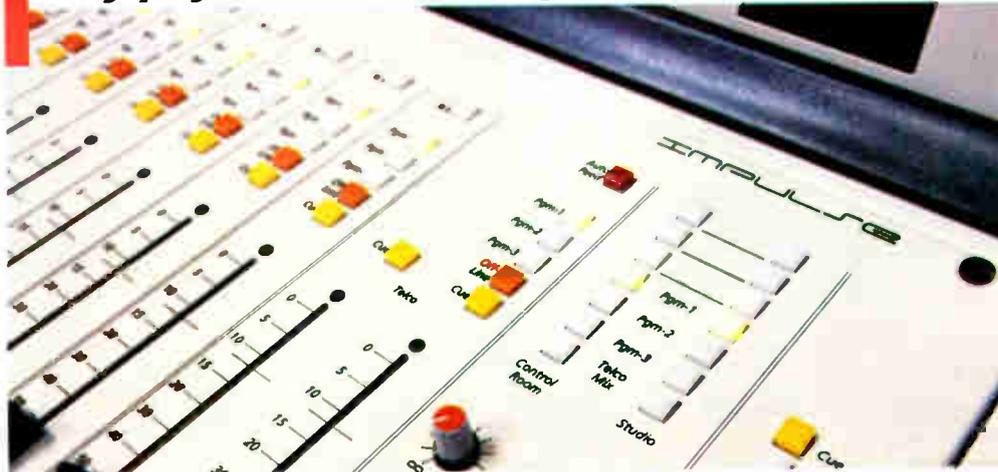


XM Satellite is using two HS-702 geostationary satellites built by Hughes Space & Communications Intl.

study for XM concluded. The study, performed by Strategic Marketing and Research Techniques, assumed a receiver price point of \$150 to \$399.

U.S. radio earned 8 percent of all advertising revenues last year, according to *See SATELLITE, page 5* ▶

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NEWSWATCH

OSHA: Tower Firm at Fault

RALEIGH, N.C. The December 1999 deaths of three tower workers in North Carolina could have been prevented if proper safety procedures had been followed, said the North Carolina Department of Labor, Division of Occupational Safety and Health Administration after investigating the accident.

The three workers fell approximately 1,000 feet while ascending the 1,500-foot tower near Cleveland, N.C., to paint the structure (RW, Jan. 5). The tower is

owned by WFMX(FM), Statesville, of the AMFM Inc. group.

The OSHA report revealed several violations by Quality Tower Painting of Red Oak, Va., including improper use of the capstan hoist being used to lift the personnel, improper safety training of the crew, and improper safety and lifeline equipment.

Workers were not attached to an acceptable lifeline, inspectors found.

The report stated the crew of three "was being lifted on a three-fourths-inch-diameter nylon rope — a practice called 'riding the line.'"

The capstan hoist was designed to lift materials only, said OSHA.

A rest platform connected to the nylon

rope could have contributed to the accident by becoming entangled in the tower, according to the report.

No citations were issued against Quality Tower Painting since the company was dissolved after the owner, 40-year-old Daniel Zortman, was killed in the accident.

— Randy J. Stine

NAB to FCC: Change EEO

WASHINGTON NAB has asked the FCC to reconsider the new broadcast

Equal Employment Opportunity rules. At the same time, state broadcast associations filed a court appeal challenging the constitutionality of the EEO rules, due to go into effect April 17.

"The FCC should modify its rules in order to actually provide the flexibility it claims to offer broadcasters," stated NAB.

Among NAB's requests: Eliminate the requirement to recruit for every job
See NEWSWATCH, page 3 ▶

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AUDITRONICS 4.0 NuStar

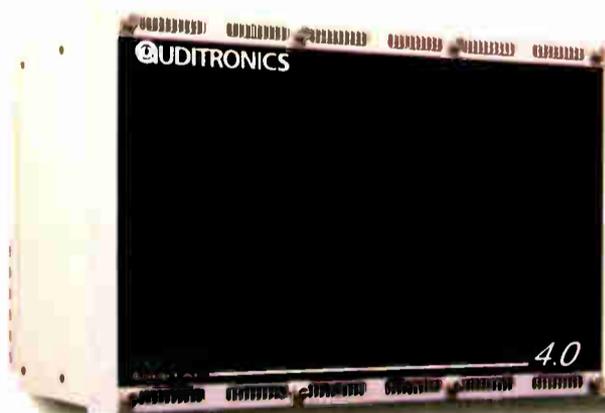
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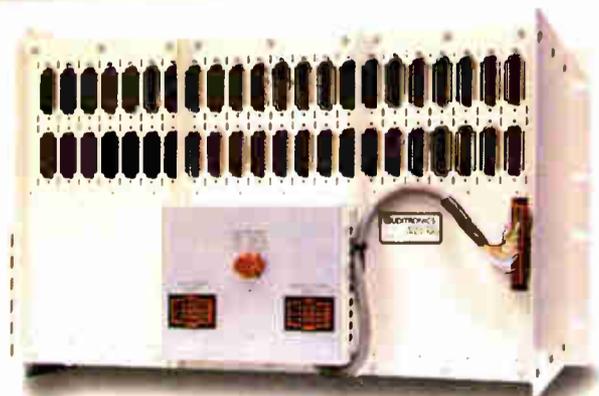
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AUDITRONICS

DIGITAL NEWS

DRM Begins SW DAB Tests

by Andy Bantock

RAMPISHAM, England Digital Radio Mondiale, a consortium of international broadcasters dedicated to developing a digital AM standard for long-, medium- and shortwave, has begun DAB field tests for shortwave.

Caribbean, with receiving/measurement sites throughout the world.

The point of the first series of tests is to collect and verify information about the effects of varying propagation conditions on digital systems and to determine how the transmitters handle digital modulation.

At Rampisham, in southern England,

The DRM system aims to support varying coding rates in order to deliver improved reception quality, as well as radio data system-style information for automatic frequency selection and associated data.

Using current coding methods, the best audio sample rate gives a signal of similar quality to that of mono FM radio.

Engineers have already identified one possible problem with the modification of existing shortwave transmitters. The Merlin transmitters already have been adapted for single-sideband use and have presented few problems. But the linearity of some modulators may prove a cause for concern.



DRM hopes the trials will provide additional information about how well modified transmitters work, key to a digital transition. Smaller, single-transmitter operators may find it difficult to invest in new equipment, meaning an effective upgrade path is a necessity.

Other parameters undergoing analysis include the effect of antenna design on the digital signal, particularly with broadband arrays.

Initially, Merlin and DRM are concentrating on data-degradation tests.

DRM also is working with USA Digital Radio on a worldwide DAB standard for AM broadcasting (RW, March 15).

For the shortwave tests, DRM is transmitting 30-second digital test signals at various frequencies around the world.

Periodic tests

Merlin Communications International Ltd. uses one of its high-power shortwave transmitters to run the periodic tests.

In February, Merlin made the first of a number of presentations to journalists and other interested parties from across Europe, demonstrating what DRM believes is a practical alternative to analog short-, long- and medium-wave AM broadcasting.

The test transmissions originate from a number of locations in Europe and the

the modulator of a Marconi transmitter has been modified to accept the digital input from an adapted computer. A similar PC-based reference receiver also is at Rampisham to enable DRM to conduct off-line tests into dummy loads.

Initially, Merlin and DRM are concentrating on data-degradation tests rather than extensive audio demonstrations, although each of the test signals includes an audio component. Engineers can simulate problems and monitor the bit error rate locally and at distant receiver sites.

Upcoming tests

Later this year, Merlin plans medium-wave tests from Orford Ness, England, and to monitor the audio quality more closely.

◆ NEWSWATCH ◆

► NEWSWATCH, continued from page 2 opening, reduce or eliminate record-keeping requirements and eliminate or modify the Annual Employment Report so the data is not attributable to stations and not collected every year.

House Passes Anti-LPFM Legislation

WASHINGTON The House of Representatives passed an amended version of low-power FM legislation on April 13. The vote for H.R. 3439 was 274-110.

The House acted despite a request for a delay by FCC Chairman Bill Kennard. President Clinton opposed House passage as well, according to a statement released by the Executive Office of the President before the vote. The administration expressed confidence in the FCC's ability to handle interference issues that might arise from the allocation of LPFM stations.

The statement is seen by observers as a sign that Clinton is likely to veto the bill if the Senate passes it.

The bill requires the FCC to maintain current channel protections, including those for third-adjacent channels,

and mandates the commission to have an independent party conduct interference tests.

"This is a great day for free, over-the-air radio listeners," said NAB President and Chief Executive Officer Eddie Fritts.

Fritts thanked National Public Radio, radio reading services for the blind, the Consumer Electronics Association and the National Religious Broadcasters Association for their support.

NPR was singled out by Kennard for its support for the bill.

"Rather than continuing the process of finding common ground and resolving differences, NPR walked away from the table and endorsed the legislation," Kennard said.

He pledged to continue to work with NPR to resolve translator and receiver interference issues.

While the legislation would not eliminate LPFM frequency allocations, it would substantially reduce them. Maintaining third-adjacent channel protections would allow potentially 75 LP100s in the 60 markets evaluated by the commission, compared to about 400 potential LP100s if third-adjacent channel protections were dropped, according to a source close to the FCC.

In the 20 cities with a population of more than 500,000, the number of LP100s would be about nine, down from about 68.

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Is There an LPFM Supplier Penalty?

Bits and pieces, briars and brambles from around the world of radio ...

★ ★ ★

Will companies that are promoting new equipment for LPFM applications be penalized by their existing radio clients?

Don't laugh. At least one industry vendor expressed surprise to me that some manufacturers are leading the way with products aimed right at LPFM.

He feels current customers will take their business elsewhere, and he says some already are doing it.

I've seen no evidence of that. But it's conceivable, given the heated emotions over the low-power issue. Yet I think it's ridiculous to do so — tantamount to shooting yourself in the foot.

If a company is in the business of making transmitters or audio gear for radio stations, and the FCC allows new stations on the air, do we seriously expect those suppliers *not* to serve the new clients?

And who loses if a radio manager willingly reduces the number of suppliers he or she can shop among? Isn't consolidation doing that fast enough already?

Another interesting point is that by no means is the broadcast engineering community united about LPFM. Many, many people disagree with NAB on this issue, as demonstrated by the letters and e-mails we've already published here from working engineers and managers.

I believe in a healthy industry supplier marketplace, and that vendors should not be penalized for serving their clients within the law.

Surely this is a sticky time for equipment marketers. They don't want to be seen as jumping too quickly or "taking sides" on an emotional topic.

Many vendors have decided to quietly answer LPFM inquiries and send out quotes, but otherwise wait to see how the fight in Washington turns out. They know the FCC could yet be overruled by Congress or the courts, and as we went to press that fight continued to be fought.

★ ★ ★

Paul Kaminski, our diligent contributor and race-car fanatic, wants to let everyone know that he lives in New York, not Florida as I wrote in my recent column about e-mail.

I guess he's not quite ready to live the retirement lifestyle.

Sorry, Paul! If you'd stay put in one town for more than three days at a time, I could keep better track of you.

★ ★ ★

Another loyal **RW** reader writes in to worry that the end is coming for radio engineering.

"How many sharp *young* guys were in that lineup of the SBE members at Harris (Expo) last October? Broadcast engineering is a dying profession, in part due to the unwillingness of our employers to pay *us* what they are willing to pay 'bit-n-bytes' people.

"This attrition is compounded by the fact that those of us left are stuck with more responsibility and sheer work than many of us have the stamina to sustain," he wrote.

"My employer is more than willing to hire a soul to work with the two of us on staff, but *who*? We are looking, and will be thrilled to find someone competent to join us.

"Paul, what you have done for the industry with your work at **RW** has been an asset for all of us."

Thanks, sir. Your note reminds me of a conversation I had yesterday with a former radio engineer who recently hopped over to the e-world.

He told me he now pays in *taxes* more than he used to *make* as a contract engineer, and that he gets paged perhaps twice a month at most.

No wonder broadcast companies are having a tough time finding tech talent.

★ ★ ★

Here's a note from a reader who appreciated John Bisset's recent *Workbench* column "EAS and Other Money-Saving Tips," because it helped him convince management — to follow the law!

He writes, "About a year ago, our already overworked office was given responsibility for a group of low-wattage FM stations that are spread across the state. Upon initial inspection, we discovered that two of the stations didn't have a clue what EAS was, let alone have the equipment to receive it.

"One station, within a day, had an EAS receiver on order," he continued. "The other puttered around and felt that a new antenna was more important than the EAS. After a period of time, they finally ordered it. During a recent inspection, I found the new antenna, an *unwired* EAS, and to my surprise, a *new transmitter*."

At that point the engineer wrote to **RW**, asking me to send him another copy of John's recent article. I complied.

"Following a sit-down session with John's article, FCC Rules Service Co. Part 11 (EAS Rules), Part 1.80 (Fines) and the threat of turning off the station, they have reconsidered the importance of EAS.

"And to think, these are the station personnel of tomorrow!"

Most licensees are very responsible. But the behavior of a few can be alarming. Share your anecdotes with us at radioworld@imaspub.com

★ ★ ★

Every year, the first of April brings its share of great April's Fools gags.

April showers gave birth to the new product shown in the photo, from the folks at SystemsStore.com.

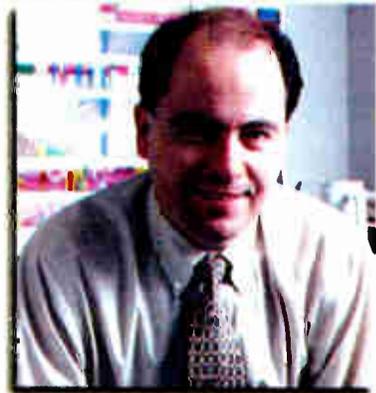
"This innovative product has so many uses, there's not enough room to mention them all here," they announced online.

"Available April 1, this is the connector every radio engineer will want to have in



their bag of tricks. The straight-forward, no-nonsense design gets right down to business. "Everybody

From the Editor



Paul J. McLane

knows the signal travels on the Hot lead, so why bother with the Low and Shield connections? And with everybody going digital, you can't hear the difference anyway.

"Order plenty to give to all your fellow engineers in your market. We guarantee it will make you the center of attention at your next SBE meeting!"

Sounds like a candidate for Cool Stuff.

★ ★ ★

And I loved this faux news report that showed up online courtesy of Dave Hughes at DCRTV, which covers broadcasting in the Washington-Baltimore area.

"DCRTV hears that the FCC is in the very early, formulative stages of a plan to use the Washington, D.C., area as the first test market to reassign the AM broadcast band to new uses.

"We have determined that virtually no one listens to AM radio in the Washington, D.C., market and we plan to reassign those frequencies," an unnamed FCC spokesman said. There was no word on what new uses would be made of the band, but we hear it will have something to do with data transmission — a lot of 'buzzes, whistles, crackling and clicks — it won't sound much different from how it now sounds,' an FCCer adds.

"The plan does face some hurdles, particularly from Republican legislators: the GOP recently purchased WMAL (630 AM)."

At this point in the LPFM debate, nothing would surprise me.

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Sirius, XM Satellite Make Nice

► SATELLITE, continued from page 1 to the RAB, and experts say it is radio's piece of the media spending pie that is the main target for the satellite companies.

Sirius and XM have begun downplaying their competition for pay radio listeners in the car, since they announced an agreement to develop receivers that enable consumers to listen to either of their subscription services (RW, March 15, page 2).

"A unified standard allows us to take direct aim at the competition — conventional radio broadcasters — not each other," said Sirius President and Chief Executive Officer David Margolese recently to analysts.

One receiver in 2004?

XM President and Chief Executive Officer Hugh Panero said both companies are targeting 2004 to offer so-called interoperable receivers.

The first receivers available to consumers will be configured as AM/FM/Sirius or AM/FM/XM.

The agreement enables Sirius and XM to meet the conditions of their FCC licenses for the 12.5 MHz of spectrum each company is using on the S-band.

Observers disagree on whether receiver interoperability is important to consumers.

"Consumers don't have a problem with the fact that DirecTV and Dish are not interoperable," said satellite expert Stephen Blum, President of Tellus Venture Associates.

Broadcasters, who will compete with the new digital satellite services, typically argue that non-compatible receivers are inconvenient for consumers who may wish to switch satellite services.

Panero said Sirius and XM "have shown a lot of maturity in a competitive environment."

Under the pact, each company also provides backup capacity to the other

should technical problems arise.

That cooperation, as well as one receiver standard, he said, can help both companies achieve larger market penetration.

"It lowers the costs for both companies and also provides a greater security that you're really going to make this third band of radio ubiquitous."

Sirius and XM have agreed that future deals with retail and automotive distribution partners and content providers will be non-exclusive. Previous agreements remain exclusive.

Sirius has receiver alliances with investors Ford Motor Co., DaimlerChrysler Corp. and BMW of North America, covering the Ford, Chrysler, Mercedes, BMW, Jaguar, Mazda and Volvo brands.

Freightliner and Sterling heavy trucks are included with the DaimlerChrysler deal. Freightliner and XM intend to partner as well.

In 1999, Ford, DaimlerChrysler and BMW vehicles accounted for about 7.5 million vehicles or approximately 43 percent of new cars and trucks sold in the continental United States.

XM has a receiver alliance with investor General Motors Corp.

Each company has licensed intellectual property to the other relating to its system. The value of the license is considered part of each company's contribution toward the joint development, XM stated in its annual report filed with the Securities and Exchange Commission in March.

Lawsuit dropped

A patent infringement lawsuit Sirius had filed against XM has been dropped as part of the joint development agreement.

Sirius told the SEC and analysts that Lucent Technologies is meeting its deadlines and has delivered receiver chipsets, making it more likely Sirius would be well-positioned in the

OEM and aftermarket worlds for widespread receiver availability. Timely chipset delivery had been a concern, analysts said.

STMicroelectronics is designing and producing XM's chips while Lucent Digital Radio will provide a version of its Perceptual Audio Coding technology for the XM audio signals.

Traditional radio

Both Sirius and XM consider traditional radio as their main competition, though in Sirius' case, radio group owner Clear Channel Communications is also an investor and will create original programming for the service.

"Some of our radio broadcasting competitors have greater financial resources than we do," stated Sirius in its annual report.

Sirius also downplays terrestrial radio's planned transition to digital. Consumers, it said, will need to buy new receivers to hear the digital audio quality. Further, a digital system will not address what Sirius and XM paint as limitations in radio programming.

Both services will target commuters as well as travelers, including truckers and vacationers in their vehicles.

Of the more than 100 million U.S. commuters, Sirius has identified 34 million as ideal targets because of long commutes.

XM estimates its nationwide service

will reach more than 98 million potential listeners ages 12 and up who are beyond the range of the largest 50 Arbitron markets.

XM expects to earn revenue from advertising on its original programming and receive a portion of the ad revenue from ads on third-party programming. XM has deals with several charter advertisers that include traditional national radio advertising placement agencies (RW, March 1, page 14).

XM has an agreement with SFX Entertainment to let consumers sample its music at SFX venues. The company expects its signal to be heard off the Atlantic and the Pacific coasts and in the Gulf of Mexico, and intends to target cruise ships, cargo vessels and leisure boats as customers.

Sirius has not disclosed many of its marketing agreements, but one of its strategies will be to embed the cost of its service in leased vehicles.

Sirius expects to substantially complete deployment of its 100 terrestrial repeaters by the end of this year. XM expects its approximately 1,700 repeaters to be deployed by the second quarter of 2001. Repeaters are required to fill in areas not covered by the satellite signals.

Sirius Satellite Radio plans to ship its first satellite to its Kazakhstan launch site at the end of May and launch the first of three satellites at the end of June.

XM expects to launch its first satellite from the South Pacific Ocean near the equator by the end of this year.

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GUEST COMMENTARY

FCC LPFM Receiver Study Flawed

by Lynn D. Claudy

On March 25, Dale Hatfield, chief of the FCC's Office of Engineering and Technology, and Roy Stewart, chief of its Mass Media Bureau, issued a joint statement that stated third-adjacent channel interference from LPFM stations cannot result in situations where portions of both a desired station's audio, and an interfering third-adjacent station's audio, can be intelligibly heard simultaneously.

This statement is false, and is just the latest example of the FCC ignoring engineering facts in order to push through an LPFM service that will cause interference to existing radio signals.

It is incredible that Hatfield and Stewart would make such a claim, given that audio recordings from laboratory tests of third-adjacent channel interference were submitted to them last year that clearly prove their statement to be false.

These recordings were made during tests that were co-sponsored by the

Consumer Electronics Association (formerly the Consumer Electronics Manufacturers Association).

CEA is not unilaterally opposed to an LPFM service, so it cannot be accused of having any bias in this area. In its com-

'This statement is false, and is the latest example of the FCC ignoring engineering facts.'

ments to the FCC on LPFM it said that, while it does not oppose an LPFM service, "the commission's proposal to eliminate third-adjacent protection requirements for LPFM would result in creation of extensive new objectionable

interference to existing services."

If you'd like to hear the effects of third-adjacent channel interference that the FCC says are impossible, check out the LPFM audio clips on the NAB Web site (www.nab.org). Real receivers, real signals, real crosstalk.

NAB is disappointed by the FCC's latest smear campaign concerning the engineering analyses that have been presented to it on LPFM interference.

FCC Chairman William Kennard said in a statement on March 27 that FCC engineers "are skilled at evaluating all sorts of technical tests and engineering claims and counter-claims that parties routinely present to the FCC, and then reaching expert conclusions and decisions based on the record, and based on the overall public interest."

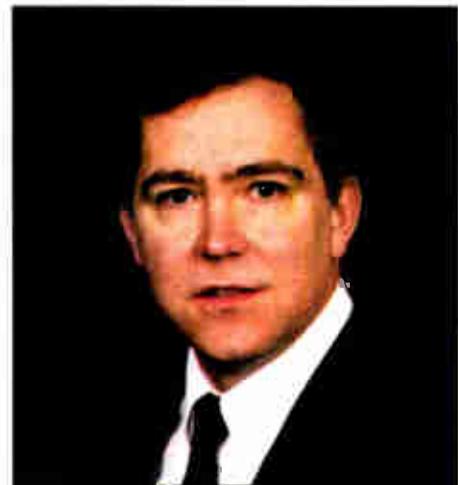
Well, that may be true in some areas. But on the subject of LPFM, FCC engineers have shown a stunning bias in favor of the service and against interference protection. The OET receiver study that they inserted into the record of the LPFM proceeding was both biased and based on unsound science. Let me explain why.

In the OET study, FCC engineers completely ignored all radios with integral antennas, which include table radios, "boomboxes," clock radios and Walkman-style radios. They said they weren't sure how to test these types of radios and that it would be difficult and time-consuming.

However, the other three parties that submitted test results to the FCC realized, to varying degrees, the importance of including a balanced receiver sample and each of them tested some radios of these types.

The OET receiver study used a biased sample of receivers — therefore it's a biased study. Then they made the fundamental mistake of measuring audio signal distortion to assess the effects of interference instead of signal-to-noise ratio. There are reams of evidence in the LPFM proceeding criticizing this blatant example of unsound science — but they chose to ignore it all.

The results presented by the other three parties show that the audio signal-to-noise levels in table radios, "boomboxes," clock radios and Walkman-style radios will be unacceptable under the FCC's LPFM plan.



Lynn Claudy

Although they often presented biased interpretations of their data in their comments to the FCC, the raw data in the LPFM proponents' own study even shows this to be true.

One has to wonder how the supposedly unbiased experts at the FCC managed to design a technical study that was far more biased in favor of new interference than even the LPFM proponents themselves.

Accurate data

The answer to this question may lie in the fact that the other parties who submitted receiver studies to the FCC hired independent engineering consultants to perform their studies for them. Independent engineering consultants rely on their reputations for their livelihoods. If they do not produce accurate data, no one will have any confidence in their work and they will not be in business very long.

FCC engineers have a different concern, however. They are not concerned with staying in business (they just raise our regulatory fees when they want more revenue).

Instead, they must balance their technical concerns with the political winds of the moment in order to survive.

And, with respect to the interference tests performed by the FCC in the LPFM proceeding, FCC engineers produced exactly the results the chairman wanted to see.

The FCC's LPFM plan will cause interference to existing radio service, and NAB will continue to oppose its implementation.

Claudy is senior vice president, NAB Science and Technology. Reach him at (202) 429-5346 or lclaudy@nab.org

RW welcomes other points of view at radioworld@inmaspub.com

DIGITAL NEWS

Sirius, ATX Developing Telematics

NEW YORK Sirius Satellite Radio is working with ATX Technologies Inc. to develop telematics. Both companies expect the deal to lead to the integration of ATX's two-way, cellular communications and location-based technology with Sirius's audio entertainment system.

Sirius and ATX hope to deliver telematics and e-commerce functions in the car. Sirius wants to give customers the ability to buy music promoted on their service, for example, by touching a button on its receiver. Other telematics options planned include downloading navigational information, traffic reports and remote-controlled vehicle functions on items such as doors, lights, etc.

Both companies hope the combination of the telematics offerings with Sirius' audio programming will be attractive enough for consumers to purchase the service and receivers.

Freightliner Corp. Snatches XM, Too

WASHINGTON Freightliner Corp. has signed an initial agreement with XM Satellite Radio to offer XM receivers in 30 percent of its truck line. Both companies also agreed to develop integrated wireless information and entertainment services compatible with Freightliner's Truck Productivity Computer.

Freightliner will market XM radios through its fleet-owner relationships, dealer network and 160 retail outlets.

Freightliner will begin offering XM radios in its new model Freightliner, Sterling, American LaFrance trucks and Thomas Built buses in 2001.

Freightliner previously agreed to install Sirius receivers in its trucks after parent company Daimler Chrysler invested \$100 million in Sirius. Daimler Chrysler also pledged to carry Sirius receivers in its cars, Dodge trucks and heavy trucks.

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GUEST COMMENTARY

Low-Power Will Harm Translators

by **Kevin Klose**

Thirty years ago, visionary activists organized a new nonprofit national radio service to create news and cultural programming of unparalleled high quality — National Public Radio.

Today, NPR and its member stations serve a national audience of nearly 15 million Americans each week with programming unmatched in national and local content, providing extraordinary diversity, perspective, ideas, issues and voices in the service of democracy.



Kevin Klose

In January, the FCC, in a split vote marked by emphatic dissenting opinions, approved rules to add new local public service radio broadcasting to the airwaves — low-power FM.

NPR and its member stations believe that LPFM can be compatible and complementary to the existing public service radio community.

At the same time, we believe that the FCC's current rules on LPFM could cause significant interference to existing full-service stations, their translator and booster stations, and radio reading services for the blind and print-impaired. (More than a third of NPR's members provide radio reading services, which are carried on subcarrier channels.)

Reconsider LPFM

NPR has asked the FCC to take a few extra months to reconsider and modify its LPFM rules before forging ahead with a policy that endangers the distribution of unique, standard-setting public radio programming to Americans who rely on it.

We used the FCC's own administrative procedures to do so — we filed a Petition for Reconsideration and a Motion for Stay seeking to delay implementation of the FCC's LPFM Report and Order until July 15 (see RW, April 12).

Reconsideration is plainly necessary because of the need to consider Category I receivers — clock radios and other small, inexpensive receivers — which are sold by the tens of millions each year.

We think it reasonable and prudent that the FCC, which proposed the LPFM service in part to empower those with limited means, consider the likelihood of interference to what are among the most inexpensive and commonly used radios.

NPR further believes the FCC's actions pose a serious threat to inter-

ference-free reception of public radio stations. For example, public stations on the reserved FM-band spectrum (87.9 to 91.9 FM, where approximately

(Americans) would not be well served by an FCC ruling that creates LPFM stations at the expense of the existing public radio services.

are highly vulnerable to interference for several reasons. Stations operating 90 percent of public radio stations are located) are more tightly crowded

together on the dial than those outside of the reserved spectrum.

Also, public radio signals are "lightly processed," which means they utilize minimum loudness processing to preserve the natural dynamic range inherent in jazz, classical music and news/talk programming.

Such "lightly processed" signals from public radio are far more susceptible to interference from adjacent-frequency transmissions.

Concerns regarding potential interference can be confirmed or disproved by real-world testing that NPR will undertake. Pending further testing and analysis, existing broadcast services should be protected on their third-adjacent channels and throughout their historically protected 1.0 mV/m service area.

See NPR, page 11 ▶

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Bryant on Buildouts, Mentors

► BRYANT, continued from page 1

She reports to Bob Donnelly, vice president of engineering for the network.

When asked about rumors she planned to leave the network, Bryant said there have been offers, but she plans to stay put.

Bryant, 43, has found that the experience of being a woman in the male-dominated field of radio engineering has not changed much since she started her career in the mid-1970s.

"I'm still a bit of a rarity. But if I wasn't good at what I do, people would have stopped hiring me a long time ago," Bryant said.

By her own count, Bryant has managed at least five radio station-building projects and assisted on four others over the years.

"I'm lucky that just about everywhere I've been, I've had the chance to build

Raised in upstate New York, Bryant never went to school for broadcast engineering. "I just hit the books and studied like crazy before taking the exam. But I also had plenty of help."

She has an associate's degree in science and communication from Dutchess Community College in Poughkeepsie, N.Y.

News and engineering

Bryant's first radio job was in 1976 on the air at WKIP(AM) Poughkeepsie, a station owned by Olympia Broadcasting Corp. There, she read newscasts at night and studied for her First Class Engineer's license during the day.

"An engineer at (WKIP) told me I had to know the difference between A, B and C Class amplifiers and I remember thinking, 'Geez, it follows the alphabet, it can't be

struction projects. One was a new AM facility on which Bryant worked with the late Charlie Hallinan, co-founder of the Society of Broadcast Engineers.

"Binghamton is where the SBE originated in 1963. It turned out I became quite involved with the local chapter in the early '80s. It's always an excellent experience to meet other engineers in town," Bryant said.

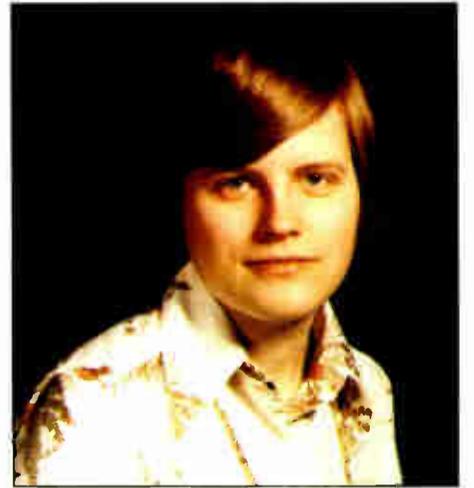
The biggest break of her career would come next. Group W Radio sent Bryant a letter asking her if she would be interested in applying for a position in the group's engineering department.

Following several interviews, Bryant started as chief engineer at KQXT(FM) in San Antonio, Texas, and immediately had the chance to build another new radio station.

Pecking order

Bryant soon realized there was a definite pecking order of engineers in Group W's operation.

"The engineers of the big powerhouse AMs were higher on the food chain than the rest of us. I was just a lowly FM engineer in San Antonio," she said. That was



Margaret Bryant During Her News Days at WKIP(AM), Circa 1977-78

about to change.

"I was in New York for a Group W awards ceremony when the vice president of operations asked me if I wanted to go to Chicago and WMAQ(AM). And feeling really secure in my position I said, 'As what?' He said, 'As chief engineer, of course.'"

After managing another rebuild in Chicago, Bryant recognized a pattern developing.

See BRYANT, page 10 ►

'If I wasn't good at what I do, people would have stopped hiring me a long time ago.'

radio stations — the best part of my job," Bryant said.

She recently built new studios for several new ABC formats within the Galaxy Radio Network including Rejoice, a gospel format, and Lite 2000, which is soft AC.

She is preparing to rebuild studios for ABC's Radio Disney. Construction is due to start in May. Galaxy delivers nine 24-hour live music formats. All originate from the Dallas studios.

Just as important to her career was a stint as a contract engineer, Bryant said.

"You get to see the worst of the worst. I would recommend it to any young engineer. It's a great training ground to make some mistakes and learn from them."

that difficult."

The station was an AM directional, so Bryant learned a great deal about directional antennas.

"The chief engineer, Jim Scholefield, was a great mentor and really got me started on my career."

Bryant was then off to WAAL(FM), Binghamton, N.Y., owned by Regional Broadcasters Group, for her first real engineering job, as assistant chief. After just three months, however, she was the CE.

"So, there I was with no formal engineering training running an operation by myself. It was a great experience," she said.

Bryant's first build-out experience came in Binghamton. She managed two con-

And the LPFM Winners Are ... !

On March 27, the FCC announced the first group of states from which it will accept LPFM applications. The so-called "Group V" includes: Alaska, California, the District of Columbia, Georgia, Indiana, Louisiana, Maine, Mariana Islands, Maryland, Oklahoma, Rhode Island and Utah.

The FCC planned to release specific information about how to apply for the Group V LPFM stations in April, and approximately 30 days before accepting applications from each of the remaining groups.

Other groups will be allowed to file LPFM applications in this order:

- Group I — August 2000 (Connecticut, Illinois, Kansas, Michigan, Minnesota, Mississippi, Nevada, New Hampshire, Puerto Rico, Virginia, Wyoming)
- Group II — November 2000 (American Samoa, Colorado, Delaware, Hawaii, Idaho, Missouri, New York, Ohio, South Carolina, South Dakota, Wisconsin)
- Group IV — February 2001 (Arizona, Florida, Iowa, New Jersey, North Dakota, Oregon, Tennessee, Texas, U.S. Virgin Islands, Vermont, West Virginia)
- Group III — May 2001 (Alabama, Arkansas, Guam, Kentucky, Massachusetts, Montana, Nebraska, New Mexico, North Carolina, Pennsylvania, Washington)



FCC Chairman Bill Kennard holds up the winning number of the first group of states from which the commission will accept low-power FM applications, while Commissioner Gloria Tristani looks on.

These dates are for LP100 stations only, the first low-power stations for which the FCC will accept applications.

Applicants must use FCC Form 318 to apply for an LP100 station. Forms are available on the FCC Web site; go to www.fcc.gov/mmb/asd and follow the directions from there.

When asked at the drawing by RW why the FCC did not decide to introduce LPFM more gradually, giving stations time to make the transition to digital, Kennard replied, "We considered that very carefully. We determined that the introduction of LPFM is in no way inconsistent with the conversion to digital, including the conversion to in-band, on-channel."

On April 13, the U.S. House of Representatives passed a bill that would substantially curtail LPFM (see page 3).

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No Typical Day for ABC's Bryant

► BRYANT, continued from page 8

"I was building new stations everywhere I went. I've been very fortunate in that aspect, since many engineers don't get even one chance."

After joining the ABC Radio Networks in 1994, Bryant managed the construction of the current facility. "This is almost like an on going construction project because we are constantly re-building studios and adding services," she said.

Most of the ABC formats have live announcers "around the clock," Bryant said.

The majority of studios use Denon DN-951FA compact disc players for music playback. A few studios use the Broadcast Electronics AudioVault for computer hard-

drive storage. Commercial playback is on the McCurdy Radio McCart system.

The Radio Disney rebuild is typical of the projects Bryant oversees.

"I'm involved with studio design and have the final say in the types of equipment we'll put in it."

Bryant said the current Radio Disney studios are not "remote broadcast friendly." The network is live from Disney Land in Anaheim, Calif., and Disney World in Orlando, Fla., every weekday.

When it comes to studio design, Bryant uses her on-air experience as a newscaster to build a better studio.

"We take into consideration the ergonomics and things that will make it

easier for the jocks," Bryant said. "So when we go to programming with the plan, usually they don't make many changes."

There is no such thing as a typical day for Bryant or her staff.

"It's literally something different every day. That's what I like about it most. I do attend a lot of meetings, but I also still get a chance to work on equipment," she said. Bryant also fields some affiliate calls every day.

Bryant has followed the development of digital audio broadcasting and said the radio industry will be closely watched for its reaction.

"Whether it's DAB, the Internet or See BRYANT, page 11 ►

What Bryant's Peers Say

I discovered Margaret in the early '80s when she wrote an article for **Radio World** and I was so impressed I hired her.

She took on one tough challenge after another and keeps producing some of the finest facilities and engineering teams in broadcasting. Margaret combines tremendous technical talent with a gift for managing people.

— Harrison Klein
VP, CellNet Data Systems
San Carlos, Calif.
Former Director of Engineering,
Group W Radio, New York

It was obvious from the first time I met her that Margaret was going to succeed in the broadcast engineering business.

Even as a beginner she had an amazing knowledge of electronics and some of the finer points of the industry. As time went by her ability and enthusiasm grew remarkably. She would talk of bigger stations and bigger markets. She had the ambition and goal of making a mark nationally in the broadcast engineering business.

Her progression up the ladder is a testimonial to what hard work and ability can accomplish. She is and will continue to be a valuable resource to her employer and an example to aspiring broadcast engineers that there is still a future in this business.

— Larry Hodge
Chief Engineer
Citadel Communications
Binghamton, N.Y.

Margaret is one of the brightest people I have ever met. She and I worked together on many different projects in many different places over the years.

During those years I saw her ability to get things done, come up with innovative solutions to problems, and manage people come into play time after time. But most of all, I had the privilege of seeing the person beneath the engineer's skin: airplane pilot, scuba-diver, photographer, dog lover, friend. Margaret is one of my favorite people.

— Wes Whiddon,
Administrator,
Senior Road Tower Group

When I hired Margaret I was looking for a competent engineering manager to run the day-to-day technical operation for the ABC Dallas facility.

Margaret was the jackpot. Her range of skills ran from being able to field-strip a 50 kw transmitter to managing a staff of somewhat reluctant engineers to getting a facility built on time and budget.

She is extremely competent at everything she undertakes and her breadth of understanding of broadcast engineering issues makes her invaluable in almost any situation that might arise.

— Mark Kalman
Vice President, National Broadcast
Studio
Sirius Satellite Radio

If you want to know what's new in AM processing, ask the guy who's been thinking about it since 1962.

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Version 2.0 adds presets that improve punch and intelligibility for narrow-bandwidth audio like shortwave. The same presets are perfect for MW stations needing to cut through co-channel interference at night. So the 9200 is now the perfect choice for MW broadcasters and HF broadcasters alike.

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THE OPTIMOD 9200



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► BRYANT, continued from page 10
satellite-delivered audio, the playing field will shift some. Many said TV would be radio's undoing, but that didn't happen. Information delivery is still what radio does best. We may need to re-invent things a bit," Bryant said.

Bryant is disappointed that more women have not joined the radio engineering field. But after living the life of an engineer, she can see why few do.

"I've known some real good female engineers who have quit to have a family. The commitment you must have to this job is incredible. When you're being paged at 2 a.m., you'd better have an understanding spouse," she said.

She is equally concerned over the shortage of young radio engineers, male or female. "There is a dearth of good young people coming into our profession. There is plenty of work to go around if you're good."

As for being a gender minority in her chosen career field, Bryant said there are advantages and disadvantages.

"You do get noticed because you are different. If they remember me because of that, it's OK," she said. "It can also help a company from an EEO (equal employment opportunity) standpoint. But I've never felt like a token female engineer. It hasn't happened."

Disadvantages include not being taken seriously, especially early in her career. "I once had a vendor yell at me to put the engineer on the phone when I called for a part.

"They never did that again."

NPR Asks FCC to Delay LPFM

► NPR, continued from page 7

In addition, we believe the FCC must take concrete steps to protect radio reading services and translator stations because of the important public service each service affords the American people.

A reasonable extension of time such as NPR seeks would permit completion of further FCC lab tests and NPR field tests measuring potential interference.

NPR is moving forward with on-air field tests which will gauge the potential for interference from LPFM stations to public radio stations and their translator networks, as well as subcarrier channels offering radio reading services.

NPR has also provided SCA radio receivers to the FCC for its lab testing to investigate the interference susceptibility of SCA receivers used by listeners to radio reading services.

Pending an evaluation of the FCC's findings, NPR will commission thorough lab and on-air field testing of SCA receivers to assess the impact of LPFM on radio reading services.

NPR and its member stations recently announced our support for the Radio Broadcasting Preservation Act of 2000, which provides for the implementation of LPFM without disrupting existing radio services. This bipartisan compromise legislation offers a balanced approach toward the licensing of new LPFM stations.

Klose is president and CEO of NPR. Reach him at (202) 414-2010.

RW welcomes other points of view.

BUSINESS DIGEST

EAS Patent Rejected Again

WASHINGTON The Patent and Trademark Office has, for the second time, rejected all the claims of the patent held by Quad Dimension Inc.

Quad Dimension holds the patent on "Storm Alert for Emergencies" (SAFE), which company officials believe is used in the Emergency Alert System now in place at U.S. broadcast stations by FCC mandate.

Quad officials have until May 13 to respond to the March decision.

Industry EAS observers have seen Quad patent rejections before. The commissioner of the Patent and Trademark Office ordered a reexamination of the patent in

1997. That time the claims were also initially rejected, but when Quad amended the claims, the PTO upheld the patent.

In early 1999, Quad sent notices to 1,500 broadcasters requesting royalty agreements for the use of its patent in EAS.

In September, the National Weather Service requested a new examination (RW, Oct. 13, 1999).

The NWS uses something similar to SAFE called Specific Area Message Encoding. Both systems are designed to send warning messages only to those areas affected by a disaster.

"The rejection is based on information submitted by the National Weather

Service in its request for reexamination," stated NWS.

A source at the Department of Commerce, the parent agency of both the NWS and PTO, said a new examiner is looking at the file. If the examiner rejects the Quad response — due May 13 — Quad can appeal to the Board of Patent Appeals and Interferences.

Quad responded to the reexamination process on its Internet Web site (www.quaddimension.com) stating, "It is indeed a sad commentary on the role of government agencies that should be supporting small business and promoting innovation instead of repeatedly attacking a small business' patent."

Quad officials could not be reached for comment.

—Lynn Meadows

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SBE NEWS

SBE Comments: How and Why

Dane E. Ericksen, P.E., CS RTE

The author is chairman of the SBE FCC Liaison Committee. RW regularly provides this space to the Society of Broadcast Engineers to update the industry on its activities.

Most SBE members are aware that the Society of Broadcast Engineers Inc. files comments with the FCC on Broadcast Auxiliary Service issues.

For example, over the past several years SBE has filed comments on:

- ET Docket 97-214, concerning the Mobile Satellite Service (MSS) sharing of 455-456 MHz remote pickup frequencies for earth-to-space uplinking, using "polite protocol" scanning telemetry activity receivers (STARS) on a constellation of low-earth orbit (LEO) satellites monitoring for "temporarily vacant" RPU channels.

- WT Docket 96-86, concerning public safety spectrum requirements through the year 2010 prepared by the Public Safety Wireless Advisory Committee. This report proposed multiple raids on both broadcast and BAS frequencies. The SBE comments successfully

pointed out several gross errors and were instrumental in preserving critical BAS frequencies.

- ET Docket 93-59, concerning wind profiler radars at 449 MHz. These high-powered stations may cause brute-force overload to adjacent band 450-451 MHz RPU receivers, and out-of-band spurious emissions from wind



Dane Ericksen

profiler radars are an interference threat to both 450-451 and 455-456 MHz RPU receivers. The SBE comments were instrumental in the adoption of a policy prohibiting wind profiler radars near major population centers, where interference to RPU systems would be most likely to occur.

However, SBE filings have not been limited just to BAS issues. SBE also has commented on, or initiated filings, on:

- RM-9791, concerning Emergency Radio Data System transmitters on 87.9 MHz (FM Channel 200).
- MM Docket 99-25 regarding low-power FM.
- RM-9156, the SBE petition proposing improvements to the Emergency Alert System rules.
- FO Docket 91-171, concerning EAS.
- Managing Director Docket 94-19, concerning BAS and other user fees. SBE was successful in canceling a proposed one-time \$105 fee for holders of lifetime operator licenses or permits.
- ET Docket 93-62, concerning updated radio frequency radiation guidelines.
- MM Docket 91-347, concerning improving the FM licensing process (this rule making resulted in the elimination of the "hard-look" policy for FM broadcast applications).

Clearly SBE is active in filings involv-



FCC Liaison Committee.

Membership on the FCC Liaison Committee is open to any SBE member interested and willing to serve. Members who wish to participate should direct their request to SBE President Andy Butler.

However, prospective committee members must understand that the position is not honorary.

Participation

Committee members are expected to participate actively in a majority of the rule makings selected for SBE comment, and so must be in a position to devote the necessary time to this volunteer activity.

Also, the committee size generally will be limited to no more than six members (plus the SBE's general counsel and executive director), for practical reasons. A bigger committee becomes too unwieldy.

Any member of the committee can

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SBE is active in filings involving issues of interest to its members.

ing issues of interest to its members.

So how does the SBE decide which issues to comment on and what those comments should be?

Active group

This work is done by the SBE FCC Liaison Committee, one of several standing committees at the national level.

These committees are authorized by Article VI of the SBE bylaws, and each committee must be chaired by a current or former national director.

This writer has had the privilege to chair the FCC Liaison Committee since 1988. The committee currently consists of seven persons. These include SBE members Ken Brown of ABC Inc. in New York; Richard Rudman of KFWB(AM) in Los Angeles; Gerry Dalton of WTS in Dallas; and Gerry LeBow of TMC Inc. at Valhalla, N.Y.

SBE General Counsel Christopher Imlay, Esq. of Booth, Freret, Imlay and Tepper in Washington, D.C., and SBE Executive Director John Poray have permanent status on the SBE

draft comments on an FCC issue that they believe warrant SBE comment. Any SBE officer or director can also request that comments be drafted on a particular FCC issue.

Draft comments are sent to other committee members. Several rounds of telephone calls or e-mails then typically result.

Once a consensus is reached, the draft comments are circulated to SBE officers and directors for "negative option" approval. Under "negative option," SBE officers and directors are deemed to have approved the finalized comments — at this point also reviewed for content and format by the society's general counsel — unless they indicate concerns about the comments.

If concerns are raised, they must be addressed and resolved before the comments can be officially filed.

For a list of all SBE comments filed since 1988, visit the SBE Web page at www.sbe.org

The chairman of the SBE FCC Liaison Committee can be contacted at dericksen@h-e.com, or by calling (707) 996-5200.

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Tom MacDonald

Radio reporters love the cellphone. It provides immediacy and access to the phone network almost anywhere news is happening.

But ever since the cellular telephone became a staple in newsgathering, the problem has been getting audio back to the station.

In the old days, it was "Hold the pay-phone handset up to the tape deck speaker and hope for the best." With your cellphone and the Conex FlipJack, many of those problems have been solved.

The FlipJack, which came on the market last fall, is small and easy to carry. It's about the size of two packs of cigarettes and weighs less than 12 ounces including a single 9V cell. Dimensions are 3.5 by 1.5 by 4 inches.

Cellphone mixer

The FlipJack is a mixer with a headphone amp and a cellular interface, built into a rugged metal case. The balanced line-level output connects to the 2.5 mm jack on most cellular telephones, or via an adapter that plugs into the bottom of your phone.

The unit provides two XLR balanced mic inputs, one of which is switchable to line level — no mini plugs here. It has a built-in belt clip that can come in handy if

you are using the unit on the run.

I got my FlipJack just before Thanksgiving, one of my busiest days of the year. That's when I cover the Philadelphia Thanksgiving Parade and Black Friday Christmas shopping.

In the past this has also been a tough

bottom. Then I plugged in the FlipJack and turned on the power.

I plugged in my reliable EV635 microphone, my Sony MiniDisc deck and headphones, and I had all the comforts of the studio in the middle of a parade.

With the FlipJack I could use the



The Conex FlipJack

time to report, because I might not be near a phone to send audio back to the station or to make extra money feeding the network.

But this time it was different. Using the FlipJack is a snap.

I bought an adapter from Conex to interface to my Nokia 5120 phone. It snapped into the hands-free port on the

microphone to do man-on-the-street interviews or live reports, with sound gathered from the parade route.

Off-air monitoring

Another useful feature is the tuner input for monitoring your station.

Just plug your radio into the back of the FlipJack using a standard 1/8-inch connector on the rear of the unit, next to the XLR mic plugs.

Product Capsule: Conex FlipJack

Thumbs Up

- ✓ Simple to operate
- ✓ Pro XLR connectors
- ✓ Cellphone/air monitor capability
- ✓ Affordable

Thumbs Down

- ✓ Not compatible with all phones (yet)
- ✓ No VU meter

For information, contact the company in Washington State at (800) 645-1061 or send e-mail to conex@conex-electro.com

The unit provides LED level and low-battery indicators. Using the unit for two days in the Philadelphia cold for hours at a time didn't drain the 9V cell. The company estimates operating time on one battery to be 20 to 50 hours.

The FlipJack worked flawlessly during my evaluation. It really is helpful when you are sending a wrap or just actualities back to the studio.

During a feed to ABC, the editors were impressed with the sound that the FlipJack provided, especially feeding out of the MiniDisc. The unit sounds good, is small and compact, and really does a lot for a list price of \$289.

The FlipJack could be used for TV in an IFB setup, using the headphone jack. The return cue is adjustable with the monitor

See FLIPJACK, page 26 ▶

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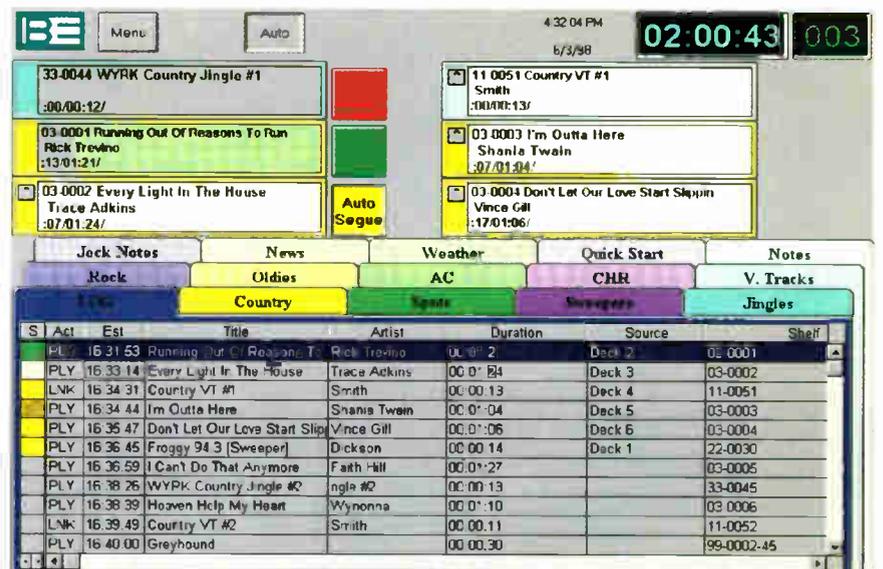
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cations and program creation work-group programs.

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

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Lighting for the Radio Station

Charles S. Fitch

In this issue, we resume our in-depth look at the National Electrical Code (NEC). The previous article in the series appeared Sept. 29.

The NEC, according to Underwriters Laboratories Inc., is the world's most widely used code. In whole or in part, it is recognized in more than 100 countries. The code is published by the nonprofit National Fire Protection Association.

Because of our dependence on electricity in the studio, transmitter shack and business office, the mandates of the NEC, and its counterpart, the Canadian Electrical Code, have a significant impact on our business.

The more we know about this ubiquitous standard, the easier it will be to stay in compliance.

We'll resume with a multi-part look at lighting. Previous columns are available in the Reference Room section of the RW Web site at www.rwonline.com

Several major themes flow through the logic of the NEC.

Its main theme or purpose is to annotate minimal requirements to assure safety.

A close second is that homes and dwellings are treated with a finer and more specific brush than other locations such as plants and businesses.

A fine example of this treatment of businesses over homes is the terseness of the code concerning mandatory lighting in non-dwelling locations.

For the most part, the primary lighting directive for businesses is to make sure sufficient power is available from the service and branch circuits to provide an adequate foot candle level per square foot as a function of projected use.

For instance, your office would require a higher light level (3.5 watts per square foot) than a dead storage warehouse (0.25 watts). See NEC article 220-3(a).

For non-dwellings, NEC 210 and 410 provide instruction for the installation of the lights you choose, but little specific directive on fixture choice, location and other details.

When the BI comes

When the building inspector comes to your new or improved business environment, there really isn't much for him or

her to specifically inspect concerning lighting.

Because businesses are self-directive and under heavy scrutiny from insurance carriers, the assumption is that the light will be more than sufficient, properly organized and switched.

The thinking is that a specific NEC would inhibit the logical structure of your business. For example, if the NEC dictated corridor light switches, this would run against the safety concerns of those who



Bulbs come in many shapes. The special PL fluorescent on the left is a substitute for a 30-70-100-watt lamp bulb.

prefer to keep their interior corridor lighting on all the time. As specific as the code is for dwelling units, it is vague for businesses.

Aside from a few specific requirements unique to hotels/motels, NEC 210-70(c) calls for one of the few mandatory lights in a commercial environment. At least one lighting outlet controlled by a switch near the usual point of entrance to under floor and attic spaces is required but only when and where there is serviceable equipment in that space.

A "lighting outlet" is a universal moniker for a location in the electrical system where a variety of lighting can be connected. But according to the code, a "switched outlet" in a commercial location is *not* a lighting outlet. In a commercial environment it must be an actual light, even if it's just a bare bulb.

If your studio is new construction, and you have rooftop HVAC units, the building inspector will check to see if there is a light near it for maintenance (located in

other codes) and a GFI-protected outlet within 25 feet on the same level (see NEC 210-8 and 210-63).

Note, the shutoff switches with the red cover plates that you find in oil-burner installations are covered in the Life Safety Code, not the NEC.

Certain latitude

We mentioned bare incandescent bulbs. For closets and the like, these are now forbidden. Storage spaces over a certain size

that might be used for clothes storage require either one or more recessed, lens-covered incandescent lamps, or a surface or recessed fluorescent (NEC 410-8).

Although there is no specific proviso that the fluorescent be covered, the purpose of this regulation is to lower fire danger from the bulb heat that could ignite materials stored therein. So a covered fluorescent is wisest.

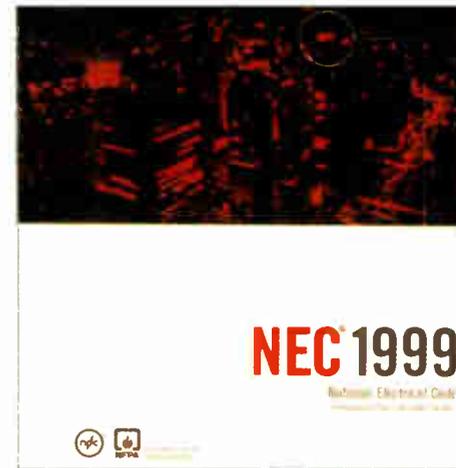
Eventually, the inspector will check your initial submission for lighting calculations against what has been installed to confirm that there are sufficient watts per square foot available for what is generally accepted as adequate lighting for your plant environment.

As mentioned, the rest is left up to you.

The stance of the NEC is that the efficiency, opulence and, especially in the case of lighting, the aesthetics are left to the design engineer.

However, don't relax too much.

Emergency lighting guidelines, such as exit and evacuation lighting, are contained



in the Life Safety Code (NFPA 101) in great detail.

The inspector will check these mandatory items as well as whether the exit lights are located properly and the direction arrows on them are correct.

Do not be surprised if the inspector turns off the power to these units to simulate a power failure and starts the timer on his or her watch. There is a minimum time criterion for how long and how bright these lights must work.

If they fail, you may wait weeks for a certificate of occupancy while these lights are checked and any ordered changes are installed.

Visual climate

Let's get back to the regular lights and the part covered by the code.

Humans receive most of our information visually. This is in stark contrast to most other animals, such as cats, who obtain the vast bulk of their sensual data input from smell.

Because our visual environment is so important, lighting is critical to effective work output and the climate of the workplace. Lighting can modulate our emotional responses intensely, changing an otherwise joyful experience to a miserable one and vice versa.

The design, selection and installation of lighting in your station should be a priority, especially in new and retrofit construction.

Lighting in general can be divided into two categories: ambient and task.

Ambient lighting allows us to become spatially oriented to our surroundings. Task lighting is focused or direct, application-specific illumination and is chosen to complement and illumine the work or activity at hand.

The workhorse of lighting is the luminescence generator. You'll find it at the store

See NEC, page 20 ▶

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WIRED FOR SOUND

So, What Exactly Is a Plenum?

Steve Lampen

We left our last installment of *Wired for Sound*, in the March 29 *RW*, talking about some of the major fires that prompted the National Fire Protection Association to revise and update the National Electrical Code regarding the burning of wire and cable.

The NEC code established five categories for cables most often used by broadcasters. As *RW* readers know from recent articles written by Buc Fitch, there are other categories for industrial, fire alarm and other specialties, but it would be unlikely you would deal with them in a broadcast installation. If you disagree, buy the NEC Codebook!

The categories are:

- CL2 — Class 2 (voltage unspecified)
- CL3 — Class 3, rated up to 300 volts
- CM — Commercial grade
- CMG — Same as CM but harmonized to meet Canadian fire rating FT4
- CATV — Community Antenna Television

These are the "General Purpose" designations. They are intended for non-residential (i.e. commercial) installations.

Even some old hands may do a double-take at the CMG designation. This is a "harmonized" specification with the Canadian Standards Association (CSA) FT-4 specification; any cable marked CMG can be used in both countries.

After these letters in the list above can come suffix letters, such as X, R or P.

Because CMG is the only harmonized standard to date, it's the only one with a G attached. An X at the end, such as CATVX or CL2X, indicates a cable made to residential specifications.

Homeowners will be surprised to learn that this is the lowest of all NEC categories and cannot be used to substitute for anything else. Therefore, you cannot use any X-rated cable (pun intended) in your radio station or any other commercial structure.

Next would be the General Purpose such as CM (United States only), CMG (United States or Canada), CL2, CL3 or CATV. Without oversimplifying the NEC code, these cables can go through a wall (not a firewall) without a conduit.

Then we come to the R suffix, which stands for riser. This is an application that goes between vertical floors.

I used to say "like elevator shafts" but one of those NEC experts told me that elevator shafts fall under a special designation in the NEC.

But many buildings have punch holes from floor to floor. These will require "riser-rated" cables. They can be recognized by the designation of CMR, CL2R, CL3R, CATVR. Riser-rated cables used to be rare but are becoming more common. There are a number of new audio and video cables rated CMR.

Then we come to the "king" of ratings, P for plenum.

Now what exactly is a plenum? The dictionary tells us it is an enclosed volume of gas under greater pressure than that surrounding the container.

In this case, the "enclosed" gas is air, and it is the air between a drop ceiling and the hard ceiling above, or between a raised floor (like a computer floor) and the hard floor below.

In most large buildings, the air return to the air condition system is located in the

plenum. The air usually goes up to the roof, where it is cooled, filtered and forced ceiling tiles, to a large vent where the air is returned to the roof, where the process

Think hard before selecting plenum. Riser-rated cables, CMG or other products may work as well and save money.

down through ducts into the rooms. The air filters up through the drop

continues. In fact, my dictionary must be wrong.

See LAMPEN, page 30 ▶

In this example, the air pressure is lower in the plenum area than the surrounding room air because it is being drawn away to the roof.

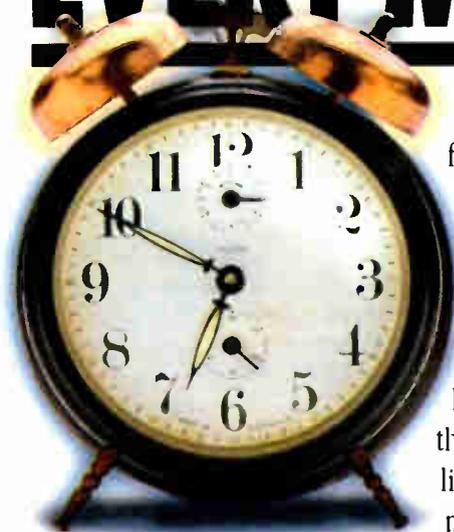
But I don't think the NEC would accept that as a reason you don't need plenum-rated cables!

You can't see in the plenum area, because often it is hidden by a drop ceiling, and that's the reason for plenum cables.

If a fire were to break out in the plenum, with burning toxic plastics, the fumes and smoke would all be drawn into the air conditioning and fed to the rest of the building, as in the sad story of the MGM Grand fire mentioned last month.

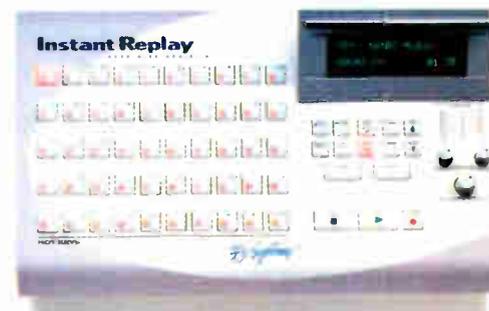
So plenum cables are specially tested to meet the plenum specification. Only cables that have been tested, and passed,

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◆ COUNTDOWN TO LPFM ◆

LPFM Proposal Spins Off Opinions

Letters continue to pour in to RW regarding the January FCC vote to create a new class of low-power FM radio stations in the United States. As of early April, opponents continued to press Congress to stop or modify the rollout. Meanwhile the FCC began to outline its application windows for various states.

We welcome other points of view, and will continue to print these letters as a service to our readers. Write to us via e-mail to radioworld@imaspub.com or at the address on the inside last page.

Dear RW,

Thanks for the good coverage on the issue of low-power FM. I have been in the broadcasting business as an announcer at a dozen stations over the past 35 years. I have

FM operators who've long had to pay their dues are being set up for audio anarchy by bands of angry 'pirate' cry-babies.

— Richard W. Fatherley

seen these satellite companies come in and just take over a market with their out-of-town talk shows and other junk programs.

I live in Elgin, Ill., and the programming here consists of shopping shows and every satellite wind-up mouth programmers can find. Basically the AM-FM operations in this town just plain stink. People like me would not want to start up these low-power FM stations if the current day broadcasters were doing their job.

There is no place for young people to learn the radio trade. They can't learn much at a station that's hooked up to a satellite dish all the time.

I will be seeking a low-power FM station license in my town. We will be broadcasting the city council meetings, school board meetings and local events and will be playing good music.

The commercial stations should have been doing this all along. Now it's our turn.

John Russell Ghrist
Elgin, Ill.

Dear RW,

Here's a copy of a letter I sent to Eddie Fritts at the NAB regarding his stand on LPFM.

Dear Mr. Fritts,

For a long time I've been an admirer (and even supporter) of NAB. As a dealer of professional audio equipment that is frequently used in the broadcast industry, I've always made it a point to attend your Las Vegas convention. It is simply the finest event of its kind in the world.

Obviously, your organization is capable of doing great things. Unfortunately, your recent stand on LPFM is not one of them. At best it has me befuddled, and at worst, it totally outrages me.

You seem to have insulted quite a few

equipment manufacturers who, by virtue of exhibiting their products at your conventions, make a significant cash contribution to NAB's treasury.

Every one of them I've talked to would like to have the opportunity to sell their products to the new group of LPFM broadcast customers, but simply put, you never asked their opinions before condemning the entire idea.

Some of these people are NAB members, some are not. In any case, they are your customers.

Your recent statements, as reported in publications such as *Radio World*, (did) little to encourage a prospective LPFM broadcaster to attend NAB2000. In fact, they make you sound a little tyrannical. It's not an image I'd want to foster if I

were in your position.

Perhaps you've never looked at the situation from this point of view, but it seems silly for an organization that is chartered to encourage commerce, to tell potential customers they are not welcome. That's just bad business.

I have asked several of my suppliers (who are NAB exhibitors) about their opinions on LPFM. Every one of them is hoping to tap into a new and lucrative market. To quote a CEO of a company who pays lots of money for booth space, "Of course I'm in favor of it. When it came to NAB's LPFM position, they never asked me about it."

He's right. You didn't. There is more than a little disenchantment among your exhibitors. I know you claim that LPFM will "create unacceptable interference all across the radio dial," but you and I both know that, as a blanket statement, it simply isn't true.

Short-spacing is a fact of life with over 400 full-power FM stations currently operating on second- and third- adjacent channels with no interference complaints. New ones come on the air all the time as "rim shots" from the suburbs.

While I am constantly amazed by what a creative engineer and a crafty lawyer can conjure up, I've never heard a word of objection from NAB.

Looking at the situation rationally, it's highly unlikely that some college, church or community organization running FCC-approved equipment at the power level of 100 watts ERP will cause any kind of interference to a full-power station within its protected contour. If they do, the rules clearly state that it is the LPFM broadcasters' responsibility to protect the full-power station.

The full-power station, on the other

hand, is not obligated to protect the LPFM.

If interference is such an issue, why don't you do something about the mushrooming growth of satellite-operated translators? In 1996, when the FCC opened up the floodgates for translators, NAB didn't even file a comment.

As you know, translators can run much higher power than any LPFM and they're allowed higher antennas too. Under many circumstances, they are extremely short-spaced with only one adjacent channel protected. At last count there are 2,500-3,000 of these things on the air with more being applied for almost every day. And you're not worried.

Does this sound like a double standard? It does to me.

NAB should reassess its views on the LPFM issue. You'd do much more for your cause by welcoming these potential new broadcasters into the fold, rather than alienating them and the people who potentially supply them. It's just good business.

Chuck Conrad
President
Crossroads Audio Inc.
Dallas

Dear RW,

Putting FCC Chairman Bill Kennard's lofty-sounding pretenses on the low-power FM question aside, I'm reminded of the riff-raff, rabble-rousers and revolutionaries whose haywired linear amplifiers plugged into the "Made-in-China" transceivers continue to tear up the 11-meter Citizen's Band.

In the absence of hard advertising revenues to support LPFM operations, what is their motivation? Just good old empty-sounding altruism?

FM operators who've long had to pay their dues are being set up for audio anarchy by bands of angry "pirate" cry-babies. Is this progress, or politics?

Richard W. Fatherley
Kansas City, Kan.

The following letter is in reply to an editorial by masked engineer Guy Wire at our Web site, www.rwonline.com

Dear RW,

Gee, "Guy," you haven't coordinated with your esteemed (or is it half-baked) RW editor who thinks LPFM is better than home-delivered pizza. I agree with you about 85 percent.

Of course this whole thing is political — Bill Kennard realizes that under lame-duck Bill Clinton he will be a *Canard Mort* unless his patron Al Gore gets elected. LPFM is all about a photo-op for the VP at the sign-on next fall of a new 100 watt that's just been granted to (fill-in favorite minority group that votes Democratic here).

As a practical matter, most of these LPFMs will be snapped up by the major religious broadcasters, operating through "prayer partners" or affiliated churches as the straw-man applicants.

Who are these folks? Look who is applying for the majority of the translators

See LPFM, page 25 ▶

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Let There Be Light

► NEC, continued from page 16 under the umbrella title Bulbs.

The light that bulbs generate has several important characteristics:

Light output — This is the designed output intensity specified in some easily comparable unit such as a lumen or candela at rated voltage and current.

Color temperature — A measure of the predominant color tone of the light, usually a function of the materials used in the source. It is a comparison of that tone against a theoretical black body at a certain temperature. This quality normally is expressed as a difference in temperature from that standard of that same black body.

Color rendition index (CRI) — This is a whole number assigned to the light source, an indicator of how well the source allows the identification or perception of the colors of the visual spectrum. This permits an easy, quick empirical comparison of the color definitional aspect of multiple, different light sources. The scale goes from 0 (unimaginably horrible) to 100 (ideal).

Secondary characteristics include pulse/strobe numbers, aging curves (light and color changes as a function of use time), envelope temperature, physical dimensions and mean time between

failures.

In bold strokes, light generators can be divided into two types: incandescent and arc.

Familiar bulbs

Incandescent types are the starship troopers of the everyday lighting world and include the regular filament type, which hasn't changed much since Edison's halcyon days, newer filament derivatives such as halogen lamps, and light-emitting diodes, or LEDs.

Arc type luminance generators are the ubiquitous fluorescent. High-intensity discharge (HID) lamps with high- and low-pressure gasses, and less common subsets of arc lights. Included in the latter are the very high-intensity, air-drawn arc lights used in big searchlights and film projectors.

After fire itself, artificial lighting began when primitive humans noticed that certain materials, heated beyond a threshold temperature, started to emit light — the glowing rocks in their fire pits.

The phenomenon of running a current through that material and bringing a material to incandescence, the point at which it begins to emit energy in the visual spectrum, was first recorded in the early 1700s.

It is possible that earlier artisans might have seen this phenomena while using the "Baghdad Battery" to electroplate certain items, but there is no mention of this

incandescence in the literature.

(The Baghdad Battery is a mysterious ancient artifact that apparently was either an actual cell or a variety of a capacitor. Its purpose was to release a large amount of current to allow metals to be electroplated onto various objects.)

In recent history, the primary challenge before Edison and contemporary technocrats was to create a simple, efficient device that would become incandescent when current was passed through it. The second was to design that device to provide a reasonable service life.

Their success, the common bulb that we buy today, has changed little from the final device that Edison's design team created around 1880.

A composite tungsten embedded filament of silk is suspended in a glass pressure vessel normally filled with argon and a dash of nitrogen at something just above one standard atmosphere.

The argon attenuates the breakdown/evaporation of the filament and acts as a heat transfer medium to take the heat of the filament to the envelope so that the filament assembly doesn't self-destruct from heat buildup.

This is important. Only a small percent of the energy delivered to an incandescent bulb is turned into light. The rest is turned into heat as well as light in non-visible parts of the spectrum.

This low efficiency in generating light is the downside of incandescent bulbs.

But incandescent bulbs are one of our best pan-chromatic light generators. Run at rated voltage, the light output has a



This is a typical arc lamp bulb with a long tube to allow the arc to be 'drawn.' Some communities require those containing mercury to be disposed of via their hazardous waste programs.

high, almost reference CRI. Nearly everything looks good and natural under incandescent lighting.

Also, as you reduce the impinged voltage, the light output has a tendency to move towards the red, "warming" everything up with a soft, pleasing, relaxing color tone.

Halogen bulbs are a variation of this incandescent light. They use a tungsten

See NEC, page 21 ►

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

WaveStation 3.0 with WebConnect
www.bsiusa.com

► NEC, continued from page 20
filament but substitute halogen gas instead of argon. The result is a uniformly brighter light maintained over time.

Halogens and LEDs

The inside of the envelope stays cleaner via the "halogen cycle." Ordinary bulbs "smoke up" from the deterioration of the filament plating out on the inside of the envelope which can cut the light output by more than 40 percent.

But halogen bulbs operate at a notably hotter temperature because the heat dissipation is over a much smaller envelope. High heat is needed for the halogen cycle action. Halogen bulbs are *hot*. Do not place combustible material anywhere near them.

At present, halogen bulbs do cost more. The price is not offset completely by the slight increase in efficiency.

A mixed blessing is the size of incandescent bulbs. They are a point source, allowing the use of small, compact fixtures. However, this emanation from a small point means more fixtures are needed to diffuse the light across a large area.

Incandescent bulbs provide full luminosity almost immediately. They are complete generators and require no other support circuitry. Further, they are easy to replace.

LEDs are a type of incandescent light. The power expended in the "barrier" voltage of the diode, that 0.6 to 0.7 volt IR drop, is used to bring the diode junction to incandescent illumination.

This sort of "solid-state" bulb is remarkably efficient and durable. The reliable life and aging characteristics of LEDs are such that we assume they will never wear out.

However, LEDs do not generate a sufficient light output to be used as ambient illuminators. We won't consider them for general station lighting.

Arcs in the shop

Other light types make their light by discharge or arc methods.

In the case of fluorescent lighting, an arc current is conducted through a gas, such as mercury vapor, in a controlled flow. Normally there is an electrode at each end of a pressure vessel, designed in such a way that the arc travels through a considerable amount of this gas.

Consider the shop light, the familiar four-foot-long, 1-1/2-inch-wide F-40 bulb. The upside of the fluorescent bulb is its physical diffusion spreading the light, compared to the small point source of an incandescent Edison bulb.

If the current were not limited in some manner in this application, the gas and the electrodes at each end of the "arc" would eventually self-destruct. After starting, a ballast limits the current to a non-destructive level.

The light generated from that current passing through the gas and ionizing it to illumination does not create a light in the visible spectrum. The light created normally is ultraviolet.

This intense UV light then travels the short distance to the walls of the bulb. The inside of the envelope is coated with a selected phosphor that when impinged with ultraviolet releases light in the visible spectrum.

This phosphor is chosen to provide a proper color temperature. For example, a shop light fluorescent has high light efficiency but substantial light output in the blue spectrum. Warm, white fluorescents have a more panchromatic color light out-

put but are less efficient.

Fluorescent are at least twice as efficient as incandescents, but they still only convert something on the order of 3 percent of the electric consumed into light.

Special cases

Metal halide, high-intensity discharge (MH-HID) lights pass current between two electrodes in a pressurized glass vessel and cause various metallic additives to vaporize. When an arc is carried through these gases, they produce prodigious light with a good to excellent CRI.

High-pressure sodium (HPS) lights function in a similar way but they use a sodium gas as the arc medium at between one and two atmosphere pressure.

Their benefit is very high light efficiency. Unfortunately that light is orange with a dash of yellow thrown in. One cannot do

work that requires color differentiation using this light. Even reading a license plate is difficult.

HPS is suitable for your parking lot or security lighting at a transmitter site. But don't plan to rebuild your '64 Volkswagen under it.

Law-enforcement organizations tell us light is the greatest deterrent for crime. Sturdy barbed-wire fences and light are a winning combination. Nothing beats HPS for this purpose due to its surreal quality and annoying tone that drives most folks away.

Although it took the lighting world by storm when first introduced, low-pressure sodium is now rare. More panchromatic and efficient light units have been introduced. Occasionally you see these bulbs running reliably along the interstates. These are identified by the 'egg custard'

light they produce. Mercury vapor also is becoming passé.

Arc type lamps have long strike and restrike times compared to incandescent. To achieve full brilliance from a cold start, this restrike time ranges from a few seconds for most fluorescents to five or 10 minutes for lazy HPS units.

Safety demands that some locations use nothing but incandescent bulbs. For example, if you cannot light at least the staircase landings with incandescent lights, specify a UPS battery ballast for the fluorescents in critical locations to guarantee light through power line disruptions. The last thing you would want would be for someone on the stairs or in front of moving machinery to be plunged into darkness at a critical moment.

Next, we'll discuss examples of lighting applications in your station.



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World Radio History

Workbench

Radio World, April 26, 2000

Keep Your Phases Balanced

John Bisset

Walt Billings of Total Engine Service and Supply in Baltimore noted the column in which it was suggested to keep hard-drive systems on the same electrical phase, to avoid ground loops and similar gremlins.

"A great idea, as long as you keep each phase balanced with regard to the

current draw. Loading up one phase at the expense of the others can lead to performance problems — especially if you use a generator!"

Too much load on any one phase may cause the generator to trip its breaker — not good for a backup system. Walt's company services and sells used and new generators, and though the Y2K planning kept him busy, he remarked

that many of his customers now have a good backup system.

Now that a date-specific event is past, the backup can be used for other events like wind, snow, ice — those catastrophes that cannot be anticipated.

So how much is too much? Walt gave an example for a 50A panel. Code states that the current draw must not exceed 80 percent, so in the example, that's 40A per phase.

When measuring the current draw between phases, a good rule of thumb is for each phase to be within + 5A of each other. By keeping the loads balanced, hot spots are eliminated.

The goal is for all poles on the breaker or contactor to heat evenly. As the current draw of the load shifts, the connections heat and cool, leading to loosening of the wires.

Significant load shifts at the studio may not be commonplace; however, loading up all the tower lights on one phase at the transmitter site is another story. Some generators sample one of the phases to sense the voltage for the voltage regulator.

If all the tower lights are run off this same phase, disaster lurks. With pulses every three seconds or so, it won't take long for the generator to try to react as that one leg is pulled down to flash the lights. A blown voltage regulator or worse can result.

A clamp-on ammeter can point to any problems, and a licensed electrician is best used to correct or balance the load.

Remember Figure 1? If you guessed the back of an ITC, you're right.

The point I want to make is the "L" bracket that Brian Edwards of

WUST/New World Radio in Washington has screwed into the back of his Middle Atlantic Rack Shelf.

This technique works for consumer gear as well. Cassette, MiniDisc and CD players can be set in an inexpensive rack shelf, and the brackets keep the gear from getting pushed around by heavy-handed jocks.

Another tip will help if you have fused equipment with rear-mounted fuses. Velcro one of those small plastic fuse boxes to the rear of the machine or rack

Velcro one of those small plastic fuse boxes to the rear of your machine or rack shelf.

shelf. Keeping the box stocked with the fuses you need will speed repairs.

Here's another brain teaser. Take a look at Figure 2 and see if you can find four things done right at this transmitter site.

Clif Glasgow handles a group of stations in the Imperial Valley of California, better known as the desert Southwest.

In this climate, even black ty-wraps die after six months of scorching sun. An inexpensive alternative is #14 or #12 TW insulated solid copper wire.

For bundling wires or cables on a tower or satellite dish, Clif suggests Band-lts. These are black vinyl-coated stainless steel bands, which are self locking and

See WORKBENCH, page 24 ▶



Figure 1: An 'L' bracket holds machines in place.



Figure 2: Can you find four things done right at this transmitter site?

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INTERNATIONAL UPDATE

Europe 1 Works Magic in Merlin

Historic French Studio Undergoes Digitization, Including New Studer Digital Console

Franck Ernould

Most French radio stations have converted their news and broadcast playback

System (DMS)."

The pair also re-equipped the station production studio with a Yamaha DMC1000 console linked to a DD1500



The Merlin Studio

systems to digital, but few boast an entirely digitized studio chain, from the talent microphone through the airchain to the listener's receiver.

Europe 1 is one of the few stations with this capacity.

As one of the oldest "non-specialized" commercial radio stations in France, it broadcasts to the country via longwave and FM. It also owns two other radio networks, RFM and Europe 2.

Some of the products chosen and technical decisions made by the staff would be familiar to U.S. managers, others less so.

Big job

Jérôme Bellay, general director of the station, and Arnaud Lagardère, head of the group Matra/Hachette that owns Europe 1, assigned the task of digitizing Europe 1 to Technical Director Pierre-André Teiller and Project Manager Olivier Bauchard.

"Olivier and I explored the market thoroughly," said Teiller. "So far as the two small broadcast studios were concerned, the console best suited to our needs was an Amek Digital Mixing

digital delay, and the advertising production studio with a Yamaha 02R and DD1500, the gear was installed over the past several years.

Once these rooms were digitized, only the big Merlin studio, named after Louis Merlin, a founder of Europe 1, remained.

This prestigious studio, rebuilt about 20 years ago, is used by famous Europe 1 "presenters." It hosts live programs, election coverage and "Le Club de la Presse" (The Press Club), a weekly television/radio simulcast program in which journalists comment on the performance of a guest politician.

Over the years, the decor of the Merlin studio was "freshened up" on several occasions, but the studio never underwent any technical renovation. Programs were hosted at the back of the studio, where tables and chairs were set up as needed.

The control room was equipped with a Schlumberger Digitec console. Due to a lack of space in the control room, the amplifier racks were located in the studio itself, resulting in undesirable fan noise.

To put it bluntly: The Merlin studio was out of date.

What was the direction to take in an

overhaul of Merlin? Alain Marcot, the interior designer who redecorated the studios, was called in.

While maintaining a degree of continuity with the two other studios in terms of color, flooring, mirrors and other design elements, Marcot had to consider an additional factor: the new Merlin studio had to allow for video shooting.

In the center of a space measuring 108 square yards, Marcot set up a large round table about 10 feet in diameter, around which eight panel members can be seated comfortably. The video monitors showing music and advertisement feeds, dispatches and related programming are hidden in the table.

"The acoustics of the new studio are particularly successful," said Bauchard. "We normally use AKG Acoustics C 535

EB studio condenser microphones, which needed little readjustment to get the sound we like; however, even when all eight microphones are live in the mix, there is very little overload of sound."

The production control room has been expanded by 48 square yards by knocking down walls.

In choosing equipment, the possibilities were left wide open.

"I wanted to be sure that we could do everything in the new Merlin," said Teiller, "live talk shows of course, but also multitrack recording."

Hesitation

For this reason, Teiller and Bauchard decided that an Amek DMS would have been undersized for the studio.

"We hesitated between an SSL Aysis Air console and a Studer D950. In the end we went for the D950, because of its DSPs, the number of inputs, the talkback network and broadcast capabilities," said Teiller.

See MERLIN, page 30 ▶

Doing It Right at The Transmitter Site

▶ WORKBENCH, continued from page 23
reusable. Expensive in comparison to ty-wraps, but they last forever.

★★★



Figure 3: Hang RFR signs inside the fence, but don't use white ties!

Figure 3 shows hanging an RFR sign inside the tower fence to deter vandalism.

The white ties used in this photo won't last long in the sun, so resort to Clif's copper electrical wire — it's usually in plentiful supply around transmitter buildings, and you can't beat the cost!

All right, did you find at least four things done right at this transmitter site?

One is having a flashlight — with fresh batteries — right by the door. A second is having main and backup air conditioning or ventilation.

Third is having the thermostats marked, so you know what each one does. The fourth is running all low-voltage wiring (for the thermostats) in conduit.

Ready for some extra credit? The erasable note pad ensures that things like air filters or spares are ordered.

■■■

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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LPFM Proposal Spins Off Opinions

▶ LPFM, continued from page 19
these days. I am aware that the rules require a certain amount of locally produced and originated programming, but that could be gospel music loaded up on the hard disk and cranked out overnight. The rules don't say when this locally produced programming runs. Also, while an LPFM can't "translate," it can run "network" programming.

True, most open channels will be in rural areas and small cities, but I checked one Web site that has a program, purportedly linked to the new rules, that indicated a 100-watter was available in suburban Columbus. (I used the coordinates of Otterbein College's WOBN(FM), in Westerville, Ohio).

I suspect you are right about policing these stations. I remember an infamous Class A in northwest Ohio that ran for years with a 10-kW transmitter into a three-bay antenna (it was supposed to be one-bay).

I translated the minimum distance table into miles — for a Class A these things could be 42 miles away co-channel, 35 miles away first-adjacent and 18 miles second-adjacent. In hilly terrain like southeast Ohio, a 100-watter 18 miles away on the second-adjacent can put quite a hole in a Class A's audience.

Unless the NAB gets a stay from the D.C. District Court of Appeals, I expect the commission to go full speed ahead on taking applications as soon as they can. After all, the courts will be more reluctant to take action when the commission has several thousand applications in the hopper.

Given the present level of incompetence at the commission, this will also mean that most other routine broadcast applications are on hold until after the election, since the mass media staff will be shunted over to process through the "favored" (e.g., politically correct) LPFM applicants.

Then again, once the FM band is destroyed, we can all switch to satellite DAB.

Doesn't Clear Channel get an interest in one of those companies through its purchase of AMFM? I suspect the government likes that better anyway. One programmer is easier to control, and those big companies all have PACs.

Tom Taggart
Owner
WVVW(AM)/WRRR-FM
St. Marys, W.Va.

Dear RW,

Thanks for the very unbiased reporting and complete coverage you have given to LPFM. Each side has valid arguments both in favor and against the proposed new service.

By simply devoting time and space to the subject shows that many people at Radio World see a need for the new service. I can't say that I agree with much of what has been proposed but for many it is better than nothing.

William C. Walker
Proprietor
KWAQ(AM)
Lee's Summit, Mo.

Dear RW,

I am one of the people who worked hard to promote low power and to petition the FCC for a new service on FM.

As a contract engineer, I have seen the need for low-power FM first-hand in

Oklahoma. There are several counties here where a full-power FM will not fit under the old rules.

completely out of the radio business.

It seems to me that even a small town should be able to have at least one local

Local communities need radio, and in many cases, only low-power radio can serve the public interest.

— James Cunningham

Local groups have approached me about applying for a station, but to no avail, since the high-power stations actually block us

station. I can take you to several county seats, where there are no local stations, and only the new low-power radio service

would make this possible.

I, for one, have never had any interest in creating interference with existing stations, or to allow for bad engineering practices on the FM band. Let's untie the FCC's hands, and allow them to decide where and how low power will fit in, with guidelines that make sense from an engineering standpoint.

I would like to see a ruling that is fair to not only minorities and non-profits, but to the entire broadcasting trade.

It seems to me that any new low-power stations should be able to show a valid reason for existing. Local communities need radio, and in many cases, only low-power radio can serve the public interest.

James Cunningham
Contract Engineer
S.E. Technical Services
Stonewall, Okla.

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Stations Select PSi Digital Audio

Prophet Systems Innovations was chosen by WOOD-AM-FM, WBCT(FM), WFNX(FM), WCUZ-FM, WVTI(FM) and WTKG(AM) to provide the digital audio system for their seven-station group in Grand Rapids, Mich.

PSi also completed a system upgrade for two Santa Barbara, Calif., stations, bringing the owner's total to seven stations using PSi digital audio, including KTMS(AM), KTYD(FM), KSBL(FM), KXXT(AM), and KIST(FM). The group's flagship station, KTMS, has been a Prophet Systems' customer since December 1998.

PSi also was chosen by Adonai Radio Group station KAEZ(FM) in Amarillo, Texas, to provide its new digital automation system. The Amarillo addition rounds out Adonai Radio's Texas station holdings in Abilene and Lubbock.

The project was completed the second week in March. The equipment change-out included upgrading from the original Prophet XPS system to the AudioWizard system. AudioWizard is a radio programming control center that stores and processes audio data for radio stations.

For information contact PSi at (800) 658-4403 or visit www.prophetsys.com

BP Distributes With Olympia

Broadcast Programming chose InterMax! file transfer software from Olympia Management to distribute customized audio tracks to client radio stations via the Internet.

BP's Director of Engineering Warren Banholzer said, "With InterMax!, we can place audio files precisely on the station's automation system, ready for broadcast. Station personnel aren't required to transfer files from one place to another, so we can provide the station a hands-free programming solution without eliminating local programming control."

Jim Withers, director of sales for Olympia, said InterMax! allows station groups to share any digital files, not just audio material, eliminating the expense of shipping or dedicated WANs and phone charges.

Withers said the company designed InterMax! to be "file neutral," so it can transfer any type of digital file across the Internet and steer the file to the correct computer and directory at the receiving station. Stations can share traffic files, production music elements, voice tracks and other material.

For information contact Olympia in Missouri at (314) 345-1030.

Gefen Sounds Good To VoiceWorks

VoiceWorks Recording Studios, in Minneapolis, chose the Gefen SFXNet database system to manage its collection of sound-effects CDs.

SFXNet enables engineers to search large databases of sound effects from an online intranet. VoiceWorks' large collection of CDs was digitally converted and loaded onto four 50-GB hard drives, and Gefen helped the company to get the network up and running.

"We are a natural fit for the SFXNet system," says VoiceWorks president Steve Harley, "because of the high volume of radio and television ads that we record and the number of engineers we employ."

For information contact Gefen at (818) 884-6294, fax (818) 884-3108 or send e-mail to gsinfo@gefen.com

Clyde Brings 'Mates' to BBC

BBC World Service recently purchased Deskmate and Deskmate Lites from Clyde Broadcast Products.

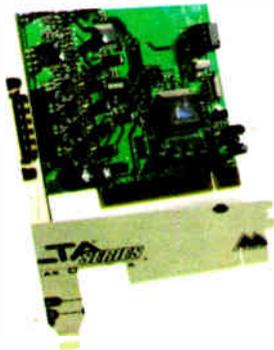
The units, designed for use with digital audio workstations, provide desktop audio functions in a device that sits neatly beneath the computer monitor. Deskmate includes a four-channel mixer, with two multi-input selector channels, a mic amp channel and one for the DAW playback.

BBC World Service is using Deskmates in a number of pilot projects to evaluate digital audio production systems.

Clyde Broadcast products are available in the U.S. through Netia Digital Audio. For information contact Netia at (877) 699-9151 or visit www.clydebroadcast.com

MediaTouch and M Audio Agree

MediaTouch recently signed an OEM agreement with M Audio to use M Audio's Delta 44 sound card in MediaTouch's new audio logging system.



MediaTouch is developing a multi-channel logging system for the Canadian Broadcasting Corp. that will archive the air feeds of radio stations and provide retrieval and system management through a Web browser.

MediaTouch is the broadcast and Internet software division of OMT Technologies based in Canada.

For more information contact John Davis at MediaTouch at (619) 460-4228 or visit the Web site at www.omt.net

Ward-Beck Series In Rogers' 'Hood

Rogers Communications chose Ward-Beck Systems R2K radio consoles for installation in several of its radio stations in Canada. Many models from the R2K Series have been ordered for CKKS/CKWX Vancouver, CFAC/CFFR/CHM/CKIS



Calgary, CKY Winnipeg, CHFI/CFTR Toronto and CIWW/CKBY Ottawa.

Kirk Nesbitt, Ward-Beck's director of engineering in Toronto, commissioned the design of a custom input module to suit the needs of Rogers Radio Broadcast Group.

For information contact Eugene Johnson at Ward-Beck at (800) 771-2556 or visit www.ward-beck.com

Broadcast Richmond Goes on Safari

Broadcast Richmond has received a contract to deliver three complete high-power AM radio stations to an African government. The company was awarded a job covering three each Nautel XL30 30kW AM solid-state transmitters, TCI AM towers, Superior Electric Automatic Voltage Regulators, Andrew Coaxial Line and Wegener Satellite Receive Stations. The contract does not allow the publication of the specific country.

Upon delivery, Broadcast Richmond will dispatch senior engineers and tower erection crews to the country. This landmark project signifies the total renovation of the customer's RF facilities to benefit 70 percent of the nation's population.

For information contact Broadcast Richmond at (765) 966-6468 or visit www.broadcast-richmond.com

Spotdata Passes 500 Installations

Columbine JDS Systems Inc. said its Spotdata electronic invoicing system has been installed in approximately 500 broadcast facilities in the United States and Canada since its launch in early 1999.

The company said this adoption was evidence of the broadcast and ad industries' "wholehearted support" of electronic invoicing.

Most of the users are U.S. television stations, but also included are radio stations, cable networks and Canadian television stations. CJDS said 120 ad agencies are using the system.

Spotdata is a Web-based system that allows electronic invoicing over the Net.

For information contact CJDS at (303) 237-4000 or visit www.spotdata.com

IDC Wins Order

Virginia-based Computer Systems & Communications Corp. chose the SuperFlex datacasting system from International Datacasting Corp.

SuperFlex allows users to establish high-speed satellite IP networks. CSCC will use it to broadcast data for the Partnership for Peace Information Management Network (PIMS) from a CSCC uplink facility near Brussels, Belgium.

PIMS is a U.S. Department of Defense program that provides an information management network to strengthen cooperation and promote database development between the U.S. and partner countries.

CSCC is a subsidiary of General Dynamics and offers design, development and implementation of WAN-based systems.

For information call (613) 596-4120 or visit www.intldata.ca

FlipJack: A New Friend

► FLIPJACK, continued from page 14
volume control on the unit's front panel.

I could envision the FlipJack as an engineer's dream for sales remotes or talk show remotes on a small-market level. Just send out the talent, a cell phone, a pair of mics, headphones and a FlipJack, no muss, no fuss.

Service folks will like it; the design is simple, and ICs are socketed to make maintenance easy.

If cell service is not available, an adapter lets you use the FlipJack with a dial-up line. This "Land Line Adapter" is to be ready by the middle of April and will sell for \$89.

My FlipJack isn't perfect, I have to be careful of RF from the phone. I solved that by extending the supplied cable with a Radio Shack extension used for telephone handset headphones.

You also must check to make sure the FlipJack works on the phone you have. It is designed to work with Motorola StarTac phones or any phone with a 2.5 mm hands-free jack. If your phone doesn't have this jack, you may be able to get an adapter that provides one.

I've tested Flipjack with Audiovox, Nokia and Motorola products with good results. I did have a problem with my Nextel phone. But Conex VP John Plattner said the Flipjack has been updated to work with Nextel phones and others that do not have side tone on full-time. The updated model also has improved RF rejection.

If you are looking for a good, quick way to get your audio from the field to the studio, or the other way around, the FlipJack is the way to go.

■ ■ ■

Tom Mac Donald is a reporter for WWDB-FM, a Beasley Broadcast Group news-talk station in Philly.



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World Radio History

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World Radio History

Merlin: Digital Studio Upgrade in France

► MERLIN, continued from page 24

"This console is adaptable. After a few months, it only took an hour to add an eight-fader module to the 24 faders that were already there. Since the console manages two banks, this means we have 64 inputs in all," he said. At the moment, the console is fitted with 40 AES/EBU I/Os.

"As far as the analog system is concerned, we have noticed that Studer pre-amplifiers are generally equal to the best

adding a special unit on each side of the console for the additional systems we needed, small integrated listening devices, two supplemental talkback posts and several drawers for small computer keyboards in front of each monitor," he said.

Set for years

"With this console, we are set for a few years, which is not easy at a time when everything is changing so rapidly."



Studer D950

on the market, including Neve, Focusrite and Avalon products," Teiller said.

In the studio itself, recordings are made either on the auxiliary channels of the D950 or, in more difficult cases, on a Yamaha 02R.

"Our D950 was put into use in autumn 1999. We were the first to use one in a radio station; later we heard that France 3 and TF1 had ordered D950s," said Teiller.

"We asked Studer to make several adjustments to the console, for example,

Teiller said.

But the renovations in the Merlin studio are not finished.

"We have an area ready in the control room where in the next few months we are planning to set up an entire video installation with a production unit, mixer and monitor controls," Teiller said.

■ ■ ■

Franck Ernould is a regular contributor to Broadcast & Production France, a sister publication of Radio World.

Reach him in c/o RW.

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The 235 is a no-nonsense, full-function AM audio processor. It features slow, "gain-riding" AGC, 3-band average level compression coupled with variable equalization, and an asymmetrical peak controller combining fast limiting with variable clipping depth. Strict NRSC compliance is guaranteed by specified pre-emphasis and overshoot-compensated low-pass filtering.

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MARKET PLACE

Musicam USA Prima LT Plus

Musicam USA offers a new digital audio codec, the Prima LT Plus. The company said the model has the features, LCD display and sonic capabilities of the Prima LT, and adds features.

Prima LT Plus contains three digital

The codec has 24-bit A/D-D/A converters, AES/EBU digital I/O standard and gold-plated Neutrik connectors.

Prima LT Plus contains Musicam, the compatible enhancement to MPEG Layer 2 audio coding, as well as MPEG Layer 3 and G.722 coding algorithms.

One-touch dialing, quick configurations and a large speed-dial directory are provided. It supports up to eight optically isolated command inputs and eight



interface slots that can hold any combination of ISDN terminal adapters, V.35, X.21, RS422 or RS530 interfaces. This gives users the ability to send stereo audio to three locations, or mono to six locations, simultaneously via ISDN.

The Prima LT Plus can bond multiple ISDN lines to send audio at rates up to 384 kbps, and can support standard bit rates through its other digital interfaces.

dry, floating relay contact closures for remote signaling.

Other features: two RS232 Ancillary Data circuits; Prima Logic Language support for auto-recognition of the calling codec; software upgrades via download from the Web; and optional SMPTE time code.

For information, call (732) 739-5600 or visit www.musicamusa.com

Wire & Cable Letters

► LAMPEN, continued from page 17 can carry the P designation, such as CMP, CL2P, CL3P and CATVP.

In fact, every cables that carries any designation must be tested to have a rating attached. Not all the cable is tested, of course, just a sample when the cable is first manufactured. And the general, riser and plenum tests get harder to pass as you go up the scale.

But there's a twist to all this. The NEC is a voluntary code.

This is not a governmental institution. These are not laws. But your local fire marshal, building inspector, planning commission, or board of permit appeals need something as a standard. So most of the country has adopted the NEC as its rulebook.

Often it has been adopted statewide. In other places, governments have left it up to the counties, most of which have adopted it. But that doesn't mean everybody.

Every so often, you will find a county that does not subscribe to the NEC or any other code and will allow you to do whatever you want. On the other hand there are areas, such as Chicago or Las Vegas, that have created their own rules that are much more stringent than the NEC book.

Before you start your installation, you had better be sure what the local code is.

If your designer, integrator or architect isn't sure, call your local fire marshal or building inspector. Better to know the truth before you start, than to have to rip it all out and start over

when the inspector happens to come around!

And sure, if you have to go to plenum cable, they're a few more bucks and general or riser-rated cables.

Think hard

Perhaps you laughed when I said plenum cables are "a few more bucks."

Well, yes, plenum cables are expensive, often two or three times the cost of non-plenum cables. Therefore, think hard about the need for plenum. If you can use riser-rated cables, you will find them significantly less expensive than plenum. CMG or similar cables will be less expensive again.

And, believe me, if you intend to convince an inspector that a certain area is not a plenum, and therefore doesn't need plenum-rated cable, well, good luck!

Just the fact that the space is hidden from view often is sufficient for an inspector to declare it a plenum, even if there is no connection to the air conditioning system.

So why not just put everything in conduit?

We'll discuss that option, and some recent changes in the NEC code in regards to conduit, in the next column.

■ ■ ■

Steve Lampen is technology specialist, multimedia products for Belden Electronics Division in San Francisco. His book "Wire, Cable, and Fiber Optics for Video and Audio Engineers" is published by McGraw-Hill. Reach him at shlampen@aol.com

In-Band On-Channel (IBOC)...

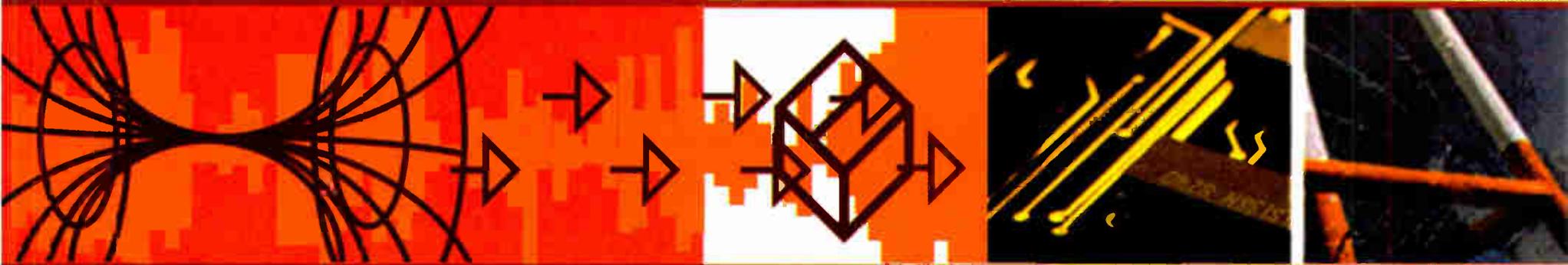
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A rugged design with heavy aluminum panels, solid oak trim, 5M operation On/Off switches and full DC control, the 1200 is ideal for On Air, Production, or News applications.

Standard Configurations

1200 - 5S	5 channels	\$2,295
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(call factory for options)

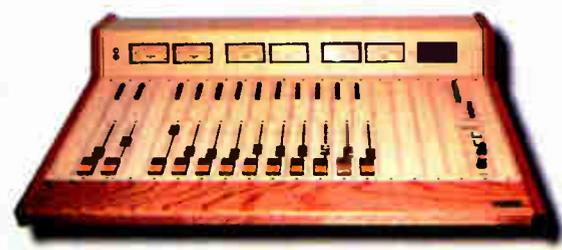
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The NEW DL4 System II comes complete with 105 hours of audio storage, 7 input play software for On Air, and DL4-SCHED for Production. This powerful 2 studio system requires only 2 customer support.

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- 8, 18, or 28 channel models
- Fully modular design
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- Monitor for control room & 2 studios



Modular, reliable, flexible, and powerful, the 12,000 is found around the world from Tokyo to Paris to New York. The 12,000 is perfect for any size market or any radio application.

Standard Configurations

12K8 - 6	6 channels	\$4,350
12K18 - 12	12 channels	\$7,075
12K18 - 18	18 channels	\$8,755

(call factory for options)

DL4 System III

- NEW - dual On Air & Production System
- Live On Air, Hard Disk Automation, Satellite Automation, Production, Jingle Box, Segue Editor
- Complete - just add 3 PCs
- Only **\$16,995**

The NEW DL4 System III comes complete with 210 hours of audio storage, two 7 input play software packages for On Air, and DL4-AUTO software packages for Production. This powerful 3 studio system requires only 3 customer support.

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- 18 CH Console \$12,995



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DL3 - 78	78 Hours
DL3 - 150	150 Hours



Instant 3-Play



- NEW - Instant 3-Play
- Triple Play & Record Jingle Box
- Control from 1, 2, or 3 PCs
- One PC has triple play -or- three PCs have a single play
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with a triple play & record DL4 workstation, 7 input record switcher, DL4-AUTO Production and Scheduling. This powerful 2 applied PCs and installation.

Just connect 1, 2, or 3 PCs running our INSTANT 3-PLAY software to our rack mounted digital workstation and you are ready to go. The workstation has 3 simultaneous plays with record. Software setup assigns play control to the PCs. 3 times the power of other Jingle Boxes, the Instant 3-Play provides access to the SAME jingle from 3 places.

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with a 6 play & dual record DL4 workstation, 7 input record switchers, two 7 input record switchers, (2) DL4-SCHED for Production and Scheduling. 3 customer supplied PCs and installation.

The Modlux Flex-Studio is a complete modular studio package that can be configured in dozens of different ways to meet nearly any studio design. It can be assembled left or right handed as well as in all of our standard configurations: 'Short L,' 'Long L,' and 'Unbalanced U.' Complete with racks, access doors, interview table, and much more.

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| • CROUSE-KIMZEY | (800) 433-2105 |
| • BGS (Broadcasters General Store) | (352) 622-7700 |
| • SCMS (Southern Coastal Marketing Service) | (800) 438-6040 |
| • BRADLEY BROADCAST | (800) 732-7665 |
| • CONTINENTAL ELECTRONICS | (800) 733-5011 |
| • RF SPECIALTIES (contact their regional offices) | |

For more complete information on any Arrakis product, visit our website at: www.arrakis-systems.com or email: sales@arrakis-systems.com

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GM Journal

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Page 42

Radio World

Resource for Business, Programming & Sales

April 26, 2000

MARKET WATCH

Charlotte Lives to See Another Day

Lyssa Graham

It's the birthplace of Andrew Jackson, the home of the first college in North Carolina, and the 37th U.S. radio market as ranked by population by Arbitron.

The Charlotte metro region includes 13 counties in both North Carolina and South Carolina, and it's growing. The U.S.F. Census of 1990 put the population of the metro at 1.58 million, and estimates for 1999 at 1.88 million.

A \$106.7 million radio market in 1999, according to BIA Financial Network estimates, Charlotte has seen impressive growth from a variety of sources.

The area now houses the offices of 305 of the Fortune 500 Industrial companies including Pepsico, Archer Daniels Midland and Westinghouse Electric Corp. Five of those companies are headquartered in Charlotte: First Union Corp., B. F. Goodrich, Duke Energy, NuCor and Bank of America.

First Union Corp. is the largest employer in Mecklenburg County, providing 15,000 residents with jobs.

Infinity Broadcasting's Michael Kellogg, general manager of sports talk station WFNZ(AM), said, "The market is swiftly growing, apart from just population and industry relocating here. I feel that the culture of the city is beginning to pick up a bit. The pace of business is increasing."

Who's on top

Arbitron counts 41 stations in the Charlotte-Gastonia-Rock Hill market, and seven of those are owned by Infinity Broadcasting, more than any other owner in the market. BIAfn estimates that the combined revenue of all seven stations in 1999 hit \$38.4 million.

Infinity's next largest competitor, AMFM Inc., has three stations in the market with a combined revenue of over \$30 million, according to BIAfn.

Jefferson-Pilot Communications, owner of three Charlotte stations, comes in third in the revenue race with \$21 million.

Infinity stations WPEG(FM) and WNKS(FM) consistently lead the ratings in the persons 12+ category in the "Queen City." The two stations held the top-two places for all of 1999.

Urban format WPEG averaged an 8.9 share in persons 12+ and contemporary



Billy James (Above) and John Boy Isley of 'John Boy and Billy' Fame

hit radio WNKS averaged an 8.1 share.

Andre Carson, program director of WPEG, a finalist in this year's NAB Crystal Radio Awards, attributes the station's success to its desire to super-serve the needs of its listeners.

"Although 'you can't please everybody,' all we can do is please as many people as we possibly can and hope that they're in the majority."

The company is finishing the interior on a new radio building on South Blvd. that will house the three urban stations, WPEG, WBAV-FM and WGIV(AM) as

well as sports talk WFNZ(AM) and country WSOC-FM.

"The studs are up and they're just putting up some of the drywall," said Phil Woods, chief engineer at WPEG, WBAV-FM and WGIV.

Woods said that right now he and his staff are debating what equipment to order for the new facilities.

The new building should be ready in the next few months. Infinity radio stations there will occupy 33,000 square feet.

The remaining two stations in the Infinity cluster, classic hits WSSS(FM) and contemporary hit radio WNKS(FM), will go to the old WSOC-FM building on Stuart Andrew Blvd.

Several programming and management shifts have taken place at the



Charlotte, N.C.

Market Rank: 37
 Market Revenue Rank: 23
 Number of FMs: 15
 Number of AMs: 25

Estimated Revenue (in \$,000's):
 1996: 70,600
 1997: 78,800
 1998: 92,900
 1999: 106,700
 2000: 119,400

Revenue Growth:
 '93 - '98: 16.5%
 '99 - '03: 10.5% (est.)

Local Revenue: 80%
 National Revenue: 20%

1998 Population: 1,399,200.
 Per Capita Income: \$17,779
 Median Income: \$37,508
 Average Household Income: \$46,231

BIA Financial network

'Commerce' (background) is one of four sculptures on the Square in downtown Charlotte.

with only one station, WSOC(FM).

Bill Schoening took over WSSS as vice president and general manager while he retained the same position at WNKS. Under Schoening, the station tweaked its format a bit, from a '70s rock feel to a more '80s mix.

Schoening also relieved WSSS Program Director Jeff Ballentine of his duties. It's too early to tell whether the new sound at WSSS will up its ratings. The station dropped from 12th to 14th in persons 12+ in the Fall '99 Arbitrends; however, the format shift did not take place until late January this year.

AMFM Inc. holds three stations in the Charlotte market, WRFX(FM), WLYT(FM) and WKKT(FM). All three stations are consistently in the top 10 with persons 12+.

WRFX is the flagship station for the

See MARKETWATCH, page 38 ▶

YOUR TIME

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PROMO POWER

Teach Your Radio Station Staff to Be Creative

Mark Lapidus

I admit it. I was wrong. For many years, I believed strongly that creativity couldn't be taught — that if you didn't already have it, you weren't gonna get it. Someone I hired a few

years ago canned my credo.

Here's the method I used to try to hire "creatives" before my enlightenment: During the interview process, I would challenge the candidate to come up with ideas and unique angles for several scenarios. This was great until I realized that many of those who

I'd like to share a few of those lessons.

The Web makes radio programming and promotion easy to research. You can discover what hundreds of radio stations are doing with contests and special programming. The beauty of this resource is that you can check those same sites regularly and look for

you enough of a detective to discover what makes those big boys tick? Trade magazines and newspapers (like this one!) and their Web sites are also terrific places to uncover material.

Interesting concepts

Several companies that monitor radio stations provide the broadcast transcripts for entire 24-hour periods, so you can read what DJs say. As you find interesting concepts, make certain to file this research away in an easily retrievable manner.

For example, create a folder for Valentine's Day and put every station promotion and programming idea you can locate about the holiday in this "Valentine's" file.

I can hear some readers now: "Stop! This isn't creativity ... this is stealing creativity!" No, it isn't, if you take your research to the next step. Allow those collected files to help you warm up your brain so that you can think

See PROMO POWER page 40 ▶

Brainstorming Tips

- Assemble a group of people. Some of the group should be selected from outside your department. You'll need a few members who look at things from a different perspective than your group.
- Don't allow a hierarchy in the group. Everyone is equal and needs to be given an opportunity to speak.
- Compile a list of ideas. Shoot for quantity. Do not stop to judge any idea or allow anyone to make comments yet about any specific idea.
- If you get stuck, try jolting the group by slightly changing the subject or question. For example, instead of just trying to come up with a ski promotion, try to come up with a ski promotion that must include dogs. You'll be amazed at some of the crazy creativity that can fly out of these subject enhancers.
- Set a length of time for the session and finish within that period. This is added incentive to the group to keep it productive.

Your mission is to devise a way in which your station can become part of the news.

offered up flashes of brilliance were folks who could think quickly and speak with charisma, but were limited in other essential employee traits.

Creative genius

Often this type of creative genius had a short attention span, was totally disorganized and couldn't focus. Fed up with this, I stumbled on someone who wasn't naturally creative, but bright and extremely focused. I gave this person a chance, and learned how to teach others a measure of creativity.

the patterns.

Take it a step further and explore only top-rated radio station sites in your format. There's a reason why those stations get great ratings. Are

ARBITRON'S DECEMBER 1999 WEB RATINGS

Arbitron's Internet Webcast report, released at the end of March, indicated that, although total audience listening for December was down slightly from the November and October measurements, many of the top Webcasters occupy the same place in the monthly audience measures.

Texasrebelradio is No. 1, with 57,800 listeners; Kpig is second, with 56,600 and cd93 is third, with 46,600. The same three Webcasters occupied the same order in the first "Infostream" report. (Texasrebelradio was not included in the November ratings.)

This is not surprising, according to Joan Fitzgerald, director of marketing, Arbitron Internet Information Services.

"As the popularity of streaming media stations increase, it is reasonable to expect a slight decline in online listenership for individual Internet channels since the audience is prone to experiment with various sites," Fitzgerald said.

Fitzgerald said the average "time spent tuning" to individual Webcast channels have

remained just about the same. This indicates that these streaming media channels are building audience loyalty, according to Fitzgerald.

The station with the longest average listening time is www.wgms.com, a classical station owned by Bonneville International Corp. The site averaged seven hours and 53 minutes, followed by Columbia's www.kpla.com with six hours and 31 minutes, and ABC Radio's www.smoothjazz.com with five hours and 23 minutes. (See chart.)

The December ratings included the largest number of audio channels — 290 — since service began in the fourth quarter last year. Eight-hundred and fifty thousand unique listeners were estimated in the December report, down from the more than 900,000 in the first "Infostream" report.

Nine streaming media services participated, including newcomers Activate.net, INTERVU, NextVenue and Evoke in addition to ABC Radio, iCastMusic, Real Broadcast Networks, BroadcastAmerica.com and LaMusica.

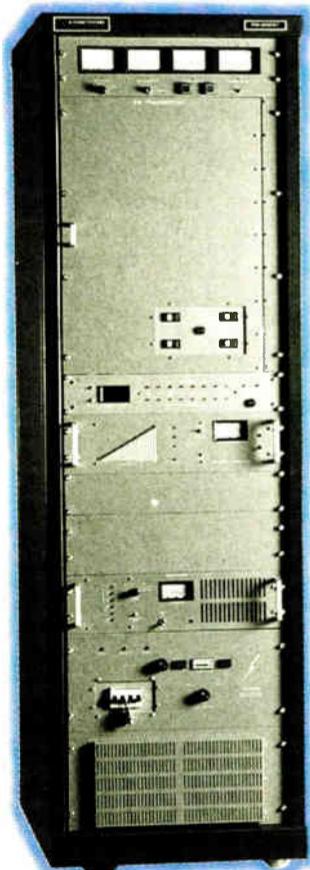
Arbitron InfoStream Report — December 1999 Top-10 Cumulative Audience

URL	Internet Affiliate	Format	Monthly Audience
www.texasrebelradio.com	iCastMusic/Activate.net	Adult Alt.	57,800
www.kpig.com	iCastMusic/Activate.net	Adult Alt.	56,600
www.cd93.com	iCastMusic/Activate.net	Mod. Adult Contemp.	46,600
www.zdradio.com	ZDTV Radio	News/Talk/Info.	44,900
www.abcnewsradio.com	RealBroadcast Networks	News/Talk/Info.	43,500
www.kix106.com	iCastMusic/Activate.net	Country	42,000
www.khyi.com	iCastMusic/Activate.net	Country	40,500
www.klaq.com	iCastMusic/Activate.net	Album-Oriented Rock	38,300
www.sets102.com	iCastMusic/Activate.net	Adult Alt.	31,200
www.wplj.com	RealBroadcast Network	Hot Adult Contemp.	28,800

Arbitron InfoStream Report — December 1999 Average Time Spent Tuning

URL Affiliate	Internet Average	Format	Time Spent Tuning
www.wgms.com	iCastMusic/Activate.net	Classical	7 hrs. 53 min.
www.kpla.com	iCastMusic/Activate.net	Adult Contemp.	6 hrs. 31 min.
www.smoothjazz1059.com	RealBroadcastNetwork	New Adult Contemp.	5 hrs. 23 min.
www.mix1073fm.com	RealBroadcast Network	Hot Adult Contemp.	4 hrs. 51 min.
www.magic98.com	iCastMusic/Activate.net	Adult Contemp.	4 hrs. 40 min.
www.92kqrs.com	RealBroadcast Network	Classic Rock	4 hrs. 27 min.
www.q106.com	iCastMusic/Activate.net	Country	3 hrs. 55 min.
www.kplu.com	iCastMusic/Activate.net	Jazz	3 hrs. 54 min.
www.wkdd.com	iCastMusic/Activate.net	Hot Adult Contemp.	3 hrs. 43 min.
www.wplj.com	RealBroadcast Network	Hot Adult Contemp.	3 hrs. 39 min.
www.wtop.com	iCastMusic/Activate.net	News/Talk/Info.	3 hrs. 39 min.

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World Radio History

Charlotte Radio Is Big on Charity

▶ **MARKETWATCH**, continued from page 35 syndicated "John Boy and Billy Big Show." The duo, John Boy Isley and Billy James, have been heard on Charlotte radio since 1980.

The pairing began that year at WBCY(FM), and in November of 1986 they moved to WRFX. By 1990, a syndication plan was in the works and with the advent of satellite delivery technology in 1993, John Boy Isley and Billy James signed their first affiliate, WROQ(FM) in Greenville, S.C. The duo is now heard on more than 80 stations in addition to Direct TV in Japan.

Program debut

Isley and James debuted their two-hour "John Boy and Billy's Rock and Roll Racing" show in 1998. The show features interviews with race-car drivers and managers interspersed with rock music.

NASCAR racing is a large part of "The Big Show" as well.

"The Big Show" has done well in the ratings locally and in its syndicated markets. Recently, Mark Cuban of Broadcast.com announced that it is the most popular morning show offered by the Internet company.

Isley and James have done much to bring attention to the Charlotte market and draw fans to the Charlotte's Lowe's Motor Speedway for NASCAR events.

Although Isley and James are a large part of WRFX's appeal in Charlotte, station staffers make it clear that there's more to the station than just John Boy and Billy. WKKT has just debuted its own syndicated racing show, "Racing Country U.S.A." The show is a mix of Nashville sounds and racing interviews and is produced, written and voiced by WKKT talent.

WRFX and sister stations WKKT and WLYT are all active in community events and charitable organizations. The hurricane season of last year affected parts of the outlying areas of the Charlotte market

with flooding and other damage. All three AMFM stations participated in fund-raising efforts for the hard-hit areas.

The Queen City's sports provide a focus for local talk radio, because sports are a part of what makes Charlotte residents tick.



The city is home to five professional teams including the NFL Carolina Panthers, NBA Charlotte Hornets — whose players' tendency to be on the wrong side of the law of late has been a hot topic for the talk stations — the NHL Charlotte Checkers, Triple AAA baseball's Charlotte Knights and the WNBA's Charlotte Sting. Charlotte also is home to the Charlotte Motor Speedway, a NASCAR venue.

The two talk stations, WBT, simulcast on AM and FM, and WFNZ(AM) are direct competitors in sporting news coverage.

Jefferson Pilot's WBT(AM) is the big winner in the revenue races with over \$12 million in both 1998 and 1999, according to BIAfn.

Although WBT is simulcast, Arbitron ranks the two stations separately. WBT(AM) pulls in higher shares than its FM sister and generally does better in the ratings, at least in

the persons 12+ demographic.

WBT(AM) came in tenth, with a 4.3 share, while WBT-FM was 20th, with a 0.5 share in the last Arbitron book.

According to BIAfn, WFNZ(AM) posted \$1.2 million in '99, and pulled a 1.1 share in the fall '99 Arbitrends.

host, John Hancock. He had a long history at WBT but resigned to take the morning show gig at WEND(FM). His WEND show with sidekick Ethan West is popular in part due to Hancock's longevity in the market.

The Dalton Group's WEND pulled a 2.8 share in the Fall '99 Arbitrends, and earned an 11th place in Charlotte market revenue rankings, with \$4.2 million in '99, according to BIAfn estimates.

Shaq attacked

WFNZ(AM) went through more turbulent programming changes. The station took heat for a series of "racially insensitive" events. Mark Mazzone was fired after a remark about Shaquille O'Neal in late April. Morning host Steve Czaban was fired two months later over an internal matter.

Just when the air seemed calm over WFNZ, another race issue raised its head. Charlotte Observer columnist Langston Wertz accused the station of being "racially insensitive" after WFNZ(AM) ran a parody of him featuring an Amos & Andy dialect.

The parody was the result of a column



In November 1999, WFAE hosted a 'Morning Edition' 20th anniversary reception with special guest Bob Edwards (left). WFAE GM Roger Sarow helps cut the cake.

Both WFNZ(AM) and WBT-AM-FM suffered a variety of lineup changes over the last year.

WBT fired evening host Michael Graham after he joked on the air about the Columbine High School shootings. His joking cost him his job, although it gained him an appearance on ABC Television's "Politically Incorrect with Bill Maher." Graham's slot was filled temporarily with the syndicated Neal Boortz until the arrival of Mike Church several months later.

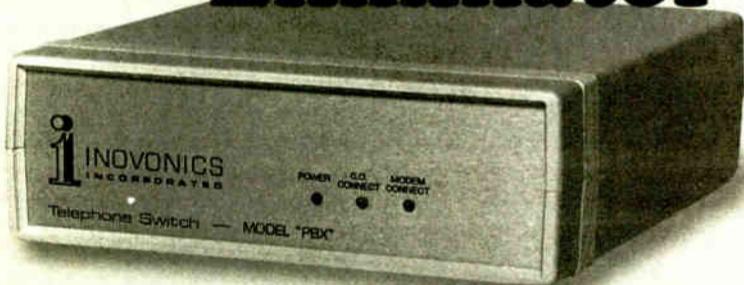
WBT also lost noted afternoon-drive

covering the Arbitron ratings written by Wertz which WFNZ(AM) staffers felt was misleading. The flak around the parody led to a walkout by three Observer staffers who were acting as talk-show commentators on WFNZ(AM).

Recent months have seen the line-up on both stations holding firm. The only exception was WFNZ(AM)'s release of evening host Jon Meterparel following a serious automobile accident involving Meterparel's father. Meterparel moved back to Boston to help care for his father and has since taken a

See MARKETWATCH, page 44 ▶

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HOLLYWOOD

WorldRadioHistory

Haas First Recipient of Fine Arts Radio International Award



Karl Haas, who has been host of the internationally syndicated radio program "Adventures in Good Music" for 42 years, accepted a lifetime achievement trophy at a Fine Arts Radio International awards ceremony in Detroit last month.

"Mr. Haas' daily radio programs, coupled with his many decades of live recitals and concerts, deserve to be recognized as a hallmark of classical music education. If not peerless in his radio niche, Mr. Haas is certainly first among his peers," said Jeffrey D. Skibbe, general manager of KXMS(FM), the noncommercial station that promotes itself as "Fine Arts Radio International."

The Fine Arts Radio International Awards focus on classical music education via the medium of radio. Karl Haas is the first recipient.

"We intend to honor classical radio programming that exhibits a strong educational component," said Skibbe. KXMS will soon issue a call for nominations for next year's award winner. All entries will be subject to international exposure via the KXMS radio Web site at www.KXMS.org according to Skibbe.

KXMS is a classical music station licensed to Missouri Southern State College in Joplin, Mo., a long-time AIGM affiliate.



Karl Haas

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Reader's Forum is now found on page 62.

Creativity Makes \$\$, Fun

► **PROMO POWER**, continued from page 36 beyond what's already been done.

For example, you may add a twist that makes that concept cool for your format or market. Truth is, sometimes when you really believe you've created a unique concept, oftentimes you haven't.

The radio industry's been around for a few generations now and it is, after all, a big country.

The second step in generating creativity is to teach effective brainstorming. There are dozens and dozens of books on this topic and many companies that actually conduct seminars on how to do it. (See "How to Make a Brainstorm" sidebar, page 36.)

Another way you can increase your

radio creativity quotient is to scan your local daily newspaper for the top stories.

Your mission is to devise a way in which your station can become part of the news. A huge consideration on the road to creativity is to instill confidence in those who are willing students. If you bash every idea they bring you, or hear a million reasons why this or that won't work, you will destroy their desire to explore risks. Another lesson I've learned: Risks are what make creativity cool. And cool is what makes radio fun.

■■■
Mark Lapidus is president, Lapidus Media. E-mail him at lapidus@erols.com

Listeners Steal Off To Secret Show

More than 200 lucky WPLJ(FM), New York, listeners were the first to hear the group Third Eye Blind perform in a "private" concert following the release of the band's second album "Blue."

All tickets for the concert were won by listeners who had called the WPLJ contest line.

The location of the Feb. 3 concert was revealed only to the winning listeners, who were sworn to secrecy.

"It creates an air of exclusivity that this is something special," said Steve Hart, WPLJ promotions director. "But diehard fans of the band (who didn't win) kept calling the station, to find out where the concert was — day after day, just so they could hang outside and maybe see the band."

The concert was held at SIR studios in Manhattan, a recording facility that also has a stage in a small performance space. The 'PLJ concert was standing room only, "But no one there minded that there were no seats," said Hart.

WPLJ plans to do similar concerts with other popular bands about every six weeks throughout the year.



(Left to Right) Mitch Dolan, President of ABC Radio Group; WPLJ DJ Kim Ashley; Stephen Jenkins of Third Eye Blind; WPLJ Music Director Tony Mascaro; Brad Hargreaves; Tony Fredianelli and Arion Salazar of Third Eye Blind

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*CD Makes It Happen

Tom Vernon

For as long as radio stations have been playing music, listeners have been frustrated when the artist's name and song title are not provided. Now there is a technology that not only funnels this information to the captive car-radio audience, but also allows them to use their cell phones to purchase the music that prompted their call.

Berwyn, Pa.-based ConneXus Corp. launched its *CD service in the Philadelphia market last May and in San Francisco earlier this month. The company plans to be in the top 30 markets in early 2000.

The system uses proprietary pattern-recognition software to identify songs as they play on a participant radio station. New CDs are regularly scanned into the system so they are part of the knowledge base of *CD (pronounced "star-CD"). Off-air receivers, each tuned to a different station, feed program audio into the system.

Customers of Comcast Cellular Communications in the Philadelphia market who are listening to their car radios use their cell phones to access *CD. After the station's frequency is entered, a computerized voice-response system will identify the song title and artist.

*CD also offers callers an option to



George Searle (Left) and Humphrey Chen

play samples from the artist's CD or scan other tunes that the station has

played recently. Users can then purchase the CD and have it delivered to their homes. The system is voice-activated, so the amount of button pushing that drivers have to do is minimized, an important safety consideration.

ConneXus has recently expanded this service so customers can also purchase CDs via a regular phone or on the company's Web site (www.starcd.com). *CD purchases compact discs wholesale and sells them to consumers for about \$2 off retail plus shipping and handling.

Do More, Spend Less

"Scott Studios Saves My Stations \$45,000 per Year"

Doug Lane, owner and GM of WWDL (FM), WICK (AM) and WYCK (AM), Scranton and Wilkes Barre, PA says he "saves more than \$45,000 per year with Scott Studios' Voice Trax automation. While the investment was major for a small family company like ours, *the pay back was fast and real.* And the savings are year after year after year.

"Unless we are running evening baseball or Friday night high school football, we close the building at 6PM and operate unattended until 5:30 the next morning.

"We use several independent announcers to record Voice Trax for us, along with our regular staff. Even me! We operate both live assist and automation."

Normally, each announcer records a fresh show every day. Scott's exclusive Voice/Music Synchronizer guarantees every song plays only with the correct voice track. If a jock gets too busy and doesn't do their show in time, Scott's unique Voice Trax System automatically airs evergreen standbys that sound right! Doug says, "No one but Scott Studios has this great fail-safe feature. Scott Studios' System provides a separate specific generic Voice Trax for every track for every hour and every day of the week in case someone can't track their show in time."

Scott's Voice Trax recorder is the industry's easiest to use: most tasks are done with just one button. The mouse and keyboard are seldom touched. Voice Trax take only seconds per cut to record. Scott's AutoPost makes announcers sound better and minimizes Voice Trax re-cuts. Experienced jocks don't waste time checking their work because they hear their voice and surrounding music and spots in context while recording.



Doug Lane, Owner and GM, WWDL, WICK and WYCK, Wilkes-Barre and Scranton, PA
Doug's stations have used Scott Studios' Voice Trax systems for many years.

Thus far, *CD has met its founders' expectations.

*CD is the brainchild of entrepreneurs George Searle and Humphrey Chen. The two met while working on MBAs at the Harvard Business School. They graduated in 1996 with a business plan for what was to become *CD, but first had to find financial backers before the company could be started.

In 1997, their ideas attracted the attention of a Boston-based venture capital firm, and after months of working 14-hour days, the concept became a reality with the test-market demonstration in Philadelphia in mid-1999.

Stations skeptical

ConneXus has drawn mixed reactions from broadcasters there. WPLY(FM) Chief Engineer Mark Humphrey said that his station currently receives no financial compensation for CD sales generated by listeners. He added that the instantaneous nature of the *CD system may cut into a station's ability to sell CDs on its own Web site.

While there has been some talk of barter arrangements between *CD and Philadelphia stations, no deals have been put on the table.

Not all stations in the Philadelphia market were included in the *CD menu. Public broadcaster WXPB(FM), with an eclectic mix of local artists and new music, had too large a playlist to be included on the *CD roster.

"The arrival of *CD has had little impact on WXPB's compact disc marketing strategy," said General Manager

See STAR CD, page 46 ▶

9:23:13 On-Air 2	I Knew I Loved You Savage Garden 11:14:24/F HIT DA3468 7:43 #1 for 2 weeks in March, 2000	Half A Minute Basia L 6:28 2p N 7:10 3p	Hands Jewel L 7:15 5p N 7:13 6p	Hang On Tight Ric Ocasek L 7:2 3a N 7:9 3p
Start 3	Show Me The Meaning Of... Backstreet Boys 17:14:13/F HIT DA5204 7:48	Happiness Vanessa Williams L 7:9 4p N 7:12 7a	Happy Girl Beth N. Chapman L 7:16 11a N 7:18 8p	Harbor Lights Bruce Hornsby L 7:4 2a N 7:12 7p
Start 3	Backstreet Boys Backsell Doug Lane 00:00:13/C VT JU1094 7:52	Harvest Moon Neil Young L 7:7 4p N 7:10 2a	Have I Told You Rod Stewart L 7:2 7p N 7:13 8a	Have You Ever Bryan Adams L 7:1 5a N 7:8 10p
Start 3	Dodge Trucks Q: Your Dodge Dealer 00:00:50/F COM DA2215 7:53	Have You Ever Brandy L 6:30 5a N 7:13 9a	Having A Party Rod Stewart/R. W. L 7:2 8p	He'll Never Leave Kathy Troccoli L 7:4 3a N 7:11 5p
Start 3	Kozy Kitchen Q: Kids Eat Free Tonight 00:00:50/C COM DA1234 7:54	Healing Wynona Judd/M. E. L 7:2 9p N 7:15 4p	Hear Me In The Ha Harry Connick Jr. L 7:2 10a N 7:15 3p	Heart Don't Fail Me Rita Coolidge/Lee L 7:1 3p N 7:13 7a
Start 3	WWDL Fast Jingle Q: WWDL 00:00:13/C JIN DA4315 7:55	Heaven And Earth Al Jarreau L 7:4 10a N 7:12 11	Heaven Knows Luther Vandross L 7:1 9p N 7:20 10	Here In My Heart Chicago L 7:4 2a N 7:14 3p
Stack	Auto	Here There & Ever Celine Dion L 7:5 8p N 7:13 5a	Here To Love You Melissa Manchester L 7:5 12m N 7:19 11	Hero David Crosby/Phil L 7:5 7p N 7:18 8a
Auto	Star	Hero Mariah Carey L 7:3 1p N 7:17 9p	Hero's Dream Jim Brickman L 7:3 7p N 7:12 5a	Hey Girl Billy Joel L 7:1 11p N 7:12 3p
Auto	Star	High Sierra Trio (Harris, Ronst) L 7:6 1p N 7:14 8a	Higher Ground Barbra Streisand L 7:4 12n N 7:13 8p	Hold On My Heart Genesis L 6:27 1p N None
Auto	Star	Holdin' On George Benson L 7:9 2a N 7:10 7p	Home Sheryl Crow L 7:2 3p N 7:10 6p	Hooked on a Mem N. Diamond/Kim C. L 7:1 10a N 7:15 6p
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After a year of trouble-free operation, Doug Lane says, "It was fun to get five calls at the studio over the Holidays from out of town PD's and GM's wanting to speak with me because they heard me 'on the air'. Guess what? I wasn't even there! They were amazed at our Voice Trax and Scott's accurate Time Checks too. Actually, they were 'very impressed'!

Doug is now installing Scott's automated temperature announcer. He says, "Scott's features are great. The savings are even better! I wouldn't want to run my stations without Scott Systems!"

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► **MARKET WATCH**, continued from page 38
job at a Boston station.

According to WFNZ(AM) Marketing Director Michael Pacheco, this has been an up-and-down year.

"We are like the little engine that could. I just think it's ready to explode."

There are plans for an increase in signal strength for WFNZ(AM) in the near future.

WBT-AM-FM and WFNZ(AM) often find themselves covering the same stories from different angles.

Format follies

While WFNZ concentrates on sporting news and WBT is a more generalized talk format, both stations compete to be the first one to break the story. WFNZ often has the advantage in coverage because

they are live, local talk from 6 a.m. to 9 p.m. WBT runs the syndicated Dr. Laura Schlessinger followed by Rush Limbaugh from 9 a.m. to 2 p.m.

WFNZ(AM) GM Michael Kellogg said, "I don't consider myself in competition with WBT. I consider our major competitors to be the classic rock stations. I like to think that we're guy radio, not sports radio."

Kellogg's target demographic is males 25-49. He feels that in order to make the sports talk format successful, the approach to the listeners should be broader than simply appealing to sports junkies. The station has a rock feel to help accomplish that mission.

Pacheco says that the format at WFNZ "gives us the luxury of looking at stories

from several different angles. We give the facts as we know them and then our talent gives their take on the issue."

Local charity

WFNZ(AM) is a community-oriented station. There are frequent charitable events, most recently the "Lids for Kids" program. The event was brought about by a letter from 10-year-old Emily Smith.

Emily e-mailed Mark Packer, host of the afternoon drive "Primetime with the Packman" show, asking for help with her school project. Smith was collecting hats for children who have lost their hair as a result of cancer treatment. Packer got involved and the station collected more than 4,000 hats during the campaign.

WSSS was just one of the interesting

format switches of the past year. There was also an abrupt change from smooth jazz to rhythmic oldies at Davis Broadcasting's WCCJ(FM) in October of 1999. The station has taken on a distinctly urban feel with a playlist that includes funk and R&B in addition to a more traditional oldies format.

WCCJ's Program Director Bill Campbell has seen the station move up a notch since the format change — from 12th place to 11th with persons 12+ in the Fall '99 Arbitrends. Campbell was brought in from Norfolk, Va., at the same time as the format change.

Said Campbell, "The jazz format did OK, but it wasn't generating much revenue." WCCJ had been running a smooth jazz format for nearly four years. In the few months since the format change, "advertising has tripled," Campbell said.

Campbell credits the increased revenue

See MARKETWATCH, page 45 ►

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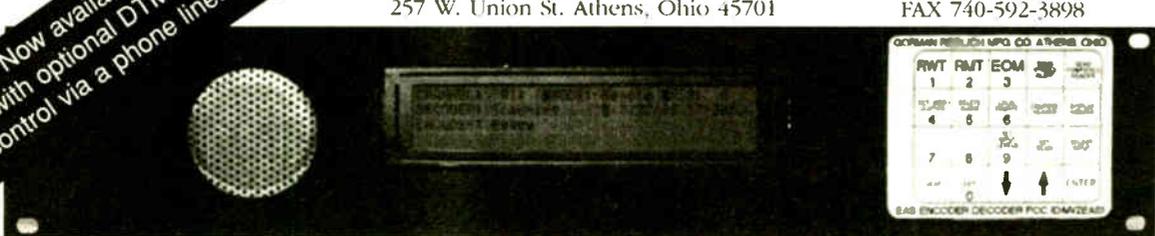
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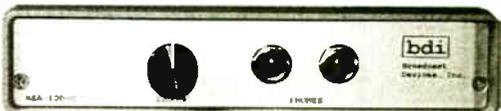
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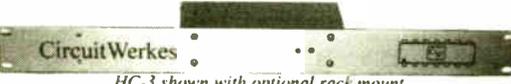
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▶ **MARKETWATCH**, continued from page 44 and ratings with the station's attempts to program for a more ethnic audience. Campbell agrees with the theory that programmers tend to forget that there are black baby boomers as well.

"Absolutely," he said, adding that the station's numbers are very high with ethnic listeners and are substantial with white listeners.

According to the Charlotte Chamber

but WBAV has definitely reacted to us."

WBAV-FM has recently added specialty '70s music programming to its urban adult contemporary format. Campbell doesn't feel threatened by WBAV-FM's move. "That just gives us credibility."

Things may change for Campbell and WCCJ. As part of the Clear Channel divestiture, urban giant Radio One has agreed to purchase WCCJ and parent company Davis Broadcasting for nearly

Murrow award for excellence in broadcast journalism, the station sponsors many local art exhibits and offers frequent technology seminars to the public with topics ranging from parental guidelines for "safe Internet surfing" for children to business practices for the new millennium.

WFAE is strong in the technology department. The station simulcasts with sister station WFHE(FM) in neighboring Hickory, N.C., and recently added a split signal.

Prior to adding the signal, WFHE received only Charlotte-area news during "Morning Edition." WFHE now airs local Hickory-area news while WFAE continues to air local Charlotte-area news.

"Our new split signal enables us to provide Hickory-area residents with information about where they live — local weather, news and event informa-

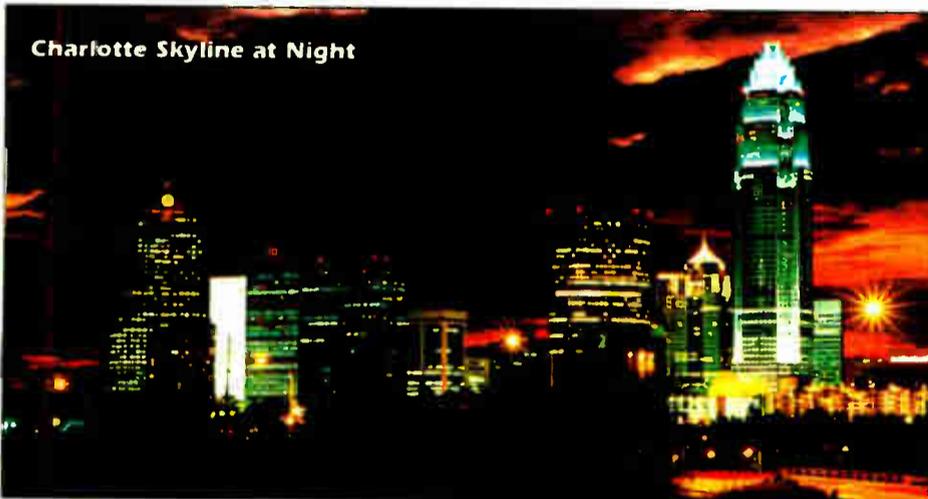
tion — while listeners in Charlotte hear information about their own region," said WFAE President and General Manager Roger Sarow.

The radio market here is far from staid. More syndicated shows are being developed at local stations and the reach of Charlotte radio continues to broaden. This is not to say that the local programming doesn't rise to the same level as the syndicated program.

Charlotte continues to grow in both population and in size with rumors of a possible annexation of Iredell and Catawba Counties following the 2000 Census.

■ ■ ■

Lyssa Graham covers the Charlotte market for RadioDigest.com. She can be reached at (910) 763-5361 or by e-mail lgraham@radiodigest.com



Charlotte Skyline at Night

of Commerce, Charlotte's population is 70.4 percent white, 26.6 black and 5 percent Asian and Hispanic.

The rhythmic oldies format is relatively new. Coleman Research Company did its annual format study on rhythmic oldies in 1999. The study is available on the Coleman Research Web site <http://www.colemanresearch.com>

One of the key findings of that study is that the presence of a strong urban adult contemporary station in the market does not adversely affect the performance of the rhythmic oldies format. The study goes on to say that rhythmic oldies stations perform even better in markets with urban adult contemporary stations that pull strong 25- to 54-year-old numbers, than in markets without high-profile urban adult contemporary stations.

The Coleman Research findings hold true in Charlotte. Said Campbell, "We don't directly compete with anyone here,

\$24 million in cash and stock. Owner Greg Davis will go with the purchase, taking a role with Radio One focusing on the company's mid-sized market stations.

Radio One also is lined up to purchase 12 radio stations from Raleigh, N.C., to Greenville, S.C., from Clear Channel Communications for a reported \$1.3 billion.

All of the wheeling and dealing is part of Clear Channel's effort to rid itself of enough stations to gain regulatory approval from the FCC for its purchase of AMFM Inc.

Perhaps the most prolific fundraiser in the Charlotte area is the nonprofit, National Public Radio affiliate, WFAE(FM). In addition to yearly fundraisers to cover station expenses, WFAE exhibits a strong community presence as well.

Winner of a regional Radio Television News Directors Association Edward R.

Charlotte, N.C.

Commercial Radio Market Overview

Stations	Owner	BIAfn's 1999 Est. Station Rev (000s)	Format	Fall '99 Rating
WBT(AM)	Jefferson-Pilot	13,700	News/Talk	4.3
WRFX(FM)	AMFM Inc.	13,300	AOR	5.4
WLYT(FM)	AMFM Inc.	9,600	Lite AC	7.2
WPEG(FM)	Infinity	9,600	Urban	9.3
WSOC-FM	Infinity	9,000	Country	4.8
WWMG(FM)	Dalton Group	8,300	Oldies	6.1
WMKS(FM)	Infinity	7,900	CHR	8.8
WKKT(FM)	AMFM Inc.	7,900	Country	5.8
WLNK(FM)	Jefferson-Pilot	6,900	Modern AC	4.9
WSSS(FM)	Infinity	5,100	80s Hts/AC	2.5
WEND(FM)	Dalton Group	4,200	Alternative	2.8
WBAV-FM	Infinity	4,100	Urban AC	4.9
WCCJ(FM)	Radio One Inc.	1,500	Rhythmic	3.1
WXRC(FM)	Pacific Broadcasting	1,300	Rock	2.7
WFNZ(AM)	Infinity	1,200	Sprts/Talk	1.1
WNMX-FM	GMB Broadcasting	1,000	Adlt Strdrd	2.1
WGIV(AM)	Infinity	900	Gospel	0.9
WBT-FM	Jefferson-Pilot	400	News/Talk	0.5
WGSP(AM)	Wills Family Broadcasting	400	Black Gospl	0.4
WXE(AM)	Monroe Broadcasting	250	Country	0.4

Lowes Motor Speedway

Stations are ranked in order of Advertising Revenue for Fall '99 (2nd share). Copyright © 2000 the Arbitron Company. May not be quoted or reprinted without the prior written permission of Arbitron. Other information provided by BIA Financial Network through its MEDIA Access ProRadio Analyzer Database software.



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*CD Delivers What the Radio Plays

► STAR CD, continued from page 42
Vinnie Curren. The station is free to sell CDs on its Web site without competition from *CD, although selling everything on the playlist is not in the plans.

Impulse buyers

"While the *CD system appeals to impulse buyers, most of WXPN's listeners are deeply interested in the artists, and tend to make more thoughtful purchases," Curren said. For that reason, the station's real competitors for online sales of CDs are e-retailers such as CDNow and Amazon.com, both of which offer an extensive music inventory as well as artist information on the Web.

ConneXus co-founder George Searle said that while his company currently has

The instantaneous nature of the *CD system may cut into a station's ability to sell CDs on its own Web site.

— WPLY(FM) Chief Engineer Mark Humphrey

no formal relationships with stations on the *CD system, some partnerships are in

the works. Searle has purchased advertising time on several Philadelphia stations

to increase awareness of *CD, and plans a promotional campaign with stations

which will publicize their Web sites and attract potential CD buyers via an interactive playlist.

Thus far, *CD has met its founders' expectations. While Searle said that information on the number of calls and purchases per day is confidential, he termed the results "favorable." The demographics, Searle said, are broader than originally envisioned.

"*CD expected to capture a target audience of gold-card consumers age 20-45 who have no time to visit music retailers, or might be turned off by the punk rock ambiance found in some stores," said Searle. "And surprisingly, a significant number of *CD's customers are also from a younger demographic."

While most of the excitement about e-commerce revolves around the Internet, the *CD system may become a new model for electronic business. *CD has the potential to take advantage of the captive audience of in-car radio listeners and give them the opportunity to purchase goods via their cell phones.

Predicting the future of technology is always risky, but at least one poten-

HEAR IT ON YOUR RADIO



BUY IT OVER YOUR WIRELESS PHONE

tial rival of *CD can be envisioned. While ConneXus sells a tangible product — CDs, MP3 looms as a vehicle to distribute music electronically.

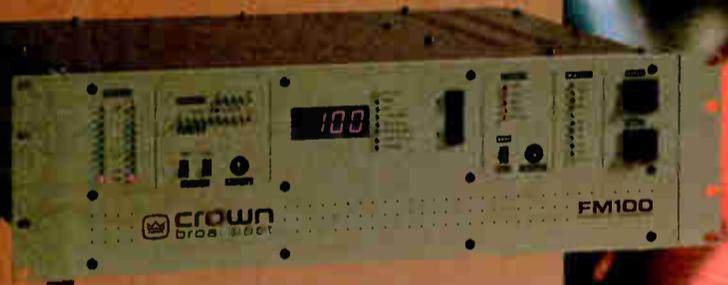
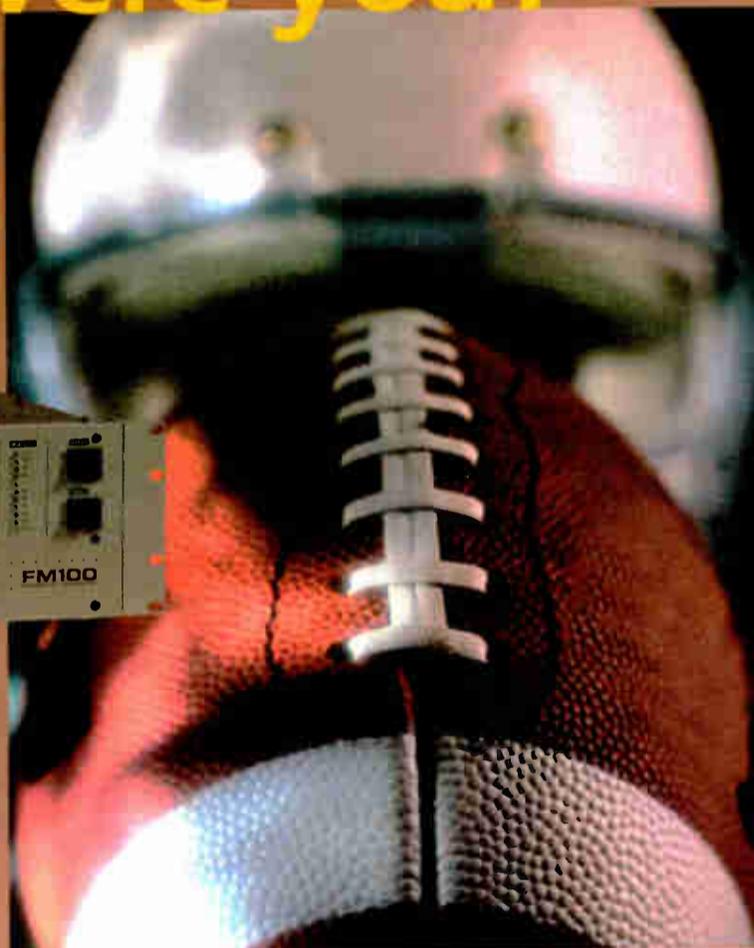
When combined with MP3 car stereos, listeners will be able to purchase and download about 75 hours of music online for their listening pleasure while driving about.

If this becomes a trend, and MP3 files can be purchased for less than the delivery cost of a compact disc, then *CD's success may be short-lived.

Searle is not too concerned about the threat from MP3 car stereos. He believes that the interactive model of radio as it exists today will prevail.

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PRODUCT EVALUATION

Imaging Never Tasted So Sweet

Sallie Sauber

When Sound Ideas sent the new Ear Candy library to me for review, I was not sure how different it could be from the others I had heard from the company.



Chief Engineer David Lukezic works at assembling a Sound Ideas library.

I figured I would hear lots of familiar sounds with new names in different packaging, so I pawned it off onto our station imaging person to play with.

A funny thing happened. I began to notice the stations promos, liners and IDs in a different light. It was like Market No. 457 meets Market No. 15, or like Grandma's fruitcake meets Willy Wonka's Chocolate Factory. It was definitely sweet.

This two-CD compilation of work parts, lasers, openers, stagers, multi-effects and sound-effect breakdowns is tops. It has 644 elements of stuff to turn a station from "that radio station that has been here since time began," to "the hot new sound that is sweeping your market."

Visualizing sounds

As a production director, using sound effects is my favorite aspect of producing spots.

The quality of these effects is phenomenal, especially for radio, because the effects can be visualized. It is easy to tell the fighter jet from the passenger jet and the Indy car from the stock car. Every sound is "in your face" and so clean and crisp, there is no having to guess what is heard.

See EAR CANDY, page 52 ▶

NPR Engineer Creates New Filter

Rich Rarey

Legions of inventors have patented their great ideas, protecting their ideas from others and defining their legal right to their own original thinking.

I am pleased to note that joining that list is NPR Broadcast/Recording Technician Parris Morgan.

Parris developed a unique device and registered it with the United States patent office. Now patent D396,862 is for an audio accessory Parris calls "X-Plosive."

X-Plosive is a low-profile pop filter, designed for the Neumann U87/89 and Audio-Technica AT4033 microphones.

What makes X-Plosive unique is the rectangular pillow shape and mounting method that keeps the filter at the same distance from the mic capsule, regardless of how the talent positions the mic.

"This started when I was researching new pop filters for NPR's Neumann U87 microphones — because I observed (NPR's Legal Affairs Correspondent) Nina Totenberg constantly having difficulty seeing her copy while trying to maintain the proper proximity to the mic. The current commercial plosive filter was constantly breaking from being handled each time the mic was adjusted," Morgan said.

Morgan had thought someone would

have already come up with the design, as U-87s have been around for decades. He was not thinking about patents, just something that worked better.

"I spent time searching through stores looking for something that looked like what I imagined," Morgan said. "It would have



NPR's Associate Digital Audio Network Systems Administrator Helena Johnson at the Mic

been a lot easier to find one already made than have to design and manufacture one, but in my research, I couldn't find anything close or comparable," said Morgan.

He did not have any design experience. The first prototype was a wire frame

with pantyhose material.

"After talking to a designer and machinist, who were polite enough to keep from laughing at my model," Morgan said, "I started tinkering with other materials. Hechinger's, Home Depot and fabric shops became my main hangouts. I even bought resin, silicone and latex in an attempt to fabricate a mold for the screen assembly.

"Eventually, I was able to focus on one style, and built a working model out of balsa wood, hanger wire, and plumbing parts."

The big test

Parris Morgan needed a real-world test to gauge the quality of his design. NPR newscaster Corey Flintoff let him mount the filter in Flintoff's studio for a newscast. Fortunately, the test was a success.

The design is a plastic frame slightly larger than the flat capsule face of a Neumann U87, holding two layers of plosive-absorbing material, which were pantyhose. A fixed bracket mounts the

See X-PLOSIVE, page 54 ▶



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Thanks Radio Boy, But No Thanks

Alan R. Peterson

I wasn't expecting this.

The last time we got together (RW, March 29), I mentioned the "fallback" position, where it pays to learn and apply an extra skill to keep the bucks rolling in when the radio gigs dry up. This was the same message I delivered to the attendees of the IBS college radio convention and conference in New York recently.

On the train ride back home to Washington, I began to feel some pangs of regret. Only hours before, I was telling a roomful of students how to go grab that primo radio job and become great communicators. Because of my current occupation in cable TV and radio, I would only be watching from the sidelines and cheering.

Memories ...

I realized how much I had missed the low pay, the pressure, the insecurity, the mentally unstable co-workers and the free T-shirts.

So, I decided to use radio *itself* as my own fallback. A weekend here, a weekend there — I could go back on the air in a part-time, fill-in capacity and satisfy that nagging demon within my soul that thrives on performance and adrenaline.

I spun off a few demo cassettes, freshened the resume and fired off a

number of carefully crafted audition packages, using the same methods I shared in my seminar up in New York. Then, I sat back for a few days and foolishly waited for the calls to pour in.

Instead, it was the letters that flowed in, all saying, "No thanks."

Thanks for the tape

After the first two rejection letters, I shrugged philosophically and remembered my own words regarding how many "nos" it takes to get a "yes."

I realized how much I had missed the low pay, the pressure, the insecurity, the mentally unstable co-workers and the free T-shirts.

After a few more letters came in, I began humming "We're a Couple of Misfits" from the Rudolph Christmas TV special, in an internal effort at gal-lows humor.

By the time the letters stopped, I came to an uncomfortable, if not unrealistic, realization that *nobody wanted me*.

It took a little effort to remind myself that I am gainfully employed in a media

position and that I am not starving or falling behind on my bills. I can always take out my paid-for camera gear and pop off a few pictures of ducklings and babies for the greeting card trade. I could even lay bricks dressed only in my underwear if I had to.

But, having a flood of rejection letters all at once stung.

The worst part was the enormous doubt that kicked in. The letters never say why the station does not want you. They always say, "you are not what we

are looking for," or "your abilities do not match our current needs." At least when I have auditioned for TV and film projects that come through Washington, I am told that my height is wrong or they are looking for a man with blond hair instead of my own color.

What is wrong with letting me know why I am not what they are looking for, or what those current needs are? Should I suspect age discrimination? Did my photo make me look like I don't fit? Did I say something in my cover letter that turned them off?

Is my style considered out of favor in my market? I have never been able to nail down the rapid-fire delivery of Arnie Woo-Woo Ginsburg or do the hat thing like Tom "Machine Gun" Kelly, but I am certainly not Wally Weekender, the plain vanilla plug-in deejay.

The guys that inspired me come from an earlier era, but I have not slavishly copied their styles. Could it be the liner card truly is the wave of the future?

Even worse, why did the job search methods that have worked forever suddenly leave me high and dry? And what is going to happen to the people who attended my talk and will apply the same methods to find work? Did I steer them down the wrong path?

Then the practical side of my psyche kicked in. Knowing about programming comes from two former PD stints. I know what it means to have to craft a station's sound. Some people you have to say no to in order to present a marketable product.

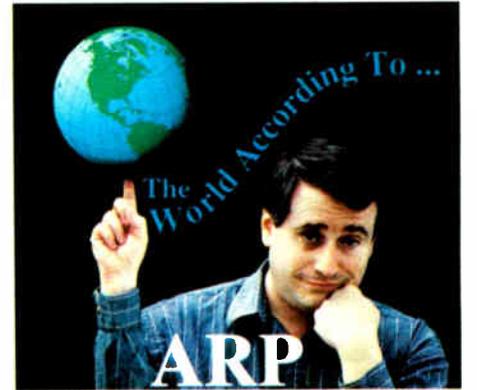
The big stinky was, I was the one they were saying "no" to.

Seems like old times

The odd part about my little bout with rejection was the ill nostalgic feeling I went through.

I began writing for RW in 1989 when I found myself out of a radio job. The weather, the activities around me, the same tapes and resumes flying out the door (well, not the same ones), the same feeling of self-worthlessness ... all added up to an ancestral memory trip from hell.

A few years ago, I had the realiza-



tion that if I were going to nail it as a radio performer, it would have happened by now. Few hit it big after 50 years of age without having sustained some kind of track record in their 30s and 40s.

Missteps along my path have dropped me in markets I never would have expected, derailed plans I had in place since my 20s and forced me to rethink my direction many times. I am past my 30s and have to be realistic. I have given up answering the stock interview question, "Where do you want to be five years from now?"

But there is no reason to feel bad and that is what puzzles me. Back then it was my career. Today, it would be a pleasant diversion during my free time. Let's face it — you never *really* leave radio.

The big differences between my crisis then and my niggling inconvenience now are that I am working, my head is above water and things in my life are going well. It is only a part-time position I am pursuing. What should I be so upset about?

The runners-up

Does the rejection truly bother me, or is it the realization there may be no Marconi award in my future?

Broadcasters have to be realistic. There is always going to be a "B list," just like in Hollywood — jocks who are peripherally on the edge of widespread recognition but who cannot break through.

There will always be the Bronze Medal winner in the Olympics, the second man on the moon, the guy in Germany that also invented the telephone but whose name has been forgotten by history.

Many would be content with their position as a runner-up. I am too, which is why I don't feel terrible about wanting simple weekend work.

I don't want to try launching an Internet station to assuage my demons. By my own admission, I burn out after five hours of performance. I do not want to have to deal with music licensing, Net issues or the problem of telling Net surfers where to find me. I am also not about to drop thousands on building a studio and server arrangement so I can "be on the air."

I will hope the call will someday come though, where somebody does not show up and a warm body is needed at the helm for a few hours.

Until then, that spark of optimism will keep me blanketing the local area stations with cover letters and resumes.

Program directors, put your office cleaning service on alert. The avalanche is about to begin.

■ ■ ■

Al Peterson writes from Fairfax Public Access Corp., Fairfax, Va.

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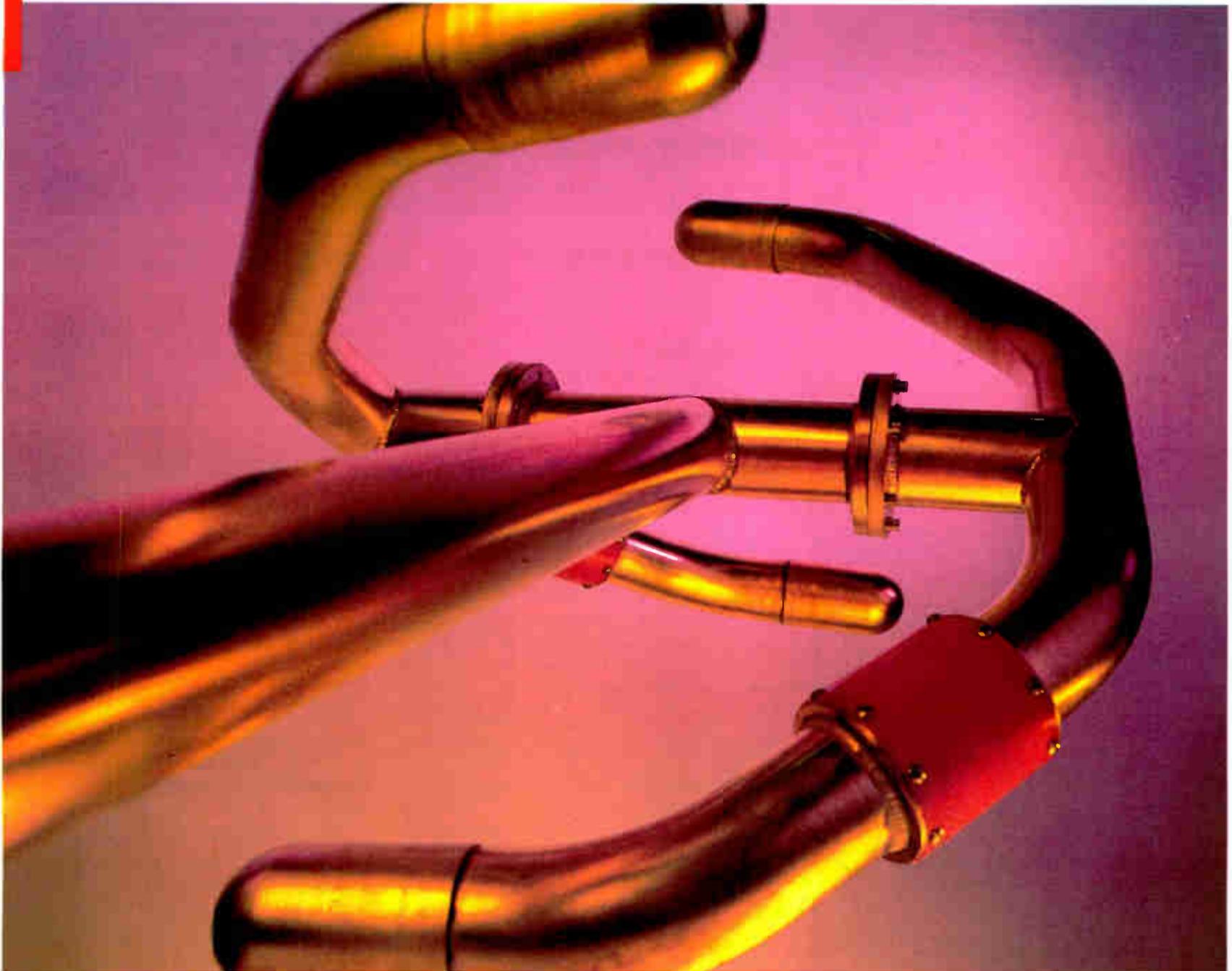
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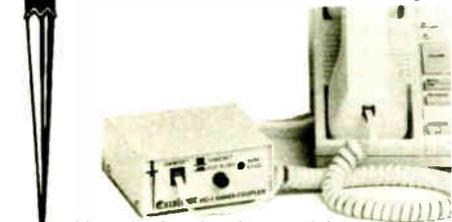
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You can find many uses for the HC-1 around your station: on-air studio, production room, newsroom, sales office, field news kits, sports remotes, etc.

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McHale Barone: New York Fresh

Ken R.

Bleeding-edge world music. Comedy spots that make you laugh out loud. Corporate audio logos that you can't get out of your head. Fresh ideas that blister your mind.

These are the stock in trade of a New York City recording studio known as Irving's Place owned by the company McHale Barone.

Anyone with a MIDI keyboard and a four-track MiniDisc system can call themselves a recording studio, but this is major league. Budweiser, AT&T, Colombian Coffee, Pizza Hut and MTV book time in this five-studio suite.

In fact, it would be easier to list the Fortune 500 companies that have *not* been guests in this beautifully decorated production facility.

"Wacky and weird spots are a daily occurrence. That's why people come here," said Chris McHale, one of the co-



The 'Live' Room at Irving's Place Studios

owners. "Our engineers are creative guys, not just mixers."

People looking for ordinary radio spots and television soundtracks are encouraged to go elsewhere.

Boasting three main fully equipped suites and two MIDI rooms, McHale Barone cranks out the hits well into the night. A typical day is 12 to 14 hours. We have built a library of stock music from our own compositions and we own a record company in partnership with BMG in Europe. We cut those tracks on the weekends," said McHale.

Behind closed doors

All three Irving's Place suites at McHale Barone have a Digidesign ProTools 24 system. Studio A also features a Studio Vision MIDI workstation. Studio B has 64 tracks of audio and a Logic Audio MIDI station in a 5.1 surround-sound environment.

Studio C is a mix-to-picture suite connected to a room of D-2 and DigiBeta machines. All three studios have access to a floating live room for recording musical talent.

"The backbone of our work is advertising. Agencies are often understaffed and their people come down here and use us as their broadcast producers," said McHale.

"We have clients in Los Angeles, Chicago and overseas, too. We use MP3 files, which make communication a lot faster, and ISDN lines let producers in

other cities listen in to their sessions."

McHale Barone sees itself serving four often-overlapping markets: broadcast and Internet creative, music creative, studio rental and casting. McHale believes it may be the only studio fully serving all of those segments of the audio production business.

McHale said the firm is now producing what he calls acoustic logos for companies. This is a sound or combination of instru-



Irving's Place Studio A features Digidesign ProTools 24, a Power Mac and a Yamaha 02R digital console.

ments that identify the client in just a second or two. He mentioned MTV, Discovery Channel and Deutsche Telekom as examples of new acoustic logo owners.

These specialized sounds can also be heard on the advertisers' Web pages and even when people pick up their phone and hear a corporate brand.

McHale said, "This is a brand-new area. We've been getting a very good response."

People who make the product

Chris McHale and his partner Joe Barone are hands-on producers and they make additional services such as writing and arranging available to their clients in addition to the normal studio rental by the hour.

Some studio owners may find this hard to believe, but McHale said the company actually turns down business.

"We try to find the right balance between our clients' needs and our facilities. We're fully booked most of the time and it's hard to get in here sometimes," said McHale.

"Pizza Hut's here now and they're booked for five or six days. MTV books for a week at a time. But we are loath to have more studios than we can handle. We're not trying to be the biggest in town because that's not what this place is about. Our clients are looking to do high-end work."

Just what does it cost to gain entrance to these creative portals?

"It starts around \$300 per hour for basic mixing and goes up to \$500 per hour for mixing to music. We don't mind being undersold," said McHale.

The company is able to duplicate tapes and CDs, but large dubbing orders are farmed out.

"We're not in that business ... we create the spots," said McHale.

When pressed to mention celebrity clients, Chris McHale begged off.

"They're here all the time but we don't like to talk about them," he said.

McHale sees the world of audio grow-

ing ever larger.

"We're just getting our feet wet on the Internet, and everyone says it'll replace radio. I don't think so. TV didn't wipe out radio, radio didn't wipe out magazines, the VCR didn't wipe out movies. We add another layer of media and things get bigger," said McHale.

The world of jingles is expanding too.

"It used to be just six guys who got all the calls to sing. Now it's wide open.

new talent. Everyone wants a more authentic sound," said McHale.

He mentioned a recent anthem for Budweiser that used a young new male singer their firm discovered.

"The upside is more room for new talent. The downside is you have to keep finding fresh voices," said McHale. "The audiences today are very sophisticated musically."

Creative engineers

"Joe and I own this place and it's certainly state of the art technically. But we're not technicians. Most of the other studios come from a business or engineering background but we come from the creative side," said McHale.

"We were both generating millions of dollars in business for other studios when we were in the agency business and we thought, 'Hey, maybe we should own our own studio.' As a result of our focus we come up with different solutions than an engineer would."

Many who open recording studios keep buying more and more equipment and find themselves in an unending cycle of trying to underbid each other. McHale Barone only buys equipment based on what it can do for their clients.

"We charge separately for our creative time. For example, for Fox TV, we almost serve as an agency. Media clients like The Sci-Fi Channel see us a creative source and depend on us to come up with the unusual," said McHale.

One would think that a recording studio

See MCHALE BARONE, page 56 ▶

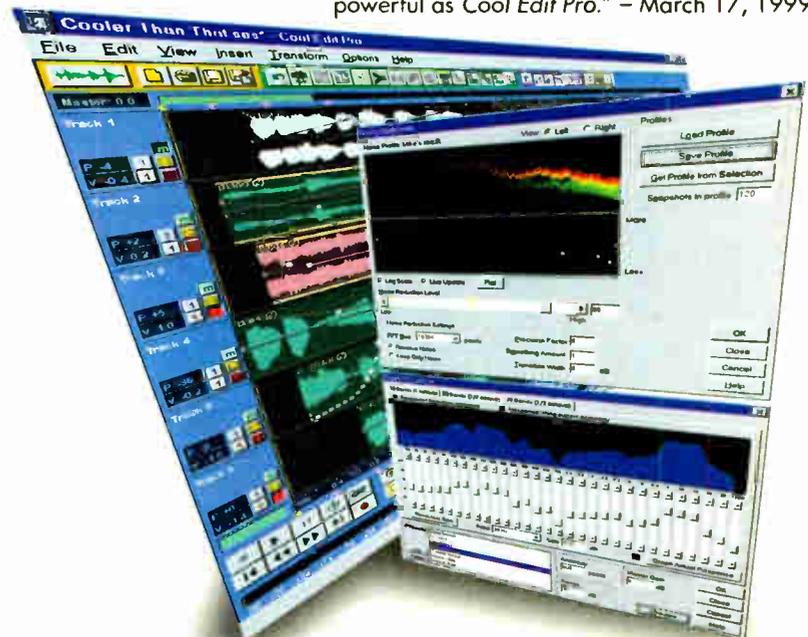
Advertisers today don't want the same old sounds, so we're constantly visiting the clubs and keeping our ears open for



Perhaps you've heard the buzz around Cool Edit Pro, the complete software multitrack recording studio. Why is it so popular?

It's so easy to use!

As one user said in Radio World, "When it comes to broadcast production, it is doubtful you will find an easier interface that is as inexpensive yet as powerful as Cool Edit Pro." - March 17, 1999



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Modern Sounds for Modern Times

► EAR CANDY, continued from page 47

I am amazed at how many current sound effects libraries do not include up-to-date telephone rings, fax tones or operator messages.

Most sound effects of phones are the old-style ones with the bell-ringer. The sound effect of "slamming down the receiver" usually has a "ringy" effect to it. That is fine when I am producing Brady Bunch parodies, but the sound effects must be representative of this decade for communications commercials.

What's that sound?

I am thrilled that the engineers at Sound Ideas caught on to this concept of

modern technology and put those sounds in to Ear Candy. The library has rings, buzzes, operator messages and fax tones based on life in the year 2000.

Any time that I have needed a sound to suggest an abrupt halt in the thought of the character or the action in the spot, I have had to resort to ripping a needle across a Mitch Miller record album.

The "beep scratch" is more intense as the beep draws the attention to the scratch that suggests a turn of events worth paying attention to.

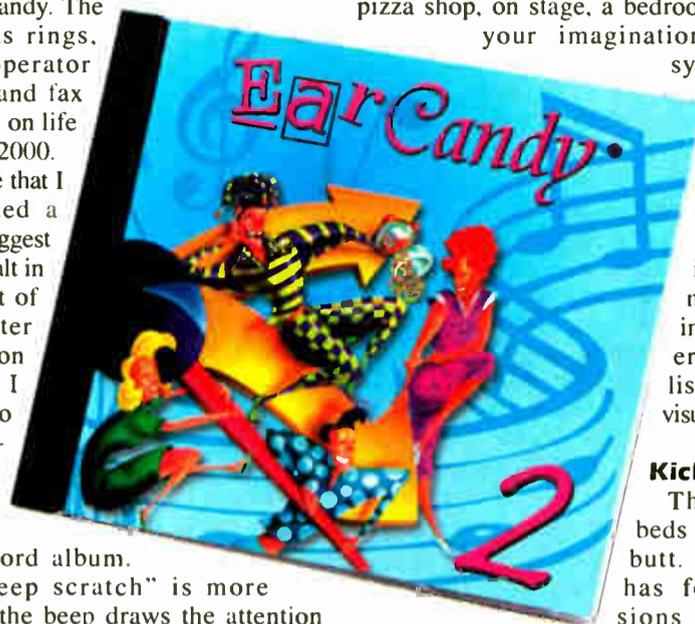
My favorite sound in the library is of a crowd being vaporized.

The best sound effects are presented in a layered sense, in that you hear several sounds to represent a single concept of a sound.

For example, in the "heavenly body" sound effect, first we hear the "heavenly

being" zapped into our universe — the pizza shop, on stage, a bedroom — use your imagination. Then,

synthesized voices take us to this heavenly status. The layering effect makes the image easier for the listener to visualize.



Kicks butt

The music beds also kick butt. Each cut has four versions from 30 seconds to five

minutes. The electric guitar will not take you back to the '80s "hair-bands-from-hell" sound. Every music bed is contemporary, not what was popular 15 years ago.

The instrumentation is intense. There is a lot going on but none of it is distracting. Synthesizers were used like they should be used, to generate funky

Product Capsule:

Sound Ideas' Ear Candy Library



Thumbs Up

- ✓ Contemporary sounds
- ✓ Broad range of elements
- ✓ Top-notch in-your-face sound effects



Thumbs Down

- ✓ Takes a while to find sounds

For more information call Sound Ideas in Ontario at (905) 886-5000 or listen to a demo at www.sound-ideas.com

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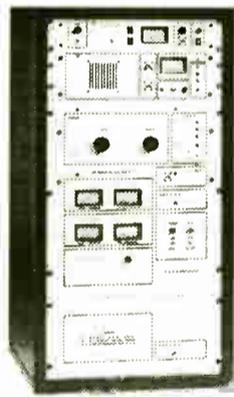
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weird exploding sounds, not to create cheesy instrument imitations.

Dave Christopher, the imaging guru at Power 105 WXTQ(FM) and 970 WATH(AM) here in Athens, Ohio, said, "The sound effects are very useable — great for go-along imaging. Our breakers and sweepers have never sounded better."

Power 105 Program Director Randy Norris was also impressed.

"Ear Candy is one versatile library. From hard-to-find work parts to fantas-

The library has rings, buzzes and fax tones based on life in the year 2000.

tic talk-over beds, it's the clip art of the audio realm," Norris said.

Pucker up

There is one sour grape in the candy dish — the indexing is not good. Cut numbers are preferable for each individual element. I know that would mean extra CDs in the collection, but it would make it easier to use.

When I am in a hurry, having to hold my finger down on the Skip Forward button to find Sound No. 6 in the cut can be cumbersome.

(Ed. note: This points shows a need for CD players that can read indexes and not just track numbers — something manufacturers should consider.)

If you are looking for elements to sweeten up production, then check out Ear Candy. It is jam-packed with an eclectic, sometimes weird, but tasteful mix of music beds, work parts, lasers, whooshes, stagers, openers and sound effects — perfect for the station trying to stay on top of the market.



Sallie Sauber is production director for WATH(AM) and WXTQ(FM) in Athens, Ohio.

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PRODUCT EVALUATION

Low-Cost Recorder and Mix Board

Bruce Bartlett

It's not often we'll review a discontinued product. But sometimes, when companies have them in their inventory, you might find some good deals.

If your staff includes someone who composes music for spots, he or she should check out the Fostex FD-8. It is an eight-track digital recorder/mixer in a portable format. However, the FD-8 is suited more for composers than for radio production personnel.

The FD-8 has been officially discontinued. However, inventory is still available in some retail chains, maybe at a discount. No promises!

Ins and outs

The FD-8 can record up to 24 virtual tracks, then play and mix any eight tracks at a time through the built-in eight-channel mixer. It has eight unbalanced line inputs and two balanced mic inputs.

The system has a choice of recording medium: an external SCSI removable device like a ZIP drive, SyQuest, Magneto-Optical (MO) or internal EIDE hard drive, which a Fostex service center can install.

A 4.3 GB drive provides about 1.5 hours of eight-track recording, and the FD-8 can hold up to a 30 GB drive. Files can be backed up to an extra SCSI device.

The recordings are 16/44.1 uncompressed CD-quality audio. Another option is ADAC data compression, a newly developed format that lets the user record 72 minutes of track time onto a 100 MB ZIP drive. Fostex claims that the recording quality is superb with ADAC compression.

Hz, 12 kHz and the sweepable mids encompass 200 Hz to 5 kHz.

Dynamic range

Monitoring is via a headphone jack and monitor-out jacks that feed the user's powered speakers. Literature claims the mixer dynamic range to be 105 dB.



Bruce Bartlett tests the Fostex FD-8.

The mixer section has actual physical knobs and faders. It can do analog or digital mixes but without automation. Each input strip contains a fader, individual pots for pan and monitor level, three-band EQ with sweepable mids, and two aux sends for external effects.

The high and low shelving EQ is 80

Channels 1 through 6 have unbalanced phone-jack line inputs for carts, DAT machines or synthesizers. Channels 7 and 8 feature balanced XLR mic inputs without phantom power or phone-jack line inputs with variable gain.

A vari-pitch control lets the user adjust the pitch (6 percent. The recorder

can sync to MIDI. A MIDI out jack transmits MTC, MMC, MIDI clock, song position pointer and FEX, which stands for Fostex System Exclusive Message. A MIDI in jack accepts MMC or FEX commands.

The FD-8 has ADAT optical connectors that let the user copy track data from an ADAT for editing up to eight tracks simultaneously or transfers the recordings to an ADAT for further production.

Punch-ins can be done automatically at preset points or manually with a footswitch. The user can perform repeated rehearsals of punch-ins.

Some related functions include Auto Play, which starts playback automatically from a located point; Auto Return to Zero and Auto Repeat.

Convenience

A convenient preview feature lets the user repeatedly listen to audio at one second before and after any locate marker, that makes it easy to find the right edit point. Time display can be set to ABS time, remaining time or bar/beat/click. A metronome click signal is available.

Many non-destructive editing functions can be done within a track or across multiple tracks. Functions include copy and paste, move paste and erase and undo/redo.

The FD-8 also offers scrubbing with a selected track, using the jog wheel.

The meters did not work the first time I set up the FD-8. I had connected my DAT recorder output to the FD-8 Recorder-In jacks. Fostex tech support

See FOSTEX, page 56 ▶

Does Your Neighbor Sound Better?

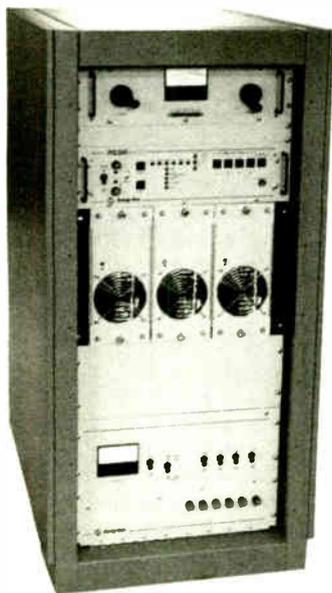
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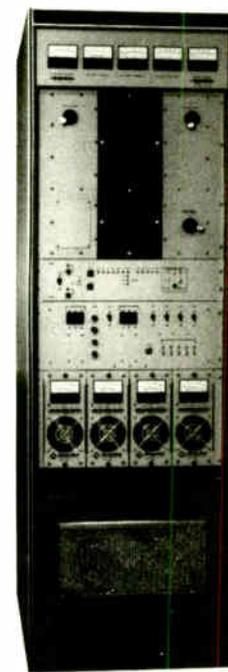


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At NPR, Taming Those Ps

► X-PLOSIVE, continued from page 47
filter to the mic mount, keeping it at a fixed distance from the capsule.

While this sounds simple, Morgan said the tough part was taking a simple, unique idea through the maze of patent protection and then shepherding his patented design through the manufacturing and marketing process.

"I wanted to try to make a physical prototype first, before committing a design on paper for manufacture, so I visited a few machine shops and discussed my ideas with the design people there."

"In each instance, the response was positive at first, but after a couple of weeks they would lose interest.

"At one point I tried making a prototype myself, experimenting with wood, plastic mold and metal. Each 'proto-

type' refined the design in the process."

Parris found the shop to make the prototype in his boyhood neighborhood in Lakeview, NY. Earl Birkett, a neighbor, heard about the idea from his mother. Birkett happened to own E.B. Automations, a factory that specializes in machine and product design. So, they worked closely to fine-tune the manufacturing and packaging strategies.

There is no exhilaration like watching your idea become a patented, physical product that people can use.

— Parris Morgan

"Because of Mr. Birkett's engineering and design skills, there were only two modifications to my original design to make it completely practical," said Morgan.

Then, to start the patent process, Parris Morgan finalized his idea on paper and began searching for the right patent attorney to shepherd the paperwork through the patent office.

"Good legal representation really is the most important part of the patent process, and trying to find an attorney in the yellow pages is not the way to go," Morgan said.

He found lawyer Robert Blackmon through another attorney he met at a recording session. In three months, Morgan had completed the patent maze with his attorney.

"I knew that the proper research and presentation of the patent application was crucial to a patent being

granted. My attorney helped me rework my blueprints in order for them to be accepted by the patent board," Morgan said.

Meanwhile ...

Morgan was adjusting the design of the screen assembly for mass manufacturing. Through Earl Birkett, he met Hugh Finneran at National Molding Company, an outfit that does contract injection-molding jobs for industry and the government.

The designers at National Molding took the prototype and refined it to survive the process of injection molding. If a

A&R Engineering in Rockville, Md., and worked with a designer to produce the hardware bracket.

Morgan said he could not realize the goal of creating a universal mount for all mics. He had to produce a package that could be brought to a small market first to generate interest and show the industry there were better alternatives to the commercial plosive filters.

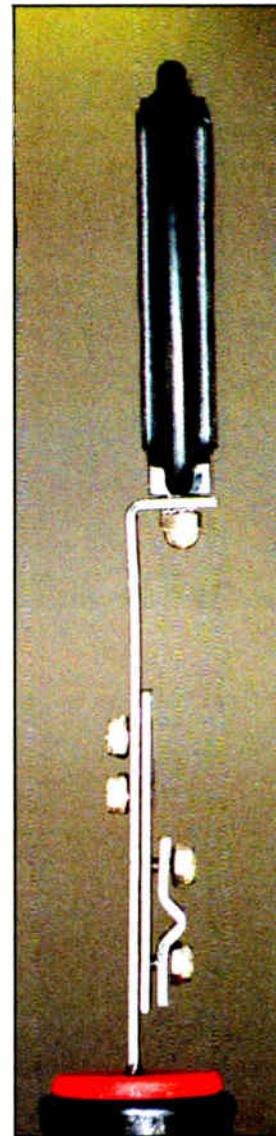
The current bracket is an assembly of three varying strips of aluminum. The longest strip mounts to the screen assembly. The smallest strip is a short piece with a "V" bent into it that has the right depth to fit around a typical Neumann mic cage. It also has two metal screws to clasp the "V" to the middle-length piece.

The middle-length aluminum strip has two riveted bolts extending from it that fit into the track of the long strip. Two nylon-center nuts hold the longest and middle length piece together to create a secure and vibration-resistant mount.

To complete the package, Morgan sourced small shipping boxes, packing material and printed up instructions and warranty sheets.

"Designing and patenting was the easy part," Morgan said. "I'm still amazed at the amount of work required after I developed the X-Plosive.

"I have to be responsible for the



Morgan estimated he has spent \$16,000 out of pocket to produce the first X-Plosive.

mold is too thick, the cooling plastic inside will bubble and ripple, rendering it unusable.

Unfortunately, the minimum run at National Molding was 10,000 units — 10 times too much for a product that was not perfected, and too high of an out-of-pocket expense for an audio engineer.

Searching on the Web, Morgan found a manufacturer in upstate New York that could do a smaller run, using drawings generated at National Molding Company.

The final design of the screen assembly is the heart of the filter. The scalloped support ring, slightly larger than the mic capsule, holds the acoustic material in place by a stiff wire, force-fitted into a channel running along the perimeter of the ring. The assembly is robust enough to withstand finger prodding.

Mounting

The mounting bracket had to be simple to use, inexpensive to produce, and almost universal in design, if the X-Plosive was to be usable on other mics besides a U 87 and an AT4033. Morgan had to learn the mechanics of mounting hardware in short order.

He took a modified bracket design to

manufacturing, marketing, accounting and management, in addition to assembling the product and prepping the boxes for shipping. My dining room is the shipping area. I also do the spray painting there and the living room is the assembly area," Morgan said.

Morgan estimated he has spent \$16,000 out of pocket to produce the first X-Plosive. When he added the time and effort spent on the project, the figure rose to around \$20,000.

"It has been an educational experience, working some long nights and days on X-Plosive, completing reams of paperwork and making dozens of phone calls," Morgan said. "But there is no exhilaration like watching your idea become a patented, physical product that people can use."

Morgan contracted distribution through Bear Essentials in Villa Rica, Ga. X-Plosive can be purchased for \$30 which includes S&H by calling the company at (770) 838-0008. The X-Plosive Web site is www.x-plosivefilter.com

Rich Rarey is the master control supervisor at NPR. He can be reached via e-mail at rrarey@npr.org

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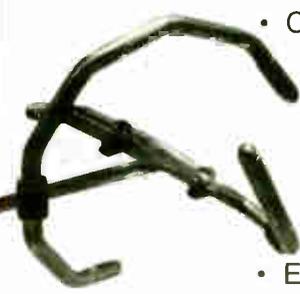
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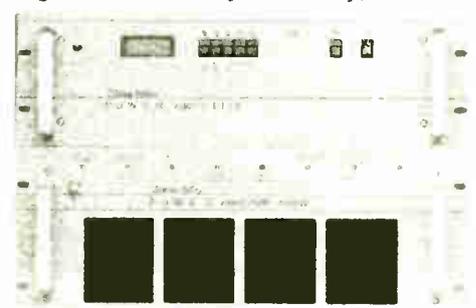
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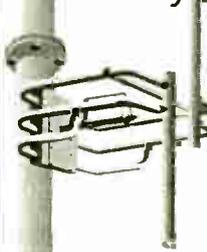


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American Radio Manufacturers Association

FD-8 Made for Music Production

► FOSTEX, continued from page 53 said that connection prevents the mixer signals from reaching the meters.

The Recorder-In accepts signals from an external recorder and sends them directly to the FD-8 recorder section. I unplugged my DAT and the meters worked.

Thanks to a well-written manual, I learned how to record, overdub, mix and punch-in on the FD-8 in 90 minutes.

Learning all the editing skills took more time. I suspect that most users would need to refer to the manual often to perform edits and to access the virtual tracks.

It's not perfect

I have a few complaints about the FD-8. The mic preamps are somewhat noisy and barely have enough gain to bring a dynamic-mic signal up to 0 dB record level. Plus, the two XLR mic inputs do not have phantom power.

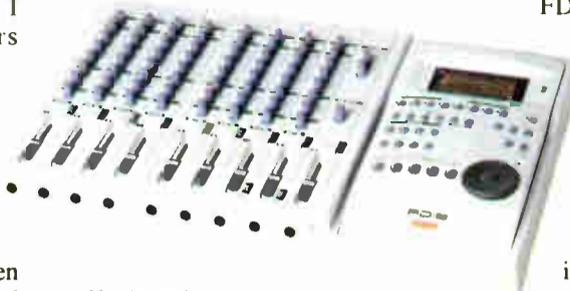
Because condenser mics are so popular, phantom should be included — it would cost little extra. For critical work, I recommend using the FD-8 with a good outboard mic preamp.

The tiny, low-contrast labels embossed on the rear panel are almost illegible. I stuck on my own labels.

Also, the LCD display is small and hard to read. Its only overload indication is the scale on the left side of the meter.

An overload line should extend across all track meters so the user can see more easily when the level is maxed-out on each track.

Although the editing functions work



well, it takes a fair amount of button pushing and jog-wheel turning. Tracks cannot be slid around in time, which makes it hard to adjust the start times of audio events in documentaries or spots.

Finally, the jog wheel switches and knobs are wiggly. They lack a smooth, professional feel, although I would not expect that in such a low-cost unit.

For what it's worth

Those quibbles aside, the FD-8 works well in all its functions. I appreciate the engineering expertise it took to pack so many sophisticated editing features, MIDI sync and digital mixing into a unit that lists for \$1,199 including a 4.3 GB hard drive. I did not hear any glitches with punch-ins.

Because of the random-access record-

ing medium, the unit locates instantly to pre-set points. The EQ sounds good and is adjustable to +/-15 dB.

With its two mic inputs, eight line inputs and extensive use of MIDI, the FD-8 is intended mainly for recording MIDI compositions, not for recording bands. I recommend using an outboard mic preamp with the FD-8.

Although audio segments can be erased, the remaining space cannot be closed up. So the FD-8 does not work for editing speech. Because the tracks cannot be time-shifted, it is hard to adjust the timing of events on various tracks. Digital editing software is a better choice for radio production work.

The FD-8 is not the best device for producing spots, but it is a fine tool for recording music for those spots.

Product Capsule:

**Fostex FD-8
Digital Multitracker**

Thumbs Up

- ✓ Lots of editing for the price
- ✓ Full MIDI implementation
- ✓ Digital and analog I/O

Thumbs Down

- ✓ Tiny labels and display
- ✓ Slightly noisy mic preamps
- ✓ No phantom power

For more information contact Fostex in California at (562) 921-1112 or check out the Web site at www.fostex.com

■ ■ ■
Bruce Bartlett's latest book "On-Location Recording Techniques" is available at www.focalpress.com

Commercials in New York

► MCHALE BARONE, continued from page 51 that also provides creative help would put off some ad agencies, but Chris McHale doesn't see it that way.

"The agencies bring their work to us because we make them look better. Top

agencies don't see us as a threat; they see us as a weapon."

■ ■ ■
Ken R. is a former recording studio owner and jingle producer who now writes full time.



(L-R) Doug Di Franco, Chris McHale, Adam Roth, Jill Chervis

The McHale Barone Demo CD

Listening to the McHale Barone demo CD is like being transported to another planet where all manner of contemporary and period musical styles, comedy, sampling, sound effects and unusual atmospheric backgrounds collide in a wonderful way.

The first section is comedy radio spots and it includes a badly translated Swedish explanation of a Mercedes engine, an clumsily censored telephone message for Amstel Light Beer, the most inept pick-up attempt ever heard in any bar anywhere promoting St. Pauli Girl Beer and "drive-by bass" driving the listener to Mountain Dew.

You also get to listen in on two men urinating in a men's room, which somehow sells J&B Scotch, a guy comparing the Rolling Rock Beer bottle favorably to the Magna Carta and a history lesson for Safeguard Soap.

Each commercial is unique, well-acted, right on-point and funny. The off-kilter approach of these radio commercials grabs the listener with realistic dialogue, sound effects and music.

If you had to use one word to describe the jingle portions of the CD demo, it would have to be "eclectic." There are no corny slogans; none of the telltale signs of bad jingles you have heard since 1962 touting "top-quality, low price and service." In fact, there are no clichés at all.

One cut may be described as "world music," featuring ethereal voices over a hypnotic rhythmic track. No drums, just a group of evocative percussion sounds and choruses in the upper registers.

Another track may feature tasty scat blues, 1940s bebop or down-home soul. Each one is designed to break with tradition and each has its own twist. One or two jingles are impossible to describe in any known musical terms. Vocals overlap, distorted or filtered samples pop in, keys change abruptly and some tracks morph from one ambiance to another in some interesting ways.

One section of the demo is devoted entirely to funny jingles. An Elvis rocks the house for Florida Oranges, a retro 1950s character starts singing for McDonalds and goes a bit out of control, a tender folk song about pimples is played for Oxy and a history lesson is taught on behalf of Dentyne Ice Gum.

McHale Barone can be reached at (212) 253-2920 or on the Web at www.mcbone.com

— Ken R.

Radio's Most Wanted

PROFILE: John Caracciolo

Vice President, General Manager
WLIR / WDRE / WXXP Long Island,
Jarad Broadcasting, Garden City, N.Y.
Radio World reader for 14 years

Hometown: East Northport, N.Y.

School: NY Institute of Technology
(Bachelor's Degree)

Favorite color: Black

Coffee: Milk and sugar

Favorite radio format: Modern Rock

Favorite section in Radio World:
GM Journal

Favorite piece of equipment:
My new Harris Platinum Z
transmitter

Best thing about your job:
Getting paid to do my hobby

Hobbies (other than radio):
Reading, keeping up with my four-year-old daughter Noelle

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Phone 800/279-3326 Fax 800/644-5958

ERI 2 bay antenna w/de-icers, tuned to 96.5, used 7 mos, \$3500; ERI 1 bay tuned to 95.9, 14 yrs old, only for 5 yrs then stored, \$1500. Tom DiBacco, Styles Bdctg Co, 850-234-8388.

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Coax patch panel, 3-1/8" - 7 pole, 3 U-clips. Continental Communications, 800-664-4497.

New Single Bay High Power "Rototiller" Antenna. Never Used, 96.5 MHz, \$1750. J Shideler, 970-482-9254.

WANT TO BUY

McKay Dymek DA 5, 6, 9 directional antenna. J Hartt, Hartt Audio Restorations, 2418 36th Ave West, Seattle WA 98194-3704. 206-282-0720.

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Sony MDS-JE520 (3), never used, w/rack mount kits, RCA & optical cables, manuals, remotes & batteries, original boxes, never used, \$250 ea or \$625/all. J Williams, Midnight Blue Studios, 12824 Lauran Rd, Hagerstown MD 21742. 301-739-1450.

UREI 1176B, silver/blue. \$1000. Chris, 408-364-9253.

Urei 565 Little Dipper EQ, \$700; ADC Propatch 1/4" punchblock patchbays, new, \$600 (many); 1.4" TRS patch cords like new, \$15; ADC TT 144 point patch bays, recond, \$149-229. W Gunn, 760-320-0728.

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ITC Delta 3D stereo, 3 deck, gd cond, \$350. T Toenjes, KJTY, 6120 Riley Creek, St Marys KS 66536. 785-437-6549.

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Arrakis 2000 SCT-12S stereo console, mfg checked in 1992, w/o power supply, being offered as an untested but likely working board, fair cond w/walnut sides & front, missing a slider know here or there, entertaining offers due to as is cond & absence of power supply accessory. R Links, Links Sound, 510-987-0460 or email: Richard.links@ucop.edu.

Gatley 16x8 audio board w/quad monitoring, xlr concentrators on all inputs outputs, in a custom console, 4 effects returns, BO. ABaker, Bdct Productions of America, 804 East 38th St, Indianapolis IN 46205. 317-925-7371.

Harris Stereo 5, 5 chnl stereo console, gd cond, \$350. T Toenjes, KJTY, 6120 Riley Creek, St Marys KS 66536. 785-437-6549.

McCurdy SS7500 (2) 10 chnl w/tons of inputs, Penny & Giles slide pots from Classical station, \$2500 ea; Gates Executives (2) solid state 10 chnl, \$1300 ea/\$2000both; Gates stereo Statesman-solid state 5 chnl, \$5500. Brian, WNGN, Box 36 The Kings Road, Buskirk NY 12028. 518-686-0975.

PR&E BMX 3-22 console w/5-mic, 16 stereo line-input modules, fully loaded program, audition & utility output busses, telco, slate, studio, control room & time modules, plus more, excel cond. Dave, 1-888-804-3345 or email: wags@netze-ro.net.

Autogram 20 mixer stereo console. Continental Communications. 800-664-4497.

Soundcraft 600, 24x8, \$3900; JL Cooper 16 trk automation, \$1200. W Gunn, 760-320-0728.

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RCA Altec, Shure, various models, private collection, 100 mic's, \$35 to \$2000. Call or write for list, SAE please. D Dewese, WLMB, POB 4, McClure OH 43534, 419-748-8430.

EV 635L mics, \$95; Altec salt shaker mics, \$295/ea. W Gunn, 760-320-0728.

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Operator & service manual for chip; Burner model storey system P-240-chip; burner for EPROM-S 2716-2516-MCI; processor board PCA 2500-0611. J Price, 214-321-6576.

Conax, Triad A9J, A10J, A11J, A12J. Stan Con PCO/PSO 150. R Robinson, Trod Nossel Recording, POB 1425, Wallingford CT 06492. 203-949-0871 or email: richmix@erols.com.

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Marantz rack mountable CD recorder, may need some work, call for details, \$500. Jerry Evans, WVOM/WBYA, 45 Linden St, Bangor ME 04401. 207-942-3311.

Philips DCC 900 digital audio cass, also plays or standard cass, \$200. Bill, Mill Ten, 497 Oak St, Manchester NH 03104. 603-644-8899.

Sony TCD07 & SBM-1 portable DAT recorder plus super bit mapping adaptor & stereo mic, \$550; Otari MX70, 8 trk 1" w/remote, \$3000/BO. D Dewese, WLMB, POB 4, McClure OH 43534. 419-748-8430.

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C-Quam STX-1 AM stereo gen w/Motorola monitor, BO. S Fuchs, KAHR, Rte 13, Box 44, Poplar Bluff MO 63901. 573-686-3700.

TAPES/CARTS/REELS/CD'S

WANT TO SELL

Various used carts, various lengths, 60cents ea; various 10.5" reels, some empty, some full, BO. J Lalino, WLAL, 319 State Rt 29, Middleville NY 13406. 315-891-3110.

TEST EQUIPMENT

WANT TO SELL

Potomac Instruments AA-51, in excel cond w/manual & cables, \$800. M Hiner, In Phase Bdctg, 12307 Butterfield Dr, Pickerington OH 43147. 614-868-5911.

Tektronix digital multimeter DM 501A, \$150; Tektronix digital multimeter DM 502A, \$150; BK Precision Dyna-Jet 707 tube tester, \$195; Eico 150 solid state signal tracer, \$100; HP 353 100 DB attenuator, \$65; HP 5308A counter & HP Multimeter 5306A, BO; assorted Nuvisitors, 425. J Price, 214-321-6576.

TRANSMITTERS

WANT TO SELL

BE FM5A 1986, very clean & well maintained w/FX-30 exciter, can deliver, \$15,000; Nautel Amfet 1 1986, very clean & well maintained on 900, can deliver, \$7000. K Smith, WMJZ, POB 1766, Gaylord MI 49734. 517-732-2341.

Continental 2.5 kW xmtr mdl 314-R 1986 in gd working cond. B McRaney Jr, WROB WKBB, Forrest Street, POB 1336, West Point MS 39773. 662-494-1450.

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Continental 314-R 1 kW, new tubes, gd cond, needs minor repair, 11 yrs old. w/manuals, \$4500 BO. R Thompson, WQXY, Main St, Hazard KY 41701. 606-785-3129.

Harris Phasor cabinet w/operating bridge, about 15 yrs old, BO. S Fuchs, KAHR, Rte 13, Box 44, Poplar Bluff MO 63901. 573-686-3700.

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Broadcast W 253 25W stand-alone exciter/xmtr, adjustable freq & power, stereo separation 45db, \$1050. G Whittenberger, Whittenberger Studios, POB 396, Mexico IN 46958. 765-985-2224.

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◆ READER'S FORUM ◆

In the March 1 issue, RW Editor Paul J. McLane wrote of the January passing of industry veteran Jesse Maxenchs. What followed was a barrage of letters remembering Jesse. We print more of them here.

Dear RW,

I wish to take a moment to additionally remember Jesse Maxenchs. After his "retirement" from Orban, we were honored to have him assist us with some of our Omnia marketing and sales direction. Jesse was definitely the finest, and even more so than his business abilities had shown.

He was the first person to extend his hand to me in 1981, when I had relocated to the Bay area to work for KNEW(AM) and KSAN(FM). I knew he was doing it to be friendly, and not to seek out another possible business lead. We became fast friends, and even remained so once I had founded Cutting Edge, and he was working at Orban.

He and I shared numerous stories and respectful competition over the following years. Hence, I learned that people could exist as friends, yet still be on the opposite "line of scrimmage" in business.

I watched Jesse battle over these past few years, and if ever there was anyone who I thought could beat this dreaded disease, it was Jesse. His is missed, yet he is still loved by many. Peace my friend.

Frank Foti
President
Cutting Edge
Cleveland

Dear RW,

Just want to say thank you for the tribute to Jesse. The industry has indeed lost a good friend and a valuable asset. He will be missed.

Fred W. Greaves Jr.
Director of Engineering
Susquehanna Radio Corp.
York, Pa.

Dear RW,

Thanks to Paul McLane for a fine tribute to Jesse Maxenchs.

I first got to know Jesse at the 1970 NAB convention in Chicago when Arno Meyer introduced me to him. I have admired and respected him ever since, and have counted it my good fortune to have been his friend. Paul and I have not just lost a friend. The entire broadcast industry has lost one of its best friends.

Bill Ashley
Sales Representative
Bradley Broadcast
Frederick, Md.

Dear RW,

Just wanted to let you know how much I enjoyed the Page 4 article on Jesse Maxenchs. I am sorry to say that I did not know him, but certainly feel that I do now after reading Paul McLane's piece.

It is nice to be able to take a little time out from running around with technology to ponder the things that are really important about what we do. Business is all about building and keeping trusting relationships. It sounds like that fact was the hallmark of Jesse's life experience.

We may have fond memories of a piece of equipment we have worked with, but those come far short of the ones we have of the people we have worked with. Eleanor Roosevelt was known for saying that she had never met someone she couldn't learn something from. Thanks to Paul's article, I feel I have learned some things from Jesse Maxenchs, despite never having met him.

Rick Dearborn
President/CEO
RDA Systems Inc.
St. Louis, Mo.

The following items appeared on the online forum broadcast.net in reply to the news of Jesse's passing. The comments are printed here with permission from the writers.

This truly is a loss to our industry. Though retired, Jesse was still somewhat active. I saw him in Orlando at the 1999 NAB Radio Show. He was struggling even then having good and bad days.

We spoke about some of the old days sharing war stories as we often did and getting reacquainted after not having seen each other for a year or two.

This news truly saddens me. I've known Jesse for about 15 years. He always was there to help and advise both personally and professionally. He is a friend who will be missed.

Ernie Belanger
Sales and Marketing Manager
Armstrong Transmitter Corp.
Marcellus, N.Y.

Jesse was one of the best reps I ever did business with. He was a credit to Orban, and a credit to the industry in general. Jesse Maxenchs was what, at one time, everyone in this business wanted to be: a real pro.

Dan Case
Chief Engineer
Citadel Little Rock
Little Rock, Ark.

Beyond Price: Broadcaster Service

Local radio and television stations provided more than \$8 billion in public service last year — more than the total annual giving of the top 100 U.S. foundations.

As NAB correctly pointed out in its recent announcement, the impact in AIDS and cancer awareness, child mentoring, alcohol abuse prevention, education and community safety, to name just a few of the subjects addressed in commercial broadcasters' public service messages, is unrivaled and lasting.

And PSAs are only a part of the benefits that broadcasters provided last year. Money raised by stations for charity, needy individuals and disaster relief is an important part of the impact that local broadcasters have in our communities.

John V. Moulden, president of the National Commission Against Drunk Driving, said local radio and TV stations help prevent needless suffering every day through the PSAs that call for all to not drink and drive.

Director of the Federal Emergency Management Agency James Lee Witt said local radio and television stations "play an absolutely essential role in helping communities large and small as they face disasters and other emergencies."

More than one-third more stations participated in the 1999 census than in a similar census two years ago.

NAB led a coordinated effort to increase station participation to make sure that stations knew that the survey was coming and to encourage them to participate.

NAB also had a Web site set up so that stations could fill out the survey online. Bill McSturff, partner in Public Opinion Strategies, the research firm that conducted the census, said the response rate this year was "remarkable."

In this election year, it is convenient for the NAB to demonstrate that members contribute so much to their communities — a good response to campaign finance reform advocates who demand that broadcasters, who receive billions in revenue from the public's airwaves, should open the airwaves to presidential campaign ads — for free.

But as we wrote here last year, radio broadcasters should do all they can to promote their own good works, to use their bully trumpet to benefit the community and to take appropriate credit.

The NAB and the entire broadcast industry are to be commended for what they do that is right — that is, to increase public safety, health awareness and disaster relief through public service.

— RW

I remember driving out to Belar back around 1976 when Jesse worked there. It was for a simple warranty repair when I was working at the old WOWW. Jesse took me out to lunch, just wondering how he could justify a company lunch on a warranty repair.

We should all strive to be as dedicated and courteous as Jesse was. He certainly was a credit to the industry.

Tom Osenkowsky, CPBE
Consulting Engineer
RW Contributor
Brookfield, Conn.

I counted Jesse as one of my friends. He was always there for you.

I know that he went down fighting. The last two years he was on the floor during the spring NAB show even though he was very weak from treatments. But he wanted to see his friends

and customers. The industry will certainly miss his smile.

I'll miss him.
Barry Victor
CEO
The Victor Group
Los Angeles

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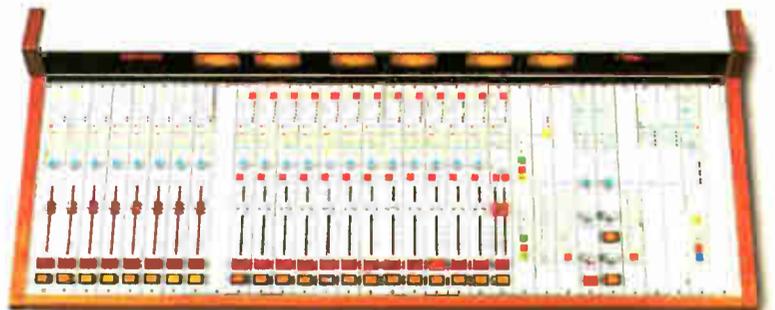


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