



Special Preview
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Radio World

Vol 21, No 18

Radio's Best Read Newspaper

September 3, 1997

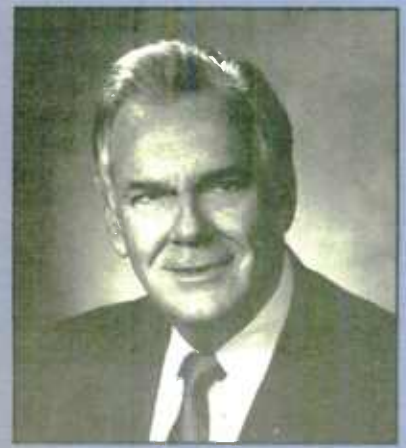
PERSONALITY PROFILE

Morgan Looks to The Future

by Bob Rusk

YORK, Pa. When Charles T. Morgan began his career in broadcast engineering, Dwight D. Eisenhower was in the White House, and a young singer named Elvis Aron Presley would soon take radio by storm. The year was 1953 and Morgan was already making a name for himself in radio — helping to build WPTS, the first AM station in his hometown of Pittston, Pa.

Late that year Morgan moved on to WARM radio and television in Scranton, Pa., where he worked in all areas of engineering. Morgan continued in television



Charles Morgan, Vice President, Engineering, Susquehanna Radio Corp.

until 1960, when he became the chief engineer at WARM(AM), then owned by Susquehanna Radio Corp. He has been with Susquehanna ever since.

As the company grew as a group owner, so did Morgan's duties. In 1975, he was promoted to director of engineering.

Today Morgan is vice president of engineering at Susquehanna, which owns 18 stations. They include such major market outlets as KNBR(AM), KFOG(FM), KFFG(FM) and KSAN-FM in San Francisco, and KPLX(FM), KKZN-FM, KLIF(AM) and KTCK(AM) in Dallas. One of the most respected people in the industry, Morgan received the National Association of

See MORGAN, page 19 ▶

Border Stations Get Boost

by James Careless

OTTAWA Thanks to a government-brokered deal, U.S. stations located near the Canadian border can boost their power a bit. The United States and Canada have revised the limits on FM translators located within 200 miles of the border.

Under the agreement, which was negotiated between the Federal Communications Commission International Bureau and Industry Canada earlier this year, FM border broadcasters have gained three distinct advantages. First, it is now legal to boost their translators up to 250-watt ERP (effective radiated power) — the previous limit was 50 watts. Translators can also be operated with a 34 dBu interfering contour distance of up to 37 miles — the former limit was 20 miles.

Second, U.S. border broadcasters no longer have to seek Canadian approval for their FM translators, as long as their interfering contour of 34 dBu does not cross the border.

Finally, FM stations running up to 6 kilowatts of power can now be classified as class A stations. Under the 1991 FM Agreement, the top class A limit was 3 kilowatts. This limit had led to

"excessive separation distances" between FM stations, according to the FCC Public Notice announcing the agreement, "which in many cases could preclude use by other potential operations."

'Ludicrous' restriction

The changes reflect simple common sense, according to Henry Straube, an engineer in the International Bureau's Planning and Negotiations Division. "The realization came about three years back that translators were limited to 50 watts in the 200-mile border," he says. "And it really didn't matter how

far from the border you were; you still could only have 50 watts.

"That's what made it so ludicrous. There was no way, (if) you're 200 miles away, (that) you're going to cause even a remote chance of interference with Canada with 250 watts."

These changes also reflect a desire by the commission to bring its international agreements in line with domestic FM policy. When the United States-Canada 50-watt limit was originally set, said Straube, "that was fine, because going back several years, 50 watts was the maximum for translators

See CANADA, page 18 ▶

New Association Brings Webcasters Together

by James Careless

WASHINGTON Broadcasting audio and video on the World Wide Web — or "webcasting," as it is known — is no longer a novelty.

There are now 586 webcasters, according to Intervox Communications

(<http://www.intervox.com>). Of these, 324 are local radio stations, 185 are international, 24 are networks and 53 are "Internet-only" — that is, they broadcast solely on the Web, and not on air.

Of the 586 webcasters, 89.4 percent use RealAudio streaming technology, 6.7 percent use StreamWorks and 1.7 percent rely on Microsoft NetShow. These numbers likely explain why Microsoft has recently decided to license RealAudio and RealVideo for use in NetShow.

With webcasting becoming such a widespread world phenomenon, it was only a

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Peggy Miles, President of Intervox Communications

matter of time before webcasters came together to form their own organization. The International Webcasters Association, held its first member meeting at NAB '97 in Las Vegas.

IWA is "a gathering place for technologists and content providers to meet and to exchange ideas, as well as to share with each other their webcasting experiences," said Ben Ly, Internet manager for IWA

See WEB, page 17 ▶

NEWSWATCH

Report Says Radio Is Increasing Public Service Ads

NEW YORK New figures from The Advertising Council show that media public service advertising is on the rise.

Radio stations donated \$542.3 million in broadcast time in 1996, a 51-percent increase over 1995. This was a higher increase than for any other medium measured by The Ad Council.

This comes despite recent criticism from Federal Communications Commission Chairman Reed E. Hundt that broadcasters do not devote enough time to public service announcements, and that the FCC should consider

making them a part of broadcasters' public service obligations.

"I dare say (broadcasters) are better equipped to determine what's in the best interest of community than anyone in the government," said National Association of Broadcasters President Edward O. Fritts in a speech before the California Broadcasters Association in late July.

He went on to highlight several examples of community service efforts by California broadcasters, including a five-part drunk driving series from KFBK(AM), Sacramento, titled "Ride of Your Life," and KMJ(AM), Fresno, which offered a reward leading to the

capture of a local man accused of assaulting senior citizens.

SFX: The Next Big Guy to Go?

NEW YORK Wall Street was abuzz with the news that SFX Broadcasting Inc., the nation's eighth-largest group in terms of revenue, with \$280,050,000 in 1996, may be for sale.

"There has been a movement in the stock, and there has been speculation that people would like to own SFX," said President/CEO Mike Ferrel. By the end of July, SFX stock had reached \$61 per share, up from \$40 a month before. Ferrel would not comment further on the

possibility of a sale.

James M. Marsh Jr., an analyst for Prudential Securities, was not surprised by the news. "I think Bob (Sillerman, SFX chairman) has made comments for a number of years that you're always a buyer or seller, and if multiples are high, maybe it's time to sell," he said. He also pointed out that Chancellor Broadcasting had made a bid for SFX in 1996.

Marsh said that the movement in the stock price shows that Wall Street believes the sale is "a done deal." In the end, though, it would all come down to "what Bob wants to do," he said.

Analyses by Prudential suggest that if Clear Channel Communications were to purchase SFX the former would have to divest too many stations in order to meet

See NEWSWATCH, page 3 ▶

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EAS Patent Is Contested

by Lynn Meadows

WASHINGTON The Department of Commerce Patent and Trademark Office will reexamine a patent that has hung over the heads of EAS equipment manufacturers for two years.

The patent was issued to Larry Ganzer, *et. al.*, on June 9, 1992, for the Storm Alert

For Emergencies (SAFE) system. SAFE operates via geographically specific emergency alerts and uses a composite code string that includes "a location code string component and an alert code string component."

If that sounds familiar, it is because the technology is employed daily at every radio and television station in the country in the

form of the Emergency Alert System equipment now mandated by the Federal Communications Commission.

License required

In spring 1995, Ganzer's company, Quad Dimension Inc., sent letters to EAS equipment manufacturers informing them that they must have a licensing

agreement to use the technology covered by the patent. The discovery of the patent was a blow to the FCC, which had wanted to establish a non-proprietary EAS standard.

What confused EAS manufacturers was that geographically specific emergency alerts had been used for years by the National Weather Service. Like SAFE, the NWS system — Weather Radio Specific Area Message Encoder (SAME) — uses frequency shift keying to transmit a code that includes both the hazard message to be broadcast and the geographic region affected.

Part of the problem, said one source, is

NEWSWATCH

► NEWSWATCH, continued from page 2

Department of Justice antitrust guidelines. On the other hand, Capstar Broadcasting Partners, with former SFX President and CEO R. Steven Hicks at the helm, would be a good match for SFX.

Capstar currently owns, LMAs or is in deals to purchase a total of 243 stations, while SFX has 72.

According to BIA Research Inc., by the end of July, the top five radio groups — CBS Corp., Chancellor Media Corp., Jacor Communications Inc., Clear Channel and American Radio Systems License Corp. — controlled 27 percent of total radio revenue.

NPR Board Looks at Budgets and Fees

WASHINGTON National Public Radio's Board of Directors met on a number of financial issues during its summer board meeting last month.

The board approved a fiscal year 1998 budget of \$59.4 million, a 15-percent increase over the FY1997 budget of \$51.6 million. NPR will reorganize its Program Strategy Board, Member Services and Communications departments as part of a streamlining program set to begin Oct. 1 (see story, page 17).

The Membership Committee reviewed three new membership pric-

ing models as possibilities to replace the current dues structure. The "pure population" model bases programming fees on a station's area population; the "pure listener hour" model bases fees on the number of hours a station carries NPR programs; and the "value-based combination" model is a combination of the other two. The board will vote on a final selection at the November 1997 meeting.

Also approved was a FY1998 distribution/interconnection fee of \$5,800 per participating station.

Congress Passes Spectrum Auction Legislation

WASHINGTON After months of negotiations, Congress passed the final version of the Omnibus Budget Reconciliation Act of 1997 on Aug. 1.

The bill resolves the backlog that has kept the Federal Communications Commission from granting hundreds of radio licenses since a 1993 court case that overturned the commission's comparative proceedings criteria (*RW*, June 25). Those licenses must now be auctioned by Sept. 30, 2002.

The law requires the FCC to auction the licenses involving mutually exclusive applications for which at least one application was filed before July 1, 1997. The bidding is limited to the competing applicants, and the FCC

must give them six months to settle before scheduling an auction.

The final version of the legislation hammered out in conference committee estimates that the FCC will collect \$21.4 billion in auctions over the next five years. The National Association of Broadcasters claimed a victory in that there was no provision in the bill for "spectrum lease fees" that would recoup any funds not raised by the deadline.

New FCC Fee Schedule Based on Population

WASHINGTON The Federal Communications Commission issued a public notice Aug. 1 outlining the new schedule for payment of 1997 regulatory fees.

Fees for AM and FM radio station licensees are based upon the class of the station and the population it serves. (A notice of proposed rulemaking issued by the FCC received several proposed models for the new schedule based on population served. *RW*, Feb. 19.) Stations are divided into 10 fee groups, and fees range from \$200 - \$2,000.

A station can determine what it owes by contacting the FCC's National Call Center at (888) 225-5322, or via the FCC website at <http://www.fcc.gov>

Fees must be paid between Sept. 15 and Sept. 19.



that the NWS was talking freely about the SAME technology, but never patented it.

The argument that SAME predates the Ganzer patent, however, would have been much stronger if the Patent Office had something in writing. In July, the office notified Ganzer's lawyer that it had a printed publication that provides ground for reexamination.

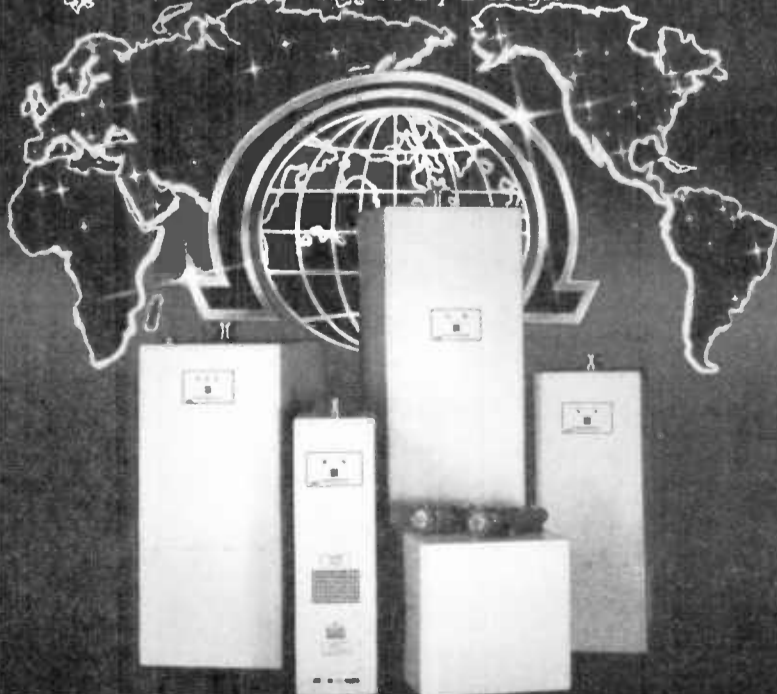
"One ground is based on materials distributed April 30, 1988, at the HollyAnne press conference (HollyAnne Press Release)," read the letter from Stephen G. Kunin, deputy assistant commissioner for patent policy and projects. "This ground is predicated on the fact that the HollyAnne press release is a printed publication."

That press release was distributed at the 1988 annual convention of the National Cable Television Association. According to Dave Halprin of manufacturer HollyAnne,

See EAS, page 9 ►

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Good Advertising Days for Radio

WASHINGTON Once NAB convention time rolls around, be it the spring convention or the fall radio one, news of mergers, acquisitions and buyouts just starts rolling in. Case in point, news just rolled in of a management buyout of Broadcast Electronics led by Dallas-based Hoak Communications Partners, L.P., and the management team of the Quincy, Ill.-based company, Marti Electronics and Broadcast Programming, the company's two major subsidiaries are part of the deal.

Hoak Communications is a private limited partnership located in Dallas that was originally formed "to invest in management buyouts, industry consolidations and other private equity opportunities in the communications industry," according to Broadcast Electronics. More details in our next issue.

★★★

The Radio Advertising Bureau applauded the U.S. Food and Drug Administration

proposed new guidelines for the advertising of prescription drugs. Under these new guidelines, commercials will be required



only to include information about major risks associated with a particular drug, and provide instructions for how consumers can obtain more detailed information concerning the approved uses of the medicine.

RAB President and CEO Gary Fries stated: "The decision by the FDA represents another step in an on-going campaign to eliminate the lengthy disclaimers that have made advertising certain products on

the radio very difficult. This joint RAB/NAB effort began last year and was successful in lifting the same kind of restrictions that had negatively affected the advertising of automobile leasing on radio."

This is good news for radio. According to the RAB, Competitive Media Reporting figures show that in 1996, prescription medicine advertising totaled \$595.5 million. However, of this total, less than \$1 million was allocated to national spot radio. We have nowhere to go but up and these new guidelines can help open the door.

★★★

In other advertising news, NYMRAD reports that advertising revenue for New York market radio stations rose by 12.1 percent, to \$42.4 million, in July 1997 vs. July 1996. The totals are tallied by Miller Kaplan Arase & Co.

Overall, the Big Apple's thriving radio market has experienced 11.4 percent growth (a whopping \$287 million) for the first seven months of 1997, vs. the first seven in 1996.

★★★

Many of you who work in promotions or marketing may know the name Helene Blieberg. Helene has been with CBS Radio for 15 years, in management positions in communications, media relations, sales development and promotion. As vice president, communications for CBS Radio, she has been involved in both of the mergers with Group W Radio and Infinity Broadcasting. I've worked with her on the USA Digital Radio story. She has been a tremendous spokesperson for radio in general, and CBS, of course, in particular. She also has always been a tremendous friend to all the reporters (including this one) trying to make a living covering the radio business.

Which makes it even easier to extend heartfelt congratulations to her for her recent appointment as vice president and executive director of the CBS Foundation. She will be responsible for the direction

and operation of the foundation, which will function independently from the Westinghouse Foundation.

Martin D. Franks, senior vice president, CBS and President, the CBS Foundation, in making the announcement, stated: "The CBS Foundation will be an ideal forum to establish standards of social responsibility and public service for the new CBS Corporation, as it has been since its formation by William Paley and Frank Stanton more than 40 years ago. Helene is an ideal executive to manage the Foundation in that



RAB President and CEO Gary Fries applauded the new guidelines for the advertising of prescription drugs.

important work, bringing experience, insight and perspective to the task."

Congratulations Helene!

★★★

And speaking of USA Digital Radio, broadcasters are fairly optimistic about reports from the IBOC camp. That's good, because halfway across the world (OK, maybe a quarter of the way) the BBC and the Eureka-147 DAB consortium "launched" DAB at a party in Berlin during the IFA Exhibition.

Manufacturers, broadcasters, retailers, network providers and regulators joined David Witherow, president, World DAB Forum, Egon Meier-Engelen, president, Eureka-147 Project and Glyn Jones, DAB managing editor and project director, BBC for an event that included the raffling of a Bosch DAB car receiver.



Backstage at Garth Brooks' live August concert from Central Park were Liz Laud (left), VP affiliate relations, music and special event programming, along with Kerry Wolfe (right), program director of Westwood One's WMIL-FM, Milwaukee, and his wife (center). This event was simulcast by Westwood One and aired nationwide.

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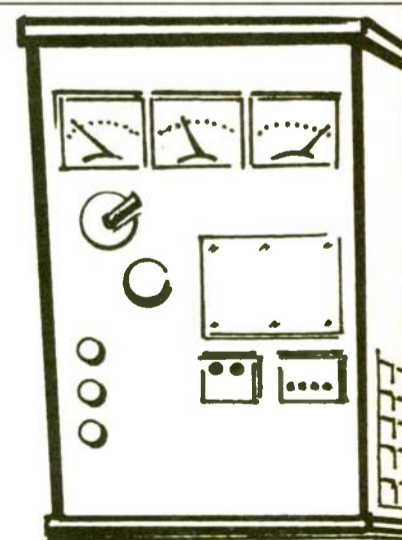
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FAA impedes tower permits

Dear RW,

Your article in the July 9 issue of **Radio World** ("Tower Space Crisis Looms") left out the biggest obstacle to new tower construction — the Federal Aviation Administration and their self-appointed authority over spectrum management. In the past five years, the FAA has shot down dozens of proposals for new FM broadcast towers because of their claims of potential electromagnetic interference (an issue that has been covered in **RW** before).

To date, the issue has not been resolved, and the FAA continues to flex its regulatory muscle in denying permits for new towers. The FCC, the federal agency that is supposed to regulate the spectrum, has done very little to alleviate the problem, instead bowing to the FAA's

greater political power. Until this problem is resolved and the FAA is told to keep their noses out of spectrum management, broadcasters having to build new towers will be faced with years of hair-pulling aggravation.

Larry Fuss
President

Contemporary Communications
Broadcast Consultants
Cleveland, Miss.

Jukebox case

Dear RW,

Regarding the story "FCC Rocks Jukebox Radio," June 11: Perhaps someone at the FCC can explain why that agency is seeking a \$1 million fine and a license revocation hearing against Dumont, New Jersey's "Jukebox Radio" for using a couple of it'sy-bitsy, teeny-weeny translators to put some signal into Bergen County, while Don Wildmon's scores of translators compromise the revenues of scores of mom 'n' pop religious radio stations.

Meanwhile, the FCC winks at the "pirate" operations.

Something's going on here.

Richard W. Fatherley
Kansas City, Kan.

Pirates are already in power

Dear RW,

I enjoyed the article about KZZU and the jamming they had encountered ("Spokane FM Hit by Pirate," June 25). Please understand that jammers are different from micro-power broadcasters. Since I was quoted in your article, I feel obligated to make the following clarifications.

1. The name of the station in Berkeley is called *Free Radio Berkeley*. People always seem to get the name mixed up. Whatever ...

2. The name of the lawsuit against FRB is called *The United States of America vs. Stephen P. Dunifer*. This is as if the whole country was against this one person. This case is still pending in court.

3. The station started up in April 1993. The continuous broadcast (24/7) started in February 1995.

As I said to writer Lauren Rooney, the real pirates are the FCC and corporations like Evergreen Broadcasting. Perhaps a return to pre-1978 conditions would be in order. I would also like the FCC to look into the Canadian licensing system, or perhaps the Japanese approach to "peanut power" would be better.

Paul Griffin
Founder

Association of Micro-Power Broadcasters
Berkeley, Calif.

They remember the 'H'

Dear RW,

I enjoyed reading Vince Santarelli's article about the 10th anniversary of the demise of WHN 1050 in New York City

Radio Is Watching

Supporters of a radio-only convention will be observing closely when the National Association of Broadcasters 1997 Radio Show convenes in New Orleans this month.

The fall show, as radio people generally call it, draws a lot of scrutiny each year. It has experienced many changes since its birth as a programming conference in the late 1970s. Most recently, the NAB held the show concurrent with three others,

as part of World Media Expo, an experiment that lasted three years. Now the NAB Radio Show is on its own again. (Radio and TV news directors will meet at the same time in New Orleans, but the conventions are not related.)

Trade shows like this one are important. They serve as mileposts at which the industry can pause, assess its condition and set new goals. They also reflect trends. Radio has seen massive change in the past 18 months, and one bit of fallout may make itself seen at this convention.

How will the rapid consolidation of ownership affect attendance, and therefore the viability of a separate radio show? As our chart on page 25 shows, the 10 top-earning radio groups now own almost 1,000 radio stations — a massive concentration of media ownership in less than two years.

Will group managers who oversee 100 or 200 stations decide they need not send more than a handful of representatives to the fall show? If so, attendance could shrink rapidly, and show planners will be pressed to justify an event of this scope. Consolidation is unlikely to have this effect on the bigger, broader spring NAB convention, but the fall show is vulnerable.

We hope that doesn't happen. Radio needs a time and place to meet, apart from the distractions of Las Vegas in April. We need a place to see new equipment, meet other owners, engineers and programmers, and to peer into the future.

Almost 200 companies will exhibit products and services at the fall show, a healthy sign. Will attendance keep pace? We call on radio's new supergroups to support this show and to invest in their employees by sending them.

Many in radio will be watching.

— RW

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Next Issue of Radio World
September 17, 1997

("WHN: Has It Been 10 Years?," June 25). It was enjoyable reading and brought back a lot of old memories. I was and still am a big radio fan, even though I work in TV on the technical side. I still listen to a lot of radio when I am not here working.

Do you plan to write an article on WNEW 1130? I used to listen to that station a lot. The radio personalities were great, along with the music. They also had great identifiable jingles.

Mark Rothberg
Technical Director
NBC Transmission
New York, N.Y.

Dear RW,

Excellent article on WHN. My dad was a loyal listener during the MOR days right into country (all the way up to the format change to sports), and so I grew up with WHN. It was sad to see it go, as it was such a legend.

Bud Williamson
President
Digital Radio Engineering Inc.
Middletown, N.Y.

Dear RW,

As a former WHN staffer who wore several hats during my tenure, it was great to have **RW** remember WHN and to see some of the old WHN materials.

Maybe you could do a follow-up about all the famous people who worked at WHN from 1922-1987. Did you know Major Bowes started there ... that it was the only identified radio station in the Marx brothers' movie "A Night at the Opera"? Familiar names include legendary sports broadcasters Marty Glickman, Marv Albert (his first gig), Red Barber and Vin Scully.

I think people forget that WHN was a big sports station before the all-sports concept, having broadcast the Brooklyn Dodgers (Red Barber), New York Yankees, Mets, Islanders, Nets (ABA days with Al Albert and Bill Mazer),

Rangers (Marv Albert), Knicks (Marty Glickman, Marv Albert), plus long-form talk shows such as Mets Extra (Howie Rose) and Bill Mazer's commentaries.

Jim Nedelka
Manager

Program and Technical Operations
ABC Radio Network Operations
New York, N.Y.

Thank goodness for crystals

Dear RW,

The recent article on master clock systems ("Master the Use of Master Clocks," Aug. 6) was a good one except for the sophism highlighted in the middle of the page: "In the event of a threat of missile attack or other emergency, the Department of Defense can scramble the GPS signal, rendering your clock system useless."

That's not true. Master clocks steered by GPS can still keep crystal-controlled time with the antenna disconnected. Thus it would probably be several weeks before a noticeable time-of-day error developed, if the GPS signals completely disappeared.

Moreover, if political conditions get that bad, and there is a missile attack on the United States, your clocks will be among the least of your worries.

Andrew Dart
Duncanville, Texas

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GUEST COMMENTARY

NRB: A Ministry to the Nation

E. Brandt Gustavson
President
National Religious Broadcasters

MANASSAS, Va. Religious broadcasting began humbly with the airing of a Palm Sunday service from Calvary Episcopal Church in Pittsburgh. The rector was not present, and his assistant had to conduct the broadcast. The first Christian broadcast in 1921 was the beginning of long and respected ministry to the nation.

Individual broadcasts began to be produced by denominations, local churches and non-profit organizations. KFUE St. Louis went on the air in 1924, owned by The Lutheran Church-Missouri Synod. KSFG Los Angeles was begun by evangelist Aimee Semple McPherson and was owned by the Church of the Foursquare Gospel. Moody Bible Institute debuted its station, WMBI Chicago, in 1926. These stations continue their broadcasts today.

Radio roots

Radio was the initial reason for the establishment of National Religious Broadcasters, and continues to represent the largest group in our

membership. We see this continuing, because for many of our members, radio remains the most effective and economical way to reach large numbers of people. It is reported that more than 20 million listeners tune in to Christian radio each week, so in our goal of reaching people with the message, I see no diminution of our use of radio.

Through the years, radio and television programs have been produced for secular and religious stations. Denominations such as the Southern Baptist Convention, the Wesleyan Church, the Salvation Army, Church of the Nazarene and the Assemblies of God, among many, have produced features lifting moral and spiritual values.

Now many of the Christian programs are produced by independent non-profits like Focus on the Family, In Touch with Charles Stanley and Billy Graham.

Evangelical Christians have been using the mass media facilities of the nation for all of these years. We don't see many adversities facing us in the use of radio other than keeping up with changing technology and any possibility of the re-enactment of the

Fairness Doctrine. We need to be alert to these matters.

Even though NRB is a domestic association with a primary goal of maintaining access for our message, we also have overseas members. At our annual conventions we entertain



E. Brandt Gustavson

representatives from more than 40 nations. Our international members, such as World Radio Missionary Fellowship, Trans World Radio and Far East Broadcasting Company, broadcast to the world in 186 languages. In our small world, where everyone is on our doorstep, it brings us great joy — yes, satisfaction — to be encouraging to so many cultures.

Financial safeguards

Because our national convention is large, with 4,000 to 5,000 registrants, we have developed regional chapters for closer relationships and fellowship. Each of these chapters has an annual summer or fall meeting, held variously in California, Texas, Michigan, Maryland and Atlanta, with our Hispanic chapter meeting in Puerto Rico.

There have been in these 75 years a few irresponsible people who have found their way into our religious broadcasting industry. Through NRB we have put in place certain safeguards to protect the funds donated. We require any 501(c)(3) non-profit corporation with \$500,000 in broadcast income or expense to be members of the Evangelical Council for Financial Accountability in order to be members of NRB.

The requirements go beyond the financial area into other matters, including independent board control. We're not sure of avoiding all future scandals, but we have taken important protective steps.

You may be interested in knowing more about the history of religious broadcasting. I'll send you the book "Air of Salvation," which outlines our long history. You may request a free copy by writing to me. The address is E. Brandt Gustavson, President, National Religious Broadcasters, 7839 Ashton Ave., Manassas, VA 20109.

E. Brandt Gustavson prepared this Guest Commentary in response to an invitation from RW, which welcomes other viewpoints.

INTERNATIONAL UPDATE

Spain Prepares For DAB

by John F. Mason

MADRID, Spain After reaching a state of profitability, private radio networks in Spain now face two new challenges, 632 new frequencies and the advent of digital audio broadcasting.

By autumn, the Spanish government will allocate 632 new FM frequencies, changing the balance that exists among private, public, network and local stations.

The existing stations will have to share lean advertising revenues with the newcomers. Private stations, municipal and regional public radio, and the networks all depend on advertising to supplement government subsidies.

The first steps

The increased competition is likely to change programming and marketing strategies. And no one is certain how taxpayers will feel about supporting a plethora of new government-subsidized national, regional and municipal stations.

To utilize 632 new frequencies, a substantial investment in new equipment is needed. The number of private radio stations will swell from 735 stations to 1,046, and public stations in the 17 autonomous regions of Spain, will almost triple from 143 stations to 407.

In addition, the number of stations in state-run national network, Radio Nacional de España (RNE), will increase by 10 percent, bringing its total to 637. After all the new allocations are made, the total number of radio stations in Spain could climb as high as 2,090.

"This is a tremendous expansion of the national market," said Alfonso Ruiz de Assin, secretary-general of the Spanish Broadcasting Association (Asociación Española de Radio-difusión, or AERC) in Madrid and vice president of the Brussels, Belgium-based Association Européenne des Radios (AER).

"As representative for private, commercial radio in Spain, AERC takes the position that Spanish radio listeners are already adequately served by existing public radio and that more public stations are excessive and unjustified," said Ruiz de Assin. "Creating more public radio stations is as irrational as suddenly building 200 new hospitals in Madrid, most of which would be empty half the time."

Greater public debt

Ruiz de Assin noted that according to surveys, 17 million of the 21 million radio listeners in Spain prefer private radio to public stations. He also said that an overabundance of new public stations will not be profitable and will

See SPAIN, page 7 ►

Affordable Digital Automation

The screenshot shows the WaveStation software interface. At the top, there's a menu bar (File, Edit, Log, Tools, Setup, Window, Help) and a toolbar with various icons. Below that, a status bar shows the current time (3:02:04 pm) and date (February 25, 1997). The main area displays a playlist with columns for Row, Q, AirTime, Actual, Name, Length, Category, and Description / Command Line. The playlist includes items like CONGRATS, RADIO, CONGA, EURO, HARVEY, and WINNER. At the bottom, there are recording controls, including a 'Recording File' field and 'Stop' and 'Cancel' buttons.

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► SPAIN, continued from page 6
create greater public debt.

"The deficit of the state-owned and operated Radio Televisión Nacional Española (RTVE) passed \$2 billion a long time ago," he said.

Of course, the introduction of 311 new FM frequencies for private radio does not mean 311 new radio companies. Many of the frequencies will go to the three big private networks — Cadena SER, Cadena de Ondas Populares Españolas (COPE) and Onda Cero — and to smaller chains like Cadena Ibérica and Radio Voz.

The networks will use the allocations to set up new niche stations — all news or all music — to augment their coverage throughout the mountainous countryside of Spain.

Creating more public radio stations is as irrational as suddenly building 200 more hospitals in Madrid, most of which would be empty half the time.

— Alfonso Ruiz de Assin, Secretary-General, AERC

Public radio in the 17 autonomous regions of Spain and RNE also will add new formats and new transmitters to cover geographical blind spots.

"RNE has long wanted more transmitters to complete its coverage of Spain," Ruiz de Assin said. RNE does not sell advertising, but increased coverage by the state broadcaster still constitutes more competition for listeners.

Many new municipal stations will be added in towns and villages currently without local radio, said Ruiz de Assin. "Public municipal stations, as well as regional, sell advertising to supplement regional government subsidies, and will thus compete directly with private stations."

Survival of the fittest

Municipal frequencies are allocated by the autonomous regional government from among those it has received from the central government. If, however, the Ministry in Madrid decides an FM radio station is not needed in the proposed town, it can deny the decision of the autonomous region.

"As a representative of private, commercial radio in Spain," said Ruiz de Assin, "my first reaction to being handed new frequencies is gratitude, but who is going to finance these new stations? Who will survive and who will not?"

No one has the answer. Meanwhile, the Ministerio de Fomento is putting the final touches on the allocation plan.

"Needless to say, speculation on the future is a hot topic, spawning all kinds of rumors. Some of the smaller networks and local stations could very well join together to form a large network — turning the big three of Spain into the big four," Ruiz de Assin said.

A possible player in the formation of a fourth big network is Televisa de México, which already owns 25 percent of Cadena Ibérica, the maximum share Spanish law allows a foreign company to own of a

communications medium.

"Televisa could conceivably buy 25 percent of other smaller networks, and it could easily end up with a network as large as that of Cadena SER or COPE," Ruiz de Assin said.

Conversion to digital

Although the issue of new stations hangs most heavily over private stations at the moment, a second major change awaits broadcasters in the not-too-distant future — the conversion from analog to digital transmission.

The first formal step toward the implementation of DAB is the National Technical Plan for Digital Radio, which was signed April 11 in Madrid. The plan is an agreement between the Ministerio de Fomento and leaders of the Spanish radio industry to launch DAB.

Among signers of the agreement were AERC, Cadena Ibérica, Consellería de Cultura e Comunicación Social de la Xunta de Galicia, Corporació Catalana de Ràdio i Televisió, Onda Cero, Radio Popular, Radio Voz, Retevisión, RTVE and Sociedad Española de Radiodifusión (SER).

Specifically, the ministry and broadcasters agreed to promote the importance of converting to DAB as rapidly as possible; to make certain that the entire country receives equal treatment in the introduction of DAB; to coordinate efforts by all members of the industry; and to work with local manufacturers to ensure that much of the equipment needed to transmit and receive DAB programs is manufactured in Spain.

While the technological advantages of DAB are well known, Ruiz de Assin said, the technology presents two problems: First,

the investment required for new transmitting equipment, and, second, how to financially support the medium until a market for digital radio emerges.

Ruiz de Assin believes the transition to digital will be gradual and that it will take a substantial amount of time before listeners purchase enough digital receivers to replace analog receivers completely. Therefore radio stations will have to provide simultaneous broadcasts over both systems until the analog medium dies.

"Spain has had a slow start to digital radio, but perhaps that is for the best. Many of the technological and economic problems have been ironed out by those who jumped in at the start," Ruiz de Assin said.

■■■

John Mason, a freelance journalist, reports on the industry for *Radio World* from Sitges, Spain.

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Audioactive

TRANSMITS OVER DIGITAL RADIO

Internet audio over DAB? Why would someone want that?? That is the first question many people asked Jeff Cohen of World Radio Network when he first explained his idea about combining the two new technologies. But once he explains why it makes sense, he converts yet another person to his cause. To help him achieve this unique scheme, Telos' Audioactive system was called into play.

Audioactive has now been shown to work not only over the Internet but also over DAB. This is the result of a collaboration with World Radio Network based in London, England who are carrying out trial transmissions using low bit-rates on data channels within a standard Eureka 1+7 DAB multiplex.

At first sight it may seem somewhat odd to add low bit-rate audio channels to the DAB



Audioactive over DAB being shown to British Government minister Chris Smith M.P. (right) by Simon Spanswick WRN's Director of Corporate Affairs

not buy it just to hear some of the same stations they can now get on FM. But with this enhancement many more audio services can be accommodated, including many serving niche markets as on the Internet. We have never had FM subcarrier radio in Europe and this system allows us to support the same sort of free and subscription services that have prospered on SCA for years in North America."

For the Audioactive trial over DAB the carrier station was OZ FM from St. John's, Newfoundland, Canada, an AC station and the top rated broadcaster in the province. OZ FM syndicates their programs for use in Europe, and needed a way to be able to broadcast OZ FM live at the Radio Festival.

By using Audioactive and the DAB system, Brian Vallis, General Manager of OZ FM, was able to discuss syndication possibilities for OZ in Europe with managers of UK stations while



medium that is known to produce high quality sound. But according to Jeff Cohen, WRN's Director of Development, there is not enough bandwidth on DAB using its standard MPEG Layer 2 audio encoding.

"The reality of radio is that there are lots of stations and audio services wanting to be heard and DAB cannot accommodate them in a 1.5 Megabit multiplex. So we are working with Telos to develop a system using MPEG Layer 3 at bit rates of between 8 and +8 kbps that will allow a far greater range of services including many specialist audio programs such as foreign language stations."

The system was shown for the first time at the Radio Festival, the annual gathering of the UK industry in Birmingham, which this year had a special DAB exhibition where Telos and WRN had a booth. The system consisted of an Audioactive encoder operating at 2+ kbps feeding the UK Independent Radio DAB Multiplex at the BT Tower in Central London.

The service was operated by a consortium including the GWR Group, owners of national station Classic FM, along with BT, and WRN. It was transmitted simultaneously in London and Birmingham on VHF.

On the reception side, WRN worked with Bosch Blaupunkt, the makers of a DAB receiver with a suitable data interface. The Hannover 106 was fed into a PC loaded with the Audioactive player (though the longer term plan is to use a hardware decoder). At Telos Systems in Cleveland, Engineer Jeff Morgan made the necessary modifications to the encoding and decoding systems.

DAB Audioactive proved to be quite a talking point at the Radio Festival because it has the potential to support new services that have not previously been available. Karl Miosga, Managing Director of WRN, said "There has been a lot of uncertainty about the possible takeup of DAB when it goes on sale to the public at the end of 1997, and people will

his station was being broadcast live from a loudspeaker at the booth. It was the first time a Canadian station had been broadcast live in Europe, and it proved not only that OZ FM was an interesting station for Europe to hear, but also that it was possible to bridge the Atlantic with live radio both affordably and with excellent sound quality.

In the longer term, World Radio Network hopes that this system will be able to take feeds of radio stations from far flung parts of the globe via the Internet and make them available on DAB. The system has already been shown to many of the leading figures in the UK radio and government, including Tony Stoller, Chief Executive of The Radio Authority, which regulates commercial broadcasting and Chris Smith, M.P. Secretary of State for Culture, Media, and Sport.

Telos, WRN, and Bosch will continue development work on the joint Audioactive/digital radio system.



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Money Hints and Lightning Strikes

Q: How can my Zephyr help me earn more money?

Rolf: The best way is to use the correct mode for your application. For instance, the power of Layer 3 can give you excellent fidelity mono on a single B channel. Use the L3 Dual transmit mode and have the far end use the L3 Mono receive mode.

When using mono modes (with the exception of L2 Mono-128), use a single B channel connection. Dial from your line 1 to line 1 of the other party. Dialing a second B channel will only raise your long distance charges with no change in the audio fidelity.

Q: Is there any way to save money on getting ISDN lines?

Rolf: If you are working from your home be sure to ask the phone company about residential ISDN rates. This is cheaper than business ISDN service and may allow unlimited local usage.

Also be sure to ask your phone company if they are running any specials on ISDN installation. Often, specials are available, which waive installation charges. If the promotion has expired, you may still get the special deal if you ask about it.

Q: What about using ISDN overseas? And, closer to home, do you save on calls within one state?

Rolf: Long distance rates on calls from the US to overseas are nearly always cheaper than from overseas to the US. So plan accordingly. Locally, if you are installing a dedicated (DDS) line which will be used for intrastate access only, ask your phone company for an Interstate Access Charge Exemption. You'll have to fill out some paperwork, but you will save money every month!

Q: Any other money-saving ISDN tricks?

Rolf: If you have a line that's no longer being used, inquire if you can have it moved to another location. You can often save a lot of money using this technique. Finally, buy a Zephyr. You'll save many hours of frustration. Other codec brands may be so complicated that even engineers find them difficult to use. Wasted time equals wasted money.

Q: How do I reduce the chances of damage to my Telos gear from lightning?

Corny: Every summer, we get some equipment back from the field that has been destroyed by lightning. There are several things to try—some old, some new—that can protect your Telos gear and other station equipment from the ravages of lightning storms.

First, investigate surge suppressors for phone lines. Some are in-line connectors with modular plugs. AT&T makes one such product. Many customers call to say that you can find the AT&T protectors at

their local Wal-Mart stores. That's a simple way to add protection.

The Siemon Company makes punch-block mounted surge protectors. These mount right to the punch block in place of bridging clips and they have ground wiring. The object is to tie these ground cables to a good, solid ground point, and the protector will discharge the lightning energy harmlessly to ground.

For AC power lines, a good surge suppressor should have some kind of an alarm system. This is because once some surge suppressors have done their job, they are no longer any good. Better surge suppressors have a longer useful life, but after many lightning strikes (or one huge one), they may fail.

The technology behind some suppressors is that there are special components inside that get destroyed during a major lightning strike. The deadly force of the lightning is dissipated while the components—and not your equipment—are destroyed!

Q: What about tying knots in power cords?

Corny: Sounds funny but computer technicians have been doing it for years and they report that in really bad lightning strikes, power cords with knots were totally destroyed but the computer was perfectly fine. Not bad lightning protection for the cost of a cord! They say three knots are the right number.

Some people report good results doing the same trick with phone lines. Being a Radio Engineer for several years now, I do have that natural engineering paranoia over lightning. So, I'd say do it all!

Put good surge protection on the power cord, then tie three knots in the power cable. Put the surge protection circuits close to the telco, then tie some knots in the modular phone lines going into the Telos gear.

Don't forget that all telephone equipment must deal with a "double whammy." Lightning can come from either the power line, or the phone line (sometimes both!). Of course, good studio grounding techniques are essential to minimize the damage of any lightning strike.

New Assistant Producer Call Screener Software for Windows



Available Autumn 1997

Olympia Online Webcasts A Hit In Top 10 Markets

Olympia Online, the St. Louis syndicator that began putting radio stations online and counting... markets on the Internet via Audioactive this spring, has more than two dozen stations online and counting...

William Moir, Vice President of Olympia Online reports that the number of stations sending high quality audio over the Internet will likely reach 40 by September 1—and all are in the Top 10 radio markets.

Olympia takes a 56 kbps feed from each station and runs it down a frame relay to its central servers. The signal then interfaces with the Telos Audioactive system and is distributed onto the Internet for near CD-quality, real-time audio webcasting.

Moir notes that the better audio quality possible via Audioactive has drawn top-market stations to the network. "A lot of stations have avoided going onto the Internet with their audio because they were worried about the quality not being good. Our stations are there because of the higher audio quality the Audioactive provides. That's helped attract stations to us."

Moir noted that stations also get a better controlled sound, save money and enjoy greater bandwidth by going through the Olympia Online network. That translates into access for more listeners.

Each station also gets a link from Olympia's central server to the station's home page, Moir says. We put a link on their page so the access to their sound comes directly from their page.

Moir says the network is growing quickly, with several agreements pending with major radio groups, as well as interest from major radio advertisers, who appreciate the ability to target specific types of stations with their message.

He also notes that stations and listeners can access Olympia Online's web page at Olympia.net to sample the audio quality of a number of stations and see for themselves that this is the best way for stations to be on the Net.

OLYMPIA
ONLINE, INC.

Hong Kong

From Page 1

the world attended, thus the need for the tight security, Leung noted. He reported information about the news gathering and distribution he got from friends but added that from what he actually heard on-air, the Zephyrs did their part beautifully.

WMJI Morning Show Broadcasts Live Over ISDN From Hong Kong

"We like to do dramatic, entertaining remotes and this was very compelling," says Denny Sanders, WMJI's Program Director, of the decision to send Ohio's number one-rated morning radio show to Hong Kong to broadcast live during the events of June 30 and July 1.

Popular radio personality John Lanigan, star of the Lanigan, Webster and Malone program, and WMJI News Director Chip Kulick did four and a half hours live from Hong Kong each day, making it one of the few radio



stations to do its entire morning show from the site of the historic Britain-to-China handover.

In a unique broadcast that could have proven a logistical and financial nightmare, Sanders said the use of ISDN lines and Telos Zephyrs pulled the two days of coverage together flawlessly and saved the station over what the same broadcast would have cost via satellite.

"To do it the old way with satellite would have priced it right out of the ball park for us, probably in the tens of thousands," noted Sanders. "Instead, our entire ISDN bill was only a little over 1700 dollars." Eager to ensure smooth on-air delivery, the Hong Kong crew—some 12 hours ahead in time—started out by having the Zephyr dial Cleveland at about three o'clock in the morning.

"We needn't have worried," Sanders said. "The Zephyrs connected on the first try and locked in for the entire broadcast. It was a dream."

Being the only local radio station from the U.S. attracted quite a bit of attention for WMJI, Sanders said. A CBS reporter on hand to cover the handover paid a visit and actually interviewed Lanigan and Kulick. And in a rare move, the Cleveland area's major newspaper, the Plain Dealer, even did a story about the two-day remote broadcast.

"They were impressed that we would send the show over there, and called it a wonderful broadcast. Their story said the sound quality was astonishing and incredibly professional," Sanders said.

How big a role did the Zephyrs play? "A large one," according to Sanders. "A good part of the air of professionalism we conveyed was due to the audio quality. You can't get much farther away than Hong Kong; with the Zephyrs, Lanigan and Kulick sounded like they were in the studio next door."

"The Zephyrs connected on the first try and locked in for the entire broadcast. It was a dream."

Denny Sanders
WMJI's
Program
Director

RRHOFM

From Page 1

notes Shaw. He adds that the new site, which is entirely separate from the R&RHOF's own site, carries a disclaimer explaining that the content is unedited and may be a bit rough.

"We monitor the audio and we remind producers and talent that their off-air comments will be carried on the site as well, but the idea is to have a genuine look at radio, which this is," Shaw says.

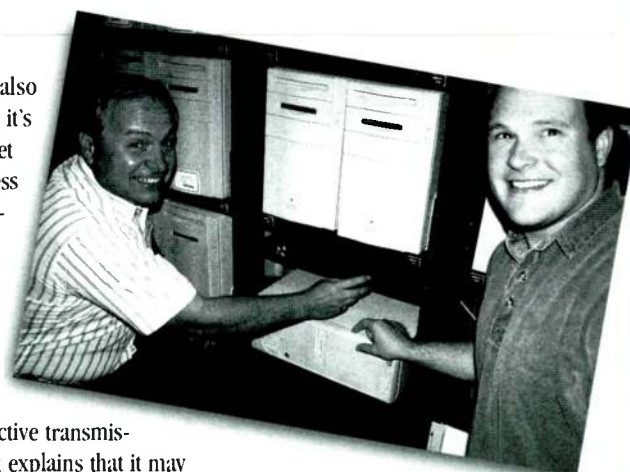
Shaw noted that using Audioactive was a natural choice, since the station uses other Telos equipment. "It also helped save us money and get a good sound on the net. Plus you can't beat Telos' support for its customers."

Audioactive provides high enough quality on the net to make it an added attraction to stations doing remotes from the studio, according to Shaw. "The talent promotes it and they seem to have no problem with the rough cut nature of it." He adds that if a station

doing a remote also has a web page, it's possible for a net browser to access both sites simultaneously for a really unique net listening experience.

Shaw notes that the quality of the Audioactive transmission is high, but explains that it may vary according to an Internet user's modem and computer sound card. He says, "With ISDN or T1 it's excellent; somewhere between FM and CD-quality."

And Shaw explains that an added plus of having the radio studio online is the ability to simulcast other events, a capability that will have its debut in September. "The Rock Hall regularly features rock & roll personalities and performers in special conferences in its theater. These include interviews as well as performances. With



Dave Shaw and Dave Hintz of RRHOFM behind the scenes at the Rock Hall with the Telos Audioactive encoder.

Audioactive and our online capability, there's no reason why we can't do Internet simulcasts, even live call-ins right over the net. That will bring our events into an audience well beyond the 160 seat theater."

Until then, when the radio studio is not hosting a remote, RRHOFM-radio.com is fed a steady menu of music CDs and is scheduled to begin rebroadcasting past radio remotes from the R&RHOF, as well as past celebrity conferences, soon.

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Telos DIRECT CONNECTION

News Coverage Of The Hong Kong Turnover Via Zephyr

The eyes of the world were focused on Hong Kong as international news organizations gathered to cover the turnover of the former British colony to mainland China at the end of June. What a substantial portion of the world heard, however, was news carried on major broadcast networks using Telos Zephyrs to cover the myriad events marking the occasion.

Security was so tight that even Hong Kong residents were kept in the dark about exactly which news networks were on hand and even how many, according to Andy Leung, VP of Jolly Pro Audio Broadcast Engineering, whose company supplied at least a dozen Zephyrs to four major news broadcasters.



CCTV/China Central television used four Zephyrs to transmit audio of the event and RTHK/Radio Television Hong Kong had two Zephyrs of its own. Radio coverage was accomplished via equipment used by Hong Kong Radio and, in the local area, Metro Broadcast—both using about a half dozen additional Zephyrs.

Leung says RTHK collected audio from the events and used its Zephyrs to distribute news to other transmitting sites to serve a number of broadcast stations.

To mark the turnover, events began on June 30 and lasted, in some cases, for several days. Dignitaries from countries all over

d.c. 17
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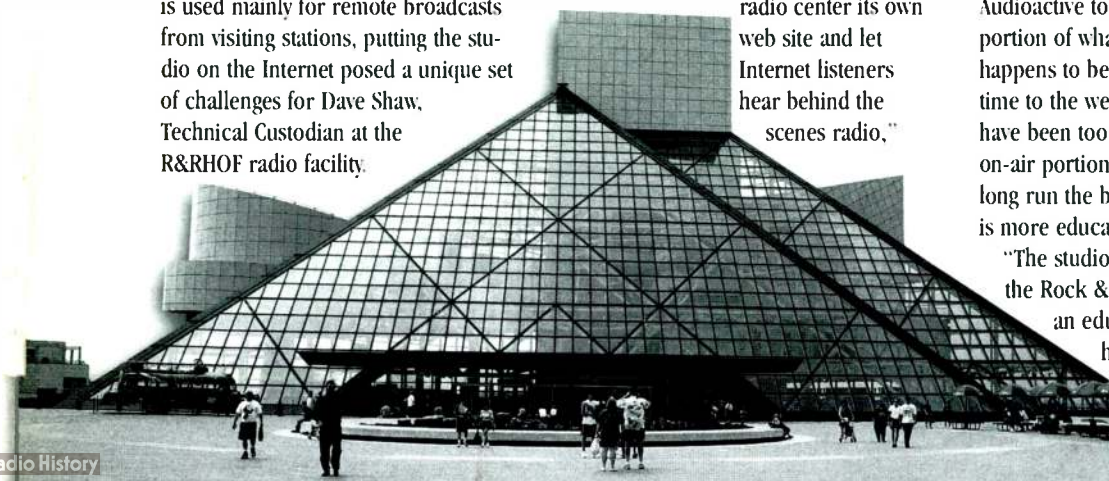
It's one of the few Internet sites that lets browsers hear the way radio actually sounds behind-the-scenes—warts and all. Since the radio studio at the Rock & Roll Hall Of Fame is used mainly for remote broadcasts from visiting stations, putting the studio on the Internet posed a unique set of challenges for Dave Shaw, Technical Custodian at the R&RHOF radio facility.

"It was one of those ideas that comes to you at four in the morning. A lot of stations don't yet have their own web site, so we thought it would be an added advantage to give the radio center its own web site and let Internet listeners hear behind the scenes radio."

Shaw says. "Telos was really helpful in getting us online."

The new site—RRHOFM-Radio.com—uses Audioactive to send the in-studio portion of whatever radio remote happens to be taking place at the time to the web. Shaw said it would have been too difficult to get just the on-air portion on the web, but in the long run the behind-the-scenes audio is more educational.

"The studio is really an exhibit in the Rock & Roll Hall, so it's become an education for listeners to hear what they hear,"



World Radio History

BACK PAGE

Conference Looks at Volunteer Stations

by S. D. Yana Davis

BOULDER, Colo. A small group of representatives from the nation's volunteer radio stations have developed an annual conference to address concerns they feel are overlooked by other community radio organizations.

Scattered around the United States are dozens of small nonprofit radio stations, staffed mainly by volunteers, offering eclectic programming to their communities — programs that, according to Cathy Melio, general manager at WERU-FM in Blue Hill, Maine, "identify with the original idea of community radio within the larger picture of public (nonprofit) radio."

One hundred managers, community board members and volunteers, representing those community stations, gathered July 24-26 at the Parker Inn in Boulder, Colo., for "Grassroots Radio Conference II."

Their purpose was to "address issues and concerns of volunteer-based stations that aren't being addressed by other conferences or organizations," according to Marty Durlen, general manager of WGNU(FM), Boulder, host station for the conference.

The first "Grassroots" conference, held last summer in Boulder, drew about 100 participants. Durlen and Melio served as organizers and coordinators for the first two "Grassroots" conferences and most likely will again figure prominently in the third, scheduled for July 1998.

The idea for the conferences was born from telephone conversations between Durlen and Melio, who shared concerns that volunteer-based stations were not being well-represented even by the National Federation of Community Broadcasters, the industry organization for independent nonprofit stations.

"Some of us reduced our membership in NCFB to associate status as a means of protest," Melio said, adding that volunteer-based stations have a "different identity" within the larger universe of community stations.

"Our mission is serving the under-served, not going with slick, syndicated programs all the time, but going with community volunteers as producers." While community stations use some syndicated programs, such as "Alternative Radio" and "Counterspin," Melio maintained that volunteer-based stations are "very different from other public stations" because most programs are produced locally, usually by volunteers.

"To hear local interviews, local issues programs, on a regular basis, you have to have community stations. Not being afraid, doing bold programs, bold radio. That includes live music, live radio drama, a lot more examination of controversial issues."

Budgetary emphasis

The sessions at this year's "Grassroots" conference reflected both that unique programming emphasis of volunteer-based radio stations, and the ever-present con-

cern for efficient fundraising by managers whose average annual budgets are less than the annual commissions of some individual sales representatives at large commercial stations.

The conference opened with a reception featuring Paul Klite, director of Rocky Mountain Media Watch, which

are highly prized" by their communities and deserve increased support.

Other sessions included "Low Budget Digital Editing," presented by KGNU News Director Sam Fuqua; a session on a proposal by the Pacifica Foundation to buy Ku-band satellite dishes for community stations, expanding the range of syndicated programs accessible by the stations; and "The Musical Mission," a roundtable discussion of programming music for wider audiences versus music that is "creative, valid and interesting," led by longtime music programmer Karl Eggert.

Perhaps the most interesting presentation was "The Pacification of Public Radio," led by David Barsamian, host and producer of "Alternative Radio." Barsamian's program is supported entirely by listeners who buy tapes and transcripts and is heard on 100 public stations weekly.

Pressures

"The gatekeepers at many public stations have moved the medium from its original principles," Barsamian contended. He quoted the original Carnegie Commission Report on Public Broadcasting, issued in 1967, which called for a system of "programs that serve as a forum for controversy and debate."

Barsamian thinks a combination of political and corporate pressures have

served to steer "mainstream" public stations away from controversy and true investigative journalism.

"It's extremely difficult for programs such as 'Alternative Radio' to get on mainstream stations," Barsamian said. "There's now very little room for opinion or dissent that challenges the existing status quo." Barsamian's program covers those issues, he said, bringing to community radio a series that treats public affairs issues from the media to the environment to race, class and gender issues differently from most other programs.

Shrinking segment

Barsamian said the "gatekeepers" at many public stations — managers and program directors who decide which syndicated programs are broadcast — "are in an industry (nonprofit radio) that is shrinking. They're governed in many cases by an institutional impulse not to rock the boat." He lauded the community stations for continuing to fulfill what he described as the original mission of public radio.

"The founders of our country saw the need for diversity and pluralism," Barsamian said, citing Thomas Jefferson and James Madison in particular. "What we have now (with limited access to the media), represents a very real threat to democracy, in my opinion."

Barsamian's remarks did not fall on deaf ears at "Grassroots II." WERU's Melio said that "Barsamian reminds us

See ALTERNATIVE, page 11 ▶



David Barsamian, Host and Producer of 'Alternative Radio'

produced the syndicated public affairs series "Terra Infirma" from 1989-1992. Klite's organization goes after violence, sensationalism, "fluff" and commercialism in the media, values widely shared among conference attendees.

Klite used humor to frame his remarks to conferees, asking rhetorically in verse, "Did you O.D. on O.J.? Had enough of JonBenet? Why is the news such a snooze? Why does it have to be that way?"

To hear local interviews, local issues programs, on a regular basis, you have to have community stations. That includes live music, live radio dramas, (and) a lot more examination of controversial issues.

— Cathy Melio, GM
WERU-FM

Describing himself as a "concerned citizen who walked into a community radio station one day and found himself with a nationally syndicated program a few years later," Klite said he tried to encourage the conference participants.

"I tried to impress (attendees) how vital community radio is, what a unique voice it is in contrast to commercial media, and in contrast to 'traditional' public radio." He said that despite difficulty with funding, volunteer-based stations are "very important resources that

EAS Patent Reexamined

▶ EAS, continued from page 3

at some time before the convention, the NWS and HollyAnne signed an agreement whereby HollyAnne would use signals from WRSAME as one of the inputs in its Safety Alert Monitor. The agreement was one of the topics addressed in the press conference and released. Halprin said the weather service had been talking about using the agreement as a premise for reexamination for some time.

According to Kunin's letter, "a paper which is orally presented in a forum open to all interested persons constitutes a 'printed publication' if written copies are disseminated without restriction." The letter explained that because the HollyAnne press release was handed out at a press conference open to the public, it is a "printed publication."

The second ground for reexamination was an unassigned patent issued in 1979 for a Disaster Alert System. This patent, which will expire Oct. 31, describes an RF activation system in which codes would transmit disaster warnings to the affected geographic area.

Industry reaction

Jim Gorman of Gorman-Redlich, maker of the EAS1 encoder/decoder, said he was glad the Patent Office was reexamining the Quad Dimension patent. Gorman, who has read the patent, said that one of the claims in it would also cover cellular telephones, which clearly preceded the patent.

"We read the patent," said Gerald LeBow of Sage Alerting, maker of the

ENDEC. "It was our opinion that the patent should never have been issued" because it was based on technology the NWS already had developed.

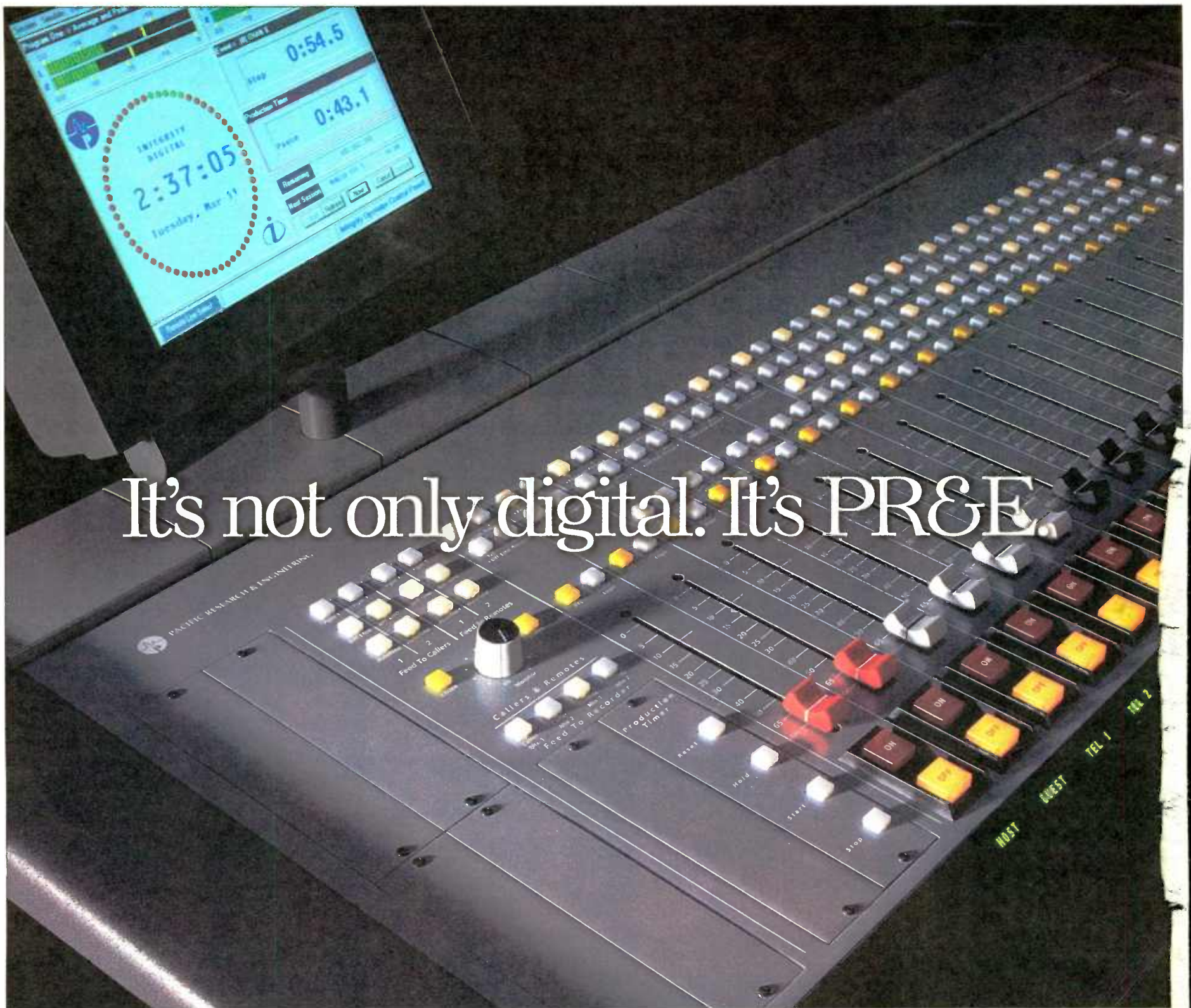
Both TFT, maker of the EAS 911, and Burk Technology, maker of the Model EAS encoder/decoder, reserved comment until the reexamination is complete.

John Raubitschek, patent counsel at the Department of Commerce, said his office heard from a number of companies that were concerned about the Ganzer patent. One of the companies brought the 1979 patent to his attention.

Ordinarily, said Raubitschek, patent reexaminations are precipitated by companies that must pay a \$2,460 fee to initiate the process. In this case, in which the issue was one of public policy, however, the patent commissioner himself initiated the review.

The reexamination notice gave Ganzer and his lawyers until Sept. 15 to file a statement regarding the reexamination. They may choose to argue that the reexamination request is somehow deficient or explain why the patent for SAFE is distinguishable from SAME. At press time, they had no comment on their plans.

One of the "other publications" cited in the patent issued to Larry Ganzer is a "DCR-400" brochure, which describes WRSAME. This implies that either the examiner found the Ganzer technology different enough from SAME to issue the patent or that the examiner did not comprehend that the two technologies were so similar.



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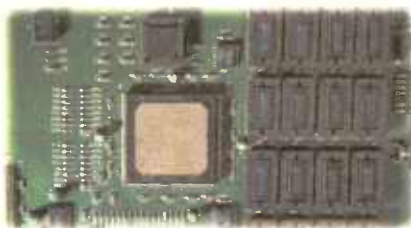
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PACIFIC RESEARCH & ENGINEERING

Grassroots Gathering

▶ ALTERNATIVE, continued from page 9
we have a major role in putting out information not available elsewhere."

Finding funds, and how to make do with less money than even most "mainstream" public stations raise, were also hot topics at "Grassroots II."

Four sessions dealt with various aspects of fundraising, which is critical for community stations.

Sessions addressed practical issues, such as finding sources for free premiums — gifts used to induce individual donors to make larger contributions — and running capital campaigns to construct new studios and buy equipment.

"With pressures on public stations to become more corporate-oriented, we have to reinforce (for smaller community stations) how important it is to have local donors and lots of them," said Melio.

Stations threatened

Durlen was more direct. "Small stations are endangered," she said. "KOPN(FM) in Columbia, Mo., is going under as we speak. They changed formats, and now they're on the chopping block." She attributed loss of community support to KOPN's abandonment of the typical community station's wide range of locally produced programs for a more "mainstream" public radio format.

"Communities will support a diverse format," Durlen continued. "My station here in Boulder, as well as WERU(FM) in Blue Hill, Maine — very different communities — are examples of that." She contended that sharing knowledge, ideas and experience at "Grassroots" conferences is a critical resource for volunteer-based stations.

While sessions dealing with fundraising were aimed at sending station representatives home with better — and more successful — approaches to increasing local dollars raised, federal funding is a *sine qua non* for most community licensees.

Until now, Capitol Hill lobbying on behalf of public stations has been the domain of large public broadcasting organizations, but, said Melio, "certainly we (community stations) may have a more direct role in the future." She said lobbying by Grassroots participants was discussed at this year's meeting and will be on the agenda next year.

One obvious advantage community stations would have in lobbying efforts is the large pool of volunteers each has developed. It is not uncommon for a community station to have as many as 200 active volunteers. Stations could conceivably send an "army" of nonpaid lobbyists to Washington, consisting of prominent business and community leaders from across the country. Federal lawmakers might well be reluctant to turn down the requests of such a group.

Community station managers may already have definite ideas about changes in the way federal funds are distributed.

Durlen, reflecting the mood of many at the conference, was especially critical of current CPB grant criteria. "They are now using Arbitron figures (as one criterion) to dole out federal money," she pointed out. "We don't think ratings are an appropriate measure (to use)." CPB's original plan, announced over a year ago, to base grants to stations entirely on audience numbers was, in fact, modified recently. Stations

may opt for audience-based criteria or a grant tied to local fundraising, a move which is generally acknowledged to have saved many smaller licensees from losing all federal funding.

Despite the concerns for the future, Durlen said that the mood at "Grassroots II" was "very upbeat. People love what they're doing (in community radio). We're hopeful, while at the same time we soberly assess fundraising. In general, stations are doing better in that regard."

■ ■ ■

S. D. Yana Davis is a freelance writer and public radio fundraising consultant in Knoxville, Tenn. E-mail him at yanajune@usit.net

Tower of Protest

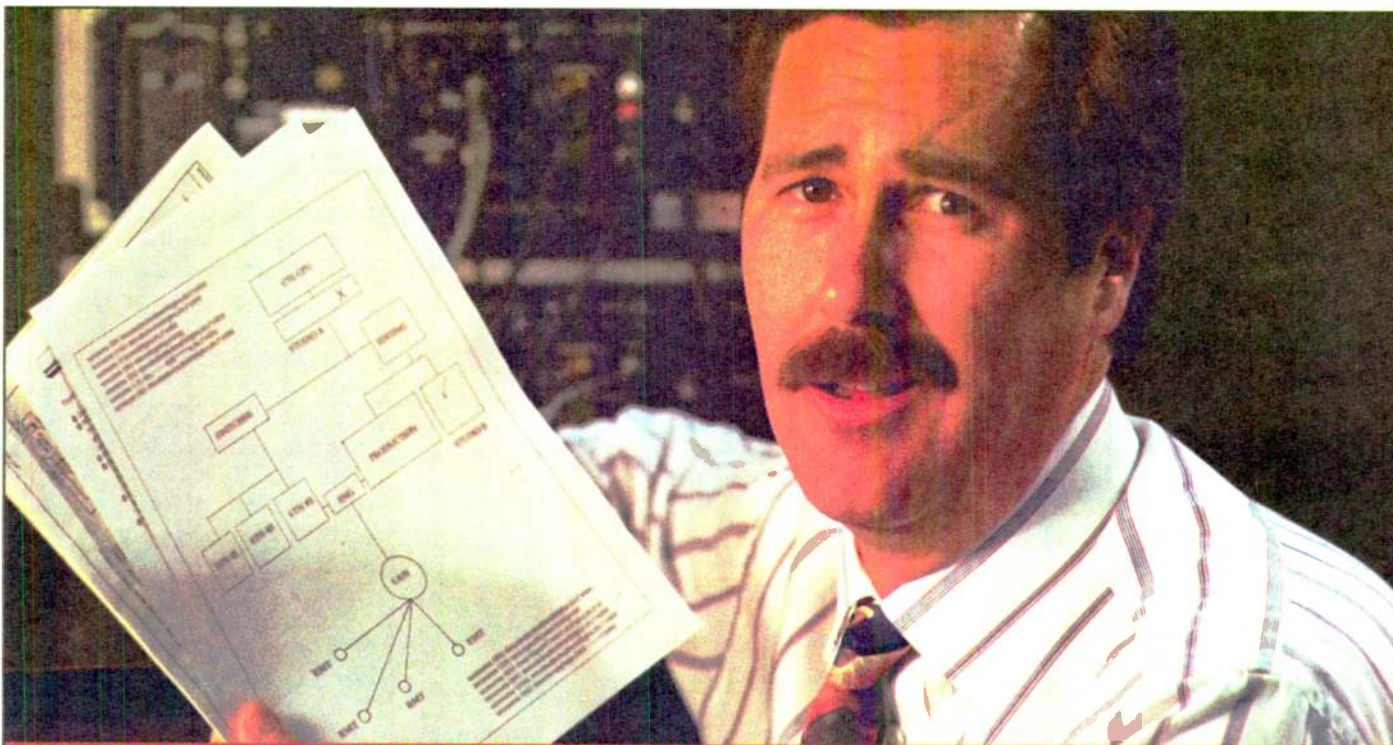


Photo by Alan R. Peterson

A man got the attention of the Washington area in August when he climbed almost 300 feet up a broadcast tower and lodged himself in a hammock, apparently along with food, a phone, a radio and a TV.

Local radio stations covered the event live and reported that he was an ex-Army soldier protesting his discharge from the service. He eventually came down peacefully and was arrested.

The tower, near Fairfax, Va., serves several users, including WJFK-FM.



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World Radio History

NRB Pushes for New Music Licenses

by Matt Spangler

CAMARILLO, Calif. A small rift has developed in the Christian community over money, music and licensing.

In May, an organization called the Coalition for the Protection of America's Gospel Music Heritage sent a letter to members of Congress attacking the National Religious Broadcasters Music Licensing Committee for its efforts to push legislation through Congress that would change the structure of its current music licensing agreements. "The selfish agenda the NRB proposes to enact via H.R. 789 and S. 28 will devastate one of American Christianity's greatest treasures — our rich heritage of Gospel music," read the letter, which was penned by Robert Sterling.

In the letter, the Nashville-based organization claimed to have the backing of such songwriting organizations

as the Christian Music Trade Association and the Southern Gospel Songwriters Association. But NRBMLC Executive Director Russ

The committee has negotiated with ASCAP for two decades.

Hauth said that the coalition is merely a front for the music licensing organization ASCAP (American Society of Composers, Authors and Performers).

"Mr. Sterling conceded under congressional questioning that he has financial ties to ASCAP," said Hauth in a statement. He called upon Sterling "to fully disclose the nature and extent of the support ASCAP provided to him

for his attacks."

NRBMLC represents over 700 Christian radio stations, and seeks to negotiate what it perceives to be a fair per-program license agreement instead of a blanket license. ASCAP and BMI (Broadcast Music Inc.) offer a per-program agreement, which some Christian stations have agreed to use.

"But," said NRB President E. Brandt Gustavson in a recent statement, "Christian stations which have opted to use the current per-program licenses offered by ASCAP and BMI are paying three to four times more per song than stations using the blanket licenses."

"That's an accurate statement, but that's comparing apples and oranges," said an ASCAP spokesman. "There's a tremendous volume discount when you buy a blanket license from ASCAP or BMI, and there's a substantially greater administrative cost for the songwriters when you buy a per-program license, because they've got to track every single one of your performances on your radio station."

The committee has negotiated with ASCAP for two decades without reaching a settlement that has satisfied broadcasters. "For 20 years ASCAP has stonewalled, offering no substantive changes, only countless meetings that go nowhere," Hauth stated.

The grievances of the stations NRB represents were summarized in an April letter from J. Thomas Bisset, general manager of WRBS(FM), a Baltimore Christian station, to the Church Music Publishers Association. "I believe these licenses to be unfair to Christian radio stations such as WRBS, where 60 percent or more of the broadcast

day is given to teaching, preaching and talk programs in which little or no music appears," he wrote.

Shortly before the coalition fired its letter off to Congress, CMPA President Geoff Lorenz wrote Congress and NRB, expressing his concern that the revenue of Christian songwriters might suffer if the "Fairness in Music Licensing Act" were to pass. "The fact that it's gone to proposed legislation is, in our opinion, borderline ridiculous," said Elwin Raymer, chairman of the CMPA Performing Rights Organization Liaison Committee. "I don't want government meddling in my life that way."

NRBMLC met with the leadership of CMPA on the music licensing issue at its annual conference in May; this was followed by two subsequent meetings. Both Hauth and Raymer described the dialog between the two organizations as "cordial."

Raymer agreed with the ASCAP representative that the licensing agreements are fair for broadcasters. "Generally it's smoke and mirrors," he said of complaints like Bisset's. "These guys aren't paying much and they want to pay less... If you're playing music, the license does give you a way to pay very little."

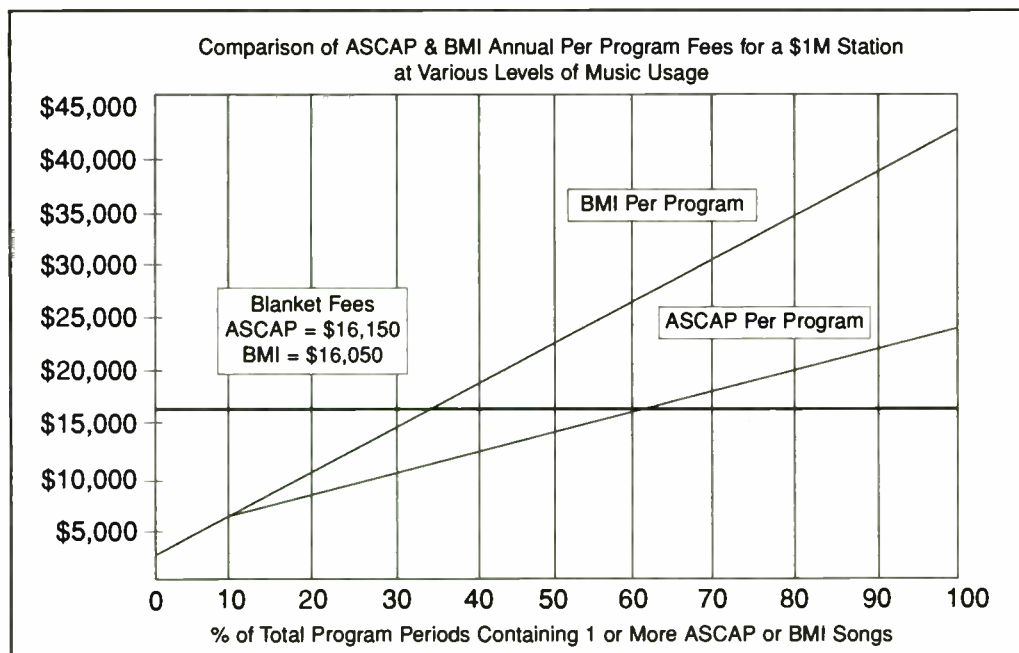
Among other measures, the House bill is designed to "reform current copyright law to provide businesses protection from arbitrary pricing." At press time, the House was holding hearings on the legislation, which had over 130 cosponsors.

Meanwhile, Hauth said that NRBMLC had pushed to have a hold put on copyright term extension legislation introduced in February, which would extend the Copyright Act of 1978 for another 20 years so that works about to enter the public domain would receive another 20-year lease on life. "What you have, in effect, is perpetual licensing on the installment plan," Hauth told RW.

He said that NRBMLC opposes any further copyright legislation until an equitable agreement is reached with the music licensing societies. Ultimately, he said, the committee hopes to incorporate all copyright legislation into an omnibus bill, out of fear that President Clinton would veto the Fairness in Music Licensing Act on its own.

If things go the NRBMLC way in the courts, the legislation may not matter anyway. The committee is waiting on a verdict from a trial in the Rate Court of New York, in which the committee sought a more fair licensing structure (RW, April 30). Hauth said a decision is expected by late summer.

The Radio Music Licensing Committee negotiated a new contract with ASCAP last year, and is currently negotiating a new one with BMI (RW, April 30). At a recent meeting of NABMLC, financing litigation against BMI was the main topic of discussion. "While I hope that the RMLC and BMI can reach a negotiated agreement," said RMLC Chairman Randy Bongarten, "the industry must be prepared to explore all options including litigation, to achieve a fair license."



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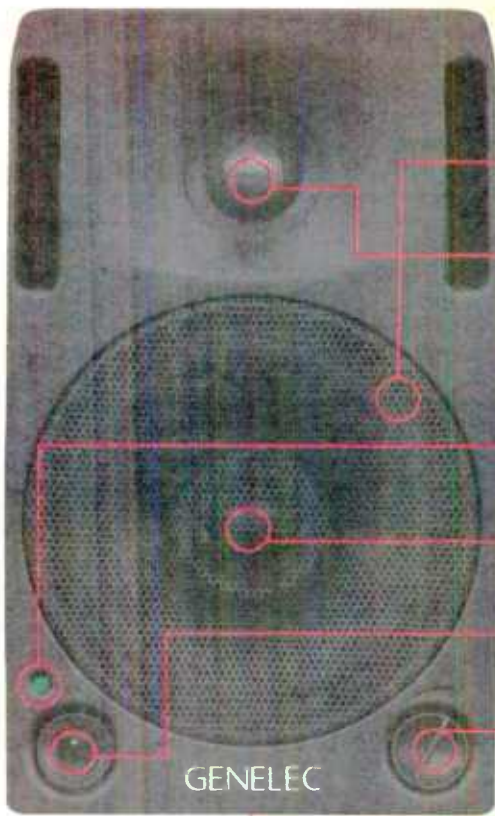
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GROUNDING IN SOUND BROADCASTING

ASCAP Wants AudioNet Contract

by Lauren Rooney

WASHINGTON The American Society of Composers and Performers has accused webcasting service provider AudioNet of not operating within the letter of the law.

"AudioNet does not have a contract with ASCAP," said ASCAP attorney Bennett Lincoff, "and they need to have permission to re-broadcast any music they use from those who own the rights." As for radio stations streaming their signals on the Internet, Lincoff said that they too need to have a separate contract for their music usage.

The Internet is becoming a very musical place. Radio stations are going on-line, music is played on-line, concerts can be seen on-line. But with the all the tunes comes one troubling question: "Who pays the royalty fees?"

The answer: it depends on whom

cable companies to broadcast material without the express permission of copyright organizations, should be applied to new technologies (i.e., the Internet).

"We feel they should not be extended," said Lincoff. ASCAP feels that

you ask. The U.S. Copyright Office held hearings in May designed to gather input as to whether or not cable compulsory licenses, which allow

radio stations should hold contracts covering the Internet above and beyond their current ASCAP and BMI (Broadcast Music Inc.) contracts, and

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in addition to any licensing contracts the ISP may have.

Similarly, the Recording Industry of America said Internet broadcasts of a radio signal are public performances of sound recordings, and royalties should be paid separately from what the station pays for broadcasting its signal over the airwaves.

The National Association of Broadcasters disagreed with the copyright organizations, claiming that stations pose no threat of copyright infringement and obtain no additional benefit from putting their air signal on the Internet.

AudioNet has held off signing its ASCAP contract until the matter can be cleared up. That had Lincoff wondering what representations AudioNet is making to stations and others whose music they're putting on-line.

"At the May hearing in Washington," he said, "AudioNet President Mark Cuban was asked if he had ASCAP and BMI licenses, to which he responded yes. But when asked again, he told the committee that his company had just signed that day with BMI and still had no contract with ASCAP."

Double taxation?

AudioNet had an ASCAP contract with one of the stations webcasting on its site, but wasn't sure if it was legally correct, so it called in Washington attorney Seth Greenstein to check things out. He determined that AudioNet should negotiate its own deal with ASCAP.

"AudioNet wants to be in compliance with the law," said Greenstein. He said the company knows it must pay royalties for any music it puts out over the Internet. He added that AudioNet is happy to sign an ASCAP contract as long as radio stations broadcasting through the company's website don't have to have ASCAP Internet contracts too. "ASCAP wants to charge AudioNet plus radio stations for the same broadcast," said Greenstein.

The Internet is becoming a musical place. Who pays the royalty fees?

Greenstein explained why he believes there's no mistake that it's AudioNet putting the signal on the Internet. When a listener goes to a station's website, he can link to the air signal. That link will then send the listener to AudioNet's site. The listener will hear a welcome, perhaps a little something about AudioNet, or maybe a special program coming up and then AudioNet's presentation of the air signal.

Lauren Rooney is a newscaster for WHP(AM) in Harrisburg, Pa. She reported in our July 23 issue on a lawsuit by manufacturer Mackie Designs against competitor Behringer.



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World Radio History

NPR Restructures at Headquarters

by S. D. Yana Davis

WASHINGTON Last month, National Public Radio President and CEO Delano Lewis reshuffled responsibilities at NPR network headquarters in Washington changes that may signify a different direction for programming.

Station managers were optimistic that Lewis would keep NPR headed in the right direction: quality programming appealing to a significant and growing audience.

But one former NPR producer questioned the move, wondering if it was not just more "blood on the floor" at public radio's premier institution and exactly what vision Lewis has for future programming.

NPR stations received a detailed memo from Lewis on July 15 in which the NPR

chief announced the end of the Program Strategy Board and the departure of Sandra Rattley-Lewis and Leslie Peters, both key programming executives.

Joseph takes the reins

Rattley-Lewis had been executive director of the Program Strategy Board. The board, composed of top NPR producers, was charged with developing and acquiring programs for the network to distribute to over 500 member stations. Rattley-Lewis' last day at NPR was Aug. 1.

Peters, whose interests lie in audience research, leaves NPR on Oct. 1 to join audience demographics guru David Giovannoni at AudiGraphics, a firm which specializes in translating raw numbers into detailed profiles of listeners, primarily for NPR and local public radio stations.

The reorganization announced by Lewis consolidates Member Services, which supports local stations' fundraising, marketing, public relations and audience research efforts, with Program Services under the supervision of NPR Vice President Mary Lou Joseph, whose division now includes a number of related network activities.

At the same time, NPR created a new position, director of program services, that will report to Joseph. The job description charges the new director with "providing leadership, management and expertise in the development and implementation of a strategic marketing, communications and acquisitions plan for NPR programs" and related services.

Both Lewis and Joseph declined to be interviewed for this story. Speaking on their behalf, Kathy Scott, NPR director of communications, characterized the reshuffle as a "continuation of efforts to support programming." Scott also cited the "tight budget" NPR is expecting for FY98 as further incentive to "consolidate as much as possible."

Scott said that a "number of reasons" were behind the reorganization. "We've been hearing from member stations that we need to do something to improve marketing and promotion of programs." The consolidation, she said, would allow a more rational alignment of NPR departments with related functions.

While Rattley-Lewis' exit was mandated by the abolition of her job, she was "not fired" according to Scott. The official announcement stated that Rattley-Lewis, who, along with Peters, would not be interviewed for this story, would leave to "pursue other interests and projects."

News lobbying

"This is a significant development, seen together with a series of other reorganizations," said John Dinges, until last year NPR news managing editor, and

now head of the radio sequence at Columbia University's School of Journalism in New York.

"There have been at least three major reorganizations since Del Lewis took over in 1992," Dinges claimed. "The first one was a budget-cutting exercise. In the second one, Del shed himself of his vice president for news (Bill Buzenberg). It was couched as a mutual agreement, but it was pretty clear, I thought, that Del was forcing Bill out."

"Del didn't have to explain what his vision for news was," Dinges continued. "The new vice president for news still isn't on board."

Buzenberg had been the key senior executive on the Program Strategy Board, leading what Dinges called a "core group" of producers who made most programming recommendations.

(Meantime, Buzenberg has landed at Minnesota Public Radio as senior director of news, while his old NPR job, vacant since late in 1996, has been filled by Jeffrey Dvorkin, former chief journalist and managing editor for CBC Radio News and Information.)

Dinges, who said he was a member of the Program Strategy Board while at NPR, had strong reservations about program services being under the supervision of Joseph.

"Mary Lou Joseph was NPR's lobbyist on Capitol Hill for most of her career," Dinges stated. "This reorganization is important, especially, to those concerned about the journalistic side of NPR. Because NPR receives, directly or indirectly, CPB money, there's always been a lobbying function there."

"And when you're a news organization like NPR covering Capitol Hill, it's a little uncomfortable to have lobbying going on inside your own organization. But, in the past, that lobbying function was always maintained carefully apart from news and programming. I have to say that I'm very concerned that the person in charge of lobbying is now directly involved with programming decisions."

See NPR, page 18 ▶

IWA Pushes Webcasting

▶ WEB, continued from page 1

founder member Paxson Communications, one of the world's leading webcasting companies. That is why the membership rolls include such veteran webcasters as CBS Radio and AudioNet (whose site features over 175 radio and TV stations), and technology providers such as Progressive Networks (maker of RealAudio and RealVideo) and Xing Technology (maker of StreamWorks).

But the IWA also includes consulting groups such as Intervox Communications, and copyright organizations such as BMI and ASCAP, said Intervox President Peggy Miles. Their goal is to "work together" to nurture webcasting as a viable broadcast medium.

Push it

But what exactly is webcasting? That is a definition which has been changing as technology advances, said Miles. "Originally it was thought of as either live or on-demand feeds of radio or TV signals down the Web," she said. "Now, with the advent of 'push' technology, this has changed."

Currently, "push" technologies, such as PointCast, make it possible for Web users to define what sort of news information they want relayed to them on a regular basis; for example, stories on the latest information from Mars, or the progress of the New York Mets.

Given this, it is just a matter of time before push technology is widely applied to webcasting, said Miles. When it is, you'll be able to work on your computer with the Web in the background, confident that when an alert is issued on your favorite radio station, your computer will automatically tune it in.

To get to this point, however, certain hurdles have to be crossed. First, there is the issue of copyright: how should radio stations compensate Madonna for the retransmission of her songs on the Web? Second is the problem of mass distribution. In its current configuration, the Web is a one-to-one, or "unicasting," medium; in other words, for each user, the webcaster has to provide a single, discrete data stream.

Said Miles, "If you don't buy a server capable of delivering a lot of streams at once, your listeners are going to get the equivalent of a 'busy signal' when they try to access your site." Given the fickleness of Web surfers — when frustrated, they just move to their next destination with a click of their mouse — the very last thing any webcaster wants to do is frustrate them.

Helping webcasters deal with this problem is an ongoing concern for IWA members such as Microsoft, Progressive Networks and VDonet Corp., which is why they're working on the concept of 'multicasting,' said Miles.

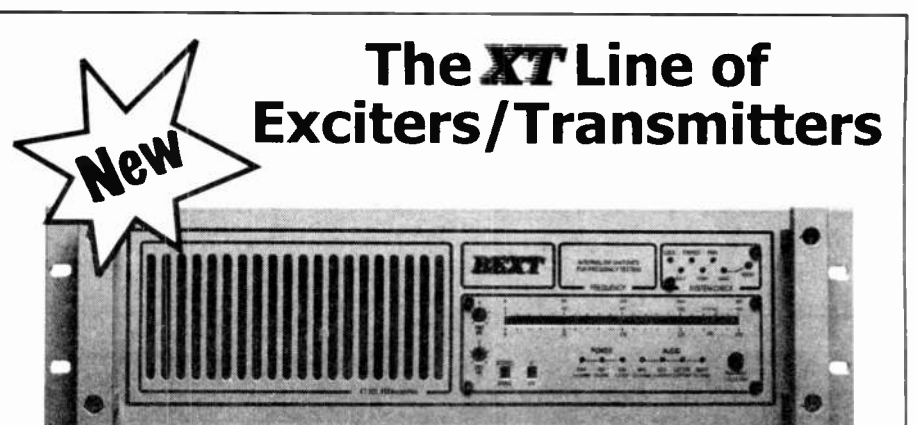
"They're developing ways that you can distribute signals to a mass audience simultaneously," she said. "Multicasting takes one signal, and lets a lot of people listen to it."

The third major issue is bandwidth. At this time, telephone lines provide the bare minimum for real-time audio reproduction, medium-grade mono for most users, and less than enough for full-motion video. Said Ly, "The biggest challenge for webcasting is the availability of bandwidth for full spectrum-rich audio experience, and full screen, full motion (30 fps) for TV and video. In an ideal Internet webcasting world, one must be able to listen to radio feeds without the jerkiness, any time, any day of the week, from anywhere around the globe."

In the short term, more immediate issues need to be addressed, such as deciding whether to take your own station on the Web. It is a big decision whether the investment in a server computer, telephone lines and software support (usually through a third-party Internet Service Provider) can be justified given the Web's unproven ability to deliver significant ad revenues.

The one advantage? Early adopters tend to dominate the market, said Peggy Miles. Hence, radio stations who move into the Web now, at a time when only 11-13 percent of their listeners have Web access, are in a position to stake out territory for the expected future boom.

To find out more, check out the IWA website at www.webcasters.org



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NPR Restructures Organization

► NPR, continued from page 17

Two leading station executives offered cautious support for Lewis' action, however.

"At this juncture, I don't think it's proper for stations to try to micromanage NPR," said Mike Morgan, general manager at WBHM(FM) in Birmingham, Ala.

Right direction?

"I'm hopeful they're (NPR) moving in the right direction, and that we'll be the beneficiaries. I believe NPR is adopting a strategy for the future that will bear positive results."

John Greene, general manager of

KUER(FM), Salt Lake City, regularly attends NPR board meetings on behalf of his station and several other licensees who make up Rocky Mountain Public Radio, a regional station association. At an NPR board meeting the week following the reshuffle announcement, Greene was present to ask questions on stations' behalf.

"It wasn't clear to me how the new relationships will work. I think NPR should tell stations how it will work. It (the reorganization) caught us off guard a bit. But, while it does raise questions, it's not at the level of 'concern' for me. At the same time, I can understand how people who program content might be concerned, but I really don't know how this

will affect programming."

Greene said a more important question for stations was: "How timely can NPR be in fulfilling certain program needs in the system, such as what to do with Saturday afternoons, and how responsive can NPR be to member stations? I think it's crucial for NPR and stations to work more closely together, and for NPR to immerse itself in a service philosophy. I see more of that happening with this reorganization."

Despite his questions, Greene was enthusiastic about Joseph's expanded role at NPR. "Mary Lou has gained a reputation for getting things done. I think this is a very dynamic, hopeful sign of change.

The tools are in place for stations to leap ahead."

But Dinges was not as hopeful.

"What is the vision of (NPR) senior managers?" Dinges asked. "What do they hope to accomplish?" Dinges claimed that, while he was at NPR, "not a single programming initiative" came from either Lewis or Joseph, although any such initiative would have been given the same consideration as ones from senior producers.

"My question is, 'Where's the beef?' They've been talking about expanding NPR productions, and similar efforts, for years, but there's nothing there. I would be a lot more comfortable if I knew what Del Lewis' vision is."

The move seems to consolidate Lewis' role as a strong, hands-on chief executive at NPR.

Whether the long-term effect of the reorganization results in a change in NPR program content, or simply better marketing to serve local stations' needs, will be unknown for some time. In the short term, the move seems to consolidate Lewis' role as a strong, hands-on chief executive at NPR — an executive who is not satisfied with just presiding, but who intends to actively lead as well.

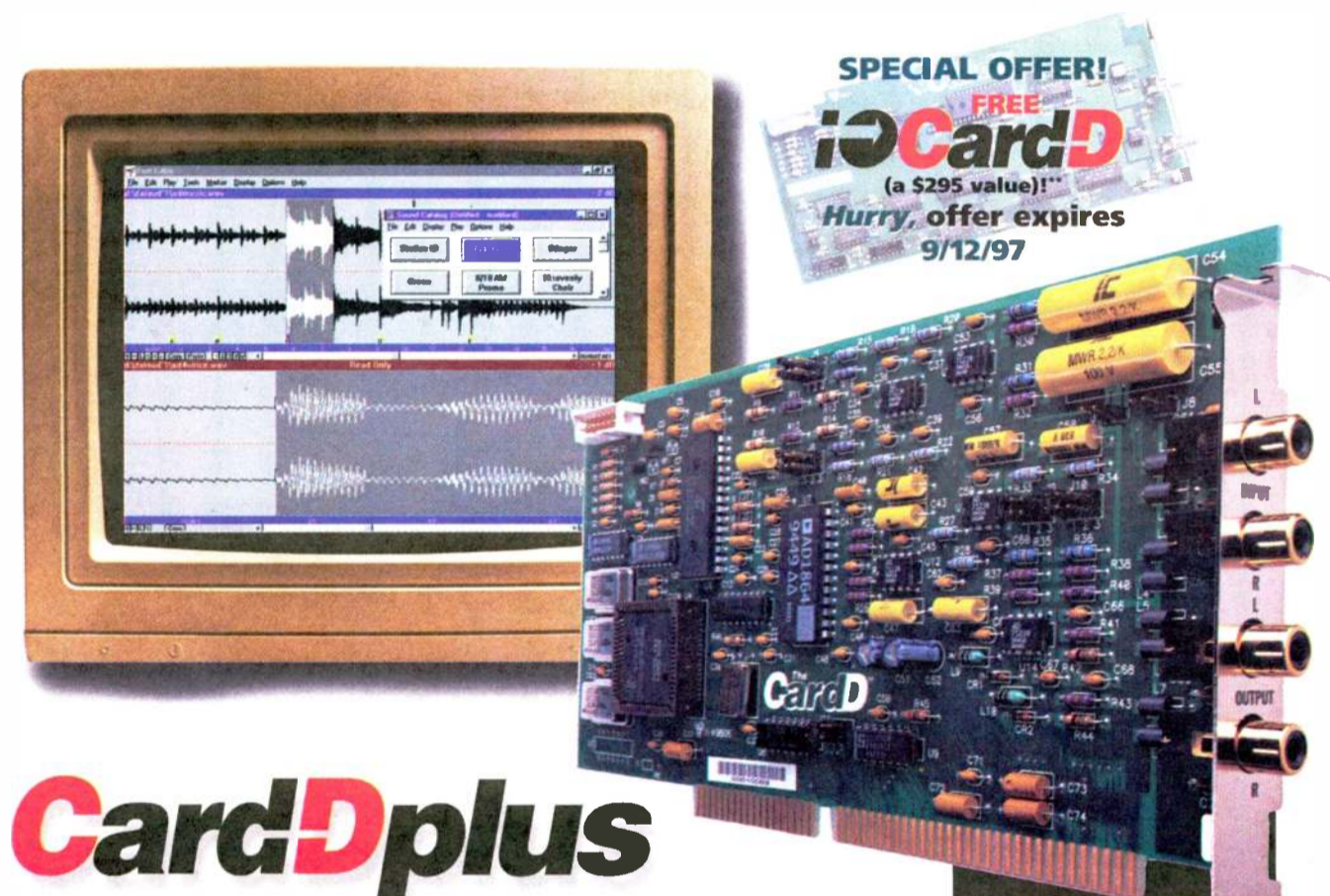
More Power To Border

► CANADA, continued from page 1

anyway. (But) when we changed our own rules to allow for 250 watts, we realized that these people were unnecessarily handicapped in the border area because they couldn't get to 250."

Reaction from broadcasters to the changes is still coming. The National Association of Broadcasters isn't commenting on the issue; it will wait to see how its members are affected by the changes. Obviously some stations will benefit from the increased power, increasing competition in their markets.

The 197-member American Community AM Broadcasters Association applauded the agreement. Many members of ACAMBA have to drop their power at night to keep from interfering with Canadian AM stations. To compensate for this power loss, and the resulting drop in market coverage, "our association is advocating the use of FM translators for AM stations to provide continuous coverage at night," said ACAMBA president Bryan Smeathers. Higher ERP limits could help those AM stations operating along the Canadian border.



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World Radio History

Morgan Looks Ahead

► MORGAN, continued from page 1
Broadcasters' Engineering Achievement Award in 1994.

Morgan is a charter member, fellow and former board member of the Society of Broadcast Engineers. He is a former member of the NAB Engineering Advisory Committee, its FM Improvement Committee and he served for five years as chairman of its AM Improvement Committee. Presently, Morgan is a member of the NAB DAB (digital audio broadcasting) Task Force, is very active in the development of future digital broadcasting standards for the United States and is co-chairman of the National Radio Systems Committee.

Engineering management

RW recently spoke with Morgan to get his impressions about the state of broadcast engineering and his thoughts on the future of the industry. Among the major issues, ownership consolidation, he said, will continue to be a hot topic.

"Consolidation resulting from the Telecommunications Act will take its toll on radio, and engineering will feel (the) effects in the same manner as the rest of the station," said Morgan. "Consolidation generally means cost-cutting, and there certainly will be less engineering positions. In smaller markets, contract engineers may be replaced by full-time engineers for a combination of group-owned stations. In other combinations, the engineer may spend more time with a screwdriver and less time with a broom.

"Super-large groups can really take advantage of a corporate engineering staff," Morgan added. "It will save them money and assure that each station is operating legally and with high productivity. I believe these groups will eventually go to a form of regional engineering management. Engineering management is simply another form of management; no one person can have direct management responsibilities for that large a group."

At Susquehanna, he continued, "engineering management is an ever-evolving process. We do not use contract engineers. Our company has always had the philosophy that engineering is an important part of the radio station. It is my belief that only with a full-time chief engineer can you be assured that someone is lying awake at night concerned about a potential problem that (could)

take the station off the air."

Susquehanna has combined engineering staffs in each of its markets. There is one chief engineer in each market, who oversees a staff of several engineers. In some cases, a chief engineer will be assigned to a specific station, who will report to the engineering manager for the market. As for the corporate engineering structure, Morgan has an assistant director of engineering who works with him in York, and a technical operations manager who is based in Dallas.

Morgan and his staff are currently in the process of putting the stations in both San Francisco and Dallas into common facilities. "Not too long ago, we had an AM station and an FM station operating out of the same studio facility," he observed. "Now there may be four, six or eight stations in a combined facility. As a result, engineers are called upon to do more things for more people more of the time."

Digital transformation

Morgan said the transformation to digital technology is the biggest challenge that engineers face today. Susquehanna plans to convert all of its studio facilities to a tapeless environment next year. When Morgan, who makes the final decision on all major equipment purchases, goes shopping, he looks to buy from both the dealers and the manufacturers.

"Requests for new equipment generally originate at the station," he said. "Equipment selection is a joint collaboration between the (station) chief engineer and corporate engineering (staff). We buy direct (from) certain suppliers and (go) through dealers for other (purchases). We are always looking for the right combination of price and service for quality products."

Morgan stressed that each Susquehanna station has its own engineering budget that "is tied more to what it takes to provide high quality and reliable service than to a percentage of revenues."

Just as the technical side of the business is undergoing a transformation, the next generation of engineers will be required to possess new skills — mainly computer-related. "We can look for computer people who are willing to learn radio, or people who want (to work in) radio engineering and are willing to learn computers," said Morgan. "I

prefer the latter."

"In any case, the chief engineer of a station should have to have the computer skills of a CNE (Certified Novell Engineer) equivalent. Susquehanna is committed to providing this training to all of its chief engineers. The next generation will be just that — a new generation. They will have grown up with computers."

Morgan also talked about three other areas of special interest to engineers: DAB, HSSC (high-speed FM subcarrier) and RDS (radio data system). "Susquehanna, like most broadcasters," Morgan said, "uses RDS sparingly. Until there are receivers in the field, there is little reason to do anything with it.

Consolidation generally means cost-cutting, and there certainly will be less engineering positions.

— Charles Morgan

"I believe nothing will occur with RDS until automobile manufacturers put RDS receivers in cars; once this happens broadcasters will move very quickly to put their call letters or identifier on that radio."

A number of car manufacturers, including Ford, General Motors, BMW, Chevrolet, Pontiac, Oldsmobile and Buick, have announced plans to include RDS receivers as standard equipment in their cars over the next five years (RW, June 25).

Concerning digital broadcasting, Morgan said he believes "we will have DAB in the United States. I believe it will be an IBOC (in-band, on-channel) system. The quality of the IBOC system tested by the NRSC was excellent and could not be distinguished from Eureka-147 by their trained experts."

The problem, he explained, has been adjacent channel interference — but it appears that this can be remedied. Within the next year, he expects we will know if DAB can overcome its problems and become market-driven.

While Morgan said he expects that DAB will be successful in the United States if it provides the quality

consumers want at a price they are willing to pay, "it is yet to be determined if there will be a consumer demand for Eureka-147 in Europe or Canada."

On the subject of HSSC, Morgan said the testing is finished "and it looks as if the process will be complete quite soon. There are several excellent systems; if a standard is developed it is clear that the others will not go away. If the NRSC believes that one of these systems is deserving of being labeled a standard for the United States, I believe that will occur within one year."

Even as the technological advancements change the face of broadcast engineering, Morgan said getting started today in radio is no different than it was when he entered the business. "You start at the bottom and work your way up," he observed. "Susquehanna has groomed a lot of good engineers who started as announcers, production assistants or interns."

Accolades

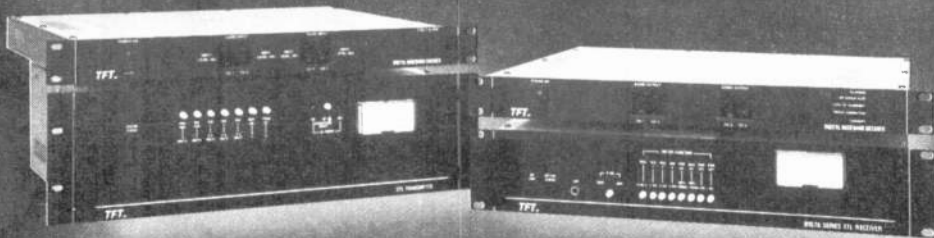
To people in radio engineering, the mention of Morgan's name brings immediate responses — praising his involvement in the business. "Charlie is always there whenever there's a need for a vocal proponent of broadcasters," said Milford K. Smith, vice president of Radio Engineering at group owner Greater Media.

"The contributions that he continues to make are incredibly valuable — probably more so ... in these days of budget cutbacks," commented Smith, who has known Morgan for about 20 years. Smith pointed to Morgan's involvement with DAB and the NRSC.

David Layer, senior engineer with the NAB, works with Morgan on the NRSC and added that Morgan "is the most interested in the future of broadcasting and (is) committed to shaping that future. He understands that the future of broadcasting is digital and he's not just letting someone else worry about it. He's worrying about it. He's been very active in all aspects of digital audio broadcast development from the NRSC standpoint. I always look forward to working with Charlie."

While Morgan is admittedly at an age where he's "considering retirement at some point," he isn't ready to hang up his soldering gun yet. Even when that time comes, though, he won't leave the business entirely. "I will still be involved with the radio industry," he concluded. "It's the only thing I know."

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Congress Adds to Radio Coffers

by S. D. Yana Davis

WASHINGTON Just as it appeared that federal funding for public radio was going to be all but eliminated, a late summer vote by Congress brought renewed hopes.

What a difference a month can make. Before adjourning for the traditional August congressional break, committees in both the House and Senate recommended increases for both the Corporation for Public Broadcasting and Public Telecommunications Facilities Program, and essentially level funding for the National Endowment for the Arts.

Suddenly, for public radio, the summer sun had come from behind the dark clouds that hung over Capitol Hill all spring.

Officials at National Public Radio, who wished to

remain anonymous, credited Senate Appropriations Committee Chairman Ted Stevens, R-Alaska, with leading the effort to recommend that CPB be given a

Public broadcasting just wouldn't be able to sustain itself without federal money.

— Jon Schwartz, GM
Wyoming Public Radio

\$25-million-dollar increase, to \$300 million, for FY2000. This squares with a House committee vote in late July for CPB funding at the same level.



Sen. Ted Stevens, R-Alaska

The full Senate committee also recommended a dramatic increase for PTFP to \$25 million for FY98.

Joining Stevens' efforts to increase funding for CPB and PTFP in the Senate. NPR officials said, were Labor/HHS Subcommittee Chairman Arlen Specter, R-Pa., and committee member Harry Reid, D-Nev., as well as Senators Bennett, R-Utah, Cochran, R-Miss., Domenici, R-N.M., Harkin, D-Iowa, Hollins, D-S.C. and Inouye, D-Hawaii.

Meanwhile, the House Appropriations Committee also voted to increase PTFP funding, but only by \$1.5 million, to \$16.75 million for the coming fiscal year. NPR cited Rep. Tom Latham, R-Iowa, and Commerce, State and Justice Subcommittee Chairman Hal Rogers, R-Ky., for leading the pro-funding efforts in the House.

The discrepancy in House and Senate recommendations for PTFP means that a joint conference committee will likely work out a compromise between the two figures, the standard procedure when there is a difference in House and Senate budget recommendations.

NEA funding, less critical for public radio, is now likely to remain level. Early in August, the Senate Appropriations Committee recommended \$100 million for the next year, a slight increase over the \$99.5 million given the NEA for the current year.

NEA Communications Director Cherie Simon said the \$100 million recommended by the Senate Appropriations Committee will go to the floor of the full Senate in September, and that further amendments may affect how much funding public radio

programs receive from NEA.

Certain stipulations on what kind of grants NEA can make may be added to the legislation, according to Simon. "There is a move to place heavy emphasis on arts education, and attach that as an amendment to the legislation." She said that it was entirely possible the final legislation might have certain legal mandates which could obviate continued NEA funding for public radio program production.

Nick o' time

"But," Simon concluded, "at this time I just cannot speculate how this would affect NEA grants (for public radio programs.) We won't know for sure until after final legislation is passed and signed by the president, and probably not until a long time after that."

As recently as early July, prospects for federal funding looked dim. At best, industry insiders were expecting level funding at the current \$250 million annually for CPB. Its direct support of stations, in the form of community service grants (CSGs), represents about 15 percent of the total revenue raised nationally by nonprofit public stations.

The 15-percent figure is somewhat deceiving, however, as many smaller licensees depend on CPB grants for as much as one-third of their budgets.

The outlook for PTFP, administered through the U.S. Department of Commerce, was darker still: the Clinton administration had recommended eliminating the program, which makes grants to buy transmitters and other equipment. PTFP was funded for FY97, which ends Sept. 30, at \$15.25 million.

Also apparently on the chopping block was NEA. Congressional conservatives, angry at NEA's support of certain artists and live performances, had vowed to carry through with their threat to do away with the agency. One proposal called for a "wind-down" appropriation of \$10 million for the coming fiscal year.

Although NEA grants directly supporting public radio program production totaled only \$200,000 in FY97 (down from \$235,000 the previous year), the bottom line was loss of a significant pool of money for producers of major nationally syndicated programs, including "Marian McPartland's Piano Jazz," "Baltimore Symphony Casual Concerts," "New American Radio," "Jazz Set with Brandon Marsalis" and "Echoes."

Grassroots support

Although final votes on the floors of both houses will be necessary to make the appropriations part of the federal budget, managers throughout the public radio system believe the corner has been turned, for the present, at least, on the federal funding issue.

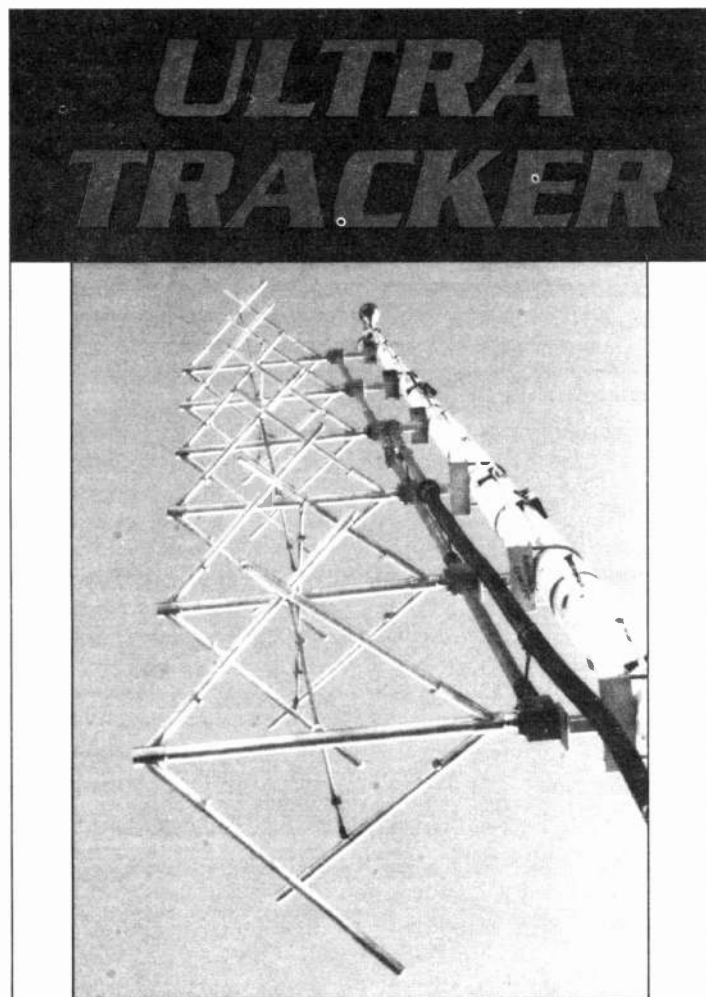
"I'd be delighted if we can see a return to a \$300 million level for CPB," said Roger Chesser, general manager at WUKY(FM), Lexington, Ky. "(Federal grants) for WUKY have been steadily dropping over the last few years. Part of that is because of the increasing number of stations qualified for grants, and also the reductions in CPB funding. I'm happy. I hope this (the proposed increase) goes through."

Chesser said that WUKY received about \$111,000 in CPB money during FY97, down from \$129,000 the previous year and from \$133,000 in FY95.

While cautioning that the "push to reduce federal funding is not over," Chesser attributed the turnaround in Congress, which just two years ago was seriously considering complete elimination of CPB funding for stations, to listeners who wrote, called and e-mailed House and Senate committee members during important votes on federal funding regularly from 1995 to the present.

West Virginia Public Radio General Manager Frank Hoffman was also "very encouraged" by the Senate vote on CPB funding. "We've lost \$25,000 in grants because of past cuts," he explained. He said his statewide network, which operates 8 stations, "basically endorses our CPB check and sends it back out to pay for NPR and PRI (Public Radio International) programs." He added that any further cuts would jeopardize WVPR's ability to purchase expensive network shows such as "Morning Edition," "All Things Considered" and "A Prairie

See BUDGET, page 21 ▶



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► BUDGET, continued from page 20 Home Companion."

"Public broadcasting just wouldn't be able to sustain itself without federal money," according to Jon Schwartz, general manager of Wyoming Public Radio, a network with 20 stations in one of the country's least populated states. "While I don't think the proposed 20-percent increase for CPB overall will necessarily translate into a 20-percent increase in our grants, it will certainly help take the sting out of the losses (of federal funds) over the last few years," Schwartz said.

Like Chesser, Schwartz credited the public radio audience with actively influencing recent congressional votes. "The people in Congress learned that public radio remains very highly valued by their constituents."

Schwartz said a recent Roper poll had ranked public radio "either third or fourth" among public institutions in popular approval. "That got translated into political action by grassroots efforts," Schwartz said. "For us, the political reality is that public broadcasting is a good use of taxpayer's dollars. And, at this juncture in our development, some form of public financing remains necessary."

For some stations, PTFP funds, used to place translators and transmitters in areas still out of signal reach, as well as purchase studio and transmission equipment, are a lifeline they could ill afford to do without.

People in many parts of Alaska would not be getting any radio at all if it were not for PFTP funds that have allowed us to put transmitters in very remote areas.

— Barnaby Dow, CEO/GM KCAW(FM)

Barnaby Dow, CEO and general manager of KCAW(FM), Sitka, Alaska, said that "in highly remote areas such as ours, PTFP is absolutely essential to us in being able to reach unserved areas. People in many parts of Alaska wouldn't be getting any radio at all if it were not for PFTP funds that have allowed us to put transmitters in very remote areas."

"People rely on us not only for the usual news and entertainment here in Alaska, but also as a community lifeline," Dow continued. "We provide emergency services, such as tsunami (tidal wave) warnings, the only way communities we serve like Pelican and Elvin Cove — small fishing towns — have to get this kind of emergency information."

Over the last five years, Dow said, KCAW has received PTFP grants of about \$150,000, which were used to upgrade old equipment and place seven translators along a 250-mile stretch

of Alaska Panhandle coastline.

"Our stations are not in big urban areas," Dow said, adding that Sitka itself has only about 12,000 inhabitants. "There are about 25 CPB-funded public radio stations in Alaska," Dow explained, "and, given the small individual and business donor base, PTFP grants have been critical in expanding service for all of us here."

"The transmitter we have on the air now was paid for with a PTFP grant," Chesser said. Of the \$150,000 total cost, PTFP provided half.

But, Chesser also foresaw a continuing — and perhaps more critical — need for PTFP grants as radio moves into a new age in coming years.

"There's a great deal of debate about digital radio: will local radio go away if digital audio gets put on satel-

lite and you have 30 channels available to anyone on the continent with a digital receiver?" he asked. "What would happen to public radio if we can't get on the air with a digital signal? And, where will the money come from to make the conversion?"

Chesser said that "listeners have shown a clear preference for quality" and that, to stay competitive, public stations will probably have to obtain PTFP grants to convert to DAB.

Hoffman cited PTFP grants his state network has received for helping purchase satellite dishes. PTFP came through with \$180,000 for the project, which the state legislature matched with an equal amount in FY94.

Now, Hoffman said, WVPR is able to relay its signal to its entire local network through daily satellite "feeds,"

which are not only less expensive than maintaining an old microwave system that had been in use, but which provide much clearer signals than the old system. "It's not easy to hop over all the mountains with microwave — they're not all the same height," Hoffman laughed. "Now, we just bounce the signal directly down from the satellite to all our stations."

Whatever the final form of the PTFP, CPB and NEA appropriations, the outlook, in the short term at least, looks brighter for continued, and possibly increased, federal funding for public radio stations.



S. D. Yana Davis is a freelance writer and public radio fundraising consultant in Knoxville, Tenn. E-mail him at yanajune@usit.net

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World Radio History



New Orleans Convention Center, Sept. 17-20, 1997

NAB RADIO SHOW

Three for Broadcast Engineers

Alan R. Peterson

Amidst the gee-whiz of Internet broadcasting and the flash and dazzle of the newest digital equipment, a chief engineer could feel lost in the convention shuffle. Where are the RF workshops once so common at these shows?

The NAB has heard you and booked three important Technical Certification workshops. Each will send you home with the technical knowledge to keep your station legal and highly competitive.

Keeping AMs up to spec

One workshop revived with impeccable timing is the all-day "AM Directional Antenna Workshop," on Wednesday, Sept. 17



RF chains will be part of the NAB workshops.

from 8 a.m. to 5 p.m.

Consolidation is causing new owners to re-evaluate their purchases and unravel some of the damage and neglect done to DAs.

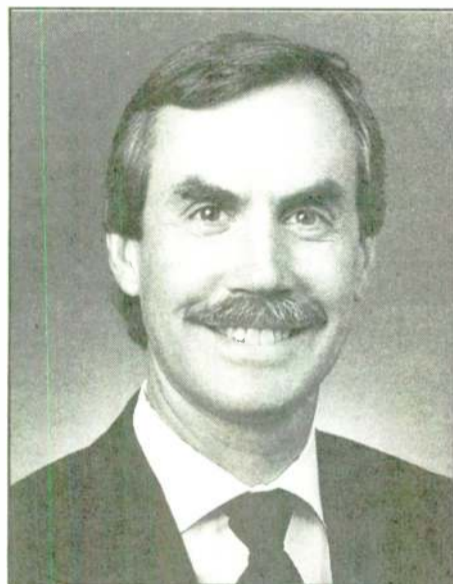
Ronald Rackley of du Treil, Lundin and Rackley, Consulting Engineers, will co-chair the session
See WORKSHOPS, page 34 ▶

Radio Writes a 'New Book'

Matt Spangler

The 1997 National Association of Broadcasters Radio Show comes at a time that American Radio Systems co-CEO John Gehron proclaimed as "the new Golden Age of radio." The World Media Expo dissolved last year in the midst of a tremendous period of deregulation and consolidation for the industry, which has seen over 3,500 stations trade hands, for \$25.3 billion worth of deals, since the passage of the Telecommunications Act of 1996.

"(T)hose of us in the business today are writing the new book and the new history," said Gehron, who chairs the Steering Committee for the show. He and his three fellow subcommittee chairs have brought together many of the financial and regulatory leaders



John Gehron

and personalities that shape the industry, and have organized a variety of sessions to bring attendees up to speed on the latest developments in management, marketing, sales, promotion and engineering.

Bull market

What do Gehron and the show's steering committee chairs have to say about the current state of the industry?

"I would say everyone's very bullish on the sales end of things," said Weezie Kramer, vice president and general manager of WMAQ(AM), Chicago, and chair of the Sales and Marketing Subcommittee.

She emphasized that sales and marketing staffs must make the most of station aggregation. She referred to a concept in her market called "cooperation," a synthesis of

cooperation and competition.

"It's learning how to harness the incredible market reach that you now have and maximize the opportunities within the market through effective communication in the group," she said. "People that you never really talked to, except socially, you're working side-by-side with."



Rick Cummings, executive vice president, programming, Emmis Broadcasting, and the Programming Subcommittee chair, said that his group had not reached the point in which consolidation meant one program director would program multiple stations. "It has provided," he said, "more responsibility for some of our program directors, who may be overseeing any number of stations in a given market, and I think that's exciting for them because it gives them a little bit more of a global view."

The jury is still out on whether or not consolidation will bring format control in markets. "We look at a given market and say, 'Wouldn't it be great if we could control the country spectrum or rock spectrum?'," Cummings said. "Yet, in almost any market, regardless of who's there, there are going to be some radio stations that are marginal performers." A company with a lot of resources, like a Jacor or a Chancellor, can turn around those struggling stations with a slight format alteration.

Development tools

The upshot of all this consolidation, according to Cummings, is when the big groups feel that they are secure within a given market, they begin experimenting within formats within that market. "They may go and say, 'Let's try a completely new format, or a hybrid of a format that's not been tried before.'"

Depending on who you talk to, the

new digital technologies — DAB (digital audio broadcasting), DARS (digital audio radio service) — coming down the pike are perceived as friends or foes. The Radio Show chairs emphasized the ways in which technology can enhance the medium.

"(Digital technology is) allowing on our on-air and production people to be far more creative, instead of the disk jockeys doing physical labor in pulling carts and things like that," said Gehron.

Kramer pointed out that radio would always be bolstered by its localism. "Radio is a local medium," she said, "and that is tied to the heart of the marketplace that you're in, and something that I don't think satellite is ever gonna be able to compete with."

The chairs all felt that technology

See SHOW, page 29 ▶

Karmazin Honored At Luncheon

And the winner is ... CBS Radio Chairman and CEO Mel Karmazin. The man the radio industry goodheartedly calls "Mr. Acquisition" picks up this year's NAB National Radio Award Sept. 19 during the Radio Luncheon of the NAB Radio Show.



Mel Karmazin

Karmazin joined CBS last December, when Infinity and Westinghouse merged. CBS has more than 75 major-market radio stations, and annual revenue exceeding \$1 billion. Karmazin also is president and CEO of Westwood One.

Before joining CBS, Karmazin was president of Infinity Broadcasting for more than 15 years.

Also at the luncheon, sponsored by Westwood One, outgoing FCC Commissioner Rachele Chong will discuss FCC activism on media content issues and the need to preserve First Amendment rights.



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Whether your station is an AM or FM let Harris show you the way to radio's digital future. Call us to find out how you can get the upper hand on your competition. The best sounding stations are built with the best digital equipment and Harris has what you need. Find out more about our digital products at our Virtual Store website, www.harris.broadcast.com.



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World Radio History

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Group Heads Huddle for Power Session

One advantage of high-profile conventions is that they attract high-profile people. At the radio show, the NAB again will bring together a half-dozen of the indus-

dent of Granum Communications Corp., offers six powerful radio managers who will discuss the challenges and opportunities of an environment



Norm Feuer



Jeff Smulyan



Scott Ginsburg



Randy Michaels



Bob Neil



Steve Hicks

gurus take a look back at the dramatic changes in radio over the past 20 months, since passage of the Telecommunications Act of 1996, and offer their thoughts on what's next.

Taking part in the discussion are Norm Feuer, president and CEO of Triathlon Broadcasting Co.; Scott Ginsburg, chairman and CEO of Evergreen Media Corp.; Steve Hicks, president of Capstar Broadcasting

Partners Inc.; Randy Michaels, CEO of Jacor Communications; Bob Neil, president and CEO of Cox Radio Inc. and Jeff Smulyan, CEO of Emmis Broadcasting Corp.

The panelists will take questions from attendees, said John Earnhardt of NAB, who promised an

"extremely interesting and informative session."

— Susan Gary

try's biggest.

The session "Group Heads: Succeeding in a New Era," moderated by Herb McCord, presi-

where groups can own hundreds of broadcast outlets.

This year's campfire in particular promises to be interesting, as the radio

The Big Five-O

You can't tell the owners without a scorecard these days. So here's a scorecard. These are the top 50 radio owners, ranked by revenue, as of Aug. 4. BIA's Master Access Radio Analyzer is the source. Where does your company fit in?

BIA Rank	Parent Owner	No. of Stations	Est. Parent Revenues (in 000's)
1	CBS	76	1,010,250
2	Chancellor Media	98	790,900
3	Jacor Communications Inc	154	439,600
4	Clear Channel Communications	165	403,250
5	American Radio Systems	97	383,850
6	ABC Radio Inc	26	306,250
7	Capstar Broadcasting Partners	243	293,250
8	SFX Broadcasting Inc	72	280,050
9	Cox Radio Inc	49	216,025
10	Emmis Broadcasting Corp	14	140,250
11	Heftel Broadcasting Corp	37	137,650
12	Sinclair Communications Inc	59	130,050
13	Susquehanna Radio Corp	21	126,700
14	Bonneville International Corp	14	120,950
15	Entercom	28	109,700
16	Citadel Communications Corp	91	109,400
17	Greater Media	14	102,000
18	Nationwide Communications Inc	17	99,450
19	Jefferson-Pilot Communications	17	89,550
20	Spanish Broadcasting System	10	71,100
21	Beasley Broadcast Group	27	67,700
22	Saga Communications LP	37	61,450
23	Tribune Broadcasting Company	4	50,050
24	Radio One Inc	9	42,650
25	Dick Broadcasting Company Inc	16	41,100
26	Sandusky Radio	10	35,400
27	Journal Broadcast Group Inc	11	34,600
28	Buckley Broadcasting Corporation	16	31,150
29	Connoisseur Communications	30	31,000
30	Barnstable Broadcasting Inc	16	28,625
31	Triathlon Broadcasting	23	27,950
32	Fisher Broadcasting	23	27,700
33	Inner City Broadcasting	5	26,350
34	Hearst Broadcasting Group	2	24,800
35	Lotus Communications Corp	19	23,500
36	Bloomington Broadcasting	17	23,350
37	Buck Owens Production Co Inc	7	23,250
38	EXCL Communications Inc	16	22,750
39	Salem Communications Corp	43	22,000
40	Great Empire Broadcasting	13	20,600
41	Dame Media Inc	22	20,575
42	Renda Broadcasting Corp	12	20,050
43	Cumulus Media LLC	24	19,650
44	M.L. Media LP	7	18,500
45	Fairbanks Communications Inc	10	18,350
46	New Century Media	3	18,300
47	Sinclair Telecable	10	17,950
48	Hall Communications	18	17,750
49	Mid-West Family Broadcast Group	24	17,500
50	Simmons Family Inc.	15	17,225

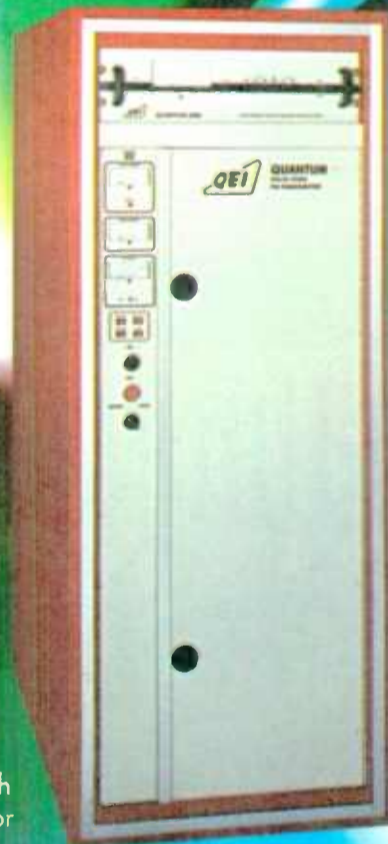
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machine, which means fully digital on-air delivery without all that staff training time. Sound Slate goes even further, putting a complete range of sound effects and audio at your talent's fingertips.

For commercial scheduling, AirTime's touch screens and easy schedule builder lets you create a commercial once, then access and reschedule it from one powerful database. The same huge, flexible database lets a program director store, organize, and play on-air resources at will.



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World Radio History

'Net Is More Important Than Ever

S. D. Yana Davis

The NAB Fall Radio Show promises to have some exceptionally entertaining and informative sessions. But none may be more important to long-term profitability of radio stations than sessions scheduled dealing with the Internet.

"Our number one goal is to provide a lot of really creative ideas and really integrate the website into the station," said Howard Freedman.

He will lead "How to Make Your Website Pay for Itself," Thursday, September 18, 3:30 p.m. to 4:45 p.m. in Room 92 of the New Orleans Convention Center, site of the NAB Radio Show.

Freedman is the San Diego-based editor of iRadio: Interactive Radio, a monthly newsletter for radio managers and owners about the Internet.

"Maybe 25 percent of U.S. stations have websites, and of those, only about 10 percent really use their websites to make money. Stations have been successful using websites for marketing and promoting the stations themselves," he said. Even so, less than half of those

with sites are set up to broadcast Internet audio.

Speaking of Internet broadcasting, a session focusing on that topic happens Saturday, Sept. 20, 10:30 a.m. to noon in Room 100 at New Orleans Convention Center.

If you decide to get serious about websites, and your group owns 200 stations, you can have an immediate major impact.

— Howard Freedman

"Broadcasting on the 'Net: Is Radio Ready?" will be moderated by Lisa Osborn of Brittany Communications of Tustin, Calif.

"The Internet presents a number of

opportunities for broadcasters," Osborn said. "Included in that is interacting directly with listeners, developing a stronger bond with listeners."

Joining Osborn as presenters will be Ted Kelly of CBS Radio, New York; attorney Neal Friedman; Peggy Miles of Intervox Communications; and representatives of Microsoft and Progressive Networks. The latter makes "RealAudio" software.

"We'll provide an overview of what radio can do to integrate the Internet into their promotion and marketing, as well as covering technical issues," Osborn said. "The Internet is happening right now, and now is the time for radio broadcasters to take a serious look at it."

Freedman echoed Osborn's sentiments and focused on the bottom line dear to all station managers.

"Stations will be at a serious disadvantage without the Internet soon," Freedman said. "More and more, they're realizing that they can't just depend on spot (advertising) sales alone. And advertisers expect 'value-added' solutions beyond just spots. Using a website for additional exposure for a client adds the 'print dimension' to radio."

Freedman added, "Many stations have simply traded for a website with an access provider and then forgot about it. They've put no time or effort into their websites. The key is to put resources into it, to make it a success, like vendor co-op (advertising) was back in the '80s."

Osborn commented, "Advertisers have already started requesting website space as part of their buys. Last year, for instance, Canon announced it would do business only with stations who have websites."

The recent wave of consolidation of station ownership should make Internet effectiveness easier for stations, Freedman said. "If you decide to get serious about websites, and your group owns 200 stations, you can have an immediate major impact."

Taking a serious look at the Internet might mean adding other important technical positions at many stations, according to Jim Smith, vice president at Clear Channel Communications.

Smith said computers and the Internet have become important enough that "too many engineers are spending too much time working on computers, and not enough on transmitter and equipment maintenance. There is definitely a case from both sides — engineering and the importance of computers and the Internet — for stations to hire dedicated computer specialists."

Looking ahead, Freedman thinks radio broadcasting will become more multimedia in nature, with traditional broadcasting reinforced and extended by websites supported by advertisers, offering audio, video and even shopping-by-net services.

"Hanging your hat on spot sales won't cut it anymore," Freedman said.

A full schedule of events and registration information is on the web at <http://www.nab.com/conventions>

S. D. Yana Davis is a freelance writer and public radio fundraising consultant in Knoxville, TN. E-mail can be sent to yanajune@usit.net

The Radio Show: Many Flavors in 19 Years

Lynn Meadows

Through good times and bad, from the 80-90 docket and AM Stereo to duopolies, triopolies and the Department of Justice, the Radio Show has weathered the storm.

It actually started as a programming conference. First held in Chicago in August of 1978, it was attended by around 300 radio operatives. Hot sessions included "Now Hear This: AM Stereo" and "Care and Feeding of DJs." The big ticket was to a dinner concert performed by Barry Manilow.

For six years, the show was billed as the Radio Programming Conference. John David, senior vice president of radio for the NAB, attended his first show in 1979 at the Stouffer's Riverfront Towers in St. Louis. At that time, he was the owner and operator of stations in Joplin, Mo. It took him about 10 minutes to walk through the exhibits that year.

In 1984, the top radio brains decided to combine the NAB Radio Programming Conference with the annual convention of the National Radio Broadcasters Association. The joint effort lasted until 1986 when the NRBA merged with the NAB.

Eight years later, planners thought the synergies of the Radio Show would work well combined with other shows like those of the RTNDA (Radio-Television News Directors Association), SBE (Society of Broadcast Engineers) and SMPTE (Society of Motion Picture & Television Engineers).

For three years, the Radio Show fell under the umbrella of "World Media Expo." This year, it returns to

its stand-alone status.

Over the years, many clever ideas have come from the show's steering committee, whose members rotate every year. In 1989, for instance, a steering committee suggestion led to the introduction of the Marconi Awards which add a touch of glamour to the final night of the show.

"This show has made the radio business more high profile," said David. He noted that in the past, most of the speakers were in radio. Now, speakers include people — like Robert Pittman — who have a background in radio but are currently in another field.

David cited one moment last year that illustrated for him how much the industry has changed in the last 19 years. It was just after the group heads session.

"More people were there to see them (the group heads) than to greet Dolly Parton after her luncheon," said David. "And Dolly Parton had a lot of people ... It's a dynamic that I hadn't thought about."

Though the size of the exhibit hall and the number of sessions have increased tremendously, David said he does not think people's expectations have varied much. Attendees depend on the NAB to "have the best Radio Show possible," he said.

"Our goal is to make broadcasters feel that they've learned something, that they've had a worthwhile experience and a chance to network with broadcasters all over the world ... that they've made or saved money with something they've learned... and that they feel good about being in radio," said David.

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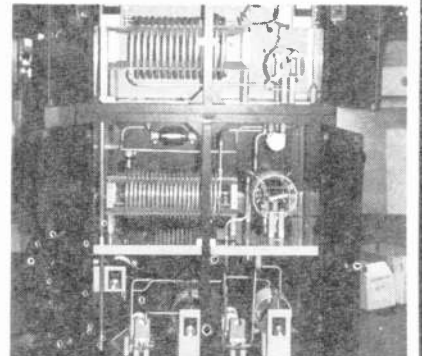
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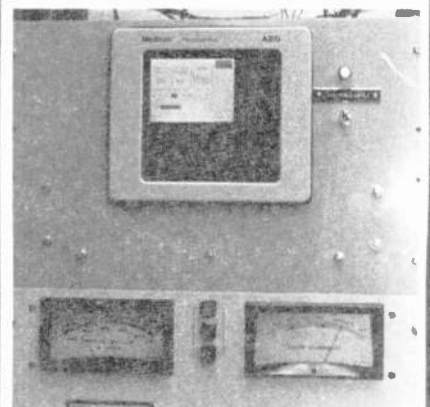
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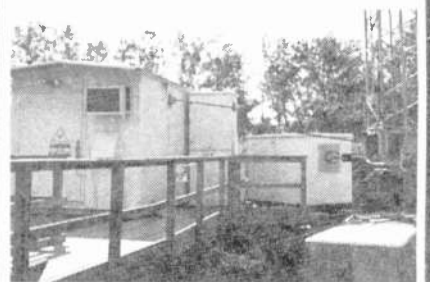
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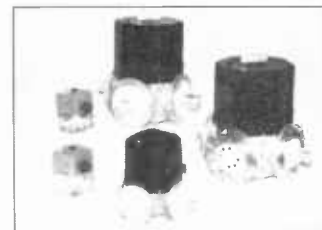
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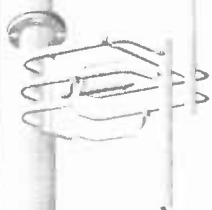
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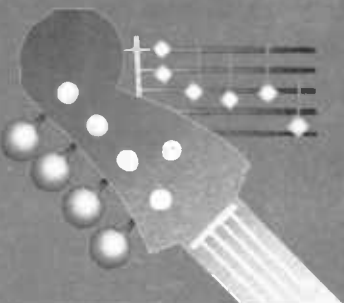
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TARPAC Targets Climate on Hill

Steve Wagner

The world of radio and TV broadcasting can easily give the appearance that the operation is greater than the operator, that the world of professional licensed communication is a giant that can gobble up everything in sight and spit it out.

Often this "T-Rex" analogy is how things work in Washington, making the broadcast owner/operator, especially the small market broadcaster or general manager, feel as though he or she has little or no control of trends within the industry. On any given day, one can feel out of the loop, that he or she lacks political clout when it comes to influencing the direction Congress would like to chart regarding broadcasting's greater good.

Whether the issue facing the House or Senate revolves around campaign finance reform, spectrum auctions or station acquisition PAC-MANism, the average broadcaster would like to enjoy at least the illusion of Congressional influence. And that's where TARPAC comes in.

It's probably easier to describe what TARPAC is not.

"It is not a lobby," said Jim May, executive vice president of the National Association of Broadcasters. "It does not make its views known. The NAB lobbies and makes its views known. TARPAC is an arm of the NAB, if you will. It's a federally chartered political action committee that is run by the NAB."

Its full title is Television and Radio Political Action Committee, and its sole mission is to create and maintain a favorable climate for broadcasters in Congress.

"Very deliberately," said May, "we do not connect issues to political giving. We distinguish those two." And it does not deal in illusions. The contributions of individual broadcasters fund TARPAC, which, in turn, targets the money to U.S. House and Senate campaigns.

"TARPAC," noted William McElveen,

general manager of Radio South Carolina, "is an organization that even the smallest market can contribute to — even if it's \$25, \$50 or \$100 — and have a voice in the political process that affects our industry."



Rep. George Gekas

"We have some very large individual contributors. The maximum anyone can give is \$5,000 a year. Of course, it's all personal money. None of it can be reimbursed by the company. They're personal funds."

"Where you may be able to give \$25," said May, "and somebody else can afford to give \$200, and somebody else \$2,500 ... all of that would go into a central pool. The management of TARPAC, then, makes decisions as to which political candidate they will support with that money."

But federal law allows an exception to this otherwise ironclad rule. You are permitted to earmark your contributions.

"Let's say you were going to give us \$200," said May. "You could do a couple of things. You could give it to us 'unrestricted.' Or you could give it to us and say that a portion of that money is unrestricted, and that you would like a portion to go to 'Candidate X.' Or ... in hundred-dollar increments ... you could say, 'I

want it to go to 'Candidate X' and 'Candidate Y.'"

"Then we at TARPAC are required to forward that money to the candidate within three working days of receipt of it from the broadcaster. It becomes a check from TARPAC for administrative purposes, but we forward it with a cover letter that says that 'Broadcaster John Doe has made a \$200 contribution to your campaign through TARPAC.'"

Federal offices

TARPAC also divorces itself from presidential campaigns. Otherwise, anyone campaigning for federal office is eligible for those monies. However, as cut-and-dried as the campaign donation process is, there are standard ifs, ands and buts. Central Pennsylvania Rep. George Gekas, R-Pa., described himself as low man on the totem pole when it comes to receiving PAC monies.

TARPAC is an organization that even the smallest market can contribute to ... and have a voice.

— William McElveen

"I have no aversion at all to the concept of a broadcasting industry contribution made to a political campaign," Gekas said. "The caveat to that is, of course, that it be so open that the voting public would be able to judge how a member of Congress is affected by this type of contribution. If the campaigner is an incumbent, that individual should not be swayed by any kind of political contribution."

Another consideration, he said, centers around the member of Congress who sits on this corporate board or that. Should one of those companies happen to be a broadcast entity, that's yet another factor to be weighed in PAC contribution ethics.

"The demands on TARPAC and on any other political action committees in Washington are just incredible," McElveen noted. "As time goes on, they seem to be becoming much more difficult to satisfy all the financial needs of the various candidates. It's certainly the NAB's responsibility to identify those members of Congress who are friendly and tend to favor broadcast issues, and they do a very good job of it."

No 'Amateur Night' At NAB Show

While broadcasters will have their plates full during the NAB Radio Show, amateur radio operators will find both their plates and their filaments turned down.

The Amateur Radio Operators' Reception, scheduled for Thursday, has been called off. The reason: Lack of support from manufacturers.

The official gathering of hams always is a popular event during the annual NAB show in the spring. "Around 800 or 900 people always turn out for that," said the NAB's John Marino. But when the NAB asked several manufacturers for ham-related door prize donations, the answer was no. The session was then canceled.

This will not stop dedicated amateurs from getting together informally to talk a little shop between sessions, however.

"We might try a survey. Let's see how many hams might be out there who might want to try for it next fall," said Marino.

— Alan R. Peterson

New-Look Radio Returns to New Orleans

► SHOW, continued from page 23

was certainly enabling the streamlining and improvement of daily station functions. "It's made all our billing areas easier," Gehron continued. "It's just made our business more fail-safe."

"A lot of radio stations are developing their websites and exploring opportunities as a way to add that to their arsenal of sales and marketing opportunities or ways to expand their brand of their particular product," said Kramer.

"Our company has had an intranet for years," said Cummings. "We are redoing it, so that this time it won't be just e-mail and audio that can be exchanged in the company, but we'll get to the point where, you name it, a document, a spreadsheet, a piece of audio, even video, can go from any point in this company to another one."

One potentially ominous effect of

consolidation may be the reduction of live, on-the-air talent in favor of so-called "virtual programming."

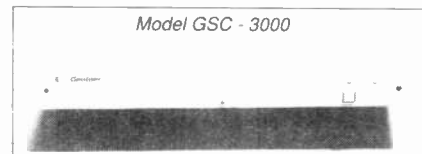
"Who knows what that's going to mean?" said Cummings. "I think ... in smaller markets, you can literally program an entire radio station with two or three great air talents who can work in something other than real-time ... I think it's possible that some formats or some kinds of markets will see some radio stations that literally don't have any live talent, and yet they have a fairly live presentation."

Whatever happens, the chairs believe the industry will survive. "I think the people in this business have always been very resilient and flexible, have always been very much guerrilla marketers," said Kramer. "Technology and enhancements are always gonna be there, and you just gotta make sure you're right up front with them."



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1997 NAB Marconi Awards Finalists

THE NAB RADIO SHOW

More than 100 radio stations and personalities are competing for the coveted 1997 NAB Marconi Radio Awards. The winners will be announced Saturday evening Sept. 20 during a star-studded gala from 5 to 9 p.m. in the La Nouvelle Orleans Ballroom at the New Orleans Convention Center.

The black-tie event also features food and top-notch entertainment. A reception begins at 5 p.m., followed by the awards presentation at 6 p.m. Organizers are starting the event an hour earlier this year to give attendees a chance to experience the New Orleans night life.

Ron Chapman of KVIL-FM in Dallas is this year's host. A previous Marconi winner, Chapman said he will do his best to keep things moving.

NAB Senior Vice President/Radio John David called Chapman "an institution" and said he is thrilled to have him as part of the show.

Marconi nominee Art Bell's "Coast to Coast AM" talk show is heard on more than 350 stations. Calling the nomination a great honor, Bell said, "As soon as I could crawl, I started taking (equipment apart). From a kid who revered Marconi and all he did to begin what we're doing now, I'm pretty excited."

Bell is up for an award as network/syndicated personality of the year.

Tickets for the dinner and show are sold separately from convention registration, for \$50.

The Marconi Awards are named for inventor and Nobel Prize winner Guglielmo Marconi. They were first handed out in 1989.

LEGENDARY STATION OF THE YEAR

KABC(AM), Los Angeles
KVIL-FM, Dallas
WDIA(AM), Memphis, Tenn.
WINS(AM), New York
WOR(AM), New York

PERSONALITIES OF THE YEAR

Network/Syndicated Personality of the Year:

Art Bell, "Coast to Coast with Art Bell," WTVN(AM), Columbus, Ohio
The Fabulous Sports Babe, "The Fabulous Sports Babe," ABC Radio Networks, New York
Tom Joyner, "Tom Joyner Morning Show," ABC Radio Networks, Dallas
Dr. Laura Schlessinger, "The Dr. Laura Show," Radio Today, New York
Howard Stern, "The Howard Stern Show," WXRK(FM), New York

Major Market Personality of the Year:

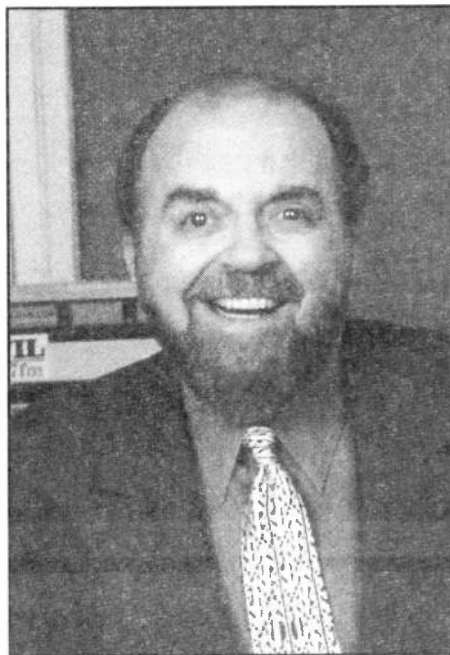
David Brudnoy, WBZ(AM), Boston
Don Imus, WFAN(AM), New York
Kevin and Bean, KROQ-FM, Los Angeles
Robert W. Morgan, KRTH(FM), Los Angeles
Scott Paulsen & Jim Krenn, WDVE(FM), Pittsburgh

Large Market Personality of the Year:

Buzz Adams, KLAQ(FM), El Paso, Texas
Gerry House, WSIX-FM, Nashville, Tenn.
Bob Kevoian & Tom Griswold, WFBQ(FM), Indianapolis
Bob Lacey & Sheri Lynch, WLNK-FM, Charlotte, N.C.
Steve Rouse, WQSR(FM), Baltimore

Medium Market Personality of the Year:

Al Caldwell, KVLI(AM), Beaumont, Texas
Joe Condon, WROW(AM), WJYB-AM-FM, Albany, N.Y.
Tom Kinard, WJMX(AM), Florence, S.C.
Bob Robbins, KSSN(FM), Little Rock, Ark.
Van & Bonnie, WHO(AM), Des Moines, Iowa



Ron Chapman of KVIL-FM will host the awards.

Small Market Personality of the Year:

Jeremy Borash, KUEL(FM), Ft. Dodge, Iowa
Dave Daniels & Darrin Cantrell, KJUG-FM, Tulare, Calif.
Griz England, WYDS(FM), Decatur, Ill.
Bill O'Brien, KRKT-FM, Albany, Ore.
Athniel "Addie" C. Ottley, WSTA(AM), St. Thomas, V.I.

STATIONS OF THE YEAR BY MARKET SIZE

Major Market:

KLVE(FM), Los Angeles
WCBS-FM, New York
WGMS-FM, Washington

WJLB(FM), Detroit
WSB(AM), Atlanta

Large Market:

KFRG(FM), San Bernardino, Calif.
WBEE-FM, Rochester, N.Y.
WFBQ(FM), Indianapolis
WHRK(FM), Memphis, Tenn.
WIBC(AM), Indianapolis

Medium Market:

KKOB(AM), Albuquerque, N.M.
KTTS-FM, Springfield, Mo.
WHBC(AM), Canton, Ohio
WHO(AM), Des Moines, Iowa
WUSY(FM), Chattanooga, Tenn.

Small Market:

KFGO(AM), Fargo, N.D.
KRKT-FM, Albany, Ore.
WBLX-FM, Mobile, Ala.
WGIR-FM, Manchester, N.H.
WJAG(AM), Norfolk, Va.

STATIONS OF THE YEAR BY FORMAT

AC:

KKCW(FM), Portland, Ore.
KVIL-FM, Dallas
WASH(FM), Washington
WBEB-FM, Philadelphia
WLHT(FM), Grand Rapids, Mich.

Adult Standards:

KOGA(AM), Ogallala, Neb.
KOMC(AM), Branson, Mo.
WAMB(AM), Nashville, Tenn.
WHBC(AM), Canton, Ohio
WMTR(AM), Morristown, N.J.

CHR:

KKRZ(FM), Portland, Ore.
KMGZ(FM), Lawton, Okla.
WJMX-FM, Florence, S.C.
WNNK-FM, Harrisburg, Pa.
WSTW(FM), Wilmington, Del.

Classical:

KING-FM, Seattle
KLEF(FM), Anchorage, Alaska
WCLV(FM), Cleveland
WCRB(FM), Boston
WQXR-FM, New York

Country:

KTTS-FM, Springfield, Mo.
KUZZ-AM-FM, Bakersfield, Calif.
WAXX(FM), Eau Claire, Wis.
WPSK-FM, Pulaski, Va.
WSOC-FM, Charlotte, N.C.

NAC/Jazz:

KSDS(FM), San Diego, Calif.
WBJB-FM, Lincroft, N.J.
WLOQ(FM), Orlando, Fla.
WNWV(FM), Cleveland-Elyria, Ohio
WVAS(FM), Montgomery, Ala.

News/Talk/Sports:

KFGO(AM), Fargo, N.D.



WBBM(AM), Chicago
WBZ(AM), Boston
WSYR(AM), Syracuse, N.Y.
WZON(AM), Bangor, Maine

Oldies:

KRTH(FM), Los Angeles
KXKL-FM, Denver
WODS(FM), Boston
WOMC(FM), Detroit
WWSW-AM-FM, Pittsburgh

Religious/Gospel:

KKLA-AM-FM, Los Angeles
WAVA(FM), Washington
WAWZ(FM), Zarephath, N.J.
WMCA(AM), New York
WMHK(FM), Columbia, S.C.

Rock:

KDGE(FM), Dallas
KQRS-FM, Minneapolis
KROQ-FM, Los Angeles
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WLVQ(FM), Columbus, Ohio
KBNA-AM-FM, El Paso, Texas
KLVE(FM), Los Angeles, Calif.
KNKN(FM), Pueblo, Colo.
KXTN-FM, San Antonio, Texas
WXDJ(FM), Miami, Fla.

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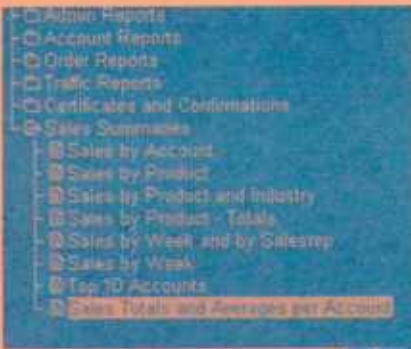
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Three Workshops for Engineers

► WORKSHOPS, continued from page 23 with Benjamin Dawson of Hatfield and Dawson. Topics include an introduction to directional array (DA) systems and patterns, the hardware that is used, troubleshooting and FCC procedures.

"We hope to target engineers who have good electronics backgrounds but did not come along at the time when you had to sit at the tower," Rackley said of the session. Dawson added, "The old sessions were very much along the lines of physics and theory. There is a need for a day-to-day understanding."

When last offered, the session lasted two days and covered lots of theory and math. Rackley and Dawson will tailor the material to newer engineers who become familiar with DAs only when they break down.

The basics will be presented in clear, non-mathematical terms. System building blocks will be used to demonstrate the complexity of directional patterns. An overview of FCC procedures including monitor points, sampling system components and partial proofs will conclude the talk.

RFR news

Besides neglect, the changing landscape around towers can throw off a DA. "Fifteen years ago, your monitor point was in farmland," said Dawson. "Now you'd be in a city."

"Cellular towers also add to the prob-

lem," added Rackley. "Any urbanization would affect the performance of a directional array, which is why for some stations, there is a lot of damage that must be undone."

Do you know what effect your tower is having on the health of the community near the site? How about on engineers working at the site and exposed to radio frequency radiation (RFR)?

John Bisset,
author of
Radio World's
Workbench column,
will moderate a
transmitter workshop.

Thursday, Sept. 18 from 8 a.m. to noon is the "NAB RFR Workshop," with Dr. Robert Cleveland of the FCC, the NAB's Barry Umansky and Milford Smith of Greater Media.

"I'm the radio industry guy, the owner, the guy-in-the-field," Smith told RW of his involvement on the panel. "The guy who is doing the things every station has had to do."

Smith has had first hand experience with RFR hotspots. "We were involved in

Boston," said Smith, "and the owner of the building we were in set some very stringent limits on his roof."

A dense antenna cluster was on the roof of a four-station facility. "The owner had us redesign the antenna and replace the mast. It was about \$2 million to bring the antenna up," Smith said.

The two-part workshop consists of an interactive session on the latest progress towards development of RFR guidelines and standards for broadcasters. After a break, the second part addresses RFR measurements and calculations and includes a special segment on ways to demonstrate compliance. NARDA Microwave will present a display of RF measuring devices and the safe and proper ways to use them.

"The session will be addressing health and safety, rather than interference," said Smith, so do not expect anything on inexpensive telephones picking up radio signals.

"We will go over the standards being established for exposure and potential exposure, based on standards that now exist for other organizations and are being adopted by the FCC," he said.

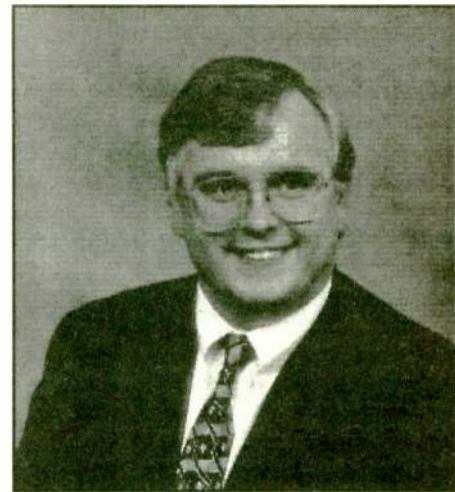
Familiar name

On Friday, Sept. 19, John Bisset moderates the "AM/FM Transmitter Workshop" from 8 a.m. to 3 p.m.

Bisset is a principal with the engineering firm Multiphase Consulting,

Springfield, Va., and is widely-known to RW readers as the author of *Workbench*, the column of indispensable tips and techniques for radio engineers.

Bisset takes you through the timeline of installation and troubleshooting trans-



John Bisset

mitters, through normal operation and right up to the ghastly experience of getting knocked off the air. The session is meant for seasoned engineers who also need a refresher and as an introduction to basic RF for engineers with a computer or studio background.

Besides Bisset, a panel of representatives from major transmitter manufacturers will have handouts and provide data on servicing their specific models. Discussions will also include worst-case off-air experiences and how they are dealt with.

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Rainer Eichhorn - General Manager ON AIR DIGITAL

NAB Establishes Radio Show EAC

Sharon Rae

In an effort to maintain a "cooperative relationship between the NAB Radio Show management and exhibitors," the National Association of Broadcasters created a Radio Show Exhibitor Advisory Committee (EAC).

"The spring show EAC has been a great sounding board for ideas," said Dennis Wharton, NAB vice president of media relations. "We thought it would be a good idea to have a similar body for the radio show."

The EAC consists of representatives from the industry and serves as an interface between exhibitors and the NAB by providing a voice for manufacturers' concerns and suggestions. There is both an EAC for the spring NAB show in Las Vegas, and a separate body for the Radio Show set for New Orleans in September.

"The design is to solicit feedback and get whatever great suggestions (the EAC) can come up with," said Wharton. "Then incorporate those suggestions into next year's show and keep making it better every year for our exhibitors and attendees."

Eddie Fritts or Reed Hundt?

"I think that the NAB sometimes comes off as almost like another FCC," said Dave Newton, vice president of marketing at Broadcast Programming. Newton was elected to represent exhibitors with booth space of 800 square feet or more at the Radio Show. Newton said he is looking for an education and a chance to give the NAB some fresh contacts.

"While there are many wonderful, hard-working people at the NAB ... sometimes policies don't seem to be in touch with the real world as far as the way exhibitors have to conduct themselves."

Michael Rau, CEO of Radio Data Group, and a former vice president of science and engineering at the NAB, is one of two people elected to represent exhibitors with booth space from 80-399 square feet at the Radio Show. He said he is excited to have the opportunity to participate and have input on the EAC.

"The Radio Show needs its own focus, marketing and support structure," he said. "It's difficult to have any direction at the spring show ... the entire enterprise in Las Vegas is so huge that it's hard for any one segment of any one industry to really claim that it's getting the focus ... nor should it ... that is what the NAB spring show is about — a candy store of ideas and support."

Jack Neff, president of Dataworld, is the other representative for companies with booth space in the 80-to-399 square-foot range.

"I've been on the floor since 1959, and think I can contribute something to traffic flow and making a smooth show."

The door is open

In the meantime, spring show EAC members are responding to complaints that radio is not being adequately represented at the spring convention.

The Radio Equipment Manufacturers Association of America, made up of

anonymous disgruntled exhibitors, stated that the NAB has forgotten them in its pursuit of bigger, more profitable conventions. REMAA even threatened to hold its own competing radio show in

manufacturers," she said. "Our Las Vegas EAC meeting was open to exhibitors ... only about three people showed up that weren't committee members. All NAB exhibitors are noti-



French Quarter at Night

Photo by Sydney Byrd NOMCVB

Las Vegas next spring (RW, May 28).

Nancy Klocko, NAB spring show EAC chairperson, said the "sole purpose (of the EAC) is to represent the interests of the exhibiting companies and to give insight and feedback to the NAB."

Klocko said the new configuration of the spring show EAC adequately represents exhibitors and she believes the breakdown is an equitable one.

While there are many wonderful, hard-working people at the NAB ... sometimes policies don't seem to be in touch with the real world.

— Dave Newton

"We have reapportioned to more accurately represent the numbers of exhibitors that are on the floor," said Klocko. "NAB did a study of the types of exhibitors. Then with a math calculation, an actual formula, they came up with a different number of representatives from each category."

"(T)his past spring an EAC subcommittee was formed to review EAC representation and make recommendations, if needed, to more accurately represent the business segments of the show," stated Klocko. "(S)ome of the changes included increasing membership ... eliminating the ... at-large positions and adding telecommunications and international categories."

Other categories within the spring show EAC include multimedia, outdoor, radio/audio and general TV/video/film.

The new EAC is made up of 15 member positions, four more than the previous 1996-97 makeup.

Not so vocal

Klocko was surprised at the REMAA allegations. "I've never received any kind of communication from audio

fied of the meeting. I think the NAB does a good job of listening to what the EAC has to say, and the EAC tries to get feedback from exhibitors. But if we don't hear from them directly, we only have our own experience to call on."

Carolyn Galvin serves as current vice chairwoman of the spring show EAC.

She also said she has never heard from REMAA.

"People shouldn't take so much for granted," said Galvin. "Bring concerns to the EAC."

Galvin sympathized with those questioning the direction of the spring show.

"We're all concerned over where this convention is going," she said. "But how do you shut the door and say one group can't come in and one can because everything is so computerized? It's cutting edge and it's a problem."

Jim Cowan is past chairman of the spring show EAC and currently represents radio/audio. "The NAB has been very open to the EAC's suggestions," he said. "The NAB has tried to include radio and to develop programs to enhance the awareness of audio."

As for charges from REMAA that the EAC gives "nothing more than good lip service" to radio companies (RW, June 10), Newton had this to say: "I for one do not intend to put in extra time or travel to my schedule to be a rubber stamp or a face-saving device for the NAB ... (N)obody has told me what I can or can't bring to the table. I'm here to bring the message to the NAB of what's on the minds of the exhibitors that I represent, so I'm going to do that job — but I'm not going to waste my time."

The next meeting of the Radio Show EAC is set for Sept. 19, from 8:30 to 10:00 a.m. in room 63 of the New Orleans Convention Center.

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BEA Will Publish Radio Journal

Susan Gary

The Broadcast Education Association (BEA) is sprucing up "The Journal of Radio Studies," as its new publisher. The new look debuts February 1998.

The journal is dedicated to scholarly research into radio covering topics such as localism, ownership, duopoly, management trends, history, networks and syndication and the future of radio.

Dr. Frank Chorba first published the Journal in 1992 to get research papers by his colleagues and himself into print for the American Culture Popular Culture Association.

Last year, Chorba, professor of mass media at Washburn University in Topeka, Kan., and creator/editor of the Journal, approached the BEA about adopting the publication as a benefit for members.

The journal was formatted after the BEA publication "The Journal of Broadcasting & Electronic Media." Several editorial members of the BEA were invited to be part of the review board. Chorba said the journal editors had hoped the BEA would accept the radio focus.

Judy Hawkins, marketing manager for the BEA, agreed. "Frank Chorba was looking to expand circulation and we were looking for another benefit in the form of a publication for our members. It was a marriage of the two."

"We wanted to offer ... a journal specific to the needs of our many members," said

Louisa Nielsen, executive director of the BEA. She added the BEA chose "this journal (because it) was doing such a good job of finding research and encouraging academics to write."

The adoption announcement will be formally made at the NAB Radio Show.

In the pages

The journal offers sections on Contemporary Radio Studies, History, International Radio and symposiums asking questions pertinent to today's radio industry.

"The Journal for Radio Studies is the only journal in the world about research in radio," said Hawkins. "It lists statistics and presents industry research that would be interesting to all of the industry people that will be at the NAB show."

The BEA also acknowledged the role of Westwood One's Norman Pattiz in bringing "The Journal of Radio Studies" under its wing.

Pattiz is immediate past president of BEA. While president, Pattiz wanted to bring corporation involvement into the BEA and use part of the money raised for an academic journal devoted to radio. Hawkins recognized the hard work of Pattiz to get corporations involved.

Pattiz said colleges that are training future broadcasters could benefit from a closer relationship with corporations. Offering such a publication would be a

step forward in bridging the gap between academia and industry.

Chorba will continue for three years as editor, while the BEA will introduce a new section edited by Michael Keith, professor at Boston College and author of several books on radio. Titled *JRS Forum*, the section will feature industry leaders discussing the future of radio.

"We hope to come up with academic questions particularly pertinent to industry heads and get their take on them," said Keith. "Then, I will respond to them as an academic. It will be a dialogue between profession and academy."

The BEA also sees the Journal as a

teaching resource. By expanding circulation from Chorba's list of 250 to 1,500 BEA members and increasing the frequency to twice a year, the BEA hopes to provide better information, wider availability and more recognition for contributors.

Chorba's current subscription list will automatically become BEA members and continue to receive the journal. "Anyone can qualify for membership in the BEA," said Hawkins.

According to Hawkins, the greatest growth in membership occurred in the category of students. "They use the BEA convention as both educational resource and as an opportunity to network."

■ ■ ■

For information on the BEA and The Journal of Radio Studies, contact Francis Weaver at (202) 429-5354. Visit the website at www.usu.edu/~bea



BEA also co-sponsors NAB career fairs.

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Follow the Rules or Pay the Piper

Session at Radio Show Will Help Attendees Assess the Risk of Bad Behavior

Lynn Meadows

Regardless of the changes in the radio industry, one perennial issue remains: "Avoiding FCC Fines and Lawsuits."

The NAB Law and Regulation department will once again try to keep you operating legally with this popular session.

The recent release of the "Fines and Forfeiture Guidelines" by the Federal Communications Commission makes the session even more timely.

president, Regulatory Affairs for the NAB, said the FCC has been asking whether there are some papers that no longer need to be included in the public file. Because the panel will include four lawyers and an FCC official as well as Fullum, she suggested people "bring suggestions as to what changes they think should be made" to the public file requirements.

The panelists for this session are Chuck Kelley, chief of the Enforcement Division of the Mass

Media Bureau, and attorneys Ashton Hardy of Hardy and Carey; Dennis Corbett of Leventhal, Senter and Lerman; George Borsari of Borsari and Paxson and Gregg Skall of Pepper and Corazzini. Hardy practices in Metairie, La. The others are based in Washington.

Encouraged to speak

Fullum said she sees the panel as a forum where the audience should participate as much as possible. If and when the questions dry up, however, she will select issues that she thinks people need to know.

In addition to public file require-

ments, for instance, the FCC has begun to study whether or not the main studio rules should be changed. The agency had also been considering whether to release guidelines on what would be considered indecent material and Fullum expects to find out what is happening with that project.

As the session title indicates, the closure of many field offices and downsizing of FCC staff do not mean the agency is no longer punishing rule violators with fines and lawsuits. Anyone interested in avoiding both will benefit from this panel discussion.

■■■

Lynn Meadows is a freelance writer based in Virginia. She recently wrote in RW about the pending sale of WDCU(FM) in Washington.

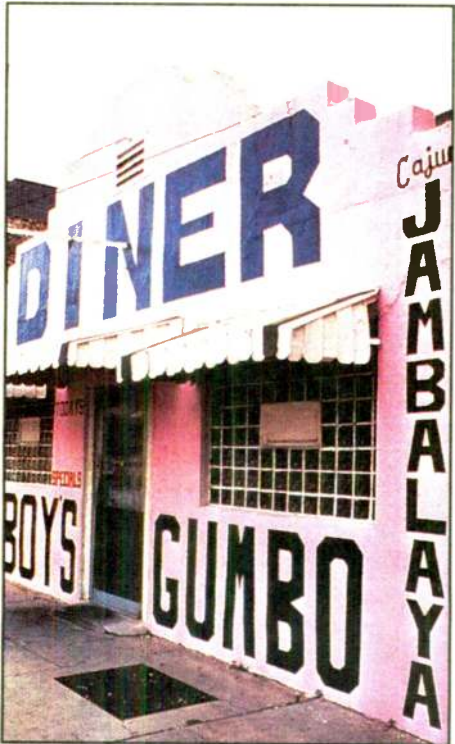


Photo by Michael Terranova NOMCVB

New Orleans Diner

This marks the second time the FCC released the guidelines. The first time it did so without accepting public comments.

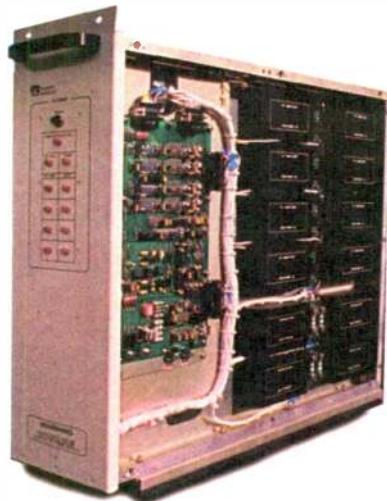
When the NAB and others objected, the court said the FCC must go through a rulemaking proceeding. That process took two years and the results are a guaranteed topic of discussion.

The panel includes the chief of the enforcement division and several experienced attorneys.

The fines read like a menu. Failure to provide Station ID — \$1000. Transmission of Indecent Materials — \$7,000. You may gain insight at the session as to when, if ever, the FCC is apt to take a "no harm, no foul" approach to violations and when the agency will show no mercy.

The FCC did reserve the right to raise or lower the charge depending on the circumstances. How egregious the violation, a missing tower light vs. a missing public file document, and how many times it has occurred may determine how heavy a fine is levied.

Moderator Karen Fullum, vice



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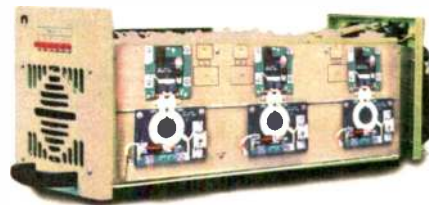
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Lawmakers Will Gather at Show

Matt Spangler

The nation's most influential lawmakers are set to discuss some of the issues that impact broadcasting in a panel session at the NAB Radio Show to be held here Sept. 17-20.

Appearing at the session will be W.J. "Billy" Tauzin, R-La., chairman of the Telecommunications Subcommittee of the House Commerce Committee, Harold Rogers, R-Ky., chairman of the Commerce, State and Judiciary Subcommittee of the House Appropriations Committee and Albert Wynn, D-Md., a member of the House Telecommunications Subcommittee.

"This session is unique in that it is the first time ever that, certainly for the Radio Show, the respective chairs of the two most critical (House) subcommittees have appeared together on a subject like the FCC and what is going on at Congress relative to the FCC," said NAB Executive Vice President of Government Relations Jim May.

"You've got Hal Rogers ... who controls the purse strings, and Billy Tauzin ... and together they probably have more to say about the future of the commission than any two other individuals in Congress."

As a result of its review of radio station transactions and mergers, some members

of Congress have questioned the need for continued funding of the FCC.

A lot hangs in the balance now, as FCC Chairman Reed E. Hundt and Commissioners James H. Quello and Rachele Chong are on the way out; by year's end Commissioner Susan Ness may be joined by four new faces. May said that if the "new" commission continues to hold up its approval of station transactions pending DOJ analyses — like the "old" commission — then NAB will seek congressional intervention.

"There are very some current examples where, very unfairly, stations are being held up," May said.

Even though the commission voted

against an inquiry into liquor advertising in its July agenda meeting, May said he expects this to be an issue at the session. Despite requests from President Clinton and numerous special-interest groups, including Mothers Against Drunk Driving, a number of lawmakers, including Burns and Rep. John D. Dingell, D-Mich., have written Hundt to express their concerns over FCC jurisdiction in this area. Tauzin was planning on introducing a bill that would require broadcasters and the combined beer, wine and spirits industries to devise their own mutual code for alcohol advertising — a measure the Distilled Spirits Council of the United States has been pushing for months.

Others on the Hill would like to give the FCC more jurisdiction in this area. In April, Rep. Joe Kennedy, D-Mass., introduced legislation that would give the commission license to come up with a liquor advertising code if broadcasters could not do it within a year.

Time and money

Another issue on tap for this session is spectrum auctions. As part of the "Omnibus Budget Reconciliation Act of 1997," Congress passed measures that would provide for the auctioning of new broadcast licenses, which would replace the comparative proceedings process. The bill called for \$26.3 billion to be collected from all spectrum auctions by 2002. Some initial proposals had Congress levying "spectrum lease fees" on broadcasters if this sum wasn't raised. "I think we've put that to rest for now, but believe me, this budget deal is not going to solve anything," said May.

Also unpopular with broadcasters are the numerous bills facing Congress now that call for giving free or reduced airtime to politicians during election cycles as a measure of campaign finance reform. In late July Sen. John McCain, R-Ariz., brought his campaign finance reform legislation, co-sponsored with Sen. Russ Feingold, D-Wis., to the Senate floor for a colloquy. He said that if the Senate did not address the issue in September, after the August recess, then he would try to attach the bill to another one as a rider.

The House has taken up the issue, as well, with bills that affect primarily television, but that could be applied to radio, introduced last summer by Rep. Louise Slaughter, D-N.Y., and Rep. John Tierney, D-Mass.

Free airtime could also become a part of the public interest obligations of broadcasters in the digital era. Vice President Gore recently appointed Norman Ornstein, an outspoken free airtime proponent, to co-chair a committee that will recommend public interest requirements for digital television broadcasters.

"I think a lot of what the Gore commission is going to focus on is radio as well as television," said May, "and I know that Reed Hundt continues to push, and I suspect there will be other members of the commission that continue to push, for a review by the commission itself on the whole issue of a public interest obligation." This committee is required to report to the president by June 1, 1998.

In a speech before the California Broadcasters Association in July, NAB President Edward O. Fritts criticized the Gore committee. "Congress has been charged with setting the parameters for public interest requirements," he said. "That is not the job of a commission of private, non-elected citizens."

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NAB Will Keep You Moving

Alan R. Peterson

When your plane lands in New Orleans, don't dive into that tall, wet Hurricane just yet. The NAB Radio Show rolls out the welcome mat the moment you hit town.

You should have just enough time to change shirts and pin on your ID badge to make it to the Opening Reception, Wednesday, Sept. 17 at 5 p.m. Because it is being held right on the exhibit floor, you'll find plenty of room to eat, drink and look around.

The Keynote Address is Thursday morning, Sept. 18, at 10:30. NAB president Eddie Fritts introduces keynote speaker Robert Pittman, a former radio programmer and now president and CEO of AOL Networks.

Back in the Exhibit Hall, a "Mardi Gras" lunch is rolled out at 12 noon while you browse the latest in audio and radio technology. Right about the point where

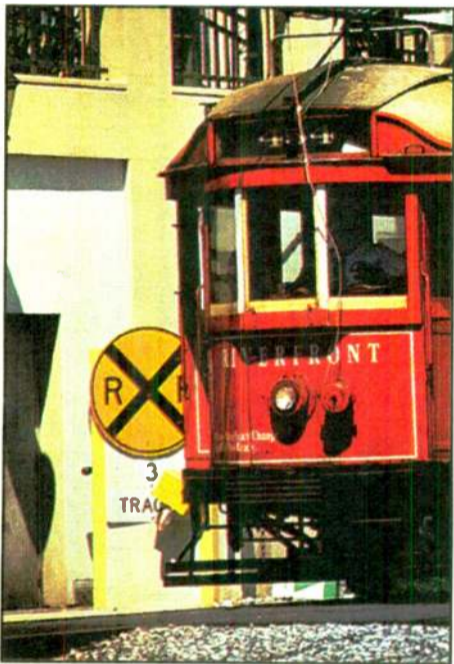


Photo by Michael Terranova, NAB/CVB

Riverfront Streetcar

your feet get tired, it is time to attend the International Reception at 5:30 p.m. Here you can share ideas with your international peers on issues affecting broadcasters around the globe.

Now that you have been properly welcomed to New Orleans, it is time to really get busy.

Format power

Programmers looking for the edge that will set their stations apart from the pack have their picks of format workshops at the NAB Radio Show. Wednesday alone features sessions on oldies, classic rock, adult standards, modern/hot AC and urban. Thursday's sessions include Hispanic, news/talk/sports, alternative and new age contemporary. Friday brings sessions on active rock, CHR, AC and country radio.

Good programming has to be backed up by a crack sales team. Sessions that will give your staff the advantage include "Do You Have a Strategic Plan? Your Future Depends On It," and "Should We Take Pricing Out of the GSM's Hands?", both on Wednesday.

For Thursday, the sales-intensive sessions continue with "The State of Radio Sales," hosted by Gary Fries of the Radio Advertising Bureau, and "The Computerized Salesperson," with a look at broadcast-specific sales software.

Bridging the fine line between sales and programming is the production department, turning ideas into money.

The Good Ol' Boys' Club goes co-ed with 'Five Great PDs ... Who Happen to be Women.'

Among the specialty workshops in this area, "Production: Imaging is Everything" with John Frost of Paxson Communications, Thursday morning at 9.

At the top

Station management who need to understand how to talk with their engineers should attend "Engineering for Non-engineers," also Thursday at 9 a.m. Here, Jim Smith of Clear Channel Communications explains the art of communicating with engineers.

Similarly, one workshop asks: "Are Managers Ready For the New Information-Based Technologies?" and gives the answers Friday at 9 a.m. Alan

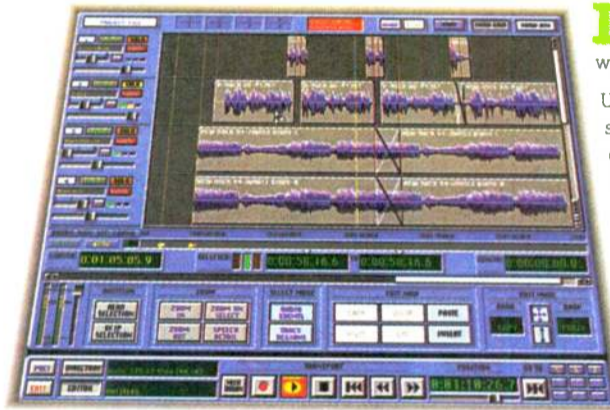
Box of American Radio Systems notes the importance of information systems managers in the real world of the computerized radio station.

If you are looking for eye-openers, the Radio Show has them. The newest technology and products for radio are highlighted in "Hot Off the NAB Radio Show Floor," Wednesday at 3:30 p.m. RW Editor-in-Chief Lucia Cobo is among the notable panelists.

The Good Ol' Boys' Club goes co-ed on Friday at 10:30 a.m. when the NAB presents "Five Great PDs ... Who Happen to Be Women." Top female program directors offer their secrets to programming success.

The exhibit floor is closed on Saturday, so plan to spend time there Friday afternoon. A three-hour wrap-up commences at 3 p.m. with the Exhibit Hall Grand Finale.

No manual required but we'll send you one anyway



If traditional audio production is analogous to walking, a digital audio workstation is the equivalent to flying.

Unfortunately, a lot of audio production software can seem like the equivalent of 747 cockpit controls: serious technoid overkill when you're just trying to get from point A to point B.

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Not that we cut out any feature you might need; we just took out all the stuff you hate about digital workstation software. Like nested menus, tricky hardware set-up, and way too many screens piled up on top of each other.

But Express isn't just some kind of "dumbed down" product. Lurking underneath this deceptively simple interface lies a tremendous amount of power and capability that allows you to accomplish even the most difficult editing tasks. Powerful tools like time compression/expansion, normalization and one-touch submix.

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Dave Green
Director of Production Services
Paxson Communications, Orlando



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Is the Group PD Role Doomed?

John Montone

Is the position of group program director headed for extinction?

It may be. Rick Cummings, executive vice-president of programming for Emmis Broadcasting, is well-acquainted with the role of programming guru for a number of stations. Emmis has radio outlets in several major cities, including New York, Los Angeles and Chicago. The formats range from hip-hop to news-talk, smooth jazz to classic and alternative rock.

Cummings, who speaks with pride and enthusiasm of his days in the radio "trenches," will address the future of

group program directors at a session at the NAB Radio Show. At the least, he said, the role of the group PD has changed during this era of consolidation.

He said the session will examine how "group PDs function now in markets where they have a cluster of stations and whether the role is as valid as it used to be."

"A lot of companies don't have group PDs anymore," he said.

Cummings has seen his own position evolve. "A lot of the things I used to sweat 10 years ago, we now count on our program directors understanding." For instance, "The positioning of the

radio station, understanding they need to play hit music and understanding their morning shows have to be topical."

Cummings said, "I tell our PDs all the time, it's a given you're going to do those things right and that we shouldn't have to spend time on them. We don't do music calls."

This new emerging philosophy gives the local station program director much more autonomy. Cummings believes there is good reason for this.

"Part of it is because the formats are different, but even in formats that are similar the playlists are different because the tastes are so different in their respective markets."

One notable example, he said, is hip hop, which has East Coast and West Coast sounds. "You won't hear Snoop Doggy Dog on the station in New York, and yet he's very dominant in Los Angeles."

Cummings demands his local program directors understand these differences. "They know how to play hits, they know how to research their audiences and they know how to get that stuff right," he said.

How does the group PD spend his or her time these days?

"On strategic issues," said Cummings, "on how to grow the company. So the new group program director may get involved in looking at a market study, measuring the group ownership of certain kinds of musical images, your entertainment value, those kinds of things. So we spend a lot of time talking about how we're going to raise the bar and perform better in

terms of perceptual issues."

A task that occupies Cummings' time and will be up for discussion during the session is how the group program director "pushes the local PDs on the creative front."

For example, Cummings said, he has been talking to Bob Davis, his program director at the group's new station in St. Louis.

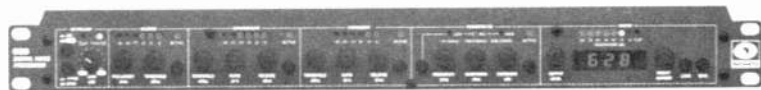
"We spend a lot of our time talking about what he's doing with the radio station between records to make it entertaining, to make it more than a one-dimensional music machine. What are we doing between the records promotionally and image-wise that really captivates people? So when I call Bob, I say, 'What have you done for me today?'"

A member of Cummings' panel is Bob Case, a former competitor from Cummings' radio "trench" days in Seattle, now the general manager of New Century Arizona. He paid his old rival a compliment: "Bob is what a group PD should be today. He certainly has a broader, more global view of radio product than local PDs; on the other hand, he is not far removed from the day-to-day wars."

■ ■ ■

John Montone is a reporter for 1010 WINS in New York and a regular contributor to RW.

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Show Sessions Target Small Radio Markets

Now as never before, stations in small markets face special challenges. The NAB targets the concerns of small-market radio stations in a series of sessions in New Orleans. Topics cover management, sales, marketing and programming issues.

On Wednesday, look for the session "60 Management Techniques in 60 Minutes" at 1 p.m. Learn to localize your satellite programming with "Flying the Bird: Better Sounding Satellite Programming," moderated by Charlie Cook of Westwood One Radio Networks, starting at 2:15 p.m. At 3:30 p.m. discover how to get "Effective Research on a Tight Budget."

Thursday, financial experts share the secrets to "Small Market Station Financing" at 9 a.m. in a session moderated by William Fleming of William Fleming & Associates. Do you have a talent that you want to keep, but he or she is looking toward larger markets? Learn "How To Keep Your Talent Down on the Farm" at 3:30 p.m., moderated by Steve

Goldstein of Saga Communications.

Friday sessions promise to sparkle with a "Small Market Conversation with Roy Stewart" from 9 a.m. to 10:15 a.m. The chief of the commission's Mass Media Bureau addresses issues of interest to small and medium markets from the standpoint of the FCC. At 10:30 a.m. listen to money-makers "Swap \$hop Success Stories" and hear some new promotion techniques that may work for your station. At 1:45 p.m. learn some new tricks in the session, "Small Market Management Magic."

The popular "Small Market Managers Roundtable" returns Saturday. Anything that applies to small-market radio is fair game in this brainstorming and idea exchange session. It's Saturday morning from 9 a.m. to noon. Listen to your peers, watch new techniques being born and contribute your own thoughts or successes.

— Susan Gary

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EXHIBITOR DIRECTORY

NAB RADIO SHOW

Sept. 17-20, 1997



The NAB Radio Show exhibit hall provides a showcase for the newest radio products and technologies. But note, the exhibit hall is not open on Saturday.

Exhibit Hall hours are as follows:

- Wednesday 5 to 8 p.m.
- Thursday 10 a.m. to 6 p.m.
- Friday 10 a.m. to 6 p.m.

NAB also offers exclusive exhibit hours — periods of time without conflicting sessions:

- Wednesday 5 to 8 p.m.
- Thursday 11:45 a.m. to 2 p.m. and 4:45 to 6 p.m.
- Friday 3 to 6 p.m.

Special events in the hall include the opening reception on Wednesday from 5 to 7 p.m.; the "Mardi Gras Walk-Around Lunch" on Thursday, from noon to 1:30 p.m.; and the

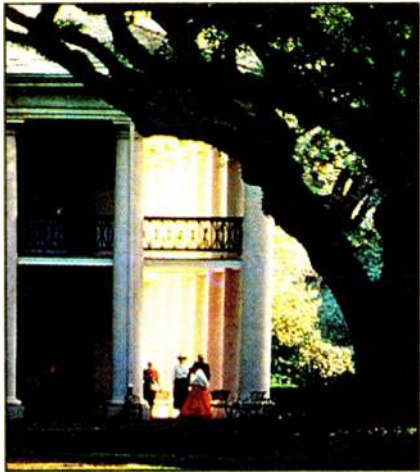


Photo by Michael Terranova/NOMCVB

Picturesque New Orleans

"Exhibit Hall Extravaganza" on Friday from 3 to 6 p.m.

360 Systems 337

Intro: DigiCart/II Plus, digital audio recorder using low-cost ZIP disks, plus up to 50 hours of storage on internal hard disks. Includes editing, playlisting, and serial control; Instant Replay/Linear, a major upgrade of the original Instant Replay, provides a choice of 16-bit linear or Dolby AC-2 recording formats; DigiCart II/Plus, uses low-cost ZIP disks, stores up to 50 hours on hard disk, lower cost, can perform linear recording.

Also: DigiCart/II; Shortcut Editor; Instant Replay; AM-16 Audio Routing Switcher.

\$2.95 Guys 400



ABC Radio International 257

Acoustic Systems 264

Aircraft Production Music Libraries, The 1034

Airdate/Phoenix Media Communications Grp. 1137

Antenna Concepts Inc. 159

APT (Audio Pro Technologies) 1153

Arbitron Company, The 519

Arrakis Systems 531

Intro: DigiLink 4 cart machine replacement. No PC computer to learn, easy control panels. Use standalone or link up to 96 plays and 32 records to a common audio library; music on hard drive option for DL2/DL3.

Also: DigiLink 3, radio's #1 selling satellite, live, CD and music in hard drive solution; 1,200/12,000/22,000 consoles; TrakStar 3 new and improved digital multi-track editor with on-air backup built in; Radius/DeskStar/Modulux modular and custom studio furniture.

Associated Press Broadcast Services 449

Intro: Newswatch On Air, award-winning Sunday magazine show. Syndicated for Sunday mornings, program runs 55 minutes with six minutes of network spots and six minutes of local availabilities. Distributed on SatcomC5 and Spacenet II.

Also: Programming to fit any format. Come see how AP's quality programming can bring your station profitability. "AP's All News Radio," where stations can air the news live, 24 hours a day; "AP Network News," flexible programming to enhance your bottom line. Also demonstrating news wires, newsroom management software and new 24 hour multimedia Internet offering, "The Wire."

ASI Industries, LLC 1054

Intro: Emergency Alert Sentinel, Emergency Alert System receiver for home and office use, indicates reception of weekly/monthly test, activated from a silent state upon reception of an EAS alert message, AC power, battery backup, station logo/graphics for front of radio provided at no charge.

Also: Emergency Alert Sentinel
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2028C West Main Street Road
Marshalltown, IA 50158
(515) 753-3540

ATI Audio Technologies Inc. 600

Intro: Nanoamp Series MXS 100 Stereo Field Mixer is a studio or field, three channel, switchable mic/line mixer with low-noise balanced inputs, phantom power, pan pots, switched low-cut filters, slate microphone, and a test tone oscillator driving stereo, metered, low-distortion servo balanced line outputs with switchable peak limiting; MX200 Stereo Studio Mixer; Nanoamp Series XPS100, XPS200 Stereo Mic/Line Expanders, expand the MXS100 or MX200 mixer with an XPS100 for four additional microphone inputs with pan pots or combine with the XPS200 to add two stereo line level inputs, use multiple input expanders to precisely meet your requirements. Expanders include all audio and DC interconnects.

Also: Microamp, Encore and Nanoamp Series of modular and self-contained microphone, line-buffer and distribution amplifiers, small power amplifiers, headphone drivers, audio processors and studio metering systems; Matchmaker, Disc-Patcher and Nanoamp IHF balancing boxes; Nanoamp Series small mixers and expanders for fixed and portable use; Vanguard Series On-air studio consoles.

AudioNet 101

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spent listening" by capturing the local market and in-office radio listenership. Extend your reach and penetration. Increase your ad revenue. How? Join the wave of radio stations reaching listeners on the Web through AudioNet, the largest radio affiliate network on the Internet. Visit us at booth #101 and hear our live radio station broadcasts. Become a member of AudioNet.

Audio Precision, Inc. 437

Audio Pro Technologies 1153

Intro: DigiCenter Version 2.1, upgraded to a Pentium processor, upgraded to Ethernet.

Also: DigiCenter, digital audio management system; the "ITC Switcher," audio switching system.

Auditronics 429

Intro: TouchStar, touchscreen PC-based control system for the NuStar digital audio signal processor, programmable alternative to physical user interfaces, high-speed serial communications protocol, "surface-wave" technology, several screen sizes.

Also: NuStar 3000 Series Digital Audio Console; 801 Series Console; 2500 Series Console

Robert Greenwald, Sales Mgr.

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Autogram Corp. 944

Intro: Solution-20, card frame holds up to combinations of 10 cards; RC-1 Relay Card; DA-3 Distribution Amplifier Card; SMA-10, 10 W stereo power amplifier; MPC-1 Mic Processor Card, self-contained power supply.

Also: Pacemaker 1032, 10 pot, 32 input audio console with mix minus selectable on front panel.

A-Ware Software Inc. 233

Intro: Music Master, music scheduling software with History-Linking, Quick-Recall Song Lists, Precision History Storage and improved Hour Rotation Tests.

Balloon on Wheels 959

Belar Electronics Lab, Inc. 102

On Display: Monitoring equipment for AM, FM and TV. The Wizard precision digital modulation analyzer for AM and FM with remote operation, logging and graphing.

Best Inc. 104

Intro: XT 20/XT30, frequency agile 20 and 30 W exciters, includes low pass/harmonic filter, optional built-in stereo generator available; XT 100/XT 150, front panel programmable 100 and 150 W exciters/transmitters with low pass/harmonic filters, optional stereo generator available; XT 300, 300 W frequency agile exciter with low pass/harmonic filter, options include a built-in stereo generator and processor.

Also: HPT Series Translators/Exciters 20/40/60W; LC STL Series Studio Transmitter links 1.5, 6, 15 W; LEX 25 Exciter 25W; SF Series MOSFET Amplifiers (150/250/300/400/500 & 1,000 W); PT Series Amplifiers 300/500W.

EXHIBITORS continue, page 43 ▶

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Circle (186) On Reader Service Card



Bradley Broadcast and Pro Audio 1145
Intro: Sound Forge 4.0, digital editing software, PC based.

British Information Services 553
On Display: Radio Newlines, sound bites from high-level British government reaction to breaking international news stories, live audio news feeds from press conferences or pool interviews; Radio Newsbreaks, every day radio stations around the country can telephone a toll-free number connecting directly to international news stories filed from London by digital circuit; Radio Newsbreaks in Spanish, Hispanic stations can receive the same access to a package of news stories presented in Latin American Spanish with the news actuality over-dubbed in Spanish; Radio Newsbreaks on the Internet, Internet users can download the Radio Newsbreak service "live" on <http://britain.nyc.ny.us>.

Broadcast Electronics Inc. 119
Intro: AM10A, 10kW AM transmitter offering updated RF amps and power supplies and a compact cabinet; AM6A, 6kW version of the new line of PowerMizer transmitters; The Predator, new digital FM transmitter/exciter boasts modular construction and multiple power levels; T-Series high power FM transmitters offer updated circuitry with MOSFET drivers; The Lynx digital stereo generator; Solid-state FM transmitters; Audio consoles.

Digital Studio Systems: Audio Vault applications, with a visual cut & paste editor, a voice tracking tool, and AirBoss studio information manager, designed to create paperless studios and integrate various information sources used for show prep.
MARTI division: Smarti allows remote transmissions from wherever the situation dictates; the Smarti telephone remote pickup delivers true broadcast quality audio over standard analog telephone lines; SRPT family of frequency-agile RPU transmitters returns in conjunction with the SR-10, MARTI's frequency-agile RPU receiver; The SRPT-40 is offered for 450MHz frequencies with export versions in various frequency ranges available; MARTI offers a complete line of studio to transmitter links and remote pickup units; The STL-15C/R-15C composite transmitter/receiver combination, and the full line of one and two frequency RPU's.

Broadcast Interview Source 1123
EXHIBITORS continue, page 45 ▶

▶ EXHIBITORS, continued from page 42
BIA Companies 543
On Display: Investing in Radio Publication Series, market report, ownership file, radio yearbook and state of the radio industry (also available for TV); Masteraccess Database Software, radio analyzer, radio contacts, "investing in" on

CD-ROM and coverage maps. Strategic and financial consulting services. Investment banking services.
Bloomberg 227
On Display: Bloomberg L.P. is a global, multimedia-based distributor of information, combining news, data and analysis for financial markets and businesses. Real-time

pricing, indicative data, analytics and electronic communications 24 hours a day through more than 71,000 terminals used by more than 250,000 financial professionals in 80 countries. Products include Bloomberg Television, Bloomberg Radio and "Bloomberg Personal" magazine.
Bob & Tom Show, The 1056

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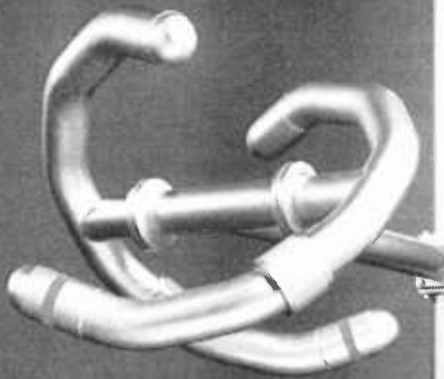
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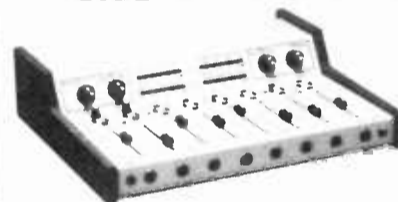
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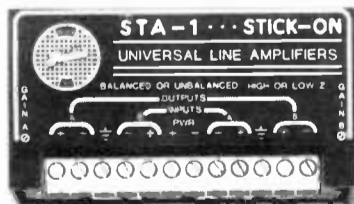
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NAB RADIO SHOW

► EXHIBITORS, continued from page 43

Broadcast Products, Inc. 263
Also: Thunder Truck; CrowdCruiser; Country Cafe; Super Roving Radio; Remote Booth; ProSet; QuickStand.

Broadcast Programming 119
Intro: Delilah, AC's 7 p.m. to midnight solution live via satellite, personality show, more than 50 stations in six months and top ratings.

Broadcast Team, The 952

Broadcasters General Store 650

BSW-Broadcast Supply Worldwide 109

Burk Technology 106
On Display: Arc-16 transmitter remote control system; LX-1 6-input stereo selector; EAS encoder/decoder; RX-4 EAS monitor receiver system; LX-4 EAS program interrupt.

CartWorks/dbm Systems Inc. 128
Intro: CartWorks MHD, added capability of Music-On-Hard-Drive; CartWorks Digital Audio Systems, digital audio cartridge replacement and automation systems for on-air and production use.

CBSI/Custom Business Systems Inc. 73
Intro: Graphical Schedule Planner, combines the use of a spreadsheet with a calendar-style visual interface, allows viewing of up to 16 months of dayparting and schedule information, on a week by week basis, can select whether to display all accounts, or to filter accounts by daypart, competitive separation and contract day ranges; Windows NT support, on the workstation, as the network or both; Enhanced Sales Analyzer, offers an information resource and improved productivity for sales managers, including unlimited user-defined reports and grouping of reports into sequences for printing; ODBC (Open Database Connectivity), permits easy export of CBSI data to many popular spreadsheet, database and other software programs.

CCA Electronics, Inc. 727

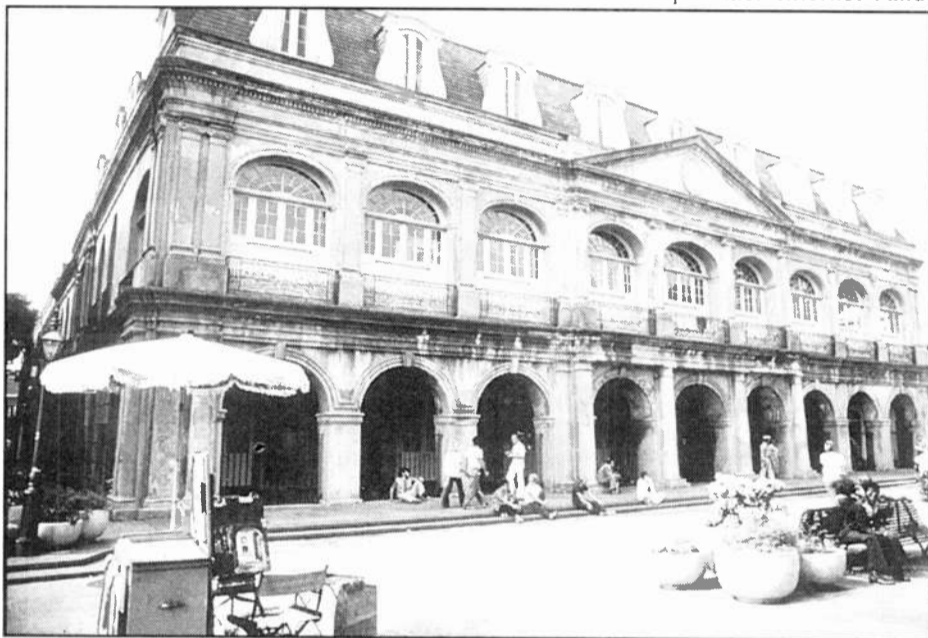
Cedar Bay Productions 1059
Intro: GolfRadio, weekly one-hour program about golfers, PGA professionals, Emmy-award winning talent and producers bring regular golf features, instruction, news and new product news to the fastest growing sport in the country.
Michael Schaffbuch, Pres.
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 Seattle, WA 98115
 (206) 525-8755



West End Shrimp Boats

Central Tower 964
On Display: Guyed and self-supporting towers; Structural analysis, Turnkey projects.

Circuit Research Labs Inc. 140
Intro: DP-100 FM Digital Processor/Stereo Generator System, recently upgraded with version 1.20 software, includes "power users menu" which allows complete control of processing parameters not found on other processors, has easy-to-use GUI touch screen interface.
Also: Line of audio processing for AM, FM, and SW; FM stereo and SCA generators; DAA-50 AES/EBU audio analyzer decoder.
William Ammons, Nat'l Sales Mgr.
 2522 W. Geneva Dr.
 Tempe, AZ 85282
 (800) 535-7648



The Cabildo

Columbine JDS Systems, Inc. 419

Communication Graphics, Inc. 607

Computer Concepts Corp. 209
Intro: VT (Visual Traffic), 32-bit Windows NT traffic system with SQL database and flexible management reporting capable of handling up to 128 stations; Cut Master, 4-24 track stereo editor with 4- or 8-band parametric equalizer, time compression, expansion, pitch control, full non-destructive editing, CD writing, networkable; Maestro, a Windows NT-based digital audio hard disk storage system with capability of multiple record/play channels with full integration of all digital audio operations.
Also: Newsroom; DCS; Voicetracker; Music Pro (music scheduling).

ComQuest 1053

Comrex Corp. 837
Intro: Mix-Minus Bridge creates up to 5 separate mix minus feeds.
Also: HotLine POTS Codec, delivers up to 10 kHz two-way audio on one plain telephone line; Nexus ISDN codec, low-delay 15 kHz ISDN codec, weighs less than 3 lbs; Buddy Remote Mixer, everything needed for a demanding remote.

Continental Electronics Corp. 833
Intro: 802D Digital FM Exciter, truly digital, PC motherboard based, software expandable; 815C 5kW FM, solid-state amplifiers, hot replacement of amplifiers, broadband, auto-recycle; 816R, 25kW FM Transmitter.

Crown Broadcast 1042
Intro: FM2000A amplifier package, DC Power supply, 90% efficient PFC

amplifier; FM1000A 1 kW amplifier package similar to FM2000A.
Also: FM30, FM100, FM250, FM500 stereo transmitters, translators, exciters, microphones, studio monitor and distribution amplifiers.

Cue Paging Corp. 649

Cutting Edge Technologies 327
Intro: Omnia.fm is a fully digital system, stereo encoder included, delivers crystal-clear highs, thundering bass, and amazing loudness with no "digital grunge," processing resources are entirely configured by software and contained on a plug-in PC card, a second PC Card slot is available for combined 10BaseT/modem connection for remote access, communication is via local RS-232, modem, 10BaseT, or even the Internet; Omnia.net is based on the Omnia.fm and optimizes Internet band-

with instantaneous tracking and verification of audio commercials sent by advertising agencies and advertisers. Enables stations to check on the status of their broadcast advertising commercials through the WWW. Compatible with PC/Windows and Mac platforms.
Also: Services for quick and reliable delivery of CD-quality advertisements, new music singles and short-form programming to radio stations, along with associated traffic instructions and supporting promotional material; rapid, reliable delivery of high-quality advertisements and associated traffic instructions to television stations and cable interconnects.

Dielectric Communications 1127
Intro: TDM Antenna, this new FM antenna is top-mounted, omni-directional and broadbanded for multistation use.
Also: FM antennas (including multi-channel); Combiners, Filters, Switchers, Patch Panels; Transmission line and related equipment.

Digital Courier International (DCI) 457
On Display: DCI provides integrated system solutions for the electronic delivery of advertising, music, data and more to the radio broadcast industry. Services include software licensing, audio distribution, network support, maintenance and design.

DLR 763

DMI 160

DTN Weather Center 958

Duncan's American Radio 120
Intro: Duncan Electronic Delivery System, ratings, market ownership, revenue and technical information on CD-ROM.
Also: American Radio Quarterlies; Duncan's Radio Market Guide; Duncan's Radio Group Directory; FM Coverage Map Atlas.



Eagle Marketing Services, Inc. 157

ElectricVillage 1119
On Display: Award-winning syndicated website content; site hosting and design; Internet training, tools and support; comprehensive Internet advertising sales support, including training, materials, billing and tracking software; electronic commerce capability; and tools for creating, maintaining and leveraging a listener database.



EXHIBITORS continue, page 46 ►

► EXHIBITORS, continued from page 45

ENCO Systems, Inc. 757

Intro: DADpro32 (Digital Audio Delivery System), windows NT based software for installation on non-proprietary computer hardware, providing live assist and automated on-air management, as well as production recording and editing; DADjr Limited Functionality Digital Audio Workstation, minimized DAD workstation for use at unmanned sites; DADSAT Store Forward Management System, software to provide management of multiple remote downlink sites.

Also: DADpro Digital Audio Delivery System.

Larry Lamoray, VP Sales/Mktg.
24555 Hallwood Ct.
Farmington Hills, MI 48335
(810) 476-5711

Energy-Onix 949

On Display: ECO, Stealth and Legend FM Transmitters; the Digital One STL Encoder/Decoder; STL 1 Frequency Agile STL System.

ERI-Electronics Research 530

Intro: Lightning Dissipation Spur provides all the advantages of a lightning dissipation system with the economy of a lightning rod. 16 times more efficient in dissipating and electrical charge than a standard lightning rod; K-Rod, a magnesium-aluminum alloy system which prevents electrolytic corrosion of guy anchors or structural steel while providing an excellent tower grounding system; Guy Guard, a low resistance grounding wire attachment which also prevents galvanic corrosion to the guy wire.

Also: Omni and directional FM antennas; lambda mounting systems, towers, filters and combiners for commercial broadcasting; X series FM antenna makes possible combining multiple frequencies into one side mount antenna; Multi-user and Master Antenna Systems.

David Davies, Engineer
7777 Gardner Rd.
Chandler, IN 47610
(812) 925-6000

EWTN AM/FM 946

Fidelipac Corp. 818

Intro: Dynatools, 4XI digital mixing router, A-D converter, D-A converter, Digital Mic Pre Amp, Digital Fade Unit; DCR-10, 2 meg, magneto optical, ZIP media, wide range of record times, quick access to multiple cuts, record/play combo.

Also: MC/D Digital Console; MX Series Analog Consoles; Studio Accessories.

Film House, Inc. 822

FirstCom Music 729

Franklin Communications 1135

Fun Industries, Inc. 857

Intro: Traveler Cash Cube Money Machine, "go inside and catch the flying money."

Gentner Communications Corp. 345

Intro: DH20, the newest technology for broadcast telephone hybrids. Benefits include outstanding performance with auto-answer/disconnect selectable caller AGC, mic/line inputs, selectable caller control (ducking), record out, selectable for caller only or both the caller and talent, new optical connection to telephone line and auto mix-minus; DH22 is two DH20 digital hybrids in rack space used for conferencing two callers on-air; SPH-10, the latest analog hybrid replacing the SPH-3A; GSC3000 is an intelligent remote control system that can monitor and control your transmitter site or up to 256 sites. Built-in macro capability allows for automatic adjustments and control, offers complete monitoring and control from 8 channels up to 256 channels per site with voice and/or data communications and control.

Gepco International, Inc. 407

On Display: Audio cable including multipair, single pair, multiconductor, microphone, guitar/instrument and speaker.

Golterman & Sabo 945

Gorman Redlich Mfg. Co. 1158

Intro: EAS 1 Encoder-Decoder, voice storage, ability to interrupt program audio and handshaking with automation are all built into unit, unit can drive sign board, character, generator and printer.

Also: Digital Antenna Monitors for AM

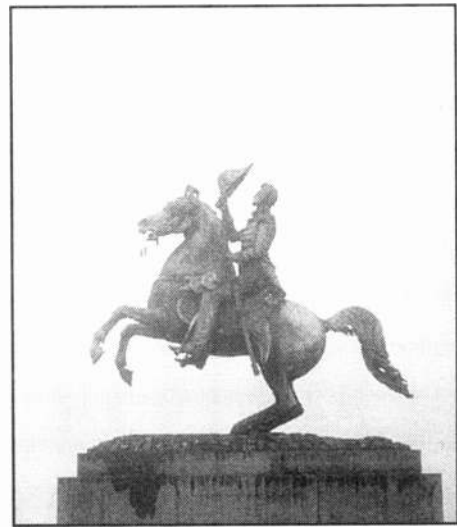
directional arrays, weather radios.

Groove Addicts 853

Intro: See "Who Did That Music Library?"

Harris Corp. 819

Intro: CD Link, a 950 MHz STL delivers uncompressed digital audio over a standard 300 kHz microwave channel; Digit CD digital FM exciter now includes more features; Platinum ZCD FM transmitters; DX 10 digital solid state AM transmitter; DRC2000 digital audio console; CD2001



Andrew Jackson Statue,
Jackson Square

Photo by Sydney Byrd NDMC/VB

CD cart machine; A2D2A A/D and D/A converter; Orban Audicy digital audio editor; Orban AirTime digital delivery system; Audion VoxPro digital sound editing system; 360 Systems Instant Replay hard disk audio player; Arrakis radius furniture; digital audio satellite receivers.

Hungerford, Aldrin, Nichols & Carter 458



IBM Corp. 1043

IMAKE Software and Services Inc. 1157

IMAS Publishing (USA), Inc. 363

Intro: The world's No. 1 audio/video

trade publisher. Publisher of "Radio World," "Tuned In" and "Radio World International," "Pro Audio Review," "TV Technology" and a number of international publications.

IMS Radio Network 460

Inflatable Advertising Company, Inc. 164/166

On Display: Helium-filled and air blower-tethered traffic-building shapes.

Innovative Devices 1020

On Display: MITS (Modular Integrated Telephone System) handles up to 15 telephone lines. Conferences up to 6 callers. Networks up to 30 systems. Built-in LCD for call screening; superb audio, very easy to use; Roadshow (remote worksurface for MITS) provides remote control of a talk show. Accommodates control of up to 15 lines. Built-in LCD for call screening provides studio/remote "chat" capability; Phone Doc analog hybrid, DTMF (touch tone) control of 4 inputs and auto-answer capability provides unattended operation for IFB listen lines, studio and transmitter monitoring.

Inovonics Inc. 433

Intro: PBX, allows several modems or other equipment requiring a telephone line to share a single central office subscriber loop for both incoming and outgoing calls; Model 540 FM Subcarrier Monitor, measures injection level of RDS, SCA and high-speed data subcarriers, demodulated SCA audio and measures deviation, works with any FM mod-monitor, built-in calibration facility; Model 701 RDS "mini-encoder," entry-level encoder, transmits PS, PI, PTY, AF, RT, M/S and DI information, works with any stereo-gen, easily programmed with any PC.

Also: Audio Processors; FM Stereo Generators; Translator Receiver, FM Mod-Monitor, RDS Encoders and Decoders.

Jim Wood, Pres./Chief Eng.
1305 Fair Ave.
Santa Cruz, CA 95060
(408) 458-0552

Intraplex, Inc. 401

Intro: IntraLink, fully modular ISDN multiplexer that allows broadcasters to customize and configure the unit to meet their audio, voice and data communications requirements, up to 6 BRIs can be connected and managed from a single IntraLink; three rack-unit shelf, saving valuable space and simplifying configuration; support transmission of MPEG and APT compressed audio, synchronous and asynchronous data and voice communications over ISDN; OutBack, digital audio codec, provides ISO/MPEG audio Layer II coding at up to 20kHz with a built-in ISDN terminal adapter, includes G.722 audio coding in both directions, a simplified user interface that can be programmed for "one-touch" call set-up and an auxiliary data port, has built-in ISDN terminal adapters with S/T and U interfaces for universal network compatibility.

Also: STL Plus, a digital stereo STL/TSL that employs no digital compression, providing the highest possible audio quality at either 15 kHz or 7.5 kHz bandwidth, incorporates 16-bit linear coding and 64x oversampling, delivering greater than 90 dB dynamic range.

InXsys Broadcast Networks, Inc. 557

Intro: RadioDate/Net, a user-friendly voice personals service that allows interactive telephone technology to be partnered with the Internet, offers the highest payouts, most effective program in the industry and gives listeners the option of placing a

EXHIBITORS continue, page 47 ►

Why *limit* Your possibilities

mediatron offers you the complete digital solution for your Radio Station!

Based on mediatron *plug-in* technology, Windows NT 4.0, standard PC- and network- configuration with unlimited audio storage (MPEG) using harddisk.

- Cart replacement, live assist and 24h automation
- Newsroom- and cartwall- systems
- News editing, text and audio
- Multitrack recording and editing
- Notebook recording, editing and communication
- Satellite automation
- Program scheduling
- Traffic integration
- ISDN and Internet
- Archive solutions



**WANTED:
DISTRIBUTORS**



mediatron

mediatron GmbH
Postbox 43 07 12
80737 München
Germany
Phone ++49-8131-8305-0
Fax ++49-8131-8305-25
e-mail sales@mediatron.com

Ask for our documentation or
<http://www.mediatron.com>



The best, visit us at NAB, booth # 367. mediatron

Circle (5) On Reader Service Card

World Radio History

► EXHIBITORS, continued from page 46 picture of themselves on your station's RadioDate website; RadioNet Classifieds, free service offered to our radio clients allowing listeners to place and retrieve classified ads on the net or by phone; RadioRecall, gives listeners direct access to commercial replay and direct-dial to advertisers through interactive telephone technology.

Also: RadioDate, voice personals system for radio.

Mark Oppenheimer, Dir. of Mktg.
921 14th Avenue
Longview, WA 98632
(360) 425-5000

IQ Television Group 124

Jackpot Promotions 142

JAM Creative Productions, Inc. 536

Intro: Radio ID jingle package demos, featuring the latest packages for stations like Z-100, KOST, WNIC, KYGO, WWW, WABC/KABC, WJR and more.

Jampro Antennas 828

John Boy & Billy Radio Network, The 1147

KD Kanopy Inc. 935

Intro: Party Shade Inc., 9'6" X 9'6" steel frame, polyester tops in white, purple and blue, retractable scissor bars

Also: KD Majestic 100; KD Majestic 200; StarShade 400; StarShade 800; KD Banner Pole Indoor; KD Banner Pole Outdoor; KD StarStage 550.

Killer Tracks 300

Kintronic Laboratories Inc. 1155

Intro: DAC-MOD-12 software programmable antenna system controllers, menu-driven touch screen control, integrated pattern clock with battery backup, field programmable via laptop computer, interfaces with any type of remote control; DSE-CBX-50AM digitally synthesized dual AM exciter, from zero to 50 W out into a 50-ohm load; RDA-1/5/10/50-AMB rapidly deployable AM/MW antenna system, installation and operation within 4 hours. Can operate at any frequency in the 540 to 1700 KHz.

Also: AM antenna tuning units; AM diplexers; AM directional antenna systems; AM transmitter combiners; AM folded monopole kits; AM dummy loads; fixed and variable inductors; RF contactors; RF LightingChokes; isocouplers.

KODAK Recording Products 948

On Display: Kodak recordable media, bulk, jewel case, printable; Kodak Disc Transporter, 75 disc automation system; Kodak PCD 600 6x6 writer; Replication bundle, 4x6 writer w/ Kodak Disc Transporter.

Landmark Creations International 243

LDS Church Public Affairs 108

Leukemia Society of America 138



Marketron, Inc. 443

Intro: Marketron/Great Plains Invoicing and Accounts Receivables, a customized financial software package for broadcasting. Exclusively from Marketron. Supports multi-station operations including invoicing, non-spot revenue, copy script, and complete credit and collection as well as consolidated A/R reporting; Headquarters Reporting program specifically for

corporate headquarters or regional offices. Detailed information about station performance including comparisons of revenue vs. budget, average unit rate, sellout, station share vs. market, revenue and station DSO reporting is collected and consolidated for the group, then forwarded to headquarters for group analysis on group performance.

Also: PC Traffic; Receivables; FirstRate Management Reporting and Demand Pricing; audience research and proposal.

Mascot Masters International 1139

MediaForm, Inc. 1152

Media Audit, The 319

Media Technology Group of SBC, The 113

MediaTouch 650

Intro: Super Duopoly, software suite designed for groups or broadcasters that are about to acquire radio formats, the integration of on-air, production, digital editing, news rooms, network recording, voice tracking, traffic, and scheduling.

Mediatron 367

Intro: Mediatron AirControl NT, live assist and 24-hour radio automation system, running under MS-Windows NT 6.0 with Mediatron plug-in technology, based on hard disk or disk array technology and MPEG audio compression; Mediatron DigiReporter, transportable digital audio workstation with communication possibilities via ISDN, GSM, modem; Mediatron X-fade Edit Plug-in Module, crossfade and segue editing plug-in module for the live assist and 24-hour radio automation system air control NT.

Also: Mediatron, computer-aided radio and broadcast automation system which is the complete digital solution for a radio station, including live assist and automation, cart replacement, news editing, multitrack editing, satellite automation, program scheduling music and traffic & archive solutions.

Metro Networks, Inc. 743

Intro: Digital Information System
Also: Metro Networks, Inc., is the largest provider of traffic reporting services and a leading supplier of local news, sports, weather and video news services to the television and radio broadcast industries, operates over 65 markets nationally and services more than 1,400 radio station affiliates and 100 television affiliates.

Microsoft Corporation 200/201

MicroVoice Applications, Inc. 1022

Miller, Kaplan, Arase & Co. 826

Moseley Associates Inc. 864

Intro: SL9003Q, linear "uncompressed," 4-channel, 950 MHz STL; SL9003TL, linear "uncompressed" T1/E1 STL; SL9001SS, 2.4 GHz spread spectrum link.

Also: PCL6000 STL Series; DSP Digital Codecs; MRC-2 Transmitter control.

Murray Builders, Inc. 1143

MUSICAM Express 135

Intro: WinDaX, Musicam Express delivers commercials, network programming, music and video through its store and forward unit to radio and television stations.

MUSICAM USA 135

On Display: CDQPrima, intelligent codecs for remote digital audio. ISDN, Satellite, T1, E1 and dedicated lines; ISO/MPEG Layer II, III, G.722, H.221, J.52 based IMUX and DAB. RoadRunner, a

portable ISDN codec/mixer that lets you send and receive mono audio over one ISDN phone line. Built in ISDN terminal adapter, 15 kHz mono audio over a single 62 kHz "B" channel, 20 kHz mono audio over 128 kbs. Optimized for ISO/MPEG Layer II, III and G.722; FieldFone II and StudioFone, for broadcast quality audio over a single regular (POTS) phone line. Operates at up to 10.2 kHz (at 33.6 kbs).

Doreen Arleth, Mktg. Admin.

670 N. Beers St., Bldg. 4

Holmdel, NJ 07733

(908) 739-5600

National Criminal Justice Reference Svc. 405



Louisiana Cypress

National Federation of Independent Bus. 462

National Guard Bureau 547

Nautel Maine, Inc. 146

Intro: Nautel XL60 AM Transmitter, solid-state 60kW AM transmitter, superb efficiency of 85-88 percent, on-air serviceability, dual built-in exciters with automatic changeover, 66kW capable, excellent VSWR, built-in AM stereo available, XL30, 30kW version also available; Nautel FM5 FM Transmitter, solid-state 5kW FM transmitter, high efficiency of 70 per

cent, digital FM exciter with AES/EBU digital or analog composite input, on-air serviceable, compact footprint, dual exciters available; Nautel FM8 FM Transmitter, solid-state 8kW FM transmitter, high efficiency of 70 percent typical, digital FM exciter with AES/EBU digital or analog composite input, on-air serviceable, compact footprint, dual exciters available.

Also: AM Transmitters, 1kW, 2.5kW, 12kW, 25kW, 50kW; High Power AM Transmitters, 100kW to 300kW and higher powers combined; FM Transmitters, 5kW, 8kW, 10kW, 20kW; Digital FM Exciter.

NBG Radio Network 1026

Network Music, Inc. 343

NPR Satellite Services 532

On Display: NPR Satellite Services provides satellite distribution services to broadcasters across the country. As broadcasters and operators of our own satellite radio network, we know the importance of the big issues in satellite radio transmission — quality and reliability — and the subtleties that make your service unique. From satellite space segment and digital equipment to separate components and uplinking services, you can count on NPR Satellite Services, the radio-only experts.

Omnia Group, The 942

On Display: Omnia Profile; Omnia MX3; Omnia ProManager.

On Air Worldwide Media, Inc. 167

Orban 143

Intro: 8218 FM Stereo Encoder/Generator with Limiter, updated version of the 8208 Stereo Encoder, offering the same high quality stereo generation and now including a modulation limiter, it allows for a wider range of input levels while also providing peak control not previously possible with the 8208; OPTIMOD-FM 8200 version 2.0 software upgrade, offers enhanced performance when used with digital exciters and digital audio links, as well as new expert parameters to better tailor the sound of your station.

Also: AirTime, the only on-air digital EXHIBITORS continue, page 48 ►

**NAUGHT.
NADA.**

BE It's Back.

► EXHIBITORS, continued from page 47
delivery system using QNX, moving digital information significantly faster than comparable systems; Audicy, the RAM-based stand-alone digital audio workstation designed for broadcast audio applications; OPTIMOD-AM 9200, the first 100 percent digital, fully programmable processor offering FM-like sound for AM.

Pacific Research & Engineering (PR&E)

1019

Intro: Integrity digital console, 16-channel, 24-bit digital broadcast console with 6 analog and 10 switchable digital-or-analog inputs. Accepts digital inputs from 26 to 52 kHz. Set, save and recall of all console configuration settings for automatic or manual recall. Active-matrix TFT flat screen provides operator interface. AirWave analog radio console, all-electronic audio switching, gate-array logic control with built-in

machine interface, automatic telco mic system, all-steel RFI-immune construction, 12 or 20-input mainframes. QuikBilt studio furniture, ready to ship flat via standard ground carrier, easy assembly.

Also: BMX III radio console; RadioMixer/ProductionMixer consoles; custom and PrimeLine studio furniture; STX stereo television audio console; studio and facilities consolidation consulting services; systems integration.

Clark Novak, Mktg. Associate
2070 Las Palmas Dr.
Carlsbad, CA 92009
(760) 438-3911

Penta Laboratories 1038

Powergold Music Scheduling Software 945

Press Promotions, Inc. 919

Pristine Systems 1052

Intro: Rapidfire, digital studio system with graphical user interface, Rapidfire's Quick Pick makes it easy to add or change music, commercials and last minute insertions.

Also: Music Plus is a multi-pass music and playlist scheduling package; Timewarp! is a network timeshift hard disk audio recorder; Voicetraxx lets you record your voice tracks while viewing your playlist days in advance; Audio Commander makes recording your audio files a snap.

Progressive Networks 301

Intro: RealNetwork delivers audio and video to audiences over the Internet by combining the MCI Internet backbone with Progressive Network's multimedia streaming technology. ABC News, Atlantic Records, ESPN, Home and Garden

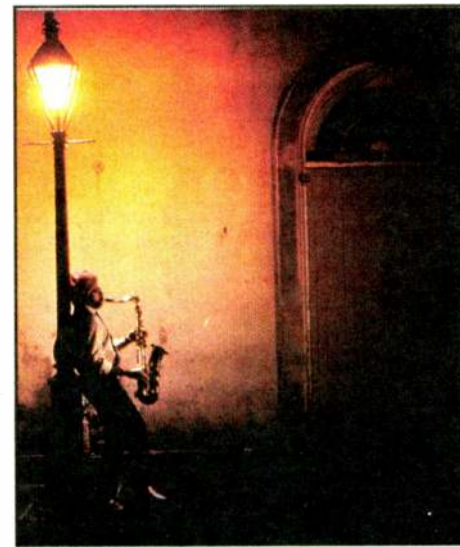


Photo by Ron Calamia/NOMCVB

Television, JAMtv and the Seattle Mariners are among the first content providers to broadcast audio and video on the RealNetwork.

Also: Real Video; Real Audio; Real Player Plus; Easy Start Internet system; professional servers.

Propagation Systems, Inc. 862

Intro: FM and FH series broadcast antennas, circularly polarized, omni-directional FM broadcast antenna for power levels from 3 kW to 40 kW. Available in arrays of up to 12 bays. Antennas can be pattern optimized or directionalized according to customer requirements; FL series broadcast antenna, circularly polarized, omni-directional FM broadcast antenna for the low-power broadcaster. Available in arrays of up to 6 bays and power levels from less than 100 W to 4,500 W; STL series reflector, 4-ft. stainless steel grid parabola for use in the 940 to 960 MHz aural STL band. 18.9 dBd gain, 16 degree beamwidth, 100 W power rating.

Douglas A. Ross, Pres.
P.O. Box 113
Ebensburg, PA 15931
(814) 472-5540

Prophet Systems, Inc. 667

Intro: Audio Wizard for Windows, a digital production and delivery system that allows you to run multiple radio stations from one system. Utilize satellite, live and automated formats or mix and match as your station requires. Features hard drive automation, copy system, touch screen option, news system, voice tracking, crystal ball, digital reel to reel recorder, real time multi-track editor, time and temperature announce, multiple levels of redundancy, music librarian and remote access. Visit us at booth #667 or our website (www.prophetsys.com).

Todd A. Kirchner, Nat'l Sales Rep.
111 West 3rd St.
Ogallala, NE 69153
(800) 658-4403

R-T

Radio Computing Services (RCS) 411

Intro: RCS.NET puts continuous information from you station on all your listeners' computers; Stormwatch, an automated school closing; Winner!, manage prize closets, jock remote schedule, listener database; Selector/Win, preview new Windows version of Selector.

Also: Master Control digital on-air system; TalkBack call screening; Klotz digital console; Sounder, hot key audio.

Radio Data Group 603

Radio Express, Inc. 549

Intro: Euro-Express weekly music service for European Hit Radio, includes

EXHIBITORS continue, page 49 ►

WORLD CLASS TELEPHONE REMOTES

MARTI



SMARTI

Using standard telephone lines, Smarti can send and receive 7.5 KHz audio for true broadcast audio quality. It's the first RPU

engineered from the user's point-of-view. And its built-in modem uses the fastest speeds available to ensure broadcast quality audio.



Cellcast Cellular Remote Broadcast Studio

MARTI'S new Cellcast remote broadcasting system eliminates line-of-sight requirements, phone line access, and antenna problems while reporting from the scene because the Cellcast is cellular - just turn it on and go.

MARTI

ELECTRONICS
World Class Performance • World Class Value

Box 661, Cleburne, Texas 76033 U.S.A. PH: (817) 645-9163 • FX: (817) 641-3869
www.marti.bdcast.com or e-mail: marti@bdcast.com

► EXHIBITORS, continued from page 48
informative liner notes about songs and artists; Imagio, radio station imaging library produced by leading music producer Bob Rettberg for TM Century. Two CDs delivered every three months; Masterdisc, custom music libraries on CD from Far West Communications. More than 8,000 record company masters.

Also: Exitos Express (new Spanish-language releases, each week with liner notes); Supercharger production tool kit; HitDisc and Gold Disc music service and music library; World Chart Show; Rick Dees Weekly Top 40; Hot Mix Dance Mixes.

Radio Netherlands 939

Intro: Satellite Programming, the English and Spanish language broadcasts of Radio Netherlands now available on Galaxy IV for rebroadcast by stations in North America.

Lee Martin, Mgr. of Client Services
316 Eisenhower Parkway
Livingston, NJ 07039
(973) 533-6761

Radio Systems Inc. 1027

Intro: Millennium Broadcast Consoles, microprocessor-based logic, enhanced control logic, excellent audio specifications; Millennium Digital Single and Dual Phone Hybrid, easy interface to any console, full digital operation, auto mix-minus, superb control logic; CT-6 clocks and timers, thin, desktop and large wall packages, all units operated as clocks, timers or slave displays, GPS and oven-stabilized crystal master drivers available.

Also: RS Series Consoles; T1-101 analog phone hybrid; DA-16 audio distribution amp.

Radio World 363

Radio-Active Net-Works, Inc. 1035

RadioDate 557

Intro: See InXsys Broadcast Networks

RDA Systems 965

Intro: Facility Consulting Package, RDA systems helps broadcasters plan, design and install studio, an RDA consultant visits your site to discuss objectives and options, you receive estimates of layout and floor space needs, project and equipment cost, and preliminary project schedule; Systems Integration Services, RDA systems' project management skills and technical expertise help broadcasters plan, design and install studios, services include equipment specification and bidding, system design, systems furniture design and fabrication, off-site prewire and on-site installation.

Rees Associates, Inc. 1055

On Display: Space planning and programming; architecture; interior design; studio and production design; Facility Business Plan.

Register Data Systems 1154

Intro: Replicator, long-form network program record and delay system. System records satellite audio feeds and control closures and reproduces both on playback; Traffic 32, Windows 95-based traffic and billing system; Phantom PE and PS, digital audio delivery for live assist music on hard, and network program automation. Stand-alone systems or fully integrated LAN-based configurations.

Also: Traffic Master II, traffic and billing; System 6, traffic and billing.

RFS Broadcast 1046

Intro: FM Combiners; FM Antenna, Directional, Non-directional; High Power, Directional Antennas for FM broadcasting. FM combiners, duplexers, couplers, filters.

Also: FM Antennas; Semi-flexible Well-flex RF cables; Associated hardware; Mounting hardware; Presentation equipment combiners; Filters; Couplers.

Richard Paul Evans Publishing 110

Roland Corp. U.S. 260

On Display: VS-880 V-Xpanded Digital Studio Workstation, completely self-contained digital recording system, recorder/editor, digital mixer, onboard effects; DM-800 Digital Audio Workstation, compact, stand-alone digital audio recorder, mixer and editor; VT-1 Voice Transformer, designed for altering and affecting the human voice or any other audio signal; AR-100, half rack space, audio recorder/player that uses a PCMCIA card slot for high-capacity, maintenance free storage and can record up to one and one half hours of CD-



Rooftops at Night

Quality digital audio on PC cards for continuous announcement, message station ID or background music playback; AR-2000 is a one rack space digital audio recorder/player; MA-Series of Stereo Micro Monitors all feature built-in amplifiers and individual bass and treble controls.

Roll A Sign, Div. of Reef Industries, Inc. 357

On Display: Roll-A-Sign disposable plastic banners.

RPMC, Inc. 1133

Scott Studios Corp. 923

Intro: PCI Linear Audio Card plays 4 uncompressed stereo streams while recording; Spot Box replaces tape cartridges with digital audio from hard drive; Invincible is seamlessly reliable digital audio; Digital Long-Form Recorder catches network programs unattended for later playback.

Also: AXS is radio's premier affordable satellite/CD controller; The Scott System is radio's touchscreen digital studio, hot keys play instantly and 10 cart walls allow immediate commercials, jingles, effects and music; Voice Trax lets announcers record while hearing songs, spots and jingles in headphones; WinNews records and quickly edits actualities, with cut stacking.

Dave Gerety, VP
13375 Stemmons Frwy #400
Dallas, TX 75234
(800) 726-8877

Shively Labs 456

Intro: B-line coaxial transmission line.
Also: FM and UHF antennas, filters, combiners, coax components, compressor dehydrators.

Silicon Valley Power Amplifier 954

On Display: Solid-state FM broadcast power amplifiers and amplifier modules; filters and combiners

SMARTS Broadcast Systems 464

Intro: Right Touch, provides hundreds of

screen buttons to play jingles, sounders, sound bites, spots and music, and switch networks and handle other live programming functions. Uses Windows 95. Available in mouse or touch screen applications; Spider, uses the Internet to inexpensively pass commercials, traffic logs, billing, audio bites and more between stations.

Also: Smartcasters; Generation 2000 and MPEG; SMARTS traffic and billing.

Solidyne 1028

Sony Electronics Inc. 956

Sound Ideas 859

Intro: Mix IV Broadcast Music Library, offers a host of brand-new music themes in broadcast lengths as well as sound effects; Turner-Broadcast Music Library,

Richmond Hill, ON L4S 1C6
CANADA
(905) 886-5000

SpaceCom Systems 256

Spectral Inc. 156

SRT Enterprises 149

StationWatch Monitoring Service 963

Strata 134

Intro: SalesPro, ratings analysis and qualitative software presentation system, using Windows you can create and modify presentations and reports, create and customize rankers, schedules, audience comp reports, qualitative rankers and more, added value feature allows stations to factor into schedules extra value items like billboards, remotes and promotions to increase reach and lower CPP and Insertion Order helps close the sale at the call.

Also: View; Q View; Retail Dollar; New Biz; Axis.

Superior Broadcast Products 500

Intro: 300 Watt FM Transmitter, stereo generator compressor/limiter built-in; Solid State FM Exciter.

Also: FM Television and LPTV Transmitters and Translators; STL Equipment; Antennas and Transmission Line; Solid State FM Translator.

Talk America Radio Networks 237

On Display: Live talk programming 24 hours a day, 7 days a week. WorldWeb News, world and national headlines on the hour and half-hour 24 hrs./7 days, sports on the hour 24/7, customized weather on the hour and half-hour. Both services available on Satcom C-5, Galaxy 4, and Spacenet 3 on a barter basis.

Tapscan Inc. 827

Intro: Viewingroom, multimedia sales presentation software designed specifically for radio. Show testimonials, station personalities, why radio and always asks for the order; now available everywhere, new local qualitative data for every market in the U.S.A. New retail spending data for any user-defined market; Mediamaster, media

EXHIBITORS continue, page 50 ►

ZERO. ZILCH.

The Engineer's Dream Machine.

► **EXHIBITORS**, continued from page 49
mixing program that's especially powerful in reshaping local advertisers' newspaper ads. This new Windows system allows you to compare radio with newspapers, magazines, outdoor, cable and television.

Also: Tapsan 2000, radio research and scheduling; Qualitap 2000, handles over 40 kinds of respondent level qualitative data; Prospector 2000, new Windows system for Dun & Bradstreet data; Salesscan, complete sales and management reporting; Retail Spending Power, radio's only market-level spending information.

Telos Systems 327
Intro: Audioactive, Internet audio-streaming technology, includes a hardware encoder, a software encoder, and a free-ware encoder, fully compatible with Macromedia's Shockwave audio standard; ZephyrExpress, combines an audio codec

with MPEG Audio Layers III and II as well as G.722, a built-in ISDN terminal adapter and an audio mixing/monitoring system in a road-rugged chassis, designed for ease-of-use by non-technical staff, it has a selectable SAFE feature that locks it into the preferred configuration; Telos Call Screener For Windows, advanced multi-line talk show system, Windows-based client/server screener software can handle multi-studio environments, enable the producer to provide the talent with information on each caller, send additional messages and control the status of multiple telephone lines.

Also: Telephone Hybrids; Interface Modules; Intercom Systems; Digital Transceivers; Screeners & Control Surfaces; Telos ONE, Telos ONE+ONE, 100 Delta, ONE-X-Six; IA2 Interface & Direct Interface Module; Telos Link; Telos Zephyr; Telos Switch Console and

Call Screen Manager.

TFT Inc. 528

Thompson Creative 359
Intro: CD jingle demos, featuring new custom packages for Chicago's B96, KOIT/San Francisco, WUBE/Cincinnati, KMLE/Phoenix, Magic/San Antonio. Plus hot new packages for CHR and Alternative stations.

Also: Thompson Creative is one of the world's leading suppliers of cutting-edge radio jingle ID packages and promo music. Thompson Creative offers a distinctly different sound in both custom and syndicated jingles for all formats.

TM Century 643
Intro: NBDD, sales library for radio; MAS!, sales library for Spanish language radio.

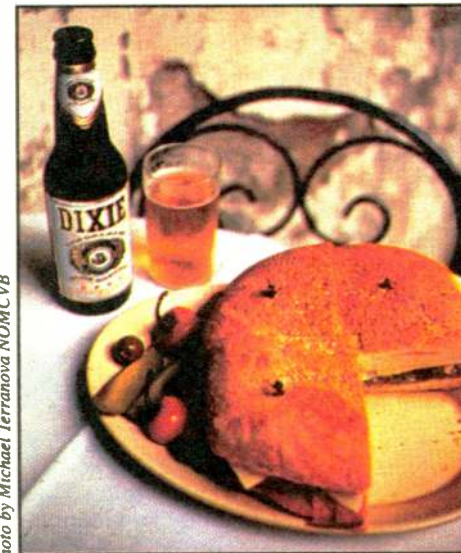


Photo by Michael Terranova NMC/CVB

Muffuletta With Dixie Beer

Also: GoldDisc; HitDisc; GoldDrive; Imagio; Production Libraries; Jingles; TM Century Comedy Network.

TOMA Research/American Consult 843

U-Z

United Press International (UPI) 1018
On Display: WorldView, real-time global news and information service fed through a serial port, stored on your PC's hard drive.

U.S. Tape & Label Corp. 723

USA Digital Radio 249A, 249
Intro: AM and FM in band on channel (IBOC) system provides CD-quality sound economically to the marketplace without new spectrum. It provides an easy transition from analog to digital radio.

USA Radio Network 719
Intro: Daybreak USA, 5-hour Monday through Friday morning magazine program. Available on barter. Market exclusive. (5 a.m. to 10 a.m. ET); USA Radio Daily, 3-hour Monday through Friday (10 a.m. to 1 p.m. ET) news/current events/political program. Host Gary Nolan. Available on barter. Market exclusive; Headline Updates, 24-hour :60 updates at half past the hour. Available on barter.

Also: News at the top of the hour, 24 hours per day; Weekend lifestyles.

V-SOFT Communications 154

Valcom Limited 962

Warner Electric/Superior Electric 116

Weatheradio 863

Wheatstone Corp. 309
On Display: A-6000 On-Air Audio Console; A-300 On-Air Audio Console; SP-48 On-Air/Production Audio Console; D-500 Digital On-Air Audio Console; Wheatstone furniture; Wheatstone Refined Series Furniture Line; Audioarts R-16; R-5, R-60 On-Air Consoles; MR-40 Production Console and SDA-8400 Distribution Amplifier.

Who Did That Music Library? 853
Intro: Groove Addicts, standout jingles and IDs, alternative, modern AC, CHR and more; Groove News, 6 News/Talk music packages; Mindbenders, a 6 CD set of Sweepers, Beds and Work Elements.

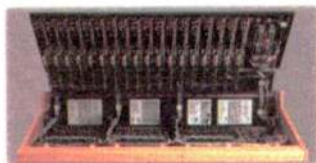
Also: Who Did That Music Library?, 70 percent recorded acoustically by the finest composers and musicians in Hollywood, includes 520 titles/2460 cuts on 29 CDs, yearly updates with 6-8 newly produced and recorded CDs.

WorldSpace 631

This is a great opportunity to own a Radio Systems RS-6, 12, 18 or 24 console. Today, while some console companies are just finally offering scaled-down versions of their boards for around \$10,000 - Radio Systems' most popular console, the RS-12 channel, is on sale for half that amount!

Plus, our boards are priced fully equipped, with no need to buy expensive options or modules to make them work.

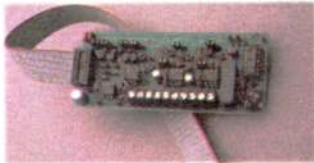
Contact Radio Systems or your dealer today, and while supplies last, *buy a fully equipped RS-12 channel console for just \$4995.00 (normal pro-list \$6795.00), or an RS-6 channel console for just \$3995.00 (normal pro-list \$4795.00), or an RS-18 channel console for just \$6995.00 (normal pro-list \$9895.00), or an RS-24 channel console for just \$9495.00 (normal pro-list \$12995.00).



No board is easier to wire or service. All parts and sub-assemblies, including switches, faders and circuit boards, are socketed or connectorized. Repair involves simply removing the bad part or circuit board, and plugging in a new one.



All input, output, and remote control wiring is via these unique, ultra-convenient, removable barrier strips. These connectors greatly simplify initial installation, and provide for quick future wiring changes.

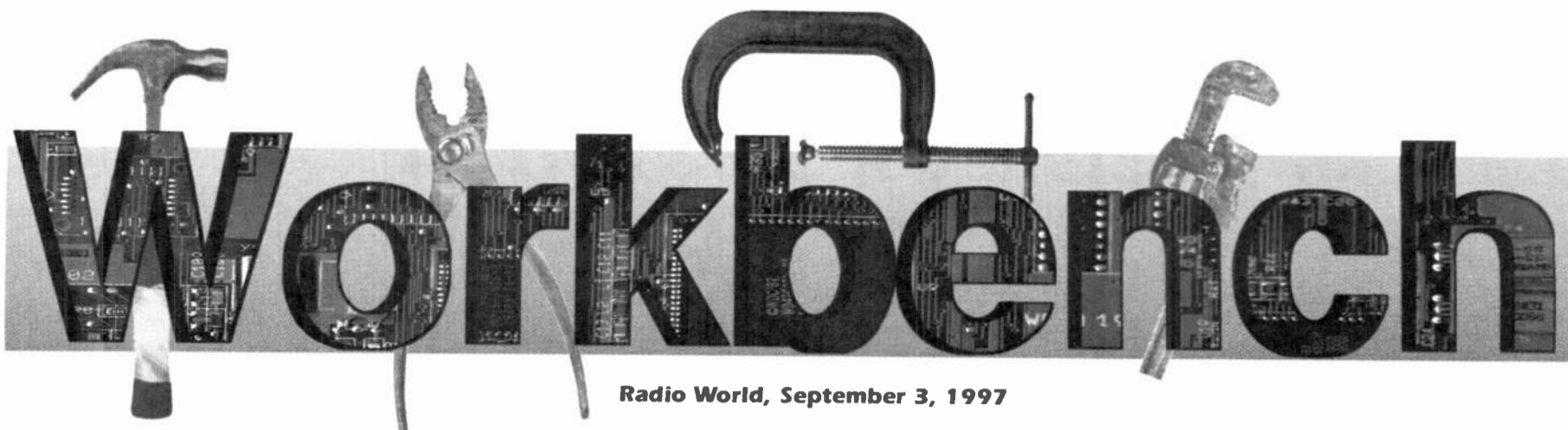


If you do have special interface needs, Radio Systems manufactures a full line of inexpensive remote control, mix-minus, input extender, and audio distribution cards.



Copy stands, special color fader knobs and titles scribed on switch caps are all factory provided so your board can be customized to your application and look.

RADIO SYSTEMS INC.



Radio World, September 3, 1997

All That Noise! RPU Solutions

John Bisset

That snap-crackle-and-pop of the RPU receiver has really hit a nerve! The latest reader to offer a suggestion to this "rainy day problem" is Randy Aldous of Brainerd, Minn. Although Randy observed that all the connections, cables and antennas for the receiver itself were re-done, he asks whether the same inspection was made for other devices on the tower or nearby. The description of the symptoms sounded like something breaking into oscillation and back out.

Randy wonders if another device with a leaky connector/joint/splice is throwing off spurious radiation when the weather is wet. Unfortunately, it may not even be on the same site at the RPU antenna. Randy also suggests trying a spectrum analyzer attached to a directional antenna during the noisy periods. This "direction finder" has helped him pinpoint similar problems.

"SidS1045" e-mailed a suggestion that threw suspicion on the RPU *transmit* antenna. It has been his experience that the transmitting side of things, specifically the

Bisset Leads Workshop

John Bisset will moderate an all-day workshop at the National Association of Broadcasters Fall Radio Show in New Orleans this month.

The "AM/FM Transmitter Workshop" will serve as a refresher for practicing engineers, as well as an introduction to fundamentals of RF for engineers with backgrounds in studio or computer work. Topics include:

Principles of Transmitters: This brief opening tutorial includes an explanation of the building blocks of basic broadcast transmitters and an explanation of the types and functions of equipment in the RF plant.

Basic Troubleshooting: Bisset and participants will discuss common problems and tips from manufacturers, as well as ideas generated over the years in *Workbench*.

Troubleshooting Transmitters: A panel of manufacturer representatives relate about their approaches to maintenance and service.

Living Through the Nightmare: This afternoon panel shares horror stories about off-the-air emergencies.

The workshop runs from 8 a.m. to 3 p.m. on Friday, Sept. 19. For convention registration information, call (800) 342-2460.

antenna, may be suspect. Because the antenna always is getting banged around in a station van, and hooked and unhooked regularly, there is more potential for something to work loose, or get bent or otherwise damaged.

By the way, Sid asks for clarification of an AM loop antenna drawing in the Feb. 5 column. The artwork specifies RG-59, which is 75 ohm coax; however, the text refers to 50-ohm line. The correct line impedance is 50 ohms, or RG-58.

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Here's another *Workbench* business contact. SESCOM builds a variety of widgets and adapters, and occasionally offers some great deals on surplus items. One recent catalog offered more than 20 types of chassis project boxes, the most expensive of which was \$6.60 (for a 2x6x2). Most were between \$2 and \$3.

Not to knock open a hornet's nest, but because that antenna was offered as a way to better receive EAS assignments, I'm curious as to what kind of luck you have been having with your EAS equipment. Isn't it great trying to get jocks to understand what to do when an actual RMT is sent? What about "auto forwarding" alerts? And all those weather bulletins!

We talked to one station operations manager who personally comes in for every monthly test — even the ones sent at 2 a.m. The station uses volunteers, and he has nearly 300 of them. It's hard enough to get a handful of jocks to understand what to do, but can you imagine 300 volunteers! He knows his visits are not a permanent solution, but I guess they solve his problems for the time being.

One of the fun things about this business is the long-term relationships you make, even though you may not talk to these people for years. Vern Killion is a case in point. He's with KRVN-AM-FM in Lexington, Neb. Vern recently e-mailed

some neat comments to share with readers of this column, the first time we've "talked" in years.

Vern has been using various loops for off-air reception for a long time, and especially liked the loop antenna we described on Feb. 5. It has been Vern's experience that the Faraday shield doesn't do much, except isolate proximity effects. His standard loop is a six-turn square, measuring 26 inches on a side with a resonating capacitor across the loop and a single-turn

low-Z link feeding the coax or audio cable "transmission" line. The PVC pipe covering is a must to prevent the elements from detuning the antenna when used outside. Vern adds that the loops work great at 160 meters.

Vern has a 100-foot, free-standing STL tower at the studio. He uses a one-turn link in one of the leg ground wires to drive a 50-ohm broadband transformer. This feeds the intercepted energy into a "video" distribution amp, which drives his in-house AM distribution system. The setup works great for low-noise, weak-signal monitoring, too.

As for the VHF RPU problem, Vern offers a couple of other ideas. He has seen poorly tuned STL transmitters create noise on VHF and UHF low-signal receiving

equipment. Some moisture-induced problems in the STL antenna could upset the transmitter match and cause this.

If the installation has coax feedlines passing through the aperture of an FM broadcast antenna, there could be faulty coax hangers that have rubbed through the outer jacket and created horrendous RF noise from moisture-induced arcing that occurs between the coax outer and the hanger clamp. Vern had this happen on a 10-bay FM fed with 20 kW. It actually burned through the outer and melted big hunks of copper. In Vern's case, the arcing caused two-way interference at an installation a mile away! Vern concludes: high-power diodes are great noise generators.

We'll close with a reminder that the third quarter is ending — time for a quarterly tower inspection. During several recent FCC inspections, the inspectors asked to see this inspection sheet. With all the consolidations going on, it is easy to get lulled into a feeling that "everything is OK" based on the previous owner's say-so. Check the licenses, logs and licensed parameters. Don't be caught in a compromising position!

■■■

John Bisset is a principal with Multiphase, a technical services company. Reach him at (703) 323-7180. Printed submissions qualify for SBE recertification credit. Fax submissions to (703) 764-0751, or send them via e-mail to wrwbench@aol.com

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BE No More, No Less.

SBE NEWS

SBE Coordinators Unsnarl Part 74

Richard L. Edwards

Each quarter, RW provides space for the Society of Broadcast Engineers to inform our readers of activities at the society. In this issue, Richard L. Edwards takes a look at frequency coordination.

In the past few years there has been a huge demand for Part 74 frequency

usage by radio and TV stations. There also is an increase in itinerant users for special situations and events, from presidential campaigns to the Olympics.

The limited frequencies allotted by the Federal Communications Commission, in addition to the implementation of the 720 hours rule (Section 74.24), have created chaos in operations utilizing the Part 74 Broadcast Auxiliary band.

In an effort to preserve order in the use of these scarce frequencies, the Society of Broadcast Engineers Inc. has assembled and oversees a group of Frequency Coordinators. These volunteers spend tremendous amounts of personal and employer time to provide

qualified users with a chance to use these crowded frequencies.

Frequency coordination is another of those thankless jobs we as engineers volunteer to do. If you are one of the 167 local coordinators, you may have been under siege by stations needing access to Part 74 frequencies, especially in an emergency.

I saw it after the Value Jet crash in Miami and can only imagine the demands on Dennis Orcutt after the Oklahoma City tragedy. These local coordinators are at the center of today's rapidly growing need for instant communications.

Why it is important

Frequency (use) coordination is necessary due to increasing demand placed upon radio frequency spectrum by broadcast licensees, networks, common carriers and program providers.

Radio and television broadcast stations use the spectrum for Remote Pick-Up (RPU), Electronic News Gathering (ENG), Studio Transmitter Links (STL) and wireless microphones. Network and program providers use the spectrum for wireless mics, intercom-foldback (IFB), and non-program functions.

Common carriers share spectrum for live video programming or conferencing as well as fixed point-to-point transmissions. These activities require careful planning and cooperation among all users to avert harmful interference. Hence Frequency Coordination.

As defined, a local broadcast auxiliary frequency coordinator acts as a database administrator facilitating license-to-license contact. He or she does not assign frequencies, but in

some cases suggests that a particular frequency may be appropriate.

The ultimate responsibility for determining whether a frequency can be used, reused or shared clearly rests with the applicant. That determination must be consistent with FCC rules.



At the station level, coordination should include the chief engineer, who is responsible for technical operation; the news director, whose work creates the most need for frequency use; and the general manager, who should allocate the time and funding to permit the process to be carried out.

Frequency coordination is not the same in all areas. SBE policy dictates that each coordinator be free to establish his or her method of processing and cataloging database information for that area.

The SBE will serve in an advisory capacity only, and will not restrict the operations of the coordinator. From time to time, SBE may provide guidelines that have proven effective.

The ultimate responsibility for determining whether a frequency can be used, reused or shared clearly rests with the applicant.

Upon receiving a coordination request, the coordinator will note the requested frequency, antennas, polarization, power and path direction. Wireless mic applications require the frequency and power.

Coordinator protocol

From the established database, the coordinator can determine if the applicant's request can be accommodated on a non-interfering basis. In some cases the coordinator may have to determine if a workable agreement can be accomplished with stations in the area that have existing use of the frequencies.

Time-sharing between applicant and stations in areas of heavy congestion

See FREQUENCY, page 53

Engineer Joins S.C.M.S.: Bill Elliott, former chief engineer of WRFX(FM) in the Charlotte, N.C., market, has joined the staff of S.C.M.S. Inc. as a technical sales engineer.

The company cited his substantial RF and audio experience, including design and construction of the original Home Shopping Network and the John Boy and Billy Network.

Elliott's duties will include marketing, technical contact for rental and used equipment and further development of the S.C.M.S. website.

INXSYS Hires Norjean: Broadcast veteran Laurence W. Norjean has been named president and CEO of Inxsys Broadcast Networks Inc., creator of RadioDate. Norjean is the former president and CEO of StratiComm America, and is the author of "The Essential Radio Spot," a multimedia educational course in radio marketing and radio creative.

Switchcraft Promotes Within: Switchcraft has promoted Jim Hoffman to manager of new product sales. Previously, he was the central

region sales manager for Switchcraft. Mark Wilson has been promoted to the latter position.

Connectronics Grows: A new data department has been added to Connectronics Corp., to be headed by Debbie Mackey. The new department makes and distributes data, communication, CATV, fiber optic and coax cabling and interconnect products.

Shadow Exec Joins WW1: Westwood One appointed Bill Greco as regional vice president, affiliate relations and administration. Greco will be based in Culver City and Valencia and will handle affiliate matters on the West Coast. In an effort to achieve greater efficiency in serving affiliates, Greco also will coordinate the administration of affiliate relationships with eastern offices.

Greco is former president and general manager for southern California of Shadow Broadcasting Services.

Grillet Moves to Radio Unica Network: Adriana Grillet, formerly with CBS Americas and Latino Broadcasting Co., is the new director



of affiliate relations for Radio Unica Network.

Radio Unica, which serves Los Angeles and Miami, is marketed as the first program-driven satellite radio network designed to offer Hispanic adults entertaining and informative long-form talk and sports shows, together with newscasts. Grillet will be based in Miami.

► **FREQUENCY**, continued from page 52 might be of value and, in some instances, be required. Once a determination has been made concerning the use of a frequency, the coordinator should respond to the applicant in writing.

If the requested frequency is not compatible, the coordinator may provide a list of suggested non-interfering frequencies that would meet the needs of the applicant. The applicant then can further investigate the possible frequencies to determine suitability.

Once a set of frequencies has been determined and selected, the coordinator should issue another letter indicating that the selected frequencies have been cleared by him or her. This letter

The Frequency Coordinating Committee and the local coordinators can be the best service that you never paid for.

is attached to FCC Form 313, filed by the applicant. In requesting temporary operation (Section 74.24), the letter will permit every person involved to understand clearance conditions.

For itinerant users: Once a license for use is confirmed, confirming correspondence should be issued to that user. A disclaimer should be included stating, "As an itinerant user you may be required to accept interference from local licensees. Efforts have been taken to minimize any such interference, yet it is possible."

In some markets, local frequency coordinators have evolved into mediators. With the reduction in FCC field staff, the local coordinator has become the first person called when interference or disputes occur. The local coordinator can assist and provide information, but cannot take sides or make any type of ruling.

The SBE urges that frequency coordination operations be set up and overseen by local area SBE Chapters, which appoint independent frequency coordinators and provide the necessary support. Those chapters usually will create a Frequency Coordination Committee with one or more members.

In many areas, SBE chapters are nonexistent. There, individuals have come forth to serve.

History lesson

What did we do before Frequency Coordination? We had a mess.

Part 74 licenses essentially had been granted by the FCC to any broadcast station within a market, as long as the paperwork was correct. This created problems proportionate to market size. Stations received grants on frequencies in use by other stations. In some higher-profile markets, a need surfaced for broadcast auxiliary frequencies for itinerant users and special event managers.

Television news placed more demand on the 2 GHz and 2.5 GHz bands. Many markets had more television stations than available ENG

channels. With remote studios in radio and additional requirements for television news and information locations, fixed STL links and inter-city relay stations, the need for additional frequencies increased.

Something had to be done. The FCC did not want to referee disputes in local markets, so its involvement virtually was nonexistent.

The duty of a Frequency Coordinator or Frequency Coordination Committee is to assemble accurate facility and technical equipment information, as well as use of the spectrum by users, into databases.

These offer single points of reference for users and licensees in the coordinator's service area, and for coordinators in surrounding areas. The objectives are to prevent interference

problems and review applications requesting frequency clearance for new or expanded authority within a given area.

Other duties

The SBE acts as secretary to the National Frequency Coordination Committee. Each local chapter of the Society has a frequency coordinating committee to administer the database. The larger states are divided into regions. Note on the California map, there are nine regions administered by 13 individuals.

Yet other states can be effective with less. Tennessee and Idaho have two coordinators and Arizona, Georgia and Utah (see map) have only one.

The list of local coordinators is published by Paul Lentz and is available

through the SBE National office in Indianapolis. Call (317) 253-1640.

What are we up to now? We are working on a pilot program with the FCC to assure local coordination and to make it easier to process Part 74 applications. This electronic-only filing will route from your computer to your local coordinator, then off to the FCC. Processing and grants will be less cumbersome and more timely. It is another way that the Frequency Coordinating Committee and the local coordinators can be the best service you never paid for.

■■■

Richard L. Edwards is president of TowerCom Ltd. of Ft. Lauderdale, Fla., and a member of the SBE Board of Directors. Send e-mail to him at retowercom@aol.com

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Try These Brawny 'Net Tools

Jim Somich

Even though this is not a computer column, from time to time I like to bring you something that will expand your horizons. I assume that you are on the Internet. If you are not, I encourage you to take the leap. The amount of information available to the professional broadcast engineer is nothing short of amazing.

If you are like me, more of your work life is spent at being a "para-consultant" than in the past. I am a firm believer that the future for many of us lies in broad-

need the absolute latest FCC rulings, check into the Daily Digest. You can have it e-mailed to you daily at no charge.

The crown jewels of the MMB section are its searchable AM and FM databases.

devoted to the Mass Media Bureau, or MMB. The bureau regulates the radio and television stations in the United States. When most of us think of the FCC, we mean the MMB, the bureau that issues broadcast licenses and seeks to ensure that those broadcasts will be received without interference. MMB can fine a station or take its license if it finds that the broadcaster is violating FCC rules.

Follow the prompts to the Audio Services Division for AM, FM and translator station information. Up pops a list of useful phone numbers. Also, you will find tips on filing an application, how to determine the status of your application and cutoff lists.

The crown jewels of the MMB section are its searchable AM and FM databases.

You can query them by call sign, file number, city/state, frequency and AM stations within a distance. These databases, separate for AM and FM, will

U.S. Census Bureau *The Office Stationer*

ening our expertise beyond fixing transmitters and setting up PCs. What slows many engineers is the search for accurate information: databases, FCC regulations, mapping, census data and so forth. Among others, these four services from the World Wide Web will be of great help to you when you put on your consulting hat.

Remember to type <http://> in front of all addresses listed here.

FCC.GOV

If you are on the Internet, you probably already know about the official website of "Uncle Charlie." Visit www.fcc.gov, a huge site chock-full of the latest news from Washington. If you

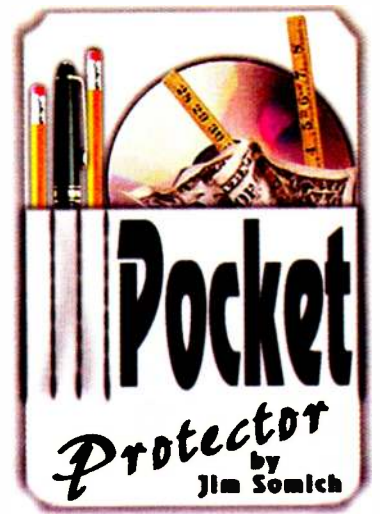
The site includes agendas for FCC meetings, digital TV info, and more than you ever wanted to know about the commission, including background info on the commissioners themselves (after all, they *are* politicians).

A large portion of the FCC website is



National Archives and Records Administration

give you transmitter location, power, channel/frequency, ownership and plenty more. Also included are self-



website for daily updates.

I've saved the best for last. TIGER is an acronym for "Topographically Integrated Geographic Encoding and Referencing," the name of the system and digital database developed by the Census Bureau to support its mapping needs.

TIGER maps

The TIGER Map Server Browser (tiger.census.gov/cgi-bin/mapbrowse.tbl) is an incredible tool for drawing downloadable maps. For example, you can pinpoint a transmitter location and mark it on the map automatically. You can include city labels, coordinate grids, counties, highways, railroads and so on. By clicking your right mouse button on the image (you are using Windows 95, aren't you?), you can download it as a GIF file and integrate it into your report or other written material.

You can generate maps based on



inspection checklists, AM silent station lists and other useful material.

Make your own maps

A great companion to the FCC site is www.radiostation.com, operated by Elliott Broadcast Services. The centerpiece of the site is its FM and AM databases. Again, you can search by many criteria and pull up useful data. What makes this website valuable is its ability to generate maps. The database can draw a downloadable map showing the transmitter site of the station you punch in.

The site also includes FCC daily updates of actions and applications.

Uncle Sam's rulebook

Every federal regulation is listed in the Code of Federal Regulations, including Title 47 (Telecommunication). Many stations pay for an FCC rules service, not realizing that every rule is available at this website for free. The address is www.access.gpo.gov/nara/cfr/index.html

This database lets you search by keyword or part/section number — just the ticket to find that obscure rule you half-remember. These rules are not totally current, so consider this as a work in progress. Rely on the FCC

coordinates or by city or state. You can zoom in and out on any map and identify most physical characteristics of the area the map covers. These maps are in the public domain. As such, they are excellent for coverage maps and other commercial purposes.

If you have your own website that requires maps, you can directly access TIGER (as does www.radiostation.com) and have it draw your maps online. Full instructions are on the TIGER site, which is the site for the Department of the Census (www.census.gov).

Although not related directly to engineering, the Census site is fascinating. For example, you can get updated population counts for the United States or the world on a daily basis. Yes, we are now approaching 6 billion people worldwide.

The Internet can be a monumental time-waster, no doubt. But if you know what is available and where to look, it can provide valuable information that would be difficult and expensive to acquire in other ways. It can make you a more knowledgeable and wealthy engineer. That's what protecting your pocket is all about.

■■■

Reach Jim Somich at (216) 546-0967, or send him e-mail at jsomich@ameritech.net

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FEED LINE

Some Common AM Headaches

W.C. Alexander

This is the 15th installment in a series about AM antenna systems. The previous article appeared Aug. 6.

Last time we began a discussion about troubleshooting and repairing AM antennas, with some practical tips on keeping your array running and solving problems. Let's talk about some other headaches that managers of AM systems may run across.

Incorrect base currents

Among the indicating instruments at any radio station, the most suspect is the base current ammeter. It lies like a slick politician. From the moment it leaves the factory, its calibration is susceptible. Vibration, magnetic anomalies, temperature, humidity, insects, moisture — everything — affects its accuracy. A toroidal current meter also can lie, but in general is more reliable than a thermocouple meter. If everything else — antenna monitor parameters and monitor points — is okay, suspect one of the meters. The best way to keep base cur-



A digital multimeter, like this one from Fluke, is a useful addition to your toolkit.

rent meters accurate is to use *one* meter at all the towers, carrying it to the towers and plugging it in when needed. Store it in the controlled environment of the transmitter building when you are not using it. Do this with either type of meter.

High monitor point

A likely cause of a high monitor point reading is an anomaly at or in the vicinity of the point itself. Reradiators and other factors beyond the station's control can influence the field strength at a monitor point. If you find a point high, don't adjust anything. Measure five or six points on the radial and see how they compare to the last full or partial proof. If they are in, you can assume the array is in adjustment and the monitor point itself has become unusable. §73.158 of the FCC rules specifies the procedure for changing the monitor point on a radial.

If the entire radial is high, the array may be out of adjustment, even though the array parameters are all within tolerance. This can occur easily in arrays with very tight nulls. Before you start cranking, though, put the array in the non-directional mode and look at five or six points along the radial both ND and DA. Compare the ratios with those in the last

full proof. You may find that a conductivity change is responsible for the high readings, and the array is in adjustment.

From time to time, parts fail in directional antennas. The most common failure component is the mica capacitor. I always suspect it first, but it is not always the problem.

Heat stroke

A symptom common to component failure is heat. Shut the system down and *immediately* but *carefully* feel all the components in the phasor and ATUs. Some components may be warm, but none should run hot. Suspect any hot

component. Inspect the coils for discoloration caused by heating. Loose hardware can get red-hot under current, causing oxidation and an intermittent connection. Look for leaking capacitors as well.

If you have an RF bridge on hand, use it to measure the reactance of any suspect components. If you aren't fortunate enough to have a bridge at your disposal, you can use a capacitor checker. Many stations have the old-style "magic eye" capacitor checkers lying about. Use a capacitor of known value to test the checker before testing the suspect cap. Take lead inductance into consideration

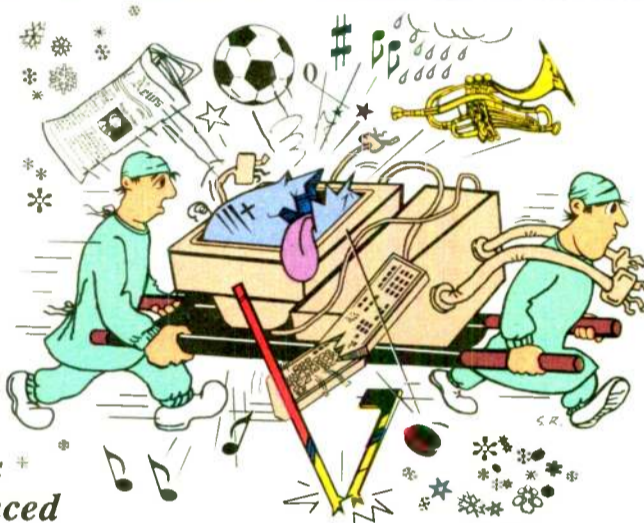
when reading capacitor value on the checker. If you don't have a bridge or capacitor checker, many of the better digital multimeters have a capacitor check function; some cost less than \$100. Consider investing in one.

Many things can go wrong with a directional array. Most problems have a ready fix. Seldom, however, will cranking on the phasor repair a problem. You may be chasing a bad antenna monitor or sample line, or compensating for a component with a changing value. When trouble comes, stop, *think* and troubleshoot the problem using thorough investigation and logical thinking. Crank on the array only after the problem has been diagnosed and fixed.

■ ■ ■

Cris Alexander is director of engineering for Crawford Broadcasting in Dallas.

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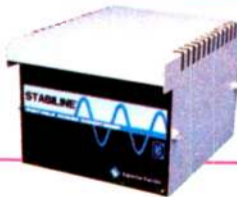
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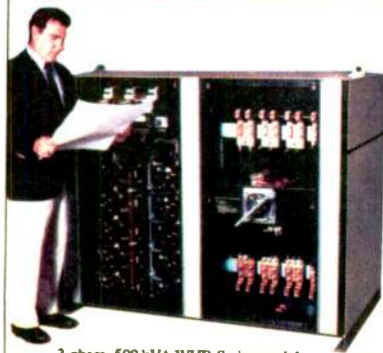


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MD: Archiving for the Rest of Us

Frank Beacham

When you entrust your digital audio or other valuable computer data to magnetic media for long-term storage, you essentially are betting on the stability of a time bomb.

Audio archivists long have warned that those tiny, fragile DAT audio cassettes used every day by radio stations and audio producers are not designed for long-term archiving. The same applies to backups of common PC files accumulated on dozens of magnetic diskettes over the years.

Because most seasoned computer users know the risks of hard-disk crashes and are savvy enough to back up important data, there's a certain security that sets in by having this archived information easily available for reference. But it's a false security that easily can lead to a big, nasty surprise.

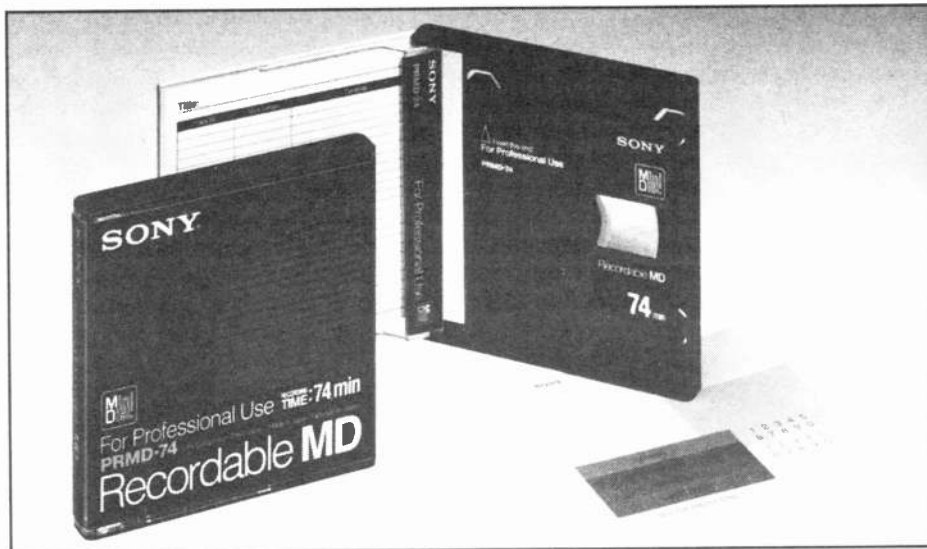
It won't last forever

Just as magnetic audio and video recording tape are not forever, those same ephemeral qualities apply to magnetic media for computers. And I don't mean just floppies; this extends to Zip, Jaz, Syquest, tape data cartridges — any magnetic storage medium used in PC and digital audio editing systems.

"The rule of thumb is: Magnetic media have a half life of five years, no matter which technology you use," said David Veilleux, marketing manager for Olympus Image Systems. "That means the magnetic signal that retains the bit on the surface of the media is half as strong as it was when it was recorded. No magnetic media manufacturer claims its product can hold data longer than 10 years."

The bottom line, said Veilleux, is

"somewhere between six and 10 years, your data, in effect, evaporates. That's because the magnetic field is no longer strong enough to retain the data."



MiniDiscs from Sony and other manufacturers are available from broadcast equipment vendors.

er for Olympus Image Systems. "That means the magnetic signal that retains the bit on the surface of the media is half as strong as it was when it was recorded. No magnetic media manufacturer claims its product can hold data longer than 10 years."

There are now some low-cost options available, based on a new generation of magneto-optical (MO) technology, that can give you the peace of mind that your valuable data will remain safe for 30 years or more.

Though professional archivists still insist the best way to store audio is in

an uncompressed state on analog reel-to-reel tape (an increasingly expensive solution), there's a far cheaper method for broadcast-grade material such as news, commercials, jingles and spoken-word programming. It's the increasingly popular MiniDisc (MD) format.

Already used as a replacement for cart machines in many radio stations, MiniDisc has some archival pluses that have not been widely noted. The MD format is based on a robust form of magneto-optical technology. Recently, with the release of the dramatically-improved ATRAC compression algorithm (now fifth generation), MD has evolved into a good-sounding, reliable, low-cost audio storage medium.

Though the first professional MO audio recorders were shown in 1989 and 1990 at the Japan Audio Fairs and remain a staple of high-end mastering applications, only in the last couple of years has the technology trickled down to the masses through the MD format.

MiniDisc, as with other MO systems, uses a laser and polarizing magnetic field to record audio. When the magnetic layer in the disc is heated by a tiny laser to a temperature of approximately 400 degrees Fahrenheit, it loses its coercive force temporarily. As the disc rotates and the surface material returns to normal temperature, its magnetic orientation is determined by an externally applied magnetic field. Polarities corresponding to the digital data "1" and "0" are embedded into the

See MINIDISC, page 57 ▶

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► **MINIDISC**, continued from page 56 disc material.

Once there, the digital information is permanent until it is reheated by the laser. "It's like heating some wax, putting your fingerprint in the wax and letting the wax solidify again. Until you add the heat again, that fingerprint stays in the wax. It's like a fossilized record," said Veilleux. MO media, including MD, are durable enough to withstand about 1 million re-recordings, manufacturers promise.

Rugged MO

Magneto-optical data storage technology is not new. The federal government has archived documents on MO disks for years. In addition to their capability to handle many rewritable cycles (about 10 times that of typical hard-disk drives), MO media also are highly resistant to data loss caused by dust, shock and temperature extremes. MO is virtually immune to magnetic fields.

"You can pack an MO cartridge in a box of magnets and ship it around the world, and the data is still there," said Veilleux. "Or say you sit on the cartridge and break the housing. With most media that's a disaster. With MO you can put the disk in a new housing. You can even clean the platter with lens cleaning fluid to remove any fingerprints."

Whereas MiniDisc drove down the cost of audio archiving, a new generation of MO drives are doing the same for PC file storage. Olympus, one of the world's largest manufacturers of MO drives and media, recently introduced the SYS.230, a new-generation, low-cost MO storage system for PC data archiving.

The SYS.230 uses 3.5-inch MO cartridges that each hold 230 MB, the equivalent of about 175 floppies of data and images. The two-pound portable drive sells for about \$360 and the cartridges are only \$10 each. SYS.230 comes in a SCSI version and a "universal" version that connects to a PC through the parallel printer port. The drive works with any PC (386SX or higher) or Macintosh (Mac OS 6.0.7 or higher).

Another important consideration in archiving either data or audio is compatibility with a wide range of drives from other manufacturers. You don't want to be stuck with some proprietary system that will disappear from the market in a few months. SYS.230 disks are ISO compatible and can be played back in any of more than 2 million MO drives in use. MiniDisc players have sold in the millions and should be available for years.

Sooner or later, most of us learn — usually quite painfully — that magnetic media are highly perishable commodities, subject to the whims of temperature, humidity, dirt, shock, magnetic fields and recorder malfunction.

With any magnetic storage material, time is not on your side. MO media are a low-cost insurance policy that offers the best shot of preserving important data for the future.

It's a reliable archiving strategy for the rest of us.



Frank Beacham is a writer and producer based in New York. Visit his website at <http://www.beacham.com>.

ATRAC Compression: How Do They Do That?

ATRAC is Adaptive *TR*ansform Acoustic Coding, the compression technology Sony uses to fit 74 minutes of digital audio onto media that normally would hold only about 15 minutes if recorded with conventional CD methods.

Pronounced "at-track," ATRAC adapts audio to the ear's constantly variable sensitivity, hiding quantization noise in frequency regions where there is a lot of audio activity.

ATRAC analyzes the signal with lots of divisions in the lower frequencies and fewer in the high.

The most sensitive areas are recorded accurately with little quantization noise, while remaining regions are recorded with less accuracy.

"Non-uniform time splitting" looks at how audio changes over time. On vivid passages, time analysis is a short 1.45 ms, while slow stationary passages have a period of up to 11.6 ms. This duplicates the ear's tendency to change over time and with the complexity of passages.

Starting at the input, ATRAC uses splitting filters to cut the original audio into three sub-bands, analyzes the sig-

nals for time and transforms these signals into frequency values by a process called MDCT, for Modified Discrete Cosine Transform.

The non-uniform frequency groups are requantized to cut the bit rate down and ditch any wasted bits; say, when a five-bit value is represented by an eight-bit number. This reduces data wordlength on top and bottom with no degradation to the audio.

On playback, the process is reversed. The MDCT frequency values are reconstructed into time values and the three sub-bands are combined to obtain a normal 16-bit audio signal.

This way, high-fidelity audio is realized at only one-fifth the bit rate. Simple, right?

—Alan R. Peterson

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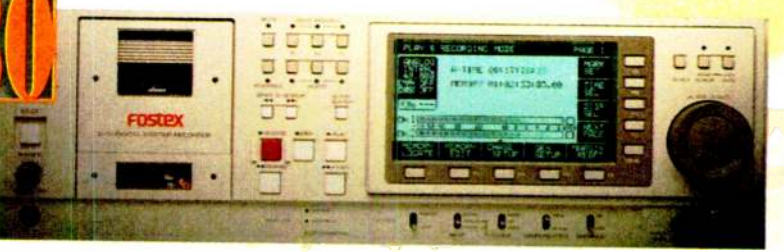
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CD-ROM REVIEW

ARRL Handbook Is on CD-ROM

Mark Jovanovic

I have been using the ARRL Handbook since 1973, when it was a medium-sized softbound book. Over the years, it has evolved into a huge, hardbound reference manual.

It has always provided a wealth of information, and was my book of choice when I needed to look up anything regarding electronics, basic theory, advanced electronics formulas or any type of electronics data.

Recent Handbooks have become so large and packed with data that they

are hard to handle physically. For several years I have been expecting the Handbook to come out on CD-ROM.

Finally it is here, direct from the American Radio Relay League for \$49.95 (plus \$4.00 shipping and handling). It has become one of my favorite CD-ROMs.

It is like having an assortment of thick data books on your library shelf and at your fingertips.

Contents and features

The CD-ROM has 30 chapters consisting of hundreds of images, diagrams and color photos — over 1,500

in TIF format — and a few powerful search engines. I have found the Search function is the best way to navigate the CD-ROM.

For example, clicking on Search brings up a dialog box where you can type in any keywords. Let's say we want to learn about WWV, the time standard radio station. The screen prompts you to start the search by clicking on the Search button. While it searches the entire disk, the familiar hourglass icon comes up.

A list of related topics with the subcategory "Basic Units & Frequencies" is highlighted. Another click on the Go

To button pops up a description of WWV and CHU, along with two media player icons labeled WWV and CHU. When you click the Play icon for either one, a sound bite of actual WWV or CHU transmissions starts playing.

Similarly, if you look up Weather Satellites, the topic describes how they work and displays the player to hear the WeFax data as the information is being transmitted to Earth.

As one who does a lot of design work, I find myself using Chapter 24, "Component Data," daily. It has page after page of useful information.

Click on Index and a screen pops up to let you pick a letter from A to Z. Pick "B," and you can then scroll to "Batteries."

Click on "Find" and a list of topics related to batteries appear. You then scroll to the sub-topic you desire.

The text files are related to amateur radio but can be a wealth of information to any engineer.

Click on "Go To" and the text for that topic appears. At any time you can click the Print icon and output the entire topic with accompanying graphics. Also, you can highlight an area of text and send it to the Windows Clipboard by clicking on the Copy command.

Getting around

When viewing a topic, you navigate around by clicking on the Back, Prev (Previous) or Next buttons. You can save and print any text or image to the Clipboard. I have printed many pages that I keep in an engineering binder.

You can save any image in any common graphics format by using the Save As command when in the Image Viewer. The image can be manipulated in numerous ways.

A great Help feature goes into more detail than I have presented here. I printed the complete Help contents for reference because the CD-ROM does not come with a printed user guide. I prefer reading a paper manual instead of a computer screen.

Another handy companion software package comes on the CD-ROM: a complete database of vendors supplying equipment and supplies related to Amateur Radio, and a listing of ham radio equipment reviews.

I recently bought a Kenwood TS-430 HF Transceiver, and decided to look up when QST, the official ARRL publication, carried the review. A quick search told me that it was reviewed in March 1984 by WB2TBN.

Also on the CD-ROM are 130 ARRL Text files in TXT format along with 15 DOS programs. The companion Software Help describes these programs in detail.

The text files are related to amateur radio but can be a wealth of information to any engineer.

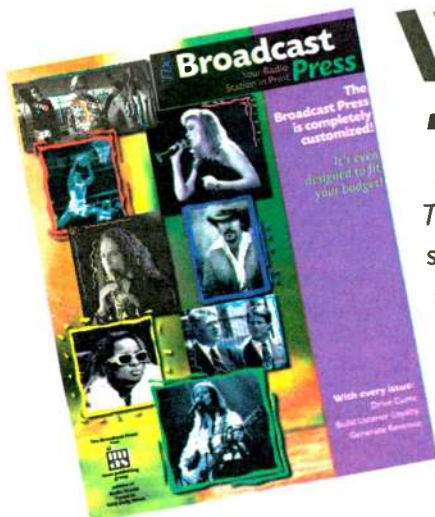
See ARRL, page 59 ►

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▶ ARRL, continued from page 58

The files in the Technical Information Service help solve problems with radio frequency interference (RFI) as applied to cable TV, VCRs, audio, telephone, PCs and so on. There also are files describing how to find

minus. The CD-ROM search engines are effective, the contents are well-organized and the images, diagrams, formulas and photos are outstanding. I enjoyed hearing the various sound files, too.

The printing works well, and as stated, I have been able to print

handy.

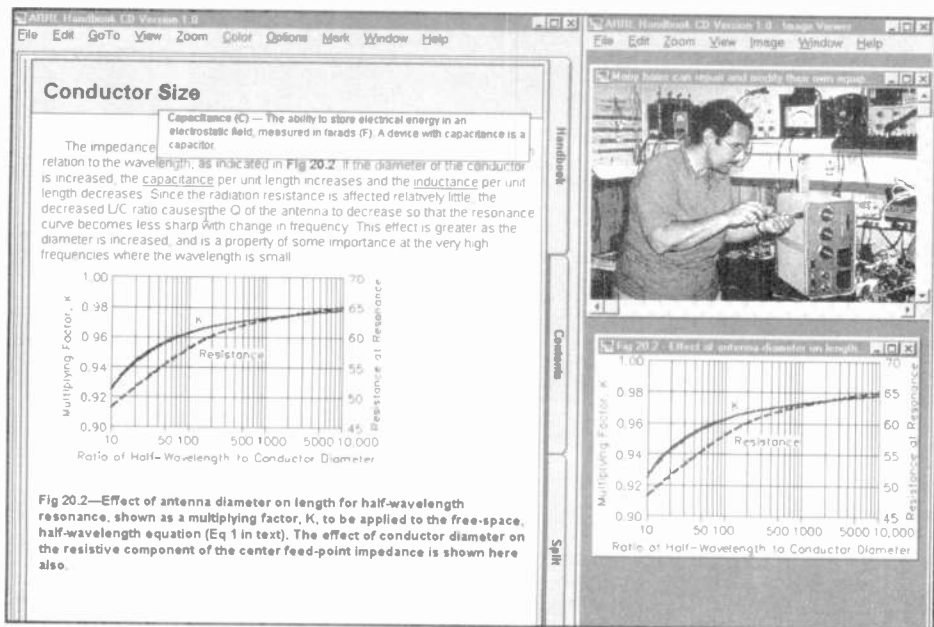
Also, I was disappointed that the CD-ROM did not include a printed guide booklet. I would have been willing to pay a bit more if it had.

Version 1.0 has been a great first effort in bringing the Handbook to CD-ROM. It is my hope that ARRL will incorporate ideas from this review into the next version.

For information, contact the American Radio Relay League, 225 Main St., Newington, CT 06111-1494. Call (888) 277-5289 or check the website at www.arrl.org

Mark Jovanovic (N3KBN) is a former electronics engineer for National Public Radio and technician for Broadcast Electronics. He has

designed and installed recording studios in the Washington area and specializes in equipment design and prototyping.



The ARRL Handbook CD-ROM Helps Build a Better Antenna

manuals, kits and radio repairs and details on packet radio.

Most of the DOS programs are written in BASIC. Programs include an active low- and high-pass filter calculator, a single-layer aircore coil-spacing calculator for use with loaded dipole antennas, a single-layer aircore coil inductance calculator and a PiNet calculator and coax line loss calculator, among others.

I give the ARRL's first effort an A-

numerous pages to add to my Engineering Binder.

It needs a greater bookmark capacity; I was able to fill it up way too quickly. I may want to refer back to many topics, but cannot because the program could not hold more bookmarks.

As far as the Vendor Database Software, some means of consolidating my existing vendor lists with those on the ARRL CD-ROM would have been

- CD-ROM drive, 2X speed or greater
- Mouse or equivalent pointing device
- Windows-supported soundcard

This evaluation was done on a 486 DX2-66 with 20 MB RAM, 800 x 600 Diamond Stealth 64 video card with 2 MB VRAM, Windows 3.11, a 2x CD-ROM drive connected through a Soundblaster AWE-32 soundcard and a Kensington Trackball.

The CD-ROM is not available for the Mac Platform, which is too bad; it is one very useful CD-ROM.

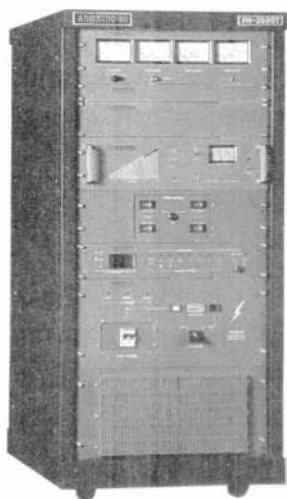
Minimum system requirements to use the ARRL Handbook CD-ROM:

- 386 PC (486 or Pentium recommended)
- 4 MB RAM (8 MB recommended)
- 6 MB free disk space
- Windows 3.1 or higher
- 640 x 480, 256 color graphics

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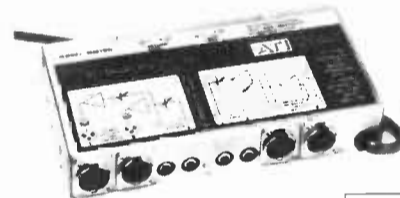
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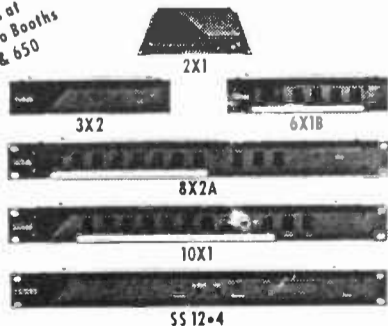
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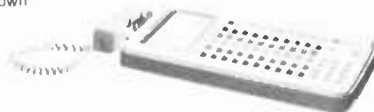
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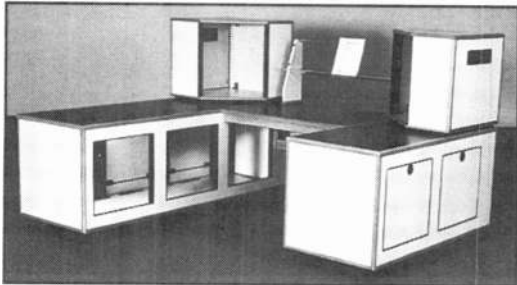
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Advanced Furniture Systems Introduces New Line

Advanced Furniture Systems introduced new AFS Series studio furniture. AFS can create furniture of any configuration with expandable and nearly seamless "modular sections." The AFS design incorporates equipment rack rails and access doors as standard features. Equipment racks are located in every side panel, both inside and outside panels. Access doors fit into any equipment rack space and come standard in all outside rack locations.



Other standard features include a single-level workspace, wood trim to protect all outside edges and wire exit/ventilation holes in each section base.

The company offers a full line of options and accessories, and can meet any custom needs.

For more information, contact Advanced Furniture Systems in Colorado at (970) 663-4123, visit the website at www.omn.com/afs or circle Reader Service 11.

NAGRA C-PP Digital Network Audio Transceiver/Recorder/Editor

The NAGRA C-PP is a digital network audio transceiver, recorder and editor. It is a rack-mount version of the ARES-C digital solid-state audio field recorder/editor, released last year.

The C-PP is designed around PC and FLASH memory technology, providing random access to recorded data, reusability, and low power requirements. A single 64 MB PC card provides more than two hours of continuous mono recording time.

Also, the C-PP features non-destructive, instant random access digital editing capabilities. With the built-in "virtual" editing capabilities, the user can quickly cut, paste and configure directly on the PC card.

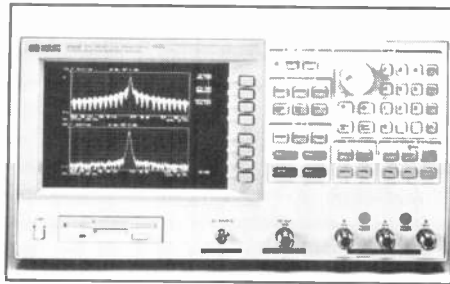
A built-in ISDN codec provides digital transmission; a standard two-way analog telephone connection also is included.

For more information, contact NAGRA in Tennessee at (615) 726-5191 or circle Reader Service 194.

H-P Combination Analyzer

The HP 4395A, a new combination 500 MHz analyzer from Hewlett-Packard, eliminates the need to "re-cable" for each test function. Providing network-, spectrum- and optional-impedance-measurement functions in a single unit, the HP 4395A covers frequency ranges from 10 Hz to 500 MHz.

The HP 4395A provides display



through a new color LCD thin film transistor (TFT). Standard VGA output allows the user to view an external display monitor from a distance.

Also standard is the HP Instrument BASIC (IBASIC) programming function allowing the analyzer to perform powerful test sequences, customized measurement procedures, process control and data analysis.

For more information, contact Hewlett-Packard at (800) 452-4844 ext. 5434 or circle Reader Service 63.

SSAC Flasher and Beacon Alarm Relay

Monitor the operation of one two-lamp beacon and one beacon flasher with the FB Series of tower flasher and beacon alarm relay from SSAC Inc.



The FB monitors the flow of current in the circuit through sensors. If a problem occurs, a solid-state output and an isolated single-pole, double-throw (SPDT) relay energize.

The FB operates at 120 VAC or 230 VAC 50/60 Hz.

When connected to a site monitoring system, the FB provides monitoring protection required by the FAA/FCC.

For more information, contact SSAC in New York at (315) 638-1300; fax to (315) 638-033; visit website www.ssac.com or circle Reader Service 37.

TC Electronic Digital Broadcast Maximizer

TC Electronic has launched a new digital audio processor, the DBMAX Digital Broadcast Maximizer.



Developed with input from chief engineers, the DBMAX combines three broadcast tools into one unit: a transmission processor, an "outside broadcast" tool and a post-production tool. Inserted as the final audio link in the broadcast chain, the DBMAX is used to maximize the station's audio modulation.

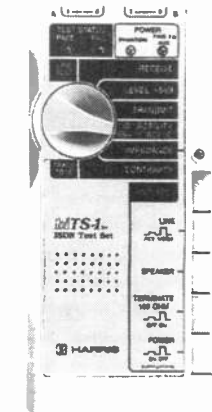
AM, FM and DAB are among its broadcast applications.

For more information, contact TC Electronic in California at (805) 373-1828; fax: (805) 379-2648, via e-mail: tcus@tcelectronic.com or circle Reader Service 218.

Harris ISDN Test Set

The Harris biTS-1 ISDN basic rate line test set identifies the source of a problem within a building. Using

pass/fail LEDs for easy readings, the biTS-1 verifies whether a terminal can access D channel, monitors D channel activity and activity on transmit pairs, and measures pulse levels.



A troubleshooting guide aids the user through the testing process. The test set is powered by a 9 VDC battery.

For more information, contact dealer Jensen Tools Inc. in Arizona at (800) 426-1194 or (602) 968-6231; contact Harris Corp. at (765) 962-8596; visit the Jensen website at www.jensentools.com or circle Reader Service 142.

Leitch AES Router With Quiet Switch

The new ASR-16x16 AES router from Leitch includes the Synchronous Quiet Switch (SQS) processor for quiet switching of AES digital audio. The router is intended for radio, live, post-production and critical monitoring applications.

The SQS provides two processing steps: synchronous switching and user-selectable cross fade. Maintaining AES framing during and after crosspoint switches, the synchronous switching ensures that equipment does not lose lock during the switch. The cross fade, which the user can disable, provides a quiet switch between any two sources.

For more information, contact Leitch in Virginia at (800) 231-9673 or circle Reader Service 168.

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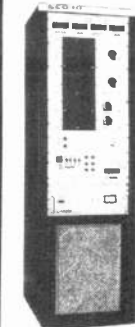
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Towers of Babble: Know Thy Lingo

Troy Conner

Tower workers are not aliens, but sometimes they seem to talk funny. In an effort to help non-climbers understand what the heck they're talking about, our Man of Steel offers up a list of tower terminology and slang. The first half of Troy's list appeared in our Aug. 6 issue; here's the rest.

Headache: If you are standing near the base of a tower while workers are aloft, and you hear this word, get under cover! Most tower workers are conscientious, but we all screw up. Even the best tower hand will occasionally drop

something, and it will be followed by the warning "Headache!" I have seen bolts and wrenches punch right through a metal roof or a truck hood. Experienced tower workers will run like track stars and dive under something stout.

Headache Ball: The headache ball is a counter weight that equals or exceeds the weight of the lift line running up the tower. Picture throwing a small rock, tied on a string, into a tree. Unless the rock is sufficiently heavy, the string will hang up on a limb. The headache ball provides the weight to "pull" the empty load line down the tower.

Hog Rod: Where this one comes from, I have no idea. The round diagonal braces or "lacing" of a tower commonly are called hog rods by those who wrestle them into place.

Nylon rigging slings, or simply 'nylons,' are used mostly for lighter work.

Johnny Ball Shackle: Technically called a J-ball clevis, this is a form of shackle. The entire shackle is slightly elongated and the removable pin looks as if it is bent. A J-ball clevis is designed so that rudimentary physics prevent the pin from rotating or being removed while under any load.

Kip: A kip is another word for 1,000 pounds, a standard unit of measurement used by structural engineers. Guy

tension charts often give the temperature-based cable tensions in kips. Why not tons or pounds? Who knows?

Load or Load Line: The load is anything rigged to be lifted. The load line (winch cable) provides the means.

Mast: This is the vertical steel pole on which we mount top-mounted FM antennas. The sailing origins of this one are obvious. Europeans often refer to the whole tower as a mast or as an antenna mast.

Nose Bag: The canvas bucket that tower workers use to haul tools and equipment looks just like the bag that one would fill with feed and hang over the head of a horse.

Nylon: Slings are made of either steel cable or a polymer webbing. Nylon rigging slings, or simply "nylons," mostly are used for lighter work.



SafetyTest CB-7 Canvas Tool Bucket, or 'Nose bag'

Phillystran: Phillystran is a brand of non-conductive resin/matrix-based polymer cable used in place of steel guy cables to prevent interference to a signal emanating from an FM antenna on the tower.

Spud: The spud wrench is synonymous with real tower work. Spuds are known by many other, more formal names. These names often reflect their intended market. Spuds are sold as bridge builder's wrenches, erection wrenches, alignment wrenches, steel construction wrenches, and so on. I think spuds are happiest when lightly oiled and just called spuds.

Traditionally, a spud is a heavy, open-ended wrench with a long pointed handle. This point can be used as an alignment tool. Historically, spuds were stamped with the diameter of the bolt, not the width of the nut (actual opening), as is the case with normal wrenches. The adjustable spud crescent and spud-style half-inch socket drive are among my favorite tools.

Tag Line: A tag line usually is attached to a load being lifted. It is used to guide the load from the ground. The tag allows the load to be held out away from the tower during the lift to prevent it from hanging up. A variation of this approach is a "trolley line." A trolley is a fixed line, rigged above the load block to a point out from the base of the tower. The load then rides a block on the trolley line.

Thimble: Any time a cable is looped back on itself, in order to form an eye, an appropriately sized thimble should be used. The thimble is shaped like a teardrop and prevents the eyelet from collapsing upon loading.



Man of Steel

Torque Arms: These are designed to add torsional rigidity to a tower. By doubling the number of guy cables at a given level, and by increasing the effective face width of the structure, torque arms significantly dampen wind-induced twisting forces.

Two-Blocked: This is one you hope not to hear. Visualize a crane that has lifted its lower block (the hook) until it can go no further. At that point the crane, the load and indeed the job itself can be considered two-blocked. Technically, it means that the load cannot be lifted higher, because the upper and lower pulleys are touching. However, any time a job is on hold, a tower hand might refer to the situation as "two-blocked."

Two-Part, Three-Part, Etc.: In a rigging application, this refers to the pulling power of the rigging system. For example, a two-part system allows us to lift a ton of load with a half-ton hoist (ignoring friction, which can be considerable). Although multi-part rigging does increase load capacity, it also increases the amount of cable we must move and proportionally reduces lift speed.

Whoop Signals: Whoop signals evolved from nautical bells and bosun's whistles, and date from the early days of constructing bridges and buildings. Whoop signals are commands directed at the operator of a hoist or crane. Although rarely used in these days of two-way radios, you might still hear one. Here's a quick guide: One whoop means bring the load up, two whoops means let it down and a long whooooo means stop or hold the load.

Quick quiz

I hope the next time you play host to a tower crew, you will be equipped to understand their lingo. So test yourself now by translating this give-and-take:

Foreman Robert: "Hey, Jim, we ready to ride?"

Jim: "Yea, I think so. The pole is jumped out the top. I just hooked the load line to the new section and got us a couple spare nylons clipped to the headache ball."

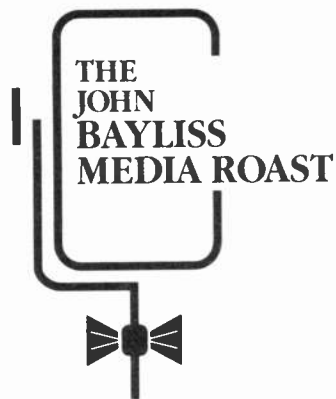
Robert: "OK, what about a nose bag with bolts and Ancos? Oh, and spuds to fit?"

Jim: "Yea, yea. Let's go." ■■■

Troy Conner is the owner of Tower Maintenance Specialists. Got a question you'd like Troy to answer? Drop us an e-mail at pmclane@imaspub.com

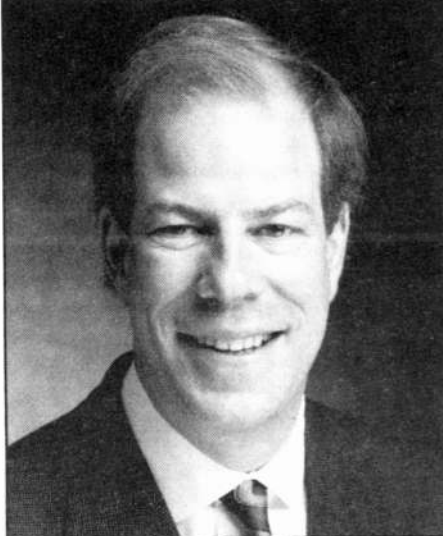
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RTNDA: Back to Basics

Steve Wagner

How do you create compelling radio news? Can local radio news survive deregulation? What will radio news directing be like in the next century? What does radio have to do to find — and keep — good employees?

These questions will all be addressed at the RTNDA International Conference and

The RTNDA Conference includes several sessions for radio people. Among them:

"Newsgathering Undercover: Understanding the Ethical and Legal Issues"

"Arbitron Basics: Putting the Numbers to Work for Your News Operation"

"Maximum Exposure: Exploring the Elements of Effective Investigative Reporting"

"Sounds of Success: Creating Compelling Radio News"

"Radio News Directors: The Next Century"

"Profitable Partnerships: Bridging the Gap Between News and Sales"

"Radio Give & Take: An Idea Exchange"

Exhibition, to be held Sept. 17-20 in New Orleans. There is something for everyone, according to RTNDA Chairwoman-Elect Lucy Riley, news director of WSFA-TV in Montgomery, Ala.

"The overall theme is 'back-to-basics.' We're exploring a lot of skills ... writing, as well as personal, professional and management development. Good performance reviews are another topic."

Veteran television journalist Walter Cronkite will emcee the Murrow Award presentations. What sets these awards apart

RTNDA

from the others, said Riley, is that it's "pure recognition by your peers."

"They're letting us set up a classroom on the show floor with 20 PCs," said Mark Thalhimier, director of news for the Next Century Project. "We're going to have three days of Internet classes. The purpose is to teach news directors who have a wide range of interests and skill levels additional uses of the Internet that can help reporters."

"One area will be 'How Should You Build and Why Should You Build a Local News Website' to support your radio or television broadcasts. Some sessions will be specifically directed toward radio because you can put audio on the net fairly easily now."

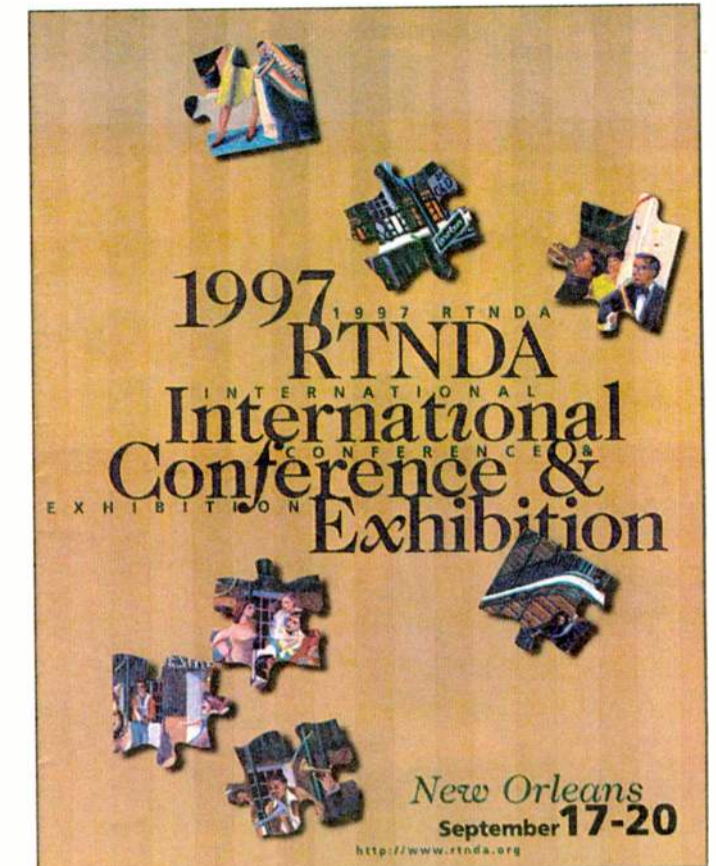
One issue that will be addressed is the validity of using Internet tips as sources.

"There are sources and there are sources," said Thalhimier. "One of the things that news organizations are learning, that are putting in an effort to be on the 'net, like CNN and MSNBC, is to have a defined brand. And the information you find there has been written objectively by journalists."

There will be joint sessions that include topics pertinent to both radio and television.

"The issue of credibility is plaguing a lot of operations these days," said Riley. "One session titled 'Sounds of Success' deals with how to create compelling radio news. News gathering undercover is a subject where the ethical and legal issues of using hidden cameras and microphones can be explored."

"Also on the agenda will be investigative reporting. High-tech toys for the radio newsroom. We have a session on electronic court coverage. Bridging the gap between news and sales on radio. Also a panel on recruiting in radio — a very



challenging workshop."

Show attendees will be treated to Creole and Cajun cuisine, a couple of Mardi Gras bands, street performers and tours through the exhibit hall.

Summarizing what he hopes

to achieve with the show, Riley said: "My goal is to focus on what we want to be when we grow up as an association. We're going to do some long-range planning that we haven't had a chance to do the past few years."

Internet, New Gear Make News Job Easier

Lauren Rooney

The clack-and-ding of the typewriter has given way to the point-and-click of computers in the newsroom.

However, the RTNDA "News in the Next Century Project" (funded by a grant from McCormick Tribune Foundation) reveals that computer technology is not being used to its full potential. Project Director Mark Thalhimier said, "One of the things we realize is the Internet is something broadcasters should learn more about."

Mastering cyberspace is the purpose of "The Internet and On-Line News Lab," featured at the 1997 RTNDA International Conference and Exposition. This lab is designed to help attendees "untangle the Web."

"We're going to have Internet class," said Thalhimier. "MCI is bringing a high-speed phone line to the convention floor, and Gateway 2000 is lending us 20 PCs." The class will take attendees from turning on their PCs, to surfing the 'net for news sources. The teacher's monitor will be projected on a big screen, and computer pros will be nearby to help attendees along.

Brian Cooley, director of CNET Radio, an on-line computer news and information service, will do his show live from the lab. "What I do is entirely computer- and Internet-based," said Cooley. "(T)here's no tape or recording equipment in our studios. We do it all digitally."

Cooley will also be part of a panel discus-

sion called "Radio News: On Air and On Line." He said stations must be slick with their sites.

"What makes your station different on the air will make it different on the Web," he pointed out. If you're the news/traffic leader in your market, do that on the Web, only expand it. "Some states have cameras on the freeway; put

those pictures of traffic on your web site," suggested Cooley.

And because content is king on the Internet, Cooley shows how to inspire all your staff to keep the web site updated, "As quickly as you get the latest news on the air, you should get it on your web page."

Even with fountains of computer knowledge, nothing beats hitting the streets to gather news. The "Hi-Tech Toys for your Radio Newsroom" session will feature the latest gizmos designed to bring the news to life.

Moderator Bill Roswell, news director of KYW(AM), Philadelphia, said that while talent will always be important, it's also important to stay up on the latest technology. "It can make the reporter's job easier and faster," he said. The old note pad and No. 2 pencil might have been fine for Lois Lane, but Roswell sees future reporters heading out with laptops. "The reporter would record the sound, edit it, and send it back to the station all from the computer," he said.

The RTNDA show will be held Sept. 17-20 in New Orleans.



Brian Cooley

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ON THE JOB

The Dreaded Job Interview

Sue Jones

This is the second in a four-part series to help you prepare for your next job interview. The first part appeared Aug. 6.

The interactive part of the job interview is the most important because it will determine your suitability for the position. Here are a few tips on how to prepare for and conduct yourself during an interview.

1. Anticipate as many questions as possible. At a minimum, be prepared to discuss special skills, accomplishments and ways that you added to the bottom line with your employers. Have some examples ready and briefly describe them.

Do not skip this step. If you have not thought through these answers and practiced verbalizing them, you could stumble and leave out important details that will distinguish you from other candidates. Worse, you may not recall an excellent example of your work.

2. Practice the interview, several times if necessary, with a trusted friend or family member. If you can, record your practice interview. These steps will highlight your interviewing flaws quickly.

Have your friend or family member ask you unusual questions so that you practice thinking on your feet and handling off-beat questions. Another way to prepare is to put yourself in the interviewer's position and think of the questions you would ask.

3. Always be ready to answer classic interview questions such as:

"Tell me about yourself." Be careful about this type of wide-open question. It is designed to see how organized you are. You could ramble on for an hour about yourself, in which case you will be passed over for another candidate.

The best response is to ask the interviewer a question to narrow your answer. For example: "I would like to make sure I cover the areas that interest you. Would you like to know about my specific experience as it relates to this position or my career objectives?" By asking this question, you immediately tell the interviewer that you would like to address his specific concerns.

Heard this before?

Other classic interview questions include:

"What are your career goals?"

"Where do you see yourself five years from now?"

"What are your strengths?"

"What are your weaknesses?"

For this question, prepare a response that does not relate to the position. You avoid revealing a possible negative that can eliminate you as a candidate, and gives you a chance to insert some humor in the interview safely.

My response to this question is "I can't sing." Other responses that could be equally effective might be: "I don't play baseball well," or "I am not a good dancer."

Another alternative: "I have a tendency to be a workaholic." Most employers will not find that to be a weakness.

If the interviewer presses for a weakness in your job area, pick one but follow it by describing the steps you are taking to correct the weakness. For example, if you are interviewing for the business manager's position, your response might be: "I have found that I need to develop a better understanding of the accounting software pack-

ages available in the market. I am currently enrolled, or plan to enroll, at a course at the community college that has hands-on review of the most common accounting software packages."

Some more common questions:

"Why do you want to work at this station?"

"What makes you think you are a top-level engineer (promotions manager, business manager, general manager)?"

"Why should we hire you instead of other people we interviewed?"

"What do you think of the station or company you are working for? Why do you want to leave?"

These last are trick questions, designed to discover whether you are having difficulty with your employer. Even if you have justifiable reason to say it is a miserable place to work, don't do it. However, you should be prepared to say why you want to move on. You can answer that you seek career advancement; that the station was purchased and is consolidating positions at several stations; that this is an opportunity to use your radio experience and develop new skills.

Be prepared

4. Come prepared with your own questions. Remember, you are interviewing the

station as a potential place of employment. If you have no questions, you convey a lack of interest.

Your questions should be related to the position you seek. Questions such as "How much vacation time will I get?" and "How often can I expect a pay raise?" will not present an image of a hard-working professional.

Ask questions that will give you information about the station's operation. Good examples: "What are the short- and long-term goals of this station?" or "What specific problem is this station trying to overcome in the market?"

If possible, use the information that you receive to combine with one of your skill sets to discuss how your background is suited to that station's operation and what you can contribute to its mission and bottom line.



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World Radio History

DG Systems: Where It All Began

Alan R. Peterson

We close out our three-part series on digital delivery systems with a look at the group that originated the service: Digital Generation (DG) Systems.

In 1992, the first delivery went out from the DG home office in San Francisco. Since then, DG receivers have gone into 5,000 radio stations and 400 television and cable systems. Two hundred points along the system insert audio upstream to the DG distribution headquarters.

Recently, DG Systems acquired the Mediatech/Starcom subsidiary of IndeNet Inc., making it the nation's

largest broadcast advertising distribution service. In its financial statement for the first six months of this year, DG Systems states that it had a 135 percent increase in revenue over the same period in 1996.

Not bad for the "grandpa" of the three big distributors.

Familiar look

Broadcasters are familiar with the original DG Systems receiver: a beige box with a meandering yellow screen and a few rubber buttons. The newest version now integrates the receiver into the station's computer network.

"You can browse the contents from any other PC located in the station," said Boda

Chen, audio products manager. Chen said the new receiver also supports the ENCO audio storage and automation system.

The new boxes also support HTML and graphics via the Internet, in addition to audio delivery. With the new DG Online service, agencies can forward flight information and stations can have confirmation of delivery.

If the Internet is involved, what keeps agencies from delivering their own material over the 'net, bypassing DG Systems?

"DG ensures the receipt and quality of the audio being delivered," said Chen. "There is no real standard for audio/video compression and there is a lack of reliability when it comes to the Internet. DG can guarantee delivery every time because we use dedicated lines; we 'own the tracks.'"

Single hub philosophy

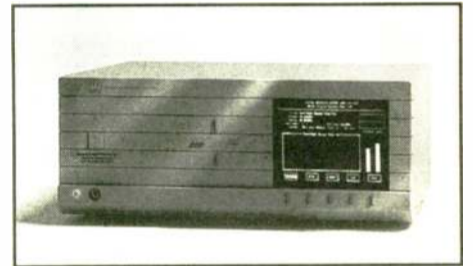
DG Systems guarantees all transmissions because all audio goes through one central point: the Network Operations Center.

Jeff Byrne, vice president of marketing, said, "We can track multiple components through the headquarters. With one clearinghouse, we provide agencies with some peace of mind. Two or three times out of 10,000 we have a problem, but it can be fixed."

Chen said, "The commitment to training the staff in one place is the focus here. And we provide digital archiving here as well."

Like the other services, DG can "time-lock" a spot or song to become available only at a specific time. Because the receiver is a closed system, it is not possible to hack the internal computer and reset the DOS clock to prematurely open the event.

"We are always in communication



The DG Systems Receiver:
5,000 Strong

with the receivers," said Chen. "We frequently reset the terminal clocks during delivery so there is no drift."

This constant communication is why DG Systems requires a dedicated POTS or ISDN line for its receivers. Too often, stations hang a fax machine across a POTS line meant strictly for a terminal. This impairs the reliability and constant monitoring of DGS receivers in the field.

Pretty pictures

DG Systems also is deep into the business of delivering television spots, with 400 "ADvantage DVPS" boxes at television stations and cable head-ends. The black-finished receiver resembles its radio cousin. It has a larger screen and a bigger, heavier case, but the handful of rubber buttons scattered around the front panel belies its heritage.

Delivery to the ADvantage receivers is via DirecPC satellite dishes, the same type used for wireless Internet communication through home television sets.

What's next for the elder statesman of delivery services? "We are staying focused on advertisers and agencies as our customers," said Chen. "We defined our services by the way the industry already worked, and we fit into the solution by being flexible and accessible."

Station consolidation and automation have been addressed by DG Systems, with the ability of the new receivers to directly integrate with ENCO. Other systems are out there, and the company is working on them.

With its five-year head start, DG Systems is bound to remain flexible for the future.

■ ■ ■

For information, contact DG Systems in San Francisco at (415) 276-6600. Alan Peterson is RW's technical editor.

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**Radio at the
Hall
Page 71**

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September 3, 1997

Family Focus, Impressive Plant

Terry Skelton

On a hill on the outskirts of Colorado Springs, Colo., stands a 212,000-square-foot, beautiful, multi-million dollar building that faces the Rocky Mountains. More

than 1,200 people work here, in the headquarters of the organization Focus on the Family and the location of its broadcast studios and satellite uplink.

Unlike many new broadcast plants in the United States, this did not start out as an office building, a bank, a shopping mall or



Main Control Room A and Studio With PR&E Console and Sonic Solutions Workstation



Focus on the Family Main Building

once a week on 43 stations.

Dobson was an associate clinical professor of pediatrics at Children's Hospital in Los Angeles and had written a couple of

well-received books on raising children. After spending time on the lecture tour, he found that radio was a better way to spread his message of practical help to husbands, wives and children. Today the various programs that carry his philosophies are sent via satellite, CD, cassette, and videotape to more than 1,900 radio stations in

the United States alone. The satellite operation runs two channels, 24 hours a day, seven days a week.

Programs are carried on commercial and non-commercial stations, but funding comes entirely from donations. Dobson also writes regular, nationally distributed newspaper columns. Focus on the Family organizations exist in Canada, South

See FOCUS, page 68 ▶

a warehouse. It was built from the start as a by-the-book broadcast plant. Completed in July of 1993, it is a state-of-the-art radio facility.

Focus on the Family was founded 20 years ago in California by psychologist and author Dr. James C. Dobson, to bring his knowledge and beliefs about families to a wide audience. The first radio show was 25 minutes long, airing

Don't Tune Out 55+ Demo

Advertiser misperception of the 55+ demographic may create a missed opportunity. Older Americans watch plenty of television and read their newspapers, but radio also plays a major part in their lives.

During the average weekday, 74 percent of 55- to 64-year-olds listen to the radio. The average weekday radio listenership percentage drops off to 61 percent among persons 65 and older. Heavy users of radio outnumber heavy users of television by 7 percent in the 55-to-64 demographic.

Although older Americans receive more exposure across the board to television and newspapers than to radio,

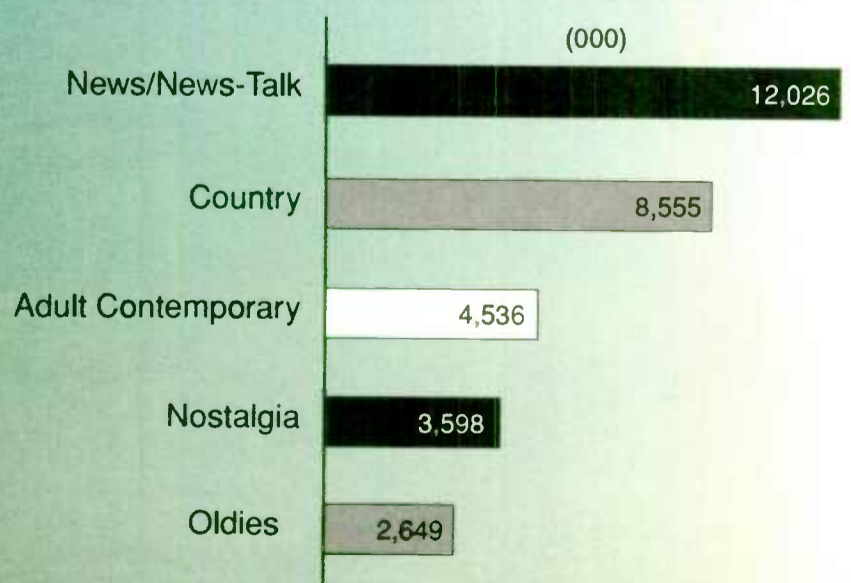
they have an underestimated loyalty to radio. "Older media users ... are also listening to much more radio than many marketers are aware of," said Michele Skettino, author of an Interep report on the demo.

The report reveals that Americans 55 and older have more than 30 percent discretionary income, and large majorities have time on their hands to enjoy leisure activities.

"They are healthier, more active and wealthier than any previous generation," said Marla Pimer, executive vice president, director of research at Interep.

— Chris Hamaker

Radio Formats with Highest Reach Among Persons 55+



Courtesy of Interep Research Division

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Circle (137) On Reader Service Card

'Family' Planning Pays Off

► FOCUS, continued from page 67

Africa, Australia and South and Central America. The organization is non-denominational and not associated with any church, and Dobson is not a clergyman. But the core values clearly are religious in nature.

The physical plant

The studio facilities were designed by the chief engineer at the time, Ray Terrill, who is now a consultant. Although this operation is a "program provider" and not a full-service network, the visitor might not know it. He or she would find eight control rooms, six studios, 16 edit "offices," an audience area with seating for 80 people, a satellite uplink control room, a dub room, two video editing suites, a Foley stage, a mastering room and a cassette duplication facility with a Gauss bin system that produces 5,000 tapes a day.

Floating floors, proper doors, acoustically correct rooms, drop-dead soundproofing and silent air-conditioning contribute to the quality of productions. All digital/computer equipment runs on a 40 kVA uninterruptible power supply. A 100 kW generator runs that and the analog gear. Three power distribution systems support digital equipment, analog equipment and "house" power. Separate Control Concepts Isolatrol systems condition all tech power. Massive ground cables come back to the power room from each audio area and connect to a large copper bus bar before dropping

through the floor to a true underground ground.

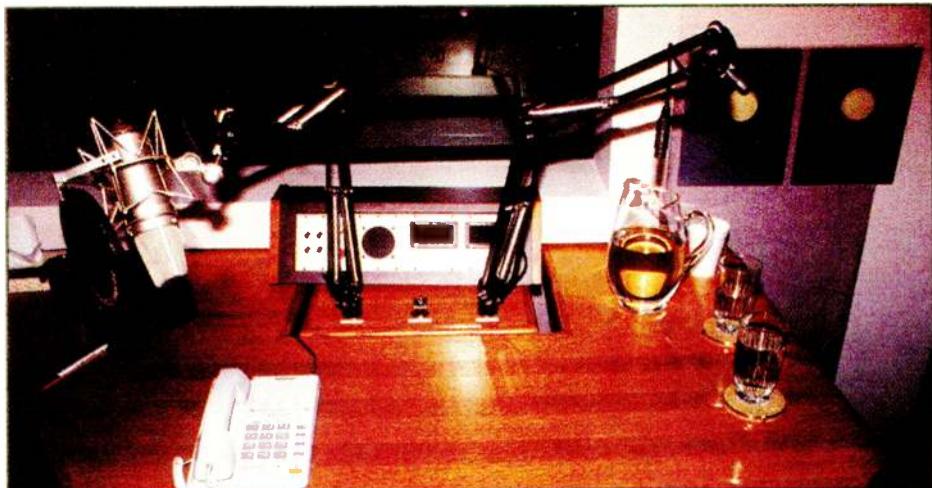
Sixteen editing offices, three control rooms, the dub room and the mastering room contain Sonic Solutions Medianet networked digital workstations. The two news editing control rooms use Digital Audio Labs CardD with Fast Eddie software, networked; two production control rooms use the Spectral Synthesis Audio Engine, networked. Although programming typically is monophonic, the children's program "Adventures in Odyssey" is produced in stereo and distributed on cassette.



The 'Foley' room has various floor surfaces for effects.

MPEG Layer 2 data compression is used throughout the plant. Two server-based 4.3

GB "mirrored" hard drives store up to 30 hours of programming for delivery to the uplink after production, running under an ENCO program. Two satellite desks pro-



A typical announce studio. Note the isolated table surface.

gram and monitor the feeds. The signals go in digital form on Ku band satellite to the Chicago International Teleport, where they are converted to analog and sent up to Spacenet 3 for distribution to stations. The audio bandwidth of the digital signal is 20 Hz to 20 kHz.

Colorado can come up with some mean weather. Automatic monitors count data errors in the Ku feed and can activate ISDN backup equipment, providing quick transitions in case of satellite fades. Programming also will be carried

soon on the Echostar direct-to-home satellite system headquartered in Wyoming.

Keith DeBelius, the chief engineer for four years, is involved actively in the development of an all-digital "store-forward" system. Now, programs are repeated numerous times during the day to allow stations to air them at various times. Under

the "store-forward" operation, programs would be fed once and stored automatically on hard drives at the local station, and broadcast under the control of either the station or Focus on the Family. This would free considerable satellite time, minimize errors and improve audio quality as aired.

DeBelius said many affiliates don't have the staffing or equipment to record and rebroadcast programs with high quality and reliability. Installing automatic "feed forward" systems would solve that problem.

See FOCUS, page 69 ►



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KXGL



KTAR-AM

God, Family And Good Audio Design

► FOCUS, continued from page 68

The scope of the Focus operation means DeBelius and his staff have many decisions to make, many problems to solve. A recent technical project has been the selection of a new, high-quality monitor speaker as standard gear for the edit offices. The current control room standard, a Tannoy model, is no longer made. After considerable testing by the engineering and production staffs, Focus on the Family chose the Genelec 1029A.

DeBelius has had some difficulties with the large uninterruptible power supply.

"All UPS systems are not created equal," he said. "Ours manufacturers a nasty artifact at about 2 kHz, which tends to leak into the analog gear."

The staff also has spent a considerable amount of effort on problems with DAT tape interchangeability. After receiving numerous new DAT machines that were out of spec even when new, he sent his maintenance people for factory training. DAT service and alignment occupies one person full-time.

DeBelius has eight technicians working for him. He looks for people well grounded in audio, with a good understanding of computers and networking. More than 20 other people work as editors and producers in the Broadcast Production department under Director Rob Kirkpatrick. Programs produced there include Dobson's daily "Focus on the Family," "Family News in Focus," "Washington Watch," shows for Armed Forces Radio and Television, Christmas and Fourth of July specials, and Spanish versions of Focus on the Family's various programming. A regular film production is "Last Chance Detectives," shot on 35 mm film. Part of the film unit is in Los Angeles; Focus also has a two-person news bureau in Washington.

Working conditions seem pleasant. DeBelius, who came from the ABC television network in Los Angeles, said salaries clearly are lower than what a commercial network would pay. However, he said, most of the employees take home another benefit: a belief in the tenets of "Focus on the Family" and participation in that mission. Job applicants must sign a "statement of faith" outlining their relationship to God and agreeing that they believe in the various religious principles that are the foundation of "Focus." Daily group prayer in each department is required. These 20-minute sessions cover employees' personal problems, departmental problems and specific prayer for people who have written or called Focus for help.

■■■

Terry Skelton is the southwest sales manager for Clear-Com Intercoms and an audio consultant and technical writer. He is based in Sante Fe, N.M.

OFFBEAT RADIO

'UFO Live' Radio Show Takes Off

Dee McVicker

Something extraterrestrial is happening in the skies, all right, and it's not coming from Mars, Hale-Bopp or Roswell, N.M. It's coming from the Florida space coast, where "UFO Live" originates Sundays at midnight.

The program debuted Nov. 11, 1996, just days after a rash of UFO sightings along the Florida coast and as the Mars Global Surveyor was being prepared for launch at the Kennedy Space Center. Several witnesses were interviewed on the show. Some shaken, others calm, they reported what appeared to be a spacecraft that hovered over

Sebastian Inlet. It then headed south to the Kennedy Space Center where, 50



miles away, approximately 30 people reported the phenomenon lingering near the Mars Global Surveyor launch pad.

"UFO Live," originating in Cocoa,

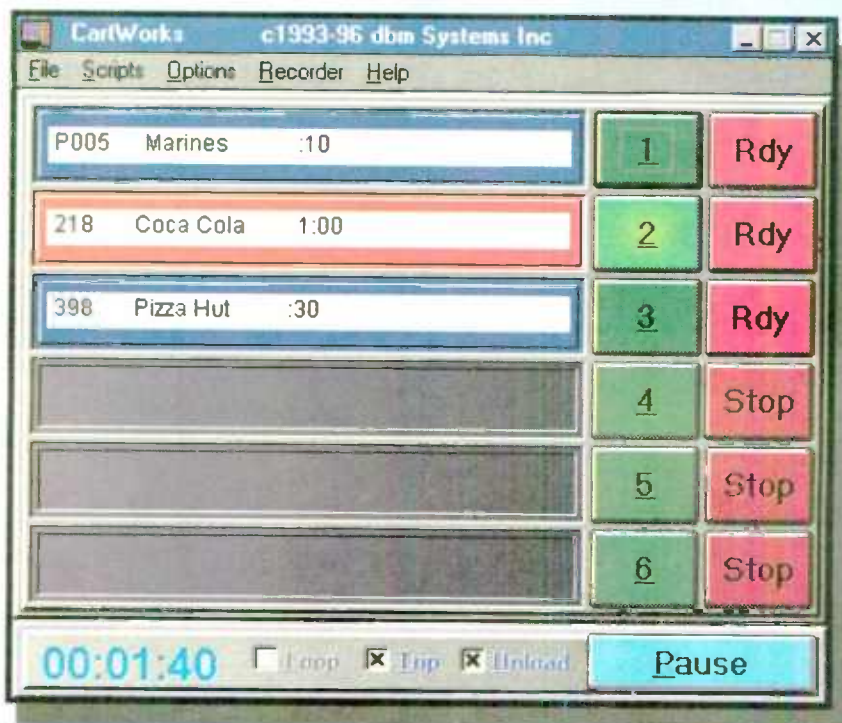
Fla., captures the interest we Americans have in things alien. It pulls on the same fascination that Orson Welles put to good effect in his infamous radio program "War of the Worlds."

Seventy-two percent of Americans believe other planets hold life, according to a Gallup poll taken last year.

In June, CNN and Time magazine found that 22 percent of adult Americans believe intelligent beings from other planets have been in contact with humans.

See UFO, page 70 ►

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<http://www.cartworks.com>

Radio Show Looks to the Sky

► UFO, continued from page 69

Even some radio folks believe in little green men — if not for fun, then certainly in the hope of gaining market share. The show's satellite distributor, Orbit 7 Radio Networks, transports "UFO Live" on SATCOM C-5 to 13 radio affiliates in markets that include Baltimore and Albuquerque, N.M. The show also has a presence on the World Wide Web at www.ufolive.com

Lights above

Meanwhile, the skies bring a production of intergalactic proportions to "UFO Live." Strange lights appeared near Phoenix in March and, later, near Las

Vegas. They lit up the night sky, then the call-in switchboard for "UFO Live."

"The Las Vegas Metro Police received quite a few calls (on) June 23," said Dr. Duncan Bowen, the producer and host of the show. "The lights seen over the Las Vegas skyway were similar in pattern to (those) reported near Phoenix in March." Bowen, a psychologist, has hosted talk radio programs "Psychological Perspectives on Life" and "Mind to Mind: Enhancing Your Personal Growth."

In the weeks leading up to the 50th anniversary of the alleged UFO crash in Roswell, interest in UFOs increased. Show guests disputed the govern-

ment's recent report on the incident and its claim that the "aliens" were dummies fallen from secret reconnaissance balloons.

"The government's statement that dummies were falling from the sky was not credible to any of the research," said Bowen.

The show's venue near the Kennedy Space Center has been paramount to its viability. "We hear a lot of information living in and around the space coast here, that maybe some of the other people around the region don't hear as quickly," said Bowen. He broadcasts the program from his studio office and sends the audio over ISDN lines to Orbit 7 Radio Networks. He typically starts the hour-long show with 10 minutes of information on recent sightings, and then segues into an interview with an author or specialist in the UFO phenomenon field. He typically closes the show with call-ins from listeners.

A distinguished list

Guests have included Dannion Brinkley, author of "Saved by the Light"; Richard Hoagland, scientist and author of "The Face on Mars"; Beth Collins, author of "Connections"; and several members of the Mutual UFO Network, a non-profit organization that investigates UFO reports and other phenomena.

Paranormal activity is a topic that

attracts curiosity seekers, the technically inclined and the somewhat eccentric. Even workers at the space center seem to be interested in the controversial subject matter, Bowen said. While officials at NASA have not endorsed the show, Bowen said, "there are quite a few people who are interested in the UFO phenomenon who work at Kennedy Space Center."

Does the show attract some of the more unstable characters of society? "Occasionally we do get crank calls. But most of the callers are genuine and real," said Dominic Bond, the executive director of programming for Orbit 7 Radio Networks. His company supplies a toll-free phone number, and screens phone calls for the show.

Those call-ins suggest that listeners typically are 35 and older, which is a desirable target for most talk shows and will attract a wide range of advertisers, Bond said. Under the barter arrangement, several minutes of air time are available to the satellite distributor, the producer and the affiliate station.

"There's a large population out there in the country who are fascinated by UFOs," Bond said.

Welles was on to something. Maybe little green men and flying saucers do make good radio after all.

■ ■ ■

Dee McVicker is a freelance writer and regular RW contributor based in Gilbert, Ariz. She reports that she, too, has seen strange lights in the Phoenix skies. They look surprisingly similar to the red blinking lights of the South Mountain antenna farm.



'UFO Live' broadcasts outside the Kennedy Space Center in November 1996.

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Rock and Roll Your Remotes

**Ann Schwab and
Don Elliot**

For many music stations, few remotes would be as exciting as a visit to the Rock and Roll Hall of Fame and Museum in Cleveland.

A tour will find you strolling down Abbey Road to see John Lennon's Rolls Royce. Another turn or two takes you to Janis Joplin's psychedelic Porsche. In

since it opened two years ago. Its commitment to showcasing the past and present of music is obvious. All items on display are on loan or donated, and the museum constantly is being upgraded.

Dave Hintz, radio coordinator at the hall of fame and museum, said, "I think the museum takes a lot of people by surprise, the way we present the music and the media side of things. It's not just a picture on the wall with an autograph.

"We try to show the history, the culture and how it has meaning to our society," he said. "In everyday life, everybody has a favorite song. Many people connect with their past while they are here, and it is not unusual ... to walk through and find tourists with tears running down their faces from the sudden immersion into deep memories and



From the collection of the Rock and Roll Hall of Fame and Museum



Darlahood plays live during the 'Rockline' show from the Rock and Roll Hall of Fame and Museum's radio studio.

the works for spring 1998 is the Elvis Presley exhibit, with original Elvis costumes, interactive music and video displays. Drawn by the chance to experience a slice of music history, nearly 2 million people have visited the museum

In exchange for on-air mentions, the Rock and Roll Hall of Fame and Museum offers promotional and travel incentives for stations. These include:

- Tickets to the museum
- Museum merchandise (T-shirts, baseball caps, coffee mugs)
- Membership to the museum
- Five CDs of your choice from HMV record stores
- Radio Shack AM/FM Optimus headphones (one set per broadcast hour)
- Tickets to local sports events, amusement parks and entertainment (based on availability)
- Radio Shack in-store promotional campaign within your market
- Complimentary lodging for station personnel; discount lodging for listeners
- Optional travel opportunities

being taken back to the happy times when they were 16 or 18."

The growth of rock is intertwined with that of radio, so it seems appropriate that this particular facility would be equipped with a radio studio. In fact, more than 200 stations and broadcast groups from the United States and abroad have used the studio, including the ABC Syndicated Pure Gold group, the Jones Satellite Network, and prominent stations in Los Angeles and Chicago.

Stations come back for more

Hintz said more than half of the stations that have done remotes here are repeat customers, planning annual promotions based on their first experience and the reaction from listeners back home. Many stations make money on the promotion by arranging a paid "bus trip" with listeners and clients; others simply do a giveaway with the trip as prizes.

The Rock and Roll Hall of Fame and Museum radio studio, which opened the same day as the museum, can accommodate up to 10 representatives from a station. When in use, the glass-enclosed studio becomes part of the museum experience, enabling visitors to see and hear the broadcasts, letting them experience another aspect of rock and roll.

Stations are encouraged to bring banners and can take promotional photos.

Many broadcasters have been surprised by music celebrities who drop in on the broadcast during their visit. While no

In exchange for the use of its facility, the museum charges no fees, even for pre- and post-production studio time.

celebrity guest is guaranteed, artists from many genres have appeared at the museum, including Blues Traveler, Ray Davies, the Temptations, Paula Abdul, Better Than Ezra, Meat Loaf, Lost Boyz

and the Allman Brothers.

In exchange for the use of its facility, the museum charges no fees, even for pre- and post-production studio time. In fact, the museum offers many incentives for stations to do remotes.

The museum web page shows a live broadcast with in-studio, behind-the-scenes commentary — a great way for your listeners to hear how radio really works (or for you to get a flavor, in advance, of how a remote there runs).

For more information about the Rock and Roll Hall of Fame and Museum, including greater details of scheduling a remote broadcast, visit its website at rrhofm-radio.com or call (216) 515-1961.

■ ■ ■

Ann Schwab is a freelance writer and broadcast consultant with Don Elliot Creative Services.

Don Elliot is a voice actor in Los Angeles and operates Don Elliot Creative Services, specializing in commercial, jingle and promo production. He is the house voice of KFI(AM)-KOST(FM) in Los Angeles.

Hall's Studio Comes Equipped for Radio

Here's a partial list of the equipment you'll find in the Rock and Roll Hall of Fame and Museum radio studio, which stations may use at no cost for production and live broadcast:

Wheatstone A-300 audio console
Telos Zephyr codec for ISDN feed of program audio, IFB return
One telephone hybrid (all calls must originate from your station, not from the museum)
Technics SL-1200 MKII turntable (2)
Denon DN961FA CD player (3)
Marantz PMD-500 dual cassette

recorder/player

Tascam BR-20T two-track reel-to-reel deck (2)

360 Systems DigiCart hard-disk recorders with 65 MB removable media, available for pre-production (6)

Operator microphone and three guest mics

The station need only supply a console operator. Any station that has ISDN service but no codec can rent or purchase a Telos Zephyr through arrangements the museum has with various vendors.

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STEREOMAXX means one more tool for success and one less headache in a frantic industry where things change overnight.

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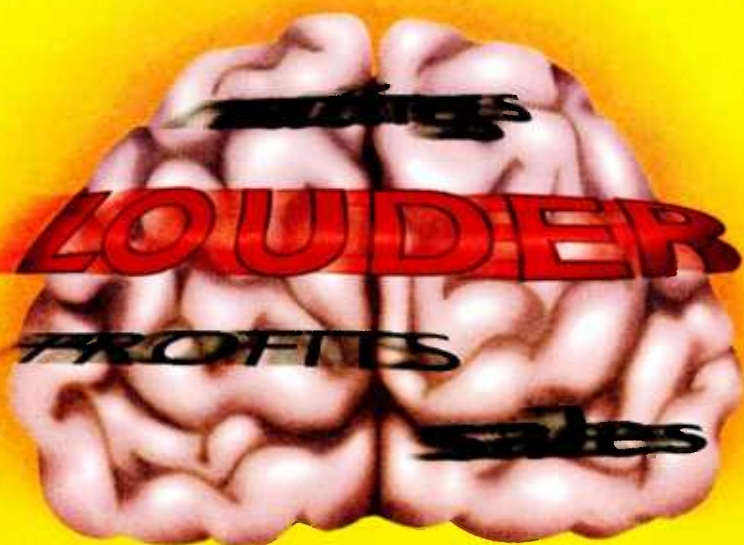
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World Radio History

RADIO ADVERTISER

Oreck Cleans Up With Radio Ads

Vacuum Pitch Man Likes to Use Radio, But Warns of Rising Network Ad Rates

John Montone

Tune in any radio station in any market and chances are you will hear his voice. David Oreck's pitch for his eight-pound Oreck XL vacuum cleaner is on stations regardless of location or format. The toll-free number rolls off his lips into the ears of America.

It didn't start that way, but Oreck didn't start out by selling his machine to the general public, either. When he founded Oreck Corp. more than three decades ago, his customers were hotels.

"But then people began to call us because they saw it in hotels," said Oreck from his New Orleans headquarters. "Frequently, the maids in the hotels would call because they wanted to buy them for their own use."

From that limited consumer base, Oreck's product took off, but it wasn't until five years ago that he began what has become a saturation advertising campaign with his first radio spots.

As befits his hands-on image, Oreck wrote his own commercial copy at first, and even now, he said, "I'm part of the team." The other team member is Goodnight-Rav, a Long Island ad agency, whose only client is Oreck. It makes for a personal relationship and for radio spots with a personal touch.

"The company's founder and president tells listeners, 'If you don't love it, you don't keep it,'" Oreck said. "I'm so confident that people will like what they get,



David Oreck

that I ask them to try it, and if they like it they keep it and if they don't then they return it. Our return rate is extremely low."

The master pitch man said he is "delighted" with radio.

"We spend a helluva lot of money on radio, and have for several years," he said.

A network strategy

At first Oreck bought talk radio shows. "Years ago I bought Rush Limbaugh when he was out on the West Coast, and a lot of other guys — a guy up in Boston, a guy in Chicago and so on." But Oreck no longer buys individual stations. Instead, the Oreck spots run nationally. He still uses Limbaugh, but buys the entire E.I.B. Network.

"We've used the CBS network for years, and I think we're on just about every other network, to tell you the truth."

Oreck defends his saturation approach. "The economics are there. We're selling in every market."

Another change in the company's

radio strategy is an expanded format list. Five years ago, Oreck bought ad time only on talk and news stations. "Our target audience has changed," Oreck said. "The demographics of our customer has broadened significantly. Originally it was middle-aged to older, middle-to-upper income. But today we're pretty much all over the place."

Oreck invests "a lot" on radio advertising. "We spend millions on radio, more than on TV," he said. Print, however, gets the biggest slice of his budget, including

four-page spreads in Reader's Digest and TV Guide, as well as newspaper inserts.

Oreck recognizes that radio has some advantages.

"We've been very successful on radio, and we used radio before we used any other media. We haven't cut our radio budget, we have in fact doubled it; but we have added to that all the other media," he said.

He believes radio makes it easier to target an audience, although that is not as important as it was when the company was buying on individual stations. "But since we carry our own paper, we give customers credit. The caliber of the credit

ORECK XL

Headquarters: New Orleans, La.

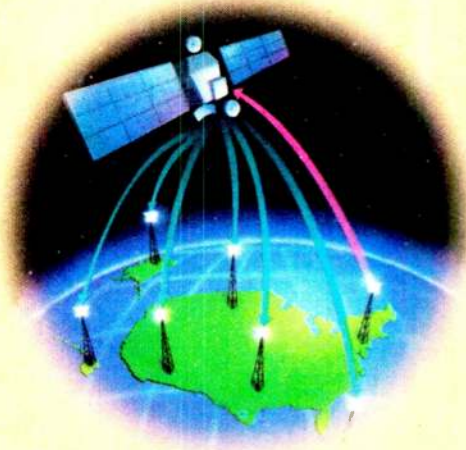
Business: Oreck is a water, air and home care company. According to Radio Advertising Bureau figures, Oreck Vacuum and Oreck Clean Air Machine spent \$21.1 million on media expenditures in 1995.

Ad Contact: Nancy Willey (504) 734-5390

customer is better on radio than we're using, than it is on TV."

See ORECK, page 74 ►

BEAM



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1997 Clarion Awards Honor Excellence

When the Association for Women in Communications handed out its annual Clarion Awards in Minneapolis this year, five of the winners were in radio-related categories.

The award "symbolizes excellence in clear, concise communication" in 93 broad categories. The 25th annual ceremony took place July 24.

Radio Advertising Spot

Entry: Henne Jewelers Atocha Treasure

From: DDF&M
By: DDF&M
Henne Jewelers

Radio Regular News Show

Entry: Ron Brown's Death
From: "Marketplace"
By: David Brancaccio, Host
Mitchell Hartman, Reporter
Stephan Beard, Reporter

Radio Feature Story

Entry: Ovarian Cancer/Vermont Blue

Cross Story

From: Vermont Public Radio
By: Steve Young, Reporter
Vermont Public Radio

Radio Documentary Series

Entry: "Guardians of Fear"



From: WJR(AM), Detroit
By: Marie Osborne

Women's Issues Radio Program

Entry: "Scarves of Many Colors: Muslim Women and the Veil"
From: KBOO(FM), Portland, Ore.
By: Joan Bohorfoush
Diana Dickerson

Oreck Is Everywhere On Radio

► ORECK, continued from page 73

But radio networks should not necessarily count on an infusion of Oreck dollars for years to come. He has seen what he believes is a natural but worrisome trend.

Rising prices

"Network people seem to be pushing up their rates, and we measure the cost of an inquiry very carefully," Oreck said. "If our cost per call goes up significantly, they may put themselves out of the box." Oreck sees the consolidation of station and network ownership as the problem.

"Obviously if you eliminate your competition by buying them, there's less competition, understandably, and they take advantage of that fact to raise their prices."

If the cost of radio advertising gets out of line for his company, Oreck will know immediately, for he is a man who keeps an eye on the bottom line. "I can measure results very specifically. I know exactly where a sale came from, and I know by commercial and by network. Other advertisers not in direct-sell can't be sure where the business came from: I can be. And so I watch that very carefully."

His print campaign is the most cost-effective but, he said, "I think radio is very good in terms of support advertising, in support of other things you are doing, in creating awareness. And so it is entirely conceivable that we have softened up the customer with radio and sold them in print."

If that is the case, Oreck will continue to soften the customers personally.

"After all," he said, "if you buy a Hoover, who do you call if it doesn't work. Hoover? Or if you buy a General Motors, who do you call? Being that we are a smaller company, I think the personalization has been helpful to us. And I work real cheap."

Or as you might hear if you turn on the radio anywhere in the United States: "If you don't love it, you don't keep it."

■ ■ ■

John Montone is a radio reporter for 1010 WINS(AM) in New York. He profiled radio advertiser Anheuser-Busch in the July 23 issue of RW.

DB's new FM Mos-Fet power amplifiers.



COLD-FET™ technology:

- ultra high efficiency
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KF 500: 500 W
KF 1000: 1000 W
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KF 3000: 3000 W
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READER SERVICE NO. 100

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The NEW SUB-03a Subaudible Tone Decoder

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- ▶ Provides filtered, balanced out.
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- ▶ Enable input lets you (or your automation) prevent closures.
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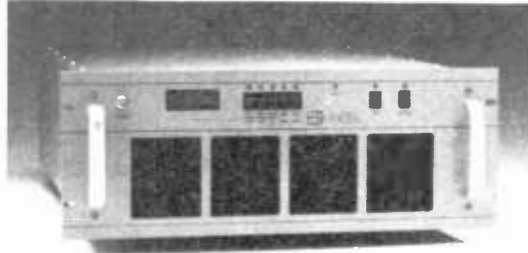
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<http://www.circuitwerkes.com>

READER SERVICE NO. 21


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TO 1200W



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READER SERVICE NO. 47

WATTCHMAN® TRANSMITTER PROTECTION SYSTEMS




WATTCHMAN® protects your transmitter and transmission line system. A permanent 19" rack installation used with any dual socket line section 7/8" through 6 1/8" and elements (additional) to monitor CW, TV, and FM power. Model 81070 features two easily read meters to monitor both forward and reflected power. Abnormal conditions quickly cause transmitter shut down.

TERMINATING LIQUID/AIR LOADS (84000/85000 series) available to cover CW power ranges of up to 10,000 Watts over a frequency range of DC to 2.4 Ghz. All models are available with optional thermal overload switches to interface with the user's interlock or warning circuit.

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Web Site <http://www.coaxial.com>
Email: coaxial@apk.net

READER SERVICE NO. 73

Fits In Even "STINGY" Budgets!



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DOZENS SOLD!

BASIC SYSTEM \$1245!
FULL SYSTEM \$2540!

GENERAL FEATURES: Basic system consists of main counter top and two PC system pedestals ... then you add on what you need from there, such as racks and shelf wings or talk table wings for a full system.

USER FEATURES: Two PC system base pedestals ... heavy rack rail systems with easy access standard ... passive ventilation systems throughout ... adjustable shelves ... wiring block backplane ... customizing ... quick installation.

DURABILITY BUILT IN: Top counters are two ply 1 1/2" thick with quality name brand laminate with protective 1 1/2" solid wood trim raised on the outside perimeters. Plus ... generous vertical and horizontal solid wood trim and recessed kickboards.

SPACEWISE® Broadcast/Furniture
CALL 800-775-3660
Visit our web catalog: www.spacewise.com
"The Broadcasters Furniture Store"

READER SERVICE NO. 99

THIS IS A TEST!

Southern Gospel Music is...

- a) something you once heard on the transistor radio at your grandmother's house
- b) popularized by ladies with strange hair-dos
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(If you chose "c", pat yourself on the back for looking forward not backward)

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1-800-742-3969 Solid Gospel



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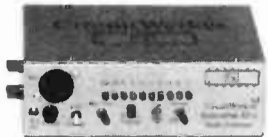
READER SERVICE NO. 128

Products & Services Showcase

For more information on the products shown below, circle the appropriate Reader Service No.(s) on the enclosed Subscription/Reader Service card or contact the advertiser directly.

Invaluable Remote Broadcast Extension or Great Test Gear for Your Tool Box? Hmmmm... You Decide!

The CircuitWerkes RP-1 combines a high quality mic amp with a headphone amp in one battery operated package for extending your remotes into locker rooms and other distant locations OR for testing out lines, etc. The RP-1 is a great addition to your remote setup and its host of handy features, including calibrated meter makes it an incredibly versatile addition to your station's arsenal. Whether you're doing news / sports actualities, general remote broadcasting or just need a handy, portable test set, you'll love the versatile features & performance of the RP-1.



The RP-1's Features Include:

- Headphone amp has a variable level balanced input and adjustable sidetone so you can monitor an IFB or cue return source AND your program audio.
- Program bus is fed by balanced mic preamp and an auxiliary unbalanced line in each with individual controls.
- Built in, variable level, 1kHz, sine wave calibration oscillator.
- 10 segment, calibrated, LED metering switchable to program output or cue input.
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CircuitWerkes

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http://www.circuitwerkes.com

READER SERVICE NO. 20

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Eliminate Out-of-Band Interference at your C-Band Receive Antenna



Photo of 7892's mounted between antenna feed and LNA's (both Vertical and Horizontal Polarization)

The model 7892 bandpass filter suppresses interference caused by radar systems.

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READER SERVICE NO. 46

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SERVICE, REPAIR & CALIBRATION

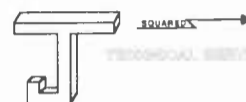
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READER SERVICE NO. 72

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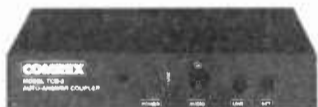


Passive: Model TCB-1

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As a pioneer in the development of both LNAs and LNBs, keynote historical events include: The establishment of the first private earth station in 1977, delivery of the first commercial production units of an all GaAs LNA in 1983, C-band LNBs in 1984

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This innovative and on-going development work has made Norsat the world's #1 commercial LNB supplier.

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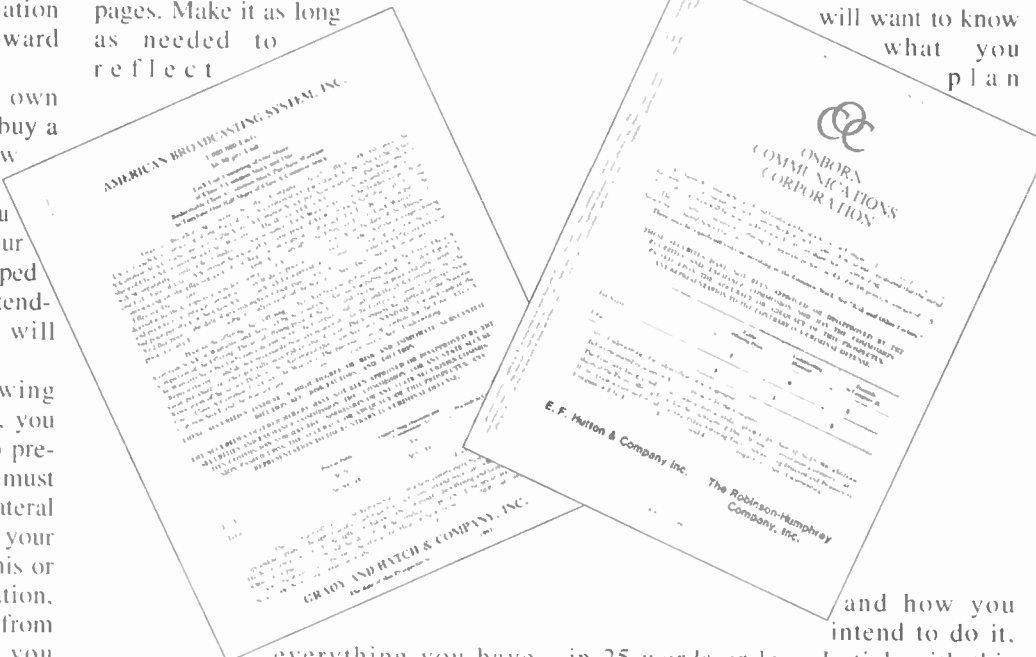
Show Me ... the Credibility!

Dain Schult

This is the second in a multipart series about buying and financing radio stations. The first part appeared Aug. 6.

ming and management), the better. Prior ownership, even in the form of stock options, helps. Any ownership in any kind of business is a plus. Your résumé should reflect this.

Forget that "rule" that a résumé should not exceed one or two pages. Make it as long as needed to reflect



Okay, I wasn't able to scare you off with stories about the perils of station ownership. So let's get going toward your goal.

Unless you already have your own equity fund of \$50,000 or more to buy a station, you will have to borrow heavily from friends and relatives, or find outside investors. But if you are like most radio broadcasters, your friends in the business are as strapped as you are; and if you care about attending future family reunions, you will avoid borrowing from relatives.

This brings us back to borrowing money from outside sources. First, you will need a compelling rationale to present to your would-be backers. You must establish some credibility, the collateral on which you will borrow much of your equity financing. An investor puts his or her money not only in a radio station, but in you. You are part of the deal from the outset. Most investors want you "lashed to the mast" so they can be confident of your commitment.

Credibility question

Your credibility as a broadcaster capable of ownership rests on many factors.

Your experience. The more years in the business, and the more varied your list of titled positions (in sales, program-

and how you intend to do it, everything you have done that could relate to your qualifications as an owner and manager.

I recommend the book "Executive Jobs Unlimited" by Carl Boll, published by Simon & Schuster. You can special-order it at your local bookstore; we found it through a national chain for \$16.95. It is worth the hassle. It will give you a wealth of ideas on how to market yourself through your résumé

and in personal meetings.

Your ability to communicate your goal. The late Joseph Belasco, a famous Broadway producer, said, "If you can't write your idea on the back of my business card, you don't have a clear idea." An investor will want to know what you plan

in 25 words or less. I stick with this summary statement: "I want to create Radio Wal-Mart in Texas."

Your presentation to promote your acquisition plans and yourself. It's not enough to be glib one-on-one with a potential investor. There has to be substance to what you say. Investors like a well-written business plan that lets them dissect the financials, both historical and projected, to see if it makes sense to proceed.

Your business plan may take many forms, but the more time you spend creating it, the better. The business plan is the touchstone to the deal. Do not slap it together like a last-minute term paper.

A number of computer software packages offer templates that will help. You

must customize these programs to fit the specifics of the radio business, but they are good starting points.

Dig around a bit

Before you write your program, review plans from other sources. Visit stockbrokers and ask to see the prospectuses of public radio station groups. Though a prospectus is designed to sell stock, it also provides insight into business plans. The company must explain its plans for the money it seeks to raise. The prospectus may be slicker than what you need, but it will help you with form and substance.

We'll cover the specifics of your business plan and proposal next time.

Your management team and/or board of directors. No one succeeds alone. Most deals require many people. Any serious investor will want to know who is coming in with you.

Think about the people you want on your team. Do they bring any "throw weight" to the deal, to borrow a phrase from the Cold War days? If they cannot bring any money, make sure they add credibility in the form of their backgrounds. It's like a potluck supper. Everybody must bring something to the table.

This element is more important in a group deal, but regardless of the scope of your plans, don't expect to do it all yourself. You cannot. Include people who complement your skills and abilities. Show that you have a cohesive group, one that is capable of handling day-to-day operations as well as emergencies.

Cut your hair, shave off the beard and start looking for a new suit. We're getting closer to show time.



Dain Schult is a 30-year broadcast veteran and consultant with experience as a DJ, general manager and group operator. He is based in Austin, Texas.

Got a question or suggestion for Dain to address in an upcoming part of this series? Send e-mail to 74103.2435@compuserve.com and put "Radio World" in the subject field.

NPR: Setting the Pace For the New Talk Radio?

D.A. Barber

With changes in the radio industry, broadcasters see a need to create quality program content as a way to stay on top of the ratings game. This is true particularly for talk radio, the darling of the format wars.

The special magic of radio call-in shows first was proved when Mutual distributed "The Larry King Show" nationally in 1978. Since then, some critics have accused programmers of taking the format too far to the political right. But new offerings are changing the dynamics of call-in talk. A year-old package of talk shows from National Public Radio has sent ripples through several markets.

Phoenix presents a visible example of how this package can work. When commercial KYOT-FM signed on in September 1995 with an all-jazz format, the largest public radio station in Arizona, KJZZ(FM), scrambled to compete during mid-days. KJZZ had been programming jazz in the morning, after NPR news, and during afternoon drive time, before NPR news. After KYOT-FM came on with jazz, KJZZ chose to emphasize call-in talk, relying on the programs provided by NPR.

"Among the stations that are carrying the package, they're all seeing a growth in audience and better fund raising," said Scott Williams, program director at KJZZ.

Top of their game

With translators carrying the station's signal to Tucson, Flagstaff and Prescott, KJZZ virtually is a self-contained, statewide public radio network. And though numbers supplied by Audiographics only

See TALK, page 78 ▶



Diane Rehm

ATTENTION P.D.s

Schedule the best in "CLASSIC RADIO" with

When Radio Was ...

Hosted by Radio Hall of famer **STAN FREBERG**, the man who drained Lake Michigan and filled it with hot chocolate

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Heard on 300 Radio Stations

Talk Package Works for NPR

► TALK, continued from page 77

look at the Phoenix metro area, the station has been "doing much better," Williams said.

Across the country, 38 NPR stations have switched to the call-in talk format. "It doesn't sound like a lot, but 20 stations supply 58 percent of the news audience in the entire country for NPR," said Leslie Peters, director of program marketing at NPR. "Our strategy for having a news/talk package was you don't have to have a lot of stations, you just have to have the right ones."

The "right ones" are located in most of the top 20 markets. They include

WAMU(FM) in Washington and NPR's flagship station KQED-FM in San Francisco. KQED has aired local talk for 10 years, and according to Program Director JoAnn Wallace, it has doubled its audience during that time. It was the first public radio FM station to go with an all-news format.

Three-show package

"I think news/talk has cast the widest net," Wallace said. "I think (for public radio) it already is the next format."

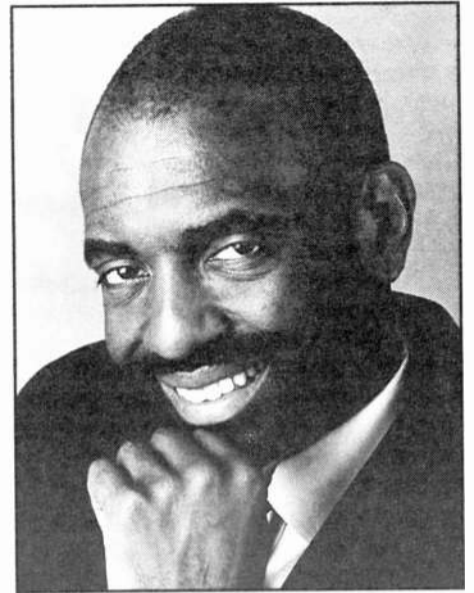
The NPR package created in July 1996 offers three call-in shows for middays, including "The Diane Rehm

Show," "The Derek McGinty Show" and "Talk of the Nation." All three programs feature guests discussing specific issues; the target demographic, according to NPR's Peters, is "the pathetically over-educated."

"Every one of these programs has the same audience as the audience for 'Morning Edition' and 'All Things Considered,' Peters said. "That was key, because what stations are trying to do is extend time spent listening by their ('Morning Edition') audience and carry them through," into the afternoon and "All Things Considered."

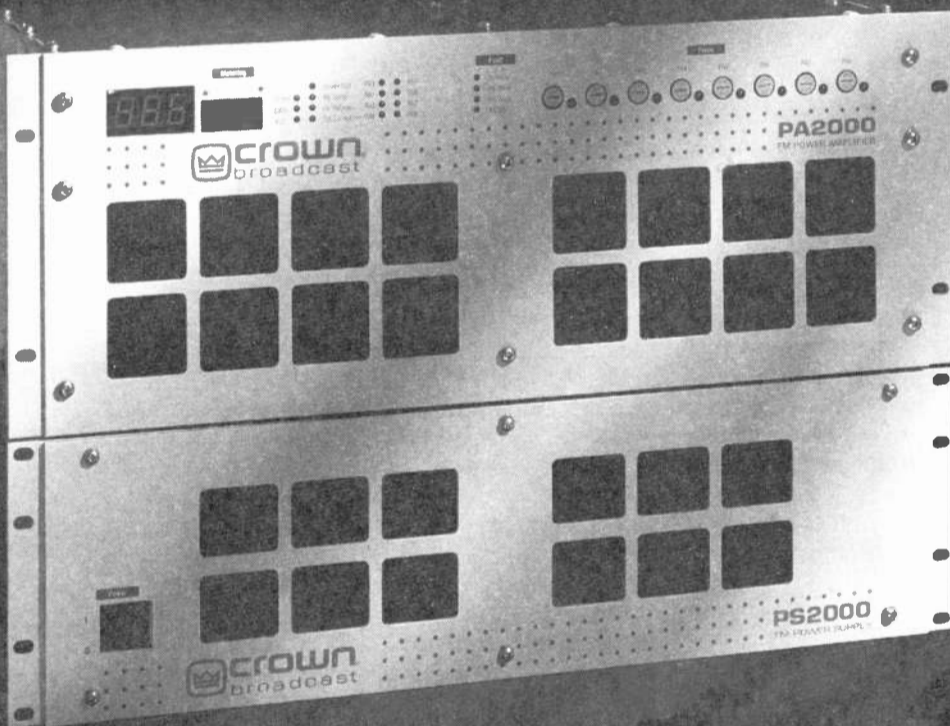
The Rehm and McGinty shows are produced by WAMU for NPR distribu-

tion, and both programs are strong locally. "I think the experience at WAMU had a profound impact on the



Derek McGinty

Efficiency: (e-fish'en-see) n. 1. the most effective use of available resources; 2. great things in small packages; 3. Crown's new FM 2kW amplifier.



Stop the presses on all dictionaries! We're redefining efficiency with our new 2 kW FM amplifier. This **broadband** amplifier requires no field or factory tuning and provides **75-80% RF efficiency** across the band. The design features **hot-pluggable, 500-watt power modules**, and a responsive protection mode. The separate DC supply is **power factor corrected** and 90% efficient. Both units are **lightweight and compact** for easy installation and overnight shipping if required. Use the amplifier and supply with your existing exciter or upgrade to a Crown exciter for an unbeatable transmitter package.

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rest of public radio because they kept looking at us," said WAMU Program Director Steve Martin. "Audiographics kept going around showing people what Diane Rehm was doing in Washington following 'Morning Edition,' and how well it fund raised."

The success WAMU achieved with this format in Washington is notable because talk has never been a strong format in the D.C. area. "Hard-core talk in the traditional sense just doesn't seem to do well in Washington," said Blanquita Cullum, president of the National Association of Radio Talk Show Hosts.

National impact

"It's been frustrating to commercial broadcasters in this market over the last 10 years as talk radio grew phenomenally around the country," said Martin. "They're having trouble attracting a significant audience for talk."

NPR's entrance into the call-in talk format has offered radio listeners more opportunities to express opinions to fellow Americans.

Nevertheless, commercial talk remains huge nationally, and NPR's entrance into the call-in talk format has offered radio listeners more opportunities to express opinions to fellow Americans. But it is too early to say what impact the panel discussion approach has had on commercial talk.

"Many of the (commercial) talk show hosts will tell you they don't need to have a guest, they are the ones that drive the issue. The show is the host," said Cullum. "It is that ability to have a one-on-one relationship with the audience that clearly separates them from NPR," Cullum said. "I don't see (NPR) as a competitor."

■■■
D.A. Barber is an award-winning freelance writer and radio producer based in Tucson, Ariz.

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Radio World

Resource for Radio Production and Recording

September 3, 1997

Sony D-8 Takes Drop, Won't Stop

Rich Rarey

In the operating instructions for the Sony TCD-D8 portable DAT recorder is an ominous note: "This tape-corder is not designed for business or commercial use. Never attempt to modify or tamper (sic) the tape-corder so that it can be connected to other business or commercial audio equipment. Do not use this tape-corder for data storage."

One wonders what the business and commercial public does with a D-8 to warrant such a caution: in our experience, the D-8 was a reliable performer, reasonably priced and possibly the most compact DAT recorder we have held.

At about \$800 list, the D-8 is the logical successor to the Sony D-7, a popular consumer machine that has found a home in many radio stations. The D-8 has similar controls and a similarly quirky consumer-level manual. ("Do not press the Stop button when 'blank' is displayed. If pressing it, the absolute time will become ...")

The D-8 is a solid field performer, one that works well and is priced for all.

The D-8 does come with more features and a sleeker look. It also still weighs 1 pound, 1 ounce, and measures 5.25 by 1.5 by 3.5 inches.

Make it work

Operation of the D-8 is straightforward: plug in an analog or digital source, insert a DAT, select one of three sampling rates and simultaneously press Play and Record.

Four AA batteries typically give three hours of recording under ideal conditions, but we preferred to run the D-8 from four D batteries by connecting a D-battery pack to the 6V-In jack.

Eight hours or more of operation are possible this way, although when you are not using the D-8, you must remove the external power or the recorder will continue to consume power and not enter its power-conserving "sleep" mode.

When running on the internal AA batteries, the D-8 will enter sleep mode after three idle minutes in order to save the batteries. The amplifiers that drive the stereo mini-output jack apparently are turned off when no plug is inserted.

The manual states that four hours of recording time can be obtained from AA

batteries when the amplifiers are disengaged in this way, but who is omnipotent enough not to monitor what is being recorded?



Photo by Alan R. Peterson

This Sony TCD-D8 saw action in the Middle East.

Indoors, the included wall-wart power adapter can be used to power the D-8 continuously (remember that the device has no power switch and will not enter sleep mode when external power is applied).

Lotsa time

The D-8 supports the DAT Long Play mode. Here, audio is recorded at a 32 kHz sampling frequency and the tape is slowed physically to half-speed. Useful, probably, for transcription tasks and digital dubs where the source is 32 kHz.

A 32 kHz digital source can be recorded at either Long Play or Standard Play, while analog 32 kHz recording can be made in Long Play mode only. Standard Play recordings at 48 and 44.1 kHz can be made from an analog source or from a matching digital source.

The accessory digital cables needed to interface the D-8 with other digital sources have a switch that selects between analog or digital input.

The analog inputs to the D-8 are daisy-chained in the order of Line Input, then Microphone. Any mic in use must be unplugged first before you can record from the Line jack.

The microphone input has an attenuation switch, marked MIC SENS. Analog audio can be recorded without level compression/limiting or with one of two automatic record level settings. Labeled Speech and Music, they are designed for boardroom voice recording and — one assumes — field music recording. We found them to be too obtrusive and heavy-handed for professional field recording, and preferred to use the Manual setting. We simply rode gain over our levels on the 11-segment LCD display.

To get analog signals out of the D-8, a stereo mini-jack is provided, with three kinds of output: normal, volume-button-controlled headphone output; an Automatic Volume Limiter System

designed to prevent hearing damage from excessive headphone volumes; and a Line Out setting designed for feeding other components, such as phone lines and analog equipment.

Interestingly, the electronics are configured such that changing the selector switch position does not change the function until the plug is pulled from the headphone/line out jack, then reinserted.

The compact Liquid Crystal Display (LCD) is backed by electronics smart enough to inform the user about normal and abnormal situations. Input status, blank tape detection, and load/unload, among other messages, are flashed onto the segmented display.

To assist in logging the recordings, the D-8 offers Auto-ID marking during recording (Start IDs are written after three seconds of no-or-low level audio) or the user can write Start IDs manually during recording or during playback. For play-

back writing, an accessory system adapter kit RMT-D7 is required.

The transport controls are conventional and standard for DAT recorders, and they work as expected. The D-8 uses various combinations of Stop, Rec and Play keys to turn AUTO-ID on and off and to show the input source and sampling frequency on the LCD display.

Supreme test

In actual field use, we found the D-8 a good performer in the hot, dry climate of the Middle East.

Our typical configuration was to couple the D-8 with a Sonosax SX-2 battery-powered mic preamp. The preamp did two things: It provided +48V phantom power for our microphones, and gave us a far superior mic preamp for recording.

Using a stereo mini-to-mini cord, we connected the Sonosax to the D-8's Line Input, set the recorder to Manual level control, 48 kHz sampling and promptly taped those two switches down in place (they are too easy to change accidentally in the heat of recording).

We gaffer-taped the Sonosax to the D-8 and plugged our D-cell battery pack into the D-8's external power jack. The weakest power link then became the Sonosax

See *SONY*, page 86 ▶

Success as a Radio Voice Talent Takes Work

Karen West

The tale of Karen West Productions reads almost like a love story.

For more than four years, my husband and I had been talking about starting our own voice-over and production company. At the time of its conception, I had been a radio personality for 13 years and he had been a broadcast engineer for 10.



Karen West in the Studio

We worked at separate, but not competing radio stations. We bounced ideas around, debated pros and cons and talked mostly on weekends; he

worked days and I, nights. We often did high-fives while passing each other on the front porch.

He constantly tells me I have "a gift." I always shoot back that it takes his engineering gift to send my own to the multitudes.

Lessons learned

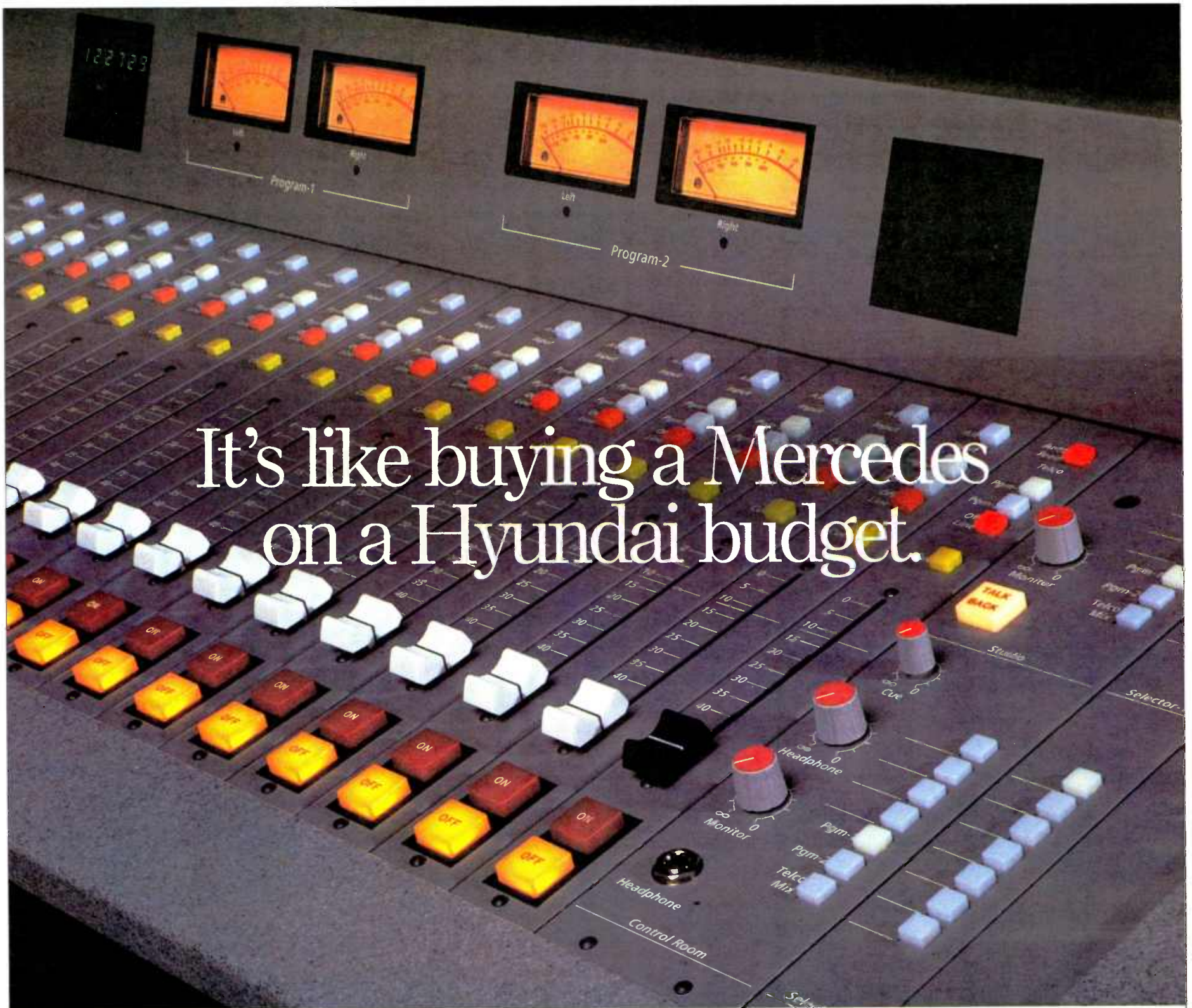
The lessons I've learned over the years helped bring my career to this point. What follows may sound devastating to aspiring voice-over artists, but I rather hope instead it will be an inspiration.

I began at a small station in Georgia in 1980. I was a news-reader/morning show giggle-girl. At one point, the job was pretty cushy, ripping and reading AP headlines twice an hour.

As the ratings rapidly approached the "Arbitron, copy-right 1980" markings at the bottom of the page, the morning personality was becoming desperate.

He employed me to write and produce bits for the show on a daily basis. He felt he could get these for no extra cost because I had majored in English Literature and my hobby was writing short stories.

See *VOICE*, page 94 ▶



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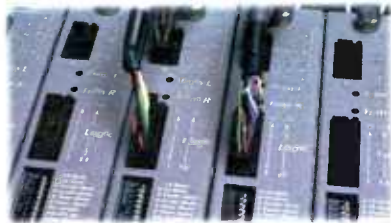
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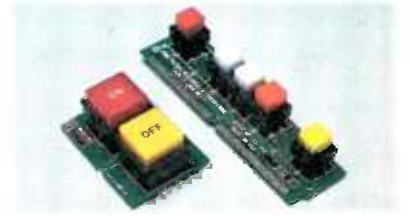
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Behringer, Versatile but Typical

Tom Vernon

Rack-mount mixers fit the void between the small and cute portable mixers that do not have a lot of extra features, and the larger units that have all the bells and whistles, but are too big to lug around easily.

Behringer has managed to squeeze a lot of versatility into its 26-input, four-out stereo model MX 2642 Eurorack mixer. Liberal use of patch points and direct outputs, as well as four assignable subgroups are among the surprising features for a mixer this size.

Check the numbers

The MX 2642 has a frequency response of 20 Hz to 40 kHz. (1 dB from any input to any output. Distortion at 1 kHz measured 0.0075 percent at +4 dBu out.

The Behringer Eurorack mixing console is, as its name implies, rack-mountable. Alternately, it can just sit on a counter with the ergonomically-slanted top panel at a comfortable distance.

A clever feature of the rack-mount configuration is that you can remove the back panel from the main chassis and mount it in the rack immediately below the mixer, giving ready access to all ins and outs. A hefty external power supply brick is provided.

A clever feature is that you can remove the back panel and mount it in the rack.

The Behringer MX 2642 has 26 inputs, and good functionality for a mixer of its size. Channels 1 through 8 are mono, with a choice of electronically-balanced mic or line inputs. Mic signals enter via XLR connectors, line level signals through quarter-inch TRS jacks.

A switchable 48 V supply is provided for phantom-powering your condenser mics. An additional eight line-level inputs are configured as four stereo channels, also with quarter-inch phone jacks. Either -10 dBv semi-pro or +4 dBu signals may be accommodated.

Plugging in

All inputs have three-band EQ, and each band has up to 15 dB of cut and boost available, with a center detented off position. A switchable low-cut filter is included for squelching subsonics.

Insert points and direct outputs are included on all mono inputs. An extra two-track stereo input can be routed to the main mix. Four mono (two stereo) assignable subgroups are provided.

Output levels are monitored via a pair of 12-segment paragraph peak meters.

One sad omission is a talkback microphone. If you want to communicate with studio musicians, you will have to give up one mic channel and route it via the cue feeds to musicians' headphones.

My overall impression of this Behringer unit is that it is typical of electronics being manufactured in China these days. Our World Cafe producers

were disappointed with the feel of the slide faders — rather rough and too short in length.

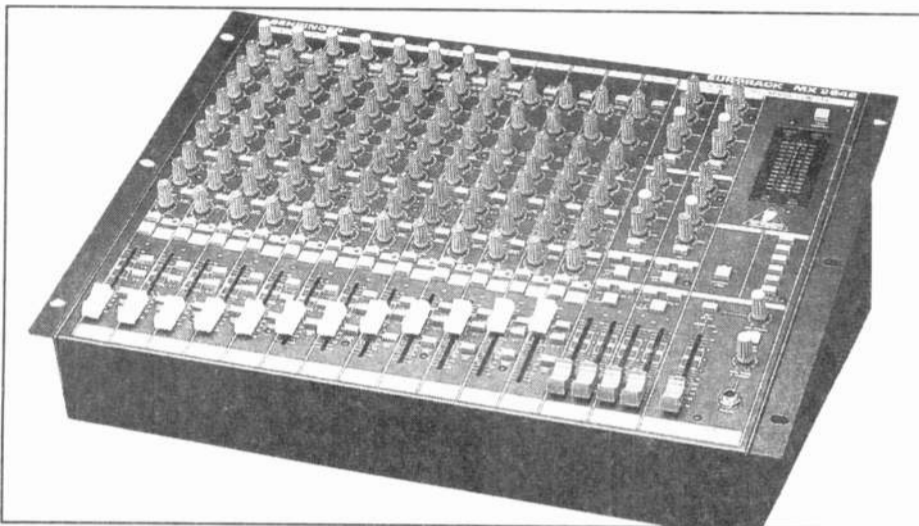
The pan and EQ pots have plastic shafts and seemed a bit fragile. The headphone jack also has a plastic shaft to isolate it from ground, and my experience is that they have a short life in the field.

Inside the mixer, all electronics are on two PC boards, one beneath the top panel and one on the rear panel to which the connectors are soldered. Ribbon cables

order to access the rear circuit board. Getting the top board out might not be any easier. My guess is that this board might not hold up well if subjected to prolonged road trips.

Das book

An English/German operating manual is included with the MX 2642. The writing style is humorous and informative. In addition to the usual mixer description, specifications and tutorial with foldouts



Behringer MX 2642 Eurorack Mixer

interconnect the various subassemblies. Liberal globs of silicone compound secure the push-on connectors and the large electrolytic capacitors.

Adequate support is provided so that the solder joints on the connectors should not work loose on the board. If they do, access to the rear of the PC board is no problem.

On the other hand, servicing this mixer could be traumatic. All of the connector hardware would have to be removed in

of the front panel, it has a well-written applications section. It walks the user through situations such as keyboard mixing, live gig with simultaneous multitrack recording, eight-track mini project studio and Aux-less headphone mix.

You also will find a discussion of mixing topics such as equalization, gain optimization, impedances, and balanced/unbalanced lines, timecode and bouncing.

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manuals do not contain this level of supplemental information.

Although Behringer has an American agent — Samson — the company is not listed in the manual nor in any of the printed material we received. Under the warranty section, users are advised to call a German telephone number for return authorization and ship the unit overseas for repairs.

Samson would do well to make its American presence a little more visible.

■■■

For information on the Behringer product line, contact Samson Technologies in New York at (516) 364-2244 or circle Reader Service 89.

Tom Vernon divides his time between consulting and completion of a Ph.D. His recent contributions to RW include a two-part series on master clocks.

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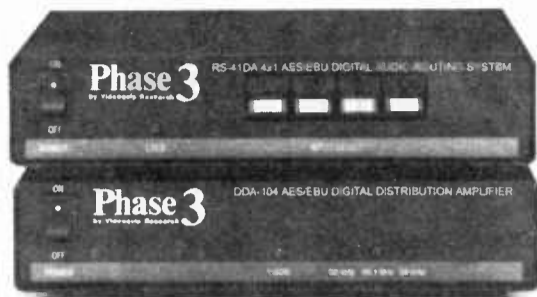
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DIGITAL DOMAIN

FireWire Technology Heats Up

Mel Lambert

You may recall that in a *Digital Domain* column earlier this year, I spotlighted potential applications for an exciting new interface proposal finding its way into a wide cross-section of consumer and professional equipment.

The IEEE-1394 standard, more popularly referred to as FireWire, a name attributed to Apple Computing, describes a high-speed, low-cost serial bus that operates at speeds of 100, 200 and 400 Mbits/second.

This is equivalent to several hundred 16/20/24-bit audio channels. Future versions of the point-to-point, cable-connected virtual bus might run at 800 Mbs or faster.

Personal application

One obvious FireWire application is in personal computing, as a scaleable, high-speed serial interface for external devices such as disk drives, printers, scanners and digital cameras. Within the broadcast arena, FireWire will provide reliable plug-and-play inputs and outputs to link servers and digital components such as consoles and processing engines.

As many RW readers are aware, most local and wide area networks (LANs and WANs) cannot provide the type of guaranteed bandwidth required for on-demand broadcast-audio applications. Parallel high-speed communication such as SCSI does not work well over long distances, and the lack of support for hot connect/disconnect often means a time-consuming reconfiguration.

A major advantage of FireWire is that it enables Isochronous Service, a parameter that ensures a guaranteed transfer latency, or the length of time between an action being requested by the calling system and the resulting data transfer.

Any on-demand broadcast automation system needs to allocate sufficient bandwidth and channel

Something tells me a number of companies soon will jump on the FireWire bandwagon.

capacity for the data to be delivered in real time to its destination (the radio audience). Once the transfer has been initiated from the remote location, the interface must ensure that sufficient data capacity is reserved until the file transfer has been completed.

An early and respected adopter of the emergent FireWire interface is Pacific Research & Electronics (PR&E), which earlier this year unveiled SoundFire. This is a series of computer-controlled audio processing engines designed to connect to host PCs as peripheral devices for integration within a variety of Windows-based audio applications.

Essentially, each SoundFire device

delivers multiple streams of AES/EBU-format digital audio from a FireWire-equipped computer platform. Control between the host computer and processing engine is via FireWire, either to a PCI-compatible interface card or to the motherboard directly.

Onboard DSP resources provided within SoundFire modules include digital audio data compression, audio mixing and special effects processing. Host PC applications communicate with the SoundFire I/O drivers via the Windows "Direct-X" protocol; the proprietary driver used by PR&E is configured to use the same calls as an SB-16 SoundBlaster card.

In other words, program developers can implement SoundFire peripherals without having to modify or rewrite existing machine code routines. Applications include digital audio storage/playback systems, as well as the capture or retrieval of high-quality audio from a computer network or workstation. A single FireWire bus supports up to 63 digital devices and peripherals, using simple connectors and a thin serial cable.

Each FireWire node also acts as a repeater, enabling interface nodes to be chained together to form a tree topolo-

gy, with a theoretical end-to-end distance of up to 670 feet.

Current SoundFire systems are two rack units in height and occupy a half-width space in a standard 19-inch rack frame. Devices also can be used outside of a rack system. External mounting of SoundFire modules enable individual components to be re-configured easily without disassembling the host PC to set IRQs and other parameters. Standalone peripherals also stand a better chance of overcoming obsolescence when bus architectures change.

Timely delivery

FireWire's isochronous operation guarantees timely delivery of data packets at throughputs up to 200 Mb/s. SoundFire processing engines can be hot-connected and disconnected as necessary by the station while the controller PC and peripherals are active, even during a Windows session.

Each SoundFire module features six stereo outputs and two stereo inputs, with individual real-time control of all functions by the host application. Multiple devices can be interconnected to expand I/O capabilities.

Up to three SoundFire systems can be controlled via a single, daisy-chained FireWire connection, providing a total of 12 stereo outputs and four stereo inputs per PC workstation. Initial SoundFire systems from PR&E

See TECHNOLOGY page 86 ▶

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FireWire Provides Solutions

► TECHNOLOGY, continued from page 85 will be based on linear PCM technologies, but plans call for the implementation of DSP-based MPEG Layer 2 digital audio data compression.

All SoundFire I/Os are AES/EBU

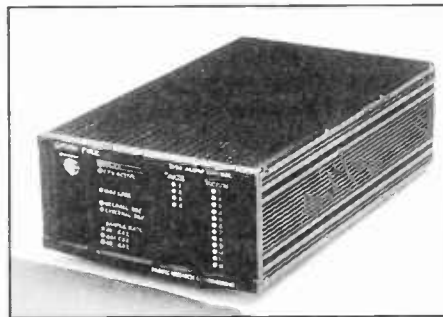
ports that support variable-bit resolution. Each input and output port is addressable individually and controllable independent from the host application as stereo pairs or mono signals. On-board DSP provides a number of

complex functions, including user-control of fades, mixing of different audio sources to provide segues on a single output and scrubbing of audio cues.

All system control and interrogation, in addition to high-speed digital transfer into the host PC, will be handled via a single FireWire connection.

Pick a sample, any sample

Although SoundFire does not support different rates on different channels, the controlling application will



The PR&E SoundFire Engine

standardize on a single user-selectable sampling rate of 32, 44.1 or 48 kHz. All audio inputs feature 20-bit asynchronous sample rate conversion so different sources can be recorded into the system. Host applications will store audio files as conventional WAV files

while a variant of this format will be used for the data-compressed digital audio files.

Something tells me a number of companies soon will jump on the FireWire bandwagon. The PR&E range of SoundFire peripherals represents a well-planned strategy and one that provides the right combination of expandability. Users can begin with a base or starter system, and add or subtract components as their requirements change.

The Windows-based design, with its industry-standard drivers and programming hooks, makes third-party development of application-specific utilities a lot easier than dealing with a proprietary architecture.

With its scaleable architecture and flexible peer-to-peer topology, IEEE 1394/FireWire may prove to be an ideal topology for digital audio systems. Because it is platform-independent, FireWire provides connectivity solutions for many ancillary market sectors.

■ ■ ■

For information on the PR&E implementation of FireWire, contact the company in California at (619) 438-3911.

Mel Lambert is principal of Media&Marketing, a Los Angeles-based consulting service for the professional audio industry. Reach him via mediapr@earthlink.net or (818) 753-9510.

Well-Engineered Sony Proves Rugged, Reliable

► SONY, continued from page 81

preamp; we had to change its 9V batteries every three hours or so. We easily got eight hours from the D-8's D-cell pack.

The whole assembly was placed in a small fanny pack, and given to our producer.

Unfortunately, our producer had only one mobile arm; the other was in an immobile cast, broken in a basketball injury. This scenario tested the D-8 and the patience of our producer nicely, as he could not hold the microphone and adjust the Sonosax levels, let alone get to the D-8 controls. We settled on dialing the levels to a conservative point and hanging the pack around his neck where he could see the D-8 display.

His complaint was with the D-8 transport controls: He swore that he had pressed the Rec and Play keys to initiate recording, only to discover later that the recording was never started. The same thing happened to us, and we resolved to be sure the display counter ticked off the numbers before we were satisfied that a recording was actually taking place.

It seems our "hanging basket" of equipment was too much for a one-armed individual. While recording in the middle of a hot day in the middle of a street, our producer watched

helplessly as the mic preamp and Sony D-8 slowly teetered from the edge of the fanny pack and fell three feet to the hard brick street.

We expected to find interesting bits of plastic and remnants of a helical scan tape-head scattered around his feet, but were relieved and pleased to find only a stiff gouge in the corner of the D-8 case.

The recorder still worked perfectly, although the absolute time was not written for the remainder of that DAT, probably because the tape was banged severely while writing or by our excited transport operations while we tried to ascertain the damage.

The D-8 continued to work perfectly for the remainder of the gig, a testament to a well-engineered "tape-corder."

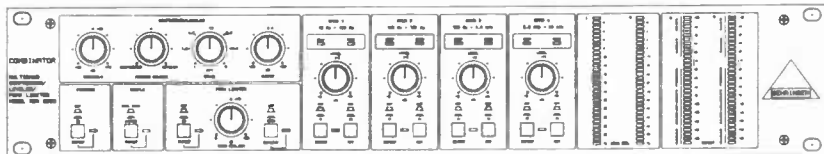
While you may never subject a Sony D-8 to this kind of abuse, you might take comfort in knowing the D-8 is a solid field performer, one that works well and is priced for all.

■ ■ ■

For information on the Sony D-8, contact Sony Electronics at (201) 930-1000, call your broadcast dealer or circle Reader Service 115.

Rich Rarey is technical director of NPR's "Talk of the Nation" and author of RW's "Public Domain" series.

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Radio Group Goes With Yamaha Mixers

Observers of the broadcast equipment marketplace have wondered whether consolidation of ownership will change the way gear is bought and sold. The new radio supergroups have a lot of buying power.

For example, Susquehanna Radio Corp. has purchased a large quantity of Yamaha 02R and 03D consoles for digital audio production.

The company owns four stations in the Dallas/Ft. Worth market and has already purchased seven Yamaha digital mixers for KLIF(AM), KPLX(FM), KTCK (AM) and KKZN(FM) from a retail music store chain.

The company plans to have 02R and 03D consoles in every station in the Susquehanna chain. That's 21 stations.

Norman Phillips, technical operations manager for Susquehanna, seemed happy with both the technology and the economics. The group's purchase replaces \$45,000 worth of consoles, although the price of the Yamahas was not disclosed.

"We have digital consoles, hard disk workstations and mixdown DATs," Phillips said. "What else do we need?"

"The EQ and dynamics on the consoles are really smooth and warm. For the cost of the mixer, you could spend that much on compression alone."

The digital consoles are coupled with Spectral Synthesis digital workstations, DAT recorders and

CD recorders.

The mixers primarily are used for cutting commercials and recording live in-studio music but are occasionally taken out for field recording.

One particularly complex project took place at a live KKZN concert, where one mix had to be output for



Production on an 03D

broadcast, with submixes feeding DAT and MiniDisc recorders. The routing matrix of the 03D accomplished this, with dynamics and effects on all three mixouts.

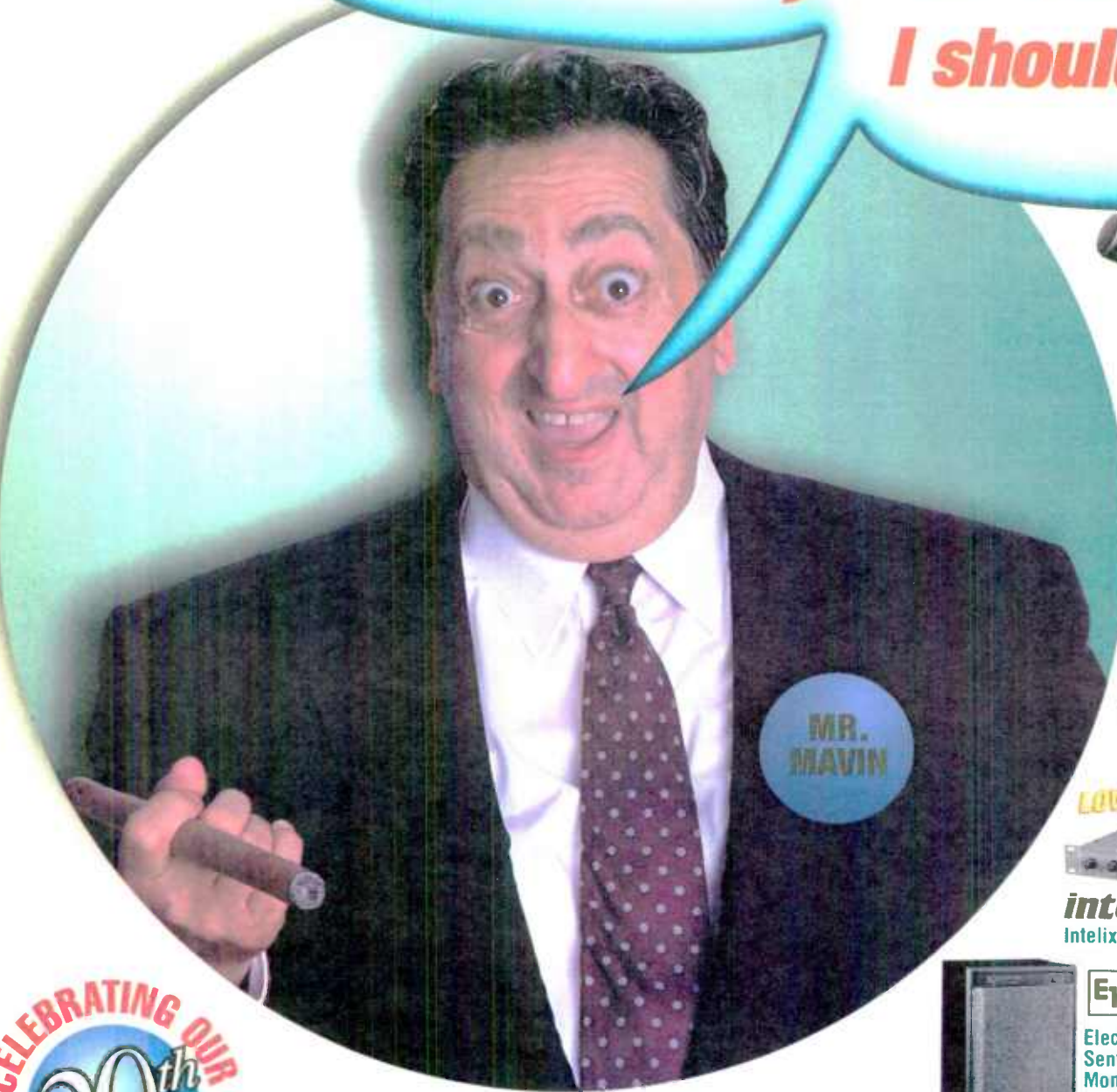
Susquehanna is building new Dallas studios for KTCK and KKZN. All will be fitted with Yamaha digital mixers, as will be the company's other properties in Atlanta and Indianapolis.

For information on the 02R and 03D digital mixers, contact Yamaha at (714) 522-9011, ask a broadcast equipment dealer or visit the Yamaha website at www.yamaha.com

— Alan R. Peterson

Find a better deal, eh?

I should live so long!



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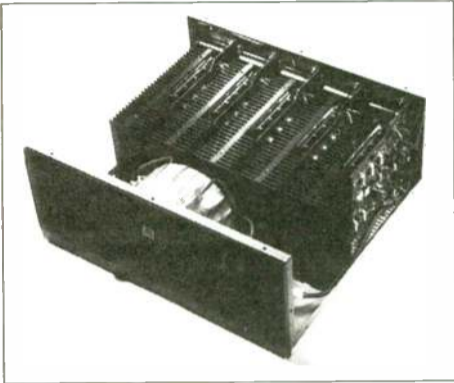
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PRODUCT GUIDE

Companies with new product announcements for Studio Sessions Product Guide should send them to Radio World, c/o Studio Sessions Editor, P.O. Box 1214, Falls Church, Va. 22041

Amplifier Technologies Power Amp

A new five-channel home theater amplifier from Amplifier Technologies Inc., has applications in smaller project and production studios.



The ATI505 has a rated power output of 150W per channel into 8 ohms, with response from 20 Hz to 20 kHz and no more than 0.03 percent THD with all channels driven simultaneously.

Reliable power is provided by a toroidal AC transformer and large filter capacitors. Massive heatsinking and detachable modular components combine for cool operation and easy service.

Although it is designed primarily for home theater applications, project studios can make use of the five-channel amplifier by dedicating two channels as a stereo monitor pair for the control room, two for the studio monitors and the remaining for the mono mix.

For information, contact Amplifier Technologies in California at (818) 343-4777 or circle Reader Service 141.

Alesis Wedge Reverb

The Wedge from Alesis Corp. is a console-top reverb processor that offers realistic natural-space reverb in a compact package.

Four sliders and a Value data wheel allow users to input size parameters and reflection/absorption ratios for infinitely variable control over reverberant space. The Wedge also provides chorusing, flanging delay and rotary speaker emulation with 128 presets and 128 user-program locations.

An Impulse Audition button on the front panel plays back a sampled sound through the process, letting users hear the details of a chosen effect. The Wedge comes with full MIDI implementation and quarter-inch balanced TRS jacks.



For information, contact Alesis in California at (800) 5-ALESIS or circle Reader Service 167.

Svetlana Product Guide

The new 1997 product catalog from Svetlana Electron Devices is available.

Svetlana is a vacuum tube manufacturer based in St. Petersburg, Russia,

with domestic offices in Huntsville, Ala., and San Francisco. The new catalog features tubes for many purposes,



including up-to-date versions of the classic 6L6 audio power tetrode, the EL34 pentode and 5U4 full-wave rectifier.

The company maintains a website at www.svetlana.com

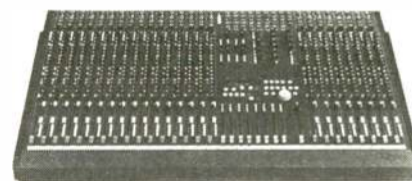
For information, contact Svetlana in California at (415) 233-0429 or circle Reader Service 193.

Soundcraft Ghost Le Console

Following up last year's launch of the Ghost console, Soundcraft has the Ghost Le mixer, designed for professional musicians and recording.

The original Ghost was priced at \$5,195 and could control digital multi-track tape machines and video recorders via the Sony 9-pin standard. Each channel contained a low-noise mic preamp, four-band EQ, phantom power and a phase switch.

The newer Ghost Le is priced at \$4,350, has many of the same features and provides six mono and two stereo auxiliary busses, plus four stereo



returns. Multiple monitor outputs feed headphone sets and speakers.

For information, contact Harman Pro North America in Tennessee at (615) 399-2199 or circle Reader Service 219.

Buyout Production Music

Music 2 Hues is offering a royalty-free CD production music package buyout for radio, video and multimedia production.

The Music 2 Hues collection consists of 10 CDs and can be ordered in assortments of one up to all 10 discs. Categories include Piano and Flute, Energetic, Action Sports and Modern Industrial.

Multiple disc purchases are heavily discounted. One disc is \$50, while all 10 are priced at \$185.

A demo CD is available direct from the company.

For information, contact Music 2 Hues in Connecticut at (888) 821-7515 or circle Reader Service 12.

Manley Stereo Reference Mic

Manley Laboratories has a stereo version of its Gold Reference microphone.

Using the same large-capsule construction and 3-micron gold diaphragm film of the mono mic, the Stereo Reference mic contains two complete systems in one body. The upper element is fixed, while the lower element can be rotated through 90 degrees for X-Y coincident pair recording.



Each capsule has its own pattern control and -10 dB pad for close miking. Dual-triode preamp circuits are used for each capsule, powered by an external supply with 30-foot cable.

For information, contact Manley Laboratories in California at (909) 627-4256 or circle Reader Service 38.

Twiddly Bits

Said to "put the music back in MIDI," Twiddly Bits is a collection of MIDI recordings of actual performances for use in sequences. Twiddly Bits is distributed through Tracer Technologies, the company behind Dart Pro noise reduction software.

The idea behind Twiddly Bits is to make sequenced music sound less mechanical. Hundreds of patterns and riffs were recorded by live musicians as MIDI events. The patterns were stored on floppy disks and can be cut-and-pasted into a sequence where desired to give MIDI music a more "human" feel.

Several diskettes are available, including drums and percussion, country licks, Brazilian rhythms and guitar passages.

For information, contact Tracer Technologies in Pennsylvania at (717) 843-5833 or circle Reader Service 64.

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Adaptec Simplifies Shift to SCSI Drives

Read G. Burgan

For years, SCSI devices have had the reputation of being difficult to install. Many were. Setting the interrupt request (IRQ) and SCSI device ID, matching connectors, setting termination and finding and installing the appropriate drivers added up to a royal pain that caused many PC users to avoid Small Computer Systems Interface devices. But not anymore. And that is a good thing.

Like it or not, more and more peripherals are SCSI devices: CD recorders and players, ultra-fast hard drives, scanners and tape drives. When you think about the capacity and speed gained by moving your digital workstation up to SCSI, the process makes sense.

The numbers game

Conventional IDE (Integrated Drive Electronics) controllers can support only four devices. The sheer number of peripherals available demands a host adapter that can handle more devices.

Today's SCSI adapters can handle seven, 15 and even more devices using a single card. Thanks to companies like Adaptec, the installation of SCSI devices has become fast and easy.

Adaptec has been making SCSI adapters for several years and its AHA-2940 PCI-to-Ultra SCSI Host Adapter is a state-of-the-art card that provides premiere performance on most operating systems, including Windows 95, NT and OS/2.

The card is available in two models: the Ultra and the Ultra Wide. The Ultra supports up to seven devices with a transfer rate of up to 20 MB per second (MB/sec). The Ultra Wide supports up to 15 devices with a transfer rate of up to 40 MB/sec.

Note that not all SCSI devices can be configured with ID numbers that go above 7.

Both cards have internal 50-pin SCSI connectors. The Ultra has a 50-pin external connector, while the Ultra Wide has a 68-pin external SCSI connector and an additional 68-pin internal SCSI connector.

Put through the paces

I tested the Ultra Wide host adapter, installing it to run under Windows 95 and NT 4.0. Installation is a breeze. The AHA-2940 Ultra Wide SCSI host adapter is a true plug-and-play card. All I had to do was place the card in a PCI slot, connect my internal SCSI peripherals and close the computer.

The AHA-2940 contains its own on-board configuration utility. After the initial booting sequence, the SCSI Select utility displays a screen message instructing you to press "Control-A" to access the configuration menu.

This menu provides access to parameters relating both to the SCSI card and the devices it controls, including termination for the SCSI host card and maximum sync transfer rate for each device connected to the card.

The SCSI Select Utility also contains disk utilities that scan the interconnection bus and identify each SCSI device connected. You can set the termination for

the SCSI card manually, but the AHA-2940 will automatically scan the SCSI bus and set its own termination. SCSI Select also provides utilities for formatting a SCSI hard drive and verifying the disk media.

Because the AHA-2940 is a plug-and-play card, Windows 95 should recognize it the first time you boot up after its installation. You then will be asked for the disk containing the appropriate driver. Windows 95 then fully installs and configures the hardware for you. Everything

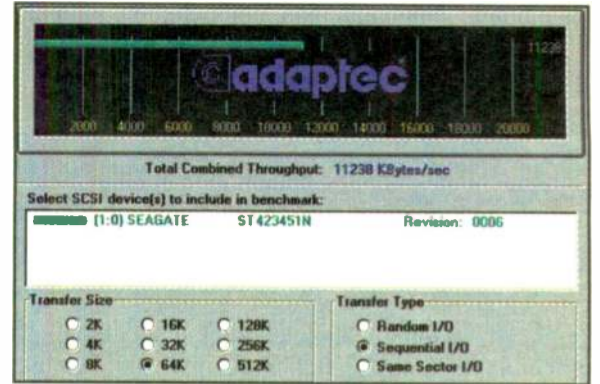
went without a hitch when I installed the card.

There is still one more task, and that is the installation of the necessary ASPI drivers for the various SCSI hardware devices attached to the host card. For this, Adaptec supplies a CD-ROM with EZ SCSI 4.0 along with three floppy disks.

Easy, scuzzy ...

EZ SCSI actually is several programs in one. You begin by running the Setup file on the initial 3-1/2-inch diskette supplied by Adaptec, which contains the latest drivers plus the files to add the SCSI programs contained on the Adaptec CD-ROM.

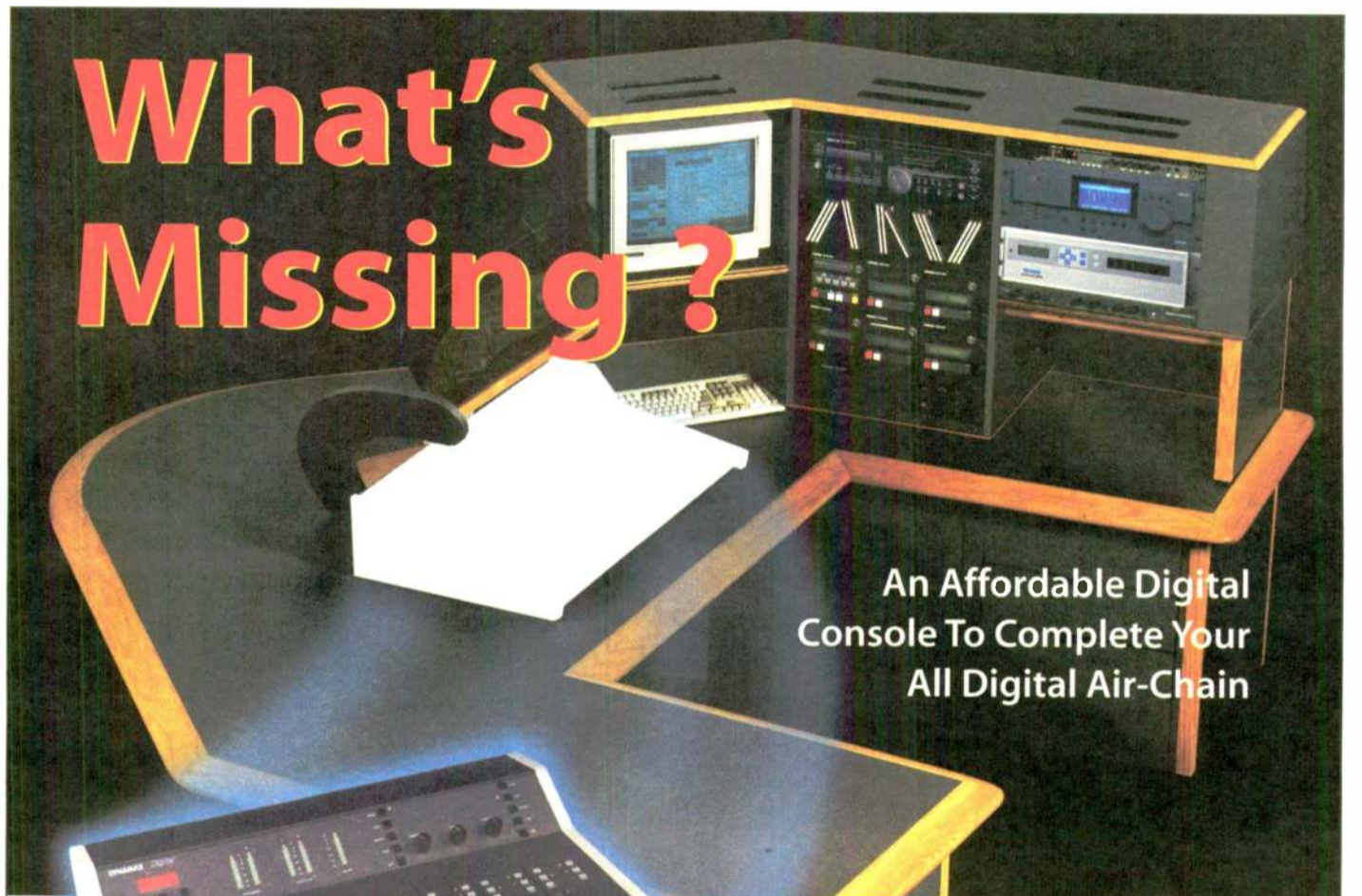
The setup file first will scan your



The Adaptec Setup Screen

computer to determine what SCSI hardware is present. It then will install the necessary drivers to support the hardware. If you add SCSI hardware later, you *must* run this setup program again in

See ADAPTEC, page 90 ▶



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► ADAPTEC, continued from page 89 order for the appropriate drivers to be added to support the new hardware.

While the 2940 supports virtually all SCSI formats, if you intend to use an 8-bit external SCSI device you will need an adapter for two reasons. First, the 8-bit device uses a different connector than the 68-pin external connector on the 2940 card. Also, the "high byte" must be terminated in order for the system to work properly. Adaptec recommends its own external converter, the ACK-68P-50P-E.

The company stresses that most other manufacturers do not actively terminate the high byte in their adapters and that they will not work properly. Is this true, or just an attempt to sell their own product?

I tried a generic converter and it did not work properly. When I installed the

Adaptec converter, it did. Draw your own conclusion.

Lots of software

EZ SCSI 4.0 is a group of SCSI-related programs including CD Copier, CD Writer, Photo CD Viewer, SCSI Explorer and SCSI Bench 32. The Windows 95 version also has Adaptec Backup for backing up your computer. EZ SCSI 4.0 also includes QuickScan, a handy program that allows you to use a Twain-compliant scanner with your printer as a photo copier.

SCSI Explorer has an Interrogator that scans the SCSI bus and lists the SCSI hardware currently detected by Windows 95. It is possible that a particular SCSI peripheral may show up during bootup, but not under Windows 95.

Usually this means the appropriate

driver has not been installed. This utility is a fast way of determining if this is a problem. SCSI Explorer also provides the means for setting the power management and disc cache options on a SCSI hard drive.

SCSI Bench 32 lets you test the transfer rate of SCSI hard drives. If you change the disc caching under SCSI Explorer, you can test the effect of this change using this utility. It provides options for testing random, sequential and same sector transfers. You can even test two or more SCSI hard drives at the same time for comparison.

I found the AHA-2940UW easy to install. It provided top-notch performance for all of my SCSI peripherals. I have been an Adaptec fan for several years, and this PCI SCSI adapter card confirms my confidence in its products.

The AHA-2940UW can be purchased for a street price of about \$300. EZ-SCSI 4.0 is bundled free with the AHA-2940, but it also can be purchased separately from Adaptec for \$89.

■ ■ ■

For information on Adaptec products, contact the company in California at (408) 945-8600; visit the Adaptec website www.adaptec.com or circle Reader Service 90.

Read Burgan is a freelance writer and a former public radio station manager. Reach him at (906) 296-0652 or via e-mail at rgb@up.net

EIDE vs. SCSI Drive: The Scoop

The differences between EIDE and SCSI interfaces are fading fast, but there are still some significant ones. Which peripherals interface should you install in your computer?

The original IDE (Integrated Drive Electronics) interface essentially supported hard disks, and only two disk drives at that. It could handle a hard drive capacity of only 528 MB. As a rule, an IDE interface could handle a maximum of 3 MB/sec transfer rate.



A Seagate SCSI Drive

Enhanced IDE (EIDE) interfaces can support up to four IDE devices, even more in some cases. In addition to hard drives, they also will support IDE CD-ROM and IDE tape. These devices can handle hard drives up to 8.4 GB. Under certain conditions, the EIDE interface can handle a transfer rate of up to 16 MB/sec.

SCSI (Small Computer System Interface) can handle a wide variety of peripherals, including hard drives, CD-ROM, scanners, tape drives and removable JAZ and magneto-optical drives.

Ultra SCSI can handle up to 20 MB/sec, and Ultra Wide SCSI up to 40 MB/sec. In addition, many SCSI hard drives have larger caches that provide improved real-world performance over their IDE and EIDE counterparts.

SCSI hard disk capacities range up to 23 GB on one drive and there is no reason to believe there is an end in sight.

This information may help when it is time to make your decision.

— Read G. Burgan

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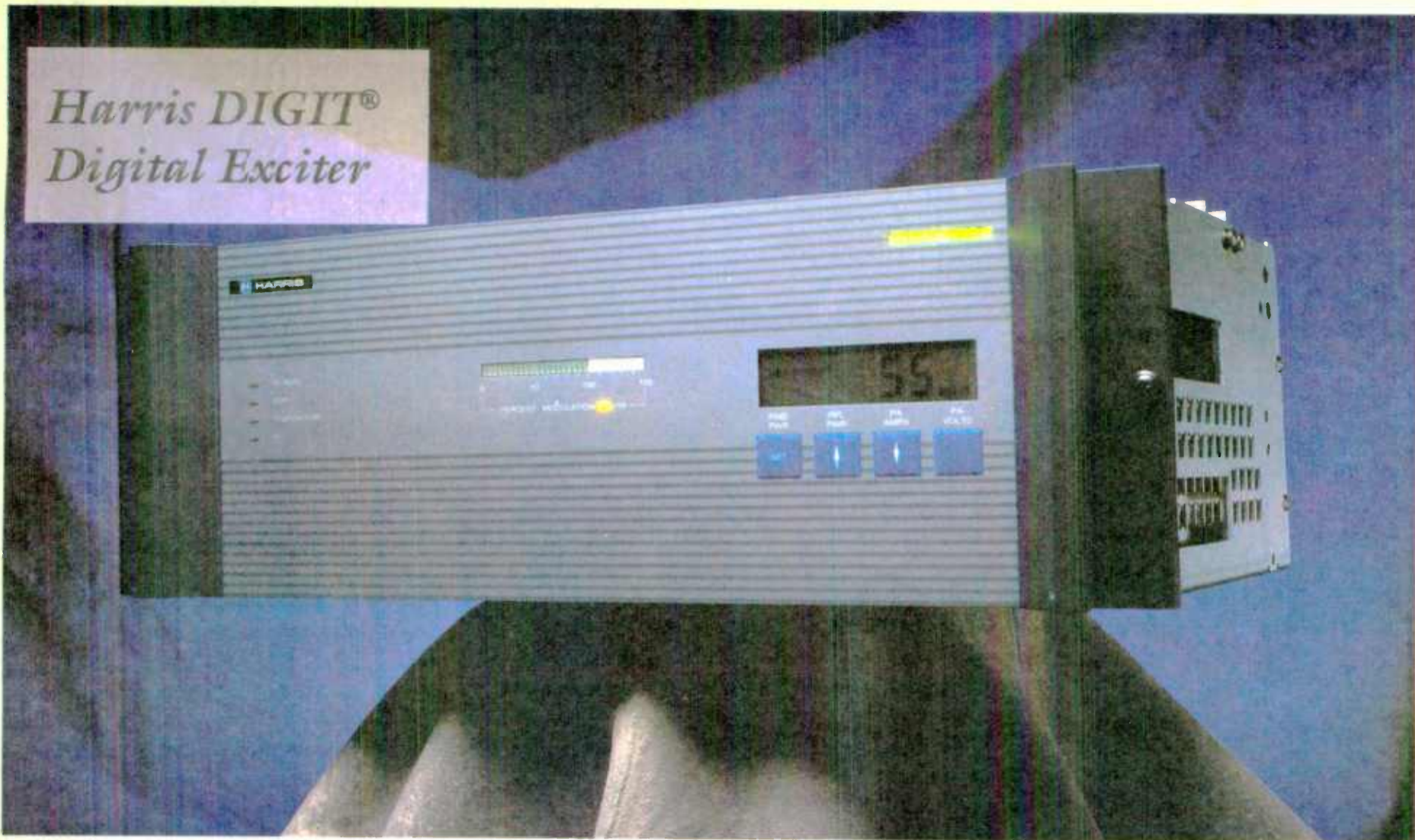
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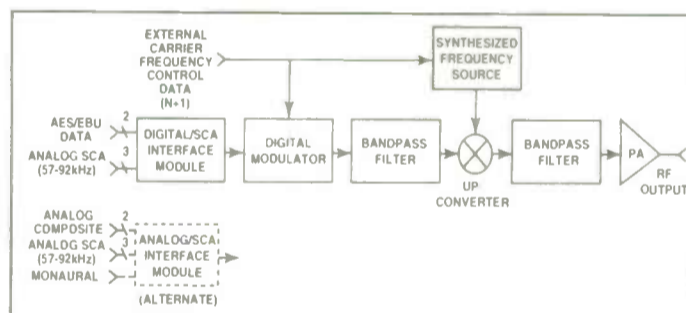
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Shecky Peterson's Return Engagement

Alan R. Peterson

You may have noted throughout this issue that broadcasters everywhere are ramping up for the NAB Radio Show in the Big Easy. You know your friends from RW will be there too, reporting on the show.

While you are scrambling and making your travel arrangements, I have my own scramble going on right now: I will be attending the 103rd AES Convention in New York City and the SBE

Regional/National Convention in Syracuse, N.Y. — both on the same weekend.

Yep, between Sept. 25 and 29, I will be running into myself coming and going in an effort to cover both shows and get back to you on some of the important doings at each event.

And on the train ride out of Washington, I will be rehearsing and refining my usual convention stand-up comedy routine. These have become something of a *World-According-to-*

ARP tradition for me.

Let's see ... topical jokes for audio experts and radio engineers. Hmmm ...

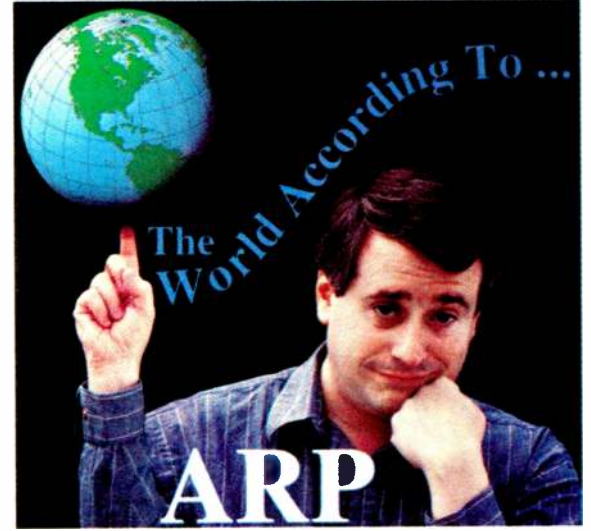
Cue the band

("Tonight Show" theme, mild golf-course applause)

Hiya hiya hiya, and welcome to the (*show name here*) Convention in beautiful (*city here*). Hey, nice to see so many radio/audio people here. Remember the good old days when LMA meant "Leave Me Alone" and Duopoly meant you got to pass "Go" twice and collect \$400?

Okay, stop me if you've heard these ...

Why did the engineer drop a resonant



parallel LC circuit in his beer?

He was trying to get tanked.

What notorious organized crime boss lives inside a battery?

Sal Ammoniac.

Why did Tommy Lasorda wrap wire around himself?

He heard he was being inducted into Cooperstown.

What do engineers use to detect dumb people at the station?

A dip meter.

What do you call the vehicle that delivers the engineer's coffee every morning?

A ground bus.

Hear about that circuit that brews beer every time it is turned on?

A Miller oscillator.

What about the circuit that brings you a beer every time it is activated?

A Butler oscillator.

Why do they call a 10 kV, 10,000 mfd electrolytic capacitor a "Crooner?"

Touch the terminals and Bing!

How does Sideband Splatter occur?

When two RF engineers get in a pi fight (ba-da-bum).

Fashion statement

Why did the engineer solder resistors to his suspenders?

To keep his pants on (they were pull-up resistors).

Why did the whip antenna get fired?

It was always coming to work loaded.

What did the existentialist technician say to his oscilloscope?

Show me some kind of sine.

What was the FM tuning circuit thrown in jail for?

Discrimination.

What is big, white, eats fish and lives under the magnitude and direction of a vector in a defined plane?

Polar bears.

Why were there 43,000 laptop computers in the stands at the football stadium?

They were doing the WAV.

Why did the 741 op-amp sue his employers?

He felt he was being uncompensated.

Why was the galvanometer always in tears?

He was too sensitive.

One transformer walks up to another transformer and asks, "Hey buddy, you got 50 cents for a transformer who's down on his luck?" The second transformer says, "Sorry, I'm tapped (*ba-da-bum*)."

On the beach

What does a 7473 IC wear on its feet at the beach?

See ARP, page 95 ▶

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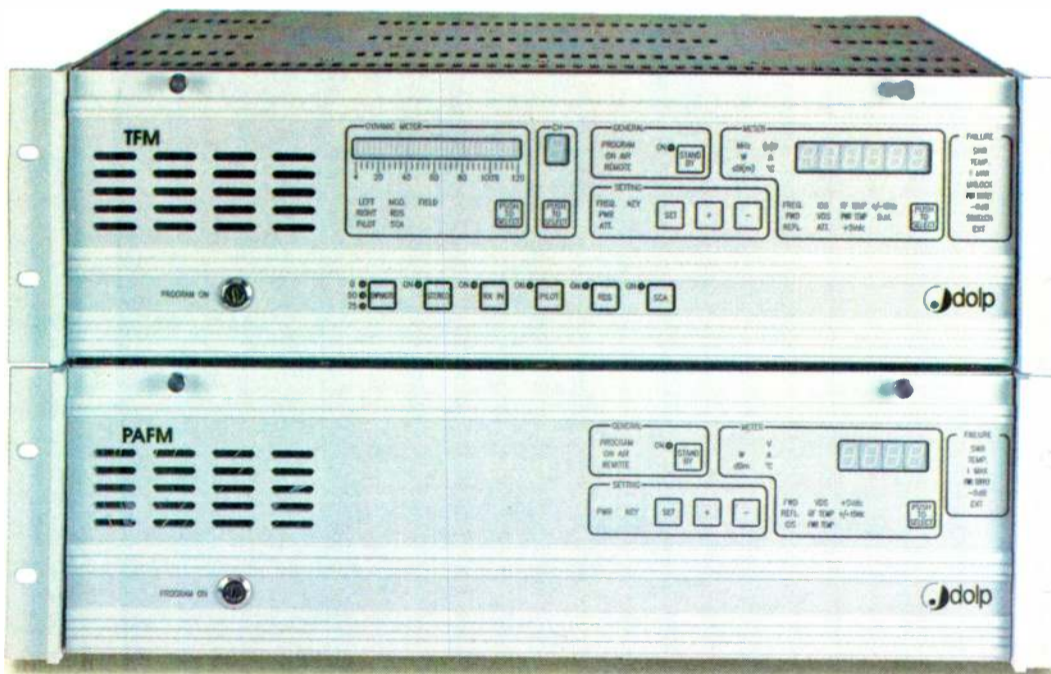
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Circle (217) On Reader Service Card

World Radio History

Radio 'Voice' Success Story

► VOICE, continued from page 81

This could have been remedied by going to the program director and taking care of the little prima donna. But life never is easy; our morning man was also the general manager of the station — the man who hired me.

Thereafter, I got a crash course in creativity and comedy writing. There were days when he was thoroughly impressed and days when he wanted to bite my head off.

It was one hell of an experience for a broadcast novice, and it often crossed my mind to bag that gig and go wash dishes at the local Waffle House.

Fortunately, I had been taught to turn

bad situations into learning experiences. After enduring this man for what seemed like an eternity, I realized that *he knew* when bits made an impact on the audience.

The philosophy is simple: If it interests or entertains me, not as a broadcast professional but as a normal, everyday listener and consumer, then *it works!* As simple as that.

In my mind's eye, I saw this man in tears laughing at one of my bits and then sharing the story with colleagues. I then pictured him as an average everyday working person on the way to the job sharing this little jewel with his coworkers.

That was when I began thinking like the person spending the money instead of the person trying to make a buck.

Fast forward

It has been years since that morning guy helped me "grow up" in the radio industry. Many others have given me both grief and pats on the back since. I have had my share of rejection and acceptance, each experience advancing my broadcast future.

I began thinking like the person spending the money instead of the person trying to make a buck.

Besides voice-over services, I also handle creative work, sharing my experiences and philosophy with my clients. I want them to know that my business does not end with voicing a script. Many times I share my ideas and extend copywriting services (see sidebar story).

To hear the finished product on the air is wonderful, but even more rewarding is the knowledge that my product produces increased sales for the client. Bonus: the clients saves money over ad agency rates and production house prices.

There is some controversy about

putting your demo on the Internet. The biggest problem is sound quality. I have colleagues who send out only cassettes or DATs for this reason.

Out in cyberspace

Yes, sound quality is important and I make it my top priority when I am producing. However, consider the other side of putting your demo up on the Internet.

If potential clients want to know how you perform and want to know *now*, they can get a good idea by listening to your Internet demo. They are interested in your ability and generally will not hold sound quality against you. I put my demo on the Internet for this reason.

A program director in Virginia Beach, Va., once called me for an interview because he heard my show on a station with an inferior signal. My overall performance is what impressed him; he knew sound quality was out of my hands.

That happened seven years ago and I have been with WGH-FM, Eagle 97.3, ever since.

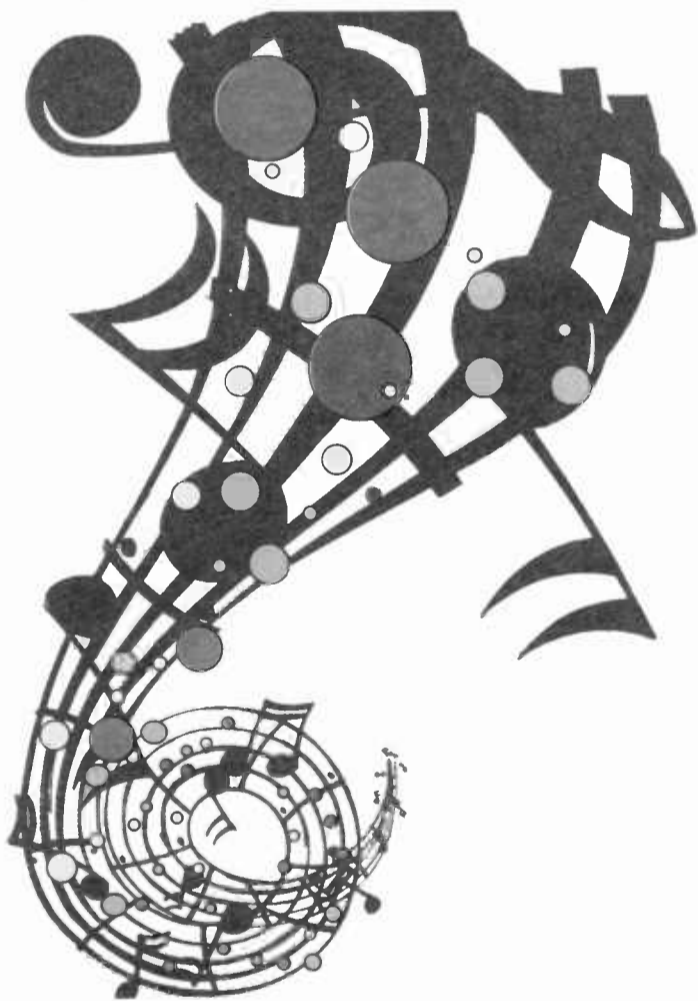
Karen West Productions was built from scratch. Numerous hours of research and footwork went into this business. While I was commuting and writing and voicing every project I could put my hands on, my husband shopped for ISDN codecs and digital equipment, rewiring, installing and testing everything. He made sure it was in perfect working order. We saved every bit of freelance money to fund this project.

Good news travels

We also were making a reputation for ourselves with our work in other areas of the medium and outside of our market.

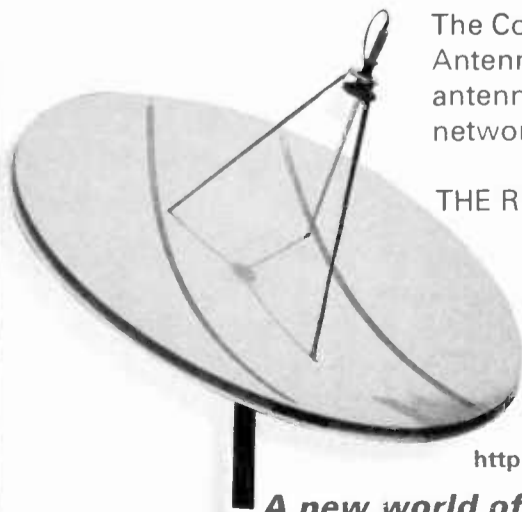
Some of the best advice I can offer to
See VOICE, page 95 ►

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Spot Script Moves Slip Dress Inventory

Remember the Slip Dress? This 1995 fashion disaster looked like floor-length lingerie from Victoria's Secret. The following script was created during that very summer, when a client had a huge sale on the Slip Dress.

The spot featured two southern belle sisters: one a trend follower, the other trying to keep the hip sister out of trouble. In this case, stylish Bertha mistakenly is wearing a real slip, thinking she is "with it."

The station salesperson was frightened by the finished product, but his fear wasn't relayed to the client because this spot aired. The client even bought another schedule using the "sisters."

Rolane Outlet Store / Radio :60

(*efx: morning sounds ... birds et. al.*)

Bertha: Hey Margaret?

Margaret: Yes Bertha?

Bertha: Ever get the feeling that people are laughing behind your back?

Margaret: Bertha, people *are* laughing behind your back. With you blatantly walking the streets wearing nothing but your undergarments.

(*sfx: newspaper rumpling*)

Bertha: Looky here on page six of the Global Gabbler. That's Goldie Hawn and Heather Locklear wearing the new Slip Dress in the "What

People Are Wearing" section.

Margaret: Well, you ain't wearing one now.

Bertha: There's no way you can tell if I am or not!

Margaret: Slip dresses don't have wide adjustable shoulders straps.

Bertha: They don't?

Margaret: Slip dresses don't have paneled girdles in the front either.

Bertha: (sobbing) I'm ashamed.

Margaret: I wouldn't get near an open flame if I were you. Rubber *stinks* when it burns.

Bertha: Oh, the humiliation!

Margaret: Look girl, you need help. Let me take you to Rolane Outlet Store. This weekend only, they have those new designer slip dresses on sale 30 to 50 percent off. At Rolane's prices, you can afford to buy several.

Bertha: Well come on! Let's go!

Margaret: Hold on, honey! We have to get dressed first.

Bertha: Oh, right. But what's wrong with what you're wearing?

Margaret: This is my *nightgown*, Bertha!

Announcer Tag: Rolane Outlet Store, Rt. 60 East in Lightfoot.

(Disclaimer voice): Shirt and shoes required.

— Karen West

Shecky Peterson Is Back

▶ ARP, continued from page 92
Sandals. (Ha! Bet you thought I'd say "Flip flops," didn't you?)

What do you do when a squirrel steals all your BNC connectors from the transmitter shack and then hides in a tree?

Coax him out.

Who lives in a bell tower and has a 2N1702 transistor soldered to his hump?

Quasi Complementary.

A CBS executive goes into work one day to find Elmer Fudd sound asleep in his fine leather desk chair. "What do you think you're doing in my chair?" the executive roars. Elmer looks up and asks, "We merged with Westinghouse, didn't we?" The executive demands, "So what are you doing in my chair?" Elmer yawns and answers, "I'm westing. Pwease cwise the door."

Hear that new Beach Boys love song about diamond-shaped antennas?

Help Me Rhombic.

Why did the equalizer get fined by the FCC?

It was being too graphic.

What conclusion can be drawn from a self-excited oscillator with a tickler coil?

If I could do that, I'd never leave the house.

What do you get when you put a potentiometer on a diet?

A trimmer potentiometer, naturally (ba-da-bum).

What can you assume when you find a vacuum tube in your swimming pool?

It's saturated.

After returning from her vacation, what did Mrs. Volta find in her husband's laundry basket?

Volta's Pile.

What did the manager say when the engineer came to work at noon?

Wire you insulate?

What encore song do engineers usually yell for at heavy metal concerts?

Binding Post.

Why do engineers always laugh when they see a microwave feed-horn?

It always strikes them as conical.

What do you call a fortune teller that emits radio waves?

A medium of propagation.

And finally, what did Mr. Bill say when Sluggo rewired his studio for three-phase power?

Oh-hh, wye-wye?

Ba-da-Bum!

Thank you, thank you, you've been a wonderful audience. See you at the ten o'clock show.

■ ■ ■

Many thanks to "The Illustrated Dictionary of Electronics, Seventh Edition" (McGraw-Hill, 1997) for reference material.

Establishing a Voice Career

▶ VOICE, continued from page 94
 those wishing to start their own voice-over company is this: Take your time and listen. It takes a passion to win your listeners.

Do not live in a vacuum. Learn the technical side of your business. Read RW and other industry magazines. Talk to your station engineers, who will help you choose and operate the equipment you need.

Face it. Without those knowledgeable people, our creations would never get heard. I have made it a point to learn as much as I can about broadcast and



West at Work

production equipment and the fun things I can do with them.

You want a reality check about the voice-over business? Go back to the June 25 RW. Mike Weiner hit it on the head with his piece, "So You Want to Do Your Own Voice-overs." Read it, clip it, laminate it, put it in a binder and call it The Bible. He's one who has definitely paid his dues.

■ ■ ■

Karen West runs Karen West Productions in Virginia Beach, Va. Reach her at (757) 622-2043. Hear her demo at www.bro.net/voice/voices/west.html

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SHORT TAKE

Cool Edit Pro for PC: Low Price, 64 Tracks

Another inexpensive, feature-packed DAW software package has entered the fray, this time from a company well-known for its popular shareware two-track audio editor.

Syntrillium Software of Phoenix — creators of Cool Edit — have released Cool Edit Pro, a Windows-based audio recorder, editor and mixer.

Cool Edit Pro is capable of mixing up to 64 tracks of digital audio on a conventional Pentium PC with nearly

any type of soundcard. Built-in effects include reverb, multitap delay, four types of EQ, compression and pitch change, many with real-time preview.

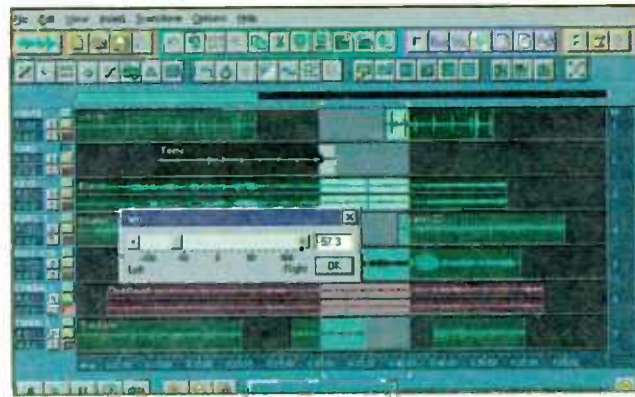
Volume and pan envelopes, as well as crossfades and “snap” capabilities, simplify the mix process. The Multiple Undo feature allows producers to “back out” of a mix mistake; SMPTE/MIDI slaving lets Cool Edit Pro sync up to music sequencers and video machines.

Existing recordings can be cleaned up with built-in noise reduction, hiss reduction and a click-and-pop eliminator.

Cool Edit Pro will record, play, convert and edit files up to 2 GB in size. To put this in perspective, a single 2 GB, 44.1 kHz uncompressed stereo soundfile can be approximately *three hours* in length.

Suggested price of Cool Edit Pro is \$399. The Cool Edit Pro demo is available for evaluation at the Syntrillium website, www.syntrillium.com

For information on Cool Edit Pro,



Cool Edit Pro From Syntrillium Software

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— Alan R. Peterson

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World Radio History

SHORT TAKE

An Atypical Tyros Mixer

It looks like a cross between a guitar player's pedalboard, a mixer and a Brannock device (the thing that measures your feet at shoe stores).

It has an aquamarine and turquoise color scheme reminiscent of municipal swimming pools and Knight-Kit electronics experimenter kits. Plastic surfaces studded with polka dots recall the motif of a '50s-era luncheonette. The thing is so far out, it is in.

The “thing” is the Tyros Modular Broadcasting Console, an RW “Cool Stuff” winner from the spring NAB Show in Las Vegas manufactured by Tyros Trade s.r.l.,



Tyros Mixer

of Argentina.

The sealed all-plastic work surface supports a novel fader arrangement with magnetic sensors rather than direct attachment of linear shafts. Fader knobs contain magnets which operate the circuitry underneath.

The Tyros mixer has three busses for Program, Auxiliary and Record, all represented by geometric shapes. Mic channels have three-band EQ and pan controls, and the LED bargraph VU meters are on flip-up plastic panels to improve visibility and cut overhead reflections.

There is no U.S. distributor for Tyros at present, so the console is unavailable domestically at press time. But watch for a full review of the Tyros mixer in a future *Studio Sessions*.

— Alan R. Peterson

Radio World

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Want to Sell

B-300 amplifier, \$1500. L Walters, KTLF, 1802 Chapel Hills Dr #A, Colorado Springs CO 80920. 719-593-0600.

Bogen CTS-1100 100 W solid state amp, like new, 10 band EQ, low imp, very clean. E Davison, WNSN, 1129 Willowbrook Dr, Springfield IL 62707. 217-793-0400.

Altec 1590-C (2) mono blocks, 200 W, mint cond, \$350/pr; McIntosh Mc240, tube amp, gd cond, \$1000; Soundcraftsmen 450X2 pro MOSFET rackmount, 450W per ch @ 2 ohms, fan cooled, \$250. R Cobb, Solid State Rcdg, 1044 Lightfoot Rd, Wimauma FL 33598. 813-634-1940.

Bogen C-20 20W solid state PA audio amp, new, \$55; Bogen C-10 10W solid state PA audio amp, excel cond, \$45; Bogen C-100 100W solid state PA audio amp, excel cond, \$85. A Ross, Ross Programmer Co, 3309 214th St SW, Brier WA 98036. 425-775-8853.

Want to Buy

Distribution amps. J Powley, Scholastic Information Network, 9279 Dutch Hill Rd, W Valley NY 14171. 716-942-3000.

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Harris FMS CP FM 12 bay antenna tuned to 98.1 MHz, pwr gain 6.8781, 40 kW input pwr rating, \$10,000/BO; Bogner LP 51 476-482, 15 chnl antenna, beam tilt 0 degrees, BO; Scala 26 antenna on 54-66 MHz, 50 ohms, BO; Andrew 7/8" foam filled Helix coax cable, 200', BO. D Blackwell, WQHL, 1305 Helvenston St, Live Oak FL 32060. 904-362-1250.

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Jampro JMPC med pwr penetrator 4 bay in Radomes on 104.9, removed from tower 7/97, \$2800. G Gilbert, CSRG, Box 492, Sulphur Springs TX 75483. 903-885-6122.

Mark Products P6120 GRN parabolic antenna, open grid type, 10' diameter, new; Taco C-1445 parabolic antenna, expanded mesh type, 12' diameter, used. R Meyers, Sound Masters, 4700 SW 75 Ave, Miami FL 33155. 305-264-5963 FAX 305-264-2357 eve/wknds, days mon-fri 305-995-2115.

Shively 6810 10 bay antenna tuned to 92.5, w/heaters, recently rebuilt, excel cond, reasonable BO. J Mosher, KPQX, POB 7000, Havre MT 59501. 406-265-7841.

Coax, " 75 ohm, 2000', never used, BO, will sell shorter pieces at \$3.50/ft. Megastar, 701 Desert Ln #4, Las Vegas NV 89106. 702-386-2844.

Hughey & Phillips KG-114 300mm code beacon, excel cond, \$500 ea; Puregas 1500 air dryer, 1500 cu ft/day, gd cond, \$950. E Black, KXXY, 100 NE 28 St,



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AUDIO PRODUCTION

Want to Sell

Ensoniq Mirage digital sampler, \$200. D Kocher, Digital Sound Makers, 1919 Hanover Ave, Allentown PA 18103. 610-776-1455.

Orban 622 parametric EQ, stereo, \$100. R Coleman, Coleman Bdcg, 932 SE 2nd St, Box 222, Galva IL 61434. 309-932-2288.

Fostex 3180 stereo reverb w/24 mS pre-delay, rack mountable, vgc, will swap for a UREI Cooper Time Cube. E O'Brien, Imperial Sound, 383 N Studio St, Terre Haute IN 47803. 812-877-2663.

Industrial acoustic voice-over booth, new \$900 +shpg; Grim audio patch bay, new, \$120. J

Baltar, New Musik Directions, 67 Green St, Augusta ME 04330. 207-623-1941.

Langevin AM1A 6 input audio mixer w/manual, excel cond, \$200; Shure M67 (2) 4 input audio mixers, vgc, \$80 ea; Symetrix 511 stereo NR system, excel cond, \$125. A Ross, Ross Programmer Co, 3309 214th St SW, Brier WA 98036. 425-775-8853.

Otari 5050 BII, \$2200 +shpg; Advantage One 8 chnl bi amp mixer, \$400 +shpg. J Baltar, Maine Reel Video, 335 Water St, Augusta ME 04330. 207-623-1941.

Sound Workshop 242 stereo reverb gen, solid state, \$300/BO. S Morse, S Morse Prod, 19 12th St, Carle Place NY 11516. 516-334-5216.

Symetrix SX-202 dual mic pre-amp, fair cond, \$100. D Meyer, Meyer Prod, 1123 Del Mar Ave, Santa Barbara CA 93109. 805-962-8273.

Yamaha FX-900 simul-effects processor, \$250; Valley Dyna-Mite 2 chnl compressor/expander rack mounted version, \$300; Ensoniq EPS-16PLUS sampling keyboard w/software, \$900. J Laurence,

Autumn Hill Studio, Franklin NC. 704-524-9602.

Tannoy 15" speaker pair, newly recond, \$1450; vintage recond tube mic pre's & mixers, \$300-\$700; new ADC patch bays " 52 up; new ADC TT or " TRS cords, \$9; Furman " to " patchbays, \$95 ea; like new tape, "x2500' 456, \$15 ea; 1" 456, 226, 250, \$25 ea; Digitec 3.6 sec delay, \$150; new pwr dist/filter rack mt, \$75. W Gunn, Box 2902, Palm Springs CA 92262. 619-320-0728.

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Texar Audio Prism, gd cond; Gentner audio prism, gd cond; Optimod 8100 card 5 for use w/Audio Prisms. T Keegan, 1421 S Water St, Starke FL 32091. 904-964-5001.

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software, used for sat bdctg, w/monitor, keyboard & mouse, \$4500. R Coleman, Coleman Bdcgt, 932 SE 2nd St, Box 222, Galva IL 61434. 309-932-2288.

Coax, .75 ohm, 2000', never used, BO, will sell shorter pieces at \$3.50/ft. Megastar, 701 Desert Ln #4, Las Vegas NV 89106. 702-386-2844.

Kingdom Technologies automation control boxes (2) w/IBM interface card, \$500 ea/BO. A McEwing, WGLY, POB 8260, Essex VT 05451. 802-878-8885.

Audisk DS1000 9Gb drive, \$2250; (2) DS100, \$1125/ea. D Kiech, AAV, 262 Wildwood, Groveland IL 61535. 309-387-6989.

CART MACHINES

Want to Sell

Dynamax CTR10 players (2), vgc w/manuals, \$250 ea; Dynamax CTR10 rcd, vgc w/manual, \$900; ITC players (2), vgc w/manual, \$200 ea; Ampro triple player, gd cond, \$100; Tapecaster cart loader, gd cond, BO; assorted cartridges & cart racks all in gd cond, new, BO. C Yengst, WAWZ, PO Box 9058, Zarephath NJ 08890. 732-469-0991.

ITC 3D triple deck, \$300. R Coleman, Coleman Bdcgt, 932 SE 2nd St, Box 222, Galva IL 61434. 309-932-2288.



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Tapecaster 700P PB only, old style, \$250; Tapecaster 700RP old style, w/delay board, \$350; Tapecaster 700P PB new style, \$300; Tapecaster 700RP new style, \$400, all used only seasonally, low hrs & regularly serviced. A Slauch, Ski Areas of NY, 2144 Currie Rd, Tully NY 13159. 315-696-6550.

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LPB 513C Signature 8 chnl stereo board, external rotary pots, expandable input, \$650. R Coleman, Coleman Bdcgt, 932 SE 2nd St, Box 222, Galva IL 61434. 309-932-2288.

Tascam 10 w/linear/rotary faders, for parts, no pwr supply, no meters, BO. P Helm, Sonlight Rcds, 2109 Glenwood Rd, Vestal NY 13850. 607-754-8507.

Wheatstone Audioarts 8X console pwr supply w/phantom, \$200. D Kocher, Digital Sound Makers, 1919 Hanover Ave, Allentown PA 18103. 610-776-1455.

Allen & Heath 2416D 24x8x16, excel cond, original shpg box; SoundTech 1604 16 chnl 4 subs, used 10 times for live rcdg. D Huethner, Dynamic Sound, 358 W Bell St, Neenah WI 54956. 920-722-7228.

Arrakis GEM-600 Gemini System w/1.2 gig + network board & software, w/cart wall; Arrakis TS-8C Trak Star workstation w/270 MG w/network board & software, units are 1 yr old, currently on air & working, \$11,500/negotiable. L Zeve, WHYL, Box WHYL, Carlisle PA 17013. 717-249-1717.

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Mackie SR2/4 mixing console, new, still in box, warranty card to

be mailed in, \$1080 +shpg. J Edwards, WZNF, 400 N Froadway, Urbana IL 61801. 217-367-1195.

McMartin 1081. T St James, Paramount Comm, 201 W California, Floydada TX 79235. 806-983-5704.

OpAmp Labs 1604-TV (2), one works, one for parts, spare modules, outboard Opamp Labs reverb units, BO. S Kozak, Theater Snd Studio, 351 Pinewood Dr, Bay Village OH 44140. 216-871-5897 eves.

Soundworkshop Logic 8 Series 20 or 30 20x16x2 producers desk, extra pwr supply, excel cond, BO. B Falvey, Richmond St Recording, 168 Railroad St, Huntington Sta NY 11746. 516-423-3246.

Soundcraft 600 32x16 w/patchbay, mint, \$4950; Tascam 512 12x8 mixer, \$750; Tascam 520 20x8x16 mixer, \$1750; Tascam 30 8x4, \$450; Allen & Heath Syncon 28x24, great sounding, \$5000. W Gunn, Box 2902, Palm Springs CA 92262. 619-320-9728.

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UREI 562 feedback suppressor w/manual, excel cond, \$225; Shure M610 feedback controller, new, \$75. A Ross, Ross Programmer Co, 3309 214th St SW, Brier WA 98036. 425-775-8853.

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Dr #A, Colorado Springs CO 80920. 719-593-0600.

Orban 2200 digital Optimod w/AES/EBU digital option, \$3100. P Christensen, Christiansen Productions, 11142 Rayle Creek, Jacksonville FL 32225. 904-619-3899.

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Shure 548 dyn mics (2), mint cond, \$150/pr, FOB dest; Shure 545 w/cable, sounds perfect, \$35 FOB dest. E Davison, WNNIS, 1129 Willowbrook Dr, Springfield IL 62707. 217-793-0400.

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Sony ECM 377 condenser, mint cond w/papers, \$450. D Kocher, Digital Sound Makers, 1919 Hanover Ave, Allentown PA 18103. 610-776-1455.

Advantage One biamp, 8 chnl mixer, \$375 + shpg; ITC SP, \$75 +shpg. J Baltar, New Musik Directions, 67 Green St, Augusta ME 04330. 207-623-1941.

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Shure SM-5B, gd cond, needs new foam enclosure, \$450; Neumann TLM-193, less than 1 yr old, mint cond w/windscreen & shock mount, \$1000. J Laurence, Autumn Hill Studio, Franklin NC. 704-524-9602.

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Want to Buy

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Technics RP-9690 remote control box for RS-1500, 1506 & 1520 r-r's, \$75. D Meyer, Meyer Prod, 1123 Del Mar Ave, Santa Barbara CA 93109. 805-962-8273.

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Fostex A-2 wanted for repair parts. A Slauch, Ski Areas of NY, 2144 Currie Rd, Tully NY 13159. 315-696-6550.

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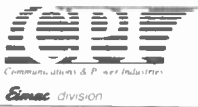
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News anchor/producer, resonant pipes, creative for production, adult formats AT, avail now, VOA downsizing casualty. Alex, 513-777-8423.

Position for on-air announcer & prod and/or sales & promotions, lots of ideas & ready to use. Charles, 405-672-1539.

Semi-Fab radio A/T, telephono's ballistics, politically incorrect & vertically challenged. Mike, 517-362-7251.

Voiceover & image prod work needed. 10 yrs on-air & prod exper, currently employed on-air at large market FM. Call or fax Robert: 1-888-755-3472.

36 yr old w/15 yrs exper looking to return to radio full time. Personality not a cue card reader, also engineering skills, FCC General, SBE Certified, Narte, ETA, also Amateur FCC. For more info write to: Radio World, POB 1214, Falls Church VA 22041. Attn Box #: 9-3-97-1RW.

Fabulous female talent w/voice to match seeks on-air position, dedicated team player, great prod skills, willing to relocate. Jennifer, 405-948-1114.

Semi-fab morning A/T-M/D, have mouth will travel, Country, A/C, Oldies. Mike, 517-362-7251.

Tower erector w/18 yrs exper & wide knowledge of MW & UHF antennas seeks work in the US. Have worked extensively for American companies & have travelled for them. Have spent the better part of the last 2 yrs installing Analogue & Digital systems for mobile phones in the UK. Would appreciate the opportunity to emigrate to the US, call before 10PM UK time to Stevan J Walker, 011-44-1-61-747-4750.

Veteran bdctr w/great voice, quick wit, keen imagination, seeking position w/community involved station, consider all markets. Bruce, 216-398-6532.

ABOUT OUR EMPLOYMENT SECTION

HELP WANTED: Any company or station can run "Help Wanted" ads for \$2/word or buy a display box for \$69/column inch. Payment must accompany insert, use your MasterCard or VISA; there will be no invoicing. Blind box numbers will be provided at an extra charge of \$15. Responses will be forwarded to listee, unopened, upon receipt. Call 703-998-7600 for details.

POSITIONS WANTED: Anyone can run a "Position Wanted" ad, FREE of charge (25 words max), and it will appear in the following 2 issues of Radio World. Contact information will be provided, but if a blind box number is required, there is a \$15 fee which must be paid with the listing (there will be no invoicing). Responses will be forwarded to the listee, unopened.

Mail to: Broadcast Equipment Exchange P.O. Box 1214, Falls Church, VA 22041 Attn: Simone Mullins

ADVERTISER INDEX

This listing is provided for the convenience of our readers. Radio World assumes no liability for inaccuracy.

Table with 5 columns: Page No., Advertiser, Reader Service No., Page No., Advertiser, Reader Service No. Lists various advertisers and their corresponding page numbers.

Table with 3 columns: Job Title, Name, Job Title. Lists staff roles such as Production Director, Publication Manager, etc.

Table with 2 columns: Location, Phone/Fax Numbers. Lists advertising sales representatives and their contact info.

Free subscriptions are available upon request to professional broadcasting and audiovisual equipment users. For address changes, send current and new address to RW a month in advance at P.O. Box 1214, Falls Church, VA 22041. Unsolicited manuscripts are welcomed for review; send to the attention of the appropriate editor.

URBAN CUSTOMER SERVICE ENGINEER

Orban is looking for a broadcast engineer to provide technical support to our customers on our line of broadcasting equipment. This support includes providing information on specifications, applications, installation and setup, troubleshooting and repair, and theory of operation. Must have an AA in electronics or equivalent experience, and at least 4 years of broadcast engineering experience. Experience with IBM-compatible PC hardware is also essential. You must have excellent verbal and written communication skills, and thorough knowledge of electronic troubleshooting and repair techniques.

Send resume to: Orban, Human Resources, 1525 Alvarado Street, San Leandro, CA 94577.

SUBSCRIPTION/READER SERVICE FORM



FREE Subscription/Renewal Card

I would like to receive or continue receiving Radio World FREE each month. Yes No

Signature Date

Please print and include all information:

Name Title

Company/Station

Address

City State ZIP

Business Telephone ()

Please check only one entry for each category:

- I. Type of Firm (check one)
D. Combination AM/FM station
A. Commercial AM station
B. Commercial FM station
C. Educational FM station
E. Network/group owner
F. Recording Studio
K. Radio Station Services
G. TV station/teleprod facility
H. Consultant/ind engineer
I. Mfg, distributor or dealer
J. Other

- II. Job Function (check one)
A. Owner/President
B. General management
C. Engineering
D. Programming/production
G. Sales
H. Programming/news
J. Promotion
F. Other

Reader Service P82

SEP. 3, 1997 issue Use until DEC. 3, 1997

Please first fill out contact information at left. Then check each advertisement for corresponding number and circle below.

Purchasing Authority 1. Recommend 2. Specify 3. Approve

Table with 3 columns: Circulation number, Circulation number, Circulation number. Lists various circulation numbers for reader service.

Copy & Mail to: Radio World, PO Box 1214, Falls Church, VA 22041, or FAX to: 703-820-3310

FROM THE LARGEST FACILITY
TO
THE SMALLEST STATION
PEOPLE KNOW
THE
AUDITRONICS 210 SERIES



PEOPLE KNOW:

- ◆ classic style when they see it
- ◆ sturdy reliability when they feel it
- ◆ convenience when they operate it
- ◆ support when they need it
- ◆ affordability when they buy it
- ◆ longevity when they use it year after year
- ◆ thousands are in use right now

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GSA #GS-03F-4032B

Circle (88) On Reader Service Card
World Radio History

Some Countries Have It ALL!




WSIX - Nashville, Tennessee "Country Music Station of the Year"

A-500 Studio Furniture delivered March 1993
A-500 Console S/N 20789 delivered April 1993
A-500 Console S/N 20792 delivered April 1993
A-6000 Studio Furniture delivered March 1995
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
1995 Gavin Country Music Award
1996 Gavin Country Music Award
1996 Academy of Country Music Award

Wheatstone Model A-6000 Audio Console shown

 **Wheatstone Corporation**
tel 315-452-5000 / Syracuse, NY.

Circle (114) On Reader Service Card

World Radio History