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Morgan on FM IBOC

The NRSC chairman says it may not be perfect, but it is indeed a significant improvement for U.S. radio.

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Big-Apple Audio

Delayed and shrunken in the aftermath of terrorism, AES 111 was still called a success.

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Photo by Alan R. Peterson

Rockefeller Center

Radio World®

The Newspaper for Radio Managers and Engineers

February 1, 2002

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COMMANDO SOLO

WHEN AMERICA WENT TO WAR IN AFGHANISTAN, RADIO WENT TOO.

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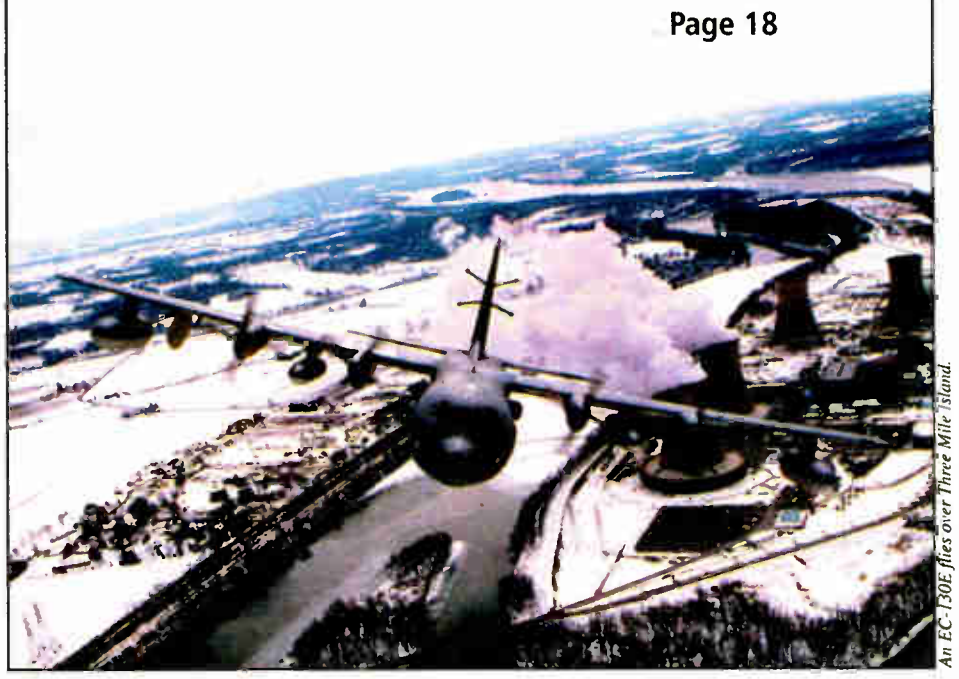

An EC-130E flies over Three Mile Island.

N.H. Owner Fights City Zoning Law

SBE Says Local Ordinance Makes Compliance With FCC Rules Impossible

by Randy J. Stine

LEBANON, N.H. The Supreme Court for the state of New Hampshire could decide later this year whether a radio broadcaster can build new towers despite a local ordinance prohibiting construction based on concerns for aesthetics and property values.

The case has drawn the attention of a national engineering group and could foreshadow a national debate over local zoning issues. Observers think the case is important at a time when television broadcasters, making the transition to digital, and the wireless industry are fighting for additional tower space.

Koor Communication Inc. holds an FCC construction permit for a Class B AM station at 720 kHz for Hanover,

See TOWERS, page 8 ▶

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World Radio History

◆ NEWSWATCH ◆

Financing Helps Sirius Into 2003

NEW YORK Sirius Satellite Radio priced a public offering of common stock, resulting in gross proceeds of approximately $158 million.

Sirius President and Chief Executive Officer Joseph Clayton said the transaction funds the company "well into" the second quarter of 2003.

Sirius also unveiled marketing programs and launch strategy at the Consumer Electronics Show in Las Vegas and unveiled its channel lineup. See story on page 6.

The stock transaction was underwritten by Lehman Brothers. Sirius intended to sell 16 million shares of its common stock at a public offering price of $9.85 per share, and granted the underwriter an over-allotment option to purchase an additional 2.4 million shares of common stock.

Kneller Named To IAAIS Board

ROANOKE Va. Harold (Hal) M. Kneller Jr. is now on the board of directors for the International Association of Audio Information Services.

The group said a key interest for Kneller is to help ensure that radio reading and audio information services are well-represented and included in the transition from to digital broadcasting.

Kneller is director of radio engineering for FM radio stations WGCU/WMKO at Florida Gulf Coast University in Ft. Myers, Fla., and also president and principle owner of Heartland Broadcasting Corp., licensee of three Florida stations.

The IAAIS is a non-profit association of independently operated broadcast entities that provide reading services for the blind and sight-impaired.

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Clear Channel Engineers Promoted

COVINGTON, Ky. Clear Channel engineering execs Jeff Littlejohn, Steve Davis and Al Kenyon have been promoted to the title of senior vice president of engineering. Clear Channel Radio CEO Randy Michaels made the promotions.

The three had served as vice presidents. They will continue to report to Michaels.

With the promotion, Littlejohn becomes senior VP of engineering services for the radio division. Davis adds the senior VP title and continues to manage the engineering division's capital budget, expense tracking and regulatory technical filings. Kenyon becomes senior vice president of projects and technology and continues to be responsible for evaluating technical facilities of proposed new station purchases and managing radio studio build-outs and consolidation projects.

Texan Fined For Unlicensed Broadcast

WASHINGTON The FCC reaffirmed a $10,000 fine against David Edwin Merrell of Wichita Falls, Texas, in December 2001 for operating a station on an amateur frequency without a license.

The commission stated that Merrell did not respond to the original fine in September and that he had to pay the amount by the end of January.

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N.Y. Reading Service Rebuilds

by Randy J. Stine

NEW YORK Managers hope to have one of the largest reading services in the country back to full service by late spring, serving New York City's blind and visually impaired.

InTouch Networks, an affiliate of the Jewish Guild for the Blind, brings the printed word from daily newspapers, magazines and novels to those who are blind or have limited vision.

Out of touch

The terrorist attack on the World Trade Center knocked the reading service off the air in New York City when WKCR(FM) lost its main transmission facility in the collapse. InTouch Networks broadcasts were aired on one of the station's subcarriers.

Columbia University's WKCR was silent for three days before reestablishing service with temporary transmitting facilities on top of a 10-story dorm building on the school's campus. It took InTouch Networks' broadcast engineers nearly a week to restore local over-the-air service to the city, and then only with a much smaller coverage area.

"We're back on WKCR's subcarrier, but with them at low-power broadcasting from a backup antenna," said Peter Williamson, general manager of InTouch Networks. "We can't reach the number of people we normally would. Our signal had a 50-mile radius."

It could be late spring before WKCR returns to full power, Williamson said. Station officials have said it will relocate its main transmitter site to the Empire State Building or the Condé Nast building in New York's Times Square.

With only the local dial-in service available the day of the attack, InTouch Networks uplinked a simulcast of programming from news station WINS(AM) and fed that across the country to its affiliates during the first 24 hours.

Denny Raghunath, chief engineer for InTouch Networks, said the building that houses the reading service is isolated from outside reception, so to simulcast WINS programming required some creativity.

"The only thing I could do was take a portable Sony radio and run an antenna outside. I opened the back up and was able to banana-clip the output onto a quarter-inch plug and patched it to the console," Raghunath said.

Dedicated line

InTouch Networks' facility on 65th Street in Manhattan includes three broadcast recording booths and a central mixing console.

Raghunath said signal strength to WKCR's temporary transmission facility at Columbia University on 114th Street in Manhattan initially was a problem. The reading service eventually installed a 15 kHz digital line to feed signal.

The terrorist attacks did not cause a severe financial hardship for InTouch Networks. The majority of equipment it lost at the World Trade Center was leased, Raghunath said.

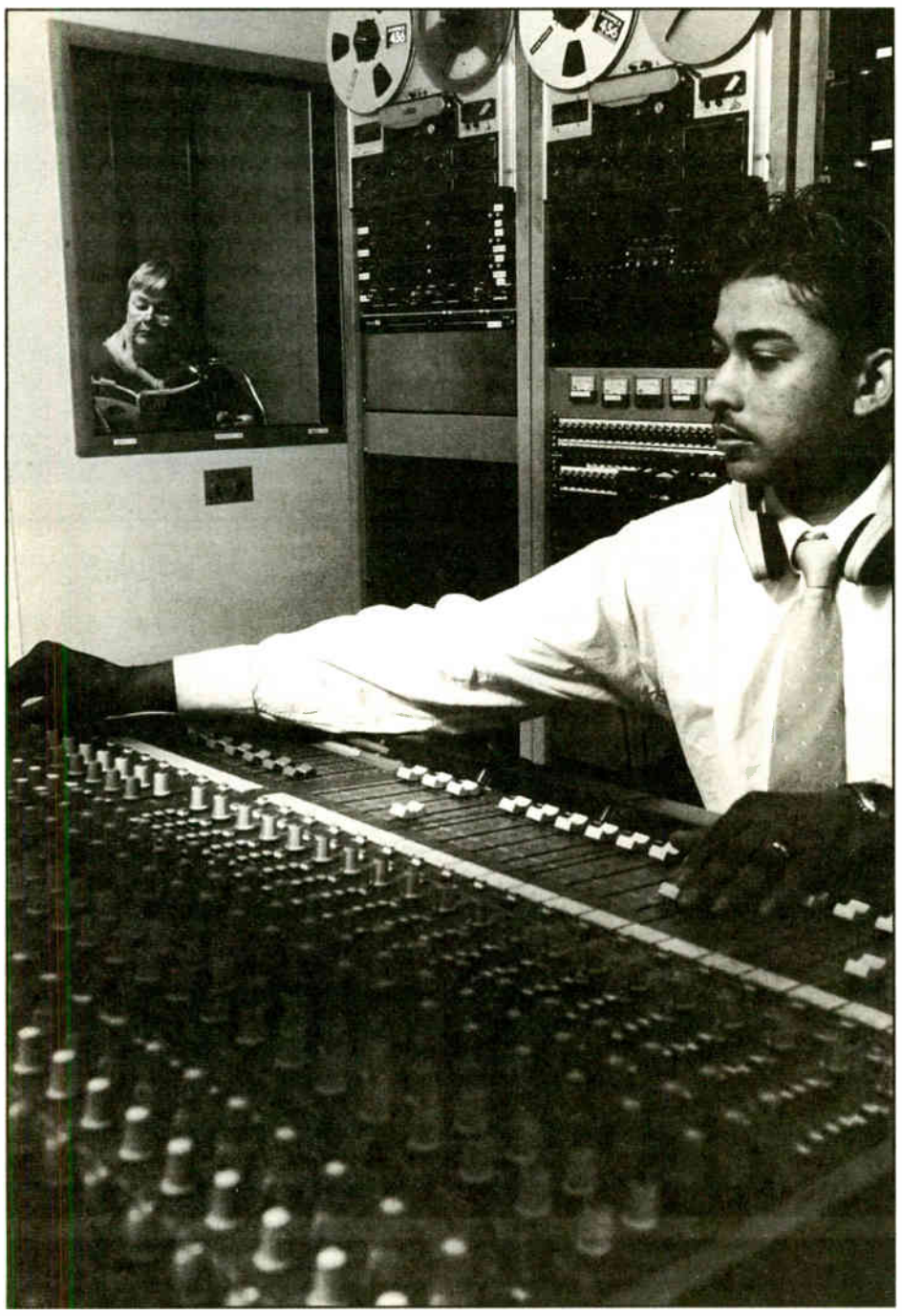
InTouch Networks, which first aired in 1977, has approximately 100 volunteers. It broadcasts news and information 24 hours a day, seven days a week.

The programming is funded by the Jewish Guild for the Blind. In addition, several New York City-based companies privately fund some programming, Williamson said.

InTouch Networks reaches an estimated 1 million households on subcarriers and open FM frequencies nationwide.

We can't reach the number of people we normally would.

— Peter Williamson



InTouch Networks Engineer Danny Raghunath is shown at the console with a volunteer reader in the broadcast booth.

The organization was forced to rely on dial-in service for more than 7,000 listeners in New York who otherwise would have used their specially tuned Subsidiary Communications Authorization receivers.

InTouch Networks continued to create programming for approximately 80 radio reading services. Audio was uplinked by the Public Radio Satellite System to Galaxy 4R.

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World Radio History

FROM THE EDITOR

Keynote Will Recall WTC Facility

by Paul J. McLane

I know it's early to think about the NAB show, but mark your calendar for this session.

One of the designers of the broadcast facility atop the World Trade Center will present a visual history of the huge antenna system. Dr. Oded Bendov will speak at the opening of the Broadcast Engineering Conference.

The master antenna, the main transmission facility for many New York City broadcasters, was taller than a small building itself, home to four radio stations and 14 TV stations before being destroyed in the terrorism of Sept. 11.

Also, the head of the New York/New Jersey Broadcasters' Coalition, Dr. William Baker, will discuss the challenges of replacing the WTC technical facilities.

Six broadcast employees lost their lives at the World Trade Center. As the weeks have turned into months since the attacks, one of the enduring thoughts I have about that day are what it must have been like for those technicians in their last moments. Kudos to the NAB for dedicating the keynote to their memory.

★ ★ ★

I touched base the other day with Peter Burk, president of Burk Technology, whose ads appear at the bottom of this page. I've known him since shortly after he founded his company in 1985, long before I joined Radio World. I wondered about his recent decision to purchase the line of Gentner remote control products.

"It was a natural," he said. "Both the ARC-16 from Burk and the GSC-3000 from Gentner have a strong base in the market." Also, Gentner had just completed the VRC-2500 as a replacement for the discontinued VRC-2000, so Burk was able to pick up another solid product.

Gentner had been heading in a different direction in recent years, focusing heavily on audio and video conferencing. It's not surprising that a line of broadcast remote control products didn't fit into its plans.

In fact, Gentner changed its name in January to ClearOne Communications.

But why would Burk buy into a shrinking marketplace?

"I wasn't aware that the remote-control marketplace was shrinking," Peter Burk replied. "It is, indeed, a narrow and specialized market. We 'keep to our knitting,' doing what we know best and constantly trying to do it better. It is mostly replacement, but not due to worn-out equipment. Broadcasters' needs keep changing."

Peter said the Burk and Gentner lines are somewhat different in approach and appeal, so he plans to continue to enhance both.

On the product side, Burk just released ARC-16 firmware version 5.4, which offers various enhancements. Also, its AutoPilot 2 control, logging and automation software now is in production; it is a full rewrite of AutoPilot, taking advantage of improvements in operating systems since the original AutoPilot for Windows.

"Our beta testers did some pretty good beating on it," he said.

Burk's next big news will come at NAB2002 when the new ARC Plus remote-control system ships.

"We have gone all-out to complete the engineering and testing so we can be ready to ship by NAB. Even five years ago, it would not have been possible to do what we are doing in the ARC Plus. There is some very cool stuff happening in that box."

★ ★ ★

In this issue you'll find *Web Watch*, a regular column about the world of Internet radio. Our new Web Watcher is Craig Johnston, who has been writing for IMAS Publishing since 1987.

Johnston spent 25 years in broadcasting, much of it in TV production, and now works in Internet and multimedia CD production.

"I find the Web, and Webcasting in particular, fascinating," he told me. "Looking years or decades into the future, I can see where some form of streaming delivery will probably eclipse broadcasting as a delivery system. That said, every time you turn around, there's another hurdle in the way: AFTRA, bandwidth costs, RIAA royalty payments."

But, he said, the end-users love it. "In a lot of ways, Webcasting is repeating the history of broadcasting. Originally, radio stations were put on the air so there would be something to listen to, and thus a reason to buy radios. Selling radios was where the money was to be made. That business model shifted until we had advertiser-supported radio, which we still have today."

Johnston spent seven years in TV news with two affiliates in Seattle and recalls producing the show "HowCome?" at KING(TV).

"We showed how things worked. We rode submarines, filmed open-heart surgery, went on cattle drives and showed how to put out an oil-well fire. For someone who's curious about all sorts of things, it was heaven and getting paid for it."

Craig Johnston, Web Watcher

One reason he lives in Seattle is that he can boat and snow-ski on the same day. He recently caught a sturgeon in the Columbia River, which separates Washington and Oregon.

"The Web Watcher can learn a lot hanging out around sturgeon," he said. "They lie low, feed on scraps, trust their nose — and when they sink their teeth into something they don't let go."

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Our prize today is a Sonifex RB-ADDA combined A/D and D/A converter from Independent Audio. The winner is Bob Hoffman of Bonneville Communications in Manchester, Mo.

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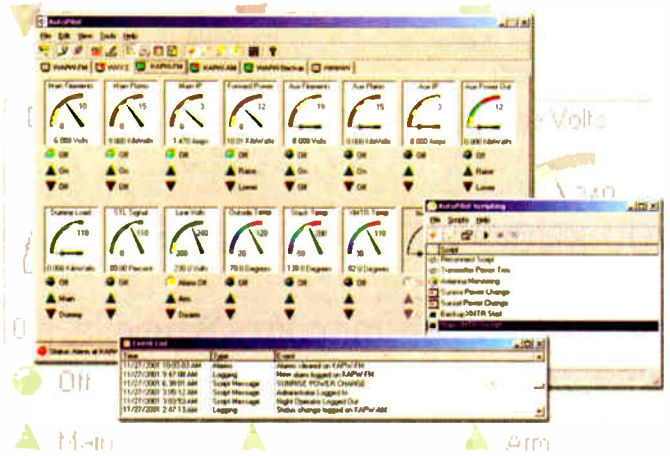

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World Radio History

GUEST COMMENTARY

IBOC: What Engineers Should Know

The Chairman of the NRSC Says FM IBOC, Though Imperfect, Is a Significant Improvement for U.S. Radio

by Charles T. Morgan

On Nov. 29, 2001, the National Radio Systems Committee issued a report stating, "The performance of the Ibiquity FM IBOC system as tested represents a significant improvement over today's existing analog service."

The NRSC recommended that this system be authorized as an enhancement to FM broadcasting in the United States.

These were the conclusions that culminated a very exhaustive testing and evaluation process that looked at all aspects of this system from both objective and subjective points of view. Extensive laboratory and field tests were conducted with heavy reliance on subjective listening tests that compared the digital signal to the host analog signal under identical conditions.

The complete report including appendices contains 215 pages and is available at the NRSC Web site, *www.nab.org/SciTech/Fmevalreportfinalfinal.pdf.*

For the broadcaster, this report can be best summarized by looking at the overall quality, durability and coverage of the digital signal as well as its compatibility with its host analog signal and its effect on the signals of adjacent channel stations.

tive listening tests using standard research methods and compare the results using standard "mean opinion score" scoring. The audio quality superiority of IBOC is best summarized in Fig. 1.

participants were asked to listen to a series of long audio samples taken along normal mobile routes that contained multipath and other forms of signal degradation.

The signal was recorded on an IBOC receiver as well as an OEM and aftermarket analog receivers. Listeners made a "tick" by pressing a button whenever they heard any impairment regardless of form or duration.

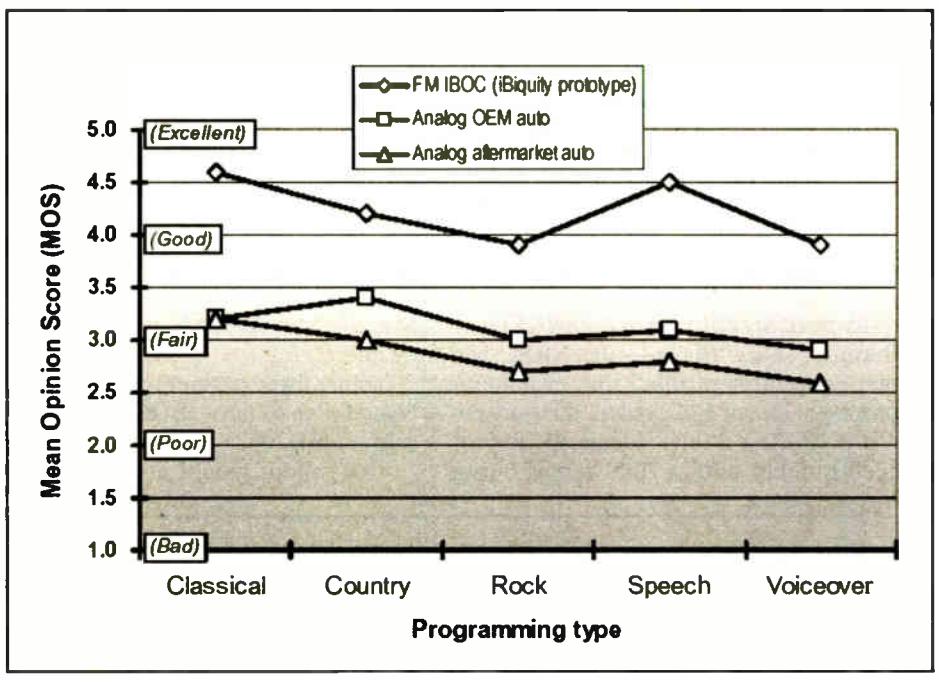

Fig. 1: Comparison of FM IBOC and Analog Audio Subjective Evaluation Results Aggregating All Field-Test Conditions

The results of this test are shown in Fig. 2. The analog receivers encountered more than five times as many impairments than the IBOC receiver. Certainly, this is a significant improvement.

Coverage: The NRSC field test results indicate IBOC FM coverage is comparable to analog and that reception within this coverage area is superior due to its durability and resistance to multipath and other forms of interference.

At the edge of digital coverage, the "analog blend" feature of IBOC allows a smooth transition to the host analog signal.

Compatibility: The NRSC concluded that listeners should not perceive any interference to the host analog signal of a station broadcasting IBOC.

There should be no interference to the reception of co-channel stations, but under certain circumstances, a relatively small amount of interference can occur in the analog reception of first- or second-adjacent channels.

First-adjacent interference: Listeners within the protected contour of a station should not perceive interference from first-adjacent stations. However, the potential does exist for some interference in some areas beyond the protected contour. When present, this interference will exhibit itself as an increase in background noise.

Second-adjacent interference: Tests indicate that most automobile and portable receivers should not be impacted by second-adjacent interference.

A very limited number of receivers of

See MORGAN ON IBOC, page 6 ▶

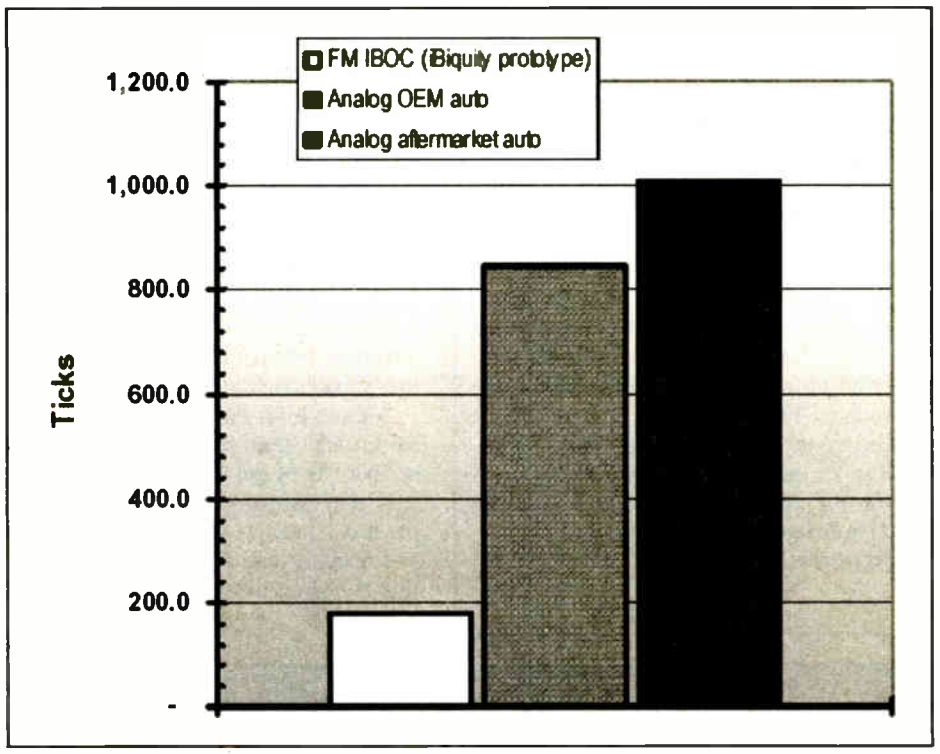

Fig. 2: This is a comparison of FM IBOC and analog automotive receivers using the so-called 'ticker' test. Each 'tick' corresponds to an audio impairment — tick, pop, click — heard by listeners on field-test audio obtained simultaneously from FM IBOC and on two FM automotive receivers.

Audio quality: I believe a well-engineered FM station can produce good to excellent audio quality in a good receiver when not subjected to external conditions that could degrade the signal. If receiving conditions were always perfect, there would be no need for IBOC. The NRSC test procedures required laboratory and field testing of the signal under all receiving conditions with direct comparisons to analog reception under identical conditions.

The NRSC selected Dynastat Labs Inc. of Austin, Texas, to perform subje-

This graph is an aggregate of all field testing under all conditions with five different program formats. IBOC is a clear winner, scoring good to excellent for all formats. Identical tests for two automobile receivers scored between fair and good.

Clearly, IBOC audio quality under a wide variety of receiving conditions is a significant improvement over analog.

Durability: Much of the report covers the durability of the IBOC signal. The superiority of IBOC in this area is best illustrated in the so-called "ticker" test, as

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All CT-6 master units also drive multiple analog impulse 12" clock displays. This is an excellent way to inexpensively add analog wall clocks to your CT-6 system.

World Radio History

Digital Radio Makes News at CES

Ibiquity Submits AM Results, Names First Cities; Sirius and XM Jockey for Position

by Leslie Stimson

LAS VEGAS Ibiquity Digital Corp. has submitted its digital AM radio system test results to the standards-setting National Radio Systems Committee, hoping to receive that group's endorsement as it has for its FM system. It made the announcement during the CES convention here in January.

Meanwhile, two companies that offer a different kind of digital radio — satellite-delivered — jockeyed for position and consumer awareness of that nascent medium.

AM next?

On the terrestrial side, Ibiquity says the latest results confirm that its AM in-band, on-channel system will deliver FM-like sound quality while preserving the integrity of the current analog AM band.

The NRSC will evaluate the results and submit them, with its own input, to the FCC.

Robert Struble, president/CEO of Ibiquity, said, "Because the NRSC has just gone through this same evaluation process with our FM system, their review of the AM test results is expected to proceed quickly with a final report being issued to the FCC within two months."

One NRSC official estimated that the committee would have its report to the FCC by the end of March.

By the end of this year, Ibiquity hopes to have several stations converted to FM and AM IBOC in Chicago, Los Angeles, Miami, New York, San Francisco and Seattle.

Transmitter partners Harris, BE and Nautel plan to have IBOC-ready gear for sale at NAB2002.

The rollout would continue in additional markets, including Atlanta, Boston, Dallas, Denver, and Detroit, and will be targeted to coincide with commercial introduction of IBOC receivers in January 2003.

An Ibiquity executive said the level of consumer electronics sales in those markets was a key reason for targeting them first. Ibiquity plans to work with its transmitter and receiver manufacturing partners to coordinate availability of equipment in these areas.

XM Satellite said it had more than 30,000 paying subscribers and claimed to be the fastest-selling new audio product of the last 20 years.

Sirius plans

Meanwhile, Sirius Satellite Radio revealed more information about its gradual launch.

It added Jackson, Miss., to its planned initial rollout on Feb. 14, along with Houston, Phoenix and Denver. Why Jackson? It's the birthplace of satellite TV. New Sirius President/CEO Joe Clayton helped debut satellite TV with RCA in that market in 1994.

Phase two rollout markets, set for April-May, are Albuquerque, Tulsa, Little Rock and Dallas/Ft. Worth.

By June, Sirius receivers will be available in Indianapolis, Nashville, Tampa and Miami. Sirius expects to be available nationally by July.

The chosen markets are in the top 30 for consumer electronics sales and are in relatively spread-out areas where commuters spend about an hour commuting in their cars.

"Sirius is not recycled radio," said Clayton, in discussing the amount of original programming Sirius is creating for its channels.

He also announced a partnership with Court TV. Live trial coverage will air on that channel, which Clayton said was a new format for radio. The full Sirius channel lineup is shown on page 16.

The company said it is trying several marketing concepts to spark interest in its product. It will test different subscription rates in different markets in its initial rollout, to see what the market will bear.

Consumers in some cities will see a $9.95 monthly subscription rate; others will be charged $12.95. The company will advertise free trial subscriptions with factory rebates on radios in some markets.

Meanwhile, competitor XM Satellite said it had more than 30,000 paying subscribers as of the CES show, and claimed it is the fastest-selling audio product of the last 20 years.

President and CEO Hugh Panero said the number of subscribers exceeded

See CES, page 7 ▶

Morgan on IBOC

▶ Continued from page 5

the home hi-fi design may receive interference in the presence of a second-adjacent IBOC signal that is 30 to 40 dB greater than the desired signal.

Impact on SCAs: The test data indicates that there should be no adverse impact on digital SCAs. However some questions remain concerning the performance of some low-cost receivers used for aural SCA reception.

Ibiquity, National Public Radio and the International Association of Audio Information Services will perform additional tests and submit the results directly to the FCC.

This report has been sent to the FCC and the NRSC anticipates that the agency will consider the document in the ongoing rulemaking to determine the future of digital terrestrial radio broadcasting in the United States. The FCC has sought public comments on the report; those are due Feb 19.

I am sure the commission will give this report great scrutiny and if the commission agrees with the NRSC, I hope that the agency will move quickly to conclude the rulemaking process with the adoption of the Ibiquity FM IBOC system for use in the United States.

At press time, the NRSC anticipated that Ibiquity would submit its AM IBOC test results to the NRSC for evaluation during the month of January.

Where do we go from here?

Although I believe FM IBOC is a significant improvement over the analog system we have today, it is not perfect. A search of this 215-page document will show flaws that we wish were not there, but it will also reveal many reasons why broadcasters should embrace this new form of FM broadcasting.

I believe that, taken as a whole, the improvements provided by FM IBOC are significant. Will these improvements be so significant that consumers will run to their local store to purchase these receivers? I think not; nor do I have any reason to believe that receiver manufacturers will bring these receivers to market without a consumer demand. For IBOC to succeed, we will need a cooperative effort between Ibiquity and broadcasters to get stations on the air quickly.

This cooperative effort is necessary because if broadcasters do not move forward and support IBOC, it and Ibiquity will fail — and if IBOC fails, we, the broadcasters, will also suffer.

I believe that radio will in some form follow television, telephones, the Internet and all other forms of communication, and become a digital medium. If not IBOC, digital terrestrial radio will likely end up in new spectrum — possibly a couple of soon-to-be-vacated TV channels.

If this is the case, radio broadcasters may find themselves in a bidding war for new spectrum as a means of survival.

Charles T. Morgan is senior vice president of Susquehanna Radio and chairman of the NRSC.

RW welcomes other points of view to radioworld@imaspub.com.

Public Service Announcement

The BlueBox is a new POTS codec from Comrex. This codec delivers the audio quality of our Matrix and Vector codecs (15 kHz on a standard dial-up line) at the entry-level price of our HotLine, just $2800. It also adds features such as wireless operation, field upgradability, and a cellular hands-free interface, and remains completely compatible with all our POTS codecs.

Since the HotLine is so popular, we decided to provide a "heads up" in advance of replacing it. To this end:

1) The BlueBox will begin shipping in February 2002, and the HotLine will be taken out of production.

2) We'll continue to support the HotLine for many years to come.

3) If you can't wait for the BlueBox, you can buy our remaining HotLines at the new price of $1995 (while supplies last!)

We at Comrex hope this helps. If you want to talk about the options or try a demo of any of the Comrex codecs, give us a call at 800-237-1776.

If you want a small 15 kHz POTS codec that can also work on wireless circuits but only want to pay $2800, you can wait and buy the BlueBox in February.

Choice A
The BlueBox: $2800

Choice B
The HotLine: $1995

If you need a POTS codec today, if 7 kHz is more than enough, or if you just want to save money, you can purchase the HotLine for $1995. But don't delay, there is limited stock available.

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World Radio History

BUSINESS DIGEST

Emmis Revenue Down; Salary Cuts in Place

Emmis Communications saw a drop of 16.4 percent in broadcast cash flow in the third quarter, and a drop of 4.5 percent in net revenue, compared to the same period a year earlier.

Net revenue was $137.1 million. After-tax cash flow dropped 34.9 percent.

CEO Jeff Smulyan blamed the impact of the events of Sept. 11 and the general weakness in the advertising environment, but said, "I remain optimistic given that we continue to outperform our radio markets."

The company expects to save $14 million in cash this year after it handed its employees a 10-percent pay cut beginning in November, to be supplemented by a 10-percent stock award.

Smulyan told employees the move would allow the company to maintain its product and efficiency of operations.

"While other companies are instituting massive layoffs, selling key strategic assets and suspending 401(k) and other benefit programs, we decided to address the issue in a manner that fits Emmis," he said.

The cut came on the heels of a senior management change. Radio Division President Doyle Rose resigned effective March 1, 2002.

Succeeding Rose will be long-time colleague, EVP/Programming Rick Cummings.

"This is a move we have been talking about for a long time internally, but after nearly 20 years and now with a solid team in place, the time was right," said Rose.

Gentner to Become ClearOne Communications

SALT LAKE CITY Gentner Communications has changed its name to ClearOne Communications Inc.

Gentner shareholders approved the change at their annual meeting. ClearOne was the name of a company that Gentner Communications had acquired earlier.

The name Gentner is one of the last connections to founder Russ Gentner, who left the firm in 1997.

According to President and Chief Executive Officer Frances Flood, the ClearOne name more effectively communicates the company's focus on conferencing. She said the name also is more marketable to its target audiences and better reflects the company's new image and growth objectives.

"The company today is dramatically different than when it began in 1981, and the new name more accurately depicts all areas of our business."

The change was effective Jan. 2. ClearOne will continue to trade on NASDAQ under the symbol "GTNR" until March 15. Then, the company will begin trading under the symbol "CLRO."

Gentner's conferencing products will continue to be branded under the Gentner name.

In mid-2000, Flood told Radio World that Gentner would continue to serve the radio community aggressively. The company subsequently sold off its remote-control product line but still offers broadcast telephone interface equipment.

CES

▶ Continued from page 6

most Wall Street analyst year-end estimates.

"Will people pay for radio?" Panero asked. "The answer is a resounding yes. ... In fact, we have created the 'car potato,' people across the nation finding excuses to drive around to listen to XM or stuck sitting in their driveway listening to great music.

"Rather than being one year behind our competitor to market, we have a nine-month nationwide lead."

XM's partners had more than 100,000 radios in stores by Dec. 1. By the end of the first quarter, it expects to have product in more than 6,000 outlets.

Company officials say the product rollout hasn't been entirely smooth. An XM executive told Radio World that Sony underestimated the demand for the home adapter for its Plug and Play unit. There were also some initial shortages in trucking antennas.

Both Sirius and XM say they need 3 million to 4 million subscribers to reach a break-even point and expect to achieve positive cash flow in 2004.

Please note

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World Radio History

Towers

▶ Continued from page 1

N.H., and wants to build four towers that require a minimum height of 266 feet in adjacent Lebanon.

However, that town's zoning ordinance regulates the height of towers, limiting them to 42 feet.

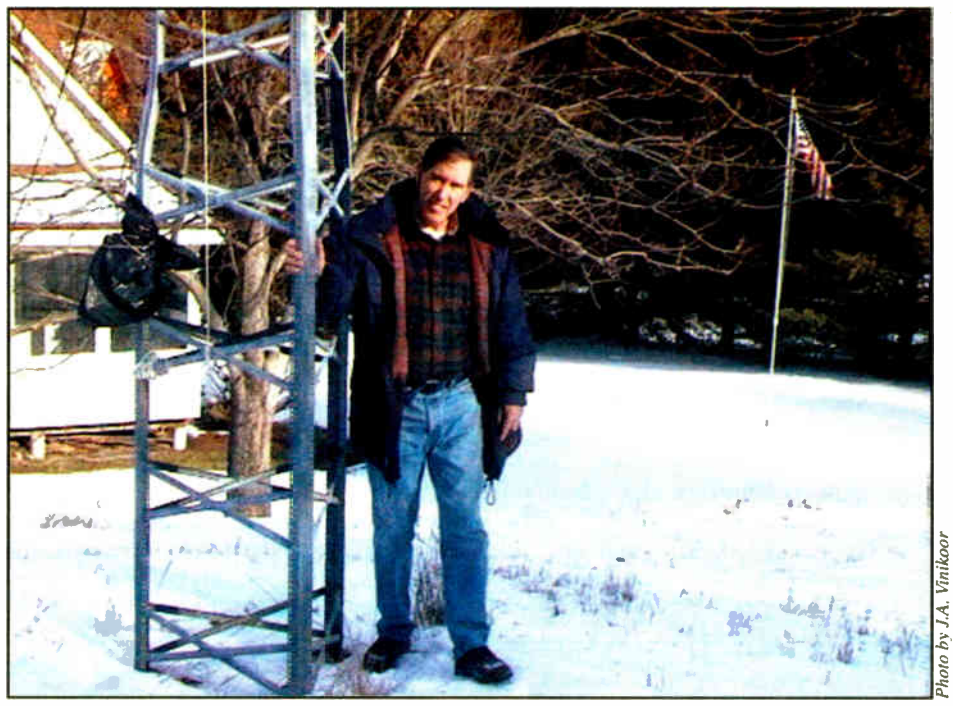

Photo by J.A. Vinikoor

Bob Vinikoor uses a 55-foot Rohn tower in his back yard for amateur radio. He says the tower is 13 feet taller than the city allows him to use for AM.

No variance

Koor filed for variances to the ordinance on several occasions seeking to construct its antennas in accordance with its FCC license and CP, but were denied by the Lebanon zoning board because of the height issue. The broadcaster filed suit for summary judgment against the city in 1999 and has subsequently lost court decisions in New Hampshire State Superior Court leading to an appeal to the state's highest court. A 2002 trial date is expected.

The broadcaster's attorneys contend Lebanon's local planning commission doesn't have the authority to regulate the height of a broadcast tower nor where broadcast towers can be located.

"The city effectively prohibits any new AM stations from being built, which is in conflict with federal law. The heart of the case is whether federal law is the law of the land. We have a FCC regulation that conflicts with a local ordinance. We say federal law has precedence," said Fred Hopengarten, a telecommunications lawyer retained by Koor.

Hopengarten plans to argue to reverse the trial court's rulings against additional broadcast towers, contending that any concerns over new stations causing additional AM interference are illegitimate.

"We feel the Lebanon zoning ordinance frustrates the statutory purpose of the Federal Communications Act of 1934 to promote and regulate nationwide radio communication by, among other things, preventing interference. We can cite three giant cases in the subject area of interference that say federal law has precedence," Hopengarten said.

Bob Vinikoor, president of Koor Communication Inc., said city attorneys pointed to the controversial Cross-Field Antenna, which lacks FCC approval, as proof that the city's zoning laws do not prohibit new AM towers. Developers of the CFA technology claim that its antennas could be built on small parcels of land and may even be suitable for rooftop applications.

"If we could do it with 42-foot towers, we would. We look at the ordinance as a blatant attempt to keep new towers out of the city," Vinikoor said.

Bernard Waugh, the attorney representing the city, said the case is strictly a test of whether the city of more than 12,000 residents can enforce the ordinance it created.

"This is not a test of technology and whether the FCC was correct in granting the license for additional radio service. I don't believe this is precedent-setting in any way.

"Koor was denied summary judgment twice already by lower courts saying the city has that right based on the grounds of aesthetics and property values. Based on that, (Koor) did not justify a need for a variance," Waugh said.

According to court documents, Koor's attorneys maintain the city's bylaws are invalid and violate the First Amendment's protection of freedom from laws restricting free speech.

With a constitutional argument and analysis, the city's ordinance requires a higher level of scrutiny than an ordinary land use regulation, Hopengarten said.

Vinikoor said nearly a dozen existing towers in Lebanon violate the height restrictions, but those were grandfathered in when the current ordinance was adopted in 1990. The purpose of the city regulation was to control the placement of cellular towers and equipment.

Vinikoor said the new station would transmit on 720 kHz with a power of 50 kW daytime and 500 watts nighttime. The towers would be top-loaded to keep their height at 266 feet. Top loading is a method used to improve the efficiency of a shorter tower by increasing its electrical height without increasing its physical height.

Vinikoor contends the tower site must be located in Lebanon to avoid nighttime interference with two clear-channel 50 kW stations, WOR at 710 kHz in New York City and WGN at 720 kHz in Chicago.

"If we felt we could build in Hanover as an alternative, we would have already," Vinikoor said. "When you are dealing with 50,000 watts of directional AM, you only have so much space to locate it in without causing interference. The engineering of power and antenna location were all done when we filed for the CP with the FCC," he said.

Vinikoor said the new station would have a news-talk format and directly serve the greater Lebanon area and much of New Hampshire and Vermont.

Tower 'scourge'

The location of communications towers is a particularly hot issue across the northeast United States, Vinikoor said.

"It seems towers have become the scourge of modern society. Broadcasters are being affected by the angst of communities over cell towers. But everyone wants the modern conveniences of cell phones and pagers. We can't have those things if everyone has the 'not in my backyard' mentality, yet these ordinances are going up all over New Hampshire," he said.

Hopengarten said the Society of Broadcast Engineers has filed friend of the court briefs on behalf of Koor.

Chris Imlay, SBE attorney, said the SBE will offer expertise on technical issues in its brief filed with the court. In particular, the FCC's exclusive jurisdiction to regulate the technical aspects of broadcasting.

"It's a bold initiative on the part of Koor. AM broadcasters in particular have not had much relief from these cases concerning land use authority and broadcast service.

"A lot will depend on how the court will look at the case. Generally it boils down to a federal, state or local jurisdiction question. This court also seems intrigued by that," Imlay said.

In its brief the SBE wrote, "The city's antenna ordinance clearly precludes compliance with the FCC technical rules and should be deemed preempted."

Imlay said, "We certainly think the FCC needs to play more of an activist's role in these matters. They could even go to Congress to ask for the authority to preempt local land use. Broadcasters need to know that reasonable accommodations can be made with local communities so they can make things happen and get stations built."

Hopengarten said the case will be scheduled for argument this year before the New Hampshire Supreme Court. A decision by the judges' panel could take until 2003.

Koor Communication also owns WNTK(AM) in Newport, N.H., WNTK(FM) in New London, N.H. and WNBX(AM) in Springfield, Vt.

World Radio History

CLEARLY NOT FOR EVERYONE

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

It's the same with processing: Some people should stick with the conservative stuff. Give them something too fast and they just won't know what to do with it. Frankly, the new Omnia-6 is probably not for them. It's just too potent, too flexible.

On the other hand, maybe you are the sort who can run a fast machine. Who loves the thrill of smooth power. Who revels in the admiration of others.

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World Radio History

NEWS MAKER

Werrbach Guides Aphex Designs

by Tom McGinley

This is one of a series of occasional interviews with the people behind today's audio processors.

Audio processing is personal. You may not know who designed your CD player or console, but you may well know the name of the inventor of your on-air processor.

If you use a product from Aphex Systems, there's a good chance it was designed by Donn Werrbach.

The company has been around since 1975 and grew from a single product: the Aural Exciter, invented by Curt Knoppel.

In the 1970s, an album credit from Linda Ronstadt and a Wings tour credit gave the company a higher profile, and it moved from Massachusetts to California. Now in Sun Valley, its product line has expanded to include processors used by recording studios, broadcasters and other professionals.

In 1984, owner Marvin Caesar, convinced Werrbach to move from Hawaii to California to take over the duties of chief engineer. Every Aphex product since 1985 has been designed by Werrbach, now the company's vice president of engineering.

Werrbach spoke about his career with Radio World Technical Consultant Tom McGinley.

***RW:** Tell us a little about the design philosophy behind early products like the Compellor and Dominator.*

Werrbach: They have proven to be our most successful products because they address the two most critical and fundamental areas of dynamic range control: average level and peak level.

Traditional comp/limiters have been used to address these problems, but they are relatively primitive and impart an audible change.

But what if I don't want that and just want the sound to be the same as before? It has always been my curse to have to keep reinventing the wheel. I can't help myself and I just can't stop experimenting. So that's become my design philosophy. I want everything I create to add something to the art; to take it to a new level; to be innovative.

My approach to creating products is to imagine some kind of tool that is needed but not available or to make a process sound better through some kind of clever algorithm that I have to discover.

***RW:** From the beginning, Aphex has favored analog audio processing designs over digital processing techniques. How has that philosophy evolved and influenced the new generation of Aphex products?*

Werrbach: We still know that, at the purely sonic level, analog is better than digital. That is a God-given fact, and nothing will ever change it because digital is a quantized and sampled numeric approximation of reality.

However, digital audio is a growing and demanding market that is displacing, to some extent, the analog market. We still find a strong market for our analog equipment because of two things.

First, there is a demand for high-quality processing that is not being supplied by digital processors because of technical limitations. Second, there is always an analog front and back end. Digital is just an intermediate step where sound is stored, mixed and edited.

The field of digital audio production is a very important target for most audio equipment companies, and we do have our battle plans in the works. We have brought out our Aural Exciter and Big Bottom as plug-ins for a first entry.

However, we have learned that hardware-based digital audio products are much more important for the industry. We are expending a great deal of research expense to develop digital signal processors of that type.

Our biggest advantage in the industry is that we have so many advanced and patented audio processing techniques in analog that we can bring into digital. Our greatest problem is that digital signal processing hardware is still so primitive. Capturing the sonic quality of our analog products will require very high sampling rates and intense DSP algorithms that present hardware can't really handle at a low cost.

Nevertheless, our philosophy is to maximize the digital audio performance over putting tons of so-so effects into a single unit. We expect to begin releasing high-quality, all-digital products within the next 14 months.

***RW:** Your most ambitious product is the 2020 Broadcast Audio processor.*

Werrbach: The model 2020 took a long time to create and bring to fruition. It comprises more than 13 patented audio processing technologies, more than any other audio product I have ever heard of.

It was designed to go into FM radio stations and serve as the final audio processor before transmission. It combines circuits to level out the program, add multiband compression to improve program consistency, limit peaks for maximum total modulation, and deal with transmission problems caused by pre-emphasis.

It also contains a digital I/O interface and a stereo multiplex generator. Fortunately, I designed the 2020 to be modular so certain processing sections can be supplied as options. That means they can be omitted for non-FM broadcast applications like mastering studios and such. This opened up a number of possibilities to use it outside of FM stations, and we have sold many to non-FM customers.

It makes a fantastic mastering tool, and it is also useful for general recording and live sound. Because it is digitally controlled, it can be run from a PC and has preset storage for instant recall of designed settings.

The biggest thing about the 2020 is that all of the processing is in analog. There is no loss of quality due to aliasing and other typical DSP problems of other products. The sound produced is very clean and natural.

We feel our best bet is to model our patented, successful and unique analog processing algorithms. We are discovering that some of them are very hard to duplicate accurately in digital.

***RW:** The original 2020 has been replaced by the 2020 MkII. We understand this is a substantially improved design and not merely an updated version. Describe the differences.*

Werrbach: The MkII is certainly an improvement. Not that the original wasn't great too.

What I did was to reinvent the "back end" of the processor and let certain improvements ripple backwards. In the summer of 2000, I was in Germany visiting the WDR federally run broadcasting company.

I was impressed by the fact that German audio engineers have a certain kind of sound they like. It is reflected in everything. They love big diaphragm condenser mics, and they love their Genelec speakers. Voices are surrealistic, and very close sounding like they are spoken next to your ear. The highs are sharp and strong while bass is somewhat restrained compared to American tastes.

I felt that I wanted to make the 2020 more capable of matching that sound for the German broadcast market. I also felt that if I could do that, I could make it sound sweeter for everyone else, too.

The result is probably the cleanest multiplex spectrum of any FM processor and no appreciable overshoot. I also took advantage of the opportunity to upgrade the stereo generator module with dual outputs and other added features.

We reconfigured the leveler module so it can be split into dual independent processing channels. That allows the MkII to now act as two independent mono processors for users who had asked for it, such as TV networks and Webcasters.

***RW:** Who was involved in the development of the 2020 Mk II?*

Werrbach: There are three people I would like to thank: Gary Liden, Kim Steffensen and Richard Faith. These constituted Aphex's entire engineering staff at that time, and I taxed them all. Without them I would still have proto boards wired together all over my workbench.

***RW:** What are the next important product introductions that we should expect to see?*

Werrbach: I have launched the Thermionics line, which I intend to keep driving. We released the Model 1100 Thermionic Mic Preamp more than a year ago and it is getting unbelievable raves for its sound.

There are a number of products in the works, one of which is a comprehensive voice processor/mic preamp. This will comprise numerous processing stages and some newly developed technology for de-essing and spatial enhancement. There will be multiband compression, and downward expansion, equalization, etc., and it will contain a super quality digital audio output. Of course, it will be based on my Reflected Plate Amplifier tube patent.

I also am pre-designing a very high-quality direct box, a studio quality power amplifier, and other things that I don't want to jinx by talking more about just yet.

Outside of Thermionics, we are releasing our new Model 204 Aural Exciter with Optical Big Bottom. There will be more 200 series products to come after that. Besides all that, we are working intensely on a new line of digital audio products that we expect to begin releasing some time next year.

***RW:** Is there such a thing as a "Donn Sound" that sets Aphex products apart from those of other audio processing products?*

Werrbach: I suppose I'd have to say the answer is yes, just out of practicality.

I always design while listening. As to what my "Donn Sound" comprises, it's hard to verbalize. To try and describe what I listen for, I love deep unrestricted and easy flowing bass. I hate it when bass sounds like it is high-passed, boxy, or pinched back. I spend a great deal of time studying bass and learning ways to process it more musically.

I love present and forthright vocals. I hate it when a vocal sinks back into the mix when other instruments are layered on, unless it is an artistic effect. I love definition. I love to be able to distinguish all the various instruments in a mix.

I like to be involved in the listening experience. Anything that clouds or masks definition and devolves the imaging makes me unhappy.

I don't like harsh digital distortion. It aggravates me and I hear it all the time these days. Once you become sensitive to detecting digital grunge, you are cursed forever. I spend a lot of time looking for better compression and limiting algorithms, and of course that is purely judgmental but it lets me play god just a little.

***RW:** What about "digital grunge"? You have built your products on the belief that the best analog audio processor can still be adjusted to sound "better" than any digital unit in terms of warmth and lack of unfriendly distortion by-products at the same loudness levels. Explain why this is.*

See WERRBACH, page 14 ▶

Donn Werrbach

'It has always been my curse to have to keep reinventing the wheel. I can't help myself and I just can't stop experimenting.'

World Radio History

A GM's best friend is his Radio Systems Millenium Console

by Rusty Eurchfield,
Corporate Engineering Manager
American General Media

"LIKE A ROCK! Tough enough for a jock, but made for an Engineer." Those are just a few phrases that describe the Radio Systems Millenium series consoles. The RS12a and RS18 channel consoles are made tough, rugged and are very durable. These consoles have been known to withstand your everyday jock armed with a cheese burger and soft drink.

In today's busy industry and with the shortage of qualified Engineers, GM's and owners need to purchase low maintenance equipment. Radio Systems RS12a or RS18 channel consoles are just that, low maintenance. Those days of having to replace "lamps" on your console are over, The Millenium series consoles use everlasting LEDs! This is just one example of the low maintenance involved in owning a Radio Systems console.

I have personally installed over two dozen Millenium series consoles in small, medium and large markets. Almost all of the connections are made via a five pin, screw down connector which allows for quick wiring. Unlike most analog consoles there's no need for "spade lugs" or "crimping tools!" Radio Systems RS12a consoles are so friendly to install, I once had a GM do it himself. When you order your new console, ask about their optional item called "Studio Hub" that makes wiring even easier; this allows you to turn your RS12a or RS18 console into a "Plug n Play" install.

It's not often that you can call a manufacturer and ask to speak to the President and actually get through the gate keeper. Radio Systems has an open door policy and anyone can pick up the phone and ask to speak to Dan Braverman, President of Radio Systems. As an Engineer I sometimes have improvement ideas and have suggested a few of them to Dan, Gerrett (VP of sales) and Roger (Tech Support manager) and have seen my suggestions make it to the assembly line. It's not often you'll find great service like this!

Radio Systems Millenium series consoles are very well priced and range from $5,495 and up. With many stations being automated in today's radio industry, we as the equipment decision makers, need to make sure we purchase equipment that is compatible with our automation needs. Radio Systems consoles are great companions to your automation system whatever it may be.

The ease and flexibility of the Millenium series consoles make them a must have for a station that depends on their equipment to perform top notch every time. In many of my markets, my staff is overwhelmed with projects and rely on their equipment to function without much technical maintenance. The Radio Systems RS12a and RS18 channel consoles make a great low maintenance item for the busy engineer, not to mention a good friend to the GM due to the price!

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World Radio History

Every Verbage Can Be Nouned

Techno-Speak Can Drive a English Teacher Crazy

by Skip Pizzi

I recently attended a technical meeting in which one delegate good-naturedly complained about someone else's use of the word "transition" as a verb.

Another attendee quickly retorted with the clever aphorism that serves as headline for this column. For most of the meeting's participants, this served as brief but merciful comic relief to the excruciatingly technical discussion, and it was quickly forgotten. But for me it also served as a good reminder of the adaptation that language experiences as it confronts new requirements in communication.

The idea that a noun can be used as a verb is something that many wordsmiths find most appalling, and some feel compelled to point out these and similar violations at every opportunity. These objections are well founded, to a point.

I agree that strict adherence to grammar and spelling is critically important, and I'm saddened whenever I see these rules of the road losing their emphasis in education. The guardianship of such tenets that teachers provide in schools is passed on to the editors of the printed word in professional life. While most editors in traditional media continue to do a good job, the far less rigorous worlds of the Internet and desktop publishing often allow fairly wide distribution of poorly written text today.

Clarity is all

We can only guess at the overall effect that these new publication modes may have on weakening the overall level of our language arts. It certainly isn't strengthening them, however. (Not to turn this into a grammar lesson, but the most common annoyances I've seen lately are improper use of the apostrophe – especially "its" vs. "it's" – and use of the word "loose" when "lose" is actually intended.)

Admittedly, English is a difficult language to learn, but most English speakers have the advantage of generally not needing another language, and often don't learn one to any level of fluency, so they should at least become reasonably adept at all forms of expression in the one language they do know.

Turning that issue around, consider also the many new or prospective arrivals to this country who observe our common usage of English as they gain proficiency in the language.

Radio is one of the best and most widely employed ambassadors of English throughout the world. Because it involves spoken language only, it generally avoids most of the pitfalls just mentioned, although it is not completely immune from such pollutants.

Most announcers are well-spoken, and the scarcity of outlets for broadcast radio means that quality levels are upheld — although talk radio is an obvious exception to such controls.

New meanings

Incidentally, this proficiency with speech in the world of radio does have some crossover to written language. During my years as editor of broadcast magazines, the articles submitted by radio professionals were almost always significantly better written than those coming from TV people. While this is a sweeping and non-scientific analysis, it is one I continue to stand by in general terms.

Today, however, nearly any deeply technical discussion or text will inevitably run afoul of traditional rules, as did the dialog at the meeting mentioned earlier. This is where I part company with the strict traditionalists, and become a supporter of an evolutionary approach to language.

New words and expressions are always required, and often basing these new words on old roots is a good approach. Perhaps best is simply adding a new definition to an existing word.

This is particularly important in the highly conceptual world of software, where many common words like "environment," "method," "call," "object" and "resource" have sprouted new specific meanings. In some cases a brand-new word is required, but these are rare.

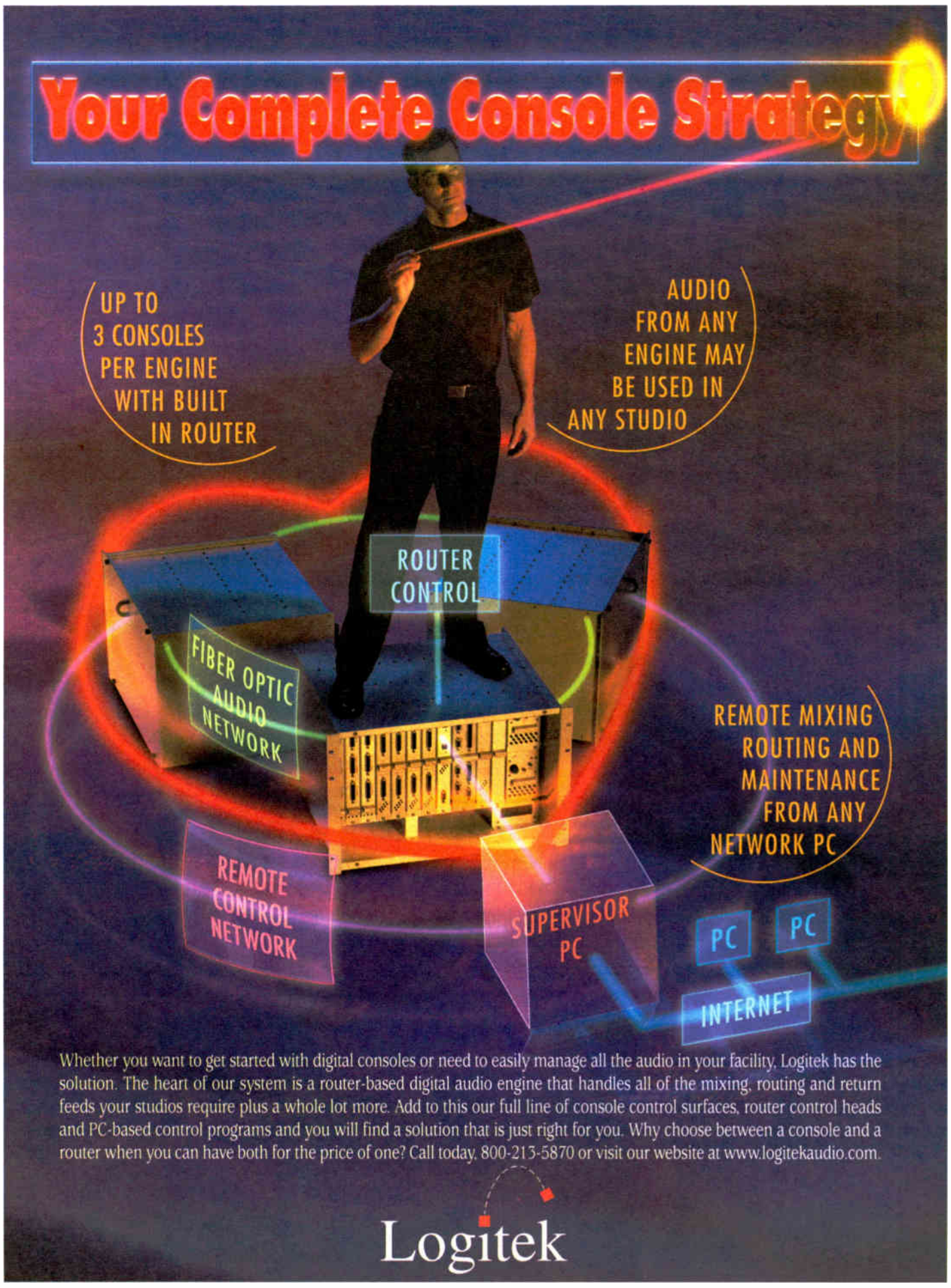
The use of existing terms keeps the jargon factor down, although it is strange to encounter a sentence in which all the words and grammar are familiar, but the meaning remains impenetrable.

See PIZZI ON VERBAGE, page 14 ▶

The Big Picture

Photo: Gary Hayes, BBC

by Skip Pizzi



World Radio History

Rave Reviews!

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

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

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

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

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

Telos

www.zephyr.com

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World Radio History

Werrbach

▶ Continued from page 10

Werrbach: Digital grunge is real enough. It can be reduced in digital signal processors by exhaustive algorithm development. However, that may heavily burden the DSP power that is economically available. Therefore, you find the grunge gets into everything eventually.

What constitutes digital grunge is the numerical rounding and truncation that is often re-entrant or recirculatory in the DSP code, and aliasing products generated by any nonlinear function like gating, clipping, compression or limiting.

Digital workstations are based upon DSP engines running DSP code that can have all these adversities in varying amounts depending upon the skills of the algorithm designer and codewriter and the extents of processing.

Just straight mixing on some workstations causes audible grunge. Grunge can creep in at CD mastering even off an analog master because of the A/D conversion and the DSP that is used for coding the CD format. This kind of distortion is distinctly unnatural. No object in nature creates anything like digital grunge. Analog distortion is comparatively benign because harmonic and intermodulation distortion can be found in nature.

That is one reason a good analog audio processor can sound better than a digital unit. Another reason is that advanced analog processing algorithms are far easier to develop through experimentation.

To develop digital processing algorithms, first you have to abstractly conceive of what you want to try. Then you have to write extensive code to implement it to whatever approximation you are allowed by available processing power. Then you have to compile the code, load it into a target processor and finally run some audio through it to listen to the result.

Many DSP algorithm designers just test their code on an offline simulator and never actually listen to it in real time. Those who do run real-time testing can never hope to test as many ideas as the analog designer within a reasonable time window. That is why, to this time, digital processors contain nothing but primitive algorithms approximately comparable to the analog art of 50 years ago.

It is fairly obvious that the most reasonable path to developing better digital processing is to model advanced analog processors. Until that happens, and the problems of digital grunge are truly eliminated, analog processors will always sound better.

RW: *What is your opinion of the ongoing loudness wars being waged by stations on both the AM and FM bands? Will the evolution of digital broadcasting and the Internet change the general sensibilities of most programmers that being loud will always be important?*

Werrbach: Digital broadcasting will not end the loudness wars.

Some of us thought, just for a fleeting delirious moment, that it would. However, the dynamics of commercial broadcasting are proving to be just the same as analog FM and AM. That goes for Webcasting as well. Programmers seek every tool at their disposal to beat their competition and loudness is one of the tools.

A possible exception could be direct satellite or cable radio where all the channels are exclusive and originated by the same company. Then there is no direct competition between channels. In that case, audio processing is usually omitted altogether and that causes problems. There needs to be at least moderate processing to hold up program consistency and peak control over the medium.

RW: *What will the coming of Ibiquity Digital broadcasting mean for broadcast audio processing? What is Aphex doing to get ready for the implementation of this new medium?*

'I love present and forthright vocals. I hate it when a vocal sinks back into the mix when other instruments are layered on, unless it is an artistic effect.'

Werrbach: As far as Aphex is concerned, we're ready now. Our 2020 MkII is modular and can be configured without pre-emphasis or a stereo generator. We have high-resolution digital audio I/O already available.

The main difference for iDAB, or IBOC as it is also called, is that it is not pre-emphasized or limited to 15 kHz bandwidth. That is going to improve the sound of the medium immensely if the technology for iDAB can ever reach all the milestones and become practical enough to actually be implemented widely.

RW: *On-air processing is a subjective arena, and it's a business that seems to be more and more defined by the marketing of high-profile personalities like Bob Orban and Frank Foti. Where do see yourself and Aphex fitting into this competitive landscape?*

Werrbach: Well, I don't see myself getting into a hissing war with either gentleman, although competition is warming up.

As most can remember, Foti came out, some would say recklessly, with a negative campaign against Orban's 8200 processor. He ran some ads about the 8200's digital grunge.

Naturally, Orban's company struck back, and that is when we saw Bob himself being put out on display in their ads. They merely downplayed the grunge issue and pitted Bob Orban's professional credibility against that of Frank Foti as they cast Frank Foti as a junk scientist and Bob Orban as the master of audio design.

It has been a sad battle ever since. It appears that Frank may have felt the sting because he has turned away from the direct credibility confrontation as far as I can see and concentrated on proving himself and his products.

I think we will see the high-profile personalities drop more into the background and the product marketing become more hardware oriented.

I believe that both Orban and Foti view Aphex as insignificant competition. They are keenly focused on each other. Meanwhile, we have made deep inroads and have taken some hallowed ground away from both.

We continue harping on our better sound quality and let everybody compare boxes to make up their own minds. Our analog sweetness and clarity, as well as the more advanced analog processing algorithms, wins a lot of races, especially with the new MkII release. We are certainly in it for the long run and intend to continue pressing into that market.

RW: *Assess the quality of audio compression or bit-rate reduction algorithms used in digital audio today, and how much improvement we should expect in the future?*

Werrbach: I always recommend using uncompressed digital media whenever possible to anyone that will listen. Anybody with good ears hates to hear bit compressed digital audio.

That MP3 quality is so widely accepted as good sound is shocking. However, we live in the digital age where audio quality is second in importance to distribution. The narrowness of Internet bandwidth and ISDN audio links dictates extreme bit compression, and the show must go on.

After three decades of digital audio consumption, people are trained not to expect anything more. The fact that "CD quality" is now the buzzword for "perfect sound" is really disappointing to me. CD quality is mid-fi, not hi-fi. That was not the promise of digital audio back in its infancy. We were promised future developments would take us further towards perfect audio. Instead, what we got was a bunch of hideous sounding compression algorithms.

Yes, we now have 24/96 digital technology, but where can you find it in use? Practically nowhere. The entertainment industry and consumer product manufacturers aren't bringing it to the masses. Instead we get MiniDiscs and cute little MP3 players and crappy sound.

Because there is such a demand to pack digital audio into tighter bandwidths, there will continue to be more compression algorithms developed, and I hope they will get better. Future technology may allow less lossy compression through wavelets or fractals or some other mathematical transformation as computing speeds soar.

These methods are now only practical in non-real-time recovery at present CPU speeds. However, when we get 100 GHz CPUs that fit into an earphone, maybe it can happen.

The full version of this interview is available online. Donn Werrbach discusses the use of tubes, the popularity of the Compellor, unique aspects of the 2020 Mk II pre-emphasis filter and likely areas of growth for Aphex.

Visit www.rwonline.com.

Pizzi on Verbage

▶ Continued from page 12

The popular public radio program "Whad'ya Know?" includes a regular feature called "Thanks for the Memos," in which a particularly bad example of incomprehensible written English is presented, selected from numerous audience submissions each week. This serves as a good metric of the extreme, and a reminder of why great care should be taken in any technical writing.

Nevertheless, adaptations are necessary if a relatively static language is to keep up with rapidly evolving technology. Some languages are better about this than others. This is why the same article that runs four pages in English may run five pages in Spanish, or three pages in German, for example.

Linguists who take the longer view, such as lexicographers, acknowledge that certain words and forms fall from common usage, and become officially classified as *obsolete* and eventually *archaic*. They also allow new words and definitions to enter their dictionaries at each new edition.

Unfortunately, the speed of change required in technical communication has far outpaced this official process, so some reasonable license must be allowed in those circles. One must take care to restrain such license to the purely technical domain, however, and not allow this stylistic fluidity to infiltrate one's regular, non-technical discourse — particularly when trying to explain basic issues to the non-initiated.

(The great editor, author and writing teacher William Zinsser addresses this process well in his marvelous books "On Writing Well" and "Writing to Learn.")

Data compression

Another way that language attempts to hold its ground against the inexorable onslaught of new requirements is through the use of acronyms. It helps the written and spoken word keep up with the ever-increasing density and speed of communication required, but it is particularly detrimental to the literary quality of the language.

Acronyms are so pervasive in technical discourse that the field is considered a "TLA-rich environment" — where TLA is a three-letter acronym for "three-letter acronym."

We have even moved into a second order of abbreviation ("nested acronyms"), where one or more of the letters in an acronym is the first letter of another acronym (e.g., DASE, the interactive standard format for U.S. terrestrial digital television, stands for "DTV Application Software Environment").

While generally annoying and off-putting, acronyms do serve a useful and efficient purpose in technical language. Often, they are also universal terms, requiring no translation to other tongues.

So the next time you hear or read something that sets off your grammar or usage alarm, consider hitting the snooze button and waiting to see whether it ultimately aids communication or comprehension. What you're hearing may just be the sound of language evolving.

Skip Pizzi is contributing editor of Radio World.

World Radio History

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THX pm3

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- A 25mm, wave-guide-loaded high frequency transducer with edge-damped alloy dome and ferrofluid cooling (same design as is used in the HR824).
- An additional rear-firing passive transducer (instead of noisy front ports) to extend bass response.
- Dual FR Series™ high-current power amplifiers – 100 watts LF/40 watts HF. Frequency response is **±1.5 from 52Hz to 20kHz**...and we back it up with individual test certificates signed by a Mackie technician.

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World Radio History

Sirius Presents Channel Lineup

Sirius Satellite Radio used January's CES show to announce its programming lineup. Sirius will air 60 commercial-free music channels and 40 channels of sports, news, talk and entertainment including programming from vendors including NPR and the BBC.

Joe Capobianco, senior VP, content, stated, "Our music channels are original, not just recycled radio. We're focused on bringing our listeners what they want to hear."

Its tentative monthly subscription fee is $12.95 but the company is still experimenting with other prices. Commencing Feb. 14, Sirius will launch service in Houston, Phoenix, Denver and Jackson, Miss. Other cities will be added later, with national service to be provided during the third quarter of the year.

Competitor XM Satellite Radio began its national service late last year.

POP
Ch 1 Top 40 Hits - Sirius Hits/US-1
Ch 2 Adult Contemporary - The Pulse
Ch 3 Alt Pop Mix - The Trend
Ch 4 Love Songs - StarLite
Ch 5 Best of the '50s/'60s - Sirius Gold
Ch 7 Best of the '70s - 1-70
Ch 8 Best of the '80s - 1-80
Ch 9 Best of the '90s - 1-90

ROCK
Ch 15 Soft Rock- The Bridge
Ch 17 Eclectic Rock- E-17
Ch 20 Rock Hits - Sirius Rock Hits
Ch 21 Modern Rock- Octane
Ch 22 Mainstream Rock- Big Rock
Ch 23 Classic Rock I - Classic Rock
Ch 24 Classic Rock II - The Vault
Ch 25 Classic Alternative - First Wave
Ch 26 Alternative I - Alt Nation
Ch 27 Alternative II - Left Of Center
Ch 29 Hard Rock- Hard Attack

COUNTRY
Ch 30 Sirius Country Hits
Ch 31 Today's Country - New Country
Ch 32 Country Mix - Big Country
Ch 35 Classic Country
Ch 36 Alt Country
Ch 37 Bluegrass

R&B / URBAN
Ch 40 R&B Hits - Sirius R&B Hits
Ch 42 Urban Hits - Hot Jamz
Ch 43 Soul Ballads - Slow Jamz
Ch 44 Classic Soul - The Express
Ch 45 R&B Oldies - Soul Revue
Ch 47 Sirius Rap Hits
Ch 48 Today's Rap - Hip Hop
Ch 49 Classic Rap - BackSpin

DANCE
Ch 50 Dance Hits- Sirius Dance Hits
Ch 51 Mainstream Dance - Planet Dance
Ch 53 Electronica - The Vortex
Ch 56 Disco - The Strobe

JAZZ & STANDARDS
Ch 60 Classic Jazz - Pure Jazz
Ch 61 Latin Jazz - Jazz En Clave
Ch 62 Contemporary Jazz - Planet Jazz
Ch 63 Smooth Jazz - Jazz Cafe
Ch 65 Standards - Standard Time
Ch 66 Swing - Swing Street
Ch 67 Broadway's Best - Broadway's Best

LATIN
Ch 70 Latin Hits - Latin Hits
Ch 71 Latin Pop Mix - Romantica
Ch 72 Rock en Espanol - Alt N
Ch 74 Mexicana - Mexicana
Ch 77 Tejano - Tejano

CLASSICAL
Ch 80 Symphonic - Symphony Hall
Ch 82 Chamber Works - Vista
Ch 85 Classical Voices - Classical Voices

VARIETY
Ch 90 Blues - Sirius Blues
Ch 91 Reggae - Sirius Reggae
Ch 93 Gospel - Praise
Ch 94 Christian Hits - Spirit
Ch 95 World Music - Horizons
Ch 96 New Age - Soundscapes
Ch 99 Kids - Sirius Kids
Ch 100 Specialty Showcase - Galaxy

NEWS & INFORMATION
Ch 101 CNBC
Ch 102 FOX News
Ch 104 CNN Headline News
Ch 105 Bloomberg
Ch 107 NPR Now
Ch 108 NPR Talk
Ch 109 PRI
Ch 111 World Radio Network
Ch 112 BBC World Service
Ch 114 C-SPAN
Ch 115 Weather Channel Radio Network
Ch 116 Sirius Talk

A custom-built, 65-foot Ferris wheel will travel the country to promote the Sirius rollout. It is equipped with eight Sirius-ready theme cars.

Ch 117 Real Sirius
Ch 119 ABC News & Talk

SPORTS
Ch 120 ESPN Radio Network
Ch 121 ESPNews
Ch 123 Sports Byline USA
Ch 124 Speedvision
Ch 125 Outdoor Life Network

HISPANIC NEWS
Ch 140 BBC Mundo
Ch 142 La Red Hispana

HISPANIC SPORTS
Ch 144 Radio Deportivo

HISPANIC TALK & INFO
146 Radio Mujer
147 Radio Amigo in English

ENTERTAINMENT
Ch 150 Radio Disney
Ch 151 Discovery Radio
Ch 152 E! Entertainment
Ch 154 A&E
Ch 156 Radio Classics
Ch 158 SCI-FI Radio
Ch 159 Sirius Entertainment
Ch 160 Sirius Comedy
Ch 161 Sirius Arts
Ch 164 Personal Achievement
Ch 165 Wisdom Radio
Ch 167 African American Talk
Ch 168 The Scandal Channel
Ch 172 Women's Talk
Ch 175 Guy Talk
Ch 180 Trucker Channel
Ch 184 Preview Channel

Blue Hens Get New Studio

WVUD(FM) recently dedicated its new master control studio on the campus of the University of Delaware.

The $50,000 project was overseen by Chief Engineer Dave Mackenzie and Station Manager Chuck Tarver. The university handled the room renovation; Vince Fiola from Studio Technology built the furniture; Mackenzie handled board installation and wiring.

The 1 kW station broadcasts from Newark, Del., at 91.3 MHz in a block format. About 50 people including station alumni attended the ribbon-cutting.

Dr. David Roselle, president of the University of Delaware, and Mayor Hal Godwin of Newark cut the ribbon at the opening of WVUD's new studio.

"We have installed a 12-channel Spherion board from Klotz," Mackenzie said. "Since fiber is available on campus, it will allow us to integrate studios from various parts of campus in the future. The integrated router allows us to control the source of our two Internet feeds and campus cable feed from the board.

"The wiring is Belden DataTwist 1624R shielded CAT-5 cable. A shielded RJ-45 patch panel is used for inputs and outputs to make testing and temporary changes easy."

New equipment includes Denon 961-FA CD players, Sony MDS-E12 MiniDisc recorders and a Tascam 112 MkII cassette deck.

A MediaTouch QuicPix computer-based playback system with a networked remote server uses two Midiman Delta 44 sound cards for multiple playback streams to allow mixing two audio cuts and listening to a third in cue at the same time.

The station also continues to use turntables. Mackenzie said he's been having a hard time finding replacement Audio-Technica tone arms for his Technics SP25s.

"No one seems to sell them anymore."

Student General Manager Joe O'Donnell shows off the new Klotz console.

World Radio History

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Mike Apple of

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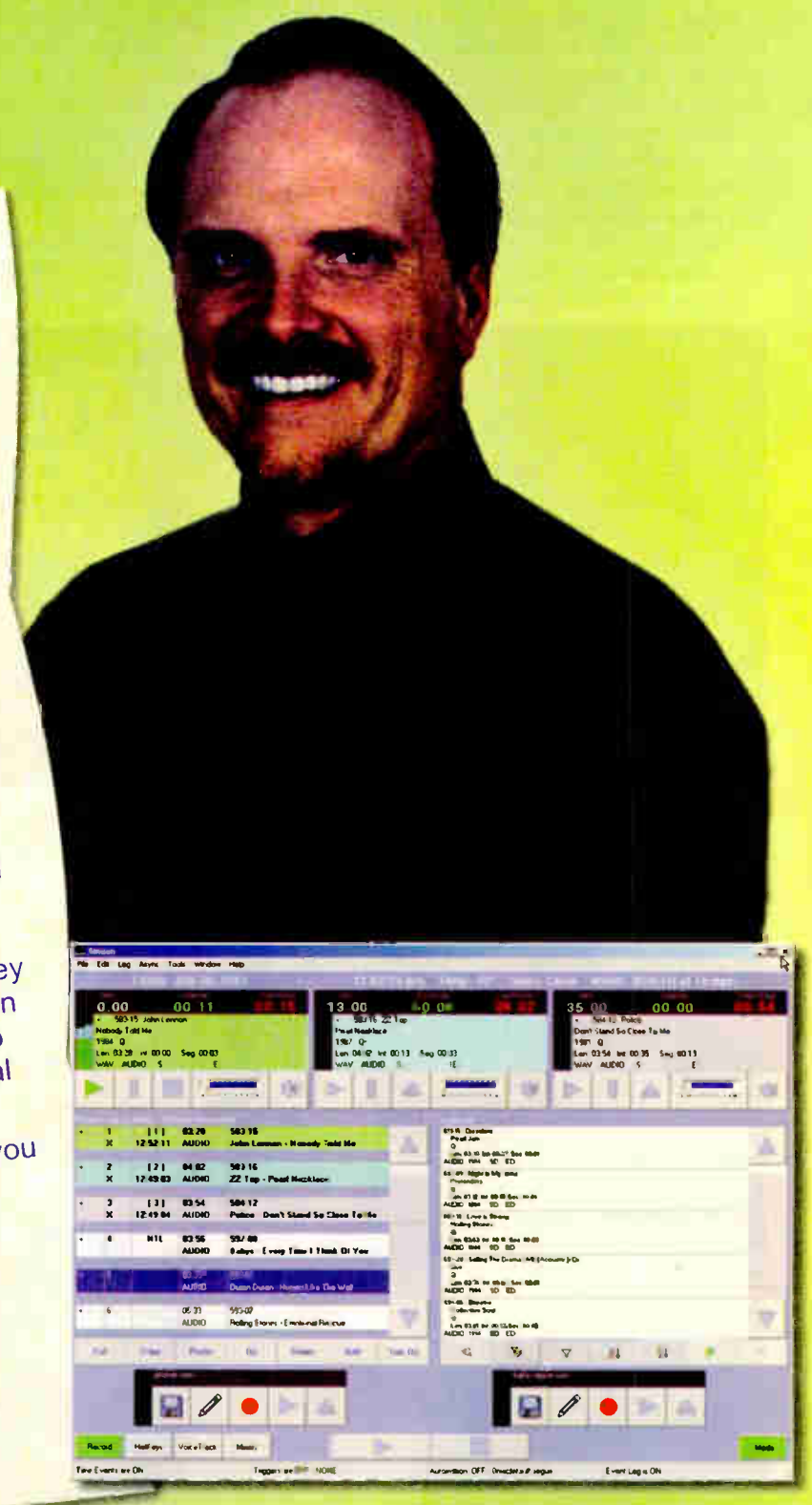

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We rip with Speedy; cut with Cool Pro, tag and play with Simian. Now if you can only design a module to write multiple choice tests. . . ?

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World Radio History

In the Air With Commando Solo

193rd Special Operations Wing Made War-Time Headlines With Broadcasts to Afghanistan

by Tom Vernon

In the months following Sept. 11, it was hard to turn on a TV or radio and not be deluged with information about America's military actions in Afghanistan.

While much attention has been given to the combat and humanitarian activities, Americans got only a tantalizing glimpse into the work of the Army's psychological warfare unit and the military's ongoing radio broadcasts over hostile territory.

The task of broadcasting propaganda messages to the local Afghan population and Taliban soldiers became the responsibility of the 193rd Special Operations Wing, a part of the Air Force Special Operations Command.

With 1,500 active members, 1,200 in Middletown, Pa., the 193rd is the third-largest Air National Guard unit in the United States. The unit averages 10 assignments per year.

Broadcasting simultaneous high-power MW, HF, FM and TV signals from an aircraft is no simple feat. Special planes with a fascinating array of hardware are needed to make it happen.

At the heart of it all is the EC-130E Commando Solo, a specially-modified four-engine Hercules transport built by Lockheed Aircraft. The 193rd maintains six of these planes at its Middletown headquarters.

Even a quick glance will tell you this is no ordinary transport. Sprouting from the tail of the EC-130 are four pods containing television transmitting/receiving antennas. Larger pods slung under the wings contain additional TV and FM antennas.

For vertically-polarized medium-wave broadcasting, the EC-130 can lower a cable weighed by a 500-pound weight from beneath its belly. The horizontally-polarized short-wave antenna is unreeled from the tail of the aircraft.

In addition to the four-person flight crew, the EC-130 carries five crew members to operate the broadcast equipment. Mounted in racks on each side of the fuselage is equipment to receive and transmit on all international broadcast channels.

Materials to be aired can be in the form of reel-to-reel tape, cassette, MiniDisc, VHS, U-Matic and Beta SX. Some of the equipment would be familiar to broadcasters: rack-mounted Ramko audio mixers, Otari 5050 tape machines, Valley People processors, Sony U-Matic video decks and a Panasonic switcher.

Others, such as the Collins digital communications receivers and frequency-agile exciters, are more specialized. The ability to monitor the technical quality of broadcasts is provided by Hewlett-Packard spectrum analyzers.

In addition to transmitting program material, facilities were provided to jam local transmissions, in an effort to persuade listeners to tune to the propaganda frequencies. Some details of the mission were classified, but can be inferred. For example, during a previous deployment to Kosovo, there were six simultaneous transmissions being broadcast, four on FM, one TV and one medium-wave.

Special needs

Immediately behind the equipment racks are the transmitters, antenna switching matrix and dummy loads. The entire package was designed by Rockwell for the unique needs of the 193rd and to fit in the relatively small confines of the EC-130.

The antenna matrix is a custom design from Delta Electronics and enables connections from transmitters and receivers to antennas and dummy loads. The matrix is controlled remotely from rack-mount units with digital displays.

Medium-wave and HF broadcasting is accomplished via a 10 kW, frequency-agile Rockwell-Collins transmitter. The red and white cabinet and styling are similar to the Rockwell broadcast gear of the 1980s, although there are no front-panel meters or controls; those functions are accomplished from remote panels in the equipment racks.

FM transmitters are solid-state units manufactured by Microwave Power Devices. The TV-8022 10 kW television transmitter is a custom design by Rockwell.

Behind the transmitters are racks with the antenna switch gear and a number of dummy loads manufactured by Bird. An H-P network analyzer is available for transmission line and antenna adjustments.

All of the transmitters save the television are able to be retuned in flight. The TV transmitter's cavity needs to be changed, and that operation takes two to three hours on the ground.

See 193rd, page 21 ▶

World Radio History

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World Radio History

Workbench

Radio World, February 1, 2002

Past columns are archived at www.rwonline.com/reference-room

Can't See the Tower for the Trees

by John Bisset

Backups are great — when they work!

Winter's elements can force dependence on a generator. If the operation is not monitored, however, disaster can strike.

By allowing a diesel engine to run out of fuel, for example, you can cause a costly fuel injector cleaning. A good way to guard against such a problem, in addition to monitoring fuel levels, is to install a two-stage fuel filter.

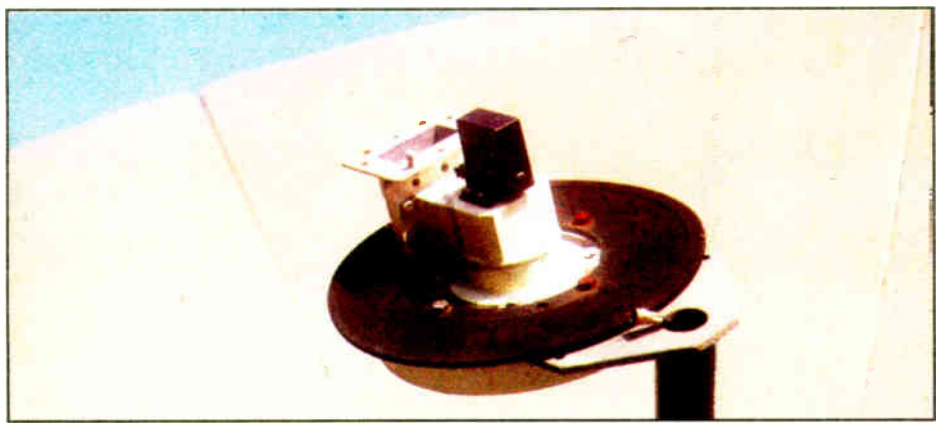

Fig. 1: Protect elements from the elements!

Thanks to Ed Bukont with Commstruction, a division of Total Engine Sales and Service Co. in Baltimore, for this timely tip.

★ ★ ★

The elements can make any engineer's life miserable. How do you guard against this? In Fig. 1, the satellite waveguide might better serve as a birdbath as its open end fills with water.

Take the time to place a small plastic lunch bag over the waveguide after the LNB is removed. Tape up the coax pigtail as well. The rusted bolts will only make replacement of the entire assembly more difficult.

★ ★ ★

Maintenance around the transmitter site includes your security systems. For most of us, this includes key or combination locks.

Squirt a little liquid graphite or lock lubricant in the locks and working the mechanism. This can thwart the effects of icy weather.

If you've got combination locks, like the one in Fig. 2, set all the tumblers to 0-0-0-0. This tells you if anyone has turned the tumblers and frustrates would-be vandals, who might think your combination is just a few numbers away from a random combination setting.

By the way, this particular Master-brand combination lock is worth its additional cost. The combination can be reset easily, meaning staff changes or tower lease expirations don't require wholesale lock replacement.

★ ★ ★

At a recent SBE Ennes Workshop, we discussed safety items to keep on hand at a transmitter site.

One suggestion was a flashlight, mounted right inside the transmitter site door. Another engineer did one better: a wind-up flashlight.

These are great and they're affordable. One store, Restoration Hardware (which, despite its name is really a neat household gadget store) sells them for $15 to $20.

You squeeze a ratchet-type handle, which works the generator to light the flashlight. No dead batteries!

★ ★ ★

So, how does that old adage go, "you can't see the forest for the … tower?"

Fig. 3 is a good example of out-of-sight, out-of-mind. This "forest" didn't just spring up overnight, although the owners of this station might like the FCC to believe that.

Fig. 2: Combo Lock

Yes, the trees are inside the tower fence.GMs, this is why your engineer must visit the transmitter site once in a while.

★ ★ ★

Older engineers may remember the Heathkit-brand pain-can dummy load, called a Cantenna.

These loads can be found at hamfests, and are useful for testing.

Take a look at the power rating the Cantenna provides, based on two types of

See WORKBENCH, page 21 ▶

Fig. 3: Get out the weed whacker.

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World Radio History

193rd

▶ Continued from page 18

Although all of the 193rd's aircraft were deployed, officials allowed a Radio World reporter to walk through the full-scale mockup of the rear of the plane. used for training purposes.

While the type of gear used for broadcast is declassified, some details of the installation remain secret. Most notable are innovations used by the Rockwell engineers to get all the transmitters to work harmoniously in such a cramped environment.

...a modified Hercules EC-130E transport built ...e 193rd maintains six at its headquarters.

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An operator verifies video quality of the aircraft's TV transmitter.

radio and NTSC black-and-white television transmitters, the 193rd updated its equipment as technology improved. In 1977, the aging Constellations were replaced with the newer C-130 Hercules aircraft, and color television capability in all formats was added.

Expanding arsenal

Recently the 193rd evaluated a new type of phased array satellite communications antenna. Such a device makes possible in-flight reception of satellite television broadcasts, adding another means to rebroadcast PSYOPs.

Delivering the U.S. military's message to the Afghan people and Taliban soldiers involved several military organizations. The material broadcast by the 193rd was written and produced by the Fourth Psychological Operations Group in Fort Bragg, N.C., which also was responsible for the content

fact that for much of its existence, the mission of the 193rd has been cloaked in secrecy.

Although the group traces its origins to a fighter squadron formed in 1942, its current mission of psychological/informations operations, or PSYOP, began in 1968, and remained classified until 1989. Over the years, the 193rd carried out secret missions in Vietnam, South Korea, Panama, Puerto Rico, Saudi Arabia, Egypt and Kuwait.

As word of the 193rd's unique mission spread in military circles, the unit became involved in Air Force, Navy and NATO operations and exercises. Threatened with elimination by Congress during a series of military budget cuts, the 193rd decided in 1989 to "go public" about its important mission. It was spared the congressional ax, and remains a vital part of the Air Force Special Operations Command, according to its supporters.

Beginning in 1968 with four Lockheed C-121 Super Constellations equipped with on leaflets dropped by an Air Force unit that uses C-17 cargo aircraft.

One of the problems of broadcasting to an area such as Afghanistan is that few people have radios. The U.S. government decided to purchase wind-up receivers to be air-dropped to the local population.

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Readers interested in this topic also can visit *www.clandestineradio.com*, which at press time included numerous articles about U.S. military broadcasts and radio broadcasts by both sides of the conflict inside Afghanistan.

Tom Vernon is a multimedia consultant working in Philadelphia.

Reach him via e-mail to TLVernon@blazenet.net.

★ ★ ★

We've all wished for an extra hand now and then, but who would have thought the lowly clipboard would come to our rescue?

Chris Kelly, CE of the Clear Channel group in Salisbury, Md., makes sure there are clipboards in his shop, toolbox and transmitter sites.

The metal clip does a great job of securing both audio and RF connectors so they can be safely soldered, as seen in Fig. 4. Squeezing the connector in the jaws of a vise, or worse yet, a desk drawer, will only

Fig. 4: It's a clipboard. It's a third hand.

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.

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World Radio History

193rd

▶ Continued from page 18

Although all of the 193rd's aircraft were deployed, officials allowed a Radio World reporter to walk through the full-scale mockup of the rear of the plane, used for training purposes.

While the type of gear used for broadcast is declassified, some details of the installation remain secret. Most notable are innovations used by the Rockwell engineers to get all the transmitters to work harmoniously in such a cramped environment.

When one considers some of the interference and intermod problems that have arisen from recent co-location projects, the task of operating several frequency-agile transmitters in such close proximity on board an airplane becomes all the more impressive.

'Commando Solo' is a modified Hercules EC-130E transport built by Lockheed. The 193rd maintains six at its headquarters.

Rigorous maintenance

AC power fo[r] -board broadcast gear comes from th[e] aft's four Allison turboprop engines. [E]ach has a 90 KVA generator attached, [p]roviding 220-volt, three-phase power [a]t 400 Hz. Three converters change the [4]00 Hz power to 60 Hz AC for the rack-m[ou]nted equipment, while the transmitters and [air] conditioning equipment have 400 Hz [tra]nsformers or power supplies.

The total flya[way] cost for the EC-130J is more than $90 [mil]lion per aircraft.

In-flight equipm[ent] failures are virtually unheard-of on the [Guard]'s Hercules aircraft due to the rigor[ous] maintenance program, according to m[ilitary] sources. Once every 18-24 months, [a] C-130 is brought in for a comprehe[nsive] maintenance overhaul. During th[is] most of the broadcast equipment [is] moved, checked out and recalibr[ated] before the plane is returned to se[rvice].

After air str[ikes] cleared Afghan territory of fixed anti-[aircraft] weapons, a threat to the EC-130s [and] other U.S. aircraft remained from [hand]-held devices such as the Stinger m[issile]. Each of the 193rd's planes are able to deploy flares and metal chaff as a defense against such attacks. Broadcast flights over hostile territory also were protected by fighter coverage.

Due to the small number of airplanes used and the unique nature of the 193rd's equipment, the Air Force has no training program for the operation and maintenance of the broadcast gear on these special Hercules aircraft. Local Guard personnel have developed their own intensive nine-month training program for the group's equipment, which includes classroom instruction, computer-based training, hands-on experience in a simulator and actual operation of the equipment during training flights over the Atlantic.

Crews occasionally are evaluated for their proficiency with the equipment via unannounced spot inspections during routine flights.

It may come as a surprise, but there is virtually no cross-pollination between employees of local radio and TV outlets in central Pennsylvania and the Guard personnel on duty with the 193rd.

All who serve have different jobs in civilian life, only maintaining broadcast gear about one weekend per month. This situation might be explained in part by the fact that for much of its existence, the mission of the 193rd has been cloaked in secrecy.

Although the group traces its origins to a fighter squadron formed in 1942, its current mission of psychological/informations operations, or PSYOP, began in 1968, and remained classified until 1989. Over the years, the 193rd carried out secret missions in Vietnam, South Korea, Panama, Puerto Rico, Saudi Arabia, Egypt and Kuwait.

As word of the 193rd's unique mission spread in military circles, the unit became involved in Air Force, Navy and NATO operations and exercises. Threatened with elimination by Congress during a series of military budget cuts, the 193rd decided in 1989 to "go public" about its important mission. It was spared the congressional ax, and remains a vital part of the Air Force Special Operations Command, according to its supporters.

Beginning in 1968 with four Lockheed C-121 Super Constellations equipped with radio and NTSC black-and-white television transmitters, the 193rd updated its equipment as technology improved. In 1977, the aging Constellations were replaced with the newer C-130 Hercules aircraft, and color television capability in all formats was added.

Expanding arsenal

Recently the 193rd evaluated a new type of phased array satellite communications antenna. Such a device makes possible in-flight reception of satellite television broadcasts, adding another means to rebroadcast PSYOPs.

Delivering the U.S. military's message to the Afghan people and Taliban soldiers involved several military organizations. The material broadcast by the 193rd was written and produced by the Fourth Psychological Operations Group in Fort Bragg, N.C., which also was responsible for the content on leaflets dropped by an Air Force unit that uses C-17 cargo aircraft.

An operator verifies video quality of the aircraft's TV transmitter.

One of the problems of broadcasting to an area such as Afghanistan is that few people have radios. The U.S. government decided to purchase wind-up receivers to be air-dropped to the local population.

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Wo[rk]bench

▶ Continued [from page] 20

cooling oil.

The curves c[hange] at approximately 350 W for 33 min[utes].

Power	X[yl]ar oil	Mineral oil
1000 W	9 min	1 min
750 W	13 min	7 min
500 W	23 min	18 min
250 W	45 min	45 min

Thanks to Jeff Zimmer with Family Stations KECR(FM) and KFRN(FM) for providing the reference information for this reasonably priced piece of test equipment.

★ ★ ★

We've all wished for an extra hand now and then, but who would have thought the lowly clipboard would come to our rescue?

Chris Kelly, CE of the Clear Channel group in Salisbury, Md., makes sure there are clipboards in his shop, toolbox and transmitter sites.

The metal clip does a great job of securing both audio and RF connectors so they can be safely soldered, as seen in Fig. 4. Squeezing the connector in the jaws of a vise, or worse yet, a desk drawer, will only result in solder spatters on your pants.

Chris has chosen both a standard-sized clipboard, as well as a smaller version to keep in the toolbox.

By cutting a small groove along the perimeter of the clipboard, the connector shells won't roll off. By keeping the shells on the clipboard as well, there's less of a chance that you'll solder the wires and forget to slip on the connector shell.

But, hey, who does that?

Fig. 4: It's a clipboard. It's a third hand.

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World Radio History

GM Journal

Radio World — Resource for Business, Programming & Sales — February 1, 2002

WCBS Scores Yankees
YES NETWORK
See Page 30

RAB2002: Bottom Line Is Focus

by Laura Dely

Radio suffered its first drop in overall revenue in a decade last year. With sales estimated to be down 8 percent compared to 2000, and with the recession and the events of Sept. 11, the industry could use a little cheering up.

The Radio Advertising Bureau hopes to lift some spirits in Florida this month at the RAB2002 Conference at Disney's Coronado Springs Resort.

Lindsay Wood Davis, RAB executive vice president of meetings, is organizing the conference. Davis said this year's conference will be about rediscovering the magic of radio.

"Given what we've all been through, the RAB's choice of the Disney World location seems to hold now," Davis said.

"They'll make money as soon as they walk in," Davis said of the attendees. The RAB2002 slogan is "You come, you learn, you make money. Period."

The show starts Thursday, Feb. 7, and runs through Sunday, Feb. 10.

Nuts and bolts

Sessions will begin at noon on Thursday with 24 industry experts in a set of four consecutive "Consultants' Showcases." Each showcase will run one hour and 15 minutes and begin with a panel of radio consultants with a moderator from one of the industry trade magazines.

Tom Taylor, editor of "M Street Daily," will lead off the first "Showcase" block with "Keeping Your Sellers Focused on Client Needs."

In the remaining time set aside for this first block, attendees will hear from Jim Taszarek, president of TazMedia, on "The Best Quota Busters," and Irwin Pollack, president of the Irwin Pollack Co., on "20 Super Shrewd Sales Secrets for the Economic Recovery."

Also, Frank Kulbertis, corporate director of sales for the Adventure Radio Group, will address "Cluster Management Systems"; Dave Van Dyke, president, Radio Mentor Inc., will talk about "How to Manage Managing"; manager, trainer and motivator Sean Luce will talk about "Leading and Managing in a Changed World" and Bruce Biette, president, Biette Sales Management, Training & Consultation, will address "The Recognition Factor."

The line-up of consultants and panel session leaders is available at *www.rab.com*.

Cramer will be one of five keynote speakers at the conference. Cramer is a financial guru who writes TheStreet.com column "Wrong." Cramer is also the host of a radio financial talk show, "RealMoneyTalk," syndicated nationally by Premiere Radio Networks. He will talk at Saturday's breakfast about "How to Navigate the Market."

"He pulls no punches — he can be a wild speaker," Davis said of Cramer. "This will be for general managers with little or no financial background who are now working for a publicly traded company and need to understand Wall Street."

See RAB, page 30 ▶

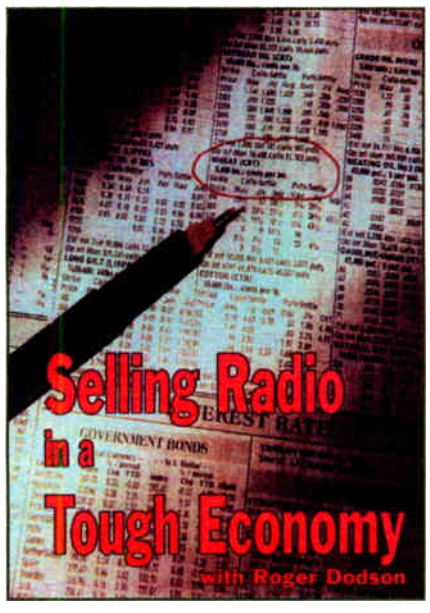
Roger Cutsforth

STATION SERVICES

Help for Tough Times

Radio Advertising Bureau Senior Vice President of Training Roger Dodson offers tips, information and inspiration in the training video "Selling Radio in a Tough Economy."

The video addresses how to help local advertisers to understand the "hows" and "whys" of advertising in a down economy.



Among other points, Dodson explains that advertisers who have the wherewithal to continue advertising in an economic slump are likely to increase their market share, which they likely will retain when the economic downturn ends.

"Firms that maintained advertising during a recession had a growth of 275 percent at the end of a recession, according to a study by Meldrum and Fewsmith," Dodson said.

The cost of "Selling Radio in a Tough Economy," is $99 for RAB members. To order, call the member service line in Dallas at (800) 232-3131. Non-members can call the same number for more information.

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World Radio History

MANAGEMENT CORNER

Radio's Mettle in Turbulent Times

by Vincent M. Ditingo

If Sept. 11 proved one thing, it is that radio could well be the most resilient and *effective* mass medium during troubled national and economic times.

It's the one medium that American consumers turn to in a national crisis and the one that advertisers, especially brand-dominant marketers, should continue to support in an economic downturn, according to recent separate studies from Arbitron and Interep.

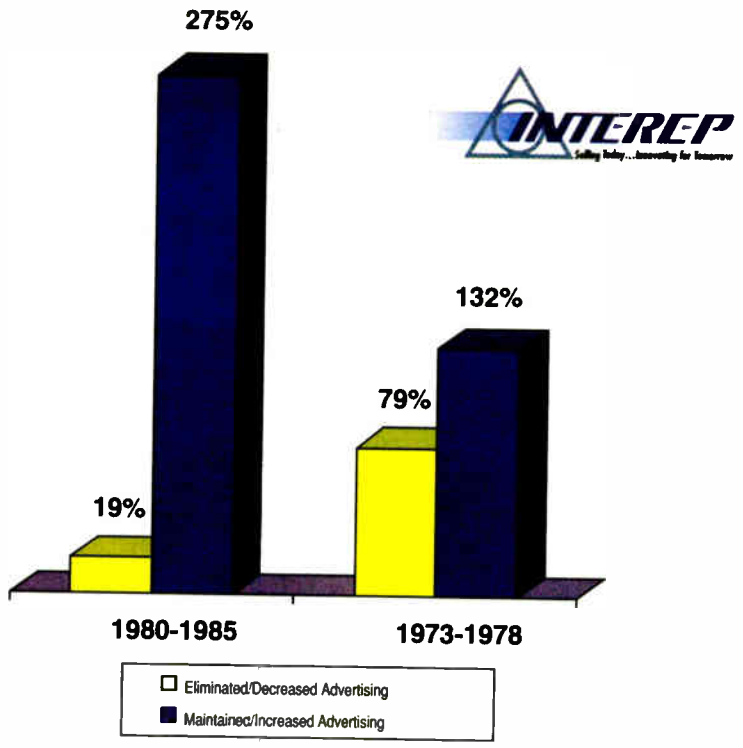
Radio's up

The Arbitron study, "Radio's Role During a National Crisis," reveals that more than one-third of Americans listen to more radio now than they did before the deadly air attacks on America.

Arbitron's findings are based upon 1,500 telephone interviews conducted from Oct. 19 through Nov. 5, 2001 regarding media usage since Sept. 11 and perceptions of radio's response to the attacks.

The results show that increased radio usage is evident especially among black and Hispanic listeners.

In general, most American listeners — 95 percent of those surveyed — said their favorite station's programming was "appropriate" on Sept. 11 considering the tragic events unfolding in the country. Consequently, the vast majority of American consumers, 94 percent, tended to remain loyal to their favorite stations through the continuing crisis.



Historically, companies that maintain or increase ad spending during a recession and for the following three to five years averaged significantly higher sales growth than those that eliminated or decreased advertising. Percentages show overall sales growth.

Even with a year-long lackluster economy exacerbated by the attacks on America, the Arbitron report indicates that nine of 10 Americans were making everyday purchases as planned, including major purchases.

Consumer bonding

Additionally, one in five music station listeners said they had participated in their favorite station's fundraising efforts, underscoring local radio's extensive reach in the community. Meanwhile, the Arbitron study showed that younger adults (12-34-year-olds) are more likely to patronize a retailer when it advertises its desire to contribute to a relief fund for the victims of Sept. 11.

While the majority of those surveyed agreed that stations should continue to run contests during the national crisis, almost half of the respondents noted that humorous advertising copy may not be as effective as it had been in previous years because their perception of "what's funny" has changed.

"In addition to its continuing role as a source of news and information, radio can also provide an important diversion from the problems of the world," stated John Snyder, Arbitron's manager of national radio sales.

"With proper care, that relationship can become even closer as people look to radio for both distraction and timely information."

This study should serve as a wake-up call to marketers not to underestimate the powerful, motivating role of radio among consumers in rough economic times.

An industry white paper compiled by Interep, drawing upon marketing research studies during soft economies dating back to the 1940s, concluded that advertising in a recession will, among other things, yield higher sales and income in the years immediately following the recession than companies that cut advertising budgets.

The Interep study should provide both radio broadcasters and media buyers a blueprint for revising promotional and advertising budgets during the first half of 2002, which many economists project will remain sluggish.

The paper, "The Power of Advertising Through Recession," highlighted a study conducted by McGraw Hill Research. The firm analyzed 468 industrial companies during the 1974 recession and 600 industrial companies in 16 industries for the 1981-82 recession.

Firms that increased or maintained their ad spending averaged significantly higher sales growth during the recession and for the next three to five years than those firms that decreased advertising.

For example, companies that were strong advertisers during the 1981-82 recession experienced a 275-percent increase in sales in the following years (through 1985) compared to 19-percent growth for those companies that eliminated or lowered their ad spending.

The Saturn factor

The Interep paper cited more recent examples of positive marketing results when advertising during a recession including Saturn's rapid rise to the top of the small-car market.

During the height of the 1990-92 recession, General Motors spent $120 million on media advertising for the launch of the new customer-friendly model line.

Some $89 million of GM's total ad expenditure for Saturn, primarily designed to compete with the foreign small-car market, was made in 1991, when total automotive advertising expenditures were down 3 percent.

According to the Interep paper, Honda Motors' ad spending, one of Saturn's main competitors and among the top companies in automotive sales at the time, remained flat in 1991 "despite mounting pressure from Saturn's aggressive appeal to the small-car market."

As a result, after only a year in the marketplace, Saturn began selling more cars per dealer than all other automakers, including Honda.

"Continuing to maintain or increase advertising during a recession solidifies a company's customer base, takes business away from less-aggressive competitors and positions a company for future growth during a recovery," the Interep report stated.

This kind of proactive strategy is essential because radio has proven brand imagery capabilities among loyal niche audiences.

Case in point is the results of a 1999 focus group study conducted by the Pre-Testing Co. on radio and television commercial recall.

According to the Radio Advertising Bureau, after experiencing an equal number of radio and television commercial spots, participants were able to recall key messages conveyed radio commercials more than half the time (51 percent) compared to just 38 percent for television's key commercial messages.

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

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World Radio History

PROMO POWER

Marketing With a Slashed Budget

by Mark Lapidus

"We've never had much of a marketing budget, and I'm afraid that this year we're going to have even less money."

Although you're probably thinking that a general manager said this to me last week, I actually heard this statement for the first time in the 1970s.

Truthfully, radio has rarely invested enough marketing dollars to promote its own product. One recent observer of this phenomenon — a buying agent — recently remarked to me that he finds this odd, considering that we in radio are the ones who tout the power of advertising.

Nonetheless, you will no doubt be hearing that perennial mantra this year. Let us explore ways of marketing your station with little or no dough.

Television

Trading radio airtime for TV time has long been No. 1 on my hit parade. Until recently,this has proved impractical for many radio stations because of its impact on "real money" that TV stations spend on radio advertising.

However, TV has now entered consolidation, and many station clusters are placing fewer dollars on radio. Some follow radio's example of cross-promoting programs on sister TV stations. Practitioners claim that this mitigates the hit their media budgets suffer in such trades. This may create a new opportunity for you to trade airtime with TV stations.

Plus, a TV station may find that placing spots on your stations as a cluster now makes more sense for targeting their various shows.

Let's move on to print.

Unfortunately, print as a consumer medium typically is over-priced due to a lack of competition; most cities have only one or two major newspapers. If you can swing a trade deal, be sure it's large enough to build in several ads to run in different sections each time you place it.

Remember, just like radio, many people look only at specific sections of a newspaper. If you want to hit each section, you really have to negotiate a large enough trade to do so.

Don't skimp on the creative by having a sales assistant do it who happens to know Power Point. Perhaps you deal with an agency that has a graphic artist they'll trade you for a few hours of work. Or maybe somebody who works developing your Web site can help you out.

And just like TV creative, it's important that you test anything you make with a panel of regular folks. Mall intercepts are inexpensive. Target people at large events — like basketball games — who are just standing in line. You'll be surprised at how much you can learn.

Does anyone trade direct mail? Not that I know of. But there are many in the direct-mail business that would be happy to have you for a partner. Every city has coupon mailers who love to do trade with radio stations.

Again, be careful here — they may be overpriced. Try to break it down to a cost-per-household to see if it's worth your attention.

Radio has rarely invested enough marketing dollars to promote its own product.

Non-profit organizations also send a lot of direct mail. Perhaps a non-profit with which you already work with does two or three mailings a year and can include a piece for your station.

If they balk, the piece could carry the label "Paid Advertisement" so their constituents won't think they're playing media favorites.

Telemarketing

Would you be happy hitting 200 answering machines a day? It can be done.

How can you do this on the cheap? One word: interns.

Here's how: Record your message on tape and grab a phone book. The intern starts calling numbers. When they get an answering machine, the intern leaves your message.

Note that this work has to be supervised — you're on another line listening in once in a while to spot check. Otherwise, you'll never know how much is getting accomplished.

So many articles have been written about database marketing that I'm not going to attempt to cover it here.

Remember, though, that e-mail marketing is not free. It takes a major investment of time to collect e-mail addresses and if you're using them improperly (read: e-mailing ludicrous offers from clients), your unsubscribe rate will be high, ultimately affecting your reach.

Unfortunately, this is an all too-common practice in radio.

Mark Lapidus is president of Lapidus Media. Contact him via e-mail to mark lapidus@yahoo.com.

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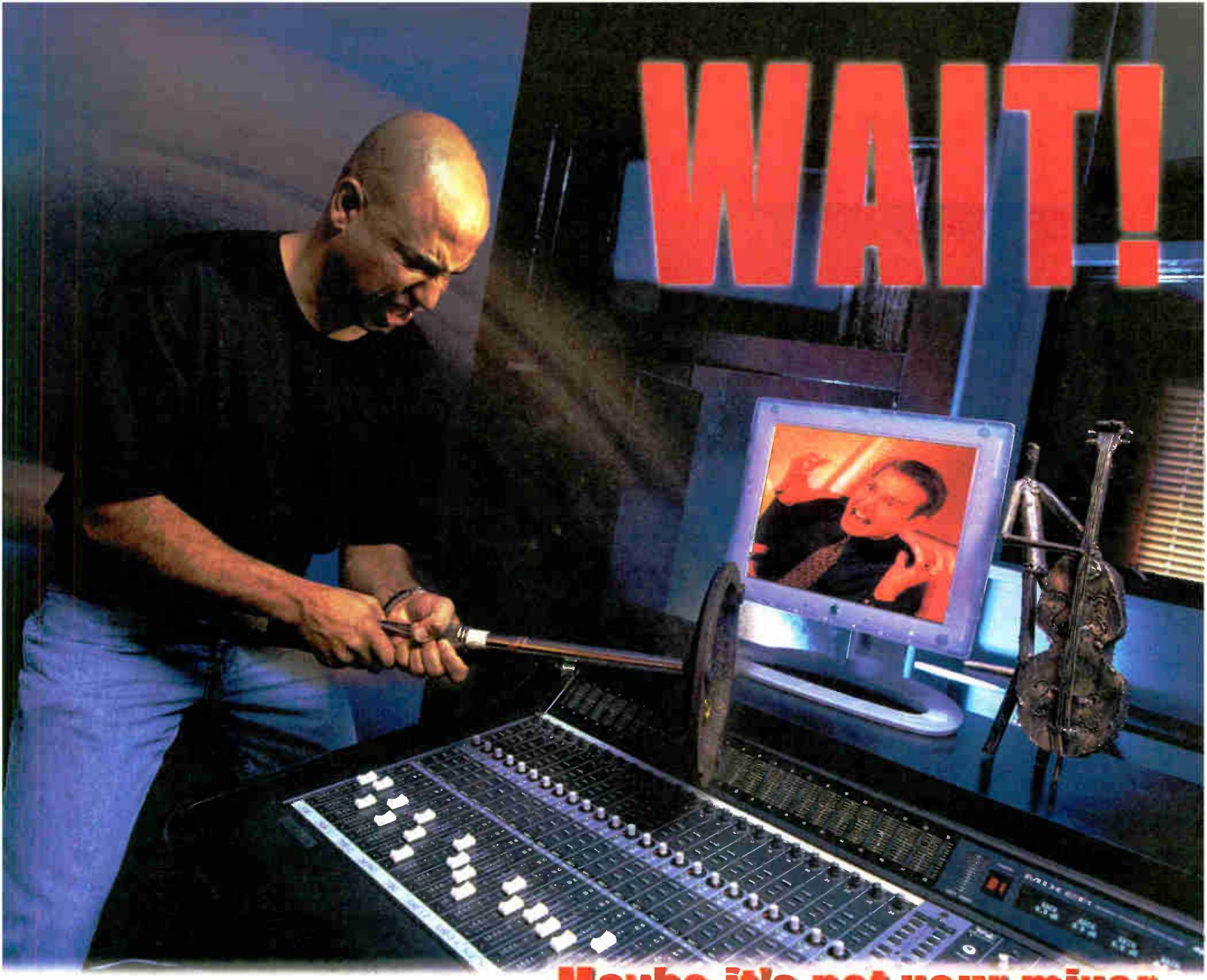

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Renowned 14 Channel Mixer

FREE 5 XLR Mic Cables

MACKIE.

The incredibly popular 1402VLZPRO is an excellent production audio mixer. Superior microphone preamps deliver even lower noise and higher headroom than Mackie's previous design. The 14-channel mixer offers 6 mic-preamps, 4 stereo line inputs, easy-to-control 60 mm linear faders, separate ALT/cue bus, headphone matrix, 3-band EQ and more. BSW is now including **5 FREE XLR mic cables** (a $49.00 value). Hurry, call today!

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BSW with your console purchase. Offer expires

R17-10 List $4,355.00 ONLY $3,695.
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FREE Shock Mount!

Stand Out on the Dial

This classic dynamic microphone offers warm reproduction of lows and outstanding high-end with a frequency response of 30 Hz to 17 kHz. Besides the very rugged Sennheiser construction, the MD421II features a five-position bass roll-off switch and cardioid pickup pattern. Right now, BSW is including the MZS421 suspension shock mount FREE with your purchase (a $50.00 retail value). A stand clamp is also included.

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506E List $529.00 **ONLY $299.00**

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ONLY $8.00 ea. **ONLY $69.00** (10-pack)

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Keep those pesky fingers off your gear. Each security cover is 1" deep to allow for protruding knobs. Small holes allow visual indication of metering etc.

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You'll be pleasantly surprised at the first rate sound from these very well built, very inexpensive mics! Includes a hard case for each and an on/off switch. An unbelievable deal!

You can also purchase multi-colored windscreen 5 packs for only $24.00!

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WSS12 WINDSCREEN (pack of 5)
ONLY $24.00

These durable mic stands also include a mic adapter and cable clips. An incredible bargain exclusively from BSW.

M5200PKG (pack of 5 mic stands)
ONLY $89.00

World Radio History

RAB2002

▶ Continued from page 23

Other keynoters include Capt. Al Haynes, who will speak about crisis management at Friday's breakfast.

In 1989, Haynes demonstrated his expertise in crisis management when he piloted a crippled jumbo jet to a crash landing in Sioux City, Iowa, in which 184 people survived.

Davis said the skills the captain deployed during Flight 232 — communication, preparation, cooperation and execution — can be applied by radio sales teams in turbulent times.

Customer service

Timothy E. Hoeksema, chairman, president and CEO of Midwest Express Airlines, has been invited to speak on customer service at Saturday's lunch.

Davis, a Midwest Express frequent flyer, said Hoeksema understands how to provide customer service and its benefit to his company's bottom line.

Radio salespeople can apply Hoeksema's techniques to their clients, Davis said. "It's all a part of how we can build our business," Davis said.

At Friday's lunch, Dick Orkin, the talent behind the radio serials "Chickenman" and "The Tooth Fairy" and cowboy-in-chief at the Radio Ranch in Hollywood, Calif., will discuss "How to Revolutionize Radio Advertising with the Simplicity of a Story."

Davis said Orkin is a big part of the conference. Not only will he deliver his keynote address, but Orkin will also consider the question, "Do You Know Who Your Customer's Customer Is?" in a session of that title on Friday afternoon.

The importance of creativity in radio is also the subject of a session that Davis said is notable: "The Magic of Radio" is presented by Roger Cutsforth of Roger Wilko Productions.

Cutsforth said his company's session will be presented in period costume "set in the time of King Arthur, Lady Guinevere, Merlin the Magician and the Arthurian legend of Camelot."

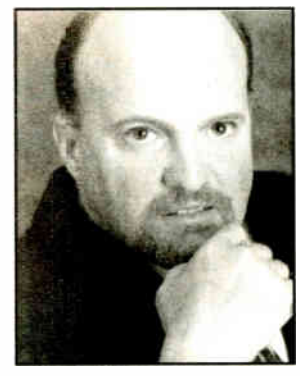
Using genuine case studies, Roger Wilko will demonstrate how radio creativity has increased the "spend" on a sale, secured repeat business and generated new sales.

Orkin and Roger Wilko will collaborate in one of the RAB's "Grad Schools," the two-and-a-half hour sessions of intense training. Their Grad School is titled "Utilizing Your Creative Engine," which will take place Friday morning. Dan O'Day, the well-known radio consultant, will moderate the Creative Grad School.

Davis said this year's Grad Schools have been tweaked to focus in-depth on four topics: "Selling in a Tough Economy," "Finding, Hiring and Retaining Sales Superstars" and "Developing Total Leadership," in addition to the Orkin/Wilko Grad School.

Capt. Al Haynes

Timothy E. Hoeksema



Jim Cramer

Before Cramer's Saturday breakfast keynote speech, Davis said, "The Essentials of Finance" workshop brings together an all-star cast to be led by Entercom Communications Corp.'s CEO Steve Fisher Friday afternoon.

The goal is to provide attendees with a working understanding of finance.

There will also be sessions devoted to Hispanic radio, the Internet, small-market broadcasters and non-traditional revenue. Attendees may chose any sessions, workshops or Grad Schools from the program, which will be updated continuously until the conference begins. To suit various schedules, the RAB will offer early-bird workshops before breakfast and late at night.

Registration for the RAB2002 Sales, Management and Leadership Conference is available at *www.rab.com* or you can make credit card reservations by calling Gail Steffens in New York at (800) 917-4269.

Holding costs down

The RAB this year will maintain "early-bird" rates (which normally increase twice during the registration period) of $495 per individual RAB member, $795 for non-members and $395 each for two or more members attendees, or $495 for two or more non-members.

At press time there were rooms available at the show's headquarters, the Disney Coronado Springs Resort Hotel. The RAB special rate is $129, which must be made through the RAB when registering.

The hotel rates will be in effect for a few days before and after the conference so attendees can enjoy the Walt Disney World Resort with their families.

Other nearby hotels within the Walt Disney World complex include Disney's Dixie Landings, Disney's Caribbean Beach and Disney's Port Orleans French Quarter resorts.

For more information on the sights in Orlando and special offers for RAB members, visit *www.rab.com/rab2002/vacation.html.*

The pilot of Flight 232 in the 1989 Sioux City air crash is among the speakers.

Yankees Move to WCBS(AM)

The New York Yankees games will be broadcast on Infinity Broadcasting Corp.'s WCBS(AM) beginning with this year's spring training.

For 21 years, ABC Radio Network's WABC(AM) had been the radio home of the Yankees.

WCBS is an all-news station that covers the greater New York region. The company struck a five-year deal with the Yankees Entertainment and Sports Network, a cable channel scheduled to launch in March. The YankeeNets, a conglomerate that manages the Yankees, New Jersey Nets and New Jersey Devils, owns the YES Network, with Goldman Sachs & Co. Terms of the agreement were not disclosed, but published reports put its value at $45.75 million.

WCBS' sister station, WFAN(AM), will provide sales, marketing and production support for the broadcasts.

"The New York Yankees are a tremendous addition to Infinity's roster of the biggest names in sports, news and entertainment," stated Farid Suleman, Infinity president and CEO.

WCBS NEWSRADIO 880

"YES Network is delighted that WCBS(AM) will be our radio partner for all of the New York Yankees games in the upcoming season," stated Leo Hindery, Jr., chairman and CEO of the YES Network.

YES NETWORK

"WCBS and its parent, Infinity Broadcasting, will add to the tradition of excellence of the New York Yankees on radio. We are grateful for the relationship."

Games are also to be broadcast on a Spanish-language New York station that was to be announced later.

World Radio History

Net Radio Grows, But Ads Don't

by Frank Beacham

Listeners are starting to catch on to Internet radio. The question, proponents of the new medium ask, is when will the advertisers follow?

Optimism ran high for Net radio at the recent Streaming Media East conference in New York City. MeasureCast statistics reported that the total time spent listening to streaming broadcasters increased 397 percent since the beginning of 2001, a statistic that energized a panel of key Net radio players.

Richard Fusco, a new media consultant who moderated a panel on Internet radio, said new listeners are being drawn to Net broadcasts because it's "where unique, stimulating and creative programming is available."

He compared the new medium to the era of free-form FM radio in the late 1960s.

"FM radio now, for the most part, is predictable, strictly formatted and stale like AM radio was in 1968," Fusco said. "The stage is set for the next evolution of radio programming."

Zack Zalon, general manager of top-rated Net broadcaster Radio Free Virgin, said improved audio quality, wider programming options and interactivity attracts new listeners to Webcasts.

Fresh

"There's a whole slew of music genres that you may not be able to hear on FM radio," he said. "Since you are hearing the music simultaneously with thousands of others on the Internet, the interactivity offers the ability to share information and build communities around the music."

Greg Morrow, executive producer at Launch Media Inc., a streaming music service, said listeners are attracted to powerful personalization features combined with a broad array of music options.

"On terrestrial radio the playlist has shortened. This a vacuum the Internet is filling. Internet radio offers very specific programming from around the world that you won't get on terrestrial stations."

John Jeffrey is executive vice president of Live365.com, a streaming music services provider. He said FM radio has become too homogeneous.

Photo by Frank Beacham

The Internet Radio panel at the Streaming Media East Conference: From Left, John Jeffrey, Jonathan Potter, Dennis Mudd, Zack Zalon and Greg Morrow.

"On a drive across the country, I used to be able to hear something different from community to community," he said. "Now I hear the exact same playlist everywhere."

The ability for Live365.com users to program personal radio stations, Jeffrey said, has created a self-perpetuating body of content for listeners.

"A user will create a unique personalized station — say Kansas City jazz — and then share it with others. We offer the tools for users to create their own Internet radio station, with people coming together to define the content," Jeffrey said.

Fusco released data to document the increased listenership. According to the latest Arbitron/Edison Media research from July 2000 to July 2001, the number of U.S. consumers, age 12 and older, who have accessed streaming media rose from 67 million, or 30 percent of Americans, to 78 million or 34 percent.

MeasureCast data noted the largest single age group listening to Internet radio is 25-34 year-olds (30 percent). Listeners under 35 constitute 56 percent of the Net radio audience; 26 percent are younger than 25, and 7 percent are over 55. And men predominate the Net radio audience: 69 percent of listeners are men; 31 percent are women.

So far, the panelists lamented, Internet radio has not attracted the base of advertisers they think the medium deserves.

Jonathan Potter, executive director of the Digital Media Association, a Webcasting industry association, said emerging streaming businesses need to focus on who listens to the medium.

"The Internet music listener is a higher-value listener to a record company than a traditional radio listener," Potter said. "If you break it down to a per-listener, per-hour value, the Internet has more intense listeners who are more focused on learning about the music and buying it than the traditional guy sitting on the beltway in Washington listening to traffic reports on the way to work."

He noted that Internet listeners include an office crowd not being peppered by media, a college crowd with discretionary income and, at home, a higher-income broadband crowd.

"We have a more-clustered, high-quality audience," Potter said.

Optimal audience

Dennis Mudd, CEO of MusicMatch, makers of an online jukebox service, said his customers purchase 20 music compact discs on average each six months.

"We have a music-loving, music-*buying* customer. They use Internet radio to discover what music they like and what CDs they purchase. It's the optimal audience for selling music."

In another good omen for the industry, new peer-to-peer bandwidth sharing technologies — from companies such as Blue Falcon Networks of Los Angeles and ChainCast Networks of San Jose, Calif. — are helping to lower the cost of large scale streaming media.

"If you have hundreds of thousands of people listening, you are pushing terabytes of content. That's very expensive," said Zalon. "Our start-up costs are relatively small, but it costs us more and more as we get popular. It's the opposite for radio stations. Once they buy all the equipment and put up the tower, it's almost free to reach increasingly larger numbers of listeners."

Radio Free Virgin, said Zalon, is now working with Blue Falcon Networks, a pioneer in using peer-to-peer distributed networking for streaming media distribution. The company promotes the ability to scale audio and video streams to larger audiences more cost effectively by reducing bandwidth requirements and

See STREAMING, page 36 ▶

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World Radio History

WEB WATCH

Majors Move Catalogues Online

AOL's One-Click Radio Player and Major Labels' Online Services Juice Net Radio Now

by Craig Johnston

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

In mid-January, the **Copyright Arbitration Royalty Panel** rejected the **Recording Industry Association of America** and the **broadcast radio industry**'s joint filing that sought approval for a streaming music rates agreement. The terms of the scuttled December agreement were to set the rates that the **RIAA** and **radio** had settled upon in negotiations apart from the **CARP** proceedings.

The lengthy dispute over payments terrestrial broadcasters will pay to the record labels for the music broadcasters stream over the Internet will continue to be examined by CARP, which is expected to announce its decision on the rates in March.

The **U. S. Copyright Office** stated in its decision that all parties to the dispute had previously agreed that CARP would not consider any agreement or settlement until it completes the preparations of the final report.

The parties were expected to resubmit their settlement for CARP's later consideration, according to the Copyright Office.

But **Rick Wolf**, legal counsel for **Clear Channel**, one of six radio giants joined in the settlement attempt, said, "We were disappointed that the Copyright Office decided not to proceed with the interim regulation and we are pursuing other means to try to bring about the settlement."

But the fact that the two sides are trying to work it out among themselves shows some mutual fear that Copyright Office-mandated terms may serve neither party well.

Yogi Berra

Web Watcher notes that the game isn't over until it's over, to crib a **Yogi-ism.**

Both sides have a lot riding on the arbitration and negotiations.

The rates determine payments that must be paid retroactive to 1998, the date of the **Digital Music Copyright Act.**

The retroactive part of the **DMCA** has been an enormous concern to radio broadcasters; it came as a surprise to radio stations that have never paid performance fees to the RIAA and never imagined they would have to pay for the music they streamed.

Web Watcher notes that Internet-only music streamers continue separate arbitration proceedings with the CARP, which is scheduled to announce its findings in February.

Big boys make moves

Web Watcher surmises that radio stations settled with the labels because of the competition radio faces from the labels' recently launched **online subscription services**.

At year's end, four online subscription-based services launched or announced they would soon launch.

Two are based on the major label consortium, **MusicNet**.

MusicNet is a partnership between **RealNetworks Inc.**, **AOL Time Warner Co.**, **Bertelsmann AG**, **EMI Group** and **Zomba Recording Corp.** Both Real and AOL launched similar online subscription music services in December.

RealOne Music and **AOL Presents MusicNet 1.0**, the two Web giants' subscription services, offer **100 streams and 100 downloads for $9.95 per month**.

MusicNet allows members to provide access to legally download **75,000 tracks** from its major label partners' collective catalogues.

Artists such as **Christina Aguilera**, **Backstreet Boys**, **Eric Clapton** and **Britney Spears** are included in the MusicNet offerings that both RealOne Music and the AOL service provide.

Radio@AOL

AOL began beta testing its online subscription service in December; it was expected to launch commercially in the first quarter 2002. RealMusic One launched commercially in December.

In addition to monthly "rentals" of songs from its MusicNet partner's catalogues, RealOne Music also provides access to **48 commercial-free online radio** channels. **Radio Active Media Partners Inc.**, a b-2-b custom audio provider, provides the content for the channels.

Pressplay

Also in December, just weeks after the MusicNet partners launched their services, the other two major label companies, **Universal Music Group** and **Sony Music Entertainment**, launched an online subscription music service, **Pressplay**. Included is music from the two partners as well as the EMI Group and some independent labels.

Pressplay offers **200 streams and 20 downloads per month** in its basic **$9.95** subscription.

While Real's service limits downloaded music to playback only on the computer that did the download, Pressplay subscribers can "burn" select tracks onto a CD, which gives them the opportunity to play it on portable CD players or home and car stereos.

But the burn expires after 30 days if a subscriber doesn't renew. Real also rents its downloads in 30-day increments that expire if not renewed.

If the labels have MusicNet and Pressplay online subscription services that provide the best-known artists, thus far only **Listen.com** has picked up independent labels through a licensing agreement with the **Harry Fox Agency Inc.** — the licensing subsidiary of The National Music Publishers' Association, Inc.

Listen.com launched its Rhapsody service in December; it includes unlimited access to the catalogues of indie labels **26.2 Music**, **Ark 21 Records**, **Eroica Classical Recordings**, **GNP Crescendo Records**, **JamDown Records**, **Jazzateria**, **LoveCat Records**, **Slimstyle Records and Tinder Records** as well as access to every musical work authorized by participating publishers the HFA licenses. HFA represents 27,000 music publisher principals, which in turn represent the interests of 160,000 songwriters.

For **$5.95 per month** its basic **Sampler** service offers unlimited playback of either a classical catalogue or a more eclectic sampling, such as blues, rock and country music.

Rhapsody's **Sampler Plus** package combines both offerings for **$7.95 a month**.

All versions of Rhapsody offer free access to **50 Internet radio channels** that are provided by an in-house staff of 18 programmers at Listen.com.

Web Watcher has been told from time to time that size doesn't matter, but he believes AOL had an itty-bitty advantage in its **30 million-plus-user universe** when the company launched **Radio@AOL**, its Internet radio service last October.

According to Nielsen/NetRatings, in October, more than **2.2 million** of those members accessed one or more of the 100 channels of music, news, sports and entertainment the service offers.This appears to be a huge number of individuals sampling Radio@AOL, relative to other top-rated channels.

For instance, **MeasureCast Inc.** reported that in December 2001, **all 993 stations** that it measures **collectively streamed to 2.03 million people worldwide**.

Web Watcher suspects Radio@AOL's **built-in, one-click** position in the new AOL 7.0 software made it easy for first-time Net radio users to sample.

The largest Webcast network was down for four days in December.

Streaming services provider **Live365.com** has led its nearest competitor by **five times the number of aggregate tuning hours** in Arbitron Webcast Networks Ratings reports. On Dec. 3, the company's bandwidth provider, **Cogent Communications Inc.**, refused to provide service to Live365.com's Net service provider, which shut down the network. (Web Watcher has been unable to unmask the identity of the rogue ISP, which was accused of spamming practices.)

Live365.com returned to service Dec. 7, with a new ISP. To atone for the downtime, the network offered its professional broadcast customers a free month of services.

It appears that the company lost no listeners during the outage. Live365.com's **CEO John Jeffrey** told Web Watch that a week after service was restored, Live365.com had the highest simultaneous listener number since before Sept. 11, when there was an unprecedented spike in listenership.

It's easy to understand the recent decision that **Salem Communications Corp.**'s flagship station cluster, **KKLA Communications Group**, made to deploy the technology of the new partnership between **Hiwire, Inc.** and **Blue Falcon Networks**.

Hiwire is an ad-insertion service and Blue Falcon provides distributed streaming network services. KKLA is the charter customer for the new partnership's service.

Hiwire's ad-insertion and ad-targeting system will allow Internet-only commercials to be sold. Blue Falcon's software-based peer-to-peer technology reduces the number of streams that need to be sent from the Web streamer's server by setting up a daisy chain of sorts that reduces bandwidth costs for broadcasters.

Web Watchers will recognize KKLA's Internet-only **Christian Pirate Radio** channel, which appears regularly among Arbitron's top-50 stations in its monthly Internet radio ratings. It is arguably the most-listened-to Christian radio station online.

Four new CPR music channels launched the first week of January: **CPR Kids, CPR Classic, CPR Celebration and CPR Fish Net**. All will deploy the

See WEBWATCH, page 36 ▶

World Radio History

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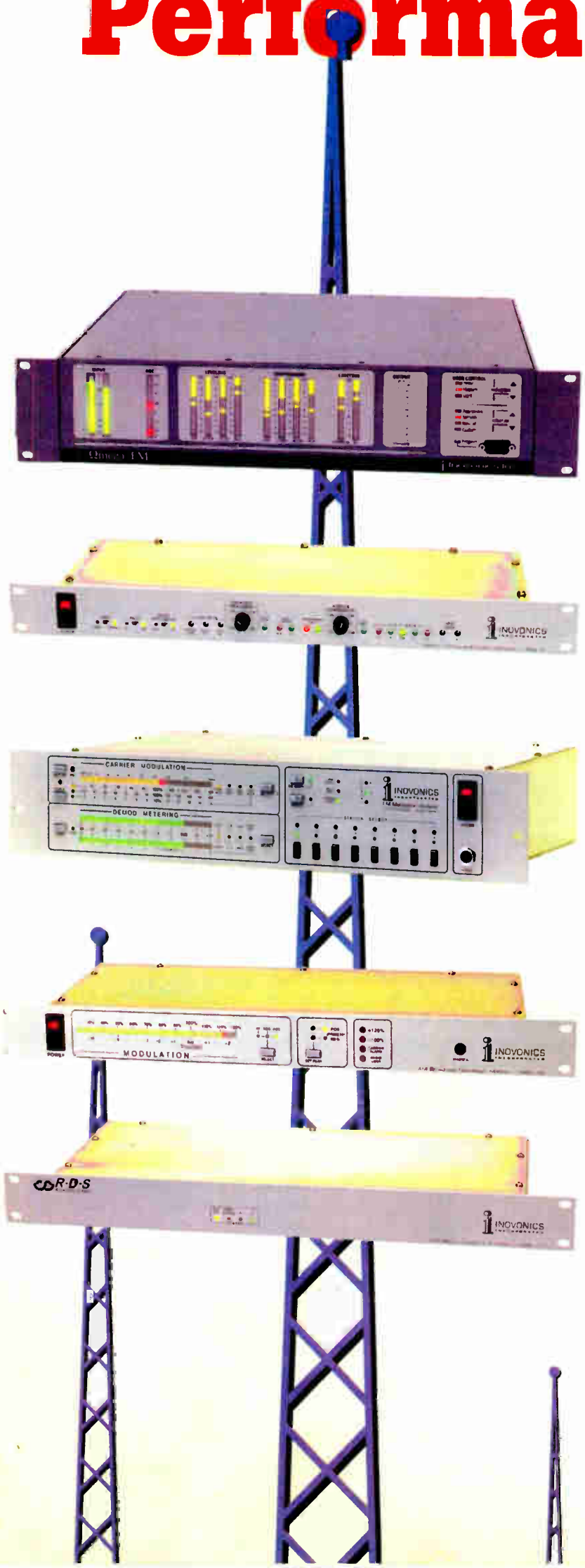

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World Radio History

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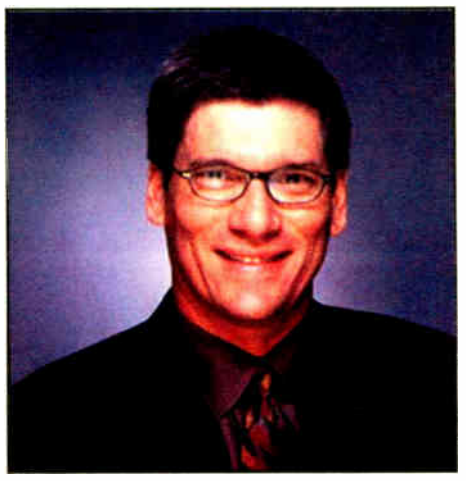


Dan Halyburton

Dan Halyburton is senior VP/GM, group operations at Susquehanna Radio Corp. in Dallas. He began his radio career in 1970, as a production director and air personality at Mission Broadcasting's WWOK(AM) in Miami.

Thirty years later, through similar jobs around the country, he now has responsibility for Susquehanna's Internet radio operations, oversight of the company's technical staff and oversees program directors group-wide.

Susquehanna has 29 stations with 21 brands — several of the stations carry simulcast content. All 21 brands have Web sites and stream their content online.

Unlike many broadcasters, Susquehanna was undeterred by the American Federation of Television and Radio Artists move last April that caused many broadcasters to pull their streams, at least for some time period.

The company engineered an in-house solution within hours of the news that AFTRA had warned advertisers that they would be charged triple rates for streamed commercials.

The fix allowed radio stations to slide music or promotion segments into the spots that featured AFTRA actors. The homemade ad-insertion solution worked well enough, but recently Susquehanna signed Yahoo Radio to provide ad-insertion services, which it found superior following a beta test at several of its stations. Yahoo Radio also is the company's streaming service provider.

Susquehanna is committed to Internet radio. The company is launching a new server farm in York, Pa., that will house the infrastructure its stations need to stream and increase their e-commerce opportunities (see sidebar on page 37).

Halyburton spoke to Radio World reporter Lisa Osborn about Susquehanna's Internet radio strategy and philosophy.

RW: Describe your organization's overall philosophy regarding the Internet.
Halyburton: Our station Web sites are revenue and branding extensions of their local efforts. Our job is to obviously maximize the brand and maximize the revenues.

Fortunately, our efforts to update and manage the sites started a long time ago and our cost of entry was low because of that. They were easily integrated into the day-to-day activities of our radio stations. They haven't cost very much and they've provided a lot of opportunity.

RW: How does your approach to the Net relate to your on-air philosophy — is it an extension of your radio product, or a separate venture entirely?
Halyburton: Very, very local in the approach to everything we do. It's an extension (but) that doesn't mean it doesn't have its own unique opportunities.

Those operations could be standalone. It's really for the stations to decide what to do with their sites. Because we started so early, we didn't pay a high cost of entry. We got very, very favorable deals on our streaming originally with Broadcast.com — we were their first broadcast customer. So the contract with Yahoo has continued. *(Ed. Note: Yahoo acquired Broadcast.com's assets when the company folded in early 2001.)*

On the database side, Susquehanna has been in the database business since 1981, building unique lists of our listeners in our different markets. As a result, we've amassed a significant number of these listeners into the databases at a very low cost.

We look at the Web department like promotions. Probably nobody could tell you how much the promotions department makes. But we know one thing: If we didn't have promotions, it would cost us in the revenue department. We know that promotions provide significant revenue opportunity; that's exactly the way the Web was approached at our stations.

RW: It sounds like your databases are a valuable asset to your company.
Halyburton: At a time when all radio stations are cutting back, we now have all these e-mail databases so we can continue to stay in contact with our most important listeners and hopefully maintain their listening habits. That's an ongoing benefit.

We sell advertising inside the e-mail, which we send out every week or two. We use the database in all sorts of ways with our ongoing sales efforts.

RW: What are the current obstacles to your organization meeting your goals? What are your biggest concerns?
Halyburton: Our goals are realistic in terms of what we expect out of our interactive efforts. Our core business is selling radio advertising.

Our efforts as a company have grown in a way that I call very organic. Our stations have grown organically with lots of leadership from the company.

We've spent the last couple years sorting through a lot of technology. There's a shift in my company — what we're really trying to figure out now is not so much the technology, but how will we make money. What are the new revenue opportunities?

And you have to balance your efforts with your core business and core customers. The challenge of 2002 will be how to reach beyond our core customers and what will the opportunities be in the interactive areas.

Nobody's questioned (the Internet's) abilities to work for its advertisers. But when the dot-com thing went up so high and then took a dump, it raised questions about its credibility.

RW: Who staffs your Net operations?
Halyburton: Typical of a radio station, you have a lot of people wearing several hats. We try to provide certain group tools to help them get the job done. And we build tools we believe our stations need to do a better job (with their Web sites).

RW: Aside from your own, what companies or broadcasters do you think are doing the best job at succeeding with the Net in our business?
Halyburton: I think you'd have to say, "How do you define success?" There are elements of success here and there, but it's hard to point to one company to say they've got it all knocked out.

You might define success as having really great sites ... that attract listeners. There are others that provide great selling tools. I don't think I know enough about anyone else's selling operations to judge.

First Media Works has done a great job working with stations in offering strategic and tactical selling ideas.

RW: How successful are radio organizations at making money on the Web, in your view? Why?
Halyburton: "Fair." If you were to grade the industry, I'd give it a C or C-minus. But it's not unlike how one would grade the industry on NTR (non-traditional revenue) overall. The industry as a whole hasn't done too well, but there are a couple of bright spots.

RW: What impact do you think the Copyright Office Arbitration Panel decision will have on your business? How are you going to handle the new fees? Will you have to pay retroactively?
Halyburton: The streaming industry and streaming music on the Internet is very much in the infancy stages. We have to have a reasonable outcome that will allow the industry to grow. If there isn't, it could damage the part of the business that's already in stress.

Susquehanna is in a good place in that its agreements with its providers have us covered nicely.

It looks like we *will* have to pay something. But if the number is very big, radio stations will end up shutting their doors on their streaming products — especially when faced with the cost of bandwidth and the even more difficult AFTRA issues that came up last year.

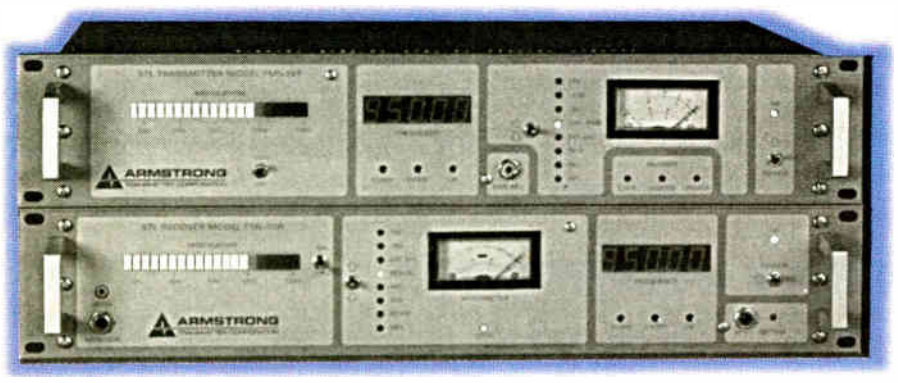
All this is even further exacerbated by the state of the ad market today.

RW: What do you think has to happen to make the Internet profitable for radio? Is streaming ever going to be a part of a successful radio strategy?
Halyburton: It's head-down-tough flogging through the mud ... . It's got to be stations continuing to say, "Here's an opportunity. Now I have to get out there and know that there's some money on the table somewhere. I can use these interactive assets to help my customers build their business." You have to work smart at it and hard at it.

RW: Do you think "side channels" — or alternative, special purpose online stations — are a brand-builder or a brand-buster?
Halyburton: We think they're brand-builders. We've had side channels for

See HALYBURTON, page 37 ▶

Frequency Agile STL Systems



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World Radio History

PRODUCT EVALUATION

Cybercorder Puts 'VCR' in Your PC

by Alan R. Peterson

Back around 1995, Radio World reported on a nifty cassette recorder/radio/timer combo that operated in the manner of a video cassette recorder to record your favorite AM talk shows automatically at certain times of day.

"That was a great idea," you might say, "but now I do a lot of listening to Internet radio stations. Why doesn't somebody make a similar recorder to capture Webcasts?"

Well, somebody did.

Skyhawk Technologies has come up with the Cybercorder 2000, a novel little shareware recorder/timer for the PC that you download and set up on your computer, then use to capture conventional broadcast audio or streaming Internet content.

Best of all, Cybercorder 2000 clocks in at less than $25.

With the same set-and-forget simplicity that has made the home VCR indispensable, the Cybercorder 2000 can be programmed for a single-shot recording, or can record at the same time each day for an entire week. The thing even dials up your favorite Net station to boot!

Getting it off the Net

The zipped download is about 5.1 MB in size. On DSL or T-1 lines, this is not a problem. Slower dial-up lines will be tied up for a while pulling this one down.

Once in your computer, the program is opened up with an unzipping program. The software will write a new folder called "Cybercorder" in your "Program files" directory.

The program also writes itself to your system configuration "Start-up file," launching the program and dropping it in the task bar every time you power up your PC. While not a huge memory hog, the program does occupy a corner of your RAM and you may not always want it there when other programs are clamoring for space.

You can enter your PC's system configuration file and turn off the Cybercorder start-up command to free up a little RAM.

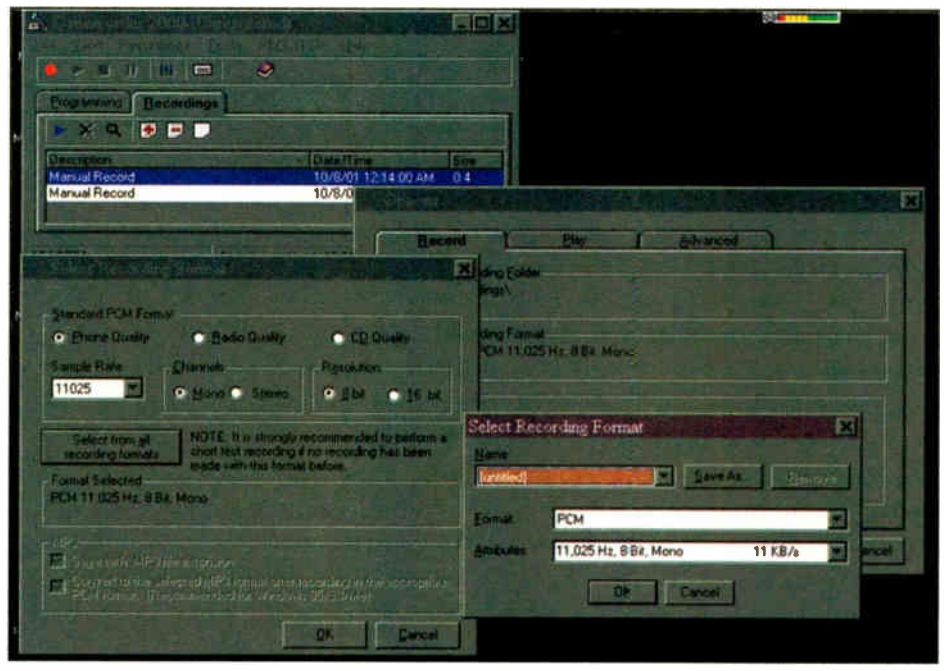
A simpler way is to open the "Options" menu item and uncheck the box asking if you want the program launched when Windows starts. But doing that prevents the automatic launch of the recorder when it's time to catch your show ... *right?*

Note that the computer will not create a recording just because you *say* it has to. At first it needs a little help.

For instance, do you want to capture an actual radio broadcast? Patch your receiver into your soundcard, or if using a tuner card, patch that so audio is fed directly to the recording software.

Internet audio recording is a little trickier and depends on your soundcard: The card is already in use to play back streamed audio.

Some cards have internal loopback that lets you direct playback audio right into the record input of the same card, effectively recording the performance you are capturing.



Cybercorder 2000 is a shareware program that lets you record a favorite Web show when you can't be near your computer.

Other lesser cards will need to have a small patchcord fabricated that feeds audio from the speaker or "Line out" jack right into the "Record in" plug. But first, it must be determined from the literature accompanying the cards that such a procedure is possible. It is pretty much a given that those $9 cards at the computer superstore may not be up to the task.

Configuration

Once unzipped and running, Cybercorder must be set up for the recording parameters best suited to you.

Click open "Programming/add new" from the menu bar to set up a file name, the day and time you wish for recording to take place, and whether you want a one-time session or the recording to repeat each day for a week.

Here, you can also decide if you want a WAV or MPEG audio file upon completion. The program defaults to an 8-bit telephone quality PCM WAV file to save drive space.

This sounds lousy in print, but in reality is not much worse than a cassette in slow-record mode. We may be in a digital age, but the human ear is rather forgiving.

Next, tab over to "File," where you can set parameters for naming the saved recording. The easiest and simplest way to name a soundfile is to go with the "*MMDDYY_hhmmss*" option, which automatically labels the recording with the date and time.

Finally, by tabbing over to "Advanced," you can set up the Cybercorder software to launch the Internet link to your desired streaming audio source prior to capture. No round-the-clock babysitting needed for your computer.

Cybercorder 2000 monitors your hard drive, tracking how much space your recordings occupy. On the "Options" menu item, you can have the program automatically warn you when a specific amount of disk capacity remains, or stop completely when disk capacity is almost gone.

You can also have recordings automatically purge on a schedule so your drive does not become clogged.

The "Options" menu also lets you configure the "feel" of the fast-forward and rewind buttons. You can jump around the track at time increments of your choosing — anything from small 1-second steps to 1.5 hours.

In use, the Cybercorder does what it was designed to do: behave like a VCR for your computer. But because it is shareware, it is subject to any number of variables that can prevent its proper operation.

For example, on my Win 98 laptop computer, it is unable to recognize the very file it just recorded when I go to play something back. On my old 333 desktop, it does just fine.

Fortunately, you are able to download a full version of Cybercorder 2000 and use it for 30 days before deciding whether to purchase it. In that time, it should be possible to resolve any soundcard and file format anomalies that crop up.

As I mentioned above, Cybercorder 2000 is available for $25 for single use or if you need to capture and record a lot of audio sources on a lot of computers, Skyhawk Technologies will write you a site license for $399.

Order by phone or over the Net through a secure server.

There are some mighty clever programs floating around in cyberspace; many of them are free, many more of them are very affordable and you probably already have a fistful of them now in your own machines.

Adding Cybercorder 2000 to your PC to timeshift your favorite radio or Webcast programming is a pretty good deal.

Alan R. Peterson writes "The World According to ARP" column for RW's Studio Sessions section.

Product Capsule:
Skyhawk Technologies
Cybercorder 2000 Automatic Audio Recorder for the PC

Thumbs Up
✓ Inexpensive shareware
✓ Multiple file formats
✓ Behaves like a VCR

Thumbs Down
✓ Subject to hardware limitations

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World Radio History

Web Watch

▶ Continued from page 32

Hiwire/Blue Falcon technology, as will KKLA's four other stations that are already running: **KKLA(FM), KRLA(AM), KFSH(FM) and Internet-only Christian Pirate Radio.**

CCIG transforms

Late last year, **Clear Channel Interactive Group** transferred responsibility for Web site development and sales to its individual stations. That left open the question of what CCIG's responsibilities would be.

CCIG is now **Clear Channel Radio Interactive**, which will provide technical and marketing expertise to the stations. **John Martin**, a member of Clear Channel's senior management team for more than 10 years, has been promoted to VP/GM of **CCRI**.

John Martin

Martin's emphasis will be on multi-platform promotions using the station Web sites, such as on-air contests that require a visit to the station Web site to register to enter. (Web Watcher wonders if the days of "I'll take the fifth caller" are numbered.)

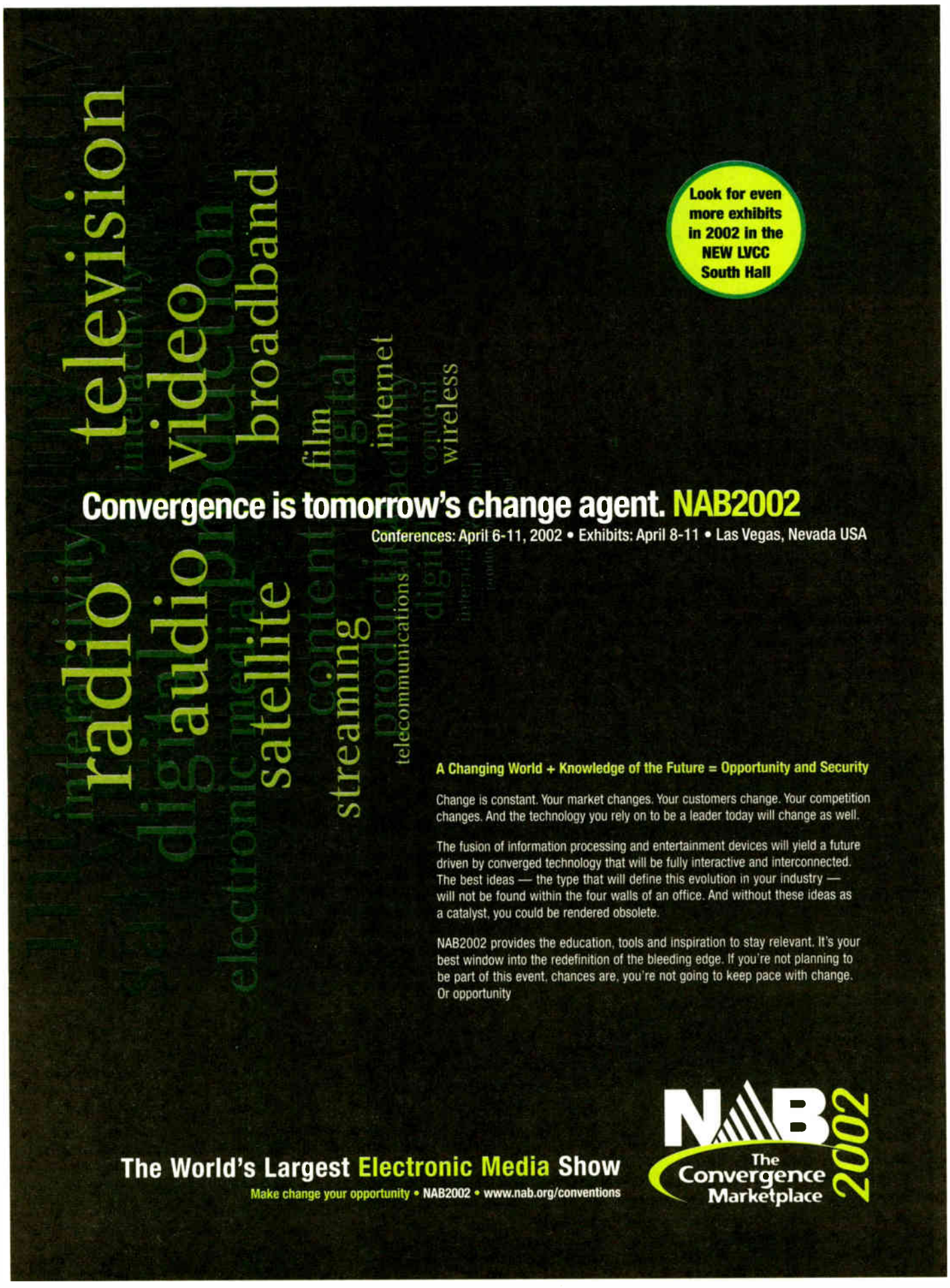
Finally, in a "what goes around comes around" sense, Web Watcher notes that the record labels, which were quick to jump on pioneer music services for not following copyright law, got some of their own medicine.

The **Los Angeles Times** reported that attorneys for music artists, including the **Dixie Chicks, Korn, Limp Bizkit, Offspring** and **No Doubt**, prepared cease-and-desist notices that would bar the use of their songs on MusicNet and Pressplay.

The artists contend they have a right to be informed when their music is to be streamed. The record labels worked hard to encourage their artists not to offer their music on the artists' Web sites.

Now, their own boomerang has now hit the labels.

Craig Johnston is an Internet and multimedia producer in Seattle. Contact him via e-mail to Craig@CraigJohnston.com.



Streaming

▶ Continued from page 31

infrastructure costs.

"When someone connects with a Radio Virgin stream and if they have some available upstream bandwidth, we'll take that bandwidth over and have them redistribute it to other Radio Virgin listeners," said Zalon.

"We are creating a peer-to-peer environment with an actual live stream. We're not fully launched yet, but in early tests with some of our most popular channels (using Blue Falcon) we've seen from a 40- to 75-percent total decrease in bandwidth. To the listeners, it's 100 percent as reliable as before."

Worth the effort

Each of the panelists predicted a bright future for Internet radio once current issues such as rights management, bandwidth and advertiser support are resolved.

Within five years, Morrow predicted Net radio would move beyond the personal computer to home stereos, personal digital assistants and even cell phones.

The Internet music listener is a higher-value listener to a record company than a traditional radio listener.

— Jonathan Potter

"Access will be untethered toward the end of the five years," he predicted. "Personalization services will get better and continue to draw consumers away from terrestrial radio."

Over the next five years, Zalon predicted a global 100-times increase in the number of listeners that access streaming audio on a regular basis.

"I think you will also see a 100-times decrease in the cost that it takes to push content to them and I think you will see about five to 10 major players running extremely profitable businesses in this space," said Zalon.

Mudd said, "I don't think there will be a clear difference where traditional radio stops and on-demand music delivery begins (within five years). At a push of a button one will move from a personalized station to a traditional station."

Frank Beacham is a New York City-based writer and producer. Visit his Web site at www.beacham.com *or send e-mail to* frank@beacham.com.

World Radio History

Halyburton

▶ Continued from page 34

quite awhile — in San Francisco, Atlanta and a more user-definable side channel in Dallas for quite a while.

We conducted a test with Binary Broadcasting, they are no longer around ... . It works like the Xact radio player — we like Xact and what that player can do. During the holidays, KRBE(FM) in Houston had a Christmas side channel, as KFOG(FM) in San Francisco.

KFOG was one of the earliest stations that we've had with a specialty feature called "10@10," 10 songs at 10 a.m. This is a feature that highlights music of all formats and culture from a particular year.

***RW**: Do you advertise or push your Web sites on air? Do you do contests, promotions? Can the Web help you to increase participation? Or is it a bust?*
Halyburton: There's a lot of focus on live announcements that send people to the Web site and give people a good reason to visit the site.

***RW**: Do you/did you stream pro sports? If so, how do the MLB, NBA, NFL and NHL deals affect your ability to deliver the games you broadcast to your online listeners?*
Halyburton: Not really, there may be some college games here and there but we don't have any professional sports that are streaming. We did stream the San Francisco Giant games on KFOG.com until the 2001 season. *(Ed. Note: Major League Baseball then launched its own online subscription-based service.)*

***RW**: Do you think Net radio can be ad-based or is a subscription model one that you think could work?*
Halyburton: It's more ad-based. There may be some real niche specialty stuff that could be subscription-based.

I'm favorable on what AOL, Yahoo and Real Networks have done in trying to sell content. They've zeroed in on some of the most valuable things like professional and college sports.

It's a great thing and it's going to take the really big guys to do it.

***RW**: What do you think of Premiere's efforts to charge a monthly subscription fee for some of its on-air content — Rush Limbaugh, Dr. Laura, etc.?*
Halyburton: It's interesting. Again, if you have Rush Limbaugh you could see that a highly popular host could attract paid subscribers. Although there are a lot of stations you can get these hosts on, it's probably going to be a small number of people they attract.

Having said that, I applaud their efforts — for putting value on the content. But the obstacle is going to be that the people like Rush Limbaugh are on a lot of radio stations. I think they'll pick up some subscribers but it will be hard to charge for things like that.

***RW**: How do you get around the AFTRA commercial demands? Do you use ad insertion? Whose? Or did you devise your own system?*
Halyburton: We've beta tested Yahoo's ad insertion. Many of the Susquehanna stations are rolling out and will be rolling out the Yahoo ad-insertion technology.

Right now we block the whole stopset. Some stations have insertion capabilities at the local level and can put in spots. Most of the stations are just blocking the entire stopset.

***RW**: Who is your streaming partner?*
Halyburton: Yahoo, and we're talking to them about renewing our contract.

***RW**: What will be the relationship among FM radio, satellite radio and Internet radio in five years? In 30 years? Will Net radio overtake traditional radio?*
Halyburton: These technologies will find their place as all other technologies have. I don't think one supplants the other or will put them out of business, just like FM didn't put AM out of business.

'It's head-down-tough flogging through the mud. It's got to be stations continuing to say, "Here's an opportunity. Now I have to get out there."'

And there will be more new technologies coming along, too.

As for satellite radio, the reception of the satellite broadcast (rollout) was good — but the quality isn't as clear as what we've been hearing about. It did not sound as technically pleasing as we thought it would be.

***RW**: How do you cope with high bandwidth costs? Is there a way to save on these costs?*
Halyburton: That hasn't been an issue for us because of our relationships. There are some peer-to-peer technologies coming out that are streaming radio simulcasts. That looks interesting.

The questions is, can the streaming companies make a living long enough to survive all this?

***RW**: Do you stream in Windows or Real formats or both?*
Halyburton: Yahoo supports both.

***RW**: How do you sell your Web site? Do you have your salespeople offer it with the terra radio, or do you have a separate Net radio sales team?*
Halyburton: We do some of everything — we've given away some, but we've also sold and established a clear value for the Internet and streaming.

We're figuring it out as we go. A couple of our stations have dedicated sellers but most of them it's just an integrated selling effort with traditional sales.

Arbitron is to be commended for their research. It's helped our stations a lot to sell advertisers.

***RW**: Describe the technical facilities that you use regarding the Web. How is your programming created, by whom, where, with what equipment?*
Halyburton: The content is created at the local level. There's a central server farm that's being rolled out in York, Pa. (see sidebar). All the sites will operate on those servers. This is a team effort between Susquehanna Media IT group and our sister companies BlazeNet and Susquehanna Technologies.

***RW**: What brand of encoder do you have? How much money did you have to invest to begin to stream?*
Halyburton: When it comes to streaming, Yahoo handles that. There's a Yahoo encoder at each of our stations that streams. It's included as part of the deal. Our database and Web site servers are in York.

I can't say exactly how much money we're spending, but it's enough to get the job done right — nothing more.

***RW**: Do you have other content-provider or technology partners?*
Halyburton: We bought a company called BlazeNet, which provides Web connectivity. We also purchased Judds Online, which is now called Susquehanna Technologies.

This firm builds Web sites and databases for companies. They've done Web sites for Martha Stewart, Reba McEntire, Maryland Public Television and the United States Air Force — some pretty high-profile sites.

ST is also converting our databases into Web-based, state-of-the-art databases. Parts of that are rolling out now and will roll out aggressively through the first quarter of 2002.

It will also provide more tools and different technologies to all the stations. This has been a very valuable relationship.

We were also investors in RadioWave (a streaming and interactive services provider). They hung in for a long time and did a good job compared to a lot of other folks. When they went away, we didn't see any significant impact on our company.

We lost some Web interactivity that had been there before and we're working on how we might replace some of that.

Susquehanna Server Farm Is Loaded

Susquehanna Radio Corp. plans to move all of its radio station Web sites to a new server farm in York, Pa.

Steve Witt is a client partner with Susquehanna Technologies, a Susquehanna Radio sister company that provides radio stations Web development and content delivery capabilities, as well as custom-built e-commerce options. He is in charge of the new server farm build-out.

According to Witt, there will be many benefits to Susquehanna once all of its stations are hosted on a common platform.

"We will be launching a set of Web-based tools that each individual station/market can use on their Web sites. The core of this functionality is an SQL 2000 database of listener information," Witt said.

Improvements for the online listeners include improved download times.

Below, Witt explains the function and type of the equipment installed on the server farm. The farm uses the Windows 2000 operating system.

Cache Server — This server improves the download times for end users. This is achieved as this server stores frequently accessed components such as GIFs or JPGs in memory so that they can be served to the end user more quickly than from a Web server.

Cache Server Hardware — Four Compaq Proliant DL360 servers, two Pentium III 1-GHz processors, 512 MB RAM and two 18.2GB drives, mirrored.

Web Servers 1, 2, 3 and 4 — These servers will work as a cluster to serve Web pages to end-users. Each of these servers will contain identical content provided to them by the staging server. A hardware "switch" will use load balancing to direct traffic to the appropriate Web server.

Web Servers' Hardware — Four Compaq Proliant DL360 Servers, two Pentium III 1-GHz processors, 512 MB RAM and two 18.2GB drives, mirrored.

SQL Server 1 and 2 — These servers contain all the databases for the system as well as the individual databases used by the individual station sites. SQL1 functions as the "live" server, while SQL2 acts as a mirrored copy that will be used as a "hot-swappable" backup.

Database Servers' Hardware — Two Compaq Proliant 5500R servers, four Pentium III XEON 500-MHz processors with one GB RAM, five 18.2 GB 7200 RMP drives — two mirrored, three RAID "5" configuration.

Streaming File Server — This server is essentially a file server for storing audio files that can either be downloaded or streamed using Microsoft streaming server technology.

Streaming File Server Hardware — One Compaq Proliant DL360 server, two Pentium III 1-GHz processors, 512 MB RAM, two 18.2GB drives, mirrored.

"Admin" Server — This server will contain the Web pages that are necessary to run the administrative portion of the system. This server will also contain the reporting engines used to report against the data located on SQL2.

Admin Server Hardware — One Compaq Proliant DL360 server, two Pentium III 1-GHz processors, 512 MB RAM, two 18.2GB drives, mirrored.

Mass E-Mail Server — This server contains the group's mass e-mail product and will have the capability to send mass e-mails to listeners in the database.

Mass E-Mail Server Hardware — One Compaq Proliant DL360 server, two Pentium III 1-GHz processors, 512 MB RAM and two 18.2GB drives, mirrored.

WebTrends Server — This server will run WebTrends Enterprise Edition for reporting on-site traffic for Web sites hosted on the server farm.

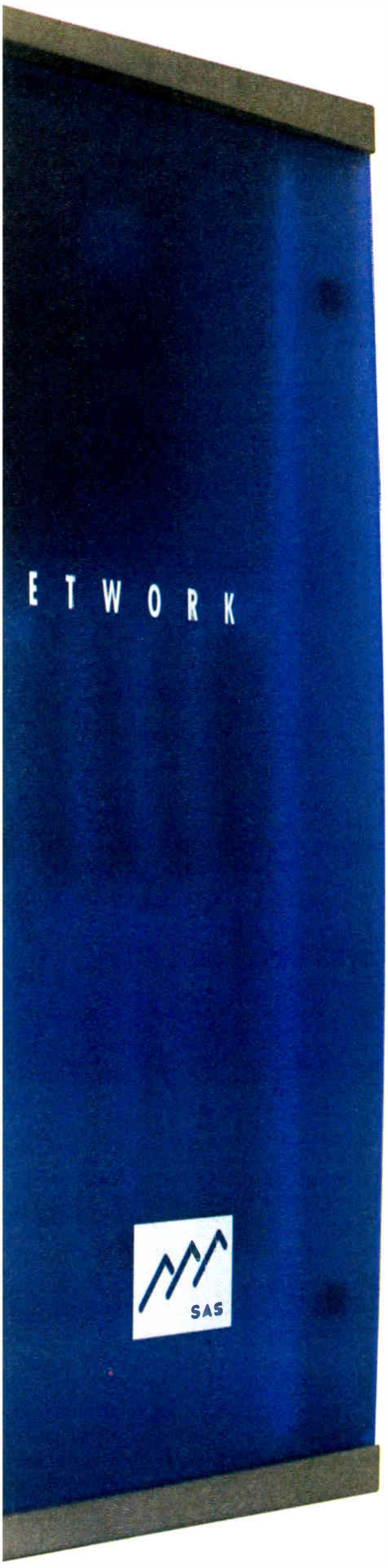
WebTrends Server Hardware — One Compaq Proliant DL360 server, two Pentium III 1-GHz processors, 512 MB RAM and two 18.2GB drives, mirrored.

Staging Web and Staging SQL Server — These machines will act as the "staging" environment where both the stations' Webmasters and SusQTech will test content and code prior to moving it into production. Each Web site has either FrontPage or FTP access to the Staging Web server, as well as the ability to replicate content from staging to a "live" format.

Staging Servers' Hardware — One Compaq Proliant DL360 server, two Pentium III 1-GHz processors, 512 MB RAM, two 18.2GB drives, mirrored.

Background: Susquehanna logo

World Radio History



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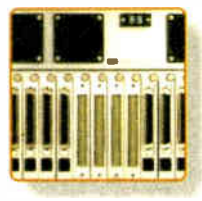

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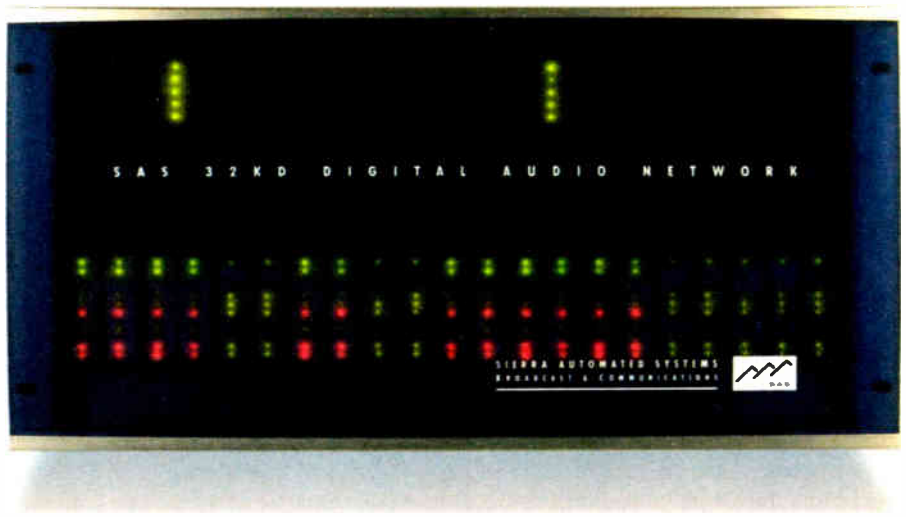

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Studio Sessions

AES Show Review Page 40

Radio World | Resource for Radio On-Air, Production and Recording | February 1, 2002

PRODUCER PROFILE

J. Vaughn: The Invisible Woman

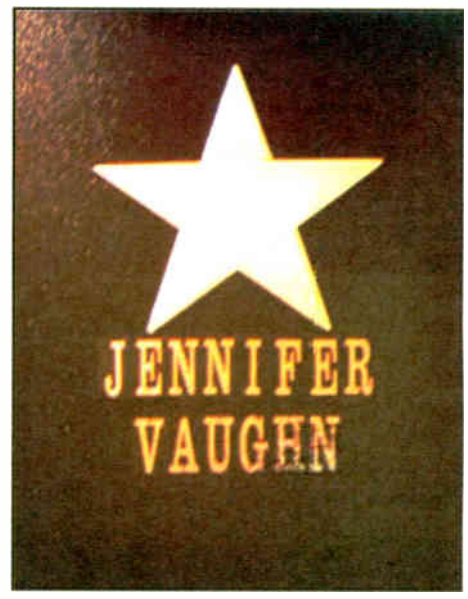
by Ken R.

Radio announcers never look like you imagine them. Thus the hesitancy of Jennifer Vaughn to let us get a peek at her visage. Her voice, however, is certainly ubiquitous.

From her private studios, located near Captiva Island on the west coast of Florida, Vaughn and her partner Kevin Russell service about 150 radio stations with imaging liners each month, and produce radio commercials for national clients such as Eureka vacuum cleaners and others.

In her "spare" time, she runs a business that helps promote her fellow national voice talents by sending CD demos to ad agencies.

Inside Studio A



Behind this door lurks Jennifer Vaughn ... voice of mystery.

Getting here from there

"I worked for Florida radio stations in the Ft. Myers/Naples area as a promotions director, program director and even on a morning show," said Vaughn.

"But I always recorded a lot of spots, so I hooked up with Advantage Productions (no longer in business) in 1993. They were just about the only one out there then marketing several voice talents nationally."

She recalls learning about ISDN and shipping high-quality voice over phone lines by using the Telos Zephyr ISDN codec.

"Back then no one even knew what the heck that was," Vaughn said.

In her early years, Vaughn was represented nationally by the William Morris Agency, which sounds prestigious, but didn't really serve her interests very well.

"It was an exclusive agreement the first year, but I could promote myself better than they could because they had a roster of talent in different divisions," Vaughn said.

"The second year I had a nonexclusive agreement, which was unusual at the time for them. I didn't want my clients to have to suffer the 'big-city agent' attitude."

Vaughn began to break away, spending what would have been the agency's 20-percent commissions to promote herself.

"Agencies only promote you when someone requests your specific talents."

"Being a voice talent is only half the battle," she said. "On a Web search engine you see about 200,000 names pop up when you look for announcers. So the other half the job is being Web-savvy, becoming a master of all trades."

Vaughn credited her radio experience with showing her how to break down the barriers to industrial narration and national ad campaigns.

One might think that a female voice talent would only be considered by program directors for imaging work on jazz or light rock formats.

"One would be wrong," Vaughn said. "Contemporary hit radio and rock are my biggest formats, because I can do a very hip delivery, that 'rock chick' thing."

Voice chameleon

Part of her charm is her ability to become a voice chameleon. Vaughn prides herself on being able to read the parts of soccer moms, breathy and sexy characters, dizzy blondes, tough New Yorkers or whatever the script specifies.

"But I don't do impersonations,' Vaughn said.

Client stations can receive Jennifer Vaughn's work via the Internet or ISDN.

"Small stations still like to use MP3 attachments. We can also post our work on our File Transfer Protocol site and they can download it."

The savings and speed are great when compared to other systems such as the old DCI delivery system, FedEx or even mailing tapes back and forth.

Vaughn works on a monthly retainer based on market size, but will consider a "one-shot" buy-out license for smaller stations.

"Let's say you are in Arbitron market 47, which is the greater New Jersey area," Vaughn said. "We're in the $500-per-month category, which gives the station up to four sessions a month of my work or about one a week. It's almost unlimited what we can provide for that fee, within reason."

In the smaller markets, Vaughn charges accordingly less.

"In those cases we might charge $500 for about 30 liners. It's difficult these days because bottom lines are getting cut and many stations still use both jingles and announcer liners," Vaughn said.

See VAUGHN, page 42 ▶

World Radio History

Small Crowd Wowed by 111th AES

by Alan R. Peterson

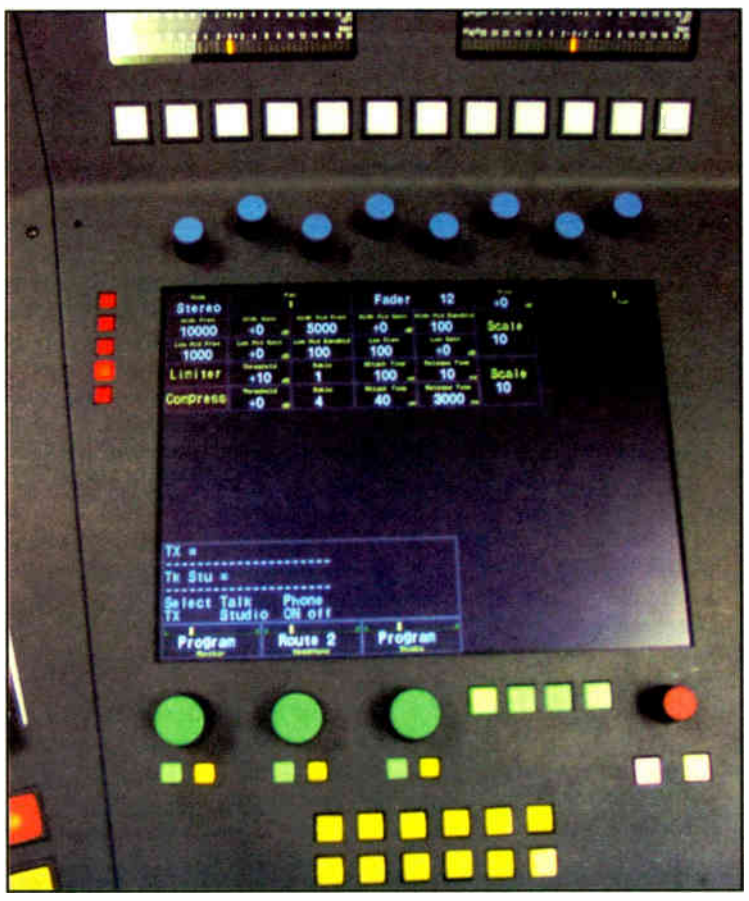
It was delayed by roughly two months. Prominent companies such as Mackie Designs and Digidesign Pro Tools chose to stay home.

Crowds were small but enthusiastic, even though the specter of Sept. 11 still hung heavy in the New York air.

Such was the setting for the 111th Audio Engineering Society Convention, which took place at the Jacob K. Javits Convention Center on the West side of Manhattan.

At the time when the show had originally been scheduled to take place, the Javits Center was being used as an operations center, coordinating recovery efforts at the World Trade Center site. By late November, the city had regained enough of its footing for the show to go on.

In spite of the smaller turnout and absence of some leading manufacturers, the convention seemed well-received. Many more modest companies, normally lost in the push, found themselves with new visibility and interested customers.



Logitek Numix Control Surface

Many innovations in microphones are being built around good old condenser technology.

Neumann drew a crowd by exhibiting its new Solution-D digital microphone system, consisting of the D-01 digital condenser mic, the DMI-2 Interface and software.

More than just a microphone with an embedded A/D chip, the D-01 contains onboard DSP for setting gain and limiting transients, muting and reversing phase. Multiple mics can be controlled from a remote laptop computer.

A unique touch is a case-mounted LED that can be activated from the remote computer. Now the red recording light in front of the talent is mounted in the microphone itself.

Crowds were small but enthusiastic, even though the specter of Sept. 11 still hung heavy in the New York air.

From Shure came the new KSM27 large-diaphragm studio mic, optimized for voice recording but capable of capturing the high sound levels generated by amplified instruments.

According to the company, the KSM27 is intended for use in project and home studios, but is robust enough for broadcast.

Across the aisle at Sennheiser, the company put emphasis on its SK 5012 wireless microphone body transmitter pack, ideal for wandering jocks at remotes, and HD 280 pro headphones for studio use or critical monitoring in the production room.

From Earthworks, the New England company that created the 40 kHz microphone, came word of the Sigma 6.2 monitoring system that also scopes out to 40 kHz, for ultracritical detailing of recorded material.

Capsule mics from Brauner and distributed by the TransAudio Group consist of the dual-diaphragm VM1 tube mic, the high-end Valvet and the Valvet Voice, optimized for vocal work. The Valvet Voice is a limited-run product, with only 500 units built.

More capsule condenser units showed up from ADK, carrying variations of the A-51 legend. Most are meant for instrument recording and orchestral/chamber use, but one microphone, the A-51TC, received high praise from an Ohio imaging production director.

From Wes Dooley and Audio Engineering Associates came the return of the AEA R44C, the modern recreation of the classic 1930s RCA 44 ribbon microphone. The AEA price list puts these microphones at about $3,000, but the company also offers empty 44-style shells for mounting other side-address microphones inside.

Developments from AKG include the instant classic C 451 B condenser mic, which recreates the company's earlier C 451 EB with the CK-1 modular microphone element. A handheld condenser mic, the C900, can be brought to personal appearances or news conferences, and provide frequency response to 20 kHz.

Audio-Technica did redesign work on the AT4033 microphone to create the AT4033SE Special Edition. Innovations include a new shockmount, a floating element and a two-micron-thick, gold-plated diaphragm.

PMI Audio Group rolled out the Studio Projects line of microphones and a preamp at the AES convention. The $299 C1 is a fixed-pattern condenser mic with a one-inch capsule and transformerless design.

The $1,099 T3 mic uses a 6072 vacuum tube and features completely variable polar patterns. And the VT1 tube mic preamp allows the user to dial in enough 12AX7 "tube blend" for characteristic warmth.

Electro-Voice used the AES show to introduce the EVID line of surface-mount speakers. Intended for sound contractor installations, the speakers are nonetheless useful and attractive for use in the broadcast environment as well.

Eventide hit the floor with the Orville, the model 4000, and its newest Harmonizer-brand effect processor, the Eclipse.

This unit is the first single-rack space processor offered by Eventide and features more than 100 algorithms that may be combined and edited to fit the user's needs. A special broadcast-specific unit will be available in spring, with presets designed for radio and TV audio production.

Two companies, Sound Ideas and Serafine, offered up a huge order of sound effects and music. Frank Serafine, the motion picture audio designer who created memorable effects in "Star Trek" and "Hunt for Red October," was promoting his new collections Comic Sonic Relief and the Guns of Cinema.

Sound effects libraries

The libraries offered by Sound Ideas now fill a catalog and run the gamut from Foley footsteps to full orchestrations and laser zaps.

Down the hall, Sonomic was promoting its online library of on-demand sound effects. For a flat monthly fee, Sonomic provides access to 150,000 samples and sound effects from Valentino, Sampleheads, Clack Sound Studios and others.

Shure KSM27 Studio Mic

This is joined by the company's M-80 eight-channel mic preamp and ACP88 eight-channel dynamics processor. For fans of "killer compression," the stages of the ACP88 can be linked.

Presonus also used the show to debut the CL44 four-channel compressor/limiter. Its features include an optical emulator to recreate vintage opto-electric limiters, and a flip button that reverses tip and ring connections to be compatible with some British-manufactured consoles.

With many makers of digital workstation products absent, Mark of the Unicorn (MOTU) took center stage with its Digital Performer 3 recording environment.

The company took time to promote products from its development partners, including AltiVerb from Digital Ease. This software plug-in simulates real-space reverb by using a digitized template of actual concert halls and performance spaces, then applying those characteristics to digitized audio.

Photo by Alan R. Peterson

An idea looking for an application: P+G developed a fader with translucent knobs that change color based on channel status.

Many more processors were displayed by dbx, including the Blue Series 160SL compressor/limiter and 786 mic preamp, the Quantum II multiband processor and the Silver Series line of tube-driven processors. New for vocalists and announcers is the dbx ProVocal digital voice processor with digital mic modeling, EQ, compression, reverb and classic dbx compression.

PreSonus showed off its own mic box, the VXP single-channel mic preamp and voice processor. This unit combines a microphone preamp, phantom power, compression, expansion, and four-band semi-parametric EQ.

Arboretum Systems has offered the Hyperprism plug-in pack for some time. But age has not dampened enthusiasm for its bundled reverbs, vocoders, ring modulation and nearly two dozen effects. The bundle is available for DirectX, VST, Mac and DAS for Pro Tools 4.

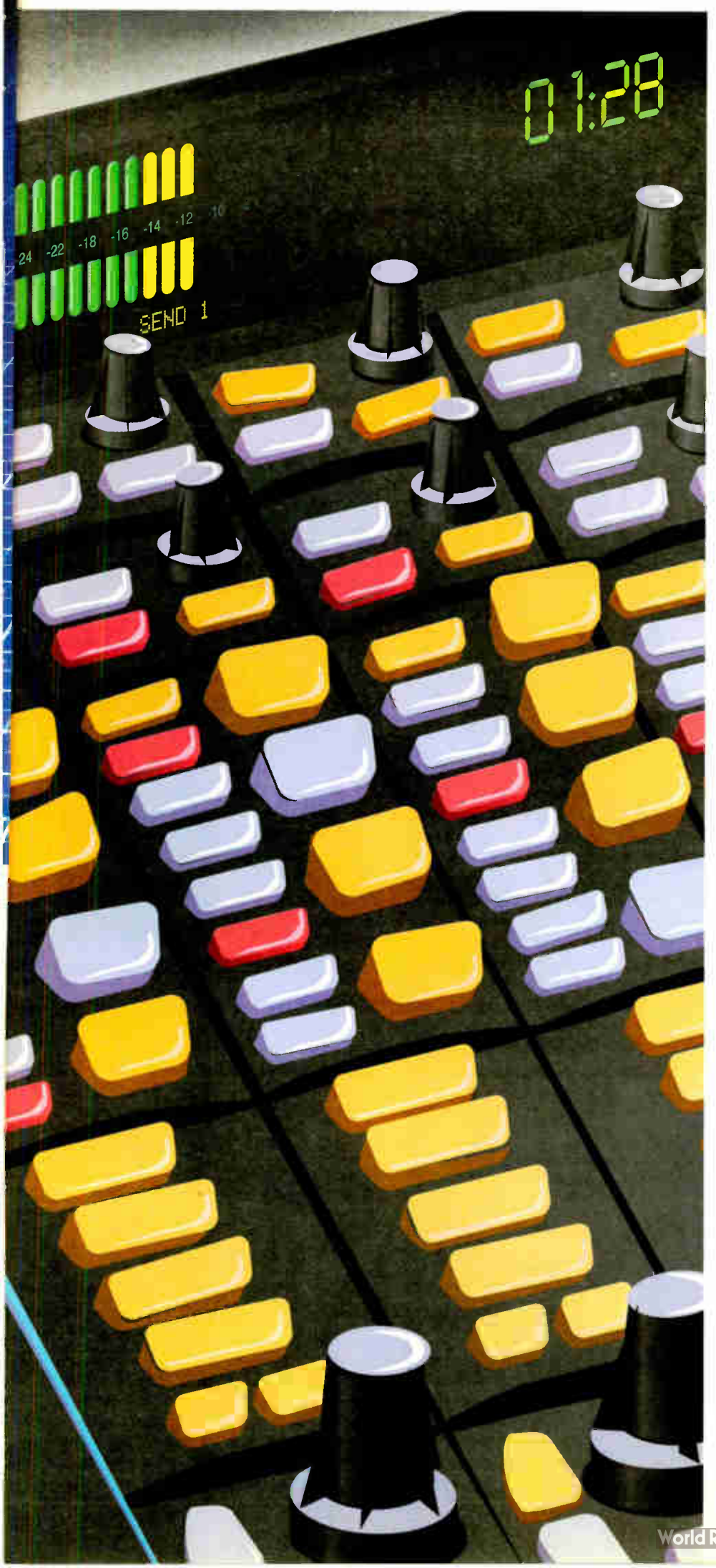
Similarly powerful and just as popular are the bundles from Waves, which include the Native Power Pack, the Renaissance

See AES, page 43 ▶

World Radio History

Power Can Be Beautiful

BMX*digital*



Sure, it's the best looking broadcast console you've ever seen. But, beneath the sleek, elegant exterior beats the heart of a true warrior!

Pacific BMX*digital* has everything you need to win the digital revolution. Whether it's the number of output buses, mix-minuses, off-line mixes, stereo sends, direct IFB's, monitor inputs and outputs, inter-communication paths or logic interface, BMX*digital* offers more.

Incredible Flexibility including all input modules accommodate analog and digital signals without reconfiguring, swapping, or even removal from the mainframe.

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HARRIS

World Radio History

Vaughn

▶ Continued from page 39

One of the most lucrative gigs an announcer can pick up is the "industrial" or long-form narration, usually a training soundtrack for a big corporation.

"I can charge about $150 a page for nonbroadcast. I'm not in the American Federation of Radio and Television Artists," said Vaughn, "and this gives me a lot of freedom. We really benefited here when AFTRA went on strike."

Vaughn said being in the union would actually hurt her business, as she is not in Los Angeles or New York and union affiliation would prevent her from taking many opportunities.

Vaughn seems to operate "full steam ahead" but she does remember one disappointment in her career.

"When I jumped out of radio, I went into concert promotion, working 22-hour days. That was a cutthroat job and those guys were sharks," said Vaughn. "It was a big mistake, but a good learning experience because now I'm able to smell a snake from a mile away. I really dug booking a show and pulling in the masses with a great advertising campaign, though."

Corporate structure

Vaughn just purchased a building to house her two studios.

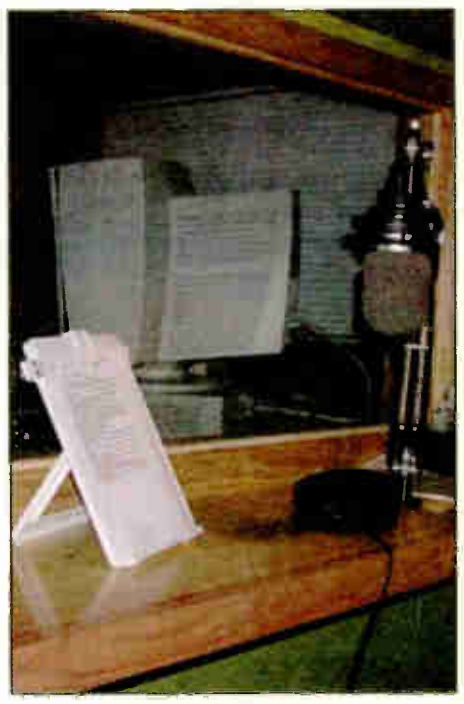
"Real estate is a great investment and you can formulate your building around your exact needs, "said Vaughn.

One company in the building is Marketing Mania Inc., which is centered around production, post-production and marketing of other announcer talents from around the country. It is where Vaughn does a lot of her own work.

Vaughn's Captiva Island, Fla., Studio

"I didn't want to get rid of the part of my job where I get jobs for others in the business," said Vaughn. Her other business entity is Jennifer Vaughn Voice Imaging.

Here is a little tip from the voice pro: Just because a voice talent is already in a market on retainer doesn't mean he or she can't pick up an extra retainer in the same market.



Inside the Voice Booth

"There's no reason why you can't be the voice of a TV station and a radio station in the same town," Vaughn said. "We've done that in New York with WCBS(TV) and WBIX(FM), for example."

Vaughn swears by the Neumann U-87 microphone for her signature sound, but also uses a Neumann TLM 104 on occasion. Her processor of choice is now the TC Electronic Gold Channel.

"It's a wonderful piece of gear, I can totally change my sound with the touch of a button," Vaughn said.

Vaughn is in the studio voicing copy about four hours each day. The rest of her time is spent marketing her services and networking with other voice talents in the industry.

The Web address for Marketing Mania is *www.mktmania.com*. Jennifer Vaughn's Web site is *www.jennifervaughn.com*.

Ken R. is a former broadcaster who can't even get a gig voicing the Blue Light Specials at K-Mart.

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OFFICIAL NAB

AM Edition: Published Monday, Tuesday and Wednesday, with distribution at NAB-designated hotel rooms, all AM editions will be distributed by hand and in the racks at the Las Vegas Convention Center and the Sands Expo Center. Every AM edition includes an exhibit map, the latest news, product coverage, exhibitor listings, session schedules and more.

PM Edition: Published Monday, Tuesday and Wednesday afternoons, the PM edition is the source for up-to-the-minute news, making it a must-read "hot sheet" for the show. The afternoon edition will be distributed at both the Las Vegas Convention Center and the Sands Expo Center.

Reach the crowd that reaches for the only official on-site newspaper — The NAB2002 Daily News.

World Radio History

AES

▶ Continued from page 40

Collection and Gold Native. Effects include the unusual MondoMod and the Renaissance Compressor, which simulates optical and electronic compression methods.

Waves also exhibited Restoration software, a $1,200 noise reduction software bundle that includes a click and crackle remover, and a hum reducer that works on 60 Hz hum and its harmonics.

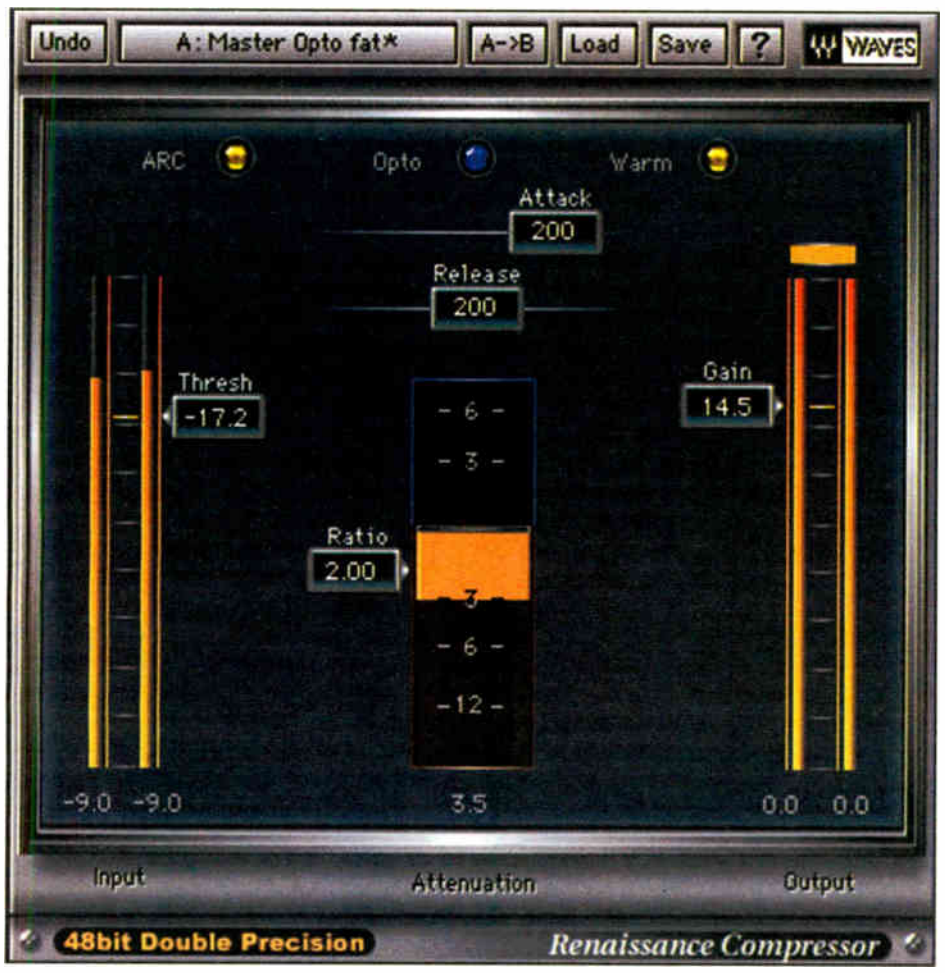
Putting the squeeze on

Speaking of optical compression, JoeMeek Compression, also from PMI Audio Group, offered the MicroMeek MQ1, a hardware opto-compressor/EQ module that actually fits in a computer drive bay. The product is bundled with Sonic Foundry Sound Forge, Cakewalk Sonar and Acid Pro software.

While not offering a conventional product, THAT Corp. headed into New York to display its line of VCA and dynamics processing ICs. Also available were application notebooks with schematics and technical notes, for anyone looking to "roll their own" studio processors from scratch, using THAT parts.

For the radio broadcaster, the AES convention offers fewer possibilities than does the annual NAB spring show. But there are always pleasant surprises and a few familiar names.

Logitek exhibited the only for-broadcast console on the floor, the redesigned, wedge-shaped Numix control surface. Small LCD displays on the Selector wedge have been replaced with a single color panel, and programmable buttons can be set to perform nearly any function. According to Tag Borland, president of Logitek, the Fader wedge is next up for a facelift.



Waves' Renaissance Compressor

Speaking of "Selector," the staff of RCS took the train down from White Plains, N.Y., to exhibit its Master Control digital automation system. The current screen is more streamlined and easier to navigate than earlier versions, while the overall system can manage several stations from one computer.

Neutrik Test Instruments welcomed another addition to the family, the DL1 Digilyzer, joining the Minirator and Minilyzer introduced in recent years.

The DL1 tracks and analyzes virtually all digital audio formats up to 96 kHz, measuring signal level and type, presence of carrier, and whether or not the right wires are being used. A built-in oscilloscope generates a real-time display of incoming signals, and automatically scales it to fit the screen.

Power purity was the name of the game with Furman Sound and Equi=Tech. Both companies displayed innovations in balanced power conditioners.

New from Denon Electronics is the DN-C550R dual-disc CD recorder. The recorder can handle CD, CDR and CD-RW media, as well as support playback of HDCD-encoded discs.

Photo by Alan R. Peterson

The Museum of Sound Recording in New York exhibited this classic Collins remote mixer.

Both drives are PC/data compatible, and the inputs to Deck 2 are SCMS-defeatable. The DN-C550R is available now for $850.

Digital doings

Sony also offered a CD recorder, the single-transport CDR-W33, which includes an internal limiter and EQ, both operating in the digital domain. Other Sony offerings for broadcasters include the MZ-B50 portable MD recorder and an upgrade to the Oxford OXF-R3 digital production console.

On the topic of consoles, the absence of Mackie Designs from the 111th convention was felt by many. But other console manufacturers took to the floor to show their wares, including Soundcraft, which manufactures the all-digital RM1d radio broadcast console; the high-end Solid State Logic MT Production mixing console; and the Calrec C2 production console.

The California Recording Institute returned to the AES floor this year with its visual "Virtual Mixer," a computer screen filled with floating spheres and ellipses representing elements of a mix. Levels and pan positions are altered by "grabbing" a sphere and changing its location in the on-screen field.

This year's offerings from Digigram were more for professional audio rather than broadcast, yet one product, the VXpocket 440, stood out as a potentially powerful audio interface for laptop machines. The PC card has four balanced analog inputs; four balanced analog outputs, one S/PDIF connector and a breakout cable to handle it all.

SEK'D, the German maker of Samplitude and Sequoia workstation software, has entered the broadcast realm with AudioCaster broadcast automation software and JingleCaster cart replacement software. In an arena already crowded with automation software both expensive and free, it will be interesting to see what kind of attention these products draw.

The 112th AES Convention will be in Munich, Germany, May 10-13. The next U.S. conference will be Oct. 5-8 at the Los Angeles Convention Center.

PRODUCT GUIDE

Speakers Offer Big Sound in Small Places

The Electro-Voice 4.2 compact full-range multi-use speaker system is practical for use in small studios and for lobby sound systems.

EV says the 4.2 system offers the bass response of larger speakers with dual 4-inch woofers. The 1-inch-waveguide, coupled Titanium tweeter delivers controlled, clean mids and highs.

Price: $340 per pair.

For more information contact Electro-Voice in Minnesota at (952) 884-4051 or visit the company at www.electrovoice.com.

World Radio History

DIGITAL | NEWS

Digital Audio Production at AES

by Mel Lambert

The quality and quantity of products on show at the AES Convention in New York at the end of 2001 were outstanding, although the show had been rescheduled following the events of Sept. 11.

It also suffered a reduction in high-tech exhibits for logistical reasons, but still included many digital audio workstation and recorder developments of direct relevance to the radio production community.

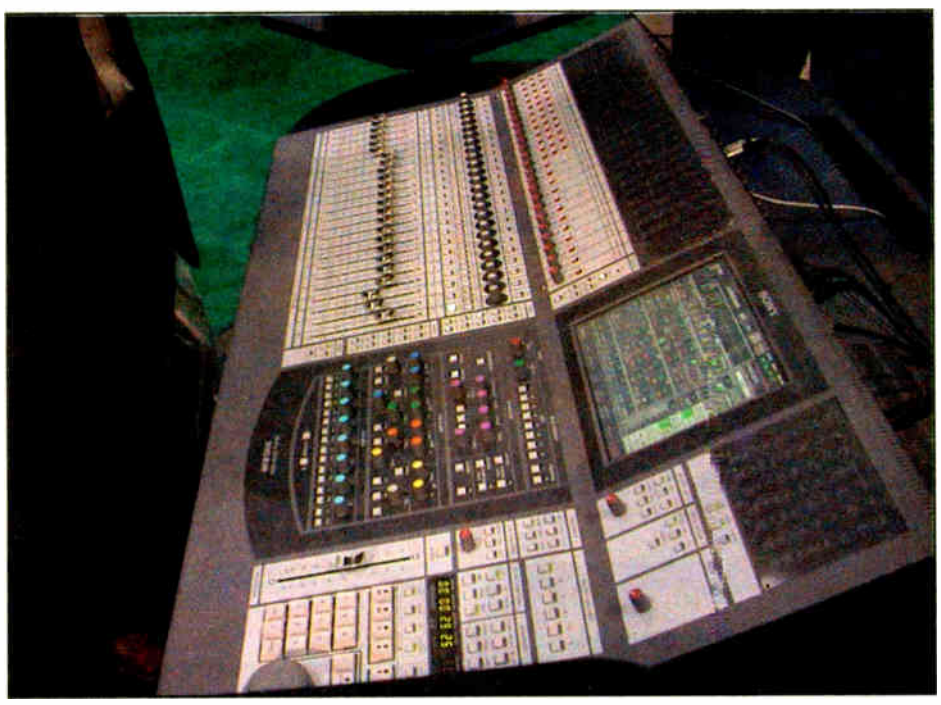
As is usually the case at AES, many audio products would find homes in radio stations; others offer non-radio features but will appeal to the audiophile or pro audio user.

Tascam DM24 Digital Mixer

They do Windows

Arboretum Systems showed Ionizer-DX, a Windows-compatible version of its popular noise reduction and multiband dynamics processing plug-in software for users of Cool Edit Pro and Sound Forge.

Ionizer-DX has an automatic noise function that identifies and eliminates unwanted hiss, hum, buzz and other interference.



Sony DMX-R100 Digital Console

A manual Spectrum mode enables the user to remove noise selectively for extremely precise noise reduction. A flexible interface can be reconfigured as a graphic EQ, compressor, limiter, expander — or all four.

EQ Theft technology allows the user to capture the equalization profile from any recording, allowing in-studio tracks to be matched with location recordings, for example.

Also on display from Arboretum was Ray Gun 2.0 noise reduction software for Windows DirectX plug-ins, which now allows post-noise reduction bass and treble enhancement plus stereo separation, for cleaning up vinyl scratches, tape hiss, telephone recordings with crackles and line noise, plus other problem recordings.

Fairlight USA launched the DREAM Series (Digital Recording Editing and Mixing), available in small-, medium- and large-format configurations.

The open-architecture DREAM Console is a full-feature digital model with automation and processing, plus an integrated 48-track recorder/editor.

The console offers 192 channels of routing to mix busses, with six-band EQ and filtering plus two-stage dynamics processing on 96 of these inputs, plus 48 returns with two-band EQ, and 48 short-fader paths that can share EQ and dynamics with their associated full channels.

According to Fairlight, such a channel structure allows simultaneous generation of multiple surround formats plus bus-to-bus mixing for multisystem sessions.

The DREAM Console consists of a range of control surface elements driving Fairlight's QDC engine; up to four QDC cards can be accommodated to provide plenty of DSP power. The console is available in various chassis sizes, with a choice of fader numbers, central assignment panels and meter bridges.

QDC-compatible

Other products powered by the QDC engine include Merlin digital multitrack, Prodigy2 post-production system and MediaLink multichannel audio networking solution.

MOTU (Mark of the Unicorn Inc.) unveiled the first major update for Digital Performer 3 audio workstation software since its release last June.

DP3 offers surround recording, editing, arranging, mixing, processing, mastering and integrated MIDI sequencing. New features for V3.1 software include unlimited multiple undo, a unique Timeline Undo and waveform editing of surround files. The update includes new features for loop-based music production, post-production and MIDI-based jingles.

The MOTU DP3 has unlimited Multiple Undo to allow users to reverse just about anything during a session, from trimming an audio region to deleting an entire sequence. An Undo History window shows a list of actions since the project was opened.

Timeline Undo provides a time-based representation of a session; clicking anywhere on the timeline allows the user to jump instantly to the project's state at that point.

Radikal Technologies' SAC-2K Ergonomic User-Interface Surface

Radikal Technologies showed the SAC-2K, an ergonomic user-surface that features touch-sensitive faders. Its LED indicator encoders, three displays and assignable pushbutton controls allow direct use with the majority of popular DAWs, including Digidesign ProTools, Sonic-Foundry Acid and Vegas, Steinberg Cubase 5.0 and Nuendo 1.5, Soundscape, CreamWare Scope/Pulsar, Emagic EXS24, ESI and Logic Audio, MOTU Digital Performer, Waveframe, SekD Sequoia, Tascam GigaStudio, and Merging Technologies Pyramix.

Control interface is via USB, with remote implementation of volume levels, transport functions and track mute/solo. Display features include rotary LEDs for the unit's 12 shaft encoders and two-by-40 alphanumeric readouts. The SAC-8X Extender adds eight more touch-sensitive faders; up to three units can be added to an SAC-2K

SADiE unveiled the new V4.2 Disc Editor Software, designed for compatibility with current and future DAW operating systems. It aims to permit users to move easily from earlier versions without having to learn a completely new user interface.

SADiE4 is a 32-bit application compatible with Windows 2000 Professional and other operating systems, such as NT4, and is designed for current 24•96, ARTEMiS and RADiA.

New features include individual vertical zoom settings for EDL streams, large/small PQ and video stream settings, and enhanced waveform viewing. A revitalized Trim Editor provides a dedicated area where crossfades can be pinpointed and manipulated, while a new Fade Linking feature allows the user to further combine and edit fades.

A permanent Navigator Window shows the full EDL as an overall frame of reference, while providing direct access to any point within the program material.

The V4.2 software provides multichannel bouncing, enabling high-resolution 5.1 mixes to be combined into a single file for easier transfer and manipulation purposes.

Software upgrade unveiled

Sony unveiled V2.0 software for the DMX-R100 8-bus Digital Console, which now allows 24-bit/96 kHz processing in 24-input/5.1-channel surround-sound mode, as well as conventional 24-input/two-channel stereo.

In essence, two channels handle the DSP for a single 24/96 input source while new software patches enable group bussed to run at the enhanced sampling rate. The V2.0 upgrade adds the ability to link a number of control parameters, choose surround-link groups, such as LCR, LS/RS, etc., and allows the subwoofer/LFE output to be adjusted separately.

A new Audition automation function enables fader-trim updates to be rehearsed prior to overwriting a previous mix. A new DMBK-R109 MADI Interface Board enables a single Multichannel Audio Digital Interface connection to carry 48 inputs and 48 outputs from a single I/O module.

Tascam showed V3.0 software for the

See DAWs, page 49 ▶

World Radio History

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Equipped with 16 opto-isolated and CMOS/TTL compatible inputs and 16-Relay (Form C) outputs that may be controlled from a host computer, or a pair of units can be used in a stand-alone configuration (relay extension cord).

SRC-8 Serial Remote Control
The SRC-8 provides a means of adding 8 channels of remote control to RF, wireline and fiber type STL systems and may also be used with dedicated modems (full & half duplex models).

PSC Programmable Schedule Controller
Stores and controls up to 160 events with Hour/Minutes/Seconds, Day/Month/Year, or Day of Week with Daylight Savings Time correction. 20 SPST relays and/or 32 serial custom commands provided.

MC-16 Telephone Hybrid/Coupler
Full featured telephone line coupler/hybrid provides 32 programs; 32 ASCII strings (DTMF to ASCII); 64 macros; 16 relays; auto answer; 4-digit access codes and much more.

SSM Smart Silence Monitor
Monitors any stereo or two independent monaural sources and generates alarms indicating loss of carrier when white noise and/or silence is detected.

MSO-8 Control Panel
Provides a convenient way to add front panel control to our smaller profile products with eight LED-indicator-equipped switches.

BOS, ROS & PBB-24 Switch Panels
The BOS offers 12 N.O. dry contact switches with status LEDs in a desktop panel. The ROS is similar, but in a single-space rack unit. The PBB-24 provides 24 momentary buttons that can be programmed to output ASCII character strings.

UI-4II Universal Interface
Perfect for adding logic functions to mechanical switches/relays, adding remote functions to transmitter control/logic, detecting phone line "ring", etc.

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The SUB-03 SUbaudible Tone decoder
The SUb-03 is a single channel subaudible tone *decoder* that can detect 25Hz, 35Hz and combination tones on audio channels. Each tone gives a distinct relay closure. Integrated filters strip each tone from the SUB-03's audio output so no one hears it.

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World Radio History

◆PRODUCT GUIDE◆

Products for Radio Air & Production Studios

Mail info and photos to: RW Product Guide, P.O. Box 1214, Falls Church, VA 22041

Sony Brings Console EQ to Pro Tools

With its OXF-R3 and DMX-R3 digital consoles, Sony says it offers digital EQ to match the standards of analog circuitry.

At the recent AES show, the developers of the Sony digital consoles introduced a high-precision Digidesign Pro Tools plug-in based on the same processing algorithms that offers previously unavailable on-board equalization power in a digital audio workstation.

The Pro Tools plug-in is the first in a new range of plug-ins from Sony designed to offer the sound of Sony's high-end digital recording consoles to users of computer-based digital audio editing systems and workstations. It is a five-band parametric, with separate high- and low-pass filters.

Sony R100 Screenshot

Sony also unveiled DMX-R100 Version 2 software at the show. The DMX-R100 V2.0 software enables surround-sound processing at double sample rates (88.2 and 96 kHz) and features enhanced sub-level control on each channel in conjunction with five-channel panning.

New dynamic functions include enhanced trim and audition modes. Additional primary functions include fader naming on Channel GUI, EQ and dynamic library function, access follow solo function, dither mode for PGM output and DOS-compatible floppy-disk automation data storage.

Price: The DMX-R100 V2.0 upgrade is free to existing users; plug-ins available at *www.sonyplugins.com*; prices listed at Web site.

For more information, contact Sony at (201) 358-4109 or visit www. sony.com; *for information on the Sony line of plug-ins, go to* www.sonyplugins.com.

Denon Pro Dual-Disc CD Recorder Shown at AES

The Denon Electronics DN-C550R dual-drive combination CD player/CD-R/CD-RW recorder, shown at the AES convention, was developed in response to the rising popularity of dubbing and recording CDs.

Professional features include balanced XLR inputs and coaxial S/PDIF inputs (SCMS-defeatable), as well as a second drive for pro dubbing and playback of CDs.

Drive 1 can be used as a dedicated playback deck and accepts pro and consumer CDs, CDRs and CD-RWs. It also supports playback of HDCD-encoded discs with a built-in HDCD decoder.

Drive 2 can be used as a CD-R/CD-RW recorder or as a second playback drive, with the same playback functions as Drive 1.

Both drives are PC/data disc-compatible and the analog and digital inputs of Drive 2 are SCMS-defeatable. The analog XLR inputs feature 24-bit A/D conversion. Digital coaxial or optical inputs are included. Using the internal digital sampling frequency converter lets the DN-C550R convert 32 kHz and 48 kHz rates to CD-standard 44.1 kHz. A text input feature allows disc and track names to be entered for display on the unit's easy-to-read front panel.

The DN-C550R is housed in aluminum-faced 2 RU rack-mountable housing.

Price: $850.

For more information, contact Denon Electronics in New Jersey at (973) 396-0810 or visit the company on the World Wide Web at www.denon.com.

ATI Headphone Amps for On-Air Studios, Remotes

The Audio Technologies Inc. (ATI) Encore Series of headphone amplifiers includes the HDA400 and HDA600.

The HDA400 is a four-output stereo monitoring system. It has balanced 1/4-inch TRS stereo line inputs with a master level control, clipping indicator and stereo/mono switch that drives four independently adjustable high-compliance stereo outputs. Each output drives typical 32- to 600-ohm headphones to SPL in excess if 120 dB at 100 mV each.

There are duplicate headphone jacks on the front and rear panels. The amp takes up one rack space and has an internal power supply.

The HDA600 is a six-output stereo headphone distribution system with parallel balanced XLR and TRS cue and stereo line inputs to allow loop-through and connector flexibility. A mic/line cue input is adjustable and selectable into left, right or both internal distribution busses mixed with the stereo line feed.

Clip LEDs monitor cue and line inputs. Six independent, 100-mW stereo headphone drivers are fed from the internal distribution busses or individual rear TRS connectors configurable as stereo unbalanced or mono balanced inputs. Signal-presence LEDs monitor each input.

Prices: HDA400: $429; HDA600: $549.

For information from Audio Technologies Inc. call the company in Pennsylvania at (215) 443-0330 or visit www.atiguys.com.

AKG C900 Suitable for V/O Work

The new C900 is part of the AKG Emotion Series of dynamic microphones. The Emotion line is aimed at musicians and voiceover artists.

The C900 is a condenser microphone with gold-plated transducer case for protection against corrosion and humidity. The transducer element is shock-mounted in an elastic ring. In addition to the transducer case and the decorative gold ring, the XLR connector is gold-plated for a reliable electrical contact. The mic is insensitive to handling noise; a resonance weight tunes the transducer resonance frequency to a value where handling noise is nearly eliminated.

A supplied presence boost adapter can be installed to boost the 5 to 9 kHz range by 2 to 4 dB for better intelligibility.

The wire mesh grille on the C900 is spring steel to provide added protection from rough handling. The impact-resistant die-cast metal body is finished with a "soft-touch" enamel. Price: $250 list.

For more information contact the company in Tennessee at (615) 360-0499 or visit the company Web site at www.akgusa.com.

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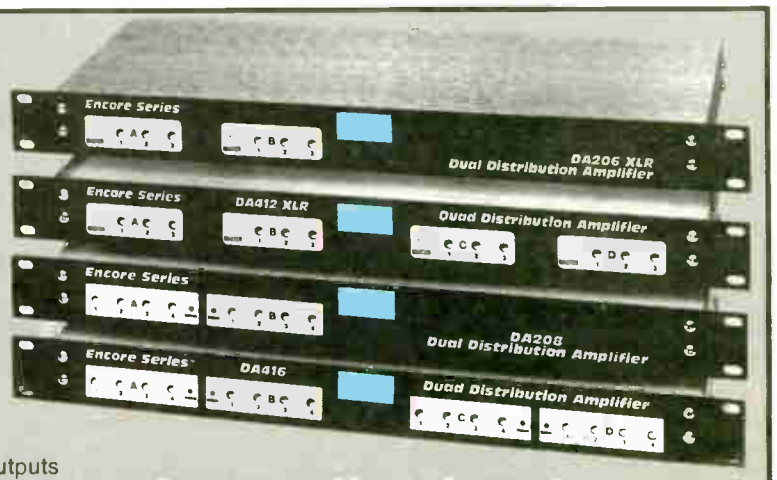

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World Radio History

DAWs

Continued from page 44

MX-2424 hard-disk recorder, which now offers sample-level waveform editing, plus a Mix Mode that allows the system to record 24 tracks while simultaneously playing back up to 24 tracks for mix-down/mastering.

WaveFrame Frameworks

The new MX-View graphic editing interface for MacOS- and Windows-based computers also features on-screen multi-machine metering, easier virtual-track management, on-screen display of multiple machine status, plus editing capabilities across multiple machines.

There is a new MX-2424SE recorder that features a removable 18 GB hard drive for quick and easy transfer and archiving. The IF-AN24EH Analog Interface Module for the recorder accommodates a -20 dB digital reference level commonly used in post facilities.

Waves Ltd. announced the release of the Restoration processor bundle for native MacOS and Window platforms, which allows removal of unwanted background noise and signal transients without affecting the original sound.

The Restoration bundle includes four new plug-ins: X-Noise, X-Click, X-Crackle and X-Hum. X-Noise is said to intelligently learn from a section of noise and apply a broadband noise reduction to eliminate background noise from any source.

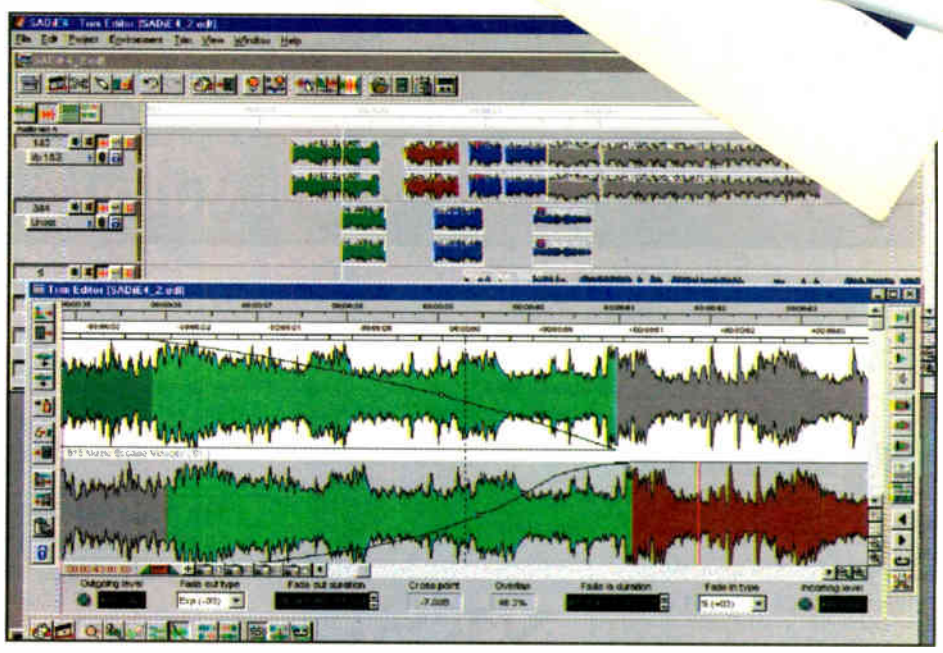
X-Click removes clicks from 78s or vinyl records, as well as spikes from digital switching or crosstalk. X-Crackle serves as a second stage in the restoration of old records, eliminating crackles and surface noise left after X-Click.

Finally, X-Hum attenuates steady pitched LF perturbations, such as ground loop hum and its harmonics. Also announced: a V3.2.1 software update that accommodates Steinberg VST audio plug-ins on Windows-based PCs.

WaveFrame demonstrated enhancements to the WaveFrame/7 workstation, with new Mykerinos digital audio DSP hardware running on Windows 2000, updated to deliver 32 tracks of 24-bit audio with effects plug-ins, surround mixing.

WaveFrame/7 offers the specialized features of the popular 408+ system, including an updated Sound Selector Media Database, machine control, auto assembly and comprehensive file import/export options, including OMF, OpenTL and AES31. I/O options include AES/EBU, ADAT, TDIF and MADI ports.

The high-precision FrameWorks/DX offers up to 16 channels of digital I/O with up to 64 hard-disk tracks of 24-bit recording at 48 kHz, with integrated 5.1-channel surround mixing, editing, plug-in processors, CD mastering, optional operation at up to 192 kHz sample rates, DSD (Super Audio CD) option, and DVD preparation.



SADiE V4.2 Software

PRODUCT GUIDE

Digital Noise Analyzer Fills Many Functions

The NC10 digital noise analyzer shown by Cortex Instruments at AES is a multifunctional test instrument for environmental noise, building acoustics, product noise and sound intensity.

It is a two-channel, class 1 IEC, battery-powered device. It is a system; standard accessories include two-channel hardware, level meter, third-octave analysis and loudness, class 1 measurement mic, batteries, power adaptor, carrying belt, protective case, RS-232 cable and software for downloading to PC.

A variety of options are available, including microphones and analog sources, DAT recorder, a PCMCIA interface and power supplies.

For more information from Cortex Instruments contact the company in Germany at +49-941-92057-0; e-mail to info@cortex-instruments.de *or visit* www.cortex-instruments.

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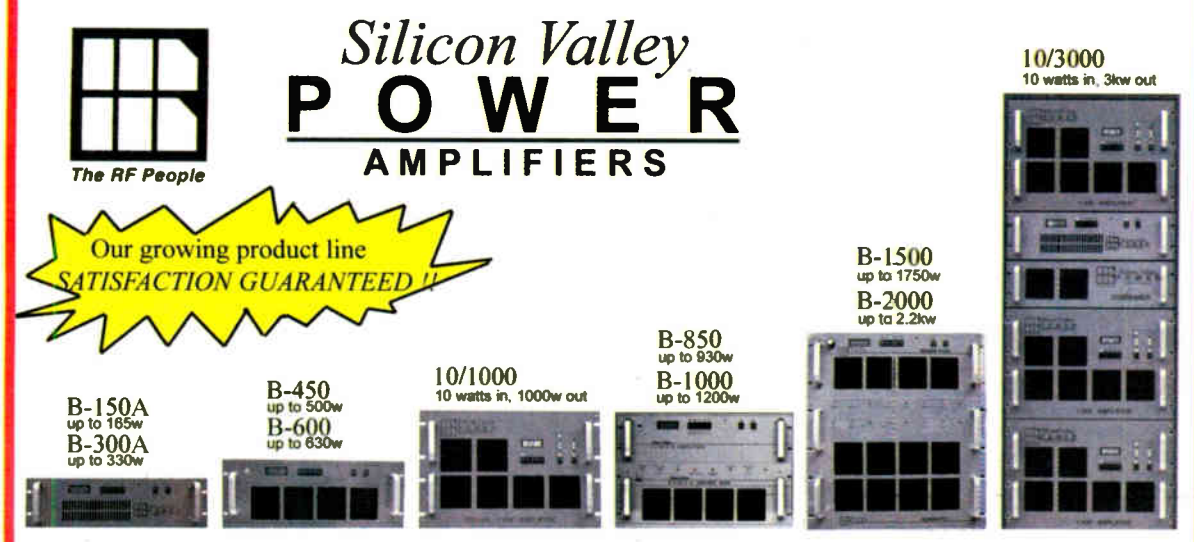

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Radio World

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Dielectric 3-5/8" motorized four port coaxial switch . Continental Communications, 314-664-4497. Email: contcomm@fiastl.net.

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Cablewave FLC158-50NF, 1-5/8" to x male, (12) connectors, never used, $150 ea or $1600 all 12. Russ Kinsley, WCLX, POB 310, Vergennes VT 05491. 802-759-4000.

ERI Cycloid 3-bay FM originally on 92.7, tuned to 93.9, no heaters or radomes, $1000, you pick up, will not ship. Randal Miller, Miller Media Group, 918E Park, Taylorville IL 62568. 217-824-3395.

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Shively FM 6710-4R-DA, 4 bay full wave with radomes. 30' long, good for 98.7 to 102.7 mHz, pole mount, $5000 FOB Colorado Springs. Jim Bruneau, KGFT, 6760 Corporate Dr #340, Colorado Springs CO 80919. 719-531-5438 x124.

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AUTOMATION EQUIPMENT

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SMC, various pieces including audio monitor, 16 channel audio switcher, (2) 350 Carousels, (2) cart players in drawers, all as-is, $200 & you pick up, will not ship. Randal Miller, Miller Media Group, 918 E Park, Taylorville IL 62568. 217-824-3395.

Scott Studios AXS, complete control room & production system for satellite control with switcher, $7500. Bruce Campbell, Dove Media, 1740 N First St, Abilene TX 79603. 915-673-5289.

Scotts Axis automation system. 3 stations on-air & full production. Very seizable system, 2 yrs old, $10,000. Todd Noordyk, Great Lakes Radio, 2025 US 41 West, Marquette MI 49855. 906-228-6800.

CART MACHINES

Want to Sell

Fidelipac Dynamax CTR112 stereo single play cart machines (5), $600 ea +shpg. Has fast forward, almost new condition. B Lord, Lord Bdctg, 3824 SW Myrtle St, Seattle WA 98126. 206-932-4839.

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Gates 8 pot mono board, as is, $100, you pick up, will not ship. Randal Miller, Miller Media Group, 918 E Park, Taylorville IL 62568. 217-824-3395.

Yamaha 03D (OH-3-DEE) (2), production consoles, excellent condition, $2230 each. Pete Stouer, WJYJ, POB 905, Spotsylvania VA 22553. 540-582-5371.

Peavey Unity Series 2002 console, 16 channel stereo mixer, slid pots, new, $450. George Wilkes, WSOC FM, Charlotte NC. 704-227-8101.

LIMITERS/AUDIO PROCESSING

Want to Sell

Orban Optimod 8100A, $2000. Russ Kinsley, WCLX, POB 310, Vergennes VT 05491. 802-759-4000.

Digitech Studio quad processor, new, still in box, $400. George Wilkes, WSOC FM, Charlotte NC. 704-227-8101.

Want to Buy

Teletronix LA-2A's, UREI LA-3A's & LA-4's, Fairchild 660's & 670's, any Pultec EQ's & any other old tube compressor/limiters, call after 3PM CST, 972-271-7625.

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RCA 77-DX's & 44-BX's, any other RCA ribbon mics, on-air lights, call after 3PM CST, 972-271-7625.

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Comrex Nexus ISDN codec unit. Works perfectly. Used 1 year, $1300. Charles, Pitroad Racing Network, WCON, 706-886-0652.

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Belar FMM-1, FMS-1, RFA-1, factory tuned 102.5, calibrated 1999, $1500/all. Russ Kinsley, WCLX, POB 310, Vergennes VT 05491. 802-759-4000.

Gates FM modulation monitor, as is, $100; Belar AM RF amp, as is, $100. Randal Miller, Miller Media Group, 918 E Park, Taylorville IL 62568. 217-824-3395.

RECORDERS

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Comrex Nexus ISDN codec unit. Works perfectly, used 1 year, $1300. Charles, Pitroad Racing Network/WCON, 706-886-0652.

Comrex Nexus studio and portable ISDN codec set. Hardly used, $3500/pair. Nick or Gerry, WJUX, 75 Second St, Dumont NJ 07628. 1-800-585-1031.

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Marti RPT30 transmitter, 800-900 MHz radio remote or STL, 2 channel w/mixer built in, $1200/BO. Ron Meyer, TSR Media, 5053 Ocean Blvd, Sarasota FL 34212. 312-208-3599.

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Marti tube type VHF 160 MHz receiver, as is, $50. Randal Miller, Miller Media Group, 918 E Park, Taylorville IL 62568. 217-824-3395.

Musicam Fieldphone, first generation fieldphone, very good condition, 3 units, all working & very clean, $250 ea or $600/all. John Salov, WUPS, 1314 Eagle Pt Dr., Clark Lake MI 49234. 800-995-9850.

Comrex Hot Boxes (2), nice units, used to connect 2 stations, great remote also, $3900/both. Todd Noordyk, Great Lakes Radio, 2025 US 41 West, Marquette MI 49855. 906-228-6800.

SATELLITE EQUIPMENT

Want to Sell

Comstream CM701 PSK modem, chassis with 70 Mhz IF mod/demod, M&C & RS-449 card, clean, $3450 firm. John Katonah, WFGB, POB 777, Lake Katrine NY 12449. 845-778-2402.

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Teac A1500W stereo r-r, as is, $50. Randal Miller, Miller Media Group, 918 E Park, Taylorville IL 62568. 217-824-3395.

90 Fidelipac WR-25 wire cart racks. Each rack holds 25 carts & can be wall mounted, $10 ea. Some bases which hold 8 racks also available for $20 ea. All +shpg, good condition. B Lord, Lord Bdctg, 3824 SW Myrtle St, Seattle WA 98126. 206-932-4839.

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Continental 814R-1 2.5kW FM, removed from service in 7/01 fue to upgrade & freq change. Includes 802-A exciter, needs repair, tuned to 95.3, $5000. Tony St James, KFLP, POB 658, Floydada TX 79235. 806-983-5704.

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World Radio History

◆READER'S FORUM◆

Crossed-Field Antennas

Many years ago, a brilliant man by the name of Carl Smith helped develop a system by which AM broadcasters could use multiple towers to manipulate the directional pattern of their signal.

His theories are still in use, and his formulas are published in every edition of the NAB Engineering Handbook.

Fast-forward to 2001. A new idea in AM broadcasting is attempting to stick its nose under the tent flap.

This new technology is called the Crossed-Field Antenna, or CFA. Supposedly this new technology will enable AM broadcasters to build very small towers that are just as good as a full-sized tower.

Proponents of CFA seem rather reluctant to allow other engineers to conduct experiments on their antennas to justify the claims.

However, unlike the honorable Mr. Smith, the proponents of the CFA seem rather reluctant to allow other engineers to conduct experiments on their antennas to justify the proponents' claims.

Moreover, the CFAers do not publish the design specifications or factual data on the system. Imagine what would have happened had Smith proposed his directional AM broadcast system without any relevant data to back up his claims.

Yet, as we saw in an article published in the Dec. 19, 2001 issue of Radio World, entitled "CFA Holds Promise for AM," the CFA proponents, through Mr. Robert Richer, are still spewing technobabble without providing hard facts to support their claims.

I would even go as far as to question Mr. Richer's grasp of basic AM design principles.

At my six AM stations, I do not have any "copper cables" in the ground under my towers; copper wire, yes, but cables, no! Further, none of my stations project their signals through the ground. The last time I used my FIM-41 to analyze my radiation patterns, I pointed the meter toward the towers, and not at the ground, to get an acceptable signal.

My suggestion to Mr. Richer is this: If CFA is the savior of the AM world, as you seem to believe that it is, publish your designs and data in a well-respected publication such as Radio World. Don't give us any more sales pitches until you can prove that your system works.

I truly hope that it does function as you say it does. It would be a godsend to AM broadcasters throughout the world.

However, if it is nothing more than smoke and mirrors, then I would hope that Michael Powell and the engineers at the FCC would see through the facade, and refuse to permit the CFA from ever becoming a reality in the United States.

Edward C. Dulaney
Chief Engineer/Colorado Region
Crawford Broadcasting Co.
Denver

I have been reading with great interest the articles and comments about the Crossed-Field Antenna. As I understand it, the holdup is getting approval before testing the antenna in a real-world environment inside a developed country where it can be documented.

Why can't someone promoting this antenna just do experiments in the United States on a TIS station or use a Part 15 AM transmitter for comparisons?

I would love to believe that the Crossed-Field Antenna is all they claim, but why isn't there an antenna I can travel to in operation? I know, I know. "There's a bunch on the air in Egypt and Timbuktu, unfortunately we can't tell you where they are for security reasons, etc." Whatever.

It appears to me that all the articles until now have been very short of actual technical information, and are instead nothing more than a marketing ploy designed to build interest in the United States.

Because I've been around radio for more than 20 years, I've picked up some tips from the various "marketing professionals" I've worked with. Let me give you some tips:

1.) Stop painting all the Crossed-Field Antennas like carnival rides. If you spent as much time developing the CFA as you do masking and spraying all the different racing stripes and colors on your antennas, there would be thousands in use already.

2.) Don't use planes and trains as excuses not to get people with cameras and notepads to your antenna sites. There are many trusted people here in the United States who would be happy to see one of your antennas in operation and take measurements of its radiated field.

3.) Lose the "smoke and mirrors." Instead of spending hours choosing the biggest, most confusing sales brochure verbiage your antennas are designed with, how about a schematic and dimensions? I could build one right here and plug it into one of the TIS stations and tell you what happens.

I have a few years of antenna designs I have worked on, and all of mine have worked at some point. I provided schematics, dimensions and even models to anyone with questions — I did not act like an evasive three-year-old hiding cookies behind my back. As a result, my antennas designs are in operation.

The real shame of it is, I'm sure that many hours of talented engineering and expertise have gone into this project. Unfortunately, nobody here is buying any of it. Save it for April 1.

Paul Shinn
Contract Engineer
Stockton, Calif.

Radio: Get Ready to Recover

As radio looks back at a dismal year — the Radio Advertising Bureau predicting an overall drop of 9 percent in advertising for 2001 — a survey of prestigious economists reports near-consensus that the recession is almost ended, likely to sputter out sometime in this quarter.

Whenever the turnaround comes, radio will be operating in a tougher, more competitive world, as marketing and advertising consultant Phil Guarascio recently told RAB board members.

"Changes are coming," Guarascio said. "It's not just CPMs, but how things happen in the marketplace. Media buying has become a commodity practice."

Radio World agrees: radio has to be at every "cross-platform" media buyers' table and must educate clients about our effectiveness.

"You have to get past re-selling the medium each time you go into a buy," he said. Hear, hear.

Guarascio also projected new money would soon come into the media business, particularly for companies aligned with multi-media assets. "But get in on the ground floor," he said. "Be ready!"

We feel radio should go local to succeed in the recovered world. RAB President and CEO Gary Fries predicts that national sales will be flat this year, but local sales, which account for the great bulk of radio revenue, will grow by perhaps 3 percent.

Match that with Guarascio said about local sales: "Most advertisers are looking for ways to take their big national assets, like the Olympics, and drive it down to the local level."

Radio's got to be in every media buyers' plan.

The need for better, more professional radio sales people continues to be an issue for the industry. Guarascio is just one of many experts who counsel radio to strengthen its sales force.

"Support training initiatives that the RAB has in place. You are going to need better-qualified people," Guarascio said.

He also said the time is ripe for creativity and fresh ideas, especially at the local level.

We concur. These are useful reminders as the industry pauses for the RAB show this month.

— RW

Write to Us

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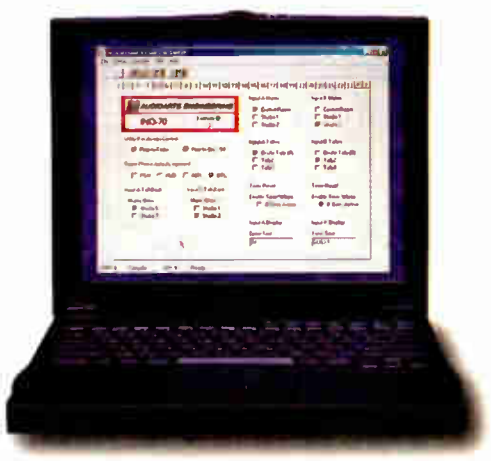

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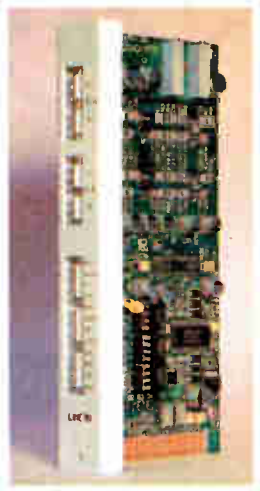

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