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RadioWorld®

Vol 20, No 26

Radio's Best Read Newspaper

December 25, 1996

1996: The Year of Deregulation

by Bob Rusk

WASHINGTON It was Christmas in February for consolidation-minded radio station owners, as Congress passed the much-debated Telecommunications Act of 1996. The act is the most far-reaching deregulation of the communications industry ever, and gives broadcasters three principal changes. That short list is topped by the ownership reforms that continue to make headlines.

The act also extends stations' license terms to eight years, up from seven, and eliminates challenges to licenses.

At renewal time, a broadcaster no longer can be challenged by a competing applicant. Only when the FCC denies a broadcaster's application for license renewal can anyone else seek the license.

Barry Umansky, deputy general counsel of the National Association of Broadcasters, called this a major step

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forward. "For decades broadcasters have opposed the comparative renewal policy," said Umansky. "It was a quandary for both the FCC and the incumbent broadcaster. How do you compare a track record against the paper promises of a challenger?"

Just do it

As soon as Congress passed the act, the NAB lobbied the FCC to implement the changes immediately.

"We urged the commission to take the Nike approach and 'just do it,'" said Umansky, "rather than going through a notice and comment procedure."

The FCC did that when it quickly implemented the new radio station ownership rules, which have drawn both

praise and criticism from group owners and industry observers.

Some owners said the public will not be served as well with single owners controlling more stations in a market. But with strength of ownership, others said, radio can grab more ad dollars, perhaps even squeezing some out of the hands of newspapers.

"Radio represents only about 7 percent of every advertising dollar," said David Pearlman, chief operating officer of American Radio Systems, which has more than 90 stations in 18 markets.

"By having stronger ownership and stronger groupings of radio station properties in a market, the leadership of those groupings can focus on raising the level of revenue for the entire market.

"There can be more effective customer-focused marketing, which will lead

continued on page 17 ▶

Why Was This Station On the Air for a Year?

by Lee Harris

Bolingbroke, Ga. The management of WDBS(FM) finally knuckled under to pressure from the FCC and took the station dark on Nov. 29, ending more than a year of unauthorized broadcasting.

WDBS went on the air in September of 1995, although its construction permit had been revoked, its license application denied and its call letters deleted from the FCC database. The big question now for the station's competitors is whether it will stay dark.

William Taylor, general manager of

WDBS and its LMA partner WKEU(AM) Griffin, said he silenced the station to avoid a negative impact on owner Joseph Kendrick's re-application for a license.

On March 19, 1993, the FCC issued a construction permit to Kendrick for what would turn out to be WDBS, a Class A station in Bolingbroke that reached the Macon market. The permit expired eighteen months later.

On the expiration date, Kendrick filed an application for an extension. According to the FCC, the application indicated that he had not started

continued on page 14 ▶

Canada Poises for DAB; U.S. Thinks About It

by James Careless

WASHINGTON 1996 has proved to be the pivotal year for Eureka-147 digital audio broadcasting technology in Canada.

The year also brought important developments in efforts to select a DAB standard in the United States, but as Canada and some other countries move ahead with DAB, the U.S. radio industry continues to debate the best path.

After years of testing, the Canadian government has adopted Eureka in the L-band (1452-1492 MHz) as its official DAB standard. In cooperation with both private and public broadcasters, the gov-

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Digital Radio withdrew its three IBOC systems (two FM and one AM IBOC) from the field tests.

USADR cited irreconcilable differences with the testing and reporting procedures. AT&T could not find a station to volunteer its signals to the rigors of a digital rider.

The only systems tested in the field in the United States were Eureka-147 on the L-band, an S-Band system from VOA/JPL and the in-band, adjacent channel (IBAC) system from AT&T/Lucent Technologies and Amati Communica-

NAB steps in

After the AT&T announcement, the National Association of Broadcasters (NAB) offered its services "to facilitate a fair and impartial IBOC testing program for all proponents."

The letter from NAB President Eddie Fritts also indicated that the NAB is not worried about the United States losing ground to other countries that have signed on the Eureka-147 system and are moving ahead with pilot projects.

No official testing mechanism has yet been set up by the NAB.

continued on page 11 ▶

The NAB offered help to facilitate an IBOC testing program.

ernment has worked out the major regulatory and technical obstacles to commercial DAB.

U.S. testing efforts did not go smoothly. AT&T/Lucent Technologies and Amati Communications withdrew their in-band, on-channel (IBOC) system from the digital audio broadcasting field tests in September, a few months after USA

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NEWSWATCH

Disney Debuts Children's Network

NEW YORK Four affiliates have begun broadcasting ABC/Disney's new 24-hour children's radio format network. ABC's KQRS(AM) in Minneapolis switched its call letters to KDIZ and its format from classic rock to accommodate the Disney programming; the other affiliates were ABC's WKHX(AM) Atlanta, Citadel Communications' KCNR(AM) Salt Lake City and American General Media's WYDE(AM) Birmingham, Ala. Some station managers touted ABC/Disney as a vanguard in children's programming.

A lawsuit filed by former partner Children's Broadcasting Corp. (CBC), which alleges that ABC/Disney used "confidential business information ... to develop and market a competing children's radio network" to CBC's Radio AAHS, is pending.

Panel Deals Setback To CD Radio

WASHINGTON CD Radio's entry into the realm of digital audio radio service (DARS) suffered a major blow when an FCC panel recommended that the company not be given "pioneer preference" to offer the service. The panel's

ruling means CD Radio would have to participate in an auction next year among the four major providers of the technology for the 25 MHz of spectrum allotted by the FCC for DARS usage.

Reps. Thomas Bliley, D-Va., and John Dingell, D-Mich., asked the FCC to appoint a scientific advisory panel to determine whether CD Radio, the first company to apply for the right to offer DARS services, or any of the other three companies were worthy of pioneer preference status, which would guarantee a license and sometimes a price discount to the company.

NAB President Eddie Fritts supported the panel's decision, saying, "We believe

that local stations best serve local audiences and that any fragmentation by satellite DARS undermines the principle of localism."

Western Storm Silences Stations

PORTLAND, Ore. Nearly a dozen radio stations were kicked off the air when a freak November storm hit Portland. About 100,000 customers lost electricity, as lines snapped under the weight of heavy, wet snow.

Unfortunately for KKRZ(FM), the emergency generator was in the process of being replaced. The station is owned by Jacor Communications.

Most electricity had been restored throughout the city by the day after the late November storm, but the melting

continued on page 3 ▶

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World Radio History

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READERS FORUM

If you have comments for Radio World, call us at 800-336-3045 or send a letter to Readers Forum (Radio World, PO Box 1214, Falls Church, VA 22041 or e-mail 74103.2435@compuserve.com or MCI Mailbox #302-7776) All letters received become the property of Radio World, to be used at our discretion and as space permits

Bong ...

Dear RW,

Enjoyed your article ("NBC Chimes Ring Through History," RW, Sept. 18) on this well-known bit of radio heritage. The story mentioned how the hand-struck chimes were later replaced by a "push-button" device, and I'd like to offer some details.

When I worked at NBC-owned WRC(AM) in Washington years ago, I remember one of the engineers (Tom Mann) hauling out an old rack-mount chassis for me to look at.

Mounted on a Bud box was a metal cylinder, suspended above the chassis so it could spin. It was about the diameter of a soup can but half the height. It contained little protrusions along its surface, that in turn brushed a polished metal comb mounted on rubber grommets to a bracket. The assembly resembled a wind-

up music box, and may even have been patterned after one.

A push-button (remote start) activated an electric motor with a gear reduction assembly on the side of the can, which would then revolve. The protrusions would flick the metal comb to create the now-classic "NBC" tones of G, E and C. The teeth of the comb included musical overtones and subharmonics that made this "sounder" so unique.

There was a magnetic pickup beneath the comb, and wire that ran to a vacuum tube, what I believe was a type 2A3. The output, through a transformer, then drove at 600 ohms, line level. On the rim of the cylinder rode a wheel-and-arm microswitch, which opened when reaching a dent on the rim. This completed the cycle by stopping the motor, making it ready for the next use.

The unit was Serial Number 008, as I recall reading on a front panel plate marked RCA Engineering Dept. It may have been one of the first "automated" devices this flagship NBC station owned.

Paul Courson
Dow Jones Broadcast
Washington, DC

Bong ...

Dear RW,

A few days ago I was in Hurley's Pub talking "radio days" and I read with interest that article by Dick Stedler concerning the NBC chimes. As a follow-up, I'm enclosing a photo of an NBC console which was equipped with the "Chimes" key in the upper right. This rotary switch, through relay logic, started a cart, which played the chimes into the studio amplifier. There were four handmade panels of this type installed in 1963 on the fifth floor of 30 Rock. One was used for several years for local radio programming (WNBC Radio 66), and all originated network feeds from moon shots to "Monitor." The chimes were reproduced on a pair of recalcitrant RCA RT7s, upgraded to RT27s and finally to ITC SP decks.

In 1985 NBC Radio Network was moved to 1700 B'way where chimes continued to be used as a signal to affiliates upon conclusion of network feeds. There, the McCurdy SS8500 consoles were equipped with "Chimes" push-buttons.

The chimes served as a promotional item and were the basis for an NBC logo in the 1950s, prior to the popular "spaghetti" design. Lapel pins with the chimes logo and chimes "vibes" were sold in the '80s at the NBC store in Radio City.

Incidentally, the notes G-E-C signified General Electric Company, which owned NBC Radio when chimes first chimed, and thematic variations of chimes have appeared in various NBC sounders and jingle packages.

Holiday Greetings

Happy holidays from Radio World to the guy who runs the board overnight ... to the overworked program director schlepping to Maryland to read Arbitron diaries ... and to the split-shift traffic reporter whose life is radio from dawn to rush-hour dusk.

Happy holidays to the bigwigs who buy, sell or run radio's new super-groups, making their companies better on behalf of their investors and employees. But a warm cup of nog too for the surplus program director, the GM out of a job, the staffer wondering whether he'll have a paycheck after the next LMA, JSA or buyout.

Season's greetings to the government slaves at the FCC and on Capitol Hill, toiling under piles of paper. May their copiers never break down. Warm wishes to the commissioners, and an extra big stocking for Jim Quello.

Hearty Hellos to the consultant who tweaks our processors, the broker who helps sell our station, and the lawyer who keeps us honest (or at least defensible).

Felicitations to the radio pros who write in their spare time for RW. If it's not for the pay, it must be the glamour.

Ho, ho, ho to the entrepreneur who makes our equipment, to the woman in the factory dipping circuit boards into solder bath, and to the salesman working until midnight to set up the exhibit booth.

Greetings to the guy who runs that little station in Eatonton, Ga., to the professor of broadcasting in Newark, Del., and to the fellow who keeps the transmitter running in North Pole, Alaska. Seasonal snugglies to the woman who writes grant requests for the public radio station, to the high school teacher with a passion for radio and to the alphabet soup folks: RAB, SBE, RTNDA, EIA and all those at NAB who watch out for the best interests of radio and its people.

Happy New Year to the guy who climbs the tower, the sales rookie, the copy writer, the production slob, the weekend jock and the FM sidekick. And a particularly fond tip of the elf cap to that solder-stained fool, the one who works our transmitter, sets our levels, reboots our computers, chases down our hum, grouches when we take coffee into the studio, shows us how to turn stuff on, and sometimes even cleans the bathroom: our radio engineer.

To all the citizens of the world of radio, happy holidays.

— RW

Hardware such as the chimes themselves, as well as pins, carts, and even the Engineer's Console survive in private collections. Now all this talk of chimes make me think of Chimay Ale ... Hurley's beckons.

Bill Kuhar
Lehigh Valley, PA

Bong!

Dear RW,

The article about NBC chimes was of special interest to me. Back in 1961-62 I was program manager for NBC-owned WMAQ-AM-FM, Chicago.

When I arrived on the scene I asked why I had not heard the NBC chimes in a long, long time. I was told it was due to a policy sent down from New York. This was puzzling as I had long identified the NBC chimes as a proud trademark of the network and its owned stations, but I did not push the point. I did learn that most employees there missed them as well.

One day we had to make a feed to the network. I don't remember the exact circumstances, but it was a remote from some hotel in Chicago. As the day program director, Howard Keegan, was tied up with the AM operation, which was not carrying the network program, I stepped in to handle the production. As I recall, we did carry the program on the FM side to simplify things.

Most of the Chicago NBC studios had long been diverted to other use, such as offices, storage, etc., so we had to scrounge around to come up with a facili-

ty to use. We lined up an engineer, a staff announcer to handle the system cue and FM station break, and an engineer for the remote end.

As we neared the end of the program, it appeared we were going to get it back a bit early and have some dead air before the system cue. Sure enough, it came back to us a bit early and I never did like dead air.

The announcer, I think it was Dick Noble, looked at me, as did the engineer in the control room. Perhaps the announcer read my mind, and I said "Hit it," pointing to the chime button. With a big smile he stretched out "This is NBC, the National Broadcasting Company," and hit the chime button, just like in the old days.

You might say I was the "hero of the day" at NBC in Chicago that day, as those who did not hear the chimes heard about them as word of their resurrection, at least for that afternoon, quickly spread. It was a morale booster, especially for the "old timers."

I always did like the chimes on the radio, maybe because of my first radio job back in 1940 at WLBI, the Wisconsin Department of Agriculture station at Stevens Point, we used them regularly ... manually, with a little mallet, of course. But, that is another story.

I notice that now NBC has brought back chimes on TV, though "electronically," even before scores during football games. Maybe somebody in New York figured out they didn't sound so bad after all.

Robert K. Brown
Fort Atkinson, WI

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January 8, 1997

New RFR Guidelines Kick In

by Lynn Meadows

WASHINGTON After three years of deliberation followed by a strong push from Congress, the Federal Communications Commission released new, more stringent Radio Frequency Radiation guidelines this year.

The Telecommunications Act passed in February gave the FCC 180 days to define new rules regarding the environmental effects of RF emissions. Accordingly, on Aug. 1, the FCC adopted a Report and Order (R&O) with new guidelines for evaluating the effects of emissions from FCC-regulated transmitters (see *RW*, Dec. 11, page 35).

The R&O indicates that the new guidelines will apply to applications for stations filed after Jan. 1, 1997. This would include applications for new stations as well as renewals and facilities modifications.

However, an FCC source said all stations should check that they are in compliance, because they will be responsible for the new limits should someone bring an allegation against them.

With the congressional mandate satisfied, sources said the FCC had received

with requests for waivers to the new guidelines. The new RF limits for uncontrolled environments — those where the general public is found — will be five times stricter than limits for controlled environments. However, limits for controlled environments where station

Visit <http://www.fcc.gov/oet/> to learn more about the new RFR guidelines.

several requests for reconsideration of the deadline and at press time was "strongly leaning" toward extending it to June 1, 1997.

By late November, the FCC source said, the Office of Engineering and Technology (OET) had been "flooded"

employees work will not change.

An extension would be handy, because the OET did not expect to publish an update of its Bulletin 65 until late December. That bulletin is to provide equations, charts and graphs to help engineers comply with the new guidelines. A

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separate question-and-answer bulletin for the general public, OET Bulletin 56, was also expected out this month.

Plenty of comments

The new guidelines replace the 14-year-old RF exposure standard set by the American National Standards Institute (ANSI) in 1982 and adopted by the FCC in 1985. Establishing new guidelines was no simple task. The Notice of Proposed Rule Making regarding new RF rules released in April 1993 generated more than 3,000 pages of comments. One big debate was over which standard the FCC would choose.

Two main groups have worked on RF standards since 1982: the National Council on Radiation Protection (NCRP), which issued its standard in 1986, and the Institute of Electrical and Electronics Engineers (IEEE), which in 1991 released a new standard that was subsequently adopted by ANSI the following year.

The R&O released this year is actually a hybrid of the two. The FCC chose Maximum Permissible Exposure limits for electric and magnetic field strength and power density based on the 1986 NCRP recommendations. Other limits, like the specific absorption rate for evaluating hand-held devices like cellular phones, were based on ANSI/IEEE recommendations.

Broadcasters did not get everything they wanted in the new guidelines. Many had asked the FCC to rule that its guidelines would preempt local government attempts to regulate broadcast RF. Instead, the FCC adopted language from the Telecommunications Act allowing federal preemption of local regulation of personal wireless service facilities — not broadcast facilities — on the basis of RF environmental effects.

Induced vs. contact

On the other hand, the National Association of Broadcasters was pleased that the FCC decided not to require stations to measure induced or contact currents. Induced currents occur when a person becomes an antenna with current flowing through his or her body, without touching anything. Contact currents occur where a conductive object is located near an antenna. A person touching the object could be shocked or burned.

The 1991 IEEE standard included limits on induced and contact currents. In its R&O, the FCC noted that most federal health and safety agencies supported the use of those limits. The NAB and others questioned the accuracy of instrumentation to measure these types of currents. The FCC elected not to adopt exposure guidelines for induced or contact currents yet. The R&O states that the agency will consider adopting limits if more accurate measuring devices become available.

Engineers with questions about the new RFR guidelines can visit the OET web site at www.fcc.gov/oet/ and watch for the revised version of OET Bulletin 65.

Here's a typical digital audio question:

Can I make it play music on the air, take requests, record Rush, Limbaugh, automate overnight, switch 24 satellite networks, switch transponders and satellite receiver channels, tell the time, tell the temperature, start the coffee pot and let out the cat and a lot of other stuff?

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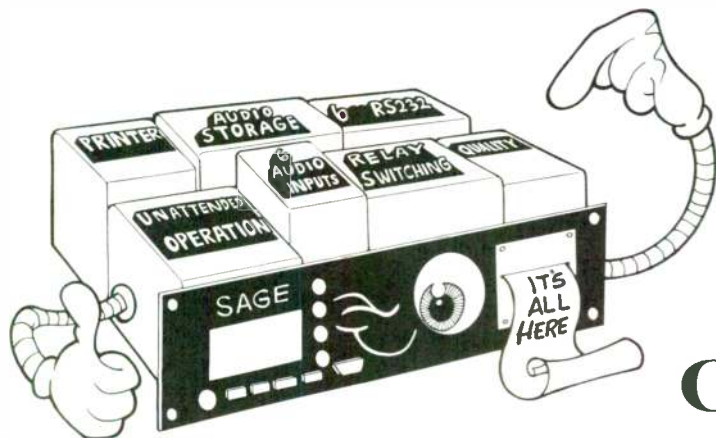


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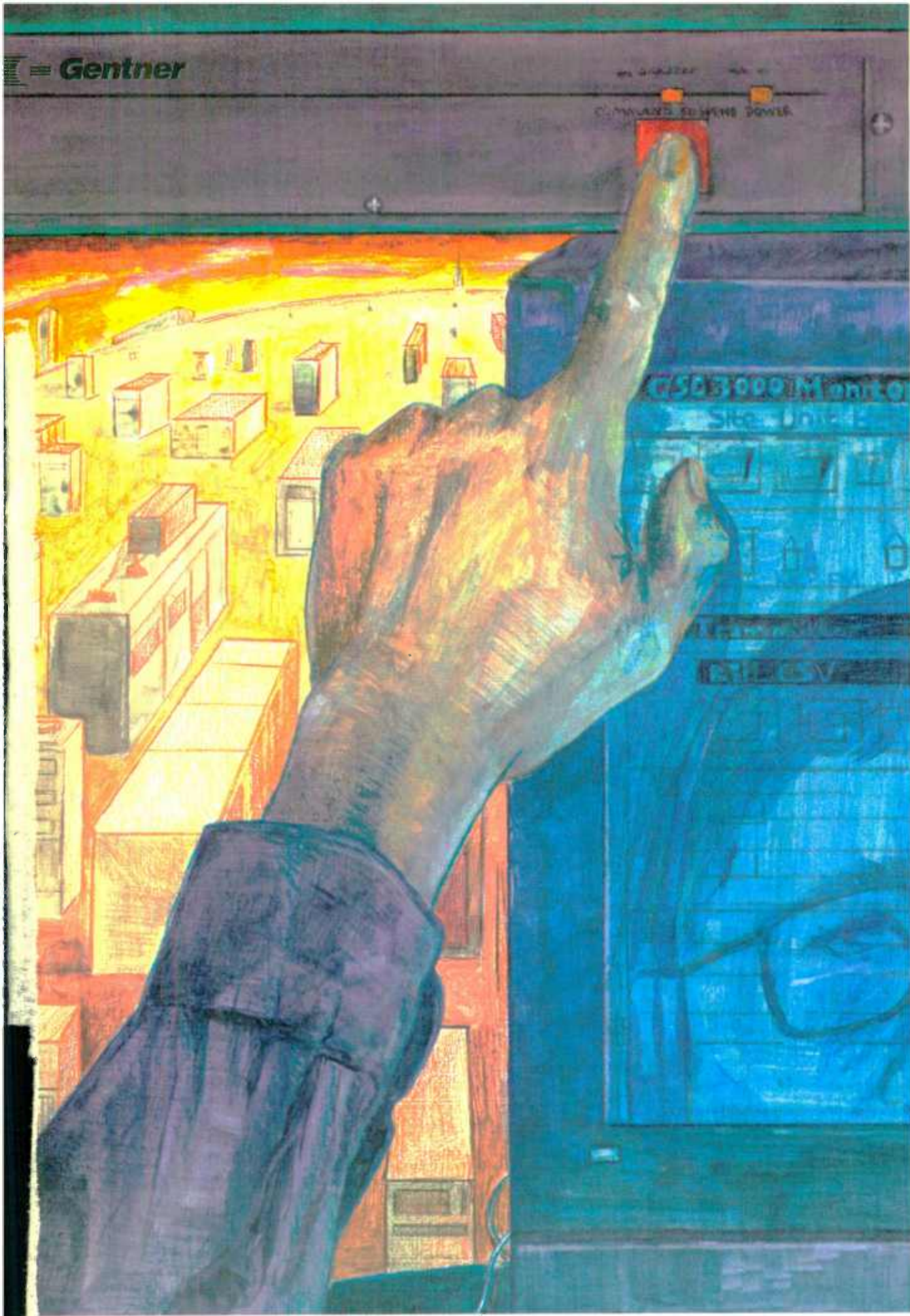
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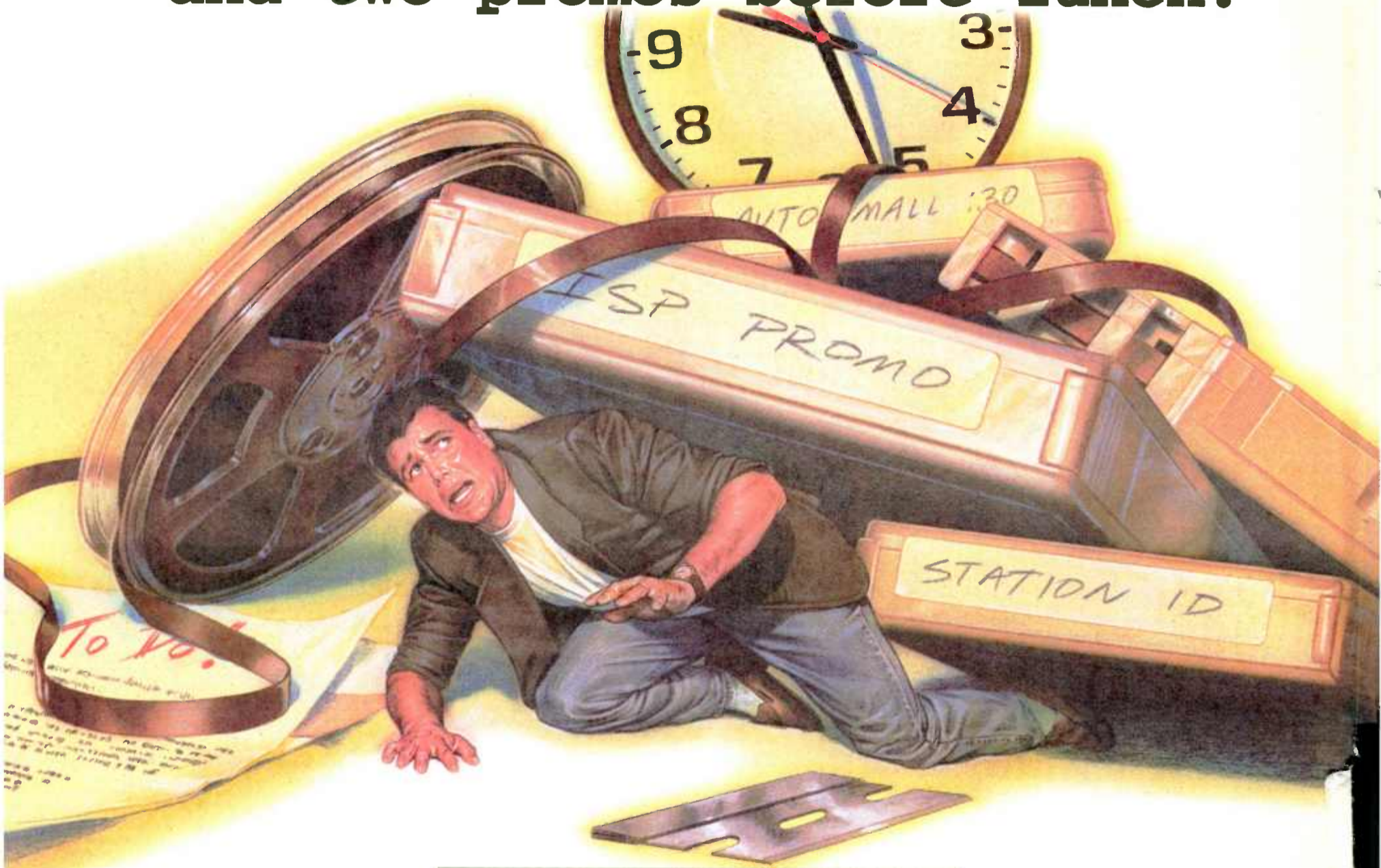
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World Radio History

DAB Is Moving Ahead Abroad

► continued from page 1

USADR plans to demonstrate improved AM and FM IBOC systems in 1997. The company had discussed a working relationship with Lucent Technologies in which Lucent would participate in the development of USADR's IBOC systems. No further news has come from that front.

This was in keeping with the Canadian view of DAB as a replacement, rather than a competitor, for analog AM and FM.

Industry Canada released a nationwide L-band frequency allotment plan in mid-1996. It was based on the notion of the L-band offering space for 23 1.5 MHz channels, each of which could carry five

Tower, through a consortium called Master FM.

Radio executives speculated that similar joint ventures were being discussed for Montreal and Vancouver.

Shortly thereafter, the Canadian Broadcasting Corp. announced plans not only to take DAB services into Toronto and Montreal by the end of 1997, but also to extend them to 75 percent of its national listening audience over the next five years.

Canadian radio executives can now obtain a guide titled "Turning on DAB" to learn the ins-and-outs of launching digital broadcasting.

Elsewhere

To the south, Mexican broadcasters are also watching DAB developments. The government and industry have established a DAB commission to plan the development of the commercial, technical, financial and regulatory facets of the technology.

Mexico has not adopted a standard. Its industry is divided over whether to implement a Eureka-147 solution, or to base a decision on a U.S. standard.

Elsewhere in the world, DAB broadcasts are going strong.

Many of the nations in Europe have at least begun dabbling with Eureka-147

DAB, and several countries — most notably the U.K., Germany, Sweden, Poland and Norway — have had ongoing DAB pilot services in place since late 1995.

WorldSpace, which is developing a satellite-based DAB system designed to serve developing nations, made several notable advances last year.

Successful tests were conducted of its StarMan receivers, and the organization opened African headquarters in Accra, Ghana.

The future

The launch of the first WorldSpace satellite is set for mid-1998.

Australia, South Africa and India all spent time last year examining the DAB options now on the market, and began the long process of deciding whether IBOC, IBAC, satellite or Eureka-147 best suits their specific market.

And NHK, the Japanese national broadcaster, announced that its DAB system will be publicly unveiled in mid-1997.

Many observers predict that 1997 will be the year consumers begin to notice DAB, as car and data receivers for DAB are slated to be introduced at the Internationale Funkausstellung in Berlin and other electronics shows throughout the year.

□ □ □

Lucia Cobo and T. Carter Ross contributed to this story.

Many observers predict 1997 will be the year consumers in some countries begin to notice DAB.

Specifically, USADR was interested in Lucent's PAC (Perceptive Audio Coding) compression technology, which it believes has the capability to deliver superior audio quality at reduced data rates.

For Canada

A major step for Canadian DAB came late in 1995, when the Canadian Radio-television and Telecommunications Commission released its policy on the licensing of digital radio. The CRTC announced that "All AM and FM licensees who wish to use digital radio facilities to provide programming that would consist largely of a simulcast of their existing services would automatically qualify for these licenses."

stereo radio stations plus auxiliary data services. As with the CRTC policies, "that plan basically provides accommodation for all existing AM and FM services," said Royce Trenholm, Industry Canada's Manager of Broadcast Planning and New Technology.

Another big step came in October, during the Canadian Association of Broadcasters (CAB) convention in Edmonton, Alberta.

Eight of Toronto's major broadcasters — including Rogers, CHUM, Standard, Telemedia and Shaw — announced their intention to begin simulcasting their AM/FM signals via a jointly run DAB transmission facility in 1997.

These broadcasters already share FM transmission facilities at the Toronto CN

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Review in *Line Up - The Journal of the Institute of Broadcast Sound*
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Justice Is Now a Radio Player

by Matt Spangler

WASHINGTON When the Telecommunications Act became law, 1996 promised to be the year that the sharks would engulf the minnows. The radio industry landscape, it seemed, would soon be populated with fewer owners, many of them huge corporate entities controlling a much larger piece of the business.

Then, in late summer, the federal government made its presence felt again, this time in the form of Justice Department lawyers.

The Telecommunications act both simplified and complicated ownership rules. The revised national multiple ownership

rule, as implemented by the Federal Communications Commission, eliminated caps on the number of stations one entity could own.

Local ownership was weighted by the FCC according to market size. In a major market (with 45 or more stations), a party could own, operate or control up to eight stations, with no more than five in the same service (AM or FM); in a large market (30 to 44 stations), up to seven stations, with four in the same service; in a medium market (15 to 29 stations), up to six stations, with four in the same service; and in a small market (with 14 or fewer stations), up to five stations, with no more than three in the same service.

No sooner was the legislation inked than the dealmakers got to work. Cox Broadcasting announced plans to acquire NewCity Communications, and Chancellor set out to buy eight Florida stations from OmniAmerica Group, making Cox and Chancellor the big players in Orlando. Tichenor Media Systems sold its 20 Spanish-language stations to Clear Channel Communications, ensuring that the latter would reach two-thirds of the Hispanic population in the country.

Then, on June 20, an announcement of seismic proportions: Westinghouse/CBS would purchase Infinity, a \$4.9-billion merger that would create an 83-station empire with an estimated annual 1995

TOP News of 1996

revenue of \$973.5 million. The new group would have 36 percent of market revenue in New York, 40 percent in Boston and 44 percent in Philadelphia.

The buying frenzy continued. As of mid-November, almost 2,800 of the nearly 5,000 Arbitron-rated stations were involved in some sort of in-market combination (LMAs, triopolies, quadropolies and the like). In the 40 days before the Telecom Act was signed into law, only 53 stations had traded hands; as of Nov. 25, 1,912 more stations had changed ownership.

The Department of Justice (DOJ) began to take notice.

Traditionally, antitrust regulations have taken a back seat to FCC rules, which, in this case, seemed to make ownership easier. For the Justice Department it was not so clear. The department reviews each merger or acquisition based on its own merits, even molding the definition of a market relative to a particular case (see *Cole's Law*, RW, Aug. 7). The Telecom Act, at least in the eyes of the Justice Department, preserved the antitrust review of radio mergers.

"It follows," said Lawrence Fullerton, deputy assistant attorney general of the department's Antitrust Division, "that antitrust law restrictions on station ownership can be more binding than the telecommunications law statutory limits in some cases."

What's the threshold?

Making matters more difficult, the Justice Department carved out radio as distinct from other media within advertising markets. It also counts LMAs and JSAs towards station ownership. The key number bandied about in the media in the summer and fall was 40 percent, referring to the amount of radio advertising revenue that Justice would reputedly allow an owner to have within a market before a deal would be scrutinized for possible antitrust violation.

Many industry leaders argued that Justice should measure station revenue in the context of a market's entire local advertising revenue, not radio alone. Nevertheless, the DOJ forced Jacor Communications to spin off WKRQ in Cincinnati this summer before its purchase of Citicasters would be approved. By spinning off WKRQ, Jacor went from a market share of 56 percent to 49 percent in Cincinnati.

On the other hand, the Justice Department approved the purchase of Henry Broadcasting's Honolulu stations by Patterson Communications with no such requirement. That deal gave Patterson 51 percent of the market there.

Justice also claimed that, in some instances, LMAs and JSAs fall under the jurisdiction of HSR filing requirements. Under those rules, mergers or acquisitions that meet a certain monetary threshold (based on the assets of the parties involved) or a "change in the beneficial ownership" must undergo a waiting period

continued on page 17 ►

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Circle (16) On Reader Service Card

Is This a New Dawn for RDS?

Opinion Divided on State of Technology and Market Acceptance After Strong Promotion

by Alan Haber

WASHINGTON Opinion is divided as to whether Radio Data System (RDS) technology is progressing fast enough to reach critical mass, or simply moving slowly without building appreciable momentum. Yet RDS is making progress. The number of radio stations listed in *RW*'s RDS Roll Call rose to 624 between February and October, an increase of almost 57 percent.

Perhaps the chicken-and-egg syn-

percent desired paging and messaging features, and 26 percent wanted the technology's ability to automatically switch to alternate frequencies.

The consumer electronics market is about to grow. Pioneer will have six new RDS-enabled car radios available in 1997, the first expected by February and the rest by May, according to Russ Johnston, vice president, car product planning.

Pioneer will show its RDS radios at the Winter Consumer Electronics Show in Las Vegas next month. All will feature

I think you'll see that more and more stations continue to see the benefits of RDS.

—Edward O. Fritts

drome attached to RDS since its 1993 introduction has been broken. The president of the the Consumer Electronics Manufacturers Association, Gary Shapiro, said the syndrome broke when the association began its promotional campaign placing 300 RDS encoders in radio stations in the top 25 markets during its April 1995 to June 1996 run.

NAB President Edward O. Fritts said in October that "progress is being made and that's encouraging. As we go forward in that arena, I think you'll see that more and more stations continue to see the benefits of RDS."

The encoder side

Encoder makers are at work with cautious optimism. RE America supplied the encoders for the CEMA campaign. Ron Caird, customer support engineer, said the level of interest at radio stations has been about where it was before the campaign started: "moderate at best." Caird said he feels that "it's going to take probably another six months" before the effects of the campaigns "start to show up."

Circuit Research Labs' Domestic Sales Marketing Manager Bill Ammons said stations buying encoders "are typically the ones that want to try making some money." He said, "Until you can walk down to a Chevrolet dealer and get your brand new Malibu or Impala that has (RDS) built in, there's not going to be the mass exodus."

Ben Barber, senior development engineer at Inovonics, said his company shipped few encoders within the United States in 1996, but shipped quite a few to overseas destinations. Yet, he said, Inovonics wants to see RDS "go, and we want to see every station have RDS on the air." Things are "moving in the right direction," he said.

New car radios

A 1996 CEMA survey showed that 48 percent of respondents were interested in receiving Emergency Broadcast System alerts with RDS, 44 percent were interested in receiving automatic traffic and emergency news, and 33 percent were hungry for song titles and artist names on their RDS displays.

Further, 31 percent wanted to be able to search for radio stations by format. 29

scrolling radiotext and ID Logic capability. National department store Best Buy and other stores will carry them. Pioneer plans a trade advertising campaign, probably in the spring, to trumpet its entry into the RDS marketplace.

Duane Hoff, Best Buy's senior buyer for car audio, thinks RDS will be a success for the retailer, particularly if the radio broadcasting community supports it. He said Best Buy will train its sales staffs on RDS features "and how to talk about those features and sell 'em."

Denon Electronics has virtually led the way on the manufacturer side until now and will roll out three car units at the CES. Denon has sold more than 100,000 RDS home and car units. Stephen Baker, vice president of sales and marketing, said that Denon sees "what we think to be a critical mass of radio stations out there ... covering a significant portion of the U.S. population."

Baker observed that "there's a body of broadcast activity, there's a body of manufacturing activity, and there's consumer interest. We think it will continue to accelerate."

Delco next year will produce RDS radios in high volume for other companies,

TOP News of 1996

for sale under their names, according to business manager Ed Catlett. Bang & Olufsen introduced three home audio systems that feature RDS since this past spring. Onkyo now has two RDS products, with the introduction of a new model this year (available in a gold finish).

Paging

The RDS paging front saw movement. Thanks to a marketing agreement between ACCESS Global Communications and Matsushita Electric Industrial, an RDS-based nationwide paging network is being built.

The network started with almost 100 stations on the West Coast. ACCESS Global CEO and President Robert L. "Bobby" Adams said he wanted 500 stations on line within the next 24 months.

Some manufacturers remain skeptical. Blaupunkt's Senior Design Engineer Mike Stosich said that his company will not make RDS radios available for the aftermarket until probably 1998. He said he doesn't think that a lot of radio stations are taking RDS seriously.

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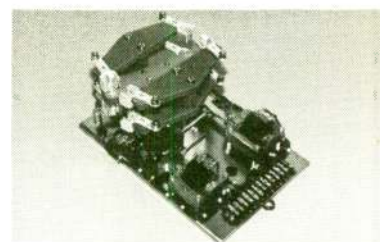


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Circle (26) On Reader Service Card

Expanded AM Band Drags On

by Lynn Meadows

WASHINGTON Most stations anticipating a position on the AM expanded band gained no ground whatsoever in 1996.

Only two stations inched any closer to broadcasting on the band between 1610 and 1700 kHz this year: KXBT(AM), formerly KNBA, in Vallejo, Calif., began broadcasting on 1640 kHz in March and KOJY(AM) in Costa Mesa, Calif., is working with the Federal Communications Commission to get Special Temporary Authority (STA) to begin broadcasting on 1650 kHz.

The remaining expanded band applicants started the year awaiting the release of a revised proposed allotment plan listing who is eligible to migrate up the dial. They end the year awaiting yet another new version of that allotment plan.

Despite the apparent lack of progress, the FCC has been working to resolve who gets to move. But the two allotment plans proposed to date have been greeted with several petitions for reconsideration.

The FCC released the original proposed AM expanded band allotment plan in October 1994. The agency took nearly a year to resolve the petitions for reconsideration that followed. In the end, the FCC announced it would accept comments on how to modify allotment procedures and what modifications to make to the AM database used to calculate the

TOP News^{of} 1996

allotment plans. Only four people submitted comments during that brief comment period in the fall of 1995.

The FCC reran the computer programs that determine who gets to migrate up the dial. The programs calculate improvement factors for expanded band applicants and then generate an allotment plan.

The second proposed allotment plan, which would have allowed 87 stations to migrate, was made public in March. Eight new petitions for reconsideration arrived in April.

In response, the Audio Services Division updated its plan software this fall. It has generated a third proposed allotment plan and drafted a Report and Order which must be approved by the full commission before it is released to the public. That is expected to happen soon.


WJDM(AM) in Elizabeth, N.J. is the only other station enjoying the benefits of expanded band operation. WJDM was the pioneer station on the expanded band

having begun broadcasting on 1660 kHz in October 1995.

Those three stations and KHPY(AM), Moreno Valley, Calif., are guaranteed a spot on the expanded band thanks to a congressional mandate. The mandate basically states that any AM daytimer that is the only station serving a community of over 100,000 has priority in

moving to the expanded band.

The remaining expanded band applicants have to wait for a finalized allotment plan. Stations on the expanded band will be able to operate a 10 kW signal during the day and a 1 kW signal at night.

The expanded band promises to be a DXer's delight. One general manager in Iowa City said he was told his station would be able to reach 20 states at 1630 kHz. WJDM reported it had heard from people "around the world" who have caught its signal. 

Georgia License Fight

► continued from page 1

construction, nor ordered any equipment. Kendrick's explanation was that he was in "the process of preparing a petition to modify the proposed facilities." The commission decided that Kendrick didn't qualify for an extension. The bad news was delivered in a letter dated Aug. 2, 1995.

Less than two weeks later, Kendrick's attorney submitted an "Amendment to Application," stating that Kendrick had suffered a heart attack in December of 1994 and that he required 18 days of hospitalization. The filing states that this illness delayed the "permittee in reaching final plans concerning construction." However, the construction permit had expired more than two months before the reported heart attack.

The amendment also stated that "steps are now being taken to secure the required permission to construct the tower" and that Kendrick had "decided to construct the station as authorized."

At this point, construction of the station was in fact no longer authorized, but Taylor issued a press release stating that the FCC had authorized WDBS to begin field tests. WDBS took to the air on Sept. 15, 1995, about one year after the expiration of the construction permit. The satellite-fed oldies station operated out of the Griffin studios of WKEU, which handled all operations and sales.

An engineer from the FCC's Atlanta field office stopped by the ersatz combo a few weeks later and ordered WDBS off the air. Kendrick complied, but not for long. A few days later, WDBS was back on the air.

Chuck Tarkenton, owner of WEKS(FM), Zebulon, Ga., was in competition with WKEU. Now, it appeared, he was also competing with an FM that was not supposed to be on the air. Tarkenton said WDBS management told him they had received "special verbal permission" from the FCC to continue operating, pending yet another appeal.

"I called the FCC Atlanta field office and the guy there told me he was told to leave it alone. My lawyer and I both called the FCC in Washington and asked who had issued the special verbal permission for WDBS to remain on the air, and nobody could tell us," an incredulous Tarkenton said. "I had never heard of anything like this in my life."

WDBS continued to crank out "good-time oldies" and, according to Tarkenton, to take in advertising dollars. On April 30 of this year, more than seven months after WDBS started operations, the FCC issued an order upholding its previous decision that Kendrick did not qualify for an extension of his construction permit. The fact that WDBS was already on the air did not help Kendrick's case.

The order noted that the FCC has a well-established policy against crediting post-authorization construction, adding that "we believe that the public interest would be ill-served if we were to reward Kendrick's failure to timely construct by crediting his post-authorization construction in contravention of our policy. Kendrick's construction efforts appear timed to force the Commission into a favorable decision on reconsideration, an action that would run counter to Commission policy."

The order was clear: "Station WDBS(FM) IS ORDERED TO CEASE broadcast operations." The emphasis is the FCC's.

"I kept waiting for them to go off the air," Chuck Tarkenton said, "but it never happened." The FCC apparently decided not to enforce the order while considering Kendrick's latest appeal, filed June 7, in which the station restated its arguments and added a claim that the commission's policy for canceling construction permits is inconsistent.

The FCC rejected all of these arguments in an Opinion and Order released on Nov. 8. Again, the FCC wrote, "Station WDBS(FM) IS ORDERED TO CEASE broadcast operations."

"Oh yeah, they're still on the air," Chuck Tarkenton said more than two weeks after the order was released. "My lawyer called the compliance bureau and they told him a supervisor was reviewing the order. I mean what is there to interpret, exactly?"


Waiting for orders

At that point, WDBS general manager told **Radio World** that he had no immediate intention to go dark.

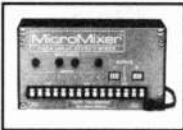
"You see, we're just the LMA partner, so under the law, we're not allowed to make decisions like whether the station should go off the air. We haven't received any orders from Mr. Kendrick, nor have we had any direct orders to us from the FCC. My understanding is that Mr. Kendrick is continuing to fight this."

Clear orders apparently came on Nov. 29. Taylor told the Griffin Daily News that he was taking the station dark to avoid prejudicing the FCC against Kendrick's pending re-application for the frequency. Taylor added that he was unaware that Kendrick had problems with the FCC when he agreed to operate the station under the LMA.

Radio World made repeated phone calls to Kendrick and his Washington attorney, Laurence Bernard. They were unanswered.

In the meantime, Chuck Tarkenton tunes his radio to 102.1 MHz periodically to make sure WDBS had not made an unauthorized return from the radio grave. 

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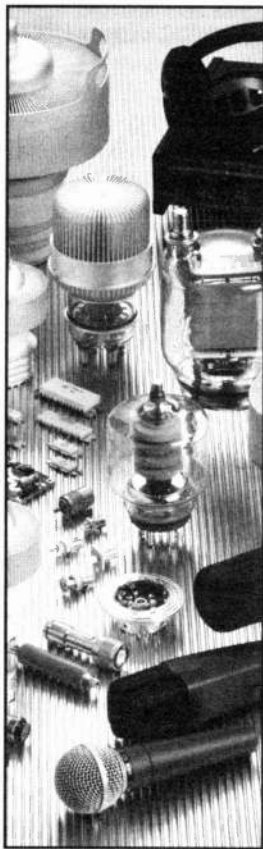
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Analog Survives in a Digital Age

Digital Gets the Attention, But Suppliers of Analog Tape Products Aren't Going Away Just Yet

by Alan R. Peterson

WASHINGTON Is the analog tape format dying? According to some forecasters, it should have been dead by now, given the popularity and maturity of digital cart replacement systems and multi-track hard disk recorders. But those involved say, "not yet."

Two well-known names in the broadcast equipment industry were acquired by new owners in 1996. In May, audiopak of Winchester, Va., acquired the tape cartridge division of International Tapetronics Corporation (ITC). Following its recovery from Chapter 11 bankruptcy, Fidelipac was purchased in November by Amplifonix Inc., a Philadelphia-based manufacturer of FET amplifiers and voltage controlled oscillators.

These recent developments follow an earlier decision by 3M to cease manufacture of analog tape and the highly publicized restructuring of the Ampex tape division into the new Quantegy line.

Despite these changes on the analog tape landscape, the reports of tape's demise are premature. Indications do

we have the direct replacements for those."

With a major competitor leaving the marketplace, Quantegy has enjoyed immense share growth. "But market growth, no. People are leaving that market," said Smith.

International tape sales continue to do well, Smith said, noting a half-million dollar order from Turkey and large orders placed by the Vatican and Swedish Radio.

Will Quantegy ever stop analog tape

production entirely? Smith thinks not.

"If we only have to make three reels of quarter-inch every Friday, if it supports the people who have to walk in there, turn on the lights, start up the coating line and pay for the electricity, we would do that," he said.

But Krassowski is more certain evolution will prevail. "The reports of analog's death are only *slightly* exaggerated. Digital is here and it will eventually kill analog."

Still, in the grandest don't-give-up-the-ship tradition, several companies plan to be around to turn out the very last product of its kind when the time should come.

Companies like Otari and Audi-Cord

TOP News of 1996

continue to make reel-to-reel and cart machines. Quantegy is committed to spooling off the world's final reel of quarter-inch analog tape, and by his own reckoning, Krassowski of audiopak is certain he will retire even "before that last cart is made" at least a dozen years from now.

Digital is here and it will eventually kill analog.

— Nick Krassowski

point, however, to a flattening domestic market and are beginning to show a dip downwards.

Dr. Arthur Riben, president of Amplifonix, said, "There is no future in tape. There is business and you can still make profit, but you're not going to grow from it."

The goal for Amplifonix is to develop and promote Fidelipac's DCR-1000 digital cart replacement system and MX/D console line while providing spare parts and support to analog product users.

Nick Krassowski, owner and president of audiopak, said the tape market is "declining, but at a smaller rate than before. Three or four years ago it was a precipitous drop, but now it's a controlled drop of about two percent a year." He sees the market for carts extending another five to 10 years, "but in declining volumes."

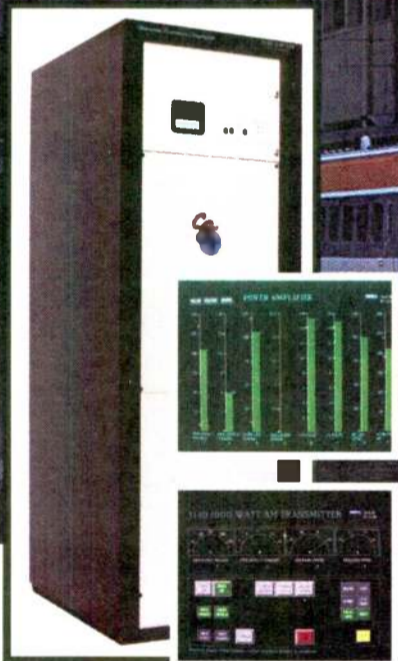
In addition to cart-based products, audiopak also manufactures analog tape for non-cart purposes, leader tape and frictionless liners for cassettes.

Other tape manufacturers paint a similar picture. A spokesman for BASF said the company penetration into broadcast has been minimal; its success has been in bulk industrial sales to cassette loaders and duplicators for consumers. But he said BASF plans to address that market in the new year.

Steve Smith, director of audio marketing for Quantegy, said his company benefited when 3M stopped making magnetic tape.

"We purchased the entire 3M Magnetics division, the professional part of it," said Smith. "Formulations, patents, licenses, inventory and all that are now with us. Our 408 is basically (Scotch) 908. If you've been using 3M products,

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DOJ Turns to Radio

▶ continued from page 12

while the federal government and outside parties analyze the proposed transaction.

The DOJ suggested that proposed JSAs or LMAs producing a change in beneficial ownership would oblige the entities to go through the HSR filing process. This appeared to confuse the issue for group owners. In the past the FCC did not count LMAs as transfers of ownership except when the two stations overlapped.

The Justice Department employed other criteria for the approval of mergers and acquisitions that complicated matters further. The Westinghouse/Infinity merger was approved on the condition that the conglomerate spin off WBOS(FM) Boston and WMMR(FM) Philadelphia, which Justice felt would give the new entity a lock on the demographics of men

25-54 and men 18-54, respectively, in those markets. American Radio Systems (ARS) had to spin off three stations in Rochester, N.Y., because its JSA with

The antitrust investigation into the merger of Multi-Market Radio with SFX Broadcasting, which was approved by shareholders in late November, was ongoing at press time.

The National Association of Broadcasters (NAB) jumped into the game at the same time. NAB Radio convened a

reportedly demonstrated a willingness to work with the NAB and the industry.

Meanwhile, while Wall Street's engines were overheating in late November, radio stocks were on a downward swing.

Heftel Broadcasting and SFX, for example, both dropped more than 10 percent in one week. Some analysts attribute this drop to Justice Department activity. An RW source compared the situation to the roller coaster ride Microsoft stock underwent during its own Justice Department investigations. The source predicts radio stocks will rebound in the first quarter of the year as investor confidence is regained.

The next stop for broadcasters could be the White House. Industry sources said conversations with Vice President Al Gore were on the horizon.

The Justice Department carved out radio as distinct from other media within advertising markets.

WNVE(FM) was, in the eyes of the Justice Department, a violation of the Sherman Antitrust Act — not to mention that the deal would give ARS more than 60 percent of the Rochester market.

meeting of the antitrust attorneys of 21 major radio groups to discuss the Justice Department actions. The group's concerns were laid before Joel Klein, acting assistant attorney general, the next day; he

New Rules For Radio

▶ continued from page 1

to increased interest and spending."

Pearlman said radio can finally concentrate on "the real revenue enemies, which are newspaper, outdoor, direct mail and television."

In addition, he said, fewer owners mean fewer "intramural battles between companies. Instead of having 12 owners in a market, there might be three or four. Each of those will be financially strong with the ability to focus on what is in the best interest of radio."

'Allowing these corporations to own so many radio stations is a disgrace.'

—Howard Kalmenson

That line of thinking does not sit well with Howard Kalmenson, president of Lotus Communications, which has stations in markets including Los Angeles and Chicago. He described the ownership reforms as a tragedy.

"Allowing these corporations to own so many radio stations is a disgrace," he said. "It limits local responsibility in each market and ultimately will limit the service that the public gets. All the problems that go with monopolization of industry will be inherent in this."

"We used to have a nice business," continued Kalmenson. "You had 20 stations and 10 owners (in a market) trying to make a living, trying to do a good job, hiring a lot of different people, competing nicely and giving the audience what they wanted."

With 18 stations, the privately held Lotus would have been a major player not long ago. But today the largest groups control upwards of 100 stations, a stratosphere that Lotus does not expect to enter.

"We don't have the money to expand dramatically," admitted Kalmenson. "We can't compete at (today's) prices."

As of Dec. 1, the FCC had not implemented the extension of the license renewal term, but was considering it in a rulemaking proceeding.

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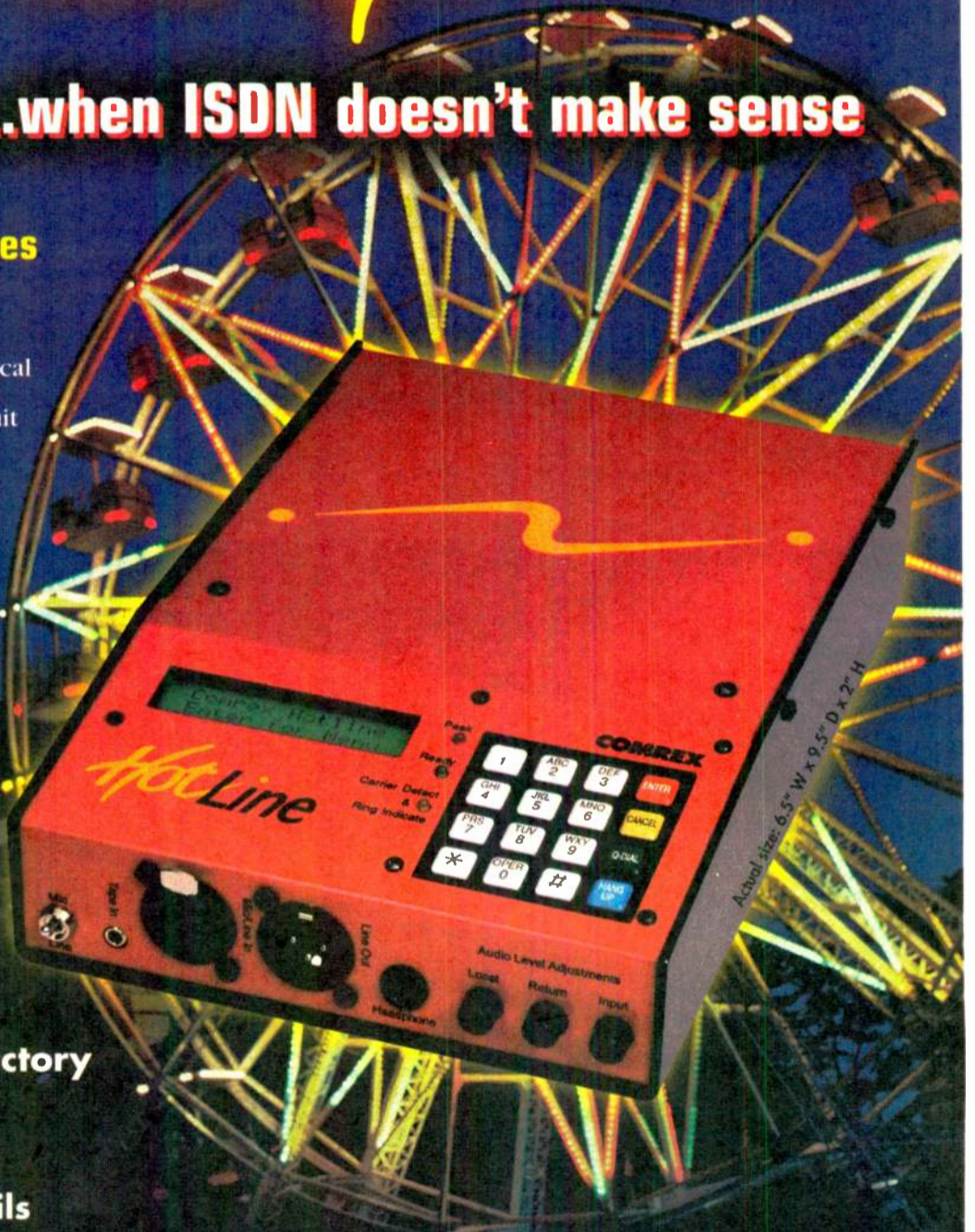
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Hard Liquor Hits the Airwaves

by Frank Montero

WASHINGTON Last summer, Seagrams and a television station in Corpus Christi, Tex., rocked a 60-year old self-imposed ban on hard liquor advertisements on the airwaves by airing a Crown Royal Whiskey ad (RW, July 24).

What ensued was a storm of controversy over whether the ad would open the flood gates to other hard liquor advertisements. The major television networks vowed not to run the ads. Congressman Joe Kennedy, D-Mass., introduced legislation to ban the advertisements from the airwaves, while the NAB walked a care-

ful line in the midst of the storm.

NAB President Eddie Fritts stated, "We oppose any advertising ban on any

Spirits Council voted to lift its voluntary ban on broadcast advertising, the NAB officially expressed "disappointment"

Presumably, one major concern is the possibility of government regulation if the large broadcasting chains fall off the wagon too quickly.

legally produced product" and called the proposed legislation "unnecessary." However, when, on Nov. 7, the Distilled

over the decision.

Beyond the television networks, several large radio groups owners, including

TOP News of 1996

ARS, Clear Channel, Jacor and SFX adopted a wait-and-see approach to hard liquor ads. While they have not completely ruled out the possibility of eventually running such advertisements on their stations, many of the larger radio owners have turned down the business for the time being. Presumably, one major concern on the part of the broadcasters is the possibility of government regulation if the large broadcasting chains fall off the wagon too quickly.

Indeed, the Distilled Spirit Council decision has fueled the debate in Washington. The White House openly opposed the move.

Most recently, Senate Majority Leader Trent Lott, R-Miss., joined President Clinton in condemning the council decision. Lott called the council decision a "big mistake" and expressed his position that "it would have a bad impact on our children and young people and society as a whole."

On M Street, FCC Chairman Reed Hundt offered a veiled threat of governmental regulation when he noted, "Many steps can be taken, the government has many options, but it is not necessary that these options be explored if broadcasters say no to airing the liquor ads."

A hypocritical stance?

The Federal Trade Commission also stated it will carefully monitor the ads to be sure that they do not target an under-age audience.

The opposing viewpoint espoused by some broadcasters, as well as the Distilled Spirits Council, is that the uproar is hypocritical given the millions that are spent on radio and television advertising by beer and wine companies.

Indeed, competition with the beer and wine industries is believed to have motivated the council decision, with distilled spirits gradually losing their share of the overall alcoholic beverage market in comparison to beer and wine sales.

Fred Meister, president of the Distilled Spirits Council noted that "there is no difference in the alcohol in spirits, beer and wine — alcohol is alcohol."

Adding to the controversy was the U.S. Supreme Court's May decision in the 44 *Liquormart* case which declared unconstitutional the Rhode Island attempt to ban price advertising of alcoholic beverages, and held that any attempt by the government to ban such ads would be constitutionally questionable unless it served an overriding governmental interest — the strictest level of constitutional scrutiny.

Moreover, FCC Commissioners Chong and Quello have begun to question the propriety of the FCC role in regulating such ads.

In the meantime, all eyes will be on Capitol Hill in 1997 to see if legislation banning the advertisements will hit the floor of Congress.



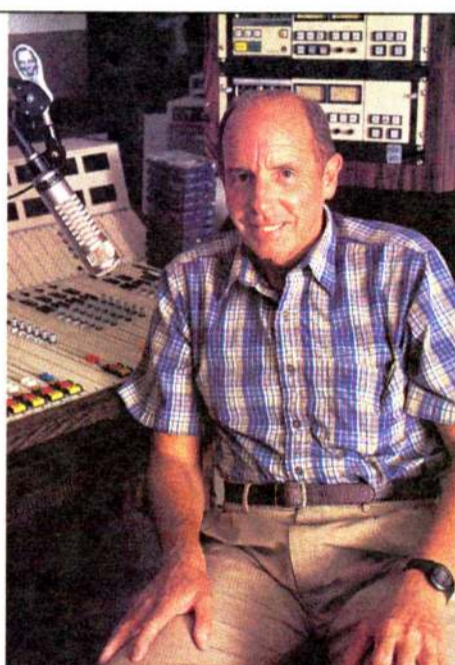
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ROOTS OF RADIO

Memorable Radio Christmas Shows

by Richard W. O'Donnell

PORT RICHEY, Fla. Old-time radio had many memorable Christmas shows, some of which were repeated for several years. Television, despite its technical advances, has never come close to matching vintage radio at Christmas. Its programs do not inspire your imagination to soar.

Take a lovely tune like "Sleigh Ride." It certainly is a jolly holiday song. PBS will show a full symphony orchestra, and Placido or José belting it out. But all you see is a concert hall, the audience, orchestra and singers. Something is missing!

When you listened to radio's "Railroad Hour," or the "Voice of Firestone," or the "Bell Telephone Hour," you went along



Lionel Barrymore

on that musical sleigh ride and glided through a snowy winter scene. Your imagination made the joyous journey possible.

Barrymore and Welles

In fact, you might enjoy musical Christmas TV shows more, if you ignored the picture, closed your eyes, and let your imagination do the rest.

Radio had an abundance of great shows during the holiday season. The most famous was probably Lionel Barrymore's annual "A Christmas Carol," which ran from 1934 until his death in 1954. Others have played the Charles Dickens skinflint, including several fine British actors, but many people considered Barrymore to be the greatest Scrooge of them all. His performances are a bright star in the history of radio.

Fortunately, an audio version of Barrymore as Scrooge is available in a one-hour version, as performed on the Mercury Theatre in the '40s. Host Orson Welles doubled as narrator. Many radio stations repeat this show every December.

The "First Nighter Program" aired a new half-hour playlet every week. It ran from 1930 until 1952. From 1936 on, the radio anthology featured a drama each Christmas called "Little Town of Bethlehem," the story of the Nativity done in a simple and tasteful style. The show attracted the series' largest audience every year.

Another favorite aired each year on "Grand Central Station," a half-hour weekly show about travelers who got off the train at the New York railroad terminal. The program ran from 1937 to 1952. For years it featured an awesome Christmas drama about a stranger who

got off the train and went to a nearby hospital, where he worked as a doctor. He claimed to be a man who had died earlier that Christmas Eve. The stranger spent the night riding through the city with an ambulance driver, performing miracles. Who was he?

For 21 years, Lum and Abner's annual Christmas show found the duo helping a couple who had a baby in a barn. It was strictly cornball, but you were left with a warm feeling.

"The Cinnamon Bear" was a 26-chapter serial for children. Transcribed in 1937, it remained in syndication for several years, usually starting around

Thanksgiving and concluding on Christmas Eve. It was about two children and a Cinnamon Bear who go searching for a lost Christmas star. This was not a great show, but it certainly was a popular one. If sharp transcriptions are available, the show would probably still work today.

An impressive number of famous radio people took part in "The Cinnamon Bear." They included Joe DuVal, Ted Osborne, Gale Gordon, Cy Kendall, Frank Nelson, Lou Merrill, Elliot Lewis, Elvia Allman, Howard McNear, Slim Pickens, Hanley Stafford, Joe Kearns and Vernon Felton.

In the late 1940s and early '50s, Lux

Radio Theatre repeated "Miracle on 34th Street." This was a movie original, modified to fit into a one-hour radio format. Edmund Gwenn was Santa Claus. Lux first aired the show in the spring. Eventually the deep thinkers realized it might have wider appeal at Christmas.

Some celebrated holiday programs aired only once. Radio producers of the time created a new show every week, and repeats were rare.

The Lone Ranger's best holiday show was "The Real Spirit of Christmas," about a doctor, wanted for a crime, who performed a miracle operation on Christmas Eve. Needless to say, the Ranger and Tonto helped out. Hallmark's "The Story of Silent Night," aired in the late '40s, was a true Christmas classic, but never had an encore. On one "Amos

continued on page 42 ▶

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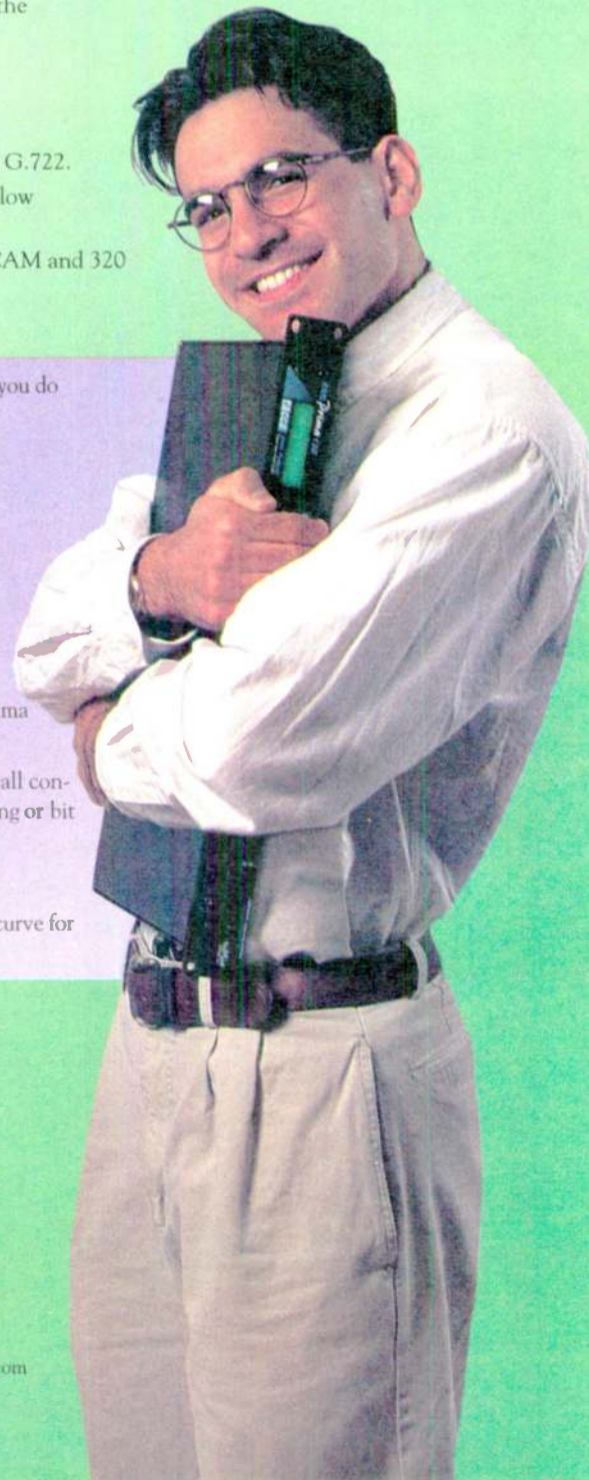
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Profit from Vertical Real Estate

The Perils and Pitfalls of Leasing Tower Space

Part I

by Troy Conner

BRASSTOWN, N.C. Recently, some of my RW readers and customers at large have expressed interest in tower lease arrangements. More specifically, they want to know how they can go about approaching this potentially lucrative market. In this two-part article, I offer an overview of the topic and introduce some of the many elements to consider.

Careful deliberation and forethought are essential to maximize your existing vertical real estate while maintaining the structural integrity of the tower. Be warned: Rushing into a hasty lease arrangement out of greed could cost you the very tower that is essential to your station's survival.

The evolution of a lease arrangement is unique to each tower. Unfortunately, we can apply no set procedure to all towers, owners and markets. However, some general rules of thumb may help tell you if your tower and market are suitable for lease arrangements. Also, a station should do certain things before it enters into any type of lease arrangement.

What kind of tower?

One of the first questions is the primary function of the tower. Is it AM, FM or both? Is it part of an AM array? Is it a primary or a standby tower? Know this at the onset: different types of towers call for some immediate differences in approach.

Hot AM Towers: An AM tower, as engineers know, is electrically "hot" and must be insulated from the ground by a big chunk of porcelain. The tower is the actual antenna and the frequency radiated is based on the height of the structure. The lower the broadcast frequency, the taller the tower. OK, enough basic radio theory,

For the potential AM tower lessor, this means the station must be off the air during the installation of any tenant equipment. Subsequent service will also require occasional powering down of the tower. In addition, an isocoupler must be utilized in the transmission line to maintain the isolation between the tower and the ground. You folks with AM and FM on the same tower are familiar with this physical set-up.

Height Distinctions: The next obvious question: What is the size of the structure? Typically, larger, taller towers have greater engineering margins and are more suitable for additional loading with tenant antennas and transmission lines. A vast majority of AM broadcasters use quarter-wave towers, which are less than 450 feet tall.

Theoretically, the very tallest half-wave AM tower would be 893.6 feet above the porcelain insulator, although I don't know if an AM structure of this size actually exists. FM towers run the range right up to the 2,000-foot limit, but for the most part they co-own with a TV station or another FM above about 1,500 feet. The bottom line: greater height equals more steel and more money.

Guyed or Self-Supporting: The next distinction is between guyed structures and self-supporting towers. Self-supporting structures can be thought of as heavier and shorter. Even the very largest self-supporting towers are mostly less than 1,000 feet tall. The height of this type tower is limited by sheer mass steel and the breadth of the base, but typically, it is more often constrained by depth of wallet and availability of land.

Guyed structures, on the other hand, use the cantenary guy cables to transfer a portion of the horizontal forces of wind loading down diagonally to the cable anchors. This arrangement allows guyed towers to be lighter and more delicate,

although the word hardly seems appropriate to describe the largest guyed structures. These towers top out at better than 2,000 feet and contain 1 million to 1.5 million pounds of steel. There are few truly large guyed towers built today. The cost of a 2,000-footer is easily well over a million dollars, without an antenna or transmission line!

Check the drawings

Old Drawings: In order to determine if a tower will support additional antennas and transmission lines, you must find a set of original design drawings. If you can find no drawings, learn if the tower's original engineers, manufacturers and erectors are still in business and able to provide design information. If not, a set of drawings must be commissioned, based on a physical inspection and documentation. Normally, the age of the structure and the conscientiousness of the original engineering personnel determine whether old drawings exist in some dusty file cabinet.

Unless the tower was designed to carry additional loading, a distinct possibility exists that it will not safely support further loading and remain within current EIA/TIA engineering standards. Many older structures barely pass current standards and simply are unsuitable for any additional loading unless reinforced.

AM Overload: Of particular concern to a person like me who climbs towers for a living are the countless small AM towers standing today. Most old AM transmission towers were engineered to carry little more than their own weight. The smallest of these are less than 200 feet tall and are engineered very near the failure strengths of the materials used in their construction. Many of these towers have seen 30 or 40 years of neglect. Add to that a shiny new 3,000-pound cellular antenna array and you have a tower collapse just waiting for a good storm.

Old Towers: Older towers almost always require an inspection and structural documentation. This involves hav-



ing a climber precisely measure all of the tower's structural elements, such as leg diameters and horizontal and diagonal member sizes. In addition to the tower itself, locate and measure all appurtenances, ladders and platforms. The locations and size of any antennas and transmission lines on the structure are also important.

Given this information from the climber, a draftsman can then recreate a set of engineering drawings. With this base line data, a structural engineer essentially can build an accurate model of the tower in a computer, then simulate wind and ice loading, finally determining if and how much additional loading is possible at given elevations on the tower.

Critical Analysis: The importance of the structural analysis cannot be stressed enough. Subject no tower to additional loading without performing an engineering analysis. Ideally, a single structural analysis will provide precise information about the maximum potential loading at a number of elevations. In many cases, the owner can make the first lease tenant pay for some or all of the re-engineering needed to safely, but completely, load the tower.

We'll continue our discussion of tower space leasing in the Jan. 22 issue of RW.

□□□

Troy Conner is the owner of Tower Maintenance Specialists. Reach him by phone at (704) 837-3526 or via fax at (704) 837-1015.

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RDS ROLL CALL

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Table listing radio stations across various states including Alabama, Arizona, California, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, and Wisconsin. Each entry includes the station call letters, frequency, city, and state.

PIONEER PROFILE

WJR: Michigan's Good will Station

by Barry Mishkind

TUCSON, Ariz. Broadcasting in the early 1920s was not a secure profession. The earliest stations had a high rate of attrition. Some found the costs of operation too high or suffered mismanagement, others could not get enough airtime, and some owners just lost interest. Eventually, the Federal Radio Commission (FRC) deleted several hundred stations deemed not broadcasting in "the public interest, convenience and necessity."

The forerunners of WJR(AM) Detroit were afflicted with several of these problems. The station barely survived its first

years. Yet, seven decades down the line, WJR is acknowledged as one of America's premier radio facilities. Formal industry recognition came this fall when the station won the NAB Marconi Award as the Legendary Station of the Year.

Creating a legend in the broadcast industry is not what E.D. Stair had in mind when he reluctantly permitted W.H. Pettibone, the general manager of the Detroit Free Press, to start a radio station to meet the competition from news station WWJ. Radio was a frill; Stair was skeptical that it would amount to much.

WCX debuted on May 4, 1922, with impressive sign-on ceremonies typical of the pioneer stations. The governor, university president and other local dignitaries took part. Reception reports came by telegram and letter from many places, as far away as Texas and Arkansas. Stair was not impressed, and many engineers today will instantly guess one reason: despite all the places where the station could be heard clearly, one of the few "dead spots" just happened to be the area around the owner's home!

Theaters sensed a threat

Securing talent was difficult: local theater owners had decided radio was a threat and kept many professional artists from appearing on WCX. Station manager Neal Tomy did his best, and in 1923 devised a contest to see how much of an audience was out there. A "Michigan Red Apple" was offered to the first listener who identified a singer.

So many responses arrived that WCX decided to organize the "Red Apple Club." Within a year, the club had more than 500,000 members from coast to coast. Several of the Red Apple Club per-

formers, including Al and Pete, became local and network celebrities. But Stair chafed at the \$15,000 cost of operating the station for the year. WCX did not seem to attract much advertising, and most of its programs ran unsponsored.

Stair was interested when his friend Edward Jewett offered a proposition: Jewett's new station, WJR, would provide a new transmitter and \$75,000 a year in financing if the two stations would share facilities. The combined WJR-WCX premiered on Aug. 16, 1925, the second station, after WLW, to go "super power" at 5,000 watts.

Unfortunately, Jewett was not a very good owner/manager, and financial crises arose almost immediately. With Stair unwilling to put in additional money, the station came to the brink of financial collapse in March of 1926. The station rose to success out of this disaster under the leadership of Leo Fitzpatrick.

Fitzpatrick had come to WJR from the successful WDAF program "Kansas City Nighthawks." The "Merry Old Chief" was determined to make the station successful. He convinced the financiers to allow him time to try. First, the antenna was re-oriented toward Detroit.

With an improved signal, managers turned next to finances. Advertising was still a rather hard sell; many businesses were slow to appreciate the intangible nature of radio advertising. Among those in whom Fitzpatrick found an appreciation of the power of radio (and ready to pay full commercial rates) were several local churches. One sponsor would later become one of the most famous, controversial, most reviled of all broadcasters: Father Charles Coughlin.

Fitzpatrick also sold commercial announcements tied to the station IDs. The

turnaround came quickly. After just one month, WJR was operating with a monthly profit. That attracted the attention of one of the major sponsors, G.A. Richards.

Noting the prestige and good will his Oakland and Pontiac auto dealership got from his association with WJR, Richards decided to option, then purchase, the station. He dubbed it "The Good Will Station." Richards' money and flair for showmanship helped establish WJR as a major factor in the market. Management built new studios, picked up NBC's Blue Network, and put on special broadcasts to show the immediacy and importance of radio. Even the FRC helped by moving WJR-WCX to 680 kHz, then later to 750 kHz, all alone on that channel.

Radio over cars

The strategy worked. Even the theater owners took note and began permitting broadcasts right from their stages. WJR prospered so much that Richards retired from the automobile business to devote himself to radio. Soon Richards offered to buy out WCX; this delighted Stair, who had never liked radio in the first place. With that, WCX just faded away in early 1929.

By contrast, WJR continued to grow. The Depression made entertainment broadcasts on radio even more important to many people. Listeners came to expect news as another essential service, so WJR worked to develop a greater news image, including interviews of newsmakers. Live musical programs were also a station staple, well into the 1970s.

According to the New York Telegram, every 50 kW station in the country ended 1929 in deficit. Cognizant of the tightening financial situation, WJR decided to increase power to 10 kW, mainly to protect its clear channel status. A 1935 fight with NBC over compensation led to a change in affiliation. Simultaneously with the inauguration of a new 50 kW transmitter, WJR changed to CBS on Sept. 29, 1935.

The national frequency move in March 1942 brought WJR to its current dial location at 760 kHz.

Among the many talented individuals who came to WJR during the 1940s was James Quello, who rose from promotion and publicity director to the posts of program director, vice president and general manager. In 1974, Richard Nixon appointed Quello to the Federal Communications Commission, where he serves today (see RW, Oct. 16, page 1).

Acquired from the Richards estate in 1964 by Capital Cities/ABC, WJR now serves Detroit with a news and talk format. The emphasis on quality programming has led to a long list of awards.

General Manager Mike Fezzey, himself a 17-year veteran at WJR expressed great pride over the industry recognition, especially in the past year.

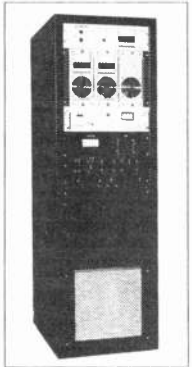
"I don't know of another station that has been named Legendary Station of the Year, as well as receiving the Edward R. Murrow Award and the Peabody Award, all in one year," Fezzey said. "I believe this speaks great volumes to the tradition of excellence at WJR."

He said, "The great challenge we have now is to adapt to the various cultural changes in the Detroit market so that we can be sure to meet the needs and expectations of our listeners."

□ □ □

The author thanks WJR's Fran Ehlers, who provided some of the historical materials for this profile. Call Barry Mishkind at (520) 296-3797. He invites e-mail to barry@broadcast.net

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PRODUCT EVALUATION

RE-2000 Mic is Natural Performer

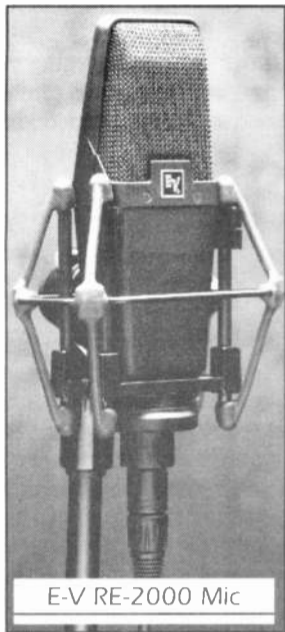
by John Bisset

SPRINGFIELD, Va.

Electro-Voice has long been associated with the manufacture of rugged dynamic mics. With the RE-2000, Electro-Voice ventures into the realm of high-class condenser microphones. Listing close to the prices of Neumann condensers, the mic has some strong competition.

It fares well, providing a wide dynamic range and includes some features that are normally optional on other brands.

One of these features combats one of the biggest problems with condenser mics — moisture buildup. The mic



has been designed to incorporate what EV calls its Constant Environment System.

The mic is equipped with a power supply that generates a voltage to heat the capsule and the electronics.

This heat burns off any humidity, preventing moisture buildup between the two plates of the condenser mic element. This humidity or moisture buildup can be identified by an intermittent sizzling sound.

On the air

Our first test of the RE-2000 was in an FM con-

trol room. We ran into a problem with its sensitivity: the mic sensed the breathing of a person on the other side of the studio! This mic is extremely quiet.

This is an important consideration for condenser mics, but it also puts your studio sound-proofing to a test.

A condenser mic will actually develop some amount of noise. The quieter the mic is, the quieter the signals can be recorded before they are overcome by the noise of the mic electronics.

The RE-2000 has a self-noise spec of 9mV/Pascal. By comparison, the specs on a U-87 mic is 20mV.

The lower this number, the quieter the mic. What might initially be seen as a good point, this "quietness" initially wreaked havoc with the Telos phone system, enough to require the relocation of the caller speaker to reduce a bizarre echo/feedback effect and also a backing-down of the overall mic system gain, to make the mic less sensitive. This sensitivity takes some getting used to. Jocks simply can't swallow condenser mics the way they climb all over dynamics. Old habits really do die hard.



The mic sounded good on the air, providing a very natural sound. Our next stop was the production room. The freelancer and two production directors who tried the mic loved it. The freelancer used the mic in his home studio in place of his Neumann, which was being repaired. With a 148 dB SPL spec, the RE-2000 is rugged and capable of handling a forceful

delivery. Its sound pressure spec falls within the 140 to 150 dB SPL of other condenser microphones.

The freelancer masters everything onto DAT, so it was easy to hear the superb sound of the RE-2000 on playback. It definitely lived up to its specifications of a rich bottom end and full dynamic range. In the pro sound arena, this mic has been used successfully in the studio by a number of groups, who also appreciate accurate reproduction — not

Product Capsule:

E-V RE-2000 Microphone

Thumbs Up	Thumbs Down
 <ul style="list-style-type: none">✓ Power supply, windscreen, case and shock mount.✓ Very low self-noise✓ Accurate reproduction.✓ Combats moisture build-up problem.	 <ul style="list-style-type: none">✓ May be too sensitive.

For more information, contact Mark IV Pro Audio Group at (616) 695-4750 or circle Reader Service 93.

SHORT TAKE

World Sounds on CD

by Alan R. Peterson

CHICAGO To add an international flair to audio production, look to the Wink Music Group World Sounds CD collection, with selections that originate from all corners of the globe.

Some production libraries use synthesized approximations of ethnic instruments, while a greater number use digitally-sampled sounds to recreate the performance of a specific musical object. World Sounds was recorded with actual instruments played in the manner of the regions that originated and popularized them.

There are the normal concessions given to German-style Oktoberfest music, mandolin-heavy Italian themes and a Greek bouzouki performance. But there are several styles in this collection which make it worthy of attention.

South American tracks make use of actual native tenor pan flutes, quicos, agogo bells and rain sticks. African cuts include the kalimba thumb-piano and "talking" drum. If you think you know American music, World Sounds may surprise you with authentic zydeco tracks, Mississippi-style dobro and harmonica and an almost new-age Native American performance of the six-hole Lakotan flute with Taos drums.

Several solo sound effects are included on the CDs, which can be sampled and sprinkled back into the themes for extra punch during editing. Tibetan prayer cymbals, an Australian didgeridoo, Japanese solo flutes and a bull roarer represent a portion of the bonus exotic effects on World Sounds.

Wink Music Group makes World

Sounds available by license only. The company is at 445 W. Erie St., Suite 5B, Chicago, Ill., 60610. Listen to examples by calling the company's sample line at (312) 335-DRLM.

Contact Wink Music Group at (800) 501-2328, visit their site at <http://www.winkworldsounds.com> or circle Reader Service 74.

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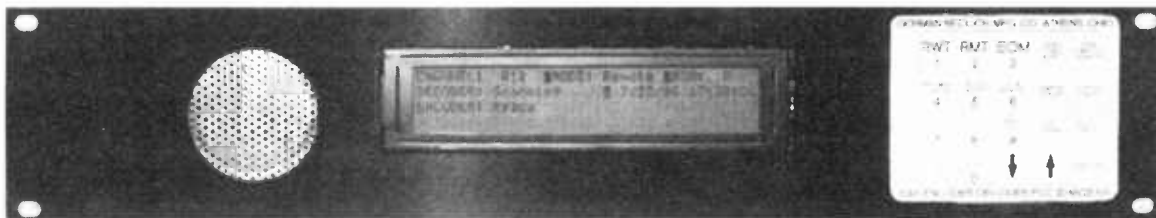
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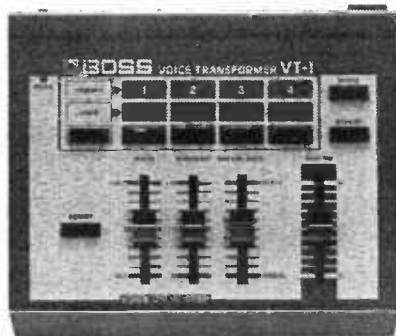
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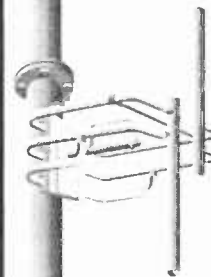
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LINE OUT

Got Those Low-down CD Jitters?

by Bruce Bartlett

ELKHART, Ind. Even though all CD players are digital, they sound slightly different.

One factor is their amount of jitter. Jitter is irregular timing of the samples received from the digital signal of the CD.

What does jitter sound like? The music has a veil on it. Instruments lose their focus. Even the stereo image is smaller and grainier. With severe jitter, it becomes harder to sense the musicians' presence behind the instruments. And it is harder to tell what materials the instruments are made of. You lose low-level resolution due to distortion or noise added to the signal.

The word "jitter" suggests shakiness. Indeed, jitter is a shakiness in the timing of a digital signal. Jitter is the difference between the time a data bit should occur and when it really does occur.

Clocking in

Ideally, a digital bitstream — made of ones and zeros — is clocked or stepped from one bit to the next at a constant rate. But if there is jitter, the bit positions shift in time from their desired positions. The ones and zeros are read correctly, but the bit timing is not constant; it is too slow at one instant and too fast at another.

At instants when the digital data is too slow, the pitch of the sound is lowered when converted to analog. At instants when the data is too fast, the pitch is raised. These changes in timing are very small and occur very rapidly, at an audio rate. So you don't hear wobbly pitch, but a subtle veiling of the sound.

The variation in timing may be periodic, resulting in low-level spurious tones. Or the variation may be random, resulting in low-level noise.

Originally, an acceptable jitter spec was around 100 psec (picoseconds, or trillionths of a second). But later tests show that jitter below 10 psec is desirable. Today's best CD players have a spec of 25 psec or less.

One cause of jitter

Jitter can happen if you use a separate digital-to-analog converter (DAC) instead of a self-contained CD player. To explain this, let us look at how a CD player works.

Every CD playing system includes a transport and a DAC. The transport rotates the disc and reads data from it. The DAC changes the disc digital signal to analog. In the DAC is a crystal oscillator, which puts out a clock or timing pulse at a very stable rate.

The disc produces samples at an average rate of 44,100 samples per second. A clock signal at that rate is extracted from the disc signal.

The disc clock and the crystal clock both feed into a comparator circuit, which compares the two sample rates. The comparator puts out a DC control voltage based on the difference between the two clock rates.

When the disc data rate is too fast, the control voltage slows the transport motor. When the data rate is too slow, the control voltage speeds the motor. This is called a servo mechanism. It keeps the transport and its data signal at a relatively

constant speed.

If the DAC is built into the transport, the DAC's crystal is used to control the transport speed. But suppose you are using a separate DAC unit in hopes of

Because the two systems do not share a common clock, there might be some jitter in the data transfer between transport and DAC.

Some DACs are designed to control a

Jitter is a shakiness in the timing of a digital signal.

getting better sound. The transport speed will be controlled by its own crystal clock, rather than the DAC clock.

mating transport. The two units are meant to work together. For example, the Linn Numerik DAC mates with the Linn

Karik CD transport. The DAC sends its DC control voltage through a special sync cable to the transport. That way, the DAC controls the speed of the transport, and so reduces jitter.

Buffering

Even with servo control, the speed of the CD transport varies slightly. Fortunately, every CD player solves this problem with a few kilobytes of buffer memory storage.

The buffer accepts jittery data from the CD. Then the data in the buffer is clocked out at a uniform rate by a very stable crystal oscillator. It is comparable to a group of people entering a room at irregular intervals. A guard at the exit door lets them out at a constant rate, say one person per second. Thanks to the

continued on page 31

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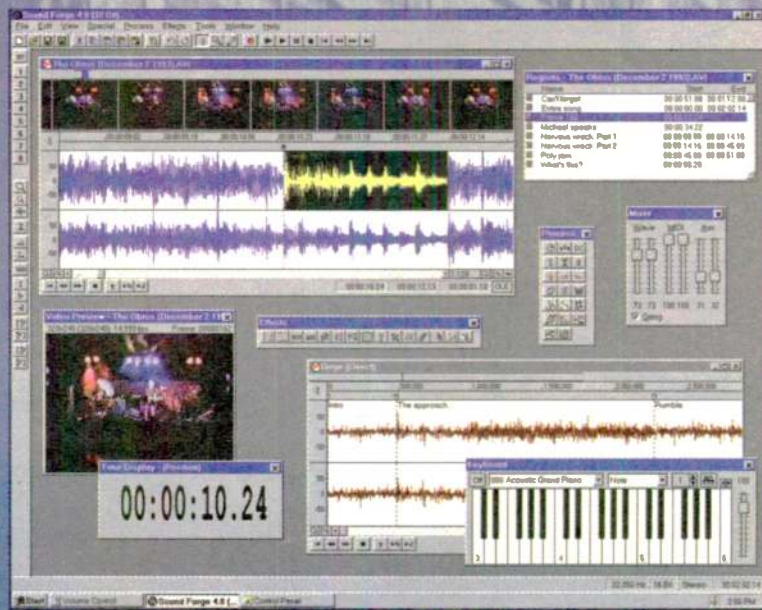
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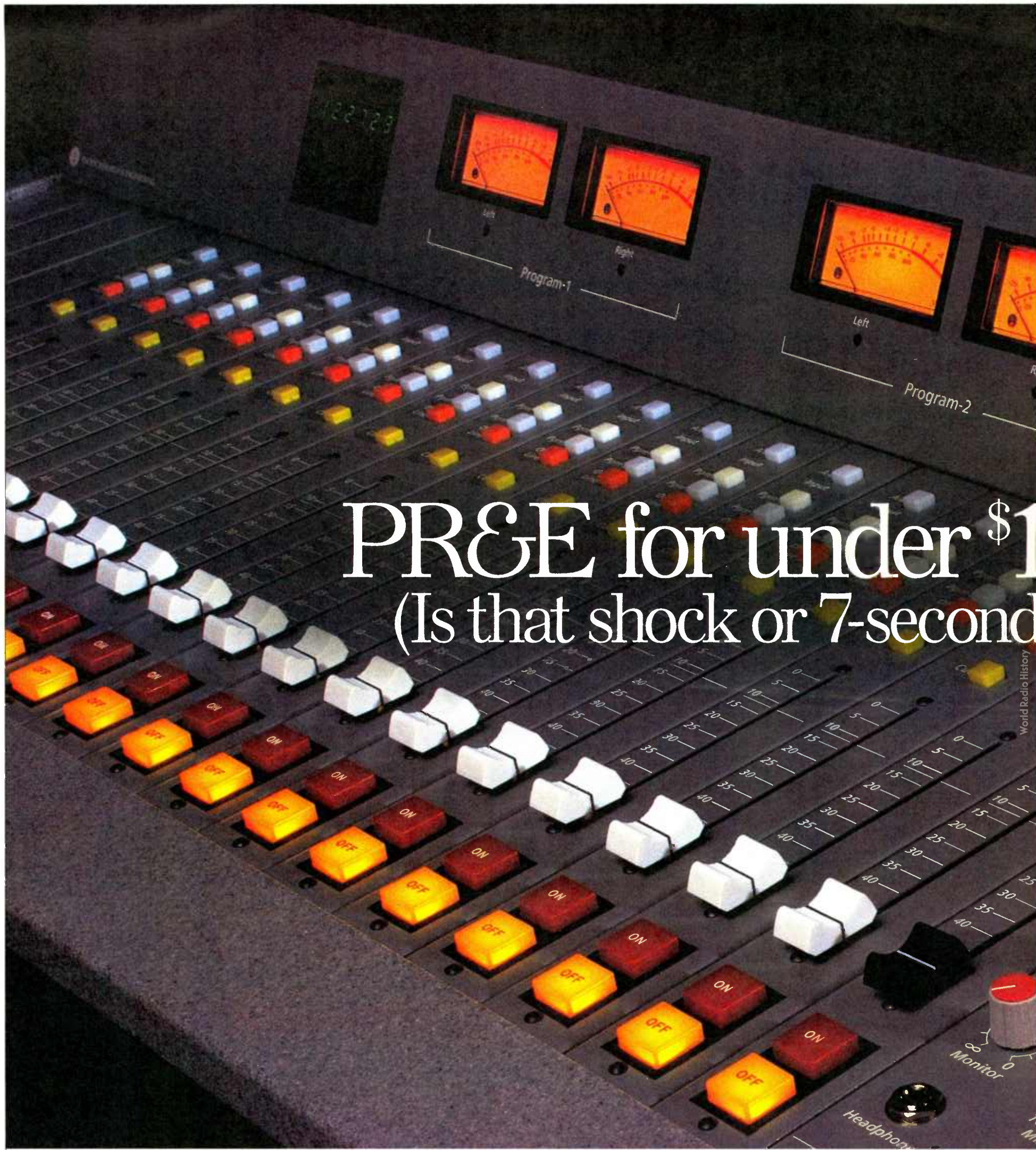


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World Radio History



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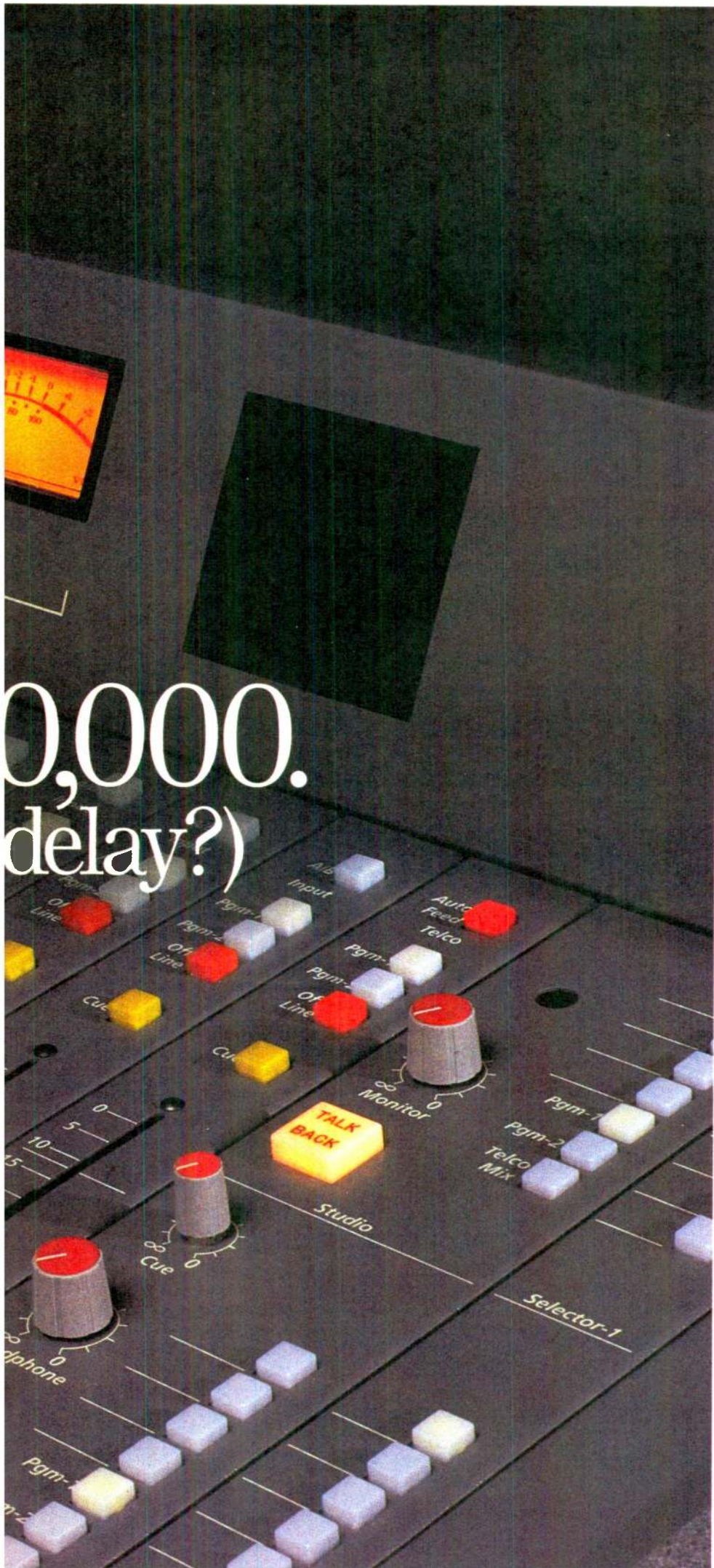


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(delay?)



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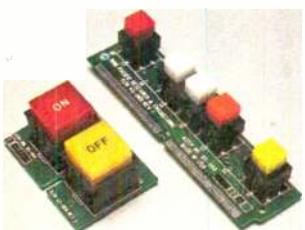
How did we do it? It wasn't easy. We started with a clean sheet of paper, chose the most appropriate features for today's programming, and borrowed from years of industry experience.

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Sealed, LED illuminated buttons are designed so you can remove the switch assembly without unsoldering... in case of a coffee spill.



The digital timer displays the tenth of second digit in the Hold and Stop modes, but blanks it when time is running to minimize distraction to the board operator.



Where great radio begins.

Purple Folio is One Plum of a Mixer

by Tom Vernon

PHILADELPHIA When I first unpacked the Folio Notepad portable mixer by Soundcraft, I didn't think I would take it too seriously.

First off, the plastic case was a bright purple. Second, it seemed too tiny to offer quality sound. Measuring a little over 9 inches square and 2 inches tall, this little mixer looked like something you might find in a blister pack at Wal-Mart.

After a month-long field test in the studios of the World Cafe, we were pleased to find the Notepad a valuable piece of production equipment.

Don't be fooled

Within this little box are six input channels: four mono and two stereo. Mono inputs accommodate balanced mic or line levels. Mic inputs are via XLR connectors, line inputs via three-pole TRS jacks.

Each mono channel includes a pre-



Purple Plastic People-eater? No, it's the Folio Notepad.

amp level pot, treble and bass controls, effects send level, and a panpot. A phantom power supply is included for juicing up professional condenser mics. Stereo input channels have the pre-amp level pot, effects send level, and a balance control.

Two phone jacks permit effects to be returned to the mixer without using up input channels. The jacks are wired so a mono effect can be plugged into the left jack and be fed to both channels.

Two RCA jacks labeled Tape In permit auditioning an external source through the headphones and monitor function. This is useful for playing back masters while recording or for listening to the output of a PC sound card. These inputs are not routed to the mix bus.

Outputs are via TRS jacks and include left and right master mix, effects, monitor, and headphone. Knobs to twirl include master mix volume, return effects level, tape volume and a monitor/headphone pot.

Greenie check

Disassembly showed that the quality of construction of the Folio is quite good.

All input and output jacks mount on the top panel, which is made of sheet aluminum of good durability. All components are mounted on the main PC board. All pots appear to be constructed so they may be easily cleaned with aerosol solvents. Although this unit is small and lightweight, it is by no means flimsy.

Our bench test results equaled or exceeded published Soundcraft specs for the Folio Notepad.

Frequency response was measured from Line In to Master Out and turned out to be +0.3, -0.5 dB from 20 Hz to 20 kHz. Distortion at 1 kHz was better than 0.008 percent. Noise at the master output with all pots down measured -86 dBu.

The 18-page user's guide is loaded with pictorial diagrams showing how to use the Notepad for live recordings, mix-down from multitrack, multimedia and MIDI applications as well as video editing. If one Notepad is not enough for your needs, there is a diagram showing how to use the effects bus to combine two units. Instructions are included in English and four foreign languages.

A nice feature of the Notepad is the option for stand mounting. On the bottom of the unit are pre-drilled holes to accommodate an Atlas mic stand adapter. Details are given in the manual.

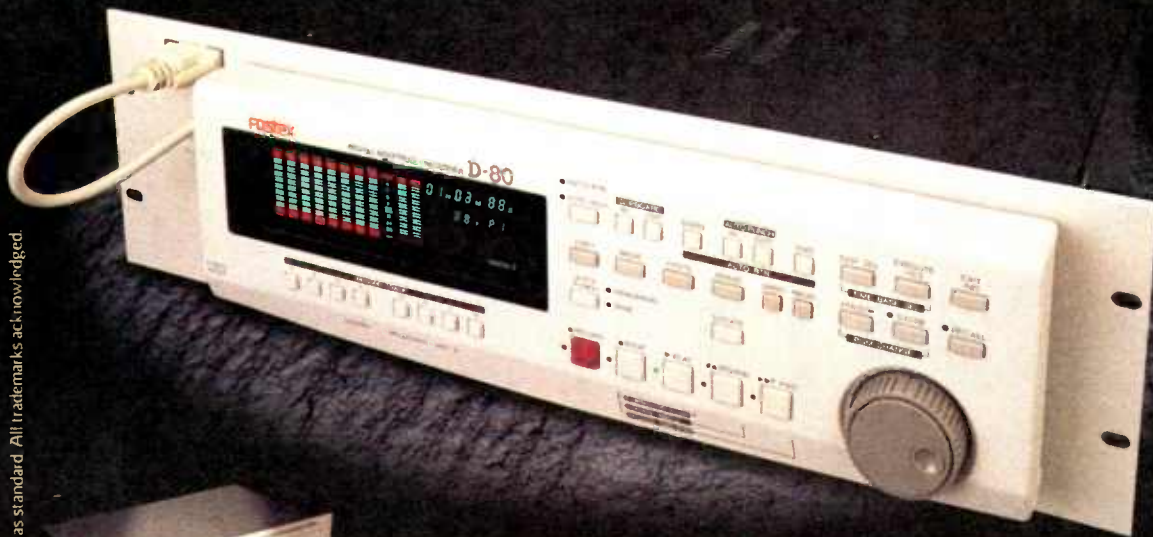
If you want to use the Notepad on location where there is no AC power, just bring a car battery and the optional PortaPower unit.

continued on page 32 ►

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Understanding Jitter

► continued from page 27

crystal-controlled buffer, the jitter caused by shaky disc rotation is removed.

Any remaining jitter is caused by changes in the waveform of the digital signal from the CD. These changes can happen in transformers, in cables with high-frequency losses and in cables with mismatched impedances that cause reflections.

Cable jitter

As I said, some CD players are made with a separate transport and DAC. The connecting cable between the transport and DAC can be a source of jitter.

The digital signal coming from the transport is a square wave, made of rapid transitions between ones and zeros as seen in Figure 1a.

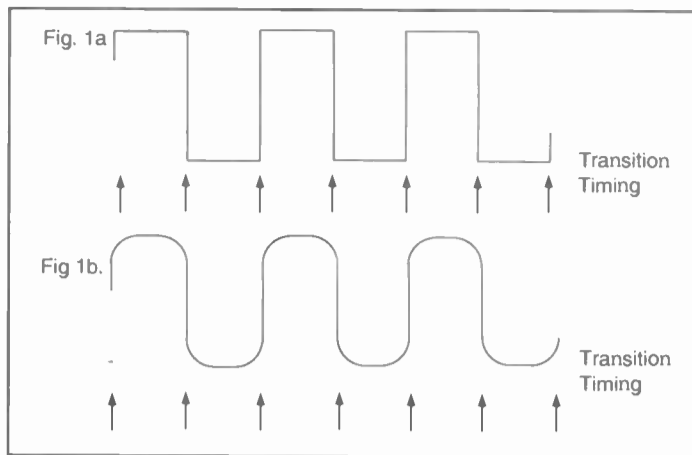
If the transitions are very fast, the receiver of this waveform knows exactly when to change states.

But suppose the player uses a low-grade connecting cable that weakens the higher frequencies in the digital signal. As shown in Figure 1b, this rounds off its waveform, slurring the transitions between ones and zeros so the receiver

might not detect the change at the right time. This is a form of jitter.

Some DACs are designed to reduce this waveform distortion. For example, the Polyfusion 800 processes the incoming digital signal by a waveshaping circuit. It cleans up the waveform to restore its "squareness." As a result, the timing of the transitions is more certain, so the veiling due to jitter is reduced.

Other features enhance the sound quality by ensuring a clean digital waveform. The digital output stage has its own power supply and a precision crystal oscillator. The coax output is transformer-coupled for impedance matching and the optic output uses an



AT&T high-current laser diode. Even without any waveshaping tricks, jitter may be hard to discern. It can be heard only on high-end stereo systems, and only with careful listening.

mic engineer, writer and recording engineer, and the author of "Practical Recording Techniques" published by Howard Sams. He can be reached at (219) 294-8388.

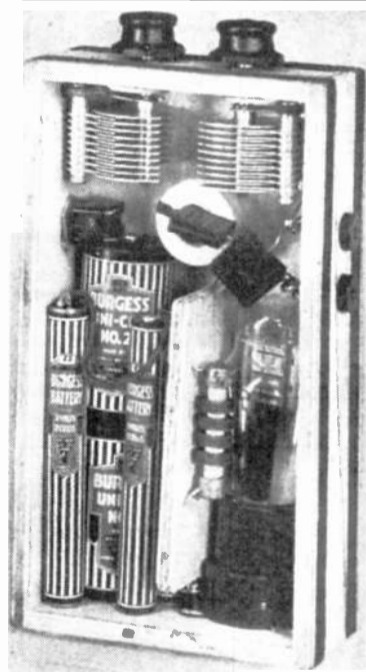
□□□

Bruce Bartlett is a

59 Years Ago

Reprinted from Radio World (November 1937).

Editor's note: The RW of old, printed for a time in the 1920s and 1930s and today's RW are unrelated except in name.



It is hard to imagine a "pocket" radio prior to the invention of the transistor and Sony's ground-breaking receiver using the new component.

But take a look at this. Here is a battery-operated tube receiver from 1937, built to fit in the pocket of any topcoat. The funky plywood box was 7 x 3.75 x 1.75 inches; roughly the dimensions of a brick. And the weight of six batteries, two tuning capacitors and a Sylvania type 30 triode with socket must have made it feel like one, too.

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Plan Now for Next Holiday Rush

by Alan R. Peterson

WASHINGTON You did it. Another Christmas production rush is finally over.

With the temporary lull in the action, here is a suggestion: now is the time to work on material for *next* Christmas! This is not as far-fetched as it may seem and may actually make a creative difference in the way you work next year.

A little gathering, picking and producing right now will make you look like a genius right after next Thanksgiving. So put down the Boss VT-1 you found under the tree and start checking this list twice.

If the radio network your station is affiliated with did one of those annual

long-form feeds of Christmas-related movie cuts and TV snippets, hang onto the reel this year. You never know when you are going to need Yukon Cornelius' classic "wa-hoo!" from the Rudolph TV

Roll a high-quality recording at home.

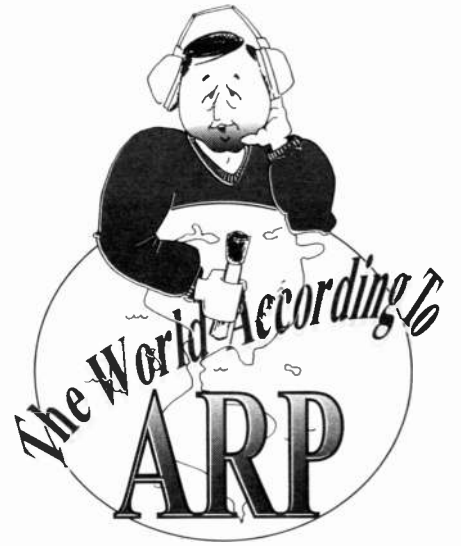
special or Thurl Ravenscroft singing "You're a Mean One, Mister Grinch."

If you have no such network deal, it's OK: you still have a VCR at home.

Collect the shows yourself and keep an index of where to find the best lines.

Note that you really should not be using these bits in commercial production, and you take on a risk by doing so. But when used as jock drops or promo punctuators, most folks look the other way. To this day, this has never been satisfactorily explained to me, but it seems to be an implied exception to the rule. Either way, be careful.

Roll a high-quality recording at home of the little ones opening their goodies and whooping it up. It may not be too late this year, as there are always one or two packages that come late in the mail from Grandma Smedley in Vancouver.

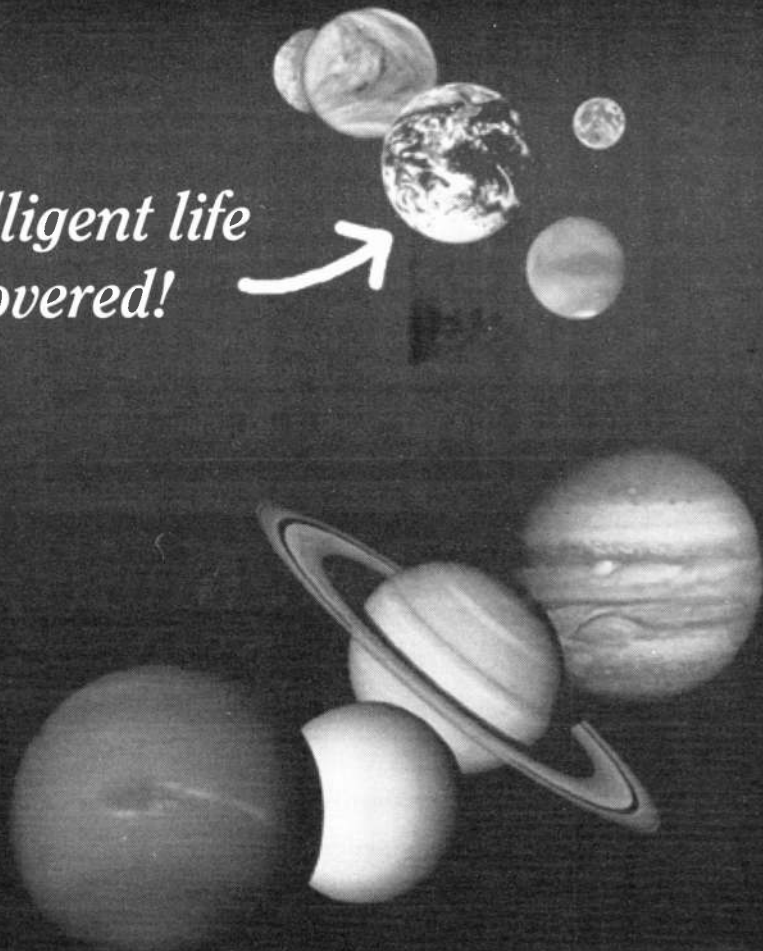


Whether their reaction is a jubilant "oh boy," or a bitter "she sent me underwear again," a couple of fun drops from the kiddies will spice up next year's crop of humorous commercials. By the way, it need not be Christmas for this trick to work. Roll tape on a birthday too. Nobody will ever know but you and me and I'll never tell.

Hit the supermarkets now for those budget holiday CDs. There are always inexpensive recordings of some municipal volunteer fire department community orchestra playing the Nutcracker Suite. Those four dollar organ-and-chime

continued on page 35 ►

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World Radio History

Plum of a Mixer

► continued from page 30

Our real-world tests in the World Cafe studios proved the value of the Notepad. Most of the time we used it to handle overflow from our main mixer. The clarity of sound and versatility impressed our producers.

Everyone felt the purple case made a funky statement too.

On one occasion, the mixer was used in the studio by a drummer who had a rather elaborate suite of instruments. He found it easy to keep the notepad within reach and tune and tweak until he got just the sound he wanted, without having to rely on a studio engineer.

Minor gripe

The only real criticism that was voiced concerned the level metering provided. All you get with the Notepad are two LEDs for each channel, one labeled "peak," the other "average." This is no substitute for real metering. A miniature LED bargraph display could easily fit on the top panel and would be a welcome enhancement if the product is upgraded.

If you need an inexpensive board for location recording, or a supplemental mixer when your studio console is all filled up, the cute little purple Folio Notepad is a viable choice.

As always, my thanks to World Cafe producers Chris Williams and Joe Taylor for their input on this equipment.

□ □ □

For information on the Notepad, contact Spirit by Soundcraft at (916) 888-0488 or circle Reader Service 27.

Tom Vernon divides his time between consulting and completion of a Ph.D. He can be e-mailed at TLVernon@aol.com or phoned at (717) 367-5595.

Good Deal on Budget CD Recorder

by Read G. Burgan

LAKE LINDEN, Mich. The Smart and Friendly CD-R 1002 CD-ROM Recorder is not the newest, nor is it the fastest CD recorder available, but it may well be one of the best deals around. Why? Let me count the reasons.

First, price. At the time of this writing the internal version can be purchased for under \$600 on the street and may well drop below that price by the time you read this.

When the unit was introduced around the beginning of 1996, it sold for \$1,099. Now for less than \$600 you can purchase a unit that will both record and play CDs on your computer.

Second, value. This is a unit that does not skimp on features. Under the cover, the recorder is basically the Sony CDU920S: time-tested hardware that is rugged. Discs are caddy-loaded, eliminating dust.

While I generally dread installing an SCSI device, the Smart and Friendly CD-R1002 proved easy to install. The package includes an Adaptec AVA-1502 internal SCSI card and cable. No problems here.

The Smart and Friendly package also includes one blank compact disc. It would be nice if it included more, but there is still a nationwide shortage of discs and this is, after all, an entry level package.

The unit records and plays at double speed. However, in my tests, I found its play speed actually closer to a quad unit than a double. My bench tests found it only slightly slower than my NEC quad

changer. And unlike some other units I've tested, it did not drop any video frames that I could notice while playing. So even as a player, this unit performs very well.

Short memory

At this stage in CD recorder technology, one of the most common problems is buffer run-out. A CD recorder needs a constant stream of data to burn a disc. If that stream is interrupted, it will stop recording and your \$7-to-\$10 disc is ruined. Many CD recorders sport a 512K buffer.

If your hard drive is fast enough and everything works out perfectly, you may not have any trouble.

But in testing recorders with 512K buffers on both my Pentium-100 and my 686-150, I frequently ran into buffer underruns.

Not so with the Smart and Friendly CD-R1002. This unit features a 1MB buffer and I found it to be more than adequate. I was even able to record across the network connecting the two computers without any buffer underruns.

Smart and Friendly bundles all the software you need to produce virtually any kind of CD on either your PC or Mac. The software comes on a CD with Easy CD Pro MM 3.0 for Windows 3.1, Easy CD Pro Mac 1.5 for Macintosh, Easy CD Backup For Windows 3.1, CD Workshop for Windows 3.1 and Easy CD Pro for Windows 95 or NT users.

I have chronicled the advantages of the Incat CD Pro software once before, so I will not belabor its many features

here. I will say that it allows you to drag and drop your files directly from the File Manager or Explorer menu right into the CD Pro software screen.

After that, you simply click on the on-screen record button, and CD Pro does all the rest from organizing the files to testing the recording speed and making the actual recording.

Nothing could be simpler or more straightforward. I am an unabashed fan of the Incat CD Pro software and glad that Smart and Friendly includes it with the recorder.

But Smart and Friendly does not stop here. The company also includes "Packet Recording Software" on 3.5-inch floppy discs. This Sony CDRFS software allows you to treat your CD recorder just as if it were a hard drive.

What do I mean? Using the Incat CD Pro software, you open the software, choose the recording mode, drag the files, click on Record and wait for the software to do its thing.

With CDRFS software, every time you insert a new blank CD in your recorder, an on-screen prompt will ask if you want to format it. If you say yes, the software will format the disc in the CDRFS format.

After that, anytime you want to record on the disc, all you have to do is drag and drop the desired files from their current directory to the CD recorder directory in the File Manager or Explorer menu. You don't have to open up the CD Recording software and drag the files to another screen.

Periodic backups

More importantly, if you are doing incremental backups of your hard drive, the software will load the newest version of a file to the CD, and delete any reference to the earlier version of the file already on the CD.

The file will still be present on the CD — it is not actually deleted as it would have been on a real hard drive — but you can no longer access it.

To use a CDRFS CD on another CD-ROM player, you first have to "freeze" the

continued on page 36 ▶

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PRODUCT GUIDE

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Denon MiniDisc Recorder

Denon Electronics presents the DN-M1050R MiniDisc Recorder and Player, engineered for recording and broadcast studio use.

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Up to five cue signal points per track can be recorded for quick referencing.

Optional Hot Starts can be added, allowing up to 20 tracks to be loaded into memory locations for instant playback.

Future options for the DN-M1050R include an FS converter for compatibility with different sampling rates and a SMTPE kit to support video sync and Sony serial protocol.

For information, contact Denon Electronics at (201) 575-7810 or circle Reader Service 15.

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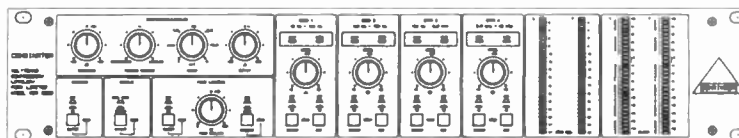
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Red Range Joins Pro Tools Lineup

Powerful Focusrite EQ Now Available in Software

by Ed LaComb

SYRACUSE, N.Y. Ask anyone who knows me and they will tell you: I am probably the biggest Pro Tools fan in the world.

I cannot think of a single thing that I don't like about the system. And life just keeps getting better, thanks to some of the fantastic third-party software plug-ins that are being developed for the Pro Tools III TDM platform. One such product is the Focusrite d2 Plug-In Equalizer.

This joint-venture product from

Digidesign and Focusrite is a real sweetie. Modeled after Rupert Neve's Red Range 2 Dual EQ, this plug-in offers your choice of three modules: a six-band, four-band and dual/single band in either stereo or mono modules.

Eye candy

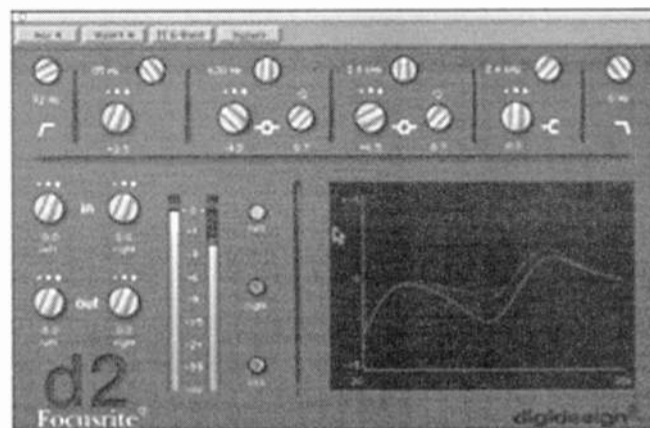
The d2 also has some neat-looking eye candy in the form of an EQ curve display that gives you a nice visual of your parameters. Like any high-end EQ, this one gives you high- and low-pass filters, high- and low-shelving filters, and high-

mid and low-mid peaking filters.

Installation of the EQ is standard Digidesign-style, which means you have to deal with the authorization/de-authorization process. I'm sorry, but this wastes my time and if I should lose my hard drive because of a crash, I have to call Digidesign for reauthorization, which wastes even more of my time.

 **Focusrite**
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especially when you figure in the time spent on hold with customer service.

In spite of this inconvenience, the actual process of authorizing and deauthorizing is really not very difficult. Once the EQ is installed, it shows up in your plug-ins area with everything else that you have available to you.

This is really quite amazing when you think about it — a whole studio complete with "outboard" gear stuffed into your computer. Even more amazing is when you compare what it would cost to do the same thing in analog. The digital difference equals some big time savings.

Results

Naturally, you want to get great results from your investment and the d2 delivers. If you are basing your entire digital EQ experience on the basic peak/notch

module that comes with Pro Tools TDM, get ready for a pleasant surprise. The d2 actually sounds like a real, honest-to-goodness analog EQ without the noise.

The six-band module gives you a 20 Hz boost/cut followed by a sweepable low, then low-mid, then mid-high, sweepable high, and finally a high-pass/cut. You have input and output controls as well.

All of the controls have the appearance of rotary pots. Click on them with the mouse, then adjust by raising your mouse up or down depending on the

direction you want to go. As you make your adjustments, you will see the parameter graph change with your movements to give you a quick visual of what you are doing.

You can adjust the channels independently, or link them together. There are two distinct lines on the graph: one for the left channel, one for the right channel. One is blue, while the other is colored red.

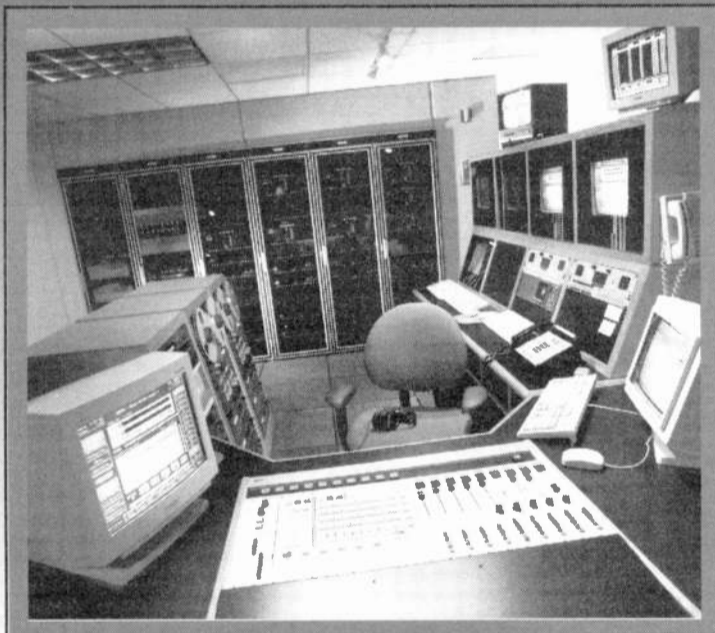
Frankly, I would like to see the color-coding scheme carried through on the controls as well. When adjusting the channels independently, the graph can get a little confusing. My color code suggestion would alleviate some of this.

Once you have the sound you are looking for, you can A/B it against your source with a bypass button. The only other thing that I would like to see on this

continued on page 36 ►

Arrakis Studio Furniture systems are #1 with over 1,000 sold !

The Master Control Studio, shown right, is one of seven Arrakis studios in Sony's Manhattan network origination center for SW Networks.



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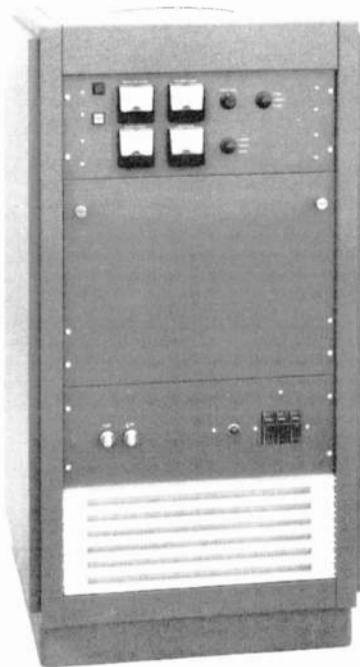
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Circle (48) On Reader Service Card

Happy Holiday Rush

► continued from page 32

cutouts may be too lame to seriously play at home, but they make great back-grounds. Again, be aware of the legality of using the music in this manner before you consider spinning a disc.

Everybody's radio spots have sleigh bells on them, but never reindeer. Bet you didn't know a few horse snorts from the CD collection make dandy reindeer noises. Drop a couple of those into your production (Santa: "Wait here, Rudolph." Rudolph: "Snort.") for a genuine dose of theater-of-the-mind.

No horses in the effects library? There is usually a riding academy within a few dozen miles of your station. Drive out to one with a portable DAT and a high-quality mic. Trade out a couple of first-quarter avails when the log is light and everybody is happy.

Ever wanted a busy Santa's workshop on a spot? Mix stock carpentry sounds with a sped-up recording of your coworkers.

Do one take with them all whistling a popular holiday tune, then a second with one half of the group chanting the word "yammer," the other half repeating "gritcham." The result sounds like random conversations in a large room. Old theater trick.

Drain the DAW

Workstation ran out of disc space pretty fast this time, didn't it? Before you do a mass purge of all the Christmas commercials you will never need again, flag the relevant sound effects and bounce them over to a DAT backup first.

This makes perfect sense when you figure you will need the same church bells, shoppers' footsteps, child giggles and crackling fireplace again next year. And dropping a ready-made DAT back into the workstation next year certainly makes more time-management sense than rifling through four effect libraries to find the exact reindeer hoofbeats and snort you used "last time."

This would also be a good time to borrow a few friends to lay down some new versions of "ho ho ho" and other Santasisms.

By the way, as long as the DAW is on, make and save a few different loops of jingling sleigh bells. Some being shaken fast, some slow. Use the compression and pitch-shift algorithms to give that single strand of bells some variation so it is not the same jingle bell effect from spot to spot.

Spread the effect out in stereo by layering and panning even more sleigh bell tracks. Make it big!

Jazzed-up jingles

There is always one client who will never give up that awful jingle they had done back in 1971 and insists on using every year. The least you can do is freshen it up a little.

Dump the audio into Pro Tools or Sound Forge or any popular sound editor you have available to give the jingle some much-needed lift and punch. Tweak the EQ and lift the vocals out a little. Some de-noising and spatial enhancement may give it a new lease on life on the FM band. When you are satisfied, drop it into the DAW.

Here, add a hint of digital reverb under the vocals. Invariably, this will sound

better than the dark damped plates used in the old days. If there is a distinct four-beat to the jingle, draw a volume curve on the DAW that adds a snappy lift to the drum hit on the "two" beat. SAW Plus

the overall feel. The Copy and Snap To feature of several combined MIDI/WAV sequencing programs make this happen a lot more accurately than trying to play it in real time off a sampling keyboard.

If this is way too much work, you can still make a little magic happen. One client I worked with had an old jingle that he wanted massaged into a

A sampler was pressed into use along with a multitrack recorder. Once the jingle was transferred to the multi, the sampler was used to add sleigh bells jingled on every other beat, a couple of tubular bells chiming in between vocal phrases and some very Salvation Army-esque horns at the end.

With proper EQ and a touch of compression to smooth out some over-enthusiastic hits on the sampler triggers, the piece sounded as if it were intended as a Christmas jingle from the get-go.

The unfortunate part was, he wanted it only days before Christmas at the start of his traditional last-minute, two-day-only flight. But with a little hustle, he got it.

Next year at this time, your foresight may mean a little more gold in the pocket, which, in my book, beats coal in the stocking anytime.

There is always one client who will never give up that awful 1971 jingle.

from IQS does this very well.

Drum sounds too dippy? Fly in a new one. A contemporary snare drum sample dubbed into the jingle does wonders for

Christmas-sounding piece. Because the jingle company went out of business, he had no way of having it redone or remixed by the original group.

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Focusrite EQ Processor Plug-in

► continued from page 34

plug-in is automation, and I understand this is not too far away for all Pro Tools plug-ins (version 4).

I used the d2 initially to enhance voice tracks on a spot. It was as clean, if not cleaner, than any outboard box you could find. The key advantage is, of course, being able to keep everything digital rather than adding another generation of A/D conversion.

After you get used to the unique adjustment method of the virtual "knobs," you discover that you can adjust the d2 just like you would any outboard unit.

I wanted to fill out the vocal so I did a +5 dB boost at 80 Hz. I also sharpened

the high end with a small boost at around 15 kHz.

Render time? Almost nil. It is simply a set-it-and-go type of thing.

You want great results and the Focusrite d2 Plug-in Equalizer delivers.

If there was any render time, I could not detect it. Overall, the d2 is a great alternative, if not a full substitute for six-band outboard EQ.

So who can use the Focusrite d2?

Anyone using Protools III TDM on either a NuBus-based Macintosh or a PCI-based Macintosh. As with all TDM Protools systems, it is always a good idea

to pick up some extra DSP power with an additional DSP farm card.

The Protools III Core System gives you just one DSP card, which allows the use of only two stereo plug-ins at a time.

If you want reverb, some compression and the use of the d2, I'm afraid to say you are out of luck on the core system.

At any rate, as long as third party companies and Digidesign continue to crank out high-quality plug-ins like the Focusrite d2, you will want to have lots of DSP to work with.

Pretty soon, that studio full of gear might just be emptied out in favor of your Mac or PC, with lots of plug-in power.

□□□

Contact Digidesign Development Partners in Palo Alto, Calif., for information on the Focusrite d2 EQ Protools plug-in and the entire line of compatible peripherals and software. Telephone (415) 842-7900 or circle Reader Service 28.

Ed LaComb is director of NewCity Production Services, providing production to five stations in Syracuse, N.Y. He can be reached at edlacomb@aol.com

Smart and Friendly

► continued from page 33

disc, which adds a table of contents that allows a CD-ROM drive to find the files on the disc. You can access the freeze menu through the "My Computer" icon.

You can freeze a CD more than once, but each time you do it eats up 13.5MB of space on the CD. So you should do it only if you need to access the CD on a drive other than your CD Recorder.

Too thorough?

Sometimes the CDRFS software works even when you would rather it did not. For example, I use Fast Eddie digital audio software, and every time I load a WAV file in Fast Eddie, the software creates a small file containing the on-screen waveform information. When I loaded a WAV file from a CDRFS CD, it immediately wrote the new .SMD file to the CD Disc without even asking.

The bottom line is: It is a nice utility that takes all of the thinking out of using a CD recorder.

I did find one problem with the CDRFS software. For some reason, a WAV file recorded using the CDRFS format will not load into Sound Forge 4.0. It creates an error message that crashes the system.

Fortunately this is not much of a problem, as WAV files are better recorded using the Incat CD Pro software.

All in all, the Smart and Friendly CD-R 1002 represents a real value. It records and plays well, includes everything you need to get started, is easy to install and use and includes some of the finest CD-R software available.

Of course, CD-R technology is changing almost daily. Today's value may be tomorrow's dog. But if you have been waiting to jump on the CD bandwagon, the Smart and Friendly CD-R 1002 may be just what you need to get started.

□□□

Contact Smart and Friendly, Inc., P.O. Box 2312, Chatsworth, CA 91313-2312, (800) 542-8838. Point your web browser to <http://www.smartandfriendly.com> or circle Reader Service 39.

Read Burgan is a freelance writer and a former public radio station manager. He can be reached at (906) 296-0652 or at rgb@up.net

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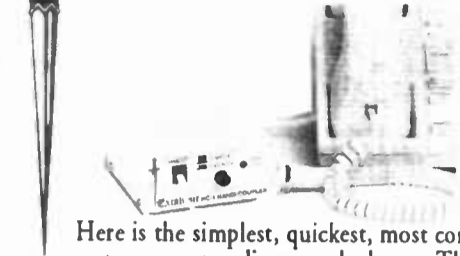


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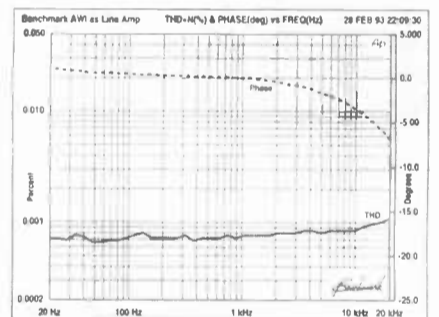
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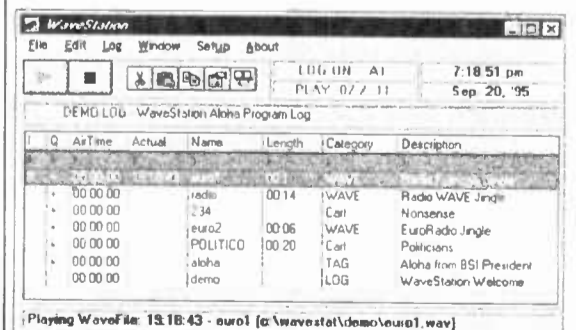
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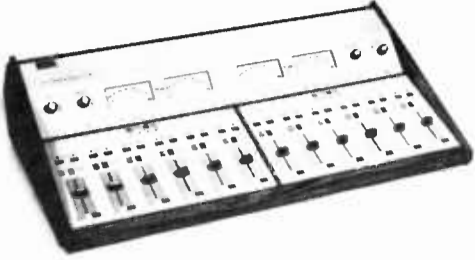
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READER SERVICE NO. 107

A History of the NBC Chimes

by Bill Harris

Few stories have generated as much reader comment as Richard Stedler's look back at the NBC chimes in *RW*, Sept. 18. Obviously you enjoy reading about this familiar piece of radio history, so we turned over our letters page in this issue to that topic (see page 5).

A friend of *RW* also pointed us to an article about the chimes and the people who created them. A version of this article first appeared in *The Reproducer*, the quarterly journal of *The Vintage Radio & Phonograph Society, Inc.*, Irving, Texas.

We reprint it here with permission of the author and the society. To learn more about the group, call (972) 315-2553.

was needed to signal the affiliates for these breaks.

Three men at NBC were given the task of finding a solution to the problem and coming up with such a coordinating signal. These men were Oscar Hanson, a former engineer for AT&T, Earnest la Prada, an NBC orchestra leader, and Philip Carlin, an NBC announcer. In 1927 and 1928 these men experimented with a seven-note sequence of chimes, G-C-F-E-G-C-E, which proved too complicated for the announcers to strike consistently in the correct order, so the sequence was reduced to four notes, G-C-F-E. This was later reduced to the three notes G-E-C, and these three notes were first broadcast

on Nov. 29, 1929. The notes were struck at 59 minutes 30 seconds, and 29 minutes 30 seconds past the hour.

I also received information from a person who worked for WSB(TV) in Atlanta for 24 years, that the chimes had their origin at Atlanta radio station WSB.

Supporting this, a Mr. Paul Ferry wrote the following in an article in the *St. Petersburg Times* in early 1995:

"I read in your Jan. 17 Action column that NBC officials said the chimes used for network identification are the musical notes G, E, and C and originally stood for General Electric Corporation which was part owner of NBC."

continued on page 41 ▶



The three-note NBC chime signature still grips the imagination of radio fans. (Seven chimes would have been a handful.)

ROANOKE, Texas "This is the National Broadcasting Company. Bong Bong Bong." Almost anyone who has ever listened to radio has at some time or other heard the famous three-note chime that has been the long-time trademark of NBC. The chimes were used on the hour and half-hour to announce station breaks on the network.

I became interested in the history of the chimes after discovering a book at the library titled "The Fourth Chime" by NBC, printed in 1944. I had never heard of a "fourth" chime and my curiosity was aroused. I checked out the book to find out more. However, the book told very little about the fourth chime; it dealt mainly with the role NBC played in the reporting of special world news events, primarily during World War II.

I began to seek more information on this fourth chime. Was it a different note from the other three or maybe a repeat of one of the others? Where could I get a recording of this fourth chime?

A letter to the editor of *Antique Radio Classified* brought some results. My request for more information was published in the December 1994 issue of *ARC*, and shortly I received a letter with a copy of an article by Rod Phillips about the history of the chimes. I also made inquiries on the "Old Time Radio Digest" on the Internet computer network. I was looking in particular for a recording of the fourth chime. The response was great, to say the least, and I began to piece the puzzle together.






The birth of the chimes


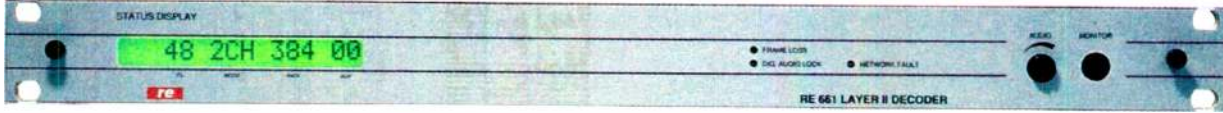
As I began to gather information, there seemed to be at least two versions of how the chimes came to be. Perhaps only those early radio broadcasters who were involved with the beginning of the chimes know exactly how it happened, but the information I have collected may shed some light.

The National Broadcasting Company was formed on Sept. 9, 1926. It was a corporation owned jointly by GE, RCA and Westinghouse. The NBC network began broadcasting on Nov. 15 of the same year from studios WEAJ in New York City. There was a combined group of 19 scattered affiliated stations, using more than 3,500 circuit miles of telephone wires.

As the number of affiliate stations grew, there was some confusion among the affiliates as to the conclusion of network programming and when the station break should occur on the hour and half-hour. Some sort of coordinating signal

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Chimes Evoke Memories

► continued from page 39

"I think if you research this a little further you will find that the chimes really originated in Atlanta, Ga., at radio station WSB.

"In the late 1920s, WSB station manager Lambdin Kay began using a miniature xylophone to hit those same three notes to signal station breaks. Later, when WSB joined the NBC network, WSB cut in one day during a Georgia Tech football game with the chimes. NBC liked it so well that it got permission to use the chimes for its own identification."

Terry started working for American

One possible chime sequence was G-C-F-E-G-C-E.

Telephone at age 12 and retired 52 years later. When not working, he would hang around station WSB, which is how he came to know about the chimes. Terry passed away two days after phoning in his story to the St. Petersburg Times, Elmo Ellis, who was hired by WSB in 1940 and retired as general manager of that station ten years ago, confirmed Terry's story.

The notes used by WSB were the first three notes of the World War I song "Over There," which are the notes E-G-C. (This becomes important in the discussion of the fourth chime.) NBC rearranged the notes to G-E-C. Station WSB went on the air in 1922 and became an affiliate of NBC on Jan. 9, 1927, shortly after the formation of NBC.

The original chimes were manufactured by the J. C. Degan Company of Chicago. Three note bars were mounted on a wooden box that acted as a sound chamber; the bars were padded with leather bumpers on each end. A handle was attached to the side of the box so the announcer could hold it up to the microphone while striking the notes.

Starting in 1932, the chimes were electronically generated by means of finely tuned metal reeds that were plucked by fingers on a revolving drum, much like a music box. The unit was invented by Richard H. Ranger, who also invented the electronic organ. The reeds formed part of a capacitor in an oscillator circuit to generate the tones, which were amplified and sent out over the network at the push of a button.

A confidential alert

The fourth chime is what started my interest in this subject. The book "The Fourth Chime" stated that it was originally contrived as a confidential alert to signal the members of the NBC news staff, engineers and other personnel responsible for broadcasting the news to the people. It was first heard on the air with the crash of the dirigible Hindenburg in 1937 at Lakehurst, N.J., and during the Munich crisis in 1938. It sounded again with the news of the bombing of Pearl Harbor.

The fourth chime continued to be used throughout World War II to alert the NBC news department and the radio audience of special news bulletins. According to the book, "The Fourth Chime will ring out again and again from the NBC Newsroom in New York whenever events of utmost

significance demand the intensive nationwide coverage of the news the American people have come to expect from the National Broadcasting Company."

The home of the chime was the RCA building in New York City, Room 404, the "News and Special Events Room."

I received a tape of a documentary, produced by a radio station in Washington, of NBC news broadcasts of the 1944 D-Day invasion of Europe. At one point the four-chime pattern was heard. Because Rod Phillips wrote in his article that the fourth chime was a second strike of the "C" note, I assumed that the four-chime sequence would be G-E-C-C.

I was surprised by what I heard on the

tape. The sequence of the notes was B-D-G-G, in the key of G. If you sound this sequence in the key of C, they become E-G-C-C. As stated earlier, the note arrangement of E-G-C are the notes as originally used by radio station WSB, and the first three notes of the World War I song "Over There."

Why did NBC use that sequence for the fourth chime? Was there a patriotic connection to the war song, or did it just sound better than G-E-C-C? Why was it sounded in the key of G instead of the key of C?

In 1950, NBC filed with the U.S. Patent Office to make the chimes a registered service mark, the first such audible service mark to be filed with that office. The Patent Office register lists Serial Number 72-349496 for a "service mark," described as follows: "The mark

comprises a sequence of chime-like musical notes which are in the key of C and sounded the notes G, E, C, the 'G' being the one just below middle C, the 'E' the one just above middle C, and the 'C' being middle C, thereby to identify applicant's broadcast service."

NBC discontinued the use of the chimes in 1971, but in November of 1976 the network began using the chimes again following all broadcasts in celebration of the 50th anniversary of the network. I have not heard the chimes on radio in several years, but they can still be heard occasionally on the NBC television network.

My thanks to these individuals who contributed information on the chimes: Richard Paul, WAMU(FM), Washington; Aubrey Bullard, WSB(TV), Atlanta; Dave Morton; and Ken Diable.

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Downlink Grant Promotes Health

by Christine Joaquim

FRESNO, Calif. Radio Bilingüe has provided satellite downlink equipment to 17 radio stations to help bring health information to poor and underserved Latino families throughout the American West.

A \$75,000 grant from the Robert Wood Johnson Foundation funded the satellite distribution project to radio stations in nine states and Mexico.

Hugo Morales, project director for Radio Bilingüe, said the project was aimed at stations that were not carrying "Linea Abierta," a live Spanish-language talk show broadcast over Satélite Radio Bilingüe. "We provided the equipment so

they could carry the show," he said.

"Linea" will bring information to Latino communities afflicted by poor sanitation, toxic contamination and other conditions. The goal is to assist poor people isolated by the barriers of language, poverty, low educational levels and cultural misconceptions.

The program includes interviews with physicians, social workers, health care advocates and other sources, including national policy makers. Recent programs have highlighted cancer survivors, domestic violence, AIDS and teen pregnancy.

The satellite service also carries "Noticiero Latino," a top-of-the-hour

national Spanish-language news service, in addition to music, drama and arts programming.

Satélite Radio Bilingüe programming is available through two satellites: the C-Band Galaxy IV (Transponder B, 71.6 MHz) and the G Star 1 (Ku-Band).

The 17 stations are:

KABF(FM), Little Rock, Ark.
KERU(FM), Blythe, Calif.
KZFR(FM), Chico, Calif.
WPDJ(AM), Huntington, Ind.
XHITT(FM), Tijuana, Mexico/San Diego, Calif.
XEQUIN(AM), San Quintin, Mexico
XERU(AM), Chihuahua, Mexico

KZUM(FM), Lincoln, Neb.
KRZE(AM), Farmington, N.M.
KCTM(FM), Rio Grande City, Texas
KCPX(AM), Salt Lake City, Utah
KDNA(FM), Granger, Wash.
KTQX(FM), Bakersfield, Calif.
XEETCH(AM), Etchojoa, Mexico
KTMR(FM), Victoria, Texas
KSVR(FM), Mount Vernon, Wash.
KWIP(AM), Dallas/Salem, Ore.

The Robert Wood Johnson Foundation, based in Princeton, N.J., is the nation's largest philanthropy devoted exclusively to health care. The late Johnson, who built Johnson & Johnson into a worldwide health and medical care products company, endowed the Foundation with a \$1.2 billion gift from his personal fortune.

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Holiday Classics

► continued from page 19

'n' Andy" show, the latter told a young girl the meaning of "The Lord's Prayer" on Christmas Eve. This 1947 show was a heart-tugger.

Stewart as Scrooge

James Stewart had a Saturday night show called "Six Shooter." In 1953, he performed a western version of Scrooge that is still a delight to hear. Dick Powell's "Richard Diamond" did a modern dress version of the Dickens story. The stars narrated these shows, putting their special touch on the stories.

In 1945, Ralph Edwards and "Truth or Consequences" brought Christmas home to a serviceman confined to a veterans' hospital. Part of the show originated from the veteran's home town. It was one of radio's greatest moments.

"Gunsmoke" had a poignant radio show in the early '50s, a Christmas gem called "Twelfth Night."

John Nesbitt's "The Juggler of Our Lady" started out in 1938 on a weekly show called "The Passing Parade." Nesbitt was a great storyteller, but he did not attract a large audience. He was on and off, but his narrative of "The Juggler of Our Lady" always managed to hit the airwaves at Christmas on some show. It made for great listening.

"Fibber McGee and Molly" featured a different comedy sketch every Christmas. The conclusion of the show was always the same. Molly, as little Teeny, joined the King's Men in a musical version of "The Night Before Christmas."

Bing Crosby started out on radio, and every year until 1954, he did a musical Christmas show on the airwaves. After that, he did his Christmas shows on television.

Most of the shows mentioned in this article are still available on audio tapes, if you can find them.

□ □ □

Dick O'Donnell is a freelance writer and old-time radio buff living in Florida. Reach him at (813) 842-6638.

Running Radio

Your Resource for Business, Programming & Sales

Wiring Up a Sports
Talk Network:
See page 46.

Radio and Weather: Sunny Match

by John Montone

NEW YORK AccuWeather of College Park, Pa., is the largest commercial weather service in the world. The company employs 300 people and is heard on 500 radio stations.

By contrast, meteorologist Frank Lombardo works from his house in Warren County, N.J. He counts 15 stations as clients.

Terry Cooley, program director of the Pro Radio Group in southern Minnesota, lost his regular weatherman, a TV personality who moved to Sacramento, Calif. While he searches for the right replacement, he relies on the National Weather Service and the Internet.

Winter is here and radio listeners will turn to radio to find out if the big storm is coming, if school is closed and if roads are passable.

"We crank it up," said Cooley, who programs for Minnesota stations KYSM-AM-FM Mankato and KXLP(FM) New Ulm. The stations "put the gags and bits on hold and go with frequent weather reports. That's what people want to hear. We're a rural area. We've got farmers who depend on us. It's really a public service."

Snow monitors and satellites

Radio managers can choose from a broad range of weather services and information sources, so service providers work not only to be accurate, but to become part of a station's sound.

Lombardo has a broadcast booth that is 6 feet by 6 feet, with a tape deck, a microphone, a mixer and a monitor feeding him

the latest forecast information. He has become a personality on many of his stations. In late November he left home for a



AccuWeather's Dr. Joe Sobel

day and broadcast from WOBM-FM in Toms River. He brought along some fresh eggs. WOBM listeners know that Lombardo raises chickens in addition to predicting the weather. "People want a home-town personality with some professional expertise," he said.

Dr. Joel Myers, the president and founder of AccuWeather, agreed. "We tie in to local events like Friday night football games," he said. "We tailor our service to the needs of our stations: all-news, country, rock."

Weather services are in the radio spotlight in winter. Myers said with pride, "We beat the National Weather Service by 54 hours on the Blizzard of '96," which dropped more than two feet of snow on East Coast cities last January. He attributed AccuWeather's

snowstorm track record to the use of its Snow Warning Operation.

"We have experts tracking the course of a storm as it moves across the country for the road departments, schools and municipal governments who are our clients." Myers called these experts "our snow monitors" and said they feed their information to AccuWeather staff meteorologists, who then form a "consensus," which in turn becomes the official forecast.

AccuWeather also has access to the same satellite images used by NASA and the National Weather Service, and real-time access to Doppler radar. "Every time lightning strikes in the United States, we have it in three seconds," said Myers.

Weather service providers say the public wants experienced weather people. Myers has a core group of meteorologists who have been with the company since it began broadcasting on WARM(AM) in Wilkes Barre, Pa., in 1971. The voices of weathermen such as Dr. Joe Sobel, Elliot Abrams and John Kocet are familiar to listeners in many markets. Myers estimated that each is approaching one million on-air forecasts.

After his college "tornado-chasing days" in Texas, Lombardo began reading weather reports on the radio in 1976 and founded his company, Weather Works, in 1986. His client stations run north to south from

WFAS in Westchester County, N.Y., to WVL(T)(FM) in Vineland, N.J.

None of the stations pay him. He works barter deals, exchanging his reports for air time. In addition to watching the computer, he must sell commercial time to advertisers and sometimes produce the spots. It can be hard work on a winter day when southern New Jersey is getting rain, the central part of the state is seeing snow, and Westchester N.Y., is partly cloudy.

"On winter days," he said, "the forecast has to be much more tailored to local climates."

Trust your guy

Small or large, weather service providers know that forecast accuracy is critical. To that end, Myers said, "We encourage any type of feedback from our stations."

Lombardo pleads with his stations to use his forecast all the time. "It drives me nuts when they use the wires," he said. He may be on the air predicting an inch of snow, while a regional news wire forecast may be calling for two to four.

"People want consistency," he said. "Stations should trust the guy they hired."

Myers said his philosophy is to be accurate, specific and precise. He believes it is not enough to say that the forecast is for clouds tomorrow with a 30 percent chance of rain. Rather, he said, "We tell people there will be a chance of showers in the morning and skies will clear in the afternoon."

With better tools and plenty of experience, forecasters today are more confident in their trade. Myers said, "Five-day forecasts today are as accurate as three-day forecasts were 15 years ago."

□□□

John Montone is a radio reporter for 1010 WINS(AM), New York. Send him e-mail at jfmontone@att.net

Looming Large in Louisville

by Sharon Rae

LOUISVILLE, Ky. His name is on a nightclub, a TV show and the list of directors of the Country Music Association. Now, for the second time, it also appears on a Marconi.

Louisville radio legend Coyote Calhoun of WAMZ(FM) received the 1996 Marconi Award for Personality of the Year-Large Market, his second in that category. He was honored this fall as among the best in the industry by the National Association of Broadcasters.

"I've been with WAMZ for 17 years in February," said Calhoun, now a two-time Marconi winner. "If you've been in the industry for a long time and you are rather high profile ... folks will recognize a name. It's really nice to win the awards ... but I think

that it's not necessarily because I'm any better than the other people I was against."

Some would differ with those humble words. "Coyote is much beloved and a fixture here in Louisville ... kind of a local legend," said Tom Dorsey, the radio and television critic for the Louisville Courier-Journal. "He's been with WAMZ for virtually their entire history as a country station ... far and away the number one station in town and he is far and away the most popular personality in the market in his time slot. The station runs away with the ratings, year in and year out, book in and book out."

Calhoun, program director and afternoon drive jock at WAMZ (Louisville's "hot new country"), credited his success on the air to a love of the industry and to connections, not only in Louisville but in

Nashville as well.

"I've been in the market for a long time," said Calhoun. "I think after a while you get to know a community pretty well and you know the things that you can talk about that are really going to strike interest in the listeners."

Calhoun has been on the board of directors for the CMA for the past decade. He owns Coyote's nightclub in Louisville and hosts a local television show called "Coyote's Country," top in its time slot. Here you have someone who is tuned in to his community. "I'm connected," said Calhoun.

"And let me knock on wood here because you never know when any of this is going to end. But I feel, because of my involvement with my (ventures), along with what I'm doing on the air, people get the feeling that I am very committed to this form of entertainment.

"It's my livelihood. I love it. But if folks feel that they can trust you and you are committed to the entertainment of country music, it's easier to get people's trust and



Coyote Calhoun

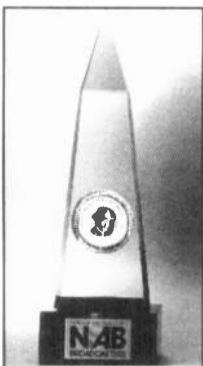
hopefully their adulation."

Calhoun also said he wanted to show his gratitude to Clear Channel Radio.

"They've been great people to work for," he said.

□□□

Sharon Rae is principal of Rover News Services in Michigan. Reach her via e-mail at schon@aol.com



This is one in a series of Radio World profiles of Marconi Award winners.

Compressing and Limiting in FM

by Ed Montgomery

This is the third installment in a multi-part series intended "to make the new generation of FM broadcast station managers aware of the equipment for which they are responsible and to help them periodically review how the equipment is operating." Parts I and II appeared in RW Oct. 16 and Nov. 13.

ALEXANDRIA, Va. In the previous installment, I discussed the importance of setting accurate audio levels for recording and playback and the purpose of the VU meter. The audio console, computer system, satellite receiver and any other originators of audio must be operating at their optimized levels to reproduce the most accurate sound.

Audio is a variable. It can be digitized and encoded but it will always wind up as an analog signal in someone's loudspeaker. Digital audio is considered superior to analog audio because digital is more immune to degradation in quality during the recording, transmission and playback process. In a digital system, the analog signal is picked up by a microphone and amplified in an analog amplifier. At that point, it is digitized. It can then be recorded or transmitted readily.

Amplifiers are used to pass digital signals just as they are analog. The performance requirements to retain the integrity of the signal are a bit different for digital systems, but they are equally important.

Audio paths

Over the years since digital audio emerged, we have heard numerous arguments about audio, especially regarding the compact disc. For technical reasons beyond the scope of this series, some audiophiles believe that the compact disc does not compare well to the vinyl disc. Vinyl does suffer from dust and dirt accumulation in grooves, and it will scratch,

The compact disc has virtually no surface noise, but some people believe the process adds distortion on high frequencies. This specific argument is among purists; for the most part, the general public has accepted the advantages of



digital audio, notably the compact disc. Digital audio is here to stay. Radio stations find that digital audio is preferable because it is easier to transmit and helps the station maintain a consistent level of quality. That is why digital equipment is now found throughout radio facilities.

As I mentioned, audio is a variable. To optimize the signal for the best transmission, start at the audio console. Make sure that the audio does not peak continuously beyond 0 or +1 dB on the "red zone" of the console's VU meter. At times you may see peaks of +2 or +3 dB, but these should only be momentary. Overdriving a console can easily cause clipping distortion. Once the audio contains distortion at this stage, there is no way to remove it.

After the audio leaves the main control room, it travels either a few yards or miles to the transmitter. This could be an audio line within the building to the transmitter, or a studio-transmitter link

(STL), typically via specialized telephone lines or a microwave feed.

We want the best possible audio signal coming from the studio. The transmitter must be protected from overmodulation. A compressor/limiter is also good protection against overloading telephone lines or overmodulating the STL. Unlimited instantaneous peaks can cause undesirable distortion.

Signal processing of this nature also prepares the audio signal for the broadcast transmitter. Otherwise the average FM signal would sound too quiet on receivers. Compressors or limiters allow us to raise the average level of audio in a manner that can be either transparent or prominent, depending on the format and the desires of the program director.

As radio progressed, automatic level control became more and more a part of the broadcast chain. One of the prominent forces in the development of audio signal processing was the change in radio in the 1950s. Television had taken over most of the comedy and drama, but on radio the age of rock and roll and the disc jockey had arrived. This required audio systems that could handle varying levels of audio and the ability to place voice distinctly over music.

At that time, most music was on AM and it was every program director's desire to have his station heard, usually louder than the competition. They did this through several methods. One was to have the disc jockey speak over the ads and the instrumental introduction to songs, always keeping audio on the air. Another was to use reverberation, or echo. Some stations still use this today, for effect, to make the voice sound bigger than life.

I believe the nature of the broadcast system also influenced the popularity of the type of music of that era. Record producer Phil Spector developed the "wall of sound," essentially a style of produced music with a lot of echo. It complemented the AM system of the time. Music with low levels of audio had to be exceptional to become popular. Some songs did, but I believe most record companies produced material so that it would sound good on pocket transistor radios and in cars. The louder the audio level, the greater the signal-to-noise ratio and the less noise apparent in the AM receiver. This formula was important with AM and holds some validity even with FM.

Professional modern audio processing came into its own by the late 1970s and has allowed radio stations to present their listeners with relatively consistent levels, which are important in overcoming the ambient noise found in today's listening environments, particularly cars.

Format preferences

Frequency modulation does not require the effects that AM needed to keep its audio signal louder than the interfering noise levels that interfered with it. However, we can use some processing to increase the loudness of the FM signal. The amount of compression or limiting required is dependent upon the type of format.

For instance, classical music has a wide range of audio dynamics, varying from very low to instantaneously high sound levels. Using compression with a quick attack and/or release time could

ruin the effect of the piece. Popular music usually does not exhibit such a wide range and can be compressed somewhat more aggressively to produce a more even, less dynamic sound.

Talk radio is different too. The compressor should not be set up to increase the audio output level at the instant someone stops talking. Too much compression or clipping can produce "listener fatigue," the result of an almost constant level of audio coming out of the speaker. The listener does not have a chance to relax. The eardrums are subjected to nearly constant pressure.

The audio compressor/limiter has evolved to a multi-function audio processor, which includes compression, expansion, limiting, clipping and gating, and is adjustable to almost any output one would want. Many models are multiband, which means they are processing certain frequencies differently than others.

Certain models may suit your station better than others. However, avoid experimenting during real programming. In fact, setup procedures supplied by the manufacturer may require that specific test signal levels, rather than program audio, be applied during installation. Also, keep your station sound consistent. Program directors and engineers must work together to arrive at the specific quality and level of processing desired.

Listen to the station on various radios and speaker systems (a Walkman, car radio, clock radio, stereo systems) to arrive at the amount of processing desired for your format. Find out what general type of radio the listeners of your particular format tend to use. Remember that a great number of listeners are sitting in moving cars.

The impact of processing is one reason that the on-air person should listen to the air monitor rather than unprocessed studio audio. If you listen to the air signal in mono, you can also detect phase problems.

EQ

Another signal processor often found in the audio chain is an equalizer, often used to develop a specific "sound signature" for a station, perhaps by boosting the low end or the mid-range slightly. But this sort of adjustment can damage the audio reproduced in radio receivers, most of which have tone controls that are set by the listener. Adjusting the tone of the signal before it is transmitted can be counterproductive. A flat transmitted signal usually is preferable, but you'll find different practices depending on format.

Program directors or managers will occasionally hear about a specific audio processor, compressor, limiter or exciter that has greatly improved the sound of other stations. Advertisements may suggest that this device will perform wonders on the sound of your station. These claims may be true in the environment in which the equipment is working. However, you might install a new processor only to be disappointed in the improvement to your sound. You may have had unrealistic expectations. Also, products from different manufacturers may interact to produce unexpected results. If you are planning to buy processing equipment, tell the sales representative and your engineer or consultant your intentions. Gather as much information as possible before acquiring the unit. Ask your supplier for a demo unit that you can install and try for a week.

continued on page 46 ►

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Is There Life Out There?

BEND, Ore. The nation's second-largest sporting magazine is venturing into radio.



"Outdoor Life Radio," a one-minute daily show covering fishing, hunting, camping and other outdoor activities, grew out of a partnership between Outdoor Life magazine and producer Scott Linden.

The program has been picked up by Interstate Radio Network of Nashville, which is distributed nationally.

Linden said promotional efforts for the radio venture include highlighting station affiliates to Outdoor Life magazine's 6 million monthly readers.

For information, contact Scott Linden at Outdoor Life Radio, (541) 382-1726, or circle Reader Service 54.

A Country Christmas

NEW YORK Westwood One Entertainment gets into the holiday spirit by airing a country Christmas music program as well as four year-in-review specials.

"Christmas 1996," airing Dec. 27-29, features performances of Christmas songs by the top artists of the '90s. Included will be new Christmas music from Alabama and Collin Raye.

Listeners can tune in "Country Countdown USA Presents The Top 70 of 1996" on Dec. 28-29.

Westwood One also is offering the program as a six-hour special for broadcast on New Year's Eve.

J.D. Spangler hosts "Top New Stars of 1996," a special holiday edition of "Country's Cutting Edge" airing Dec. 28-29. That same weekend Westwood One will air "1996, The Country Year in Review," recapping the year's top country music stories.

"1996 Year-End Countdown" first airs Dec. 27-29, and is repeated Jan. 3-5, 1997.

The two-part program counts down the top songs of 1996 and relishes the events that had a positive impact on the country music industry.

For more information contact Renee Casis at Westwood One, (212) 641-2052, or circle Reader Service 53.

Motor Sports, On Line

JOHNSON CITY, N.Y. The Motor Sports Radio Network, from Sportcom Associates, has put its information kit on line.

Information is posted in the Compuserve Broadcast Professional Forum, Journalism Forum and Public Relations & Marketing Forum. Stations can also sent e-mail to the network at 104706.401@compuserve.com

"Many people who make programming decisions frequent these forums," said Sportcom CEO Paul Kaminski, "and we don't think they should have to wait on surface mail for our station information kit."

For information, contact Paul

Kaminski at Sportcom Associates, (607) 770-9165, or circle Reader Service 33.

Specializing in Rock Radio

DALLAS Lee Abrams, the self-described "30+ Rock specialists," announced six client relationships.

The following stations and companies are using the services of Lee Abrams Inc.: WARW(FM), Washington; WXCR(FM), Albany, N.Y.; WMMS(FM), Cleveland; Austereo, the Australian broadcast group; MOR Music TV, a TV music shopping channel from Spear Communications; and the EMI-America entertainment company.

For information, contact Lee Abrams, (972) 448-3307, or circle Reader Service 37.

Shockwave Airs Cyberspace Funk

SAN FRANCISCO The Mothership docked in cyberspace on Nov. 21, as



George Clinton

Macromedia, Inc., Capitol Records and Telos Systems cybereast George

Clinton's "Live From the Mothership" performance.

The broadcast utilized Telos Systems' Audioactive live audio technology along with Macromedia's Shockwave, an MPEG 2, Layer III real-time audio compression technology.

For more information contact Cate Cowan at Cowan Communications, (202) 726-0121, or circle Reader Service 24.

What a Lovely Addition!

PITTSBURG, Calif. Building on its success, "On The House with the Carey Bros." expands from three hours to four beginning Jan. 4, 1997.

The home repair and improvement call-in program will begin an hour earlier, at 6 a.m. PST, on its more than 125 affiliates.

Popular "On The House" features include "Webhead," highlighting home improvement sites on the Internet, "DR Roof" and "Tip of the Week."

For more information contact Steve Raucher, (800) 737-2474, or circle Reader Service 96.

The Fruit of Much Labor

WASHINGTON The weather outside may be frightful, but radio programmers can look ahead to spring. Those with an interest in gardening can tune in "The

Garden of Eden with Jack Eden" radio show every Saturday from 8 to 10 a.m. EST via Satcom C-5 Transponder 23 Channel 14.

The live call-in program is available on a barter basis from America On The Air Radio Network.

Eden hosts long-running broadcasts on WTOP(AM) Washington and KYW(AM) Philadelphia.

He also publishes a weekly newspaper column and a one-hour weekly "Garden of Eden" television show.

For information, contact Bill Stabler at SRO Communications, (800) 292-5881, or circle Reader Service 79.

In a Galaxy Not So Far Away

SOUTHFIELD, Mich. In a move to expand its offerings to more businesses, Music Technologies International (MTI) will provide its Bizradio format on the Galaxy VII satellite from Hughes Communications beginning Jan. 1, 1997.

A separate ad channel on Galaxy VII, allowing customers to receive messages and announcements, also will be provided. MTI hopes to reach those businesses currently using the Galaxy VII Ku-band payload for other communications.

For more information, contact Susan Skinner at MTI, (810) 827-7788, or circle Reader Service 32.



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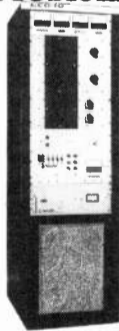
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Circle (13) On Reader Service Card

Circle (22) On Reader Service Card

If You Build It, They Will Listen

by Sharon Rae

DYERSVILLE, Iowa Reporting from out in the field takes on a new meaning with SportsAmerica, broadcasting live from the Field of Dreams in Dyersville, Iowa. While you won't find the dreamy Kevin Costner walking around, the magic and romance of the 1989 movie setting remain.

Jim Coursolle is the chief executive



Comrex Nexus Codec and Codec Buddy

officer of SportsAmerica, a nationally syndicated radio sports talk network that signed on in September. The network has 18 affiliates and is looking to grow. Coursolle credited its instant success to a dream team of talent, state-of-the-art equipment and the latest technology.

Location may be the key to real estate success, but it was the magic of modern technology that allowed SportsAmerica to pick their talent, regardless of locale. The network wanted to connect its new studio, situated just a cornfield away from the Field of Dreams tourist site, to its hosts throughout the United States.

Equipment manufacturer Comrex helped. Kris Bobo, vice-president of development, described the creators of SportsAmerica as "terribly non-technical but quite visionary." She thought their idea of a tele-commuting talent pool was achievable.

The first task was to create a special gear package to ship to talent in

Minneapolis, Kansas City, Philadelphia and other cities.

"All the talk show hosts have 'studios in a suitcase' that include Nexus ISDN codecs ... and Buddy remote mixers," Bobo said.

Coursolle said the entire package "is approximately 22 pounds and enclosed in a high-impact plastic electronics case that looks like a suitcase ... and is accepted by the FAA as carry-on luggage. That equipment allows us to broadcast from anywhere," either through ISDN or a POTS (Plain Old Telephone Service) line.

Radio from all over

"We saw it as a pretty simple thing to do," said Bobo. "(The talent) would all be sitting in their living rooms in their respective cities and the main studio is in Iowa ... and it all needs to sound like the program is generating from Iowa. ... Callers phoning into Iowa needed to be sent out to these hosts in the field and of course, the host audio had to come back to the studio where it's all mixed and sent from Iowa out to ABC."

She described the project as a fairly common application.

"We've got more and more people sitting in their underwear doing broadcasts than you'd believe," she said. "And you'd never know it. ... Especially with ISDN, the quality is so good. Studio quality."

However, the project turned out to be not as simple as anticipated.

While most of Iowa is covered by U.S. West phone service, Dyersville is in GTE territory, a situation Bobo called "your worst nightmare" when it comes to telecommunications.

"We figured we could still make the project a 'go' with Switched 56. But Dyersville, Iowa doesn't have that available, either. They don't have digital anything. So, I'm looking at this little embryonic network just collapse before my eyes."

Bobo eventually worked out a plan to bypass GTE and U.S. West and all the local telephone companies, jumping directly to the long distance carriers.

"The long distance carriers really want your business, so they're willing to jump more hurdles," said Bobo. "As it turned out, you could get what's called a primary rate ISDN — a PRI ISDN — into almost anywhere if you're willing to pay for it. (That) dedicates a huge pipe which is 23 B+D, or 1.54 MB per second. People know it as an 'ISDN-ready T1.'

ISDN lets a new sports network realize a dream.

Theoretically, you could bring that into Dyersville, Iowa from the closest long distance point of presence."

Bobo then caught the interest of a small phone company in Wisconsin. Its managers said they'd be happy to do the project for \$30,000, with a \$6,500 monthly fee.

"Again, I watched the death of SportsAmerica before it was even born" because of the projected expense, said Bobo. "But, I thought 'what the heck,' and put it out to bid with MCI and AT&T. It turned out that everybody was interested and we basically had a few weeks there where we just faxed around quotes — just watched them fight it out."

When all bids were in, MCI secured the contract, waived all installation fees, and agreed to a much lower monthly fee of about \$1,200.

As a result of her efforts, Bobo has an unabashed fan in Coursolle.

"I thought our dream was coming to an end in short order until I ran into Kris, who, in my opinion, walks on electronic water." Sweet words to any broadcast supplier.

The result is a flexible, powerful network arrangement.

"What we have done is taken our radio network to our talent where they live," said Coursolle. "So Charlie Jones, NBC Emmy Award-winning broadcaster, does his SportsAmerica broadcast Wednesday nights sitting at his kitchen table in LaJolla, Calif.

"We're able to take the audio that's coming in from all these different locations and mix it (in Dyersville), then send it to our satellite uplink.

"So, from Iowa, this signal goes to ABC's satellite services in Manhattan and is uplinked and reaches our affiliate radio stations through SATCOM C-5, Transponder 23."

Bobo said, "In studio, a Max4002 CSU/DSU by Ascend and Comrex DXR.1 codecs ship the audio around. This equipment — the Max unit and the primary rate ISDN circuit — allowed us to break off eight basic rate ISDN lines."

In what was once just a cornfield stands a million-dollar, 7,000-square-foot, state-of-the-art digital broadcast studio at the Field of Dreams.

And if you stand and listen quietly, you might hear the far-off din of an old-time baseball game.

"Is this heaven?" you ask.

No. It's Iowa.

Processing Matters

► continued from page 44

Equalizers do have a role in the broadcast facility. They can be used to "clean up" audio. For instance, a recorded news report may contain background sounds that nearly obliterate the voice. An equalizer can reduce the loudness of the offending frequencies and permit a distinguishable reproduction of the voice. Equalizers can also reduce or eliminate hum and noise.

In general, the equalizer does just the opposite of what its name implies. It "unequalizes" or compensates the signal, emphasizing certain frequencies and reducing others, to make the result sound more natural.

Modern audio processors operate on little power, and many are micro-processor-driven. They are reliable and often will run unattended for years. Most come with a switch that can connect the front-panel meter to right and left audio output, the sum or difference of the channels, compression threshold and power supply voltages. If you suspect failure, look at the meter ... and trust your ears. You can help the engineer not only by conveying the reading of a potentially failed unit, but also by telling him or her what you hear.

□ □ □

Ed Montgomery is lab director at Thomas Jefferson High School for Science and Technology in Alexandria, Va., and a part-time radio engineer. He also taught college-level broadcast engineering technology and has written educational columns for RW. Contact him via e-mail at emontgom@lan.tjhsst.edu

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World Radio History

PERSONNEL LEVEL

Got a Personal Performance Plan?

by Sue Jones

SPRINGFIELD, Va. Too often, we are willing to start the new year being comfortable and performing "in the groove." If you do not take charge of your professional development and direction, you get what is left. Even if you do not have a three-year to five-year career plan yet, you can do several things to enhance your career and professionalism this year.

1. *Check your attitude.* The most important part of your job performance is *attitude, attitude and attitude.* Make sure your attitude is appropriate for your position and aligns with the station's objec-

tives even if this means bucking peer pressure. Remember, your peers will not give you a pay raise or promotion. Keep yourself focused on facts and getting your job done to the best of your abilities. Listen to the office grapevine to be aware of the group's thinking but do not let it control your attitude.

Anger and frustration can sap your energy and enthusiasm. Work to correct relationships with co-workers while keeping tasks in perspective.

2. *The Golden Rule still applies.* As simple and elementary as this seems, we often forget it in the daily scramble to the top. Some people disregard it, often using

people to achieve their personal goals. In today's mergers and market consolidations, pity the person who is reporting to someone he used or belittled a couple of years ago.

Be nice

3. *Courtesy counts.* A sincere "thank you" can be magic. If someone does something for you or helps you, even if it is just holding a door open for you, express your appreciation. Special assistance on a project or difficult remote operation can mean the difference between just getting the job done or a spectacular performance for the station.

Follow up this kind of help with a written thank-you note, even if it is written on a sticky note left on a desk or computer screen.

You will be surprised how effective a thank-you note can be when you need help again. People love to receive them and they can be read many times. A verbal "thank you" is heard only once. If you take special help for granted, you may find that everyone is "busy" the next time you need an extra hand.

4. *Work on your image.* Write down three things you would like to be known for, decide how you can make them happen, then take action. Ask a trusted co-worker to describe how people at the station think of you. If you get some characteristics that concern you, take steps to change your image. Think in terms of integrity, fairness, cooperation and competency. Add to this mix the values management has for promoting staff. If management puts value on meeting deadlines and budget, strive to meet those ideals as well. Management will notice.

5. *Be a problem solver.* Problems are a business reality and managers know this. Informing your boss of a problem correctly and promptly will help get the resolution underway. But note that by constantly reporting problems, you may merely gain the reputation of a whiner or naysayer. Managers like to hear possible solutions. They look for those who understand the business and can resolve problems without them becoming involved. This philosophy works with your peer group as well. If they can look to you for workable solutions, you will begin to build a peer group respect that will also serve you well if you are promoted.

Be essential

6. *Make yourself indispensable.* This is nearly impossible to achieve. However, consider what happens when the station has new owners or downsizes. Those who are retained know how to do more than one job or are so important to the station's success that removing that person would be detrimental. You can gain valued knowledge and experience by volunteering to help others when they have a work overload. Not only will you learn another job, but you may also gain additional insight into how the station functions. Volunteer for special projects, even if it means working late. Consider it part of your education and building job security.

7. *Notice and eliminate nervous habits.* Tapping fingers in meetings, biting nails, twisting hair, constantly clearing your throat and tugging at clothing are some nervous habits people notice. They focus on your habit instead of what you are saying. If you are tapping your fingers or pencil while others are talking, it can be annoying; you bring attention to a negative factor rather than one that is valued.

8. *Look people in the eye.* Shy people often find it difficult to look co-workers and supervisors in the eye. They may think you are not sincere or truthful. It has often been said that the eyes are the windows to the soul. Eye-to-eye contact signals direct communication and helps to build trust.

Keep this list and review it at least once a month to see how you are doing in building your career.

□ □ □

Sue Jones is a principal in Bisset Communications, a communications management firm located in the Washington area. Contact her at (703) 505-4999.

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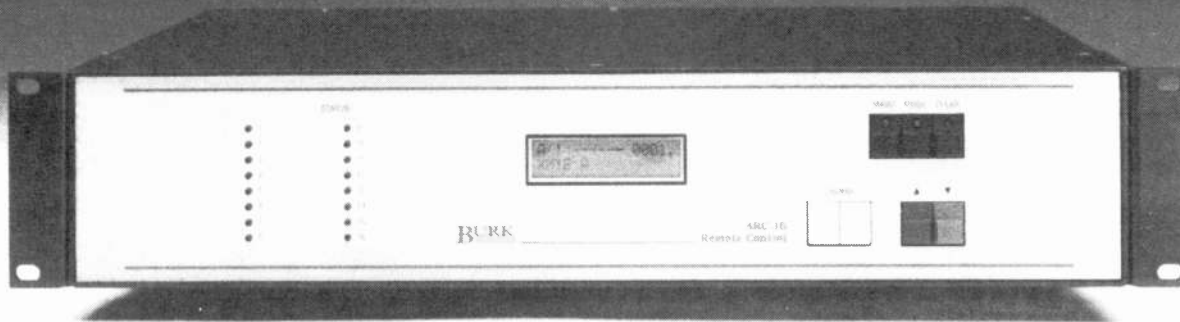
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*Closing for listings is every other Friday for the next month's issue. All listings are run for 2 issues unless pressed for space or otherwise notified by listee.

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| Amplifiers | Leasing | Stereo Generators |
| Antennas & Towers & Cables | Limiters | Tapes, Carts & Reels |
| Audio Production (Other) | Microphones | Tax Deductable Equipment |
| Brokers | Miscellaneous | Test Equipment |
| Business Opportunities | Monitors | Transmitter/Exciters |
| Cart Machines | Receivers & Transceivers | Training Services |
| CD Players | Recorders | Tubes |
| Computers | Remote & Microwave Equip. | Turntables |
| Consoles | Repair Services | Positions Wanted |
| Disco-Pro Sound Equip. | Satellite Equipment | Help Wanted |

Classified Advertising Rates Effective January 1, 1997

	1x	3x	6x	13x
1-9 col inch (per inch)	\$69	66	61	55
10-19 col inch (per inch)	52	59	55	50
Distributor Directory	105	100	95	90
Professional Card	74	68	62	56
Classified Line Ad	\$2.00 per word			
Blind Box Ad	\$15 additional			

To compute ad costs: Multiply the number of ad inches (columns x inches) by the desired rate schedule for your per unit cost. Example: a 3" ad at the 1x rate is \$207, at the 3x rate \$195, at the 6x rate \$183, at the 12x rate \$165, etc.

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A-6000 Console S/N 22536 delivered March 1995
R-16 Console S/N 22557 delivered March 1995
SP-5 Console S/N 22593 delivered April 1995

1995 Academy of Country Music Award
1995 Marconi Country Music Award
1995 Billboard Country Music Award
1995 Country Music Association Award
1995 Country Music Association SRO Award
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Wheatstone Model A-6000 Audio Console shown

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