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# Radio World®



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Vol 22, No 7

Radio's Best Read Newspaper

April 1, 1998

## ESPN Radio Steps to the Plate

by Randy Stine

**BRISTOL, Conn.** ESPN Radio takes over the national radio distribution rights for Major League Baseball this year. CBS Radio held the rights for 21 years. ESPN Radio hopes to carve a niche for itself and its affiliates by broadcasting "Sunday Night Baseball" and selected other big games. It debuts its coverage April 1 with the Opening Day matchup of the Cleveland Indians visiting the Seattle Mariners.

The new five-year agreement gives ESPN Radio exclusive domestic national broadcast distribution rights. ESPN President/CEO Steve Bornstein said he was thrilled with the new arrangement.

"The new deal carries us into the next century and gives us the addition of some very important programming," he said.

### The package

The new baseball package includes weekly Sunday night games, plus all post-season games, including the World Series. Other specifics of the deal call for at least two games on every holiday and Opening Day, the All-Star Game, and a game every Saturday night in September. The radio network also will offer comprehensive coverage via nightly segments, updating news from around the league.

The package is viewed as the crown jewel for the radio broadcast division of ESPN Inc., launched Jan. 1, 1992. ESPN Radio, based in Bristol, provides programming to some 420 network affiliates. Also new this year is the "Tony Kornheiser Show" from 1 to 4 p.m. EST. It joins "GameNight," which airs from 7



Yankee Stadium, New York

p.m. to 6 a.m., on the ESPN Radio program schedule. Listeners also can hear drive-time commentaries featuring Brent Musberger and others.

ESPN says expansion this year has produced a 200-percent increase in programming. The National Basketball Association also is heard on ESPN Radio on Sunday afternoons.

MLB games have been televised by ESPN since 1990.

The fact that ESPN will continue to televise games is not lost on baseball executives. "We see a great opportunity for cross-promotion between television and radio," said Leslie Sullivan, vice president of broadcasting for MLB.

In accordance with MLB blackout rules, ESPN Radio must coordinate its game schedule with care. Radio stations that have local broadcast rights win out over the national contract when a conflict arises.

The network would like to be known for its radio production values.

"Baseball is still the great American pastime," said Drew Hayes, general manager of ESPN Radio. "We just want to add to what

See ESPN, page 11 ▶

### NEWS MAKER

## Anderson: The Issue Is Capital

Howard Anderson, chairman of the NAB Radio Board for the past year, spoke with RW News Editor/Washington Bureau Chief Leslie Stinson about minority ownership, low-power radio and other challenges facing the industry.

**RW:** Increasing minority broadcast ownership is a priority for the FCC, and Chairman Bill Kennard has challenged the industry to develop a solution. What do you think should be done?

**Anderson:** We should work with the commission in any way that we can to come up with a viable plan. We know that minority tax certificates don't work. The second thing we know is that perhaps the primary issue is access to capital. That's really the name of the game, and that would mean we have got to work not only with the commission and with broadcasters, but bring in

See ANDERSON, page 14 ▶

## Africa Awaits AfriStar And Digital Radio

by Franz van der Puye

**ACCRA, Ghana** WorldSpace Inc., the U.S.-based organization spearheading satellite-based digital audio broadcasting in the developing world, is ready to begin operations in Ghana this year. The anticipation surrounding the start of service is a reflection of feelings elsewhere in Africa, as WorldSpace plans to launch its first satellite, AfriStar, this summer.

Ghanaian stakeholders in the industry are anxiously awaiting the introduction of this technology, particularly in an era when the competitiveness of the industry has meant a fierce scramble for the latest equipment to ensure maxi-

mum influence in the country.

In addition, the Ghana Broadcasting Corp. (GBC) signed an agreement to distribute programming via the WorldSpace satellite system.

### Digital satellite radio

WorldSpace Inc., an African-American owned company based in Washington, D.C., is pioneering the provision of digital satellite radio broadcasting to Africa, the Middle East, Asia, Latin America and the Caribbean.

The WorldSpace project has the promise to bring a modern communications infrastructure to the isolated, rural communities that form the bulk of the

See DAB, page 8 ▶

## The Next Generation Digital Console



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# NEWSWATCH

## Fiscal Agency Backs FCC Move

**WASHINGTON** The FCC long-delayed move and consolidation of various FCC offices to The Portals building makes economic sense, according to a report prepared by the General Accounting Office. "Each day of further delay will cost the government about \$51,000 in rent for the unoccupied space," the report stated.

Five of the eight office buildings FCC employees now occupy have either fire or other safety code violations, including asbestos problems, according to the report.

FCC officials recently cited security

concerns for delaying a move, saying the planned security in entrance areas was inadequate. Commission employees "are frequently the targets of persons who seek to enter the building," said the FCC. Since April 1995, 30 people have received notices to keep out of FCC property.

The GSA said it could resolve the security issue without compromising the safety of employees and without further delaying the move.

The report was prepared in response to a request from Senate Commerce Chairman John McCain, R-Ariz., who asked if it would be in the financial interest of the government for the commission

to move and consolidate its employees.

## Clear Channel to Buy Outdoor Firm

**SAN ANTONIO, Texas** Clear Channel Communications is acquiring an outdoor advertising company, More Group, for about \$783 million in cash. More Group employs more than 1,000 people in 22 countries and operates more than 90,000 fixed advertising panels. Clear Channel Chairman/CEO Lowry Mays said the acquisition gives Clear Channel a platform to expand the markets it serves in both outdoor advertising and broadcasting. The transac-

tion is subject to regulatory approval.

## High Court Lets Casino Ads Slide

**WASHINGTON** The United States Supreme Court refused to hear an appeal of a Ninth Circuit decision permitting broadcast casino gambling ads in western states. The circuit decision found the FCC ban on casino gambling unconstitutional. The development means such ads are permitted in states that are in the Ninth Circuit, and

See NEWSWATCH, page 3 ▶

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## NEWSWATCH

► NEWSWATCH, continued from page 2

only if those particular states allow the ads. The Ninth Circuit includes Alaska, Arizona, California, Hawaii, Idaho, Montana, Nevada, Oregon, Washington, Guam and the Northern Mariana Islands.

NAB President/CEO Eddie Fritts said, "We believe the high court will ultimately strike down the ban."

### Mashon Leaves Broadcast Library

**COLLEGE PARK, Md.** Mike Mashon has resigned his position as projects curator for the Library of American Broadcasting, accepting a job offer from the Library of Congress.

Mashon championed the LAB, a radio memorabilia museum located on the campus of the University of Maryland. Late last year the library acquired the rights to the Arthur Godfrey collection (RW, Nov. 12).

### Hundt Peers Into Future

**NEW YORK** Former FCC Chairman Reed Hundt is writing a book on the communications revolution in this country. The book is due to be published by Broadway Books in 1999.

## NEWS ANALYSIS

# Pirates, Low Power on FCC List

by Leslie Stimson

**WASHINGTON** Whether to license a new class of low-power stations, how to increase minority ownership, and how to achieve a more equitable regulatory fee structure are some of the topics likely to be on the minds of radio station owners and regulators at NAB '98.

In an early glimpse of what regulators have on their agendas, decision-makers in the FCC and Congress spoke to state broadcasting association members at the NAB State Leadership Conference last month.

### Pirate convicted

The news of a criminal conviction of a pirate radio operator brought applause from attendees. A Florida jury found Arthur Kobres guilty on 14 counts of operating a radio station without a license.

According to the Department of Justice, the case was the first of its kind brought under that statute in several years.

The maximum penalty is two years in prison and a fine of up to \$250,000 per count. The penalties may be cumulative, which means Kobres could face 28 years in prison and up to \$3.5 million in fines.

Kobres operated an unlicensed radio station out of his home from 1995 through last November, when federal agents seized his equipment in a raid. Authorities seized equipment from another suspected Florida pirate, Doug Brewer, the same day.

Kobres' sentencing is scheduled for May 13. FCC Mass Media Bureau Chief Roy Stewart said the agency hopes it can use Kobres' conviction to persuade the judge to rule in the government's favor in the case of Stephen Dunifer and Free Radio Berkeley.

When questioned by broadcasters about pirate operators, FCC Chairman Bill Kennard said, "Pirate radio is a problem. I acknowledge that it is a problem and we're doing something about it. Every time I'm asked about this topic ... I reaffirm the FCC's commitment to use whatever resources are available to us to eradicate pirates from the airwaves. You will have a friend on that issue."

Broadcasters stood up and applauded.

FCC Compliance and Information Bureau Chief Richard Lee said, "The most effective thing to do is to shut them (pirates) down." Lee said the government shut down 97 pirate radio operators last year.

### Low-power proposals

At the same time, Kennard is exploring the option of licensing some form of low-power broadcasting. The FCC is soliciting comments on a low-power petition that calls for a new class of "neighborhood" stations, to be limited to 1 watt of power and 50 feet of antenna height, operating on a specific, nationwide pair of channels, one on AM, one FM (RW, March 18).

The commission extended the comment period on that issue; comments are

due April 27, replies on May 26.

Broadcasters generally abhor the idea of licensing such a service. Calling it a "screwy idea," NAB Joint Board Chairman Richard Ferguson said it would squander the already tight enforcement resources of the FCC.

In the commission's defense, Mass Media Bureau Chief Roy Stewart said, "Depending on what those comments said, we will make a recommendation to the full commission to perhaps proceed further with a rule making authorizing a very low-power service." Stewart acknowledged "problems" with a potential low-power service, including interference among new stations, and between new and existing stations.

"But, heads up. It's not an attempt to legalize pirates. It's an attempt to try to see if we can give other people the opportunity to use the airwaves," Stewart said.

This low-power petition is not the only one in play. One petition, filed by a former radio broadcaster and now communications consultant, proposes an FM service similar to low-power TV (see sidebar, p. 12).

### Regulatory fees

Look for the FCC to soon change how it assesses station regulatory fees. A proposal to do that is winding its way around the commissioners' offices, one of the last steps before passage.

See FEES, page 12 ►

# LEAPFROG TECHNOLOGY



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Fifty years ago, diesel locomotives appeared on the scene. The railroads were very skeptical about them. It took the four-foot-tall wheels and belching smoke of a steam locomotive, many felt, to pull a heavy freight train. Diesels, with their barely one-foot-tall wheels, might be all right to use as a switch engine in the yard, but they couldn't deliver the muscle required for the open road.

Today, there isn't a single steam locomotive left in revenue service in the US. Early reservations about diesels were more emotional than they were based in fact. People were simply rooted in the paradigm of the previous technology. They had seen it work for years and felt emotionally comfortable with it. Diesels were not an evolutionary change which slowly morphed the past into the future. Diesels were a "leapfrog technology".

Twenty-five years ago, broadcasters saw their first AM transmitter using pulse-width-modulation (PWM). PWM transmitters didn't use a modulation transformer, which made many people uncomfortable. The majority of AM transmitters at that time had a modulation transformer, a massive block of iron... taller than a man for some transmitters... that buzzed and groaned in time with music. The new transmitters were smaller, lighter and cheaper. Conventional wisdom held that you couldn't get more with less. Many people had trouble believing that the new designs

could deliver the goods.

Today, not a single US manufacturer produces a plate-modulated AM transmitter. Another leapfrog technology had changed the rules of the game.

Today, conventional wisdom holds that it takes ten-thousand dollars worth of digital electronics to get a major market performance from your on-air, FM, audio processor. If you want to run with the big dogs, that's the price.

But even digital isn't immune to leapfrog technologies. Remember that 1997 was the year that IBM's DEEP BLUE beat a chess grand master, a feat which many felt would be impossible for all time. If you want to know more about the latest technology, call us at (724) 772-2310 and ask for our white paper *ARTIFICIAL INTELLIGENCE: It's What Comes After Digital*.

Some people don't care about the technology. They just want to sound bigger and better than the station down the street. And that's OK too. If you're one of those people, you'll be happy to know that you can plug artificial intelligence into your existing Optimod 8100\* in under 30 seconds. You'll be even happier to know that the cost is under \$2,000.

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\* Optimod is a registered trademark of Orban, Inc., San Leandro, CA.



# Products, Pills and Padding at NAB

It's NAB show time again. Lights, audio, action! One hundred thousand people. Ninety-nine cent breakfast bars. The constant clang of the quarter slots. Hundreds of exhibit booths.

So much to see, and do, and hear. But I can summarize my thoughts on the NAB show in one word.

Ibuprofen.

If you are like me, you look forward to this event with excitement and trepidation. You just can't find this kind of equipment or hear so many sessions anywhere else. But, if you are like me, your feet hurt just at the thought of it.

I wish the NAB would make those aisle carpets a bit thicker. We journalists who cover the show have the same problem attendees have: too much walking. That's why I keep the pain reliever handy. It's a trick I learned from Joellen Reed at Bradley Broadcast. A pill early in the day makes for much happier feet later.

The good news on the foot front is that the radio booths will be back together in one hall next year. Construction at the Las Vegas Convention Center means more space in 1999, so we won't have to go looking for radio companies in TV land or at the Sands.

Radio World will be out in force at NAB '98. We have dozens of engineers and other writers visiting booths, hunting for the latest products so we can tell you about them next month. Our reporters and editors will cover important radio panels on radio hot spots.

RW editors and consultants will speak on several panels. They include Technical Editor Alan R. Peterson, columnist Cris Alexander, technical consultants Tom McGinley and John Bisset, and a number of engineers who write for us.

Also at the show, we introduce RW Online, our exciting Internet presence at <http://www.rwonline.com>. You can log in from anywhere to read and hear product news, commentaries, and who's doing what in Sin City. We will announce the winners of our annual Cool Stuff Award, during a live Webcast Thursday, April 9, at 10:30 a.m. at Telos' booth.

winners one more time. Looking back, I think we did well at identifying promising new products of the year to come.

\*\*\*

For more than two decades, radio managers looking for equipment have been able to find it in Richmond, Ind.

Next year, Harris Corp. will move its studio products business to its new Broadcast Division headquarters just outside of Cincinnati. The company is consolidating a number of radio- and TV-related operations into an impressive engineering and office facility.

The business is what we once knew as Allied Broadcast Equipment, before Harris bought that business in 1988. After 27 years, Harris is leaving town. See our coverage on page 8.

\*\*\*

An important note from our circulation manager: Please do not use Reader Service Cards in an attempt to subscribe or renew your subscription to RW; these are *only* intended to help you request information from our advertisers more easily. If you are a current subscriber, you received a renewal form with your Feb. 18 issue. If you have not already filled it out, please do so now. *This is important.* We have great demand for RW, and cannot renew your subscription without that form.

To obtain a *new* subscription to RW, fill out the separate "blow-in" card provided for that purpose. The subscription rates are \$59 for one year, \$95 for two years and \$165 for three years. If you have any questions regarding your subscription, please contact the circulation department at (703) 998-7600, ext. 201.

\*\*\*

Steve Lampen's article about XLR connectors in our Jan. 21 issue included the Switchcraft A3 connector. Lampen praised it as "sleek and beautiful," but took exception to its strain relief and screw design.

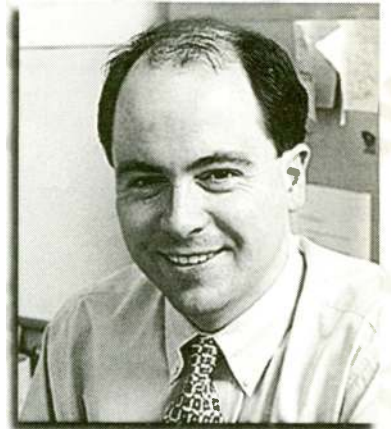
The president of Switchcraft, Keith Bandolik, wrote me with several complaints. He feels we implied, incorrectly, that Switchcraft's position in the marketplace has been supplanted by other companies. He said, customers have never complained about the strain relief, and in fact prefer the design of the A series. Its unique captive screw, he said, prevents the screw from being lost during assembly. But as an alternative, Switchcraft also offers the press-fit AA Series.

Bandolik also wants readers to know about the "significant introduction" of the patented Tini Q-G miniature microphone connector, which he said dominates the wireless mic market.

In sum, he said, Switchcraft has been around since 1946 and sells millions of connectors annually — connectors that are anything but "less than ideal."

We regret any confusion. In my view, Lampen's article contained some fascinating history about XLR connectors, but it did include opinions that should have been labeled as such.

## From the Editor



Paul J. McLane

\*\*\*

Many of our readers and advertisers know Simone Mullins, who has been a part of the RW family for many years. I'm sorry to report that Simone's husband Gene passed away in March at the age of 64. Our thoughts are with Simone and their many friends and family members.

*These products earned Cool Stuff Awards from the editors of Radio World at the 1997 NAB convention. The 1998 winners will appear in our May 13 issue.*

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Tascam DA-302 Dual DAT Recorder  
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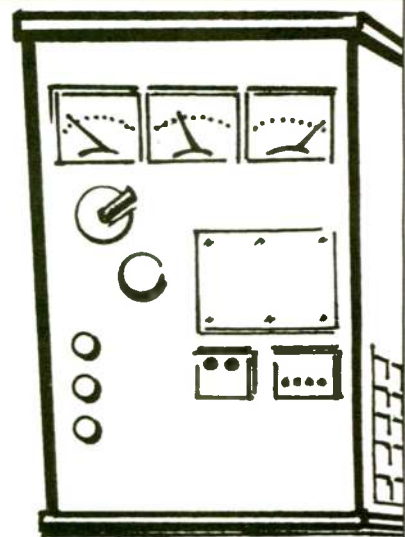
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# READERS FORUM

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

## Bookmarked references

Dear RW,  
I read the Feb. 4 issue of RW ... and was delighted to see the Peter Zollman article on job hunting on the Internet.

The URLs for those Internet job postings were extremely valuable and I have "bookmarked" them in my contact manager so I can now refer my clients to good career hunting locations whenever they call.

Thank you very much!  
Having worked at WKZO(AM) in Kalamazoo in the early '60s, I was delighted to see Sharon Rae's piece on the "Amazing Aaron," who, as you know, originates in Kalamazoo.

For those of us who can't get the comic strip in one of those "20 newspa-

pers nationwide" Sharon wrote about, is there any chance that "The Adventures of Aaron" could become a regular feature in **Radio World**?

Thanks again for a helpful issue!  
Steve Krumlauf  
SkyLight Satellite Network  
St. Paul, Minn.

## Car radio troubles

Dear RW,  
In the Feb. 4 issue, I couldn't help but notice the letter from Dave Hendricks concerning his 1997 luxury car with the radio that would not tune to an individual radio station. I recognize the radio in the picture as an Alpine-made Honda/Acura model, identical to the one in my 1994 Accord LX.

Look at the picture on the bottom left, under the volume knob. The words "TUNE/SEEK" and "FF/REW/TMS" are printed. On this radio, all one has to do is press the little tuning paddle up or down in short bursts and the tuner will advance in 200 kHz steps on FM and in 10 kHz on AM. Only by holding the paddle until an audible "beep" is heard from the speakers (about 1 second), will the radio go into "SEEK" mode, looking for the next strong station. Honda has not eliminated the listener's ability to tune in a specific frequency; they only require that the adjustments be done in quick increments.



Please inform Mr. Hendricks to read his owner's manual, including the section on how to use his radio and to take his car back to his dealer if the radio doesn't perform up to his standards.

J. Gibson Prichard  
Information Services Engineer  
WZTV-WUXP-TV  
Nashville, Tenn.

*Ed. Note: The photo that accompanied the original letter was intended to depict a typical car radio, not necessarily the model used by Mr. Hendricks. But as Mr. Prichard points out, the lack of a tuning knob on late-model receivers does not mean you cannot tune station by station. All digital-tuning radios we've seen do allow such tuning.*

## Make it legal

Dear RW,  
I am writing in response to the front-page article in the Feb. 4 issue, "Pirates Top NAB Board Actions."

## DAB and NAB

The National Association of Broadcasters annual convention, which opens this weekend in Las Vegas, has grown into a world-class event. NAB and the people who run this show know how to draw a crowd.

Radio could easily be lost at such a large event, but convention planners have done a good job at laying out a menu of tasty choices for radio managers, and radio engineers too. They deserve

praise for keeping the profile of radio high.

Get to the show early for the meatiest stuff.

For example, perhaps the most interesting and important session for RW readers takes place on Sunday, April 5. "Digital Sound Broadcasting: Worldwide Expectations and Progress" is an all-day session chaired by Milford Smith of Greater Media. The range of people on the agenda demonstrates how well Smith and the NAB have done their job at encompassing important trends.

Speaking at the panel will be representatives of WorldSpace, USA Digital Radio, Thomcast, Digital Radio Express, Cutting Edge Technologies, CD Radio, Ford, Xetron, FhG-IIS, Advanced Space Communications Research Lab, Harris Corp. and Deutsche Telekom.

Next door, our brothers and sisters in television will hold a similar session about digital TV, and they will no doubt get plenty of headlines. But forget all that DTV hubbub. Here, on the radio side, in one room, will be the people who are trying to remake the face of our industry: Satellite radio. In-band, on-channel proponents. Algorithm experts. Transmitter, processing and automobile manufacturers.

DAB has new momentum, thanks to advances in IBOC research and the pending launch of satellites to provide direct digital radio to U.S. listeners. The next 18 months will be telling.

If you catch only one panel at NAB '98, this should be the one.

— RW

Mike McDougald of McDougald Broadcasting stated, "We feel that the pirate radio people are not even attempting to abide by the law." This statement may be true in some cases, but let's consider a couple of things.

It seems that the NAB and FCC both have one idea in common: Get these stations licensed or get them off the air. Well, OK. This is all fine. But there is a small issue that is being overlooked. Money. At present, there is no possible way for an individual, middle-class American to go on the air

independent applications.

Finally, if some headway could be made with the cost factor, another option, which has been brought up many times over, is to set aside the very bottom portion of the FM band for community, low-power stations. This part of the band is cluttered with nothing more than repeaters, which in many cases repeat the same signal to a given area twice (The original signal can often be heard on its original frequency as well as the repeated frequency.) These repeated signals are also signals which often are brought in from a different part of the country, throwing the local interests and community in the garbage. Talk about a waste of bandwidth!

Pirating the airwaves should be illegal. But if the big boys want the small guys to do it legal, then make a way for this to be possible. Micro-stations are a way for the average person to go on the air and serve his or her community. With over an estimated 1,500 micro-stations in America, don't make all of these people criminals because of their interest in radio and the local communities. Instead, help them to become legal by giving some cost-effective means to go on the air with quality programming.

Joey Lane  
Monroe, La.

## Write to Us

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legally because of the cost. In most cases, it has absolutely nothing to do with people wanting to break the law. If the NAB is so interested in people acquiring a license before hitting the airwaves, then why don't they work with the FCC to bring down the cost of getting on the air? If this could happen, most likely, many of the people whom the industry considers pirates would be more than happy to comply with the law. Although there could be some minor changes in the current law to accommodate micro-casters, most of the law (the CFR, and Telecommunications Act in this case) is acceptable, pending that the industry could make it achievable by bringing down the cost to be on the air for

## Correction

The Feb. 18 article "Freinwald: A Model Engineer" included incorrect call letters for the FM and amateur radio stations at Clay Freinwald's Tacoma high school. They were KCPS and W7SBE.

Freinwald also points out that the amateur sign predated the Society of Broadcast Engineers.



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Next Issue of Radio World  
April 15, 1998



# Radio Responds to MiniDisc

Our recent overview of how radio stations use the MiniDisc format (*RW*, Feb. 4) generated numerous responses. The following are excerpts from letters to the editor regarding MD technology.

I work for Geneva College, a small college in the foothills of western Pennsylvania. When I started at WGEV(FM) in 1993, we had five dying cart machines and three reel-to-reels.

Each cart machine was going to cost \$600-plus for repair. We couldn't see investing that kind of money into cart technology so I began to research our options.

The Marantz CD recorder had just come on the market for around \$3,000. This looked like a possibility, as we had CD players already, until I realized

**I wish Sony had a MD equivalent of its TCM 5000 cassette deck, with more rugged construction and XLR I/O.**

— Gordon Byrd

it was WORM technology. We pursued DAT but I wanted to stay away from tape. I looked at Fidelipac's 3-1/2-inch floppy disk but each was a couple thousand dollars.

This is when I discovered MDs. I talked to several engineer friends of mine who warned me about the Sony MDS 101 consumer machines, how the compression was terrible and they would never catch on in broadcast.

Going against the flow, we purchased three for \$800 apiece.

The MD sound was incredible. They were easy to operate. Plus, it opened

up space in the control room. We discovered how nice MDs are to edit on, and they began to replace the reel-to-reel. For on-air work everything is now done on MD.

*Todd Hughes  
Chief of Services, WGEV(FM)  
Beaver Falls, Pa.*

I bought a radio station in Casper, Wyo., in 1993. What was left was an LPB board, STL equipment and a transmitter, so I had to fully equip the control room and production room. I bought four MD-1Z portable recorders to use for air. We were totally local. One player had jingles and liners, the next had the current spots running and the third was used for music. We also had three Denon CD cart machines.

We are an oldies format. The songs on MiniDisc are mostly from 45s and LPs that just had not been released onto CD yet. The fourth recorder was in production. I had a 4-track non-linear editing system from which we would dump the finished commercial onto the MD.

Because of the buffer, we could do a complete commercial break from one machine by just programming a sequence, which was really easy for a portable machine. The only failure to the media, was that the liner disc would not record after about six months of use. I think the fat table area just got "burned out" because that disc was repeatedly re-recorded as old liners expired and new ones were recorded.

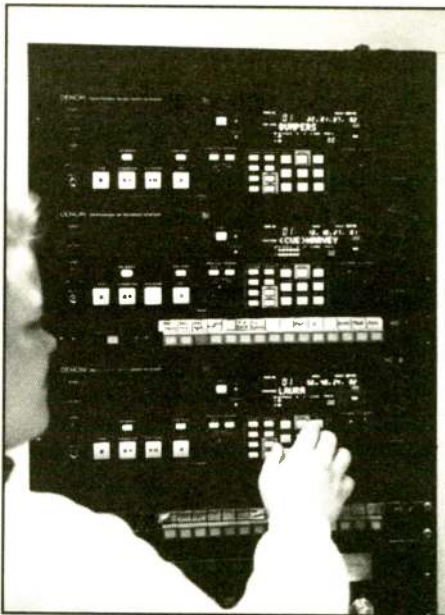
I was able to database the expired commercials, and, in a relatively small space store all the commercials. Unfortunately, the portables started to show wear in the loading mechanism and had to be replaced with the home units.

Considering that, at the time, the cost of a recordable CD machine was \$7,500 and the blanks were \$40 each, this was a much better alternative to cart machines.

In today's climate, I think I would go

for CD-Rs because of the standard, and the discs are now cheaper than MDs.

*Charlie Wilson  
Program Director  
KMOR(FM)/KOAQ(AM)/KOLT(AM)  
Scottsbluff, Neb.*



KSTP producer Holly Palmer uses one of the station's three Denon DN 1050R machines.

Long live the MD! I've been using the Sony MZ-R3 for a year and swear by it, after numerous road trips and space shuttle missions for CBS News. It enables me to capture sound, isolate

covering a NASA shuttle mission, when there are gaps between Mission Control commentary and ground-to-air conversations.

Some helpful hints for MD users: The MD goes through batteries like we change our clothes. Bring plenty of extras

Remember to let the toc-edit (table of contents) message finish before moving the machine in any way. Pulling the batteries while the message flashes could mean destroying what you've recorded.

Whatever you do, *don't drop it!* A friend dropped his MD recorder ... and found when he tried to play back his recording, it had disintegrated.

Most important, don't be intimidated by the MD. If you take time to learn how to operate it, you'll find it's not hard to learn, and it'll save you plenty of time — a precious commodity when the clock is ticking up to :55 and you've got to be on the air with a finished piece at the top of the hour!

*Peter King  
Reporter, CBS News Radio  
Orlando, Fla.*

KSTP(AM) is Hubbard Broadcasting's 50 kW talk station in Minneapolis/St. Paul, Minn.

A portion of our broadcast day is devoted to syndicated talk programming which, in some cases, is carried on a delayed broadcast basis. This obviously creates a need for reliable, long-form program recording and playback. In addition, all local talk shows are archived in their entirety for promo

**Where I think the format could use some improvement is in the ability to do 'on the beat' music edits.**

— Eric T. Smith

the cut I want, edit if necessary, and get it on the air quickly. The MZ-R3 lets me rearrange tracks in any order I want and enables me to use several cuts in a single radio spot. The MZ-R3's editing and rearranging wheel is helpful when

production and "best of" programming.

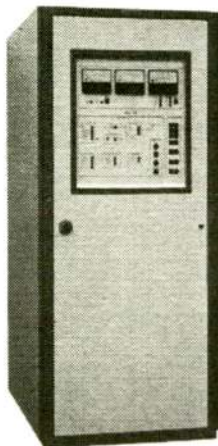
We had been relying on aging Otari MX 5050B reel-to-reel machines and Tascam cassette machines for this purpose. A decision was made last fall to

See MD, page 7 ►

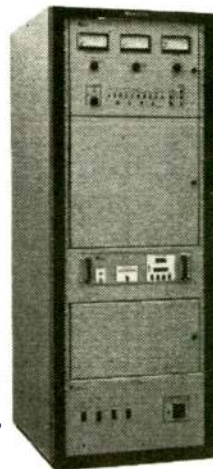
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► MD, continued from page 6  
 take advantage of today's digital technology for recording and playback. Because we were not ready to install a full, digitally based storage system, we looked for a method that would simply allow retirement of our analog tape machines.

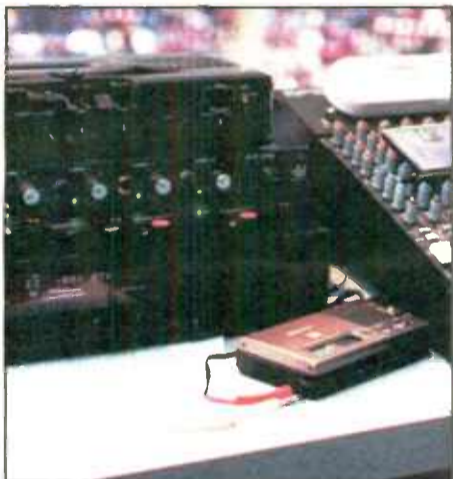
MD technology seemed to offer the best combination of flexibility, audio quality and cost efficiency. We tried several different machines and eventually settled on the Denon DN 1050R.

## I swear by the Sony MZ-R3 after numerous road trips and space shuttle missions for CBS News.

— Peter King

This machine appeared to include the features we needed, including a rotary jog wheel for easy cueing. We decided to purchase five of them. We use three in Master Control, as well as units in two of our production studios. The machines are used for the above mentioned delayed programming and archiving as well as recording and editing of commercial and promotional network feeds.

MD technology is used extensively



Three MD units are used to produce University of Minnesota hockey broadcasts.

in the production of University of Minnesota hockey broadcasts on KSTP. The entire show, including music bumpers, sound bytes, and recording of goals is produced on site by one of the country's top professional sports engineers, Wayne Selly. Thanks to the MD's ease of operation, Selly is able to construct various production items during game breaks. The editing features of the MD enable production which would be difficult or impossible using standard cassette machines. Selly uses a Sony MDS JE510, a Sony MZ-R3, and a Sony MZ-B3 during the broadcasts.

Bob Gagne  
 Chief Engineer, KSTP(AM)  
 St. Paul, Minn.

Here at New Dimensions Radio, we produce a weekly program that's syndicated worldwide. Two years ago we abandoned our aging analog recorders and adopted MD as our primary production medium. We haven't touched a

reel of analog tape since.

We chose MD especially for the ability to edit right on the disk itself. For our purposes, there's no need to dump into a hard-disk system and then back out again. Nor is any dedicated editing equipment needed; Sony's \$300, MDS-JE510 recorder does it all.

At under \$5 per 74-minute disc, MDs keep our budget under control.

MDs are far more archivally stable than DAT or analog tapes, can be write protected, and cannot be damaged by bulk tape erasers.

Like any recording medium, MD is not without its peculiarities. But once these are accommodated the net advantages of MD remain overwhelming. Since adopting MD we've improved our audio quality while doubling our production throughput. For less than

the cost of the four reel-to-reel decks we abandoned, we now own 16 MD machines of various kinds.

Dan Drasin  
 Director of Production, New  
 Dimensions Radio  
 Sausalito, Calif.

We use MDs at WHNZ(AM) and WZTM(AM) for in-the-field newsgathering. I think the format is great, but the gear Sony recommends for broadcast applications leaves something to be desired. The mic input of the MZ-B3 can break easily when you try to interface it with a standard broadcast mic through a mini plug.

The price for the MZ-B3 is a bit high when compared to the Sony cassette deck, and the unit doesn't include line-level input, even though a cheaper

Sony portable MD recorder does. If you need to use it for news conferences and other applications that involve audio outputs of varying levels, bring your "pads."

I wish that Sony had a MD equivalent of its TCM 5000 cassette deck, with more rugged construction and XLR input/outputs. Enhancements could include generating WAV files through a Data MD option and a telephone port for transferring analog audio or digital audio files over a dial-up line.

Gordon Byrd  
 Morning News Producer, WHNZ(AM)  
 Tampa-St. Petersburg, Fla.

RW thanks the many readers who responded to our invitation to tell us about their MiniDisc experiences.

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# Harris Heads to Cincinnati

*Long-Time Indiana Office Will Close; Move Is Part of Broadcast Division Consolidation*

by Paul J. McLane

**RICHMOND, Ind.** Harris Corp. will relocate its studio products business next year to a northern Cincinnati suburb, where the company has begun construction on a new world headquarters for its Broadcast Division. The studio products business now is based in Richmond, Ind., which has been its home since its predecessor, Allied Broadcast Equipment, was founded there in 1974.

The headquarters, announced previously, will house division sales and marketing, radio and television digital engineering, systems integration, management and administrative activities. In announcing that the Richmond operation will move there, the company said the new facility will be larger than originally planned, at 163,000 square feet in two buildings. It will be located in the city of Mason in Deerfield Township, northeast of Interstates 71 and 275.

Harris officials said they would offer positions at the new facility to all of the approximately 75 Richmond employees. The cities are about 60 miles apart.

The Broadcast Division headquarters is expected to open in March of 1999; the Richmond business, which includes a warehouse, sales, marketing and service functions, will move that summer.

## Converging business

"We had to find a way to manage the U.S. operations more efficiently," Jim Woods, vice president, radio and studio product lines, said. "A lot of our activity is becoming more entwined."

Woods said digital technology and other changes in the broadcast marketplace mean the lines between the four businesses of Harris Broadcast Division — radio, studio, television and systems — are converging rapidly. For example, he said, television engineering activity crosses over to radio.

"It is a natural evolution to consolidate," Woods said. He said Harris is hiring more people, and hoping most of its employees will make the move from Richmond.

Harris has cited the transportation and educational infrastructures of the area as reasons they chose it for the headquarters site. The facility was announced in 1996 as a research and development site for digital television work. As plans evolved, its scope has grown.

Harris Corp. is a communications and electronics company with sales of about \$3.8 billion. Harris Broadcast Division is part of the Communications Sector of the company. That sector, Woods said, has

annual revenue of about \$1 billion.

About half of the business generated by the Broadcast Division is in radio, Woods said. Harris does not publish sales figures for divisions below the sector level.

Woods estimated that Harris will spend



The planned Harris facility is shown in an artist's rendering.

\$12 million on its new facility.

Until now, Harris broadcast operations have been spread around Illinois, Indiana and Kentucky, with division headquarters and transmitter manufacturing in Quincy, Ill.; the studio products business in Richmond; and a systems business, dealing primarily with video systems integration, satellite uplink and broadcast vehicles, in Florence, Ky., near Cincinnati. A temporary office also is set up near the site of the new complex.

By late 1999, most of those functions will have been consolidated into the new facility. Transmitter manufacturing and engineering will continue at Quincy, Woods said, but at least some radio and TV research and development work will move to the new complex. How many engineers will be asked to relocate from Quincy has not been made public.

Woods called that facility the world's largest broadcast transmitter plant. "We see this as positioning Quincy to grow as well. We've recently broken records for the number of transmitters we've shipped in a quarter," with more than 300 radio and TV transmitters shipped in that period.

Not affected are several Harris facilities abroad. The company has a transmitter factory and European headquarters in Cambridge, England; a research and development facility in France; and a joint venture at a transmitter factory in China.

Woods said Harris also plans to continue its radio studio systems business in New York state, created when Harris purchased

dealer Northeast Broadcast Labs last year.

The Broadcast Division has its roots in the earliest days of commercial radio. Woods said Gates Radio, which had been founded in the early 1920s by Parker Gates, was acquired in the 1950s by Harris Intertype, a printing press maker then based in Cleveland. The company then expanded into other electronic media.

In the last 1970s, Harris Corp., involved by then in space program contracts, moved its headquarters to Melbourne, Fla. Eventually, Woods said, it spun off the printing press business.

Meanwhile, the Gates Radio and

Harris Intertype logos became familiar to the radio industry. That part of Harris also moved into television, and eventually changed its name to Harris Broadcast Equipment. As part of a reorganization in the early 1980s, it became the Harris Broadcast Division.

In the early years, Woods said, Harris competed in broadcast with RCA, and at one time or another offered studio equipment as well as RF. But by the 1980s it had evolved into primarily a transmission supplier, Woods said.

Harris acquired Allied Broadcast Equipment in 1988, essentially to get back into the studio product business. The Allied name has since been retired.

## Ridge and Richmond

Roy Ridge founded Allied in 1974 in Richmond, his home town; he served as president for six years after Harris bought it, and still consults with the company.

"I hate to see a very high profile business leave Richmond," he said. "The name Harris, let alone Allied, was a big asset to the community." But, Ridge said, "I understand fully and endorse what Harris has decided to do."

Ridge is now owner of Allied Telecom, a high-tech audio-visual business serving educational and corporate markets. He remains a Richmond booster. The city, he said, is unique, thanks to its location not far from Indianapolis, Cincinnati and Dayton. "The best of both worlds: a small town where you can drive to a big city for dinner."

## WorldSpace to Launch DAB in Africa This Year

► DAB, continued from page 1  
population of the developing world.

Communications facilities in much of Africa are outmoded.

In Ghana, for example, regional broadcasting services were extended to communicate with far-flung rural communities during the 1960s. But financial, political and technical difficulties led to a dwindling of dedicated broadcasting services for rural Ghanaians.

The state-run GBC gradually was replaced by small, community broadcasters, but these services generally do not provide the development-oriented programming originally promised by rural broadcasting.

The WorldSpace concept is to use satellites to transmit radio signals to inexpensive dedicated digital receivers. This principle has been employed successfully by the growing satellite television industry.

Three digital satellites will be used by

WorldSpace to deliver audio to Africa, Asia, Latin America and the Caribbean. Each satellite is capable of broadcasting almost 300 radio channels to millions of portable radio sets operable by solar power.

The GBC plans to air a variety of programs on its WorldSpace channel.

"We can, for example, use this facility as a revamped and cost-effective external service, as a delivery mechanism for a comprehensive education service and as a distribution system for our existing terrestrial network," stated Dr. Kofi Frimpong, director general of the GBC.

Industry analysts in the region expect broadcasters who use WorldSpace DAB channels to be able to cut operational costs while providing both better sound quality and wider geographic coverage.

In addition to the GBC, several other African broadcasters have announced plans to broadcast via WorldSpace, including Sud FM in Senegal, the Zimbabwe Broadcasting Corp. and the Kenya Broadcasting Corp.

Other WorldSpace broadcasters include New Sky Media of Korea, Radio Cadena Nacional of Colombia, the Voice of America, Radio Nederland and Bloomberg.

## 96 programs

The system is designed so that each satellite can broadcast up to 288 high-quality audio channels ranging from better-than-AM to full CD stereo quality.

Each satellite has three spot beams, See DAB, page 16 ►

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*Ray Baker, Chief Engineer, Ace Radio Broadcasting, Melbourne, Australia*

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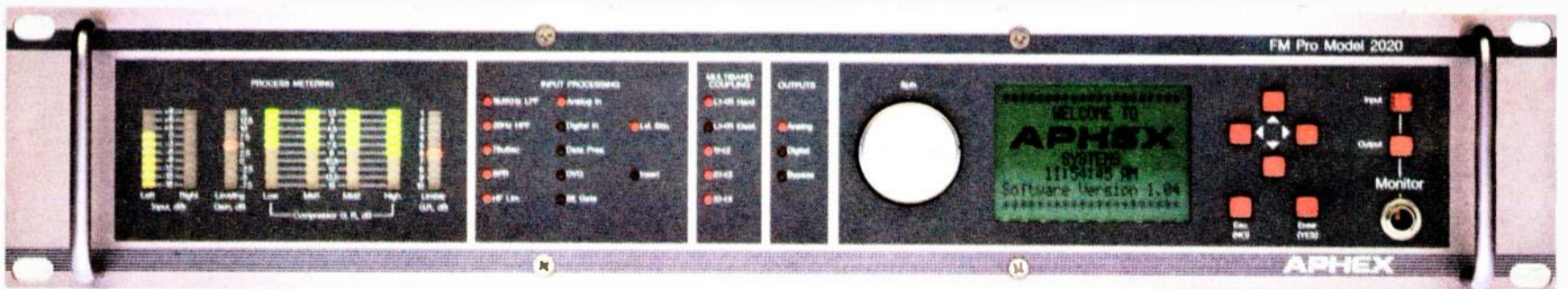
*Pete Partenlo, Audio Specialist, Odyssey Communications*

**“The station pops right off the dial—it didn’t do that before.”**

*Tom Sittner, Chief Engineer of KSJL-FM, San Antonio, Texas*

**“We’re getting calls from listeners commenting about the improvement in reception.”**

*René Engel, General Manager, KCSN, Los Angeles*



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World Radio History



# ESPN Does Baseball

► ESPN, continued from page 1  
the listener gets out of it by enhancing the production elements."

Radio and baseball have a strong, historic bond. Fans can name the home-team radio broadcasters from their childhood years. "I grew up with Phil Rizzuto, Bill White and Frank Messer doing Yankee games," said Hayes. "Those guys, at least the good ones, can make you smell the peanuts and see the green grass."

The amount paid by ESPN Radio for Major League Baseball rights has not been disclosed.

ESPN Radio is a joint venture between ESPN Inc. and ABC Radio Networks. ESPN provides programming while ABC Radio Networks is responsible for broadcast distribution, sales, affiliation, marketing and promotion.

Julia Atherton, director of marketing for ABC Radio Networks in Dallas, said, "We expect to have nearly 250 affiliates on board and clearing the games by the start of the season."

"Some are already ESPN Radio network affiliates, and some are not," Atherton said. "We open up the bidding to anyone who is interested." Each station must agree to carry the games in their entirety. In turn they are guaranteed a certain number of local avails.

WDFN(AM) in Detroit has been an ESPN Radio affiliate for four years. Program Director Gregg Henson said baseball lends more credibility to the network.

"ESPN Radio has done great things in a very short time. With the addition of MLB, I know as an affiliate, we now have a nice little franchise to which we can attach our call letters and build programming around," he said.

Henson said, "We love the idea of Sunday night baseball. It doesn't clutter up the rest of our weekend programming. Then at the end of the season, we get the playoffs and World Series."

"Sports is ESPN Radio's only business," said Rick Scott, president and CEO of Scott & Associates, a sports talk consulting firm in Seattle. "I think this is a terrific move for MLB. You can't do anything radically different when it comes to broadcasting baseball. ESPN Radio will put on a top-notch product that sounds great, but then comes marketing and promotion in a way only they can," he said.

### At the ballpark

The first person hired by ESPN Radio seven years ago was Bob Sagendorf, who as operations manager will be responsible for making sure the baseball broadcasts hit the air. He plans to use to his advantage the things ESPN has learned from broadcasting baseball on cable.

The plan calls for ISDN transmission. At times, the crew will use existing equipment at the various ball parks. "That is something we negotiate," said Sagendorf. Other times ESPN will use its

own Telos Zephyr codec.

Sagendorf said he is aware that ISDN service can be finicky. "We are looking at using the television side for the option of second- and third-channel audio possibilities off the satellite for backup, since we will be broadcasting the same games as the television side." As a second fail-safe, ESPN Radio plans to have a Comrex HotLine POTS codec for emergency use.

ESPN Radio is contracting with engineer Al Rosenberg to do game-day set up. Rosenberg is from Michigan and is ready to start racking up the frequent flier miles.

"I'll arrive at least four hours before the broadcast, lugging my three cases of equipment," he said. Rosenberg raves about the Mackie Micro Series 1402 mixer board, and its 14 inputs with 10 faders and two-channel stereo output. "It's small and extremely versatile," he said. "We'll broadcast the game in mono and send it back to the studio in the left channel. Then we'll use the right channel to feed the announcers the director's feed." The broadcast crew will use Sennheiser HD 25-1 headset microphones.

To compress the signal, Rosenberg uses a DBX 166 compressor. A Shure FP22 headphone amplifier with individual volume levels allows the announcers to hear themselves. A wireless microphone will be used for any field reports.

"You should be able to hear the crowd reaction and the pop of the glove as if you were sitting in the park. We will have two feeds for effects from the field," Sagendorf said.

The game-day broadcast crew will

consist of two announcers, who were yet to be named in mid-March, who will do play-by-play and color. Joining them at the stadium will be a director, engineer and statistician. The games will be broadcast in real time with no delay. The director and announcers will take their cues from Bristol over the Zephyr codec, which has full-duplex operation for two-way transmission.

ESPN Radio engineers will produce the game from headquarters in Bristol. "Our radio studio is about 95-percent digital," said Sagendorf. "We use a Yamaha 02R board with RE27 studio microphones." A 360 System Shortcut Editor will be used to edit play-by-play sound-bites on the fly.

"We'll produce our opening and closing billboards on an Orban DSE-7000 digital work station that really speeds up the process," Sagendorf said.

Once the package is assembled, it will be sent to New York. ABC Radio Vice President of Operations John Rosso said most of the work will have been completed by then.

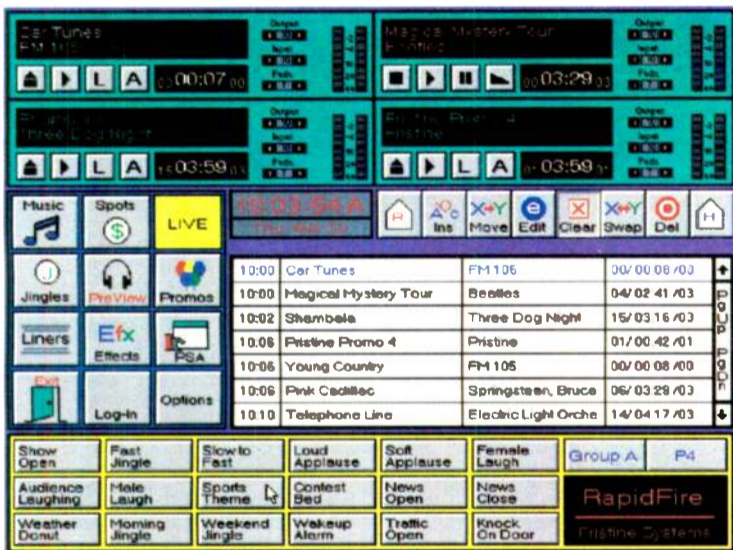
"ESPN Radio in Bristol is handling the full package: commercials, production values, studio drops. It's not until we pick up the transmission via T-1 land line or digital KU satellite from Bristol, that New York gets involved," he said. From New York, affiliates across the country receive the broadcasts over an ABC SEDAT satellite channel.

ESPN Radio has five years to put its spin on how baseball is broadcast on radio.

"Hayes said, "Baseball is a great game and this is our chance to leave our mark."

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# Minority Ownership a Priority

► FEES, continued from page 3

Last year, radio regulatory fees reflected a new calculation method. They were determined through a combination of station class and population served. Many fees increased, and stations complained. To determine population, Stewart said, "We used a contour-protected service area which pushed you out much further ... clearly past your city-grade service contour."

The new proposal would use a combination of station class and city-grade contour protections. The commission also is trying to figure out how to make sure broadcasters who pay fees don't carry the weight of those who did not last year, when many stations apparently did not comply in protest.

The commission also has been working on a proceeding to relax rules governing placement of a station's main studio and public interest file, and was expected to complete it soon.

## Minority ownership

Saying he was "distressed" by falling numbers of stations by minorities and women, Kennard challenged broadcasters to find a solution. A broadcaster from Mississippi said, "The key thing for entry is education, access to money and restriction of artificial barriers such as regulation. That's how you get more people involved entrepreneurially in our capitalist system."

Kennard said he prefers partnerships

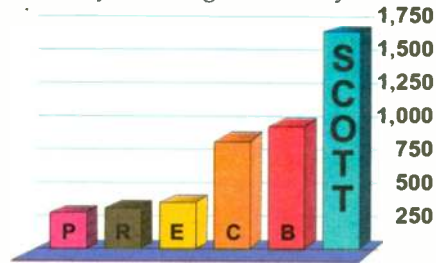
between established broadcasters and "new entrants so they can get a foothold in the marketplace. I'm not necessarily talking about regulation alone."

Some broadcasters challenged the effectiveness of incentive programs, such as the defunct minority tax certificate program. Said one attendee, "We saw what happened with incentives last time. You had sham companies, fronts ... people taking advantage of the tax situation ..."

Kennard replied, "There is nobody who is more committed to making sure we don't have sham operations than myself. If this is going to work, we've got to make sure there's real opportunity and not illusory opportunity."

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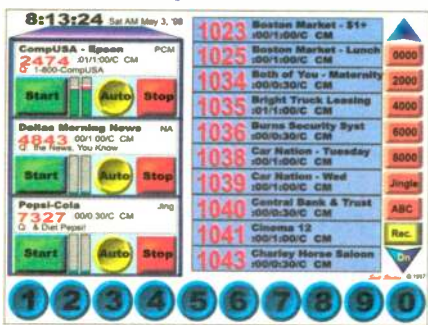
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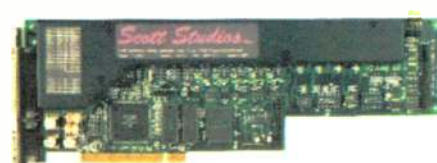


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The commission is poised to release an inquiry to enhance public-interest obligations for stations. As part of that inquiry, President Clinton and some 80 members of Congress have asked the commission to include a mandatory free air time provision for political candidates who agree to certain spending limits.

Kennard said, "The FCC has traditionally had the role of making sure candidates had access to the airwaves. ... I want this proceeding to be not something government does to broadcasters, but rather, something we do together. We don't have all the answers."

One broadcaster suggested that, rather than mandating free airtime, the FCC allow stations to continue to experiment with what works best to accommodate political candidates in their area. In reply, Kennard said, it wouldn't be fair to rely just on stations that do the right thing and foster political debate.

"Many will, but some won't," he said. "We've got to have a definition of the public interest that sets minimal guidelines and is enforceable."

Broadcasters have done a good job with debates, said Kennard. "But some candidates don't want to debate. You've got to deal with that. Some candidates would prefer to use the time for the 30-second spot. ... Shouldn't the airwaves be used to facilitate (getting the message out) in a way that doesn't require candidates to continually chase money?"

Said one attendee, "I doubt free time is going to keep them from chasing money."

Congressional leaders who govern telcom issues moved against the free-time proposal. Senate Majority Leader Trent Lott, R-Miss., Commerce Committee Chairman John McCain, R-Ariz. and Telcom Subcommittee Chairman Conrad Burns, R-Mont., oppose the provision. All planned to introduce opposition bills and attach them as amendments to unrelated legislation. House Commerce Telcom Subcommittee Chairman Billy Tauzin, R-La., planned a similar move.

## Is New LPFM Radio Ahead?

The new low-power FM service proposed by Roger Skinner and mentioned in the accompanying story calls for four classes of FM stations.

The first is for hobbyists, already covered under Part 15 rules. The second is for a "special event" license, to cover one-time specific requests.

The third proposed service is "LPFM-2." These stations would have power levels of 1 to 50 watts, and antennas up to 150 feet HAAT.

The fourth proposed service is "LPFM-1." Similar to the old Class A FMs, their power levels would be from 50 W to 3 kW, with a maximum HAAT of 328 feet.

"If the commission had rules that made it easy for a person of limited financial means to acquire a broadcast license, there would be no need for this petition," stated J. Roger Skinner. Under his proposal, only those who live within 50 miles of their proposed tower site would be eligible for a license.

Skinner suggested charging applicants about \$500 for a license and using a lottery system to decide between mutually exclusive applicants.

— Leslie Stimson



# Engineer Dave Evans Dies at 55

by Lauren Rooney

**SAN FRANCISCO** His colleagues remember him as a warm, friendly man, and a dedicated radio professional.

KALW(FM) Chief Engineer David Evans died Jan. 17 from injuries he suffered in a car accident in November. He was 55.

As a teenager, Evans went to work as a volunteer DJ for Pacifica station KPFA(FM) in Berkeley, Calif. He studied engineering at California Polytechnic University in San Luis Obispo, and worked selling transmitters for Harris before becoming the chief engineer of noncommercial KALW(FM) in San Francisco in 1984.

KALW staffers said Evans, who also wrote occasionally for RW, would be hard to replace.

Daniel del Solar, former general manager of KALW, hired Evans in 1984. "I was never sorry I did, not for one minute," he said. "His death leaves a big hole, and it's not going to be filled in the same way." Del Solar recalls Evans as an engineer who paid close attention to detail. "He never failed to keep the station on the air, even after the 1989 earthquake."



David Evans

"Our studios were on the fifth floor of the John O'Connell Technical High School," del Solar said. "The quake arrived rocking and rolling." The quake knocked out electrical power, and the station went off the air. The quake also did so much damage to the building that officials evacuated it.

"Dave headed to the transmitter," said del Solar. "As I drove home I heard KALW start transmitting. We were re-broadcasting KCBS (the station broadcasting emergency information) less than two hours after the quake hit."

With the studios condemned, Evans had to find new digs. Evans called on his longtime friend Kevin Mostyn, then the chief engineer for KFSO-FM, Visalia, Calif. "We had an emergency studio at the transmitter site," Mostyn said. "I offered to let them move there until they could get themselves set up. They were there for a year."

Some of Evans' work at KALW helped broadcasters across the country. A station licensed to Walnut Creek, Calif., applied to build a booster to serve 1,500 listeners incapable of receiving their signal, but instead put in a 1,700 W station that interfered with a third of the KALW listeners. Evans filed a petition to deny with the FCC, which eventually ruled in his favor, according to del Solar.

Evans developed a way to use a

Roland AR-100 Announcement Recorder to partially automate the overnight BBC programming on KALW. The method he developed was quick, easy and relatively inexpensive, as reported in RW on Aug. 6, 1997.

Evans also set up and supervised broadcast facilities for the San Francisco Lighthouse for the Blind.

Evans was just as loyal to his friends as he was to his work. Mark Hutchins, a broadcast engineering consultant in Brattleboro, Vt., met Evans in 1976 when they were both working for Harris. "He felt sorry for me since I was a home-based boy living in Quincy, Illinois," said Hutchins with a chuckle in his voice. "He

had a lot of trouble understanding how anyone could live in that part of the country. He called it 'the land of the frozen mud.'"

Hutchins said Evans would cook up some reason to bring him out to San Francisco to get him out of the cold Midwestern winter.

Bill Helgeson, operations manager at KALW, said the news of Evans' accident took the wind out of the staff. "At the time, we were in the middle of a pledge drive. Dozens of people were running around the place and we get the phone call from the hospital and everyone was, like, 'What?'" Helgeson said Evans would do whatever it took to keep the

station on the air.

Evans designed, built and equipped new studios for KALW. "He was up on all the new technology. When Dave came here in the mid-1980s this place hadn't changed since 1945. But Dave turned it into a state-of-the-art digital station. It's a gorgeous place."

Long-time companion Rick Spearman said Dave Evans was passionate about his work. "He worked 48 hours a day. And he never went anywhere without his little green screwdriver in his pocket."

Evans was to be laid to rest on March 7 in San Francisco, his urn wrapped in a ribbon, his little green screwdriver attached. Spearman asked that instead of flowers, donations be made in Dave Evans' name to the Aids Emergency Fund, 1540 Market Street, San Francisco, CA 94102.

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# Howard Anderson

► ANDERSON, continued from page 1  
bankers and capitalists and so forth, because there is supposed to be a source of capital.

**RW:** Would so-called "incubation" programs work — where a company would "incubate" minority ownership in a facility, by maintaining a stake in a station that steadily decreases?

**Anderson:** Yes, but you have got to get back to the core issue, which is access to capital. And are you going to prohibit them from selling in order to preserve minority ownership? They build the property up and it's minority owned and so forth, and if they want to realize the profitability that has come from the Telecom Act, are you going

to say you are a minority so you can't sell it? A lot of the minority ownership has changed because those owners have realized attractive profits on the properties they own.

**RW:** They are cashing out?

**Anderson:** A lot of them have sold, and that's one of the reasons minority ownership has gone down.

**RW:** Some broadcasters say it is tough for any small group or person who does not have a lot of money to buy a station and get in the game.

**Anderson:** I am a small-market broadcaster. You don't get any smaller than Essex, Yermo and Mountain Pass (California). I got into the business 20 years ago. I get back to access to capital.

I don't think it is any different now than it was then. If you have a track record in the industry, money goes after talent, and sitting there with a big bundle of money, those people have got almost as big of a problem as we have. They want to put that money out profitably and find talented, capable people who can make money for them. ... They care whether (the operators are) white, black, brown, yellow. The groups are bigger, but there is still an awful lot of opportunities in small to medium markets.

**RW:** And lenders would understand that, in radio, you might not see a steady profit stream of profit but ...

**Anderson:** It might be up and down, but most of them say ... "What are the assets that you are going to put up to guarantee this loan?" They don't understand that assets don't repay loans. Cash repays loans... That is really what you need to do, is network into a financial resource. If the guy just thinks he is going to get into the broadcast business because he wants to, without building a reputation and an access to capital, building some kind of confidence in a banker ... Dealing with financial institutions is a people business.

**RW:** Bill Clinton, Bill Kennard, and some 80 members of Congress believe the FCC should mandate broadcasters to give free air time to political candidates who agree to certain spending restrictions. Many candidates claim that most of their campaign spending goes toward air time. Is that true?

**Anderson:** NAB heard (from a recent study by the American Enterprise Institute) that air time accounts for about 30 percent of campaign costs. (Candidates) spend more money on research, staff, travel and consultants than they do on broadcast time. The California Broadcasters Association has offered statewide debate in cooperation with the League of Women Voters ... We have been turned down more times than I can count, so free TV time, what they want is cheap or free spots in order to attack their opponent ... Why not (mandate) free cellular telephone time or free airline seats?

**RW:** Is the lowest-unit-rate system working?

**Anderson:** If you look at the complications of it, no. But it's probably a better solution than free time. ... Just figuring out what the lowest unit rate is, is a tremendously complicated business ... There isn't a rate card in most places. Is it

fixed time? Is it run-of-station? You have got packages, you have got bonus spots that come into it sometimes, you have got make-goods. ...

My own opinion is to go along with unrestricted fundraising, (with) immediate reports ... full disclosure on where every nickel comes from.

**Going to the pirates**

**RW:** Care to comment on the petition filed with the FCC that calls for licensing 1-watt AM and FM services?

**Anderson:** It could absolutely dominate every resource the commission has. They could get three and four hundred applications from southern California alone. How do you license them? Do you auction them?

You have already got a system in place. To propose this without saying what is the regulatory cost going to be. ... Can they sell them? Who is going to arbitrate interference? What about indecency and obscenity? Most of these operators are really far out on the fringe. What about ASCAP and BMI? It's almost the Attorneys Full Employment Act.

Now pirate radio, to me, it's just the law. Just enforce the law.

**RW:** On EEO, the FCC is now allowing religious broadcasters to include knowledge of a particular religion as a hiring criterion for all station jobs. Does that discriminate against some applicants?

**Anderson:** I don't have any trouble with that. The very nature of what they are asking you to do is requiring some position in their faith. Any religious organization has got to impose standards upon their own members.

**The new commissioners**

**RW:** How do you see the new commission shaping up? Four of the five commissioners are new; the only holdover is Susan Ness. How does this affect your lobbying efforts?

**Anderson:** They will gain experience rapidly, and NAB and other organizations are doing everything we can to cooperate with them and give them the background, the information that they need to make intelligent decisions. ... I was with Commissioner (Michael) Powell, and he said very openly, "I want to get out and talk to broadcasters, I want to go around the country." So I asked how he would like to come to Hawaii and he said, "I could live with that."

**RW:** What do you think of Kennard so far as a chairman?

**Anderson:** I am going to reserve any opinion on that. He certainly has a wonderful background. He worked here at the NAB. He's bright, he's capable, and so forth. I hope he doesn't have a fixed agenda going in.

**RW:** Tell us about your stations. Are you putting in any new equipment?

**Anderson:** Let's talk about California first. We are out in the middle of the Mojave Desert and our audience is purely mobile on Interstate 15 and Interstate 40, between Los Angeles and

Laughlin, Nevada. Our audience is totally mobile and turns over 100 percent every three-and-a-half hours. Those studios are partially digital. (Anderson has California FMs licensed to Essex (KHXY), Mountain Pass (KHYZ) and Yermo (KRXX). In 1997, he purchased KIXF(FM), Baker, and KIXW(FM), Lenwood.)

**RW:** How many engineers do you have?

**Anderson:** I have one in Hawaii and one in California. We are buying two more California stations, so we'll have five different transmitters (from Harris) in five different sites in the Mojave Desert. So this (engineer) is really busy. He's on the road all the time, and they

(the transmitters) are in very harsh environments. One of them is powered exclusively by diesel electric. We have to haul 800 gallons of diesel fuel up a 5,000-foot mountain every month. We are putting in some more emergency standby power in two of the locations.

We've got a studio in Barstow

that feeds via microwave a transmitter that is 12 miles away, and then on a second hop, a second transmitter 87 miles away. The signal is then picked up at a relay point down by Laughlin, Nevada, and sent by microwave down to the third transmitter. We have a similar situation for the two stations we are just purchasing now.

From a facilities standpoint, I don't know any environment that is tougher than a transmitter out in the middle of the Mojave Desert. In the summer, it can be over 100 degrees. We just had a situation in January where he (the engineer) couldn't get up to the transmitter. We had to hire a helicopter to drop him there when we went off the air because the snow was so deep. At a 6,000-foot peak in the Mojave Desert, the snow was so deep that he couldn't get to the transmitter.

In Hawaii, we bought those (Honolulu stations KINE-FM and KCCN-AM-FM) in 1994, and they were all analog. We decided it didn't make any sense to cut the dog's tail off an inch at a time, so we went in and just converted those stations entirely. We are just going into new studios this year, mostly digital. We have signed a lease (and are waiting for) building permits. We should be in them by May.

**RW:** What would you say to a small- or medium-market station owner who is sitting on the fence about going digital questioning the expense?

**Anderson:** At the studio, I don't think he's got any alternative. He can do it gradually, but everything is going to be digital; he can struggle along with analog. It's expensive to do it a little at a time, so you might as well go all the way as your equipment has to be replaced.

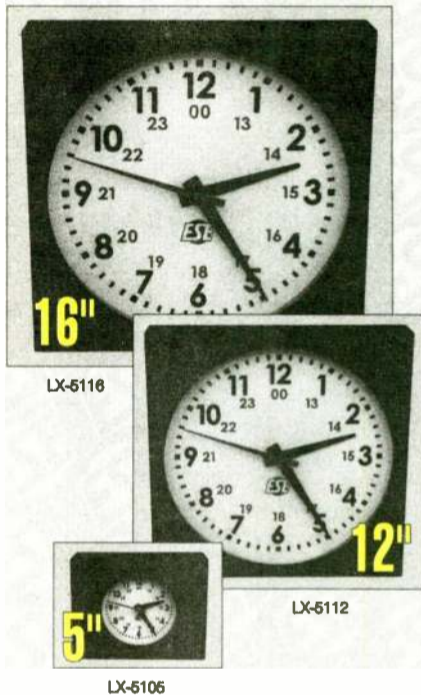
With in-band, on-channel (digital audio broadcasting), we don't know enough about it to know what the transmitter costs are going to be or anything else. My own opinion is that is going to be a rather gradual transition.



Howard Anderson

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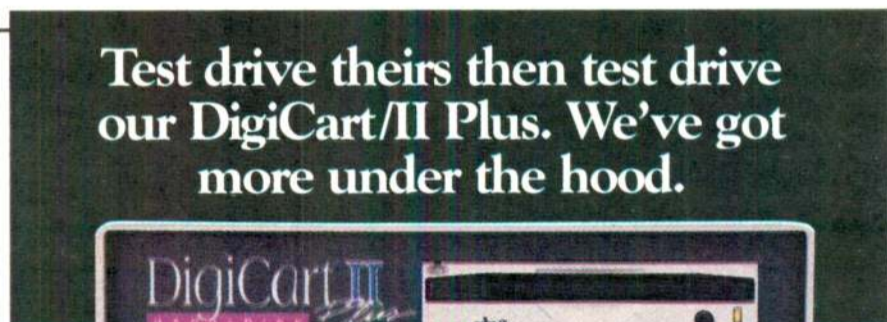


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World Radio History



# EEO: Religion 'Counts' for All Jobs

by Leslie Stimson

**WASHINGTON** For more than two years, religious broadcasters have pressed the FCC for the right to include religious belief or affiliation as a qualification for all job openings. Managers of stations with religious formats now have that right.

The FCC in February modified its Equal Employment Opportunity rules to provide a special exemption for religious broadcasters. Previously, managers of religious stations could only enforce a religious affiliation requirement if the position for which they were hiring was one in which the employee would espouse religious views on the air. That meant religious station managers (and the

FCC) had to decide on a case-by-case basis which job categories were eligible for the religious exemption.

"The policy excessively entangles the government in religious affairs, whereas a bright-line rule exempting all positions at a religious station would avoid this pitfall," the National Religious Broadcasters stated in comments filed with the commission.

A spokeswoman for the NRB said allowing stations to hire personnel "with cohesive religious beliefs" will simplify management for religious stations, where members of a small staff usually must be able to do several types of jobs.

The change affects more than 1,600 radio stations, according to "M Street Radio Directory" Editor Robert

Unmacht, who cited 1,063 commercial and 628 noncommercial religious stations at last count.

Despite the exception, religious broadcasters must still adhere to other EEO rules. When vacancies occur, religious broadcasters will still be required to recruit without limitation on the basis of race, color, national origin or gender from among those applicants who share their religious affiliation or belief.

Although Commissioner Harold Furchigott-Roth voted for the change, he said the definition of exactly what is a religious broadcaster was vague and that the commission "should not involve itself in the determination of who is and who is not" a member of a religious organization.

The commission will decide on a case-by-case basis whether a station qualifies as a religious broadcaster for EEO purposes. "Relevant characteristics will include, among other things, whether the station is for profit or non-profit, the existence of a distinct religious history, and whether the station's articles of incorporation mention a religious purpose."

"The FCC position is fair," said NAACP attorney David Honig. "It clarifies an area of the law that was arguably vague."

American Civil Liberties spokesman Lewis Maltby disagreed. "You shouldn't have to be Jewish to sweep the floors in the synagogues. Where there's no connection between the faith and the job, it's discriminatory."

Honig represents the NAACP in the ongoing case between the FCC and The Lutheran Church/Missouri Synod before the U.S. Appeals Court for the District of Columbia Circuit. In that case, begun in 1990, the commission fined the church, licensee of KFUD-AM-FM, Clayton, Mo., for what the FCC called "lack of candor" about station hiring practices. The fine was \$25,000.

Because of the new religious exemption, the commission asked the appeals court for a partial remand of the record in that case. If granted, most of the case would be made moot. The fine would still stand, although the church could appeal, said Honig.

If the motion for partial remand is granted, said the FCC, the commission would unconditionally grant the church application for license renewal.

The appeals court can either grant the FCC request, dismiss it with an explanation or dismiss it without an explanation.

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## Digital Radio To Africa

► DAB, continued from page 8

each of which will cover some 14 million square kilometers. Each receiver is expected to be able to receive at least 96 program channels.

Once WorldSpace begins its full-scale operations in Ghana this year, both radio listeners and the broadcasting industry are expected to see more expansion in the industry.

What is not known, however, is how Ghanaian officials will react to further media growth.

Minister of Transport and Communication Edward Salia has announced plans to submit a new communications bill to the country's parliament.

Insiders say the proposed bill covers a broad range including telephones, broadcasting, aviation and meteorological services. Both DAB and traditional radio services are expected to be addressed.

Ghana — and Africa in general — has come a long way in liberalizing its airwaves over the past decade, and the introduction of DAB to the continent is seen as inevitable if African broadcasters are to stay abreast of broadcasters elsewhere in the world.

■■■  
Franz van der Puye writes for sister publication *Radio World International*.



# Workbench

Radio World, April 1, 1998

## Wire Nuts Can Save Your Compound

John Bisset

Air and caulking compounds, like the glue used to affix Sonex to a studio wall, keep longer if the tube is sealed properly. I have seen engineers stick a nail down the nozzle or wrap tin foil around the end. Next time, try a wire nut! A large plastic wire nut will screw down on the end of the tube and effectively block the air that dries out the compound.

\*\*\*

From the "Why didn't I think of that?" department comes a product just in time for remote season. Tunnel Tape is patented and manufactured by KAJO Co. Gummed-up remote cables are a thing of the past. This new product firmly seals cables to the floor but has no adhesive in the center of the tape where the cables are, allowing for easy removal of the cables.

In addition to easier remote setup and breakdown, how many times have you taped down all your cables only to find you need to add one more? The tunnel in the middle of the Tunnel Tape will permit the snaking of another cable through it for these last-minute additions.

Tunnel Tape comes in 3-, 4- and 6-inch widths. For a free sample and more information, circle Reader Service 60.

\*\*\*

I recently spoke with Charlie Goodrich of Goodrich Enterprise. In addition to providing spare parts for the McMartin line of products, he also is refurbishing the old low-power McMartin FM transmitters. If you have an old 3.5 kW or 5 kW McMartin, it can be refurbished for under \$10K, and the refurbishment time is about a month. Charlie also has refurbished transmitters for sale. For more information, contact Goodrich Enterprises at (402) 493-1886.

\*\*\*

If, in dusting off your old remote kit, you find a roll of adhesive tape that has hardened and lost its stick, do not toss it in the trash; instead, toss it in your microwave for 15 to 20 seconds. Monitor the softening; don't leave the microwave unattended! When you remove the roll of tape, it will be as good as new.

\*\*\*

For some reason, the metal "pulls" on remote zipper bags always seem to break off. Maybe it's the mad rush to get set up!

Rather than tossing the bag, try this simple fix. Slip the end of a large paper clip through the zipper eye. To prevent the paper clip from coming off, slide a piece of heat shrink over the paper clip and shrink it down.

These large paper clips usually are bigger than the standard zipper pulls that come with the bags, making access easier. I saw one remote kit where the engineer slid black shrink over the paper clip first, then made up a P-Touch label with white lettering identifying the contents. A sleeve of clear shrink then was used to keep the label in place.

If you label everything in your remote kit and your staff understands that everything has its place, setup will be much easier. You also will end the mad search for that adapter plug you knew was somewhere in the bag.

\*\*\*

Speaking of remotes, remember our noisy Marti RPU? Bob Hawkins writes about a different twist. On VHF Hi-band, prior to raining, the signal meter and noise level would increase. This increase made reception very poor.

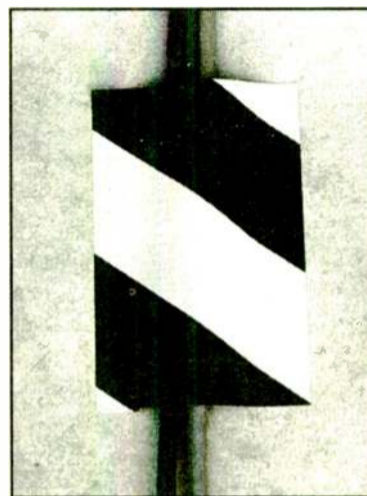
As soon as it started raining, 100 percent of the noise would disappear, and the reception was better than on a dry

day. This phenomenon only happened on a top-mounted antenna. An identical antenna mounted 50 feet lower was unaffected. Because the troubled antenna was mounted near the top of the tower, Bob recommended lowering it.

Bob Hawkins is the chief at WENS(FM) and WNAP-FM in Indianapolis and can be reached at (317) 684-8411.

\*\*\*

Joe Stack at ABC in New York has also encountered interference. His showed up as intermittent noise/static pulses that pegged his FM modulation monitors used for off-air monitoring. The problem eventually was traced to an old outdoor mounted neon sign transformer



Tunnel Tape: Safety Without All the Sticky Cleanup Mess

that was used to light up the station call letters.

Joe said the HV leads were long since disconnected, but the AC line was still hot. The transformer would gather moisture in the housing and intermittently arc. The arcs caused FM interference in addition to the AM interference. In fact, the arcs were intense enough to get through the limiter in the FM mod monitor.

Joe suggested checking outdoor high-voltage AC components, even fluorescent signs nearby, motors, and pole pigs. Joe can be reached on line at STACKORA-MA@aol.com

■■■

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

## Tower Terminology Can Trip You Up

Troy Conner

If you missed last month's *Man of Steel* column (March 4), shame on you; I described basic conceptual physics as they apply to guyed towers.

Tower folks use all sorts of terminology to describe guy systems: "inners," "outers" — no, we're not talking about belly buttons. It's all part of proper tower-speak.

### Some terminology

Let's talk terms. Tower guy systems normally are described by the number of "guy levels" or elevations at which the cables terminate on the structure, then further by the number of wires at each level or total number of wires.



Example: "The tower is a 200-footer with five guy levels. There are three wires at each level, or a total of 15 guy cables."

We can then refine the description further by looking at the number of guy anchors: three guy anchors, six, nine and so forth. Multiple guy anchors frequently are differentiated as "inners" and "outers," or perhaps "inners," "middles" and "outers."

So now our example might read, "The tower is a 200-footer with five guy levels. There are three wires at each level. The top three guy levels run to the outer anchors, and levels one and two are attached to the inners."

Traditionally, because a guyed tower is triangular, the guy wires extend out from each of the three legs. The wires are spaced equally 120 degrees around the structure, forming a naturally stable base. We can refer to this type of configuration as "leg guyed."

### Imaginary example

Another way to describe a guyed structure is the direction in which the anchors lie in relation to the tower. Picture a blank sheet of paper. Now center a compass rose on the page. To make it easy, let's put north at the top of the page.

Now imagine an equilateral triangle centered over the compass rose in the middle of the paper. For those of

you who have forgotten your high school geometry, an equilateral triangle has three equal-length sides and therefore three equal 60-degree internal angles.

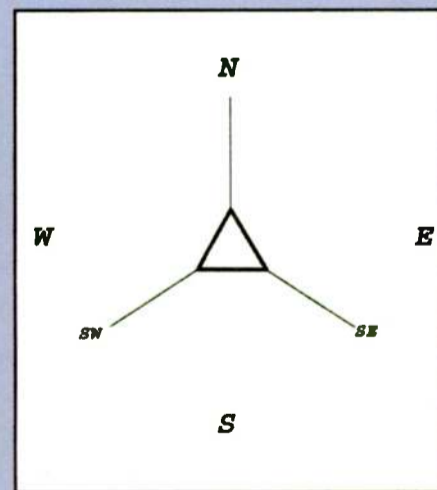


Figure 1

To retain simplicity, this triangle should be oriented with one flat side parallel to the bottom of the page and a point aiming up the centerline of the page. So if this triangle represents our "leg-guyed tower," we will have a set of guys at due north, southeast and southwest (Figure 1).

Technically, "east southeast" and "west southwest" would be more specific, but most tower folks do not use the term "east southeast." "Southeast" is close enough.

See WIRES, page 19 ▶



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# Picture This: A Guyed Structure

► WIRES, continued from page 17

One of the guy anchors usually will be aimed close enough to north, south, east or west that it should be used to define the other two. Example: "The east guy anchor has a crack in the concrete, but the southwest and northwest anchors both look OK."

## Guy wires multiplied

Guy wires normally are laid in triplicate at each elevation (or level), with each cable spaced 120 degrees apart. There are, however, some variations upon this basic theme.

A "face-guyed" tower is far less common, usually seen only on larger structures. This type of guying system uses three pairs of wires at each guy level. Each pair of cables extends out from the tower perpendicularly to the three faces.

Back to our imaginary sheet of paper. We keep the compass rose and triangle oriented as they were, only now we have a pair of guys going south, northeast and northwest (Figure 2).

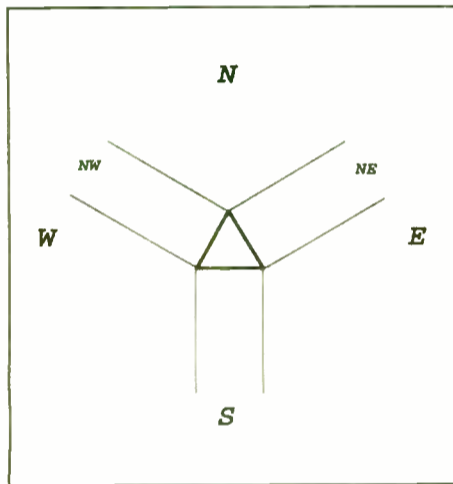


Figure 2

This type of system might utilize left and right pairs of guy anchors, or the pairs of cables from each face could converge on single anchors, as torque arms do. (Torque arms add torsional rigidity by doubling the effective face width of the structure and by doubling the number of guys.)

## Torque arms can be used to reinforce a tower at specific locations.

On our piece of paper: Again, leave the "tower" and the compass alone. North is still up, and one point of our triangle points north.

Now picture a larger equilateral triangle superimposed over our "tower," but this triangle has a flat side up (parallel to the top of the sheet) and a point aiming due south. The points of our inner triangle just touch the centers of the three faces of the outer triangle. The larger triangle is our "torque arm" and the new guy mounting location.

Using the torque arm the guys now extend in pairs to the north, southeast and southwest (Figure 3). Torque arms can be

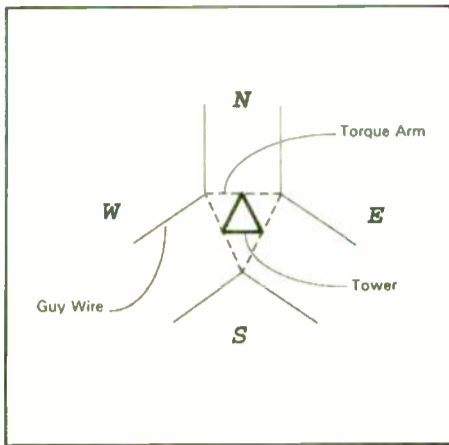


Figure 3

used to reinforce a tower at specific locations, creating rigidity and reducing oscillation. They also effectively halve the load carried by the guy cables by doubling the number of guy wires.

## Ask first

You should know these things about any tower in your care. They are among my first questions when I am contacted to perform work on a tower with which I am unfamiliar. So take a look at your tower, use a compass and by all means take some notes. Do not count on memory.

I had hoped to offer my experiences "riding" the guy wires, but I have run

out of space. Next time I plan to talk about types of cable and termination hardware.

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

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# AM Hybrid IBOC DAB System

David C. Hartup, Daniel M. Alley, Don R. Goldston

The authors work for Xetron Corp. This is the second part of a paper that describes the current state of the USA Digital Radio AM Hybrid In-Band On-Channel (IBOC) Digital Audio Broadcasting (DAB) system; the first part appeared March 18. RW prints the paper as a service to the industry.

This section will describe the AM Hybrid IBOC system. The design of the system is ongoing at this time, so the final system design is likely to be modified.

The AM Hybrid IBOC system uses OFDM [see references 3-5] to modulate the digital data. OFDM is a spectrally efficient multicarrier modulation technique that results in tight spectral containment. The spectrum of the AM Hybrid IBOC system is shown in Figure 4. The spectrum consists of the AM carrier, the analog AM spectrum, the OFDM carriers that are directly beneath the analog spectrum, and the OFDM carriers that are higher and lower in frequency than the analog



spectrum. The spectrum is fully compliant with the FCC emissions mask. The OFDM carriers, or digital carriers, extend approximately  $\pm 14.5$  kHz from the AM carrier. The carriers are spaced by about 454 Hz. To avoid interference from the carriers of first adjacent channel stations, the two digital carriers in the positions near  $\pm 10$  kHz are not transmitted. Also, the digital carrier at the center of the channel is not transmitted. This results in a total of 62 transmitted digital carriers.

The digital carriers directly beneath the analog signal spectrum are modulated in a manner to avoid interference with the analog signal. These carriers are grouped in pairs, with a pair consisting of two carriers that are equidistant in frequency from the AM carrier. Each pair is termed a complementary pair and the entire group of carriers is called the complementary carriers. For each pair, the modulation applied to one carrier is the negative conjugate of the modulation

applied to the other carrier. This places the sum of the carriers in quadrature to the AM carrier, thereby minimizing the interference to the analog

signal when detected by an envelope detector.

Placing the complementary carriers in quadrature to the analog signal also permits demodulation of the complementary carriers in the presence of the high-level AM carrier and analog signal. The price paid for placing the complementary carriers in quadrature with the AM carriers is

the transmitted analog bandwidth from the current 10 kHz to 5 kHz is not expected to result in diminished received analog signal quality because it is believed that a large majority of existing AM receivers have a bandwidth of 5 kHz or less to avoid the high level of interference present in the AM band at night.

### Three PAC rates

The AM Hybrid IBOC system will use the Lucent Perceptual Audio Coder (PAC) [see reference 2] algorithm to encode the

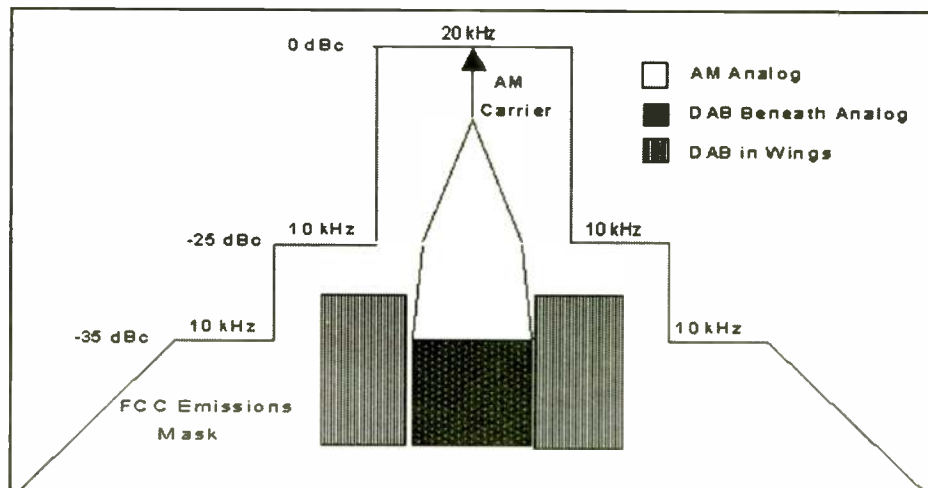


Figure 4: AM Hybrid IBOC Spectrum

that the information content on the complementary carriers is only half of that for independent digital carriers.

### Flexible modulation

OFDM is a flexible modulation scheme in that the power of each carrier can be adjusted independent of the other carriers. This allows the OFDM spectrum to be tailored to the needs of a particular application. In the case of the AM Hybrid IBOC system, the power level of the complementary carriers is set to avoid objectionable interference to the analog signal. Figure 4 indicates that the power level of the complementary carriers is about 35 dB below the unmodulated AM carrier. The level of the non-complementary carriers is about 30 dB below the unmodulated AM carrier and is limited by the emissions mask. The total power of the digital signal is about 13 dB below that of the analog signal.

OFDM also allows independent modulation types to be used on the digital carriers. For the AM Hybrid IBOC system, the modulation types being considered are BPSK, QPSK, 8 PSK, 16 QAM and 32 QAM. Trade-off studies are being conducted, and it is likely that a combination of the above modulation types will be used.

The complementary carrier pair nearest the AM carrier uses BPSK modulation. This carrier pair transmits system control information, such as the digital bit rate being transmitted. The receiver also uses this pair of carriers to achieve symbol timing via a Costas loop.

The AM carrier serves as the phase reference for the OFDM modulation. The phase of the AM carrier is defined as the in-phase signal. Carrier phase tracking is achieved at the receiver via a conventional second order phase-locked loop.

The spectrum of the analog signal is limited to  $\pm 5$  kHz from the carrier, leading to an audio bandwidth of 5 kHz. This bandwidth will help alleviate the current first adjacent analog-to-analog interference that is prevalent at night in the AM band. It also will avoid problems between the desired digital signal and a second adjacent analog signal. Reducing

program material to be digitally transmitted. The system will support three PAC audio encoding rates. These rates will be approximately 48 kbps, 32 kbps and 16 kbps. The rate is selectable by each station and the rate can be changed as desired. The goal of the 48 kbps audio encoding algorithm is to provide an FM level of audio quality. The 32 kbps and 16 kbps modes can be chosen by a broadcaster to provide more robust coverage, to counter high-interference conditions, or to trade off audio quality for the opportunity to transmit additional data services. The latter option may be especially attractive for talk radio formats.

The AM Hybrid IBOC system will include an auxiliary data channel for broadcasters to transmit digital data services. The rate of the auxiliary data will be approximately 2.4 kbps. Whereas the auxiliary data channel is a guaranteed rate, there also will be a secondary data channel called the ancillary data channel whose rate fluctuates as a function of the audio encoding rate required to encode the main program material. During simple passages that do not require the full rate of the PAC algorithm, ancillary data can be transmitted. The rate of the ancillary channel typically will be less than the rate of the auxiliary channel.

### References:

- [2] D. Sinha and J.D. Johnston, "Audio Compression at Low Bit Rates Using a Signal Adaptive Switched Filterbank," AT&T Bell Labs, Murray Hill, N.J., 1996.
- [3] R.W. Chang, "High-speed Multichannel Data Transmission With Bandlimited Orthogonal Signals," Bell Sys. Tech. J., vol. 45, pp. 1775-1796 Dec. 1966.
- [4] S.B. Weinstein and P. M. Ebert, "Data Transmission by Frequency-Division Multiplexing Using the Discrete Fourier Transform," IEEE Trans. on Comm. Tech., vol. COM-19, pp. 628-634, Oct. 1971.
- [5] B.R. Saltzberg, "Performance of an Efficient Parallel Data Transmission System," IEEE Trans. on Comm. Tech., vol. COM-15, pp. 805-811, Dec. 1967.

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## FEED LINE

# Make the Expanded-Band Connection

W.C. Alexander

This is the tenth in a series of articles about constructing an expanded-band AM facility. The previous part appeared in RW March 18.

The remainder of this series on AM expanded band facilities discusses the construction and tune-up stage, starting with the proper connecting and grounding of your transmitter, transmitter equipment and RF hardware.

There is no magic secret to a good transmitter installation. Good engineering

practice during the installation phase of a transmitter site can save much trouble later, so take the time to make that little bit of extra effort to do it right.

## Electrical connections

There is a right way and a wrong way of connecting the AC power feed and the control/monitor wiring to the transmitter. The following describes the correct procedure in making the connection.

In some situations it may be permissible to run control and monitor cable to and from the transmitter without using a

conduit, but I strongly advise against it. A thin wall (EMT) metal conduit will



provide a high degree of shielding for your control and monitor wiring in addition to giving you a "clean" entry to the transmitter.

PVC conduit can likewise provide a "clean" entry, but it provides no electromagnetic shielding whatsoever. The cost of a run of 1-inch EMT conduit between

your transmitter and equipment rack is minimal. You should insist on it.

One simple and inexpensive way to get a high degree of surge suppression in your control and monitoring cabling is to run all conductors through a ferrite toroid core at the point where the wires enter the transmitter cabinet. This will make these conductors a very high impedance to the fast rise-time currents that are characteristic of lightning-induced surges, and give the secondary benefit of choking out RF. A ferrite bead on each wire is not necessary; running all the cables through one or two toroids just large enough to pass all the cables through is adequate. Some transmitter manufacturers provide toroid cores with their equipment. If your transmitter does not come with any, you can get some from most any electronic parts house cheaply. This inexpensive ounce of prevention will pay big dividends later.

The AC power feed likewise should be run in conduit. Use the shortest feed possible from the service panel to the transmitter. I recommend that EMT conduit be used all the way. Some flexible conduit can give problems in high RF environments, so the small, extra expense of using thin wall conduit is worthwhile.

## Trust, but verify

Generally speaking, you should choose the service size based on the recommendation of the transmitter manufacturer. You should evaluate this recommendation, however, by looking at the connection point inside the transmitter. Check the conductor size, the size of the transmitter primary circuit breaker, and so forth. Providing a much higher amperage service to a transmitter than is required makes no sense and may be dangerous. In a recent new transmitter installation, I observed the recommendation of the transmitter manufacturer for service/conductor size, then noted that the wire on the transmitter side of the electrical connection point was several sizes smaller than the incoming service conductors. By the time I saw that, it was too late to pull out and replace the large (and expensive!) service wire that had already been installed to feed the 50 kW transmitter.

The flip side of this caveat is to make certain you have a large enough service to the transmitter. The service wire size in no event should be smaller than the wire on the transmitter side of the electrical connection point.

Just as it is a good idea to run all control and monitor wiring conductors through a toroid core, running the AC service wires through a toroid also is a good way to choke out lightning surges and RF. You can run all the conductors through a single toroid donut, or you can use individual cores on each conductor. Again, this will make the transmitter service entrance look like a very high impedance to a fast rise-time surge and stray RF currents on the AC line.

Always use a safety ground wire to ground the transmitter to the safety ground bus of the distribution system. The National Electrical Code may allow you to use the conduit as a safety ground, but do you want to trust your life to conduit connections that may or may not be tight, low-resistance connections after a few years? After a direct lightning hit or other malfunction, one side of the power transformer primary can short to the core or case, leaving the transmitter chassis

See INSTALL, page 31 ►

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# NAB to Honor Crystal Award Winners

**Karen Bouffard**

The Crystal Radio Awards will be announced at the NAB '98 Radio Luncheon in Las Vegas next week. They honor stations for their public service. The ceremony will mark the 11th anniversary of the coveted honor.

According to Craig Wilbraham, senior vice president and general manager of Los Angeles station KKBT(FM), radio stations typically do the minimum when it comes to community service. The FCC doesn't require it, and it takes time, money and staff involvement.

"Public affairs shows normally are prerecorded during the week and run 5 p.m. to 7 p.m. on Sundays — and then it'll be on some bland issue like somebody's book tour."

## A time for change

KKBT is among the stations vying for crystal this year. Wilbraham's station won the award last year — and hopes to win it again.

According to NAB, stations fill out 12-page applications detailing their public affairs and community service activities of the previous year. The judges look for consistent local programming and coverage; interaction with listeners, community groups and businesses; information on station-sponsored community events; and demonstrated community leadership and involvement by each staff member.

An NAB spokeswoman said the winning stations are the ones that demonstrate excellence in all these areas.

According to Wilbraham, public service at KKBT involves everyone at the station: secretaries, sales staff, on-air personalities, and promotional staff. To beef up staff efforts, the station created a Community Action Department.

"It's larger and has a broader staff than typical public affairs departments," Wilbraham said.

Sundays from 8 to 11 a.m., the station carries a live public affairs call-in show called "Street Science," featuring state and local politicians and community leaders who address topics such as racism, AIDS and child abuse.

**Radio stations have the power to educate people and we should make use of that.**

— Mary Campbell

The station also provides support to community organizations by providing \$3 million per year in public service announcements. Staff members visit schools to talk about topics like racism and gang violence. The station also sponsored a long list of community events, money-raising efforts for area food banks, AIDS prevention programs and other causes. It raised hundreds of thousands of dollars, Wilbraham said, for community organizations.

Finalists are selected by a secret panel of judges from community service organizations, public relations firms and the broadcasting industry. Entries are judged by market size, with like-sized stations competing against each other.

## Two-time winner

KBHP(FM), in Bemidji, Minn., won Crystal Awards in 1994 and 1997. It is the only station ever to win twice in the small-market category. The station reaches 30,000 listeners weekly.

"It was a thrill to be up there with stations from Los Angeles and New

York — and here you are from Bemidji, Minnesota," said KBHP Vice President Mary Campbell, who accepted the award last year in Las Vegas.

Asked why KBHP won, Campbell cited an exhaustive list of community service projects as well as unique public affairs programming. The station produces "Chat-About," a public affairs

event started with a live broadcast from noon to 8 p.m. from a local mall, where a community fair was set up featuring booths, demonstrations and children's activities. For entertainment, every elementary school in Bemidji sent their children's choir.

WBHP also raised \$12,018 dollars in a fund-raiser for Camp North, a facility serving physically handicapped children and adults. Money was also raised for Children's Miracle Network, the Multiple Sclerosis Society and the United Way. In November, the station collected more than 9,000 food items for the local food bank.

## Why do they do it?

"The community needs help," Campbell said. "Radio stations have the power to educate people and we should make use of that. All the awareness we create for organizations makes the community stronger ... and you feel good!"

Wilbraham dismissed the notion there is a direct relationship of public affairs and ratings, though he said community service builds customer loyalty.

"You become bonded with the audience," he said. "The audience comes to believe in you, and appreciate you, and you have their loyalty. They know the radio station is committed to their lives, not just to playing records."

Wilbraham said. "It needs to be done. It's not mandated by the FCC. There's not any financial reward. It's not a ratings generator. We do it because it's necessary."

## Plaudits for the NAB Crystal Award Nominees

Here are the finalists for the NAB Crystal Radio Award, given to stations for exceptional service to their communities. Ten winners will be announced during the Radio Luncheon at NAB '98 on Tuesday, April 7, in Las Vegas.


KAGE-FM, Winona, Minn.  
 KDWB-FM, Minneapolis  
 KIRO(AM), Seattle  
 KKBN(FM), Twain Harte, Calif.  
 KKCS-FM, Colorado Springs, Colo.  
 KKYX(AM), San Antonio, Texas  
 KLOS(FM), Los Angeles  
 KNX(AM), Los Angeles  
 KPWR(FM), Burbank, Calif.  
 KRUZ(FM), Santa Barbara, Calif.

KTRH(AM), Houston  
 KUZZ-AM-FM, Bakersfield, Calif.  
 KVFD(AM), Fort Dodge, Iowa  
 KWSN(AM), Sioux Falls, S.D.  
 KXPK(FM), Denver  
 KYSM(AM), North Mankato, Minn.  
 KZLA-FM, Los Angeles  
 KZZY-FM, Devils Lake, N.D.  
 WANB-AM-FM, Waynesburg, Pa.

WAXX(FM), Eau Claire, Wis.  
 WBEE(FM), Rochester, N.Y.  
 WCBC(AM), Cumberland, Md.  
 WDEL(AM), Wilmington, Del.  
 WEGR(FM), Memphis, Tenn.  
 WEZF(FM), Burlington, Vt.  
 WGMS-FM, Rockville, Md.  
 WGN(AM), Chicago  
 WGOH(AM), Grayson, Ky.  
 WGY(AM), Albany, N.Y.


WIBC(AM), Indianapolis, Ind.  
 WIZM(AM), La Crosse, Wis.  
 WJJY-FM, Brainerd, Minn.  
 WKHY(FM), Lafayette, Ind.  
 WKVI-AM-FM, Knoxville, Ind.  
 WLEN(FM), Adrian, Mich.  
 WLHT(FM), Grand Rapids, Mich.  
 WLVQ(FM), Columbus, Ohio  
 WMAL(AM), Washington  
 WOKQ(FM), Dover, N.H.

WTMX(FM), Chicago  
 WTVB(AM), Coldwater, Mich.  
 WUSL(FM), Philadelphia  
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# Cutting the Confusion of Law and Regulation

**Lee Harris**

The broadcasting industry is not unique in being beset by confusing and constantly changing rules and regulations. But the upheaval of the past few years has been enough to make even the most knowledgeable broadcaster's head spin. The Broadcaster's Law and Regulation Conference April 5-8 at NAB '98 will attempt to cut through some of the confusion and alert broadcasters to changes already in effect, and those yet to come.

Perhaps the best indicator of how times have changed is the inclusion this year of a panel on Tuesday called "Pirate Radio Stations: Will They Be Walking the Plank?" Considered a minor annoyance in years past, pirate radio operators have suddenly taken on a First Amendment legitimacy with the consolidation of the radio industry. Stephen Dunifer of Free Radio Berkeley fame is, needless to say, not on the panel, which will focus on government efforts to keep piratical activity from interfering with the livelihoods of licensed broadcasters. With the unlicensed ranks apparently growing, and FCC authority being questioned in court, organizers of the show apparently feel that unlicensed operators no longer can be ignored.

Even operators who want to play by the rules are finding it more difficult to buy or build the modern-day equivalent of a mom-and-pop station. Many lenders are chasing the giants of the industry, finding it uneconomical to fund "little" deals for less than \$1 million. However, there are lenders who specialize in such transactions, and they will take part in Wednesday's "Station Financing in the Small and Medium Markets." Panelist Katherine Marien of Allied Capital Corp. in Washington deals in broadcast loans guaranteed by the Small Business Administration. She told RW that the number of specialized lenders interested in small deals is limited, maybe half a

dozen nationwide. However, some local banks are still willing to provide funding for the right deal.

### Let's make a deal

What does Marien look for in a buyer? "We want a strong management team, one that will fit in the market. A major-market GM who wants to buy into an unrated market because that's all he can afford may be a bad bet. He's coming from an agency-dominated market and wants to go into a direct retail market. If the GM came from small-town radio, it may be a different story. There's a lot of psychology that goes into these lending decisions."

Political broadcasting rules are a headache for operators in markets of every size. The panel



Sandra Baron



Kathy Marien

"Political Broadcasting — An Update," also Wednesday, will attempt to address some of the more terrifying prospects, includ-

ing the possibility that the FCC will mandate free air time for candidates or make stations sell candidates' spots for less than the lowest unit charge.

Panelist Arthur Goodkind, with the law firm of Koteen and Naftalin in Washington, doubts that either of those changes will come to pass. "It's not clear that broadcasters have an obligation to subsidize these campaigns. I do expect stations to grant candidates more free time in the form of debates, forums or back-to-back appearances under the news exemption. The important thing is that the use of time

remains under the control of the station."

Goodkind said the panel also will attempt to sort out the vagaries of the lowest unit charge rule, including such fine points as how to account for bonus spots.

Lawsuits alleging slander and invasion of privacy have been of growing concern to radio operators in recent years, especially those dealing in news/talk formats. "News, Talk, Personality and Internet Programming — Avoiding Libel, Privacy and Related Problems," scheduled for Monday, will help you steer clear of multimillion dollar mistakes. Panelist Sandra Baron of the Libel Defense Resource Center in New York said, "Talk radio and sports talk radio have unquestionably evolved into a risky business." Morning zoo-type shows also are landing stations in legal hot water with "ugly bride" contests and similar promotions.

Baron says another problem area is a growing tendency of news gathering organizations to rely on anonymous law enforcement sources. This was driven home last year when a New York radio talk show host was sued for more than \$7 million for essentially declaring Richard Jewell guilty of the bombing at the 1996 Olympics in Atlanta. Jewell was

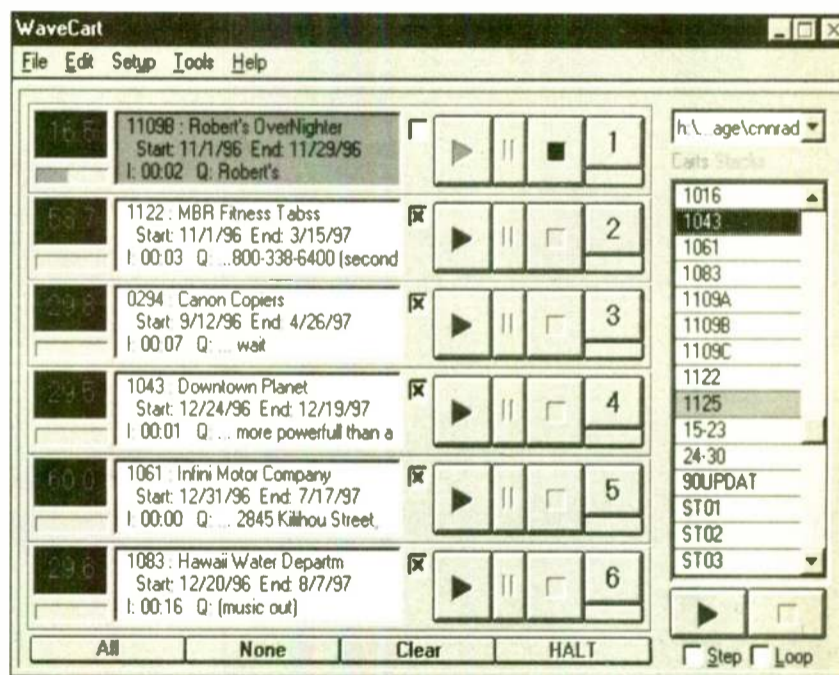
never charged and was later cleared of any involvement. This panel also will focus on how your station's Web site could turn into a legal quagmire.

The past few NAB conventions have reflected growing interest in the Internet, and this year's Law and Regulation Conference is no exception. Sunday's session, called "The Internet and Broadcasting: Extending Your Franchise," will deal with how to transform a radio station or stations into a communications company via the Internet. With some stations reporting profits from their Web sites, the panel will present case studies of proven cross-medium strategies.

"Has the Law Caught Up With Technology?" will answer that question Sunday, likely with a resounding "No," while providing a list of cyberlaw "do's and don'ts." Panelists will run down checklists for avoiding copyright, trademark, defamation, obscenity and contract trouble. They also will look ahead to possible congressional action in these areas.

This is just a sample of the more than two dozen sessions included in the Law and Regulation Conference, a reminder of the enormous number of complex legal and regulatory issues facing broadcasters as they get ready for a new century.

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# Field-Friendly Phone Interfaces

**Paul Kaminski**

The dial-up "plain old telephone system," or POTS, remains the least-expensive system for transmission or reception of audio, albeit with limited audio frequency response.

With last-minute remotes, breaking news stories, increased program demands and budgetary pressures, some radio users still depend on POTS for transmission and reception. Most people producing such programs or news coverage are not technicians. An easy way to hook equipment to the phone system is a big plus.

## Handset answer

This article focuses primarily on handset replacement products. Calls to manufacturers and dealers turned up the models mentioned here. If you make or use a model not shown, let me know and I'll write about it in a future article.

Handset replacement devices plug up or into the handset port on a POTS telephone. They replace the telephone handset microphone, and sometimes the receiver, either with an enhanced microphone or with a provision that lets you connect a broadcast mic and headphones to the telephone instrument.

The replacement devices do not act like a telephone hybrid, splitting the signal into separate transmit and receive paths. Nor, with a few exceptions, do they plug up to standard telephone RJ-11 jacks, or work with phones in which the dial pad is in the handset. You still need to dial with the dial pad of the instrument. The handset, by design, allows leakage between the send and receive paths ("side tone").

John Lynch, a sales representative for Broadcast Supply West of Tacoma, Wash., said handset replacement devices are not designed to record or put two-way conversations on the air.

"It can be done, but the quality will never be as good as that available with a telephone hybrid," he said. If you do one thing at a time with them, just send or receive audio, you can get acceptable

results, Lynch said.

According to Lynch, handset replacement devices are attractive to broadcasters on a budget, because they allow those broadcasters to "do a remote using any telephone that has a handset that can be disconnected."

## Early devices

One of the earliest commercially available devices was the SoundAmerica VoiceAct. Developed by Fred Himes for CBS News radio reporters, the VoiceAct allowed the user to unscrew the mouthpiece from either a Western Electric or GTE carbon handset, then screw in the

VoiceAct, which substituted a better mic and a switched input jack that would accept the feed from a cassette recorder.

This substitution simplified the feed of wraparound reports and actualities; with the switch, you could mute the mic. It also aided the processing of those reports and actualities at the studio end.

Now that more telephones have one-piece handsets and dynamic and electret handset mics, SoundAmerica expanded the VoiceAct concept with its TAC and TAC+ handset devices. They plug in series with a handset, allow connection of a tape recorder (or in the case of the TAC+, a line-level input) and have

impedance matching and mute switches. With the TAC series, you can record audio from the phone. The units are portable and require no battery power.

SoundAmerica put this technology in two standard desk phones called the R/SVP (Record/Send Verywell Phone) and the SVP (Send Verywell Phone). The SVP or R/SVP could be the solution for certain specific needs, such as a salesperson playing demos down the phone line or a rudimentary news bureau operation in which you need to feed tape and record phone calls.

JK Audio makes similar passive handset interfaces. The THAT-1 and THAT-2 allow users to send or receive audio, from equipment ranging from full-blown mixers to cassette recorders. The THAT-1 has

See PHONE, page 30 ▶

## FIRST PERSON

# January Ice Storm Takes Hefty Toll

**Dave Mance**

*The author is president of Clancy-Mance Communications Inc., owner of five stations in Watertown, N.Y. He relates how the January ice storm that gripped the Northeast affected his station operations.*

It began Wednesday night, Jan. 7. I was fast asleep when the phone rang at 10:30. Operations Manager Todd Dalessandro notified me that one of our radio stations, WBDR(FM) in Cape Vincent, N.Y., was off the air.

It had been raining, and the temperature was 28 degrees. I knew there was an icing problem on the antenna. I told him if things cleared up overnight to call me early in the morning, when I could see what the trouble was.

I did not make it through the night. I received a call at 5 a.m. informing me there was a severe ice storm and that all five of my stations were off the air. I raced to the studios. Two of my morning men were busy getting a generator going, running extension cords to the unit and pulling plugs on equipment not needed so the generator would not

overload. The WTOJ(AM) antenna and transmitter are co-located with WWNY-TV Channel 7; WWLF-FM is co-located with WWTI(TV) Channel 50. We realized that the transmitter for WWLF, our most powerful station, was still operating without a generator.

I knew our generator could power just one studio, so we decided to run WWLF and went all-talk beginning around 5:45 a.m. Shortly before 8 a.m. the station lost power and the TV generator malfunctioned, knocking us off the air.

Next, we found that our transmitter for WTOJ was on the air thanks to the generator at WWNY-TV, so we pulled the plug on the WWLF studio and hooked the WTOJ studio into the TV generator. WTOJ was on the air before 8 a.m.

The storm itself was massive. It rained all night Wednesday and continued to rain throughout Thursday. Temperatures remained in the 20s. Tree limbs, utility poles and wires began coming down. It was a nightmare.

The mayor of Watertown, Jeff Graham, has a weekday call-in show on our AM station, WANT, from noon to 1 p.m. WANT was off the air on Day 4 of the storm. The mayor offered to do a special

"hotline" show Sunday on both WTOJ and WWLF. The phones rang off the hook.

WWLF returned to the air after WWNY-TV rented a generator. We simulcast WTOJ and WWLF to provide a wider coverage area. Saturday also marked the first of three visits by New York Gov. George Pataki to the area. With our Marti unit we were able to cover his remarks at the Jefferson County office building downtown.

## Disaster area

The six-county northern New York area was declared a federal disaster area and placed under a state of emergency. Everyone was listening to the radio for the latest information. On Monday, Day 5 of the storm, the governor made another trip to Watertown to see the flooding. The Black River, which runs through Watertown, was at six feet above flood stage. The site the governor was to visit was a street near the river. We loaded our Marti unit and a generator onto a truck and headed for the site.

The power finally returned to the studios on Day 5. Our AM station, WTAN, began simulcasting WTOJ and WWLF,

See STORM, page 32 ▶

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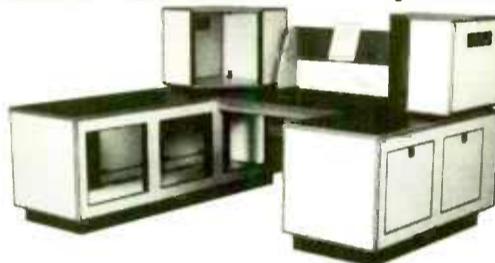
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# Handy Handset Units

► PHONE, continued from page 28  
a simple interface, with RCA jacks for inputs and outputs and a handset mute switch that replaces the handset on an electronic phone (not the old carbon mic style).

The THAT-2 adds volume controls, XLR line in and line out, and a handset switch that allows it electrically to match handsets from old-style carbon mics to digital PBX. The XLR mic-level telephone output allows an easy interface to professional equipment. Both units provide a mix of send and receive audio on their outputs.

JK Audio makes a receive-only unit called the QuickTap IFB that provides an XLR line-level connection and a 1/8-inch mono output jack for listen-line audio — a good tool when you need to feed pre-delay cue to a headphone amp or a talent ear piece.

The Excalibur Electronics HC-1 is a send or receive passive unit that replaces the handset and provides 1/4-inch input and output jacks for audio. Excalibur also makes a device for hooking a hybrid into a handset cord.

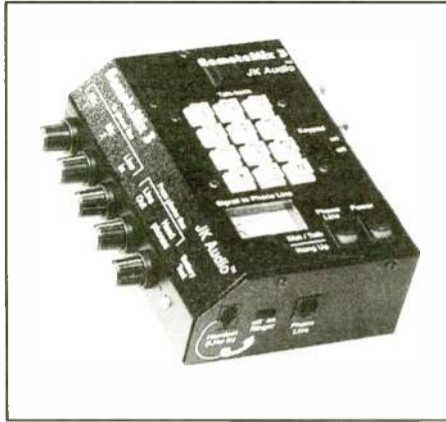
### Mixing, too

You also can choose units that include mixing capability.

The Gentner Microtel was introduced in the 1980s; it allows the user to plug in an XLR-connected mic, a tape recorder or other higher-level input and mix the audio so it can be sent down the telephone line. The Microtel has a receive output through which the user can record

telephone audio, a "Class B" output (30 Hz to 5 kHz line level) that can be used to drive a loop or a recorder line input, and an input for a radio receiver for IFB.

The Microtel also can be used as a one-box "news bureau/workstation" (simultaneous feeds of a line-level loop connection and the phone system as a



The RemoteMix 3 From JK Audio

backup, IFB off-air monitoring, and telephone audio recording). Or, for a hot backup when your RPU path is shaky, split the talent mic with a mic splitter box; send one input to the Marti, the other to the Microtel, and dial up the station.

If the RPU goes down, you still have telephone-quality audio, which is better than no audio, and an inexpensive insurance policy for that must-run big-buck remote.

Radix makes the TLM 500, a high-end interface with VU meters and XLR inputs and outputs. The TLM 500 is available through BSW.

JK Audio addresses the high-dollar end of this market, with the RemoteMix, RemoteMix C+ and the RemoteMix 3. The latter model blurs the line between handset replacement devices and telephone hybrids. If you need a three-input portable mixer and handset replacement device/phone line hybrid (hooks to both RJ-11 and handset jacks) with VU meter, squawk-box intercom style talkback and a touch-tone dial, this is your box.

The next JK iteration of the RemoteMix 3 is called the 3.m, which adds a clean mixer feed (without telephone receive audio) to its other capabilities, without an increase in price. With an audio response of 80 Hz to 15 kHz, it works well for basic field mixing to record to a MiniDisc or high-end tape recorder. JK also has an even more advanced model, the Remote Mix 3 X 4, which allows not only a hot backup system for an ISDN/POTS codec or RPU, but also the ability to produce a remote call-in talk show in the field.

### Versatility

The versatility of these devices can help broadcasters solve telephone and remote-feed problems using POTS. While the system audio response is bandwidth-limited, the transmitted audio benefits from the addition of a better microphone. Your news product can benefit, too. If your competitor covers an event with a voice report, and you cover the same event with a wraparound report, including actuality of the subject matter, expert or newsmaker, your station will be perceived as the one that brings an extra perspective to the story.

To summarize the reasons for handset replacement devices:

- The cost is low compared to POTS codecs, frequency extenders, RPUs and satellite transmission equipment. Some units are less than \$100.
- They offer relatively easy connection to

any hard-wired telephone with a detachable headset. With digital PBXs, it may be the only option if you go hard-wired.

- They allow recording or transmitting of enhanced dial-up POTS audio (but not both simultaneously with any quality).
- They allow a hot backup to an RPU/POTS or ISDN codec or other feed (reduce make-goods on that must-run, big-dollar remote).
- Higher-end handset replacement devices (\$260 and higher) include rudimentary mixing of mic- and line-level send audio, a separate line-level feed, an output for recording from the telephone line and other features, depending on the box.
- The marginal cost of transmission per minute is low compared to cellular phones.



Paul Kaminski is the Motor Sports Radio Network news director and host of its syndicated weekly programs "Race Talk" and "Radio Road Test." Send him e-mail at motorsportsradio@compuserve.com

Here are contact phone numbers for the manufacturers mentioned in the article. Most of these products are available through your broadcast equipment dealer.

SoundAmerica  
(802) 748-9787, or circle Reader Service 61

Excalibur Electronics  
(703) 222-1940 (fax), or circle Reader Service 87

Radix/Broadcast Supply Worldwide  
(800) 426-8434, or circle Reader Service 113

Gentner Communications  
(800) 945-7730, or circle Reader Service 139

JK Audio  
(800) JK-Audio (552-8346), or circle Reader Service 165

## RELIABILITY WITH LIFETIME WARRANTY

### EDUCATIONAL CIRCULAR SERIES

Model	Bays	Power	Gain	Price
MP-1	1	600W	-3.3	\$250
MP-2	2	800W	0	\$680
MP-3	3	800W	1.4	\$980
MP-4	4	800W	3.3	\$1,280
MP-2-4	4	2,000W	3.3	\$1,820
MP-3-5	5	3,000W	4.1	\$2,270
MP-3-6	6	3,000W	5.2	\$2,740

### LOW POWER CIRCULAR SERIES

Model	Bays	Power	Gain	Price
GP-1	1	2,000W	-3.1	\$350
GP-2	2	4,000W	0	\$1,350
GP-3	3	6,000W	1.5	\$1,900
GP-4	4	6,000W	3.4	\$2,600
GP-5	5	6,000W	4.3	\$3,150
GP-6	6	6,000W	5.5	\$3,700

### MEDIUM POWER CIRCULAR SERIES

Model	Bays	Power	Gain	Price
SGP-1	1	4,000W	-3.3	\$690
SGP-2	2	8,000W	0	\$2,690
SGP-3	3	10,000W	1.4	\$3,595
SGP-4	4	10,000W	3.3	\$4,500
SGP-5	5	10,000W	4.1	\$5,300
SGP-6	6	10,000W	5.2	\$6,100

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# A Properly Installed Transmitter

► **INSTALL**, continued from page 22  
 “hot” with respect to ground. The safety ground wire will be your lifeline in such a situation. Without it, enough voltage drop could develop across a conduit connection to present a lethal voltage from transmitter chassis to ground. There may be no external indication that anything is wrong, but when you walk up to the transmitter and touch it — you get the picture. Insist on a safety ground wire!

## Toroids

All those toroids now installed in the AC power feed and elsewhere are wonderful, except that now we have to give surge energy somewhere to go other than into the transmitter. Shunt-type surge suppressors are an excellent way to deal with lightning.

You can spend a lot of money on surge suppression, or you can spend a little, but if you have the budget, get the most protection you can. A small budget is no excuse to ignore this most important part of the installation. Purchase and install some of the inexpensive “kamikaze” shunt-type surge suppressors. These devices come built onto a half-inch conduit nipple and can be installed right on the electrical distribution panel. In combination with the toroids on the conductors entering the transmitter, this creates an L-type low-pass filter that effectively blocks most lightning-induced surges. Keep in mind, however, that in the case of a direct lightning strike, all bets are off. Still, by properly designing the site and its electrical distribution system, you can greatly reduce your susceptibility to lightning damage, even from a direct strike.


When connecting to the RF output of a transmitter, there is more to consider than dragging over a piece of coax and hooking it up. The antenna system is one of the most direct ways lightning can get into a transmitter — and from the transmitter, on to processing, remote control and monitoring equipment. Make the best connection possible and observe some simple, common-sense precautions to help protect your transmitter.

At the 10 kW power level of U.S. expanded-band stations, the majority of transmitters will have a 1-5/8-inch EIA flange connection. Some older transmitters may have a stud connection, and yet others may have cable clamps or other non-standard terminations.

The best RF output connection will be mechanically secure, well-shielded and provide a positive, low-resistance connection to both the outer and inner conductor of the transmission line. Whenever possible, I like to use EIA flange connections on transmitter outputs. You cannot beat the security and shielding of such a connection.

■■■

Cris Alexander is director of engineering for Crawford Broadcasting in Dallas. Contact him at (972) 445-1713 or via e-mail at cbceng@compuserve.com




## RADIO CHRONICLE

This press pass belonged to Helen Sioussat, director of the Talks Department of the CBS Radio Network. She had served as Edward R. Murrow's assistant when he held the post, and in ascending to the top spot in 1942, became one of the highest-ranking female executives in radio.


As Director of Talks, Sioussat was in attendance at the historic conferences held in San Francisco from April to June of 1945, participating in CBS radio coverage of the sessions. All the nets gave extensive air time to the last session on June 26, after which the representatives of 50 nations signed the United Nations Charter and President Truman closed with a speech. The United Nations officially came into being on Oct. 24, 1945.

Sioussat later was a member of Women United for United Nations, serving as head of the committee which put out the monthly publication “United Nations News for Woman Broadcasters.”

The Library of American Broadcasting welcomes your questions, comments, and donations. You can contact them at (301) 405-9160 or [bp50@umail.um.edu](mailto:bp50@umail.um.edu). Visit their Web site at [www.lib.umd.edu/UMCP/LAB](http://www.lib.umd.edu/UMCP/LAB)



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# Stormy Weather in N.Y.

► STORM, continued from page 28 and our CHR station began playing music again. But we were not out of the woods.

## Water hazard

Tuesday morning I learned that WTOJ was off the air. Ice from the 500-foot TV tower broke off, puncturing the roof of the transmitter building. By 6:30 a.m. the water was streaming through the roof and our transmitter. Fortunately the TV engineer, Don Rohr, had turned the transmitter off.

We put a tarp over the transmitter and Don got a huge blower to dry the transmitter out. By the time my contract engineer arrived at 11:30 the transmitter was dry but the exciter had croaked. I went to

our transmitter site in Cape Vincent, the area hit hardest by the storm, and retrieved a programmable exciter that we used. The station was off the air for about eight hours. Meanwhile, the TV station got a roof repair company to patch the holes in the roof. During that eight-hour period we again dropped the CHR format on WWLF and simulcast with the AM.

State Attorney General Dennis Vacco visited the area and announced that he was setting up a special task force to prosecute price gougers. We were notified about his visit after he was already at the county building. I raced to the scene and quickly set up our Marti. We conducted a live interview. Later in the day we would also



Dave Mance (right) conducts a live remote interview with Gov. George Pataki (center) and FEMA Director James Witt.

carry the 4 p.m. county briefing from Niagara Mohawk.

On Day 9 we received a 10 kW three-phase generator from a friend in Dansville for our transmitter in Cape Vincent. He forgot to tell us the generator used at least three gallons of gas per hour. He only brought two five-gallon cans of gas with him.

The transmitter site is 25 miles from town. Saturday we spent eight hours rigging a 55-gallon drum, filling it by carrying five-gallon cans and extending the fuel line. It worked perfectly and we ran for about 10 hours. It ran out of gas a little after midnight.

I left the house on Day 11, Sunday. A curfew was in effect until 7 a.m. Once I got to the site I filled the 55-gallon drum. The generator started right up, but it generated nothing. I went to a nearby fire hall where workers were stationed to help the community. A generator mechanic could find nothing wrong with our generator.

Workers decided to pull the generator out with a Humvee and leave it in the fire hall to thaw out. They got a 5 kW three-phase generator and moved it in about 9 p.m. They wired it up, but it wasn't big enough to power my transmitter.

Monday, Day 12, was an exciting day at the station. Governor Pataki was returning for the third time in nine days. Prior to his briefing to county officials at 4 p.m. his press secretary came over to me and said they had been listening to our station and knew we had covered each of his earlier visits.

It is rare that a governor calls a small-market station. We must have been doing something right.

## Power restored

Wednesday, Day 14, power was finally restored to WBDR.

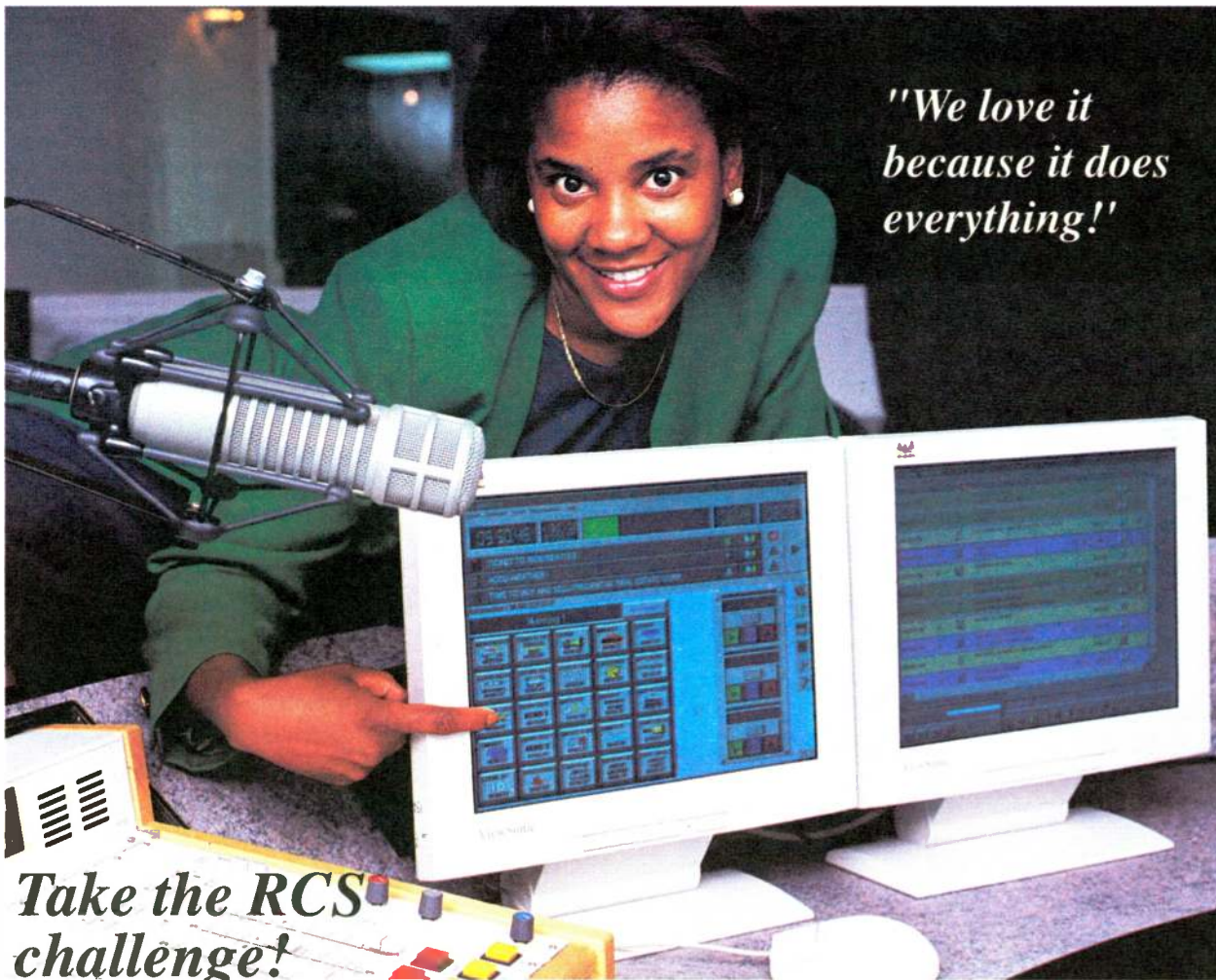
This has been a real experience. The more than 4,000 utility crews, 1,200 phone crews, the American Red Cross, 1,000 National Guard troops, local volunteers, county and city officials — all did a super job. And radio never does better than when it can help the community in such a time of crisis.

We did all the right things. We ran a station that had generator power at the studio and thankfully used TV-station generators to power our transmitters. Our hard-working staff knew how to successfully convert to an all-talk format. Our Marti unit provided live coverage of all the major briefings.

Radio is alive and extremely well in Watertown, and Clancy-Mance Communications is proud of its employees and the efforts they have made to serve their community. In fact, I will be taking my staff to Jamaica in June, just to show my appreciation!

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**C**onsolidation brings market efficiencies, but also big headaches and challenges. It's essential for management to keep track of multiple stations. And keeping a legal record of what was said and when commercials aired is also more important than ever. Several groups have standardized on **Eventide Digital Audio Loggers**. Our economical VR204 records up to 550 hours on a tiny palm-sized cassette. VR204 records up to 4 channels simultaneously so you can keep tabs on the competition's spot loads, play lists and talent while you record your own stations. New!! Now Eventide loggers let you record/play in Hi-Fi for full "broadcast quality." Ideal for show replays, time zone delays, etc.

**E**ventide's **BD500 Broadcast Delay** makes talk shows run smoother and sound better, for less. The BD500's multiple dump feature divides the delay time into several "slices" so you're still safely in delay even right after dumping an offensive remark. It's the hassle-free talk solution... even when air talent is working without a producer. No other delay offers Eventide's high quality patented catch-up technology for clean audio combined with fast catch-up. And it's the only delay with optional digital inputs and outputs for new all-digital studios. Yet the BD500 costs thousands less than our previous model. See how much easier talk shows can be with Eventide's 4th generation BD500 Broadcast Delay.

**W**ant to increase creativity without adding personnel? Add life to drive-time shows? Win new

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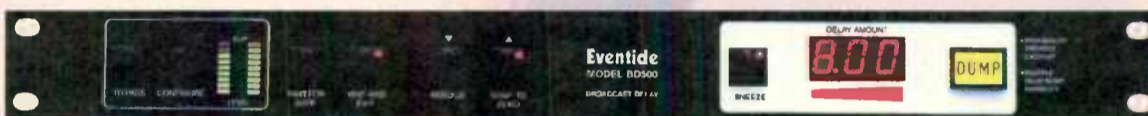
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# BOTTOM



# LINE



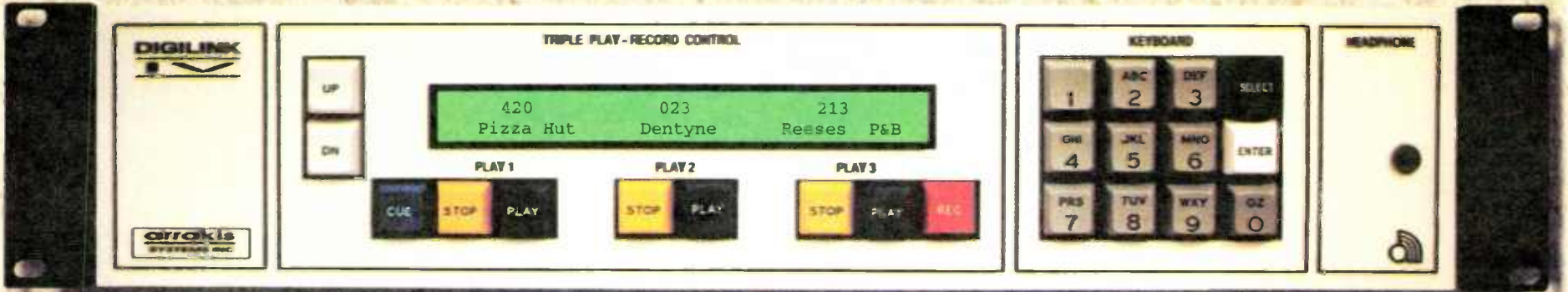
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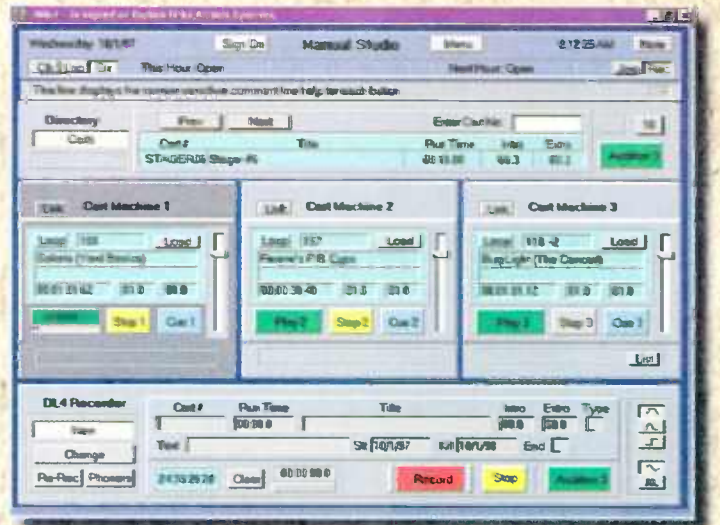


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**DL4-Live**  
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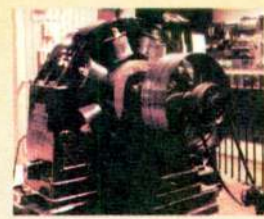
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PRODUCT EVALUATION

## It's Two, Two, Two Decks in One

*Denon DN-T620 Is a CD Player and Cassette Deck In One Rack-Mountable Studio Unit*

**Flip Michaels**

If you have just completed making 40 cassette copies of Celine Dion's unsinkable hit as a favor for that sales person, keep on reading. If you frequently make a ton of cassette copies direct from CD, stay right where you are. No longer will you have to tie up your only functional studio for such menial tasks.

Okay, you are probably saying, "Why not just ask your engineer to fix the console so you could do this all on the Audition bus?" Yeah, right. First, I would have to locate an engineer. Second, I would have to obtain a promise in writing that, while we are in the middle of this major swap-every-station-in-the-market move, he or she would agree to drop everything and rework my dinky console.

Denon Electronics makes a deck that will solve this problem. The DN-T620 CD/cassette Combi-Deck.

### New flexibility

The DN-T620 is a step up from the company's earlier 610 machine, which was a hard-wired, self-contained CD/cassette unit, a handy device for running off aerobic workout music tapes, but overkill for simply dubbing music to listen to in the car. In short, not very flexible.

The 620 version has an added input select switch that routes either CD or Line In signals to the cassette recorder. That addition made the DN-T620 more efficient and more desirable for studio use. Now, one deck is all that is needed for two functions.

On the left front panel is the CD transport mechanism. Ten numeric direct-entry buttons let you select the desired cut. Note the absence of a jog/shuttle wheel and Index counter on the display; this deck is not meant to be a main playback CD machine for studio use, so it was designed without these features.

The CD functions are up to speed (pun intended). You can operate the pitch control, random select, A/B options and specific track programming without a peek at the user's manual.

Company literature points out that the DN-T620 uses the same laser pick-up found in the DN-2000F CD deck. The heavier-duty component offers some assurance that the laser head will not go "soft" early.

### On the tape side

To the far right are the auto-reverse cassette well and a level adjust control above the headphone jack. The cassette features Dolby noise reduction,

switched in and out by a slide switch in the center cluster. Both decks have independent speed/pitch controls, seen in the lower center of the front panel.



Also in the center are the transport controls for the cassette mechanism and a fluorescent display showing a tape counter, recording levels and CD time/track information.

Dubbing from compact disc to cassette requires only an average IQ: hit the Play

button on the CD and the Play/Record combo on the cassette. In addition, the Dolby on/off, non/continuous play, music search mode (detects +4 seconds of dead space), tape speed and record levels are easy to locate and set. The Denon DN-T620 unit is rack-mountable and comes

with a remote control for those lazy-boy chair producers.

After recording a few CDs to cassette (without paying those publisher's fees, mind you), I was pleased with the quality of my recording. So much so, I was determined to find a cheesy old cassette

to verify that I had not stumbled upon some random wonder.

After toying around with the DN-T620 for a weekend, I then toyed with the idea of getting one for my home studio. I mean, I don't want to buy two CD decks; this is a home budget, not the station's. I am doing digital editing so I don't really need any duplicate machines.

Because the DN-T620 is a combination of two necessary pieces of studio equipment in one box, it saves on rack space. At a list price of \$750, it means I can purchase a high-quality CD player and cassette deck with one swipe of the credit card.

If you too receive a cassette copy of Titanic in the mail, it means either your record club selection-of-the-month just arrived or you happen to know that sales person I mentioned at the top. It also means I picked up a Denon DN-T620 Combi-Deck of my own.

■ ■ ■

For information, contact Denon Electronics in New Jersey at (973) 575-7810 or circle Reader Service 35.

Flip Michaels is production director for classical WGMS(FM), Washington. View his Web site at members.tripod.com/~FMichaels

## Creating the Sounds of Science

**Sallie Schneider Sauber**

To paraphrase the classic Zen question, what is the sound of bread molding?

How about the sound of poison ivy breaking out on your skin, or a cat's purr — from inside the cat? If the answers escape you, then you haven't made "Everyday Science" a part of your everyday life.

"Everyday Science" is a public radio show, now in its third season of demonstrating to kids and parents how much fun science can be. Two-minute modules produced for the show include "How Does Popcorn Pop?" and "What is an Echo?" The sponsor is Bayer Aspirin.

Jay Green, sound designer and president of Big Science, said "Everyday Science" is based on "making things very theater-of-the-mind and larger than life." The sound effects are top-notch, most originated by Green himself.

### They do it all

Although the show's signature sound was created by Pittsburgh-based sound company Big Science, the company did not always have control over the show's complete production. In fact, this is Big Science's first season producing "Everyday Science" in its entirety. And before you ask: the similarity in name is coincidental.

According to show producer Amy

Garrison, Big Science now handles everything, including picking topics and researching, scripting the actual show and hiring the talent.

"We've really honed it down to a science, no pun intended," said

of a cat's purr, my interest was peaked by the program, "Why Do Cats Purr?" Green takes the listener inside the cat to "see" the air rush over the vibrating vocal cords to produce the purring sound.



Mark Rosato makes edit decisions in one of the Big Science control rooms.

Garrison. "The basic criteria for any show topic is that it has to be scientific and it has to be everyday."

For example, protons, neutrons and electrons are definitely scientific subjects. But in order for them to become eligible topics for the show, there must be a way to relate them to the listener on an "every-day" level, as in the show, "What Causes Thunder and Lightning?"

As I was under the impression science had not yet discovered the secret

"The cat purring is actually more of a simple sound effect," said Green. "I'm lucky enough to have some cats in my life, including one that purrs a lot so I could record her."

He noted how difficult it was to use any sound recording without first manipulating it to some extent. The purring cat was performed by first slowing down the recording, then assigning it to several different tracks in a left-to-right stereo spread. "You

See SCIENCE, page 45 ▶



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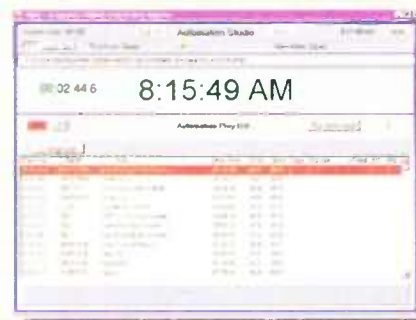
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Optional Front \$495



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## PRODUCT EVALUATION

# SADiE Portable Nice but Pricey

Alan R. Peterson

The whole world and his brother Sid has a portable workstation on the market. Some models are laptop-based and battery operated, others are portable merely because they have a handle.

The SADiE Portable is self-defining. Built inside a "lunchbox" computer case, the SADiE is powerful enough for studio use and small enough to take on location. The unit has a serious feel, like hefting ye olde portable Ampex or Roberts reel deck.

The Portable has been around longer than two years so it is not a new performer. However, it does come with the new version 3 SADiE software. It also comes with a price tag which, by today's standards, must be weighed critically against some of the sleeker laptop products now available.

## Handle with care

Even though it behaves as an audio machine, the SADiE Portable is a computer and requires appropriate care. Broadcasters handle portable gear with abandon; they genuinely mean it when they say, "Throw a recorder in the car and let's go." No computer is up to this treatment.

In spite of careful packing and shipping, the unit shipped to me had a loose soundcard. Given the journey it had, this was not unreasonable; it happens to computers all the time.

Transporting one of these units yourself should present no problems. If you ship a SADiE Portable via long-distance carrier, check to see that everything is seated properly on arrival. Conscientious broadcasters would perform the same examination to any piece of gear after a long trip.



The SADiE Portable:  
A Hefty Feel in a Portable Box

In spite of the "portable" moniker, the SADiE Portable needs AC power to operate. It also has an LCD screen which is subject to lighting conditions and can only be viewed at a narrow angle.

## Fire it up

Recording with the SADiE Portable is as simple as any other digital editor. The truth about DAWs is, if you know how to use one, you can pretty much navigate through them all.

A feature I liked was the ability to drop edit points in during the recording process. By clicking the Razor or Scissors icon while recording, markers are dropped to refer back to for editing later.

The multitrack screen is called the "Playlist Display" in SADiE-talk. Likewise, individual tracks are called "Streams" and a single block of audio is

called an "EDL Entry." Those of us accustomed to tape will no doubt continue to call these tracks and blocks, no matter what the manual says.

An on-screen button switches the EDL entries between waveform profiles and solid blocks. The blue blocks have an amusing 3D appearance reminiscent of Pez candies.

SADiE gains points for being able to crossfade two EDL entries inside a common stream (two blocks within a track for the rest of us). That requires brainpower and the SADiE Portable has that to spare. When the upper limit of processor power is actually hit, SADiE puts up

an alternating yellow and red strip on the screen or messages that read "unplayable" or "out of DSP memory."

A number of digital editing programs do not allow the naming of individual tracks, forcing the jotting-down or memorization of what went on what track. Each SADiE stream can be given an eight-character name, such as "Voice2" or "SoundEfx."

Editing on the 10-inch screen was, to say the least, a challenge. The legends and icons are incredibly tiny, and even with the excellent zoom levels, the waveforms must still fill the screen to do an edit. On the plus side, SADiE put an on-

screen Scrub wheel on the Portable. To quote the old Dial Soap commercials, I wish everybody did.

## In the mix

Performing a mix on the SADiE Portable is done with on-screen mixer strips resembling linear faders. Each fader also has in-line processing consisting of compression and extensive EQ. A routing toolbar visually helps you to route all physical I/O as well as internal routing.

On-screen virtual faders do not allow nudging and finessing a mix across several faders in real time. Mousing only allows changing one fader (or ganged group) at a time. In lieu of a genuine physical mixer interface, I prefer clicking and drawing volume and pan curves

See SADiE, page 47 ►

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PRODUCERS FILE

# AKG SolidTube 'Glowing' Review

**Ty Ford**

Having seen and heard the AKG SolidTube (\$1,500) cardioid condenser mic at the most recent AES show in New York, I looked forward to crawling around on it to confirm a few notions. I wanted to see if it just resembled a Neumann U 47 tube mic, or whether it sounded like one as well. I also was interested to hear how well a 12AX7A tube would sound as an impedance converter.

The SolidTube uses a 1-inch diaphragm in a capsule suspended in a rubber web. The web is attached at four points to a plastic interior frame. The plastic frame supports the PC card, the socket for the 12AX7A tube and the output transformers. The frame and capsule then slip into the head grille and twist to lock in place.

A two-layer metal mesh windscreen and 1/16-inch foam liner make the mic fairly insensitive to popping. You know the tube is on when you see the filament glowing through the red AKG logo window.

The rear of the mic body slips down over the circuitry and tube. Three small screws fit through the end of the body and into the three ends of the plastic frame.

Published sensitivity is 20 millivolts per Pascal. Noise is 20dB-A.

## All the goodies

The SolidTube comes in a foam-lined metal flight case with power supply, suspension mount, 30-foot multi-pin cable and yellow foam pop filter. You can attach the mic with either the suspension mount or by the threaded socket on the back plate of the mic case. The mic has a 20 dB pad and there is a 12dB/octave bass roll-off switch that starts at 150 Hz on the power supply.

Because I do not have a U 47 tube mic, my first call was to Mark Davison's Cubic Studios, outside of Baltimore. Mark has an extremely fine mic closet, where one can find U 67s and U 47s. We pulled in local consulting engineer Tony Eichler and got started.



AKG Solid Tube Mic

Davison has a Sony MXP-3000 console with Genelec 1030 monitors and has been using a Demeter VTMP2b stereo tube mic preamplifier. After letting the tubes warm up for about 15 minutes, we compared his stock U 47 (VF14, short body) and the AKG SolidTube.

The SolidTube (serial number 00029) was brighter, but not as "pleasant" as the U 47. The SolidTube provided a bit more rejection from the rear. The cardioid patterns were of similar widths, both about 160 to 170 degrees. The side-to-side off-axis response of the stock U 47 was a bit more linear, the SolidTube a bit more edgy. There also was a low-level hum, a slight buzz and slightly more tube noise with the SolidTube.

Across town at Flite 3, we put the SolidTube up against a U 87 and a U 47 FET. Flite 3 is using API mic preamps, an API console and large Urei monitors. For the most part, engineers Louis Mills, Mark Patey and I agreed that at a distance of 2 inches, the U 87 was noticeably warmer on the bottom than the SolidTube.

## Stand back

We quickly found that we did not care for a source getting any closer than about 3 to 4 inches from the SolidTube. Get in closer than that and something *smearly* happens to the low end. The LF rolloff on the power supply reduces the smearing, but leaves the mic a bit too light on the bottom. I wished for an "in-between" position. After all, one person's smear is another person's character or warmth. Only you know where you sit on that bench.

On to the self-noise test. After the preamps for all mics had been adjusted to provide equal output, the U 87 was the

noisiest, followed by the U 47. The SolidTube was surprisingly quiet, with small amounts of hum and buzz, similar to, but less apparent than, that heard at Cubic Studios.

We observed the SolidTube had some of the brightness one might expect from an AKG condenser mic; sort of a Neumann midrange with an AKG top. At close range, against Mill's U 47 FET, the SolidTube sounded sort of hollow in the midrange.

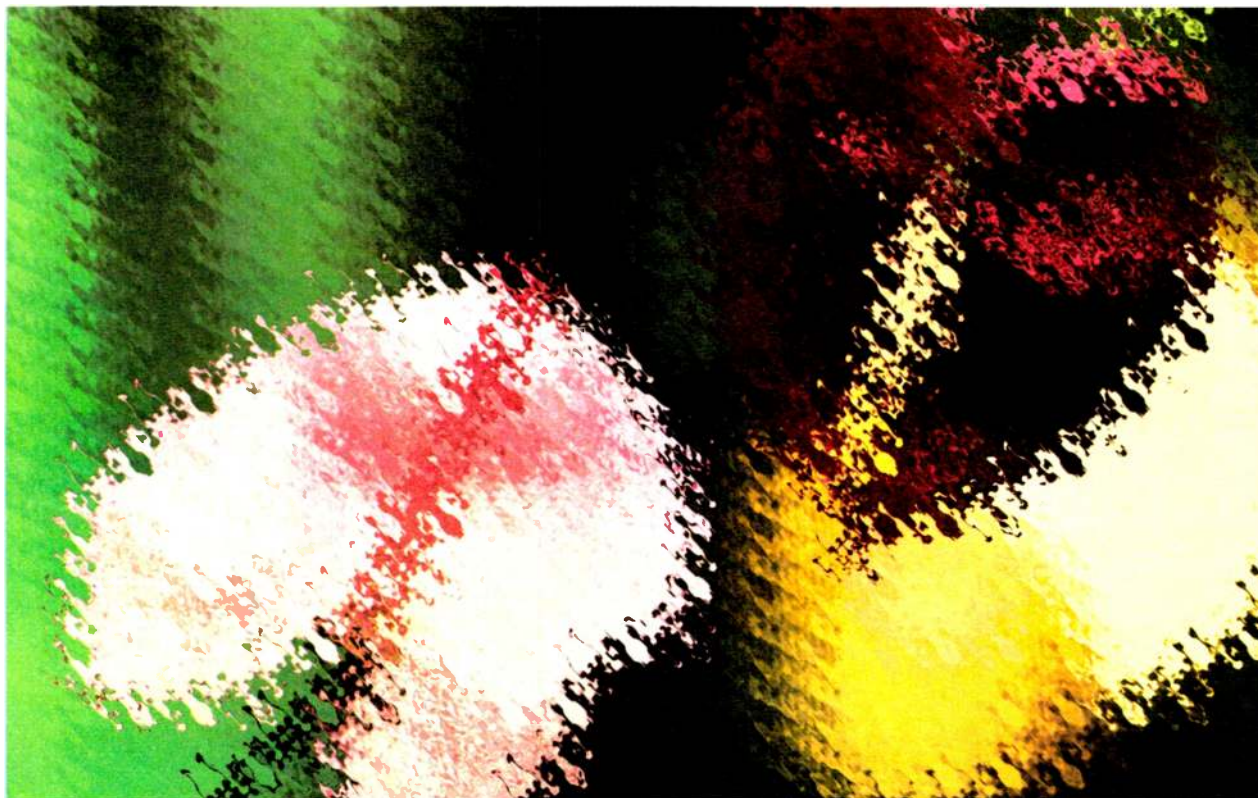


AKG Mic with pop filter

Back at my own studio with a GML mic preamp, the SolidTube sounded very good; not necessarily tubey, but more meaty, with a slight bristle of top end. Again, close-working the mic clouded up the bottom. Anything 6 inches or further seemed to work just fine.

See AKG, page 41 ►

# Impressionist Art.





► AKG, continued from page 40

Self-noise was not a problem, but the slight buzz seemed unstoppable. In fact, touching the SolidTube body anywhere on the capsule side (above the red line) produced a loud buzz, regardless of which position the power supply ground-lift switch was in, or whether or not I lifted the ground at the outlet.

**Shell game**

I finally found that holding or touching the shell of the multi pin connector plugged into the mic quieted the buzz. "Perhaps a bad multi pin cable," I thought. "Perhaps one in need of more shielding."

By using a continuity tester, I determined that, although they touch, conductivity was inadequate between the top and bottom halves of the body.

*(Editor's Note: Kevin Madden, marketing development manager at AKG Acoustics, said, "We saw this on the early prototype models with low serial numbers. The solder joint between the mesh screen shielding the capsule and the case needed to be reinforced. This has been taken care of on all later production models.")*

I plugged the SolidTube into my Mackie 1604 mixer and recorded some tracks onto an Orban Audicity workstation. The tracks were brighter and edgier than those recorded with the GML. So much so that I was just shy of being sibilant.

Got soft sources you are trying to brighten up? This mic will do it. Got bright sounds you're trying to subdue? My advice is to not use a Mackie 1604 preamp. Use an old Neve instead.

**In conclusion**

It will be interesting to see where the AKG SolidTube ends up in mic history. Although some might find the low end lacking, the SolidTube probably will be a blessing in project studios with the myriad low-end problems found in those facilities.

This is not a big, wet, soft transducer with a lush but tight bottom. It is not as noisy as some tube mics. It is also not the kind of mic you can eat. This may sound like a lot of "nots," but that doesn't mean I don't like the mic. The preamp into which you plug the mic makes a big difference.

Finally, use the mic in low-light situations where you can bask in the glow of the 12AX7A filaments through the translucent AKG window on the side of the body. The marketing department thought of that one, right?

For information, contact AKG Acoustics at (615) 399-2199 or circle Reader Service 8.

Visit Ty Ford's Web page at [www.jagunet.com/~tford](http://www.jagunet.com/~tford) for commercial and narration demos and an upgraded list of production music and SFX library companies.

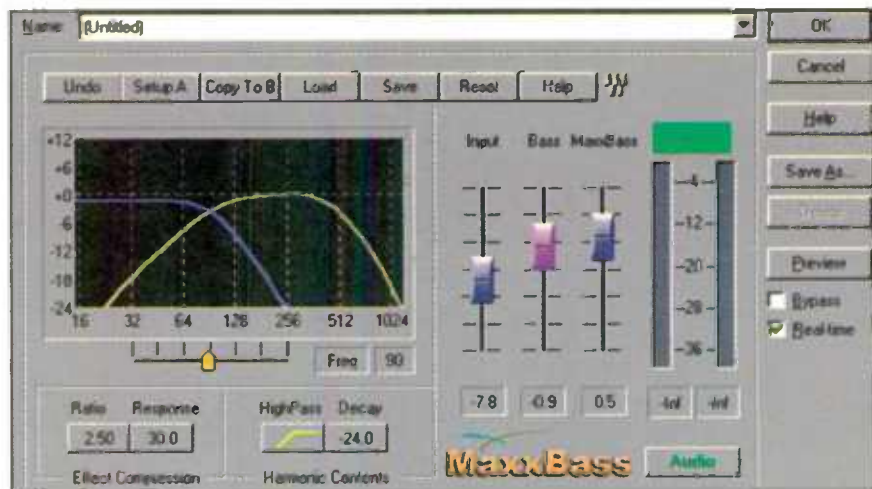
# Waves Software Boosts Your Bass Even Bigger

Read G. Burgan

Back in the early 1980s, I acquired a dbx 120 Dynamic Subharmonic Synthesizer. I was looking for something to add organ pedal notes to an accordion/synthesizer. It worked beautifully. It

Like the dbx 120, MaxxBass creates a set of bass harmonics based on the original music content, but does so by sampling your audio file at a given set of frequencies.

The process works well. One of the problems with the old dbx 120 was that



also added missing or deficient pedal notes on many pipe organ records in my collection. I have kept it in my arsenal of analog audio hardware ever since.

WAVES has announced a new software module designed to do the same thing: MaxxBass will work with any software capable of using DirectX Plug-Ins.

it could create odd effects with male voices. Not so with the MaxxBass. Regardless of the type of material I chose, the bass was always clean, deep and realistic.

If you are looking for a way to add an octave or more of bass to your

See WAVES, page 47 ►

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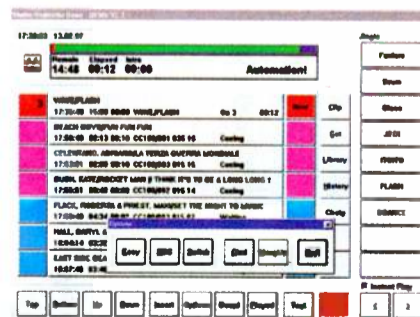
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## DIGITAL DOMAIN

# X360 More Than Surround Sound

Mel Lambert

Sony, the global electronics giant, has more manufacturing and operational divisions that many of us realize. Consumer products from this company are found in just about every aspect of our lives. Microphones, mixers, DAT machines and signal processors bearing the Sony logo nudge their way into air and production studios at a large number of stations.

However, few of us know about the fascinating work being carried out at Sony Pictures Studios.

already developing a version of X360 processing that can be used with its PlayStation systems. This includes an interactive prototype I tried out during a recent visit to the Advanced Digital Systems Group R&D Department in Culver City.

## The radio connection

This interactive version moves sound from the front to rear hemispheres as players move an image on the screen in front of them. There are additional applications for in-flight movie playback as well — the think-

outputs on a normal ProLogic decoder: Left, Center, Right and a single Surround signal. Simply feeding the surround signal to a pair of speakers located right-rear and left-rear should produce a hard rear-center signal.

This, by the way, mimics the "split-surround" configuration favored by the major movie playback formats currently available, as well as Dolby Digital- and DTS-encoded DVDs and laserdiscs. There is, after all, no difference between these two signals.

However, using X360-encoded playback, there is a definite sense of sonic separation and ambiance in the rear quadrant, with the ability to localize sounds in the corner of the room.

According to sources from Sony Pictures Studios, the patent-pending X360 process will be made available via a mixture of licensing arrangements and/or on a per-use basis. At press time, the company was still refining its roll-out plans and hardware/licensing costs.

## In the rack

A rack-mounted encoder accepts digital input signals in a number of formats, ranging from conventional LCRS through 5.1-channel to SDDS-compatible 7.1-channel formats. The encoder then outputs a two-channel signal that can be recorded onto any medium and transferred using conventional techniques.

ProLogic-compatible playback systems are just the first step for X360. With several million consumers throughout North America already possessing some form of Dolby Surround playback matrix — either in their TVs or audio-video receivers — it is not such a bad first step to take.

It has also not gone unnoticed that the large base of home-theater systems feature as many as six playback channels. The Advanced Digital Systems

Group at Sony Pictures Studios is predicting that, in the near future, a fully-featured X360 decoder could offer up to eight discrete output signals.

## In the field

These signals could be fed to speakers positioned to duplicate those utilized in the Sony SDDS theatrical playback system; namely Left, Left-center, Center, Right-center, Right, Left-surround, Right-surround and Low-frequency Extension/subwoofer.

## The X360 technology may offer creative uses for radio.

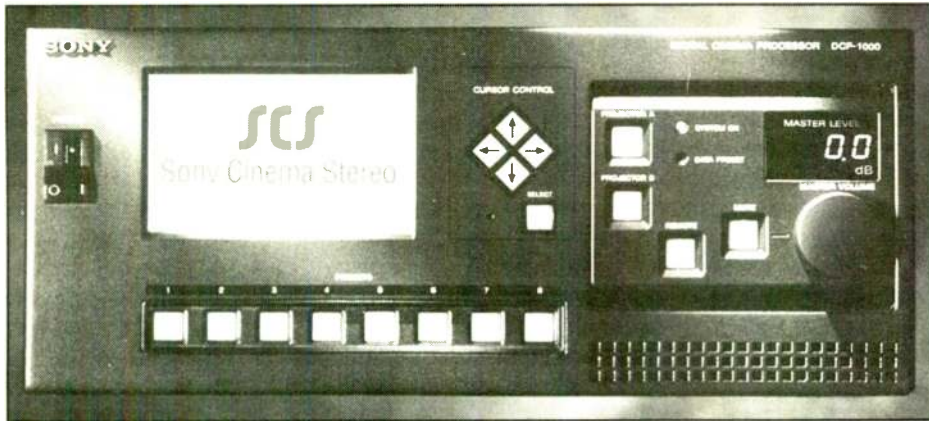
While I have yet to hear such results for myself, there is no reason to believe that such an 8:2:8 technique should not be feasible. And ProLogic-compatible playback system are just the first step for X360. If several of these eight available playback channels can truly be considered as discrete signals, there might also be ways of utilizing the technology on a non-movie soundtrack application.

Might we use these "bonus" tracks to carry additional revenue-earning news/music/data information via the two licensed FM signals? I'll get back to you on that one.

More information is available from Advanced Digital Systems Group, Sony Pictures Studios at (310) 244-7282.

■ ■ ■

Mel Lambert has been involved in production and broadcast for several decades. Now principal of Media&Marketing in Los Angeles, he can be reached at mediapr@earthlink.net or at (818) 753-9510.



Sony X360 Encoder Unit

This business entity is located in Culver City, Calif., on the historic MGM lot. If you recall, Sony purchased Columbia Pictures several years ago and, as part of the deal, acquired this impressive chunk of real estate. However, you should know the company's motion-picture division is responsible for more than simply making movies.

## Innovations

In addition to the eight-channel SDDS (Sony Dynamic Digital Sound) playback format we enjoy in movie theaters, Sony Pictures Studios' Advanced Digital Systems Group has a number of interesting inventions up its sleeve, including X360 Sound.

Designed in its first gestation to provide highly realistic surround-sound from headphones or via a home system equipped with some form of Dolby Surround ProLogic decoding system, X360 represents what I believe will be a dramatic breakthrough in providing a cost-effective yet convincing technique for placing sound around the listener.

Of course, the consumer manufacturing branch of Sony foresees enormous potential for such technology. It is

ing being, of course, that we should be able to enjoy surround sound via headsets at 35,000 feet as well as at our local multiplex.

Now, I realize ProLogic systems have been available for many years. These systems provide matrix-encoded 4:2:4 surround sound from two available channels. Yet I am brave enough to venture that Sony Pictures Studios' remarkable new X-360 could well take the game into a new dimension.

From results that I heard during extended evaluation sessions last month, there is more at work here that meets the eye. And for FM broadcasters, there are creative possibilities available from the pair of available transmission channels.

X360 is unlike any surround-sound systems that I have heard. Quite frankly, I am at a loss to understand how it performs some of its sonic gymnastics.

For example, it is possible to encode a two-channel program with information which, decoded through a ProLogic-compatible decoder, will create a highly realistic stereo image in a pair of rear speakers. That is a feat that should not be possible.

Why? Think about it. There are four

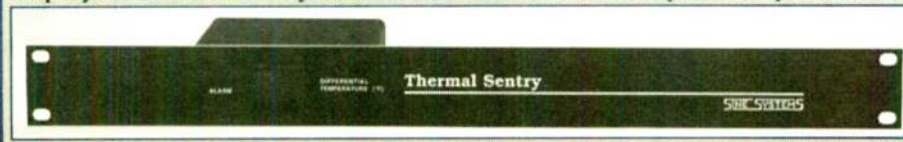
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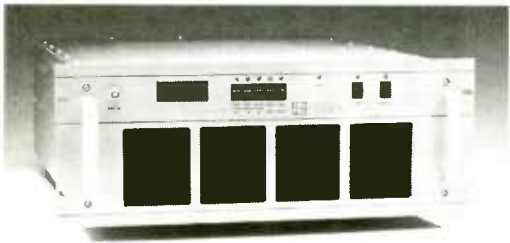
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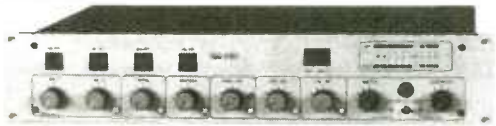
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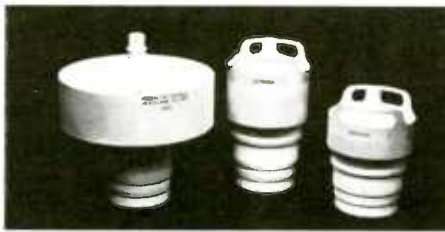
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## Attention Manufacturers!

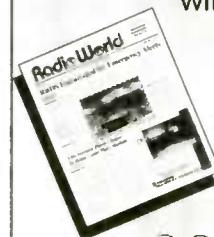
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# Squishing a Path Through Science

► SCIENCE, continued from page 35

actually feel like you're 'in' wherever the program takes you," he said.

Say Green needs to create the sound of a worm digging a hole. To pull that off, he would use dirt, sand, rice, rocks or even pieces of watermelon being ripped apart.

As for the moldy bread effect, Green outdid himself.

"To create that sound effect, I played with a mixture of sour cream and flour among other things, to make it really nasty and squishy. I then slowed the recording down on some of the tracks."

The voice on each program belongs to talented local actress Helena Ruoti who, according to Garrison, actually spends more of her time in the theater than doing voice work. Green recalled one episode in which announcer Ruoti had to sound as if she were inside a microwave oven.

Although Big Science does have a sound effects library, Green confesses he usually cannot run any cut straight from a disc without somehow manipulating it first.



The big brains at Big Science, clockwise from back left, are Jay Green, Scot Fleming, Amy Garrison and Mark Rosato.

technology. I keep up with and embrace it but I don't like to look at it. We hide it as much as we can at the Big Science Studios."

Green's main Waveframe system, normally in use by him up to 16 hours a day, is well-disguised. "I have it housed in an iron table that was custom-made from a nineteenth-century oil tank. And we collect Vespa Motor Scooters. They're sexy."

### More work

Aside from the popular radio show, Big Science has found a niche in television sound design as well. Recent clients include MTV, Herr's Potato Chips, the Pittsburgh Pirates, Hoover Vacuums, American Eagle Outfitters, Highmark/Blue Cross Blue Shield, Servistar and the Pittsburgh Symphony, among others.

Founded in 1996, Big Science may be a relatively new name in the industry. Still, this company's four-member staff has obviously gotten the art of sound design — dare I say it — down to a science.

◆◆◆  
Sallie Schneider Sauber is production director at WATH(AM)/WXTQ (FM), Athens, Ohio, and a contributing writer to RW.

**You  
Read  
It  
Here**



### Five Years Ago

All five FM radio stations with main transmitter sites atop the World Trade Center were temporarily knocked off the air due to lack of electricity on Feb. 26 when a massive bomb blast rocked the huge office complex. None sustained major damage.

*"Trade Center Explosion Damages Five FMs"*  
April 14, 1993

### Ten Years Ago

Class A FM New Jersey broadcasters could not convince the National Association of Broadcasters Radio Executive Committee to support their proposal for a blanket power hike. The Radio Executive Committee supported the full board's decision to back individual power hike requests by Class A FMers.

*"NJ Class A's Fail to Sway NAB"*  
April 1, 1988

**I played with a mixture of sour cream and flour among other things, to make it really nasty and squishy.**

— Jay Green

"We use two 16-track Waveframes, the newest version of the Studioframe multitrack recorder/editor," Green said. He noted the popularity of the Digidesign ProTools system and the number of his industry peers that have embraced it, but he personally doesn't care for the interface.

### Almost like the movies

"Waveframe is more of a tool that film makers use," he said. "I like it because I'm able to get a lot as far as track manipulation, off-setting things, slowing things down and the like. The interface is very user-friendly."

Even at the studios, no one likes to look at anything that suggests "technology." According to Green, "I'm not a tech-head. I don't really like

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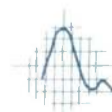
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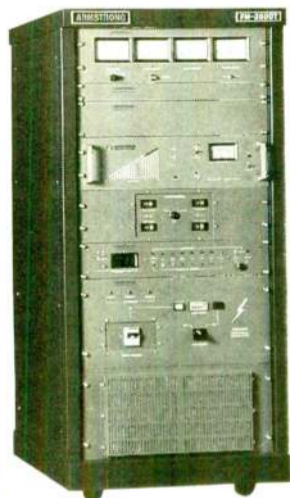
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# ◆ PRODUCT GUIDE ◆

## Products for Radio Production

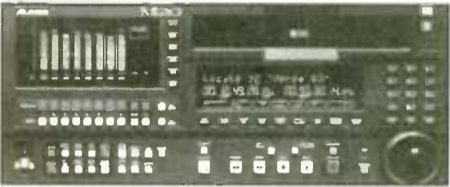
Mail info and photos to: RW Product Guide, P.O. Box 1214, Falls Church, VA 22041

### Alesis M20 ADAT Recorder

Alesis Corp. is readying the eight-track M20 ADAT recorder for release. The newest incarnation of the company's ADAT product line is a 20-bit recorder with a measured dynamic range of 105 dB.

The M20 has a built-in SMPTE time-code synchronizer, a high-speed full-servo transport mechanism and a jog/shuttle wheel. The new deck is compatible with all ADAT type 1 16-bit recorders.

The front panel has an alphanumeric keypad for titling tracks, input selection and routing and a comprehensive fluorescent display.



The Alesis M20 will retail for \$6,999.

For information, contact Alesis in California at (800) 5-ALESIS or circle Reader Service 217.

### Ward-Beck Bit Spitter

The Audio Bit Spitter ABS-1 from Ward-Beck Systems is a portable battery-powered test device for digital audio lines.

The ABS-1 generates digital and stereo analog audio test signals that may be injected into a signal path to check for continuity or audio device performance. The device outputs 1 kHz or 400 Hz digital tones at the three commonly used sample rates; and analog signals at the same frequency, with levels of -16, -8 and +4 dBu.

The ABS-1 is powered by four AA ni-cad cells; the aluminum case is

equipped with a belt clip.



For information, contact Ward-Beck Systems in Toronto at (416) 438-6550 or circle Reader Service 62.

### PreSonus Eight-Channel Compressor

PreSonus Audio Electronics introduced the ACP88, the newest version of its ACP-8 multiple compressor/gate processor for multitrack recording and for taming multiple inputs to a console.

The ACP88 has eight individual compressor/limiters and noise gates. Each unit has a compression ratio of up to 20:1 and full adjustment over levels, thresholds, attack and release. Servo balanced and unbalanced inputs are complemented by floating balanced and unbalanced outputs. Frequency response is 10 Hz to 50 kHz with a S/N of greater than 94 dB.

Front panel controls also include



hard/soft knee switching, peak/auto compression, link and bypass buttons. The ACP88 comes in an all-steel chassis with signature PreSonus blue faceplate.

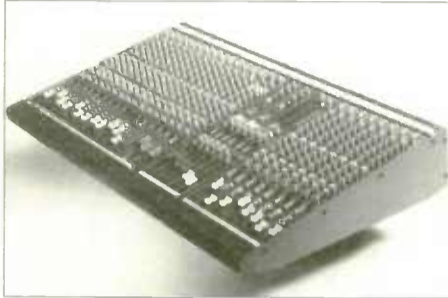
Suggested price of the ACP88 is \$999.

For information, contact PreSonus

Audio Electronics in Louisiana at (504) 344-7887 or circle Reader Service 36.

### Allen & Heath Combined Console

From Allen & Heath comes the GL2000 console, an updated version of the GL3 mixer, designed for recording



and "front-of-house" concert performance mixing.

The console is available in 12-, 16- and 24-channel configurations. There are six Aux Sends, four Groups and four bands of EQ with sweepable midranges.

The GL2000 also has individual phantom power on each channel, 100 mm faders, pan control on all subgroups and a soft armrest. Each mono input has a four-LED level meter to spot hot signals and the console has an internal power supply.

Prices for the GL2000 range from \$2,495 to \$3,995, depending on number of channels.

For information, contact Allen & Heath in Utah at (801) 568-7660 or circle Reader Service 88.

### SHORT TAKE

## New Disk Drive Runs Entirely on Steam

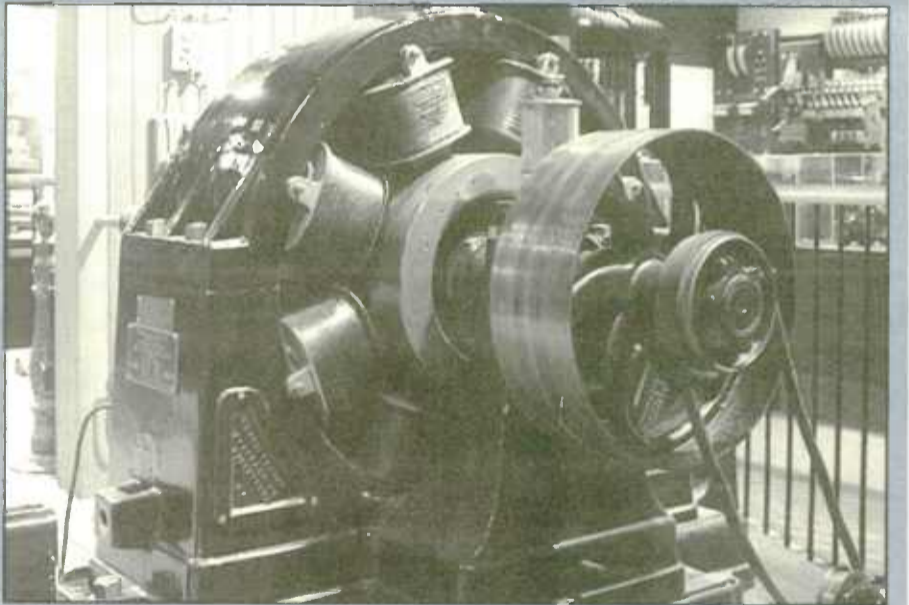
### Euphell Foritta-Gann

The quest for greater storage capacities and high-speed access has led to the creation of the audio industry's first steam-driven hard-disk drive, officially announced on April 1.

Shown is the 2-Terabyte (TB) "Tera-Ra-Boom-D/A" drive from Lila Proof, a relatively new company in Soxarintha,

RAM, a can of oil and a 70 HP Hudson Pacific steam boiler coupled with a leather drive belt (belt included; see picture). With its 2 TB storage capacity, the new drive is capable of storing more than four months of linear 16-bit, 44.1 kHz audio.

The challenge now for Lila Proof is in the creation of a laptop version of the drive, and according to Baer, the compa-



ny is looking for volunteers to evaluate laptops with prototype drives in them.

"This way, the unit can be suitable for working on airplanes and trains," stated Baer. "The only criteria we insist upon for our volunteers is that they have 'Popeye legs.' Only then can we be sure they are strong enough to support such a laptop. That, and there would be enough room and coal on the plane to accommodate a steam boiler."

The Lila Proof Tera-Ra-Boom-D/A should be commercially available by next April Fool's Day.

■■■

"Lila Proof" is an anagram for "April Fool." All names and places — including that of the author — are fictional and should be said aloud for maximum impact.

The Tera-Ra-Boom-D/A requires a minimum Pentium 90 PC with 32 MB

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# Going Out With SADiE

► *SADiE*, continued from page 39  
right on the wave — a feature offered even on the simple \$50 Goldwave Multiquence program. The SADiE Portable allows the volume curves to be redrawn and saved as automated mix data. It is nice to have that option. The SADiE soundcard interface performs nearly all of the audio processing, letting the host CPU — a

Pentium 75 on my demo — act simply as housekeeper. The card had clean audio, no hiss to speak of, and it handled fader movements with no zippering.

No extra bag needed here to hold a PCMCIA soundcard. The SADiE Portable has its card inside, which is a



Audio Streams and Faders on the SADiE Screen

distinct advantage over the laptop concept: PCM cards can slip into pockets pretty easily, but can slip out and become lost with equal grace.

The SADiE Portable is a unique product, built into a serious package. Power and speed, coupled with high-quality audio and a generous, feature-filled screen are in its favor. The I/O

cables are sturdy and hearty, and may I say how nice it is when a company provides cables instead of telling you where to find one.

### Pay up

The cost of the SADiE Portable is the albatross: a hefty \$12,000. The price point might scare potential radio users off.

Many major manufacturers are attracting attention with inexpensive, high-performance products: Witness the Alesis ADAT recorder and the Neumann TLM 103 microphone. Look at Cool Edit, a simple shareware audio editor favored by reporters everywhere.

Faster processors have narrowed the performance gap between the soundcard doing all the work or the CPU

taking on the load. And lots of software has standard Plug-In compatibility so an entire effects rack can now also fit into a laptop.

For twelve grand, some users will demand multiple simultaneous inputs rather than one-event-at-a-time recording. The SADiE Portable is an outstanding multitrack editor, but can still only take in a single two-channel element at a time. This snag is what still separates most DAWs from their analog forebears.

I am not alone in observing that a comparable laptop system can be assembled for less than one-quarter of the Portable's price. SADiE should shake things up a little and try to accomplish this on the next go-round.

SADiE is at 1808 West End Ave., Suite 1119, Nashville, TN, 37203.

### Product Capsule:

#### SADiE Portable Workstation

#### Thumbs Up

- ✓ Portable and self-contained
- ✓ Powerful editor functions
- ✓ Huge detailed manual

#### Thumbs Down

- ✓ Expensive
- ✓ Tiny screen

For information, contact SADiE in Nashville at (615) 327-1140 or circle Reader Service 9.

## MaxxBass Shakes It Up Inside Your PC

► *WAVES*, continued from page 41  
announcing voice, MaxxBass may be your answer. The harmonics created are clean and deep, and because they are fundamentally related to the original audio material, they are virtually indistinguishable from the source. There is no artificial quality to the added bass harmonics.

### Vinyl blues

Most of the LP albums in my collection had low frequencies that were rolled off beginning at 60 Hz or higher. For pipe organ recordings, this resulted in an unacceptably wimpy sound. When I transferred a recording of E. Power Biggs to my hard drive and ran MaxxBass on it, the low end came alive with room-shaking bass.

With MaxxBass you can either use the harmonically generated bass as your sole source of bass, or combine it with the original bass material, controlling the amount of each that you include.

If you have a lot of hum and other problems in the low-frequency spectrum of your original recording, you may be better off using just the MaxxBass. But if your bass is okay and is only in need of some augmentation, leave the original signal in and just add as much MaxxBass as necessary to provide a solid punch.

The onscreen interface is intuitive, and it takes only a few minutes to master all of the controls. Three sliders control the input level, original bass level and the artificially created

bass. A three-way button lets you listen to the processed audio, original bass or the newly created MaxxBass.

A control slider selects the crossover frequency at which the software samples the sound file and creates the subharmonics. Anything above the crossover point is left untouched, while the frequencies below it are used to create the subharmonic bass. A high-pass filter toggle switch allows you to selectively increment the low frequencies created by the harmonic generator.

A decay button provides a means of blending the harmonics. A ratio button allows you to apply compression to the harmonics, and a response button controls the attack and release time of the harmonic generator.

Once you understand what each control does and you have taken time to play with them for a few minutes, you are ready to use MaxxBass. Your ears and a good set of monitor speakers are your best tools. This is a digital tool that does exactly what it promises and can add a rich bass to virtually any recording.

MaxxBass is a product of WAVES and has a list price of \$300.



For information, contact US WAVES in Tennessee at (423) 689-5395; e-mail waves@waves.com or circle Reader Service 34.

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

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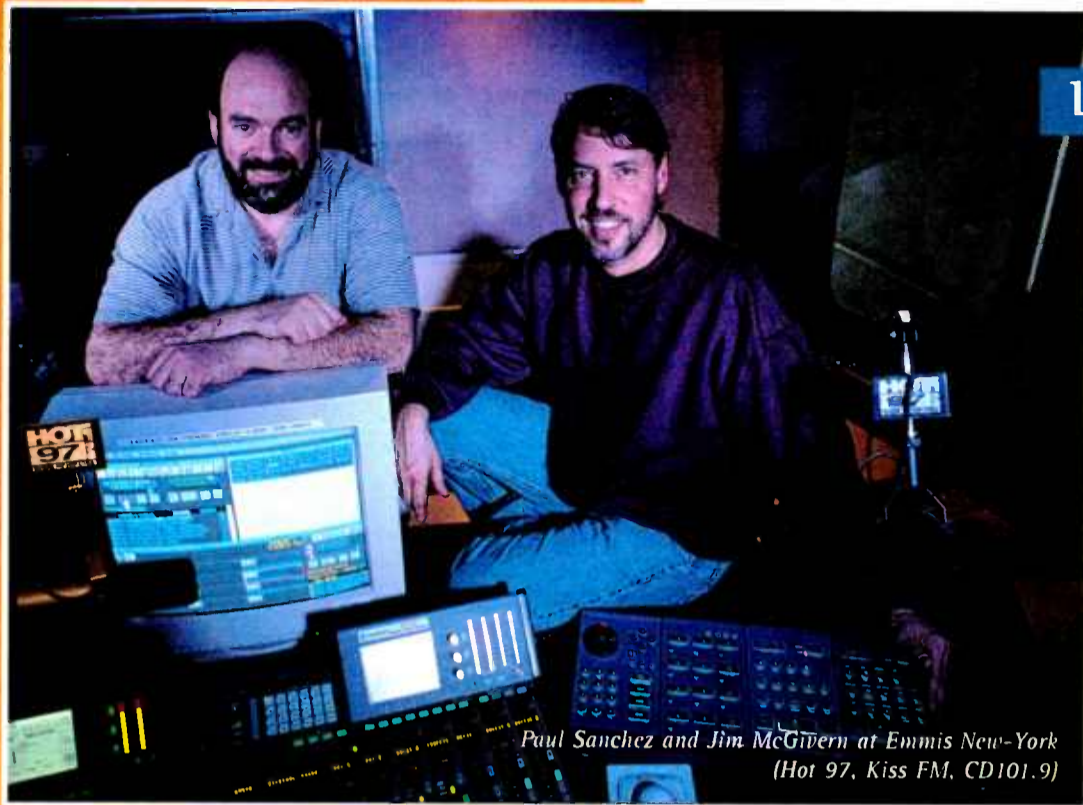


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Jim McGivern,  
Chief Engineer, Emmis New York  
(Hot 97, Kiss FM, CD 101.9)

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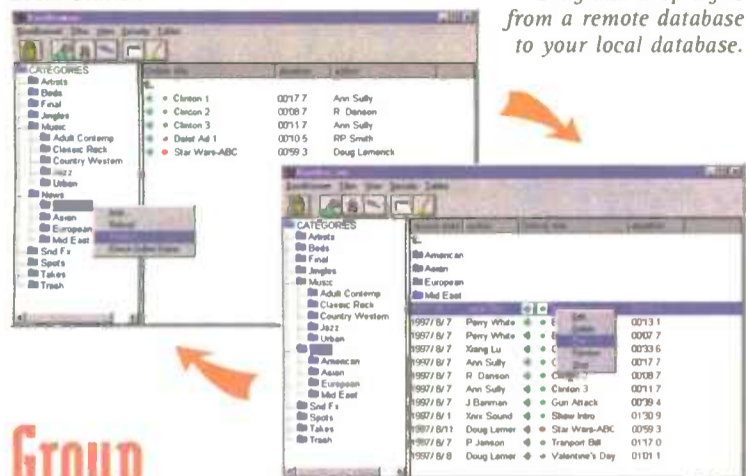
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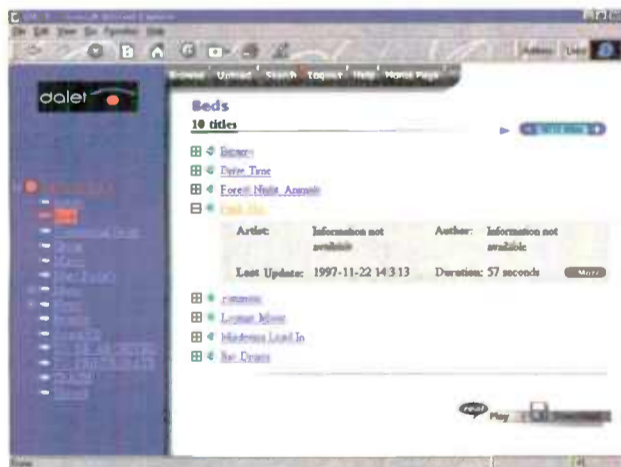
## Group Connectivity

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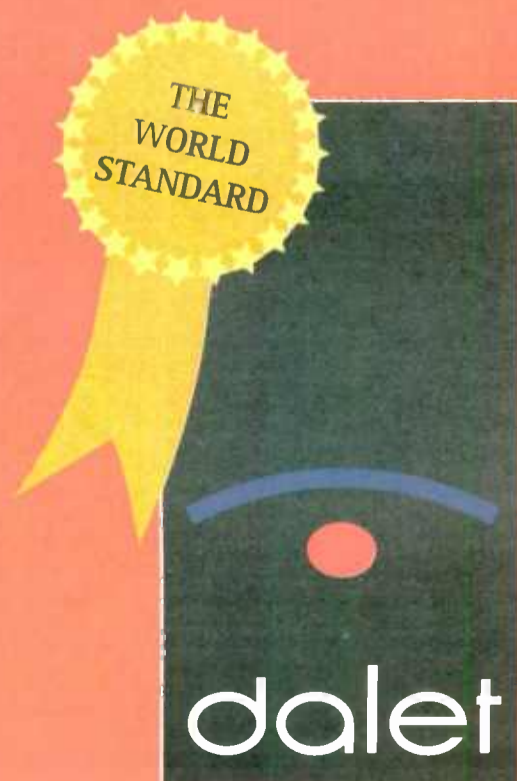
Jim McGivern

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# Running Radio



**Carl Buys Classics**  
**Page 52**

Radio World

Resource for Business, Programming & Sales

April 1, 1998

**STATION SNAPSHOT**

## New 50 kW AM Signs on in Oregon

**Bob Rusk**

A new 50 kW AM radio station in Portland, Ore., is blanketing the western part of the state with the high energy sounds of "hot" contemporary Christian music. KPAM, at 860 kHz, signed on in October.

Although other stations in the market boosted to 50 kW later, KPAM was the first station in the area granted an initial authorization of 50 kW.

**Wealth and virtue**

The KPAM call letters honor the name of station owner Robert Pamplin Jr., recently ranked by Forbes magazine as one of the 400 wealthiest people in the United States, with a net worth of \$525 million. Pamplin, an ordained minister, said he put the station on the air to bring a "high-quality Christian influence" to a wide audience.

Gary Randall, president and vice chairman, Pamplin Communications, said KPAM "is consistent with Pamplin Communications' other companies," which include Christian Supply Center retail stores, a record label and family video producer Pamplin Entertainment.

The radio station, which is Pamplin's first, "will add a significant component to our overall commitment to impact society with a positive message," Randall said.

In addition to KPAM, five other

commercial stations in the market air Christian formats. KPAM Vice President and General Manager Darrell

"We had a strong audience at KDBX," Kennedy said. "When the station was sold, that left quite a gap in



Kennedy believes there is room for all of the stations, however.

Kennedy came to KPAM after nearly 30 years as manager of Salem Communications-owned stations KPDQ(AM), KPDQ-FM and KDBX (FM) in Portland. The latter station had aired a contemporary Christian format, but Salem sold KDBX for a reported \$14 million to American Radio Systems, which changed the call letters to KBBT(FM) and switched the format to hot AC.

the market." He took the job at KPAM to fill that gap. He is joined by long-time KPDQ-FM talk show host Lew Davies, whose "Liveline" show now airs at KPAM.

Despite Kennedy's optimism, KPAM, like most major-market Christian stations, will be competing for a limited number of listeners. The highest-rated Christian station in Portland in the Summer 1997 Arbitron book, KPDQ-FM, scored a 1.4 share with listeners 12+.

While it is too early to tell how advertisers will respond to the station in the long run, Kennedy said so far "it has been unreal," with potential sponsors calling the station. To date the best account has been Pamplin's Christian Supply stores, which buy off of the rate card just as any sponsor would, Kennedy said.

KPAM is part of the explosive growth nationally in religious radio. There are now about 1,250 full-time religious stations on the air, which account for approximately 10 percent of the stations in the country, according to the National Religious Broadcasters. During the past decade, there has been a 30-percent increase in the number of religious stations.

KPAM was not the first set of call letters for 860 kHz in Portland, and contemporary Christian music was not the first planned format. As reported in RW (Oct. 2, 1996), the station call letters were to be KTZW; an all-news format was considered. Before signing

See KPAM, page 63 ▶

**CARL'S WEB**

## Two New Packages May Help You Profit Online

**Carl Lindemann**

What if you invested as much effort in your station's Internet presence as your on-air programming? Even if this approach brought lots of "traffic" to your Web site, it probably would not justify the investment. The potential for online advertising revenues simply is not there — yet. Still, is it any won-



Sample NetRCS Screen Shot

der that online listeners only visit occasionally if your Web site is updated only intermittently?

But do you have to apply the same effort online as on the air, to get good results? By developing content for broadcast, stations already have done most of the hard work. The trick is finding how to transfer and translate this material online with minimal effort. For some, this means Webcasting their programming. The Internet simply becomes another "channel" for their signal.

**Studio to site**

Soon, programmers will have additional options. Broadcast system developers Dalet and Radio Computing Services (RCS) will introduce packages with different approaches for maximizing your existing investment in programming online. These products, as well as the concepts behind them, look to new ways to service listeners, thereby creating a new venue for advertisers.

The Dalet Web Publisher (DWP), part of Dalet Digital Audio Systems,

See WEB, page 57 ▶

**BRANSON Music NETWORK**

<p><b>CLASSIC</b></p> <ul style="list-style-type: none"> <li>Hank Williams, Sr.</li> <li>Merle Haggard</li> <li>Tammy Wynette</li> <li>Patsy Cline</li> <li>Johnny Cash</li> <li>George Jones</li> <li>Tom T. Hall</li> <li>Willie Nelson</li> </ul>		<p><b>CURRENT</b></p> <ul style="list-style-type: none"> <li>LeAnn Rimes</li> <li>Mindy McCready</li> <li>Alan Jackson</li> <li>Bryan White</li> <li>Faith Hill</li> <li>Deana Carter</li> <li>Tim McGraw</li> <li>Trace Adkins</li> </ul>
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# Radio Spirits Buys Up Classics

Read G. Burgan

Radio Spirits of Schiller Park, Ill., recently acquired the radio portion of Charles Michelson Inc. of Beverly Hills, Calif., according to Carl Amari, CEO and owner of Radio Spirits.

Amari would not comment on the price. Michelson said it was in the "six-figures" range. The sale culminated six months of negotiation between the two companies.

Radio Spirits acquires those portions of Charles Michelson Inc. that relate to radio programming. Among the many programs Amari acquires are "Fibber McGee and Molly," "Jack Benny" and "The War of the Worlds."

Michelson owns some of these programs outright; he also is the exclusive representative of programs owned by others.

## Hobby history

Amari decided to use his old-time radio hobby to help pay his college expenses, initiating a broadcast of programs on a local Chicago radio station.

"Radio Spirits was founded in 1981, in my first year of college, out of my parent's basement using a Radio Shack mixer, a Radio Shack microphone and a Radio Shack cassette deck," Amari said.

"That's when I first ran into Charlie Michelson," Amari said. "It did not start out so friendly. I got these letters: 'You

can't play those shows. We have the rights to them.' And sure enough, he did. That was my first education that these shows are not in public domain."

the in-flight program and offered to syndicate Amari's programming.

Dick Brescia Associates syndicates "When Radio Was" on approximately



Over a period of time, Amari began acquiring the rights to various programs. He wrote, produced and narrated his own program, which aired in Chicago.

"My big break, came when ... my show aired on several airlines' in-flight programming," Amari said. In 1988, former CBS executive Dick Brescia heard

300 stations; the other two programs — "Radio Movie Classics" and "Radio Super Heroes" — each run on 100 stations. The programs are distributed by satellite and on chrome audio cassettes.

Michelson, 88, began his radio career in 1938 by exporting classic radio programming to Australia for \$50 per episode.



Carl Amari

"We sent samples of other series, and each one we sent we got orders for," Michelson said. "I finally got the message that I had to get out of the export business and get into the radio business on the domestic end of it."

In the 1960s, Charles Michelson Inc. began providing radio stations with packages of 52 weekly programs, including "The Shadow," "Fibber McGee and Molly," "The Lone Ranger" and "The Green Hornet."

At the company's affiliate peak, 80 to 100 stations carried the series. But in the last few years, that number declined to approximately 30 stations.

"It came to the situation where ... stations were not willing to pay for programming anymore," Michelson said. "They were getting it for free. So I saw the message on the wall."

See AMARI, page 61 ►

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## STATION FINANCING

# To Detail or Not to Detail

Dain Schult

When last we left our intrepid negotiators we were talking about crafting the Letter of Intent, or LOI, that serves as the prelude to executing the Asset Purchase Agreement. The APA will be filed for the station license transfer with the FCC.

Opinions differ on how complex the LOI should be in regard to the APA. Some people use a fleshed-out LOI for filing with the FCC instead of going through the negotiating process again by signing an APA. No law says you must have an APA, but it sure helps when conflicts arise after the closing.

### Think about it

Early in this process you should determine how specific you want to be in the LOI and what assets are included in the sale. You also must figure out how much you are paying, what form the payment will take and how long you will give yourselves to come up with an APA that both you and the seller will be willing to sign.

Some buyers chicken out, not addressing certain issues they feel will cause stress with the seller while in the LOI period of the negotiations. These buyers hope to take up these issues in

the APA, afraid that raising them during the LOI will spoil the "lovefest" going on with the seller and derail the sale.

In my experience, the earlier you get the thornier issues on the table, the better — and less expensive — the negotiating process will be for both sides. Some issues to consider:

- *How much due-diligence will you conduct inside the station and for how long?* A seller will be skittish about the staff figuring out what is going on before the APA is signed and filed with the FCC. This is a legitimate concern. Premature disclosure can cause employees to quit in fear, or stagnate if they stay.

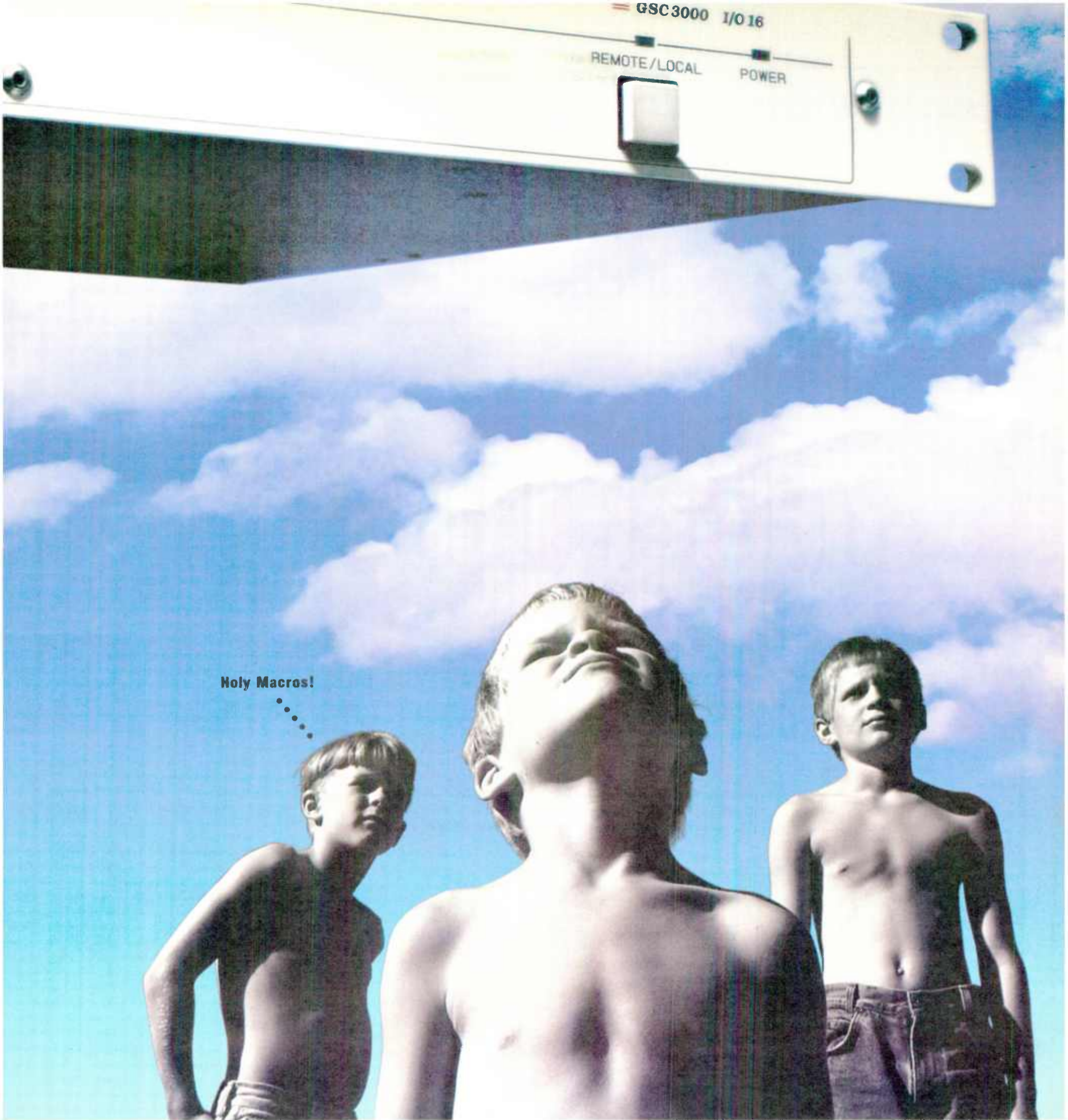
Make sure you have reasonable access inside the facility and complete access to the seller's financial information, books, public file, and other resources, to get a good idea of what is going on and whether this deal is viable. How much time is right? Each deal is different. Some stations can be inspected, investigated, shaken upside down and put right side up in two or three days. Others take months.

- *Financing contingencies, or language that gives the buyer the option of walking away from the deal if his or*

See LOI, page 54 ►







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# Clear the Air Before Deal Closes

► LOI, continued from page 52

her financing fails to materialize in time to do the deal. Sellers loathe these contingencies; buyers keep hoping sellers will accept them. Most sellers will not accept any contingencies. If they do, ask for a substantial down stroke (i.e., large escrow deposit) for the perceived risk they take in accepting the contingency. Some sellers will accept one in the LOI but will be adamant about not accepting one in the APA.

• *Have your financing arranged before you tender the LOI to the seller.* That reduces the chance of unexpected problems.

Who pays FCC filing fees? My standard approach is to suggest that the seller

and I split the cost 50/50. Rarely does anyone balk at that offer. Just the same, some sellers will want you to pay it all. That tends to be an early red flag indicating what you are in for later with this seller. Maybe this is the time to pass on that deal and look at another one.

• *Include language describing whether a media broker is involved and who is responsible for paying the broker.* This is important and should be in the LOI and the APA. It should clearly state who the broker is, who the broker is working for and who is responsible for paying the broker should the deal close. Sometimes wording should be inserted that states the seller was represented by one broker and

the buyer by another.

• *Inclusion of a non-disclosure clause.* Not a bad idea if you want to make the seller happy. This is reassurance that you will not blab about the deal to anyone else. But be careful that you actually keep your mouth shut; if the word leaks out and someone proves you leaked it, you could be held liable.

• *"As is, where is" vs. warranties.* All sellers want to sell you their station "as is, where is," meaning there are no guarantees or warranties of any kind for the equipment or its condition. If the transmitter you get in the deal is 20 years old, do not expect the seller to warrant its operation one minute past the closing.

On the other hand, you have every legal right to insert language in both the LOI and the APA that states, "All equipment used or useful in the operation of the station will be in good working condition at the time of closing. Additionally, seller warrants that the station will be in full and complete compliance with all applicable FCC rules and regulations and any other applicable federal and state rules and regulations at the time of closing."

• *Time limit for completing the APA.* Give yourself as much time as you can, but realize the seller probably will want the APA signed within 30 days. Some deals can be done in 30 days or less, but that requires the complete, undivided attention of both parties. Lawyers for both parties have to be "deal makers," not "deal breakers," to get things done that quickly.

I have completed some APAs that quickly. Right now I have two deals pending that require meeting that time limit. However, I also enjoy the ones where I have 90 days to get the APA executed, though the temptation is greater to set that APA aside.

As long as everyone remains flexible and does not lose their sense of humor, the APA can and will be done on time.

■ ■ ■

Dain Schult is president and CEO of Equicom Inc., dba Texas Eagle Radio Networks, which has closed on and operates 23 stations; it has 41 stations in various stages of action, including stations for which it has signed LOIs and/or APAs that have been filed with the FCC. He is based in Austin, Texas.

Got a question or suggestion for Dain to address in an upcoming part of this series? Send an e-mail to RW at [chamak-er@imaspub.com](mailto:chamak-er@imaspub.com) and let us know.

## Dollars for Scholars

Morning man Tom Joyner is using his popular morning program to help students in need complete their college education.



Tom Joyner

Early each month, Joyner will select a historically black college or university as the beneficiary of "The Tom Joyner Dollars for Scholars" program. Listeners donations will be earmarked for students with "depleted finances" at the designated school.

Joyner affiliates will raise additional funds in conjunction with sponsors of "The Tom Joyner Morning Show," which is syndicated by ABC Radio Networks.

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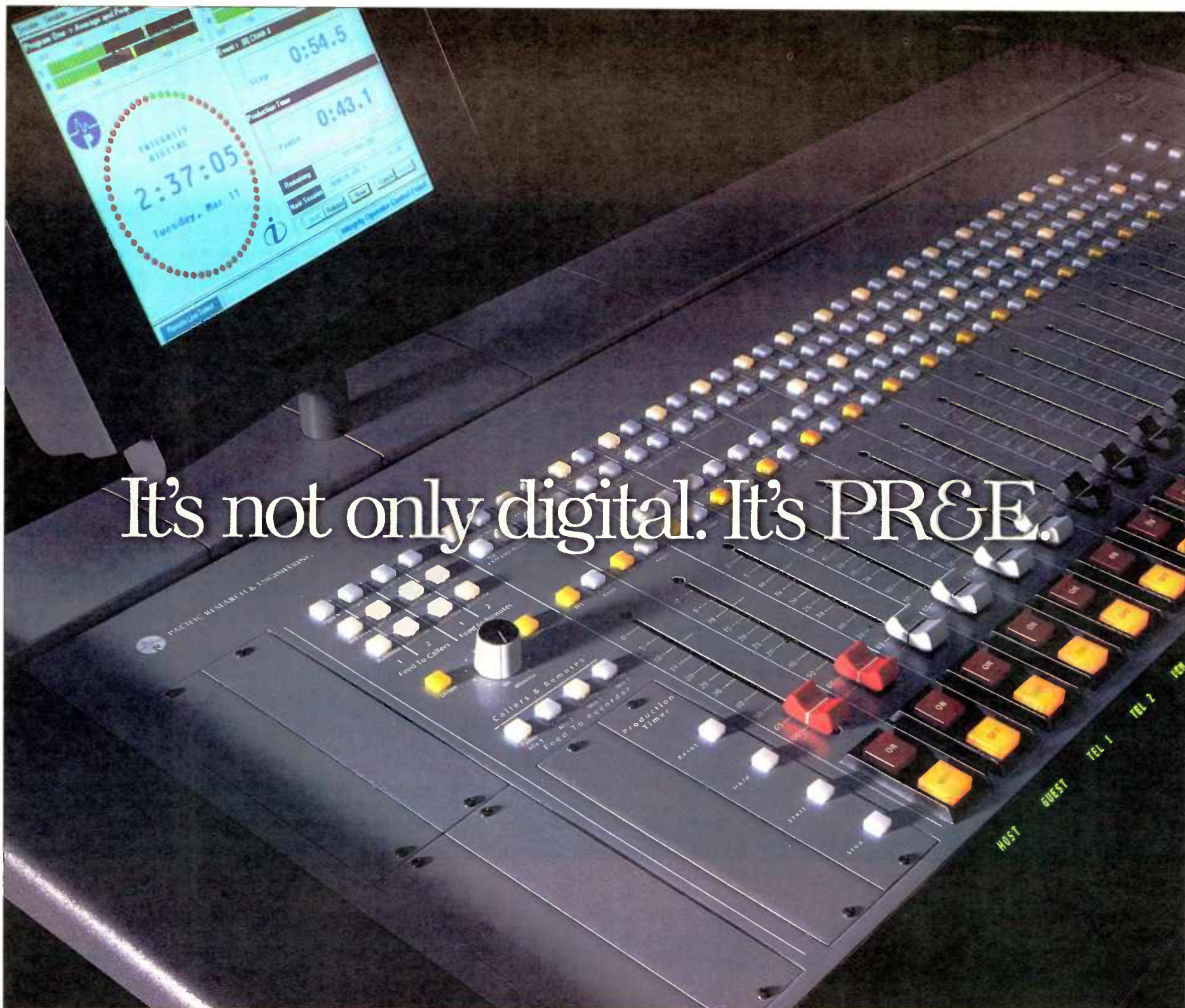
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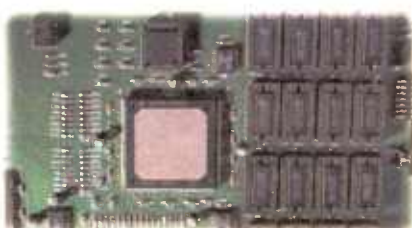
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PACIFIC RESEARCH & ENGINEERING

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# When Listeners Log On

► WEB, continued from page 50

adds an easy way to carry content from studio to Web site. DWP translates on-air log information and files into the appropriate HTML code for use online.

Stephan Guez, president of Dalet USA, sees this as a boon for news and talk formats. According to Guez, DWP allows you to update your Web site in real time.

DWP works well with news operations because of the way they already produce for broadcast. Stories are written as scripts with sound bites inserted as they are read. With DWP, newscasters also can post their text and sound online with only a few clicks.

"You don't have to edit any HTML code, and it looks very nice," Guez said. Sound files are converted automatically to streaming audio, while page templates maintain a professional appearance. The upshot is being able to update news and information online continually, with minimal effort.

information at their convenience.

Is there really much demand for this? Try answering the newsroom phone during a storm emergency. Listeners clog the lines, impatient for the latest listings of cancellations and delays. By receiving the cancellation information via e-mail, then immediately posting it online, stations could streamline operations and improve service to the community.

### Leverage

Real-time Web site updates are one way to leverage radio content for online use. RCS takes an entirely different tack. Its product, NetRCS, grows out of the log-linked Web browser integrated into the RCS Master Control system.

RCS Director of Marketing Tom Zarecki said it takes this to the next step. "The Browser was designed for the air staff. (NetRCS) allows you to choose which parts

Webcasting, either. Like any streaming product, it appears as a small box on the computer screen and is intended to run in the background alongside other applications. Yet NetRCS does not carry the audio feed from a station.

"What is unique to what we are doing is that you can have this up while you are listening to the radio — on the radio!" said RCS Vice President of Development Rich Hickey. What listeners get is a continuous flow of information that fleshes out what they are hearing on-air.

"This is a broadcast. You schedule some components like song and artist notes according to what is on-air. Also, you will be able to run ads, promos, PSAs and content interesting to your listeners," Hickey said.

Like the Dalet DWP, NetRCS shares some asynchronous qualities. "There's

going to be forward/back capability, so you can go back to something if you just missed it," he said.

"Now, stations select music and form a broadcast they think their listeners will be interested in. In the future, they will also select content for this aspect of their broadcast from a variety of vendors ... or a variety of other entertainment and information sources. We will schedule that and rotate it," Hickey said.

"You will get a 'look' for your station much as you have a sound today," Hickey said. Best of all, programming this "look" should take little more than transferring what already has been logged in traffic and scheduling programs.

Rather than carry radio off in a different direction, Hickey sees his online concept enriching radio's local focus.

See WEB, page 61 ►

## You can use Web technology to add value ... for listeners in your market.

— Tom Zarecki

The potential for a program like DWP comes from how broadcast differs from the "New Media." Radio and the Internet are contrasting, and possibly complementary, forms of communication.

Web sites can bring asynchronous enhancements to radio. The Dalet product promises to allow this nearly effortlessly; instead of having to catch news when it is broadcast, listeners can access

of this information will be shared with your listeners on the Web, too," he said.

While evolutionary in development, the NetRCS impact may be revolutionary. NetRCS intends to be an entirely new communication concept. Unlike DWP, the information does not go on the station Web site. Instead, it is sent out online through the Microsoft NetShow streamer. But this is not typical

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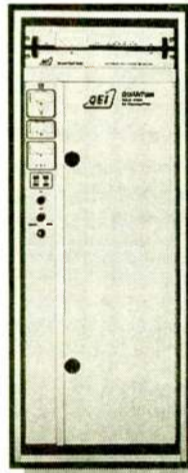
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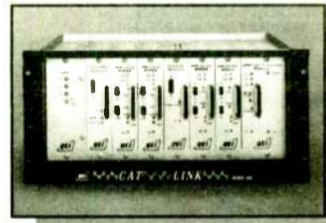
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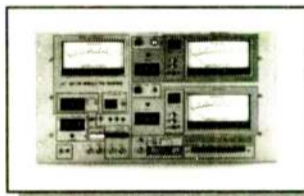
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ROOTS OF RADIO

# Heavenly Dramas for the Season

Richard W. O'Donnell

Easter and Passover are ideal times to recall the great religious programs of yesteryear. Sermons and prayers filled the airwaves each holiday season, but radio dramas often took on a spiritual dimension during this time of the year.

"Family Theatre," produced by Father Patrick Peyton of the Holy Cross Fathers, was a popular dramatic program. Produced in Hollywood, it aired in 1947 and lasted for 10 years. Transcriptions of old shows were broadcast over the Mutual Network for years after that.

Stars who appeared on "Family

Theatre" included Hollywood legends Gary Cooper, Bing Crosby, Irene Dunne, Margaret Sullivan, Gregory Peck, Ethel Barrymore and Robert Young, to name a few.

## Great authors

These dramas took on religious overtones around Christmas and Easter. Stories by Stevenson, Melville and other great authors were featured, as well as originals by some of Hollywood's great writers. At the end of the drama, a non-denominational message was aired. Its signature sign-off was, "The family that prays together stays together."

The "Ave Maria" program was produced by the Graymoor Friars of Garrison, N.Y. This long-running Sunday favorite was launched back in the '30s and could still be heard into the mid-1960s. All programs were originals and usually told of the lives of saints. Practically every radio actor in New York appeared on the "Ave Maria" show during its 30-year run.

"The Eternal Light," produced by the Jewish Theological Seminary, began airing in 1945, and remained on NBC until 1956. Directed by Dr. Moshe Davis, the program dramatized the ancient Judaic past. Through most of its broadcast run, "The Eternal Light" aired late on Sunday nights.

Actors who performed on "The Eternal Light" included Edward G. Robinson, Lee J. Cobb and Paul Muni. However, the emphasis was on the subject matter, not the stars who appeared.

"The Greatest Story Ever Told," based on the book by Fulton Oursler, was heard beginning in 1946 on ABC. This production also did not rely on star names. Instead, using a small orchestra and chorus, the show provided a weekly account of the life of Christ. Each episode was approved by an advisory board made up of religious scholars.

## Spoken on Sundays

Actor Warren Parker provided the voice of Christ. Recordings of these dramas were a part of many Sunday school and church programs.



Gary Cooper

"The Greatest Story Ever Told" also aired Sunday nights during its long run. The program was sponsored by a popular tire company, but commercialism was low key, amounting to a tag line at the end of each broadcast.

## Controversial Catholic

Who was the most controversial religious person ever to have a weekly show? Probably Father Coughlin, who started broadcasting in 1927 and remained on the air until World War II broke out.

Charles Edward Coughlin was ordained a priest in 1916. Claims circulated in 1934 that Coughlin received "more than a million letters" weekly. Exactly who counted them is unknown, but there is little doubt that the priest had a huge listenership.

A supporter of Franklin Delano Roosevelt early in his presidency, Coughlin, who broadcast on CBS, turned against him in 1935. He consistently opposed the president's policies. At one point, the pope rebuked Coughlin for his rabid attacks on Roosevelt.

Donations from supporters of Coughlin poured in, and when CBS dropped him, he was able to buy time on other stations. Church leaders upped their pressure on Coughlin after Pearl Harbor, and he eventually ended his broadcasts.

When "The Guiding Light" debuted on NBC in January 1937, its primary character was the Rev. John Ruthledge, pastor of a church in a place called Five Points. Religious values were emphasized, and the usual soap opera sobbing was missing.

CBS acquired the show and in 1952 turned "The Guiding Light" into a television soap. On the radio, "The Guiding Light" lasted 15 minutes each weekday. The television version is, alas, not very religious.

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

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PROMO POWER

# Summertime Promotions to Satisfy

Mark Lapidus

At the risk of sounding like a skipping CD ... skipping CD ... the only sure way to maximize monetary gain and potential TSL is through annual promotion and marketing planning.

Yes, it's time again for a list of summer promotions for those who have a calendar to fill. I hope you have fewer holes this year because you started early. If you are really on the ball and have already booked your promotions for summer, you still can benefit, by using these ideas for the summer of 1999!

This year, by popular demand, the concepts are more sales-focused, with many running throughout the season.

**"The W--- Summer Coupon Book":** The title explains this simple premise. The more valuable the coupons, the better this book works. Don't let a client get away with offering 5-percent-off -with-purchase junk. It never works and will ruin your booklet for future years.

Some stations like to include spot packages. During your first year, start with a small size. A few pages of real content like concert schedules, public pool locations and hours and free county entertainment options will encourage recipients to keep this booklet around for awhile. Either send the bulk of these via direct mail, or insert them in the newspaper.

Work on this must start no later than March, with sales in April and May. Ideally, this goes out Memorial Day weekend. Save extras for handout at remotes/appearances in June. You may even wish to include your own off-air contest.

If you use direct mail, you will have everyone's name later: "Listen for your name every morning this week at 7:20 a.m. If you hear it, call us at 555-6666 and win \$101."

**"The W--- Memorial Day Yard Sale":** Begin by picking a charity that is prepared to do the bulk of the work. There are two ways to execute this.

Method one: Solicit items to be delivered or picked up by your charity. It must have a large warehouse facility and trucks for moving materials the day of the sale. Method two: Have listeners sign up for tables and charge them a table fee. A portion of what listeners sell, plus the table fee, go to the charity.

For both methods, begin soliciting items no later than May 1. Hold this outdoors (with a rain date) in a high-traffic area. You may be able to get a strip center to donate a section of their parking lot. All proceeds go to the charity.

The station makes money by selling booth space to arts and crafts exhibitors and food vendors. If you have enough space, you can even showcase local talent. If you do this one annually, the community will come to expect it, and unless the event is executed poorly, I can almost guarantee success.

**"The Official Unofficial After-Prom Party":** All you need is a parking lot or field, a huge tent and a great sound system. From 11 p.m. until the wee hours, charge admission to come and dance all night. Make it alcohol-free. Cooperation with the police is a must. Your goal is to provide a safe place for kids to enjoy themselves and to keep them from drinking and driving.

**Mother's Day**

**"Queen of Mother's Day":** The week leading up to the big event, have listeners tell you why their mom should be crowned queen. Listeners can do this over the phone or at registration locations. The queen gets a limo for the day, maid service, massage, dinner and a show. Sponsors can be brought in for each category.

**"Mom's Moviefest":** Continuous chick flicks at a greatly discounted price.

**Father's Day**

**"Dad's Dreamfest of Movies":** Equal entertainment treatment! Action flicks at a discounted price.

**"Dad Discounts":** Come up with a list of stores willing to offer any dad/son or dad/daughter team a significant discount on anything just for coming in together: "Bring in dad and we will give you 15 per-

cent off your new or used car today only."

**July 4th**

**"Free Ice Cream Fourth":** Another station probably does fireworks in your market. Why not take advantage of the after-crowd with free ice cream? Either lease the local fleet of ice cream trucks or put together your own rental fleet, scooping out red, white and blue cones. Yes, this is a repeat from last year. I happen to love ice cream.

**"The Parking Is on Us!":** For the entire season, or just one night, purchase a block of parking spaces in advance that are close to the venue. Give these away on-air and to special clients. You can even sell sponsorships by calling it the "W---/Joe's Pizza VIP Parking Zone." If the venue is unwilling to sell you spaces, buy them nearby and run a bus shuttle every 15 minutes.

**"The Beach Condo":** Rent a beach condo or house for 13 weeks. Give away one week at a time. Listeners can register at that week's sponsor location or on-air. You must begin at least one week prior to your first block of rental time. If winners are unable to go, either give it away again, offer it to a client or do a staff drawing. You can bring on a "corporate sponsor" to provide something like a rental car or free beverages for the condo fridge.

**"W--- Raids":** These ticket or CD raids will work all year, but they do even better during the warm weather. Take a quantity of tickets and announce a "W--- Raid" at Joe Retailer. Run live liners a few days prior, with most falling the day of the raid. Schedule a few phoners during the raid. When listeners arrive, have them register to win. This collects more database info and keeps listeners in the store for a few minutes. Do drawings every 10 to 15 minutes. Use concert tickets, movie passes or even compact discs.

And remember: Don't sweat the summer. Beat the heat and the competition by being prepared!



Mark Lapidus is president, Lapidus Media. For marketing and programming contact, call (703) 383-1805 or e-mail lapidus@erols.com

# 66 Years Ago

Reprinted from Radio World April 16, 1932.

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

## WFIW, REGIONAL STATION, ASKS POWER OF 5KW

Washington. The Federal Radio Commission is asked by WFIW, Hopkinsville, Ky., to establish a precedent in granting 5,000 watts power, while the station maintains its 940 kc regional channel. To date a "regional" channel means one on which power is limited to 1,000 watts, so that if the request is granted the channel would be effectively in the cleared channel class. Four frequencies had been set aside for higher than 1,000 watts, but this was part of the original plan to which amendment is now proposed. The power was not 5,000 watts, however.

If the Commission grants the request and establishes the precedent it is expected that many stations now in the regional class will ask for more power, and thus to be put in what amounts to the cleared channel class. The different classifications are based on the power allotments, and these are determined by geographical, frequency and other considerations.

**May Favor the Grant**

Since other stations would be affected by the grant, if it is made, the Commission has notified them, so that they may present their arguments at a hearing.

Although when such notice is given it almost invariably follows that all the stations thus notified show up with a long list of objections to the application, it is hinted that some of the stations on or near the 940 kc channel may be surprisingly in favor of the grant. The reason is that if higher power is obtainable by one station now in the regional class, other stations may look forward with hopefulness to the same concession, whereas of the grant is denied to one it is likely to be denied to all.

**Stations Notified**

The Commission has never given a regional station power of more than 1,000 watts, except in the case of the four high-power regional channels—1,400, 1,470, 1,480 and 1,490 kilocycles—which are specially designated to this purpose, according to Commission records.

Notification was given to WDAY, Fargo, N. Dak.; WCSH, Portland, Me.; KOIN, Portland, Ore.; WHA, Madison, Wis.; KMBC, Kansas City, Mo.; WBRG, Birmingham, Ala., and WPCM, Bay City, Mich.

## The Science Of Doing Radio Right

So you think National Public Radio is too high-minded for its own good? Don't rush to judgment: Maybe NPR knows some secrets about how the mind works.



The American Association for the Advancement of Science awarded two NPR science reporters for their series "How the Brain Works." The AAAS Science Journalism award acknowledges "excellent presentation of complex concepts related to current brain research and ability to present a vast amount of information in a sophisticated manner."

## Toledo Is Tops in Revenue Growth

Turnover dominated the list of top revenue-growth markets, as quantified in the latest BIA survey.

Only Greenville-New Bern-Jacksonville remains from the 1996 list of markets experiencing the largest percentage of revenue gains among the top 100 Arbitron markets. The growth percentage of Greenville-New Bern-Jacksonville fell from 14 percent to 13.6 percent, but that level of growth only was strong enough for the market to register ninth on this year's list. It ranked fourth in last year's survey.

The market figures are published in "BIA's Investing In Radio Market Report 1998."

BIA Growth Rank	Arbitron Market Rank	Market Name	BIA's Estimated Market Revenues (in \$000s)		1996 to 1997 Growth Rate
			1996	1997	
1	76	Toledo, Ohio	21,800	25,500	17.0%
2	22	Denver-Boulder	117,600	137,400	16.8%
3	68	Knoxville, Tenn.	23,800	27,700	16.4%
4	8	Washington	202,700	235,200	16.0%
5	12	Atlanta	192,900	222,200	15.2%
6	6	Dallas-Ft. Worth	221,800	254,700	14.8%
7	61	Tucson, Ariz.	27,700	31,600	14.1%
8	7	Detroit	183,200	208,500	13.8%
9	80	Greenville-New Bern-Jacksonville, N.C.	15,400	17,500	13.6%
10	50	Austin, Texas	49,000	55,400	13.1%



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World Radio History



# Classic Acquisition

► AMARI, continued from page 52

Michelson has no intention of retiring. "Carl's acquiring the radio program rights, and we are going to concentrate on our television activities," Michelson said. "I will be selling television rights to some of the famous radio programs."

One of his television projects includes a special for the A&E cable network. "I am working with my two sons, and we are putting together a documentary called 'The First Hundred Years of Radio.'"

Michelson also is working on a deal to donate his remaining tape library to the Braille Institute. "They are going to redistribute them to other blind groups. I understand they have 20,000 blind people around the country who listen to their programming," Michelson said.

Amari plans on honoring the existing Michelson contracts with radio stations but ultimately will fold the Michelson programs into his existing program vehicles. Amari hopes Michelson's current customers will subscribe to the Radio Spirits series.

"Actually, it will be better for them, because our programming is free," Amari said. "Right now Charlie charges stations for the programming." Amari offers programming on a barter basis.



Stan Freberg

"When Radio Was" is hosted by Stan Freberg and runs for one hour five days a week. Programs include commercials for national sponsors. In exchange for airing the programs, the local stations

get the old-time radio programming plus six minutes of time for inserting their own local spots.

Amari has two other weekly programs: "Radio Movie Classics," an hour-long program hosted by Jeffrey Lyons that features adaptations of movies as originally presented on Lux Radio Theatre, and "Radio Super Heroes," a half-hour action program for kids, hosted by Kris Erik Stevens.

Amari does not host Radio Spirits programming, but he writes the scripts for Freberg, Lyons and Stevens.

How does Amari make his money? "The selling of the commercial time on 'When Radio Was' is definitely a profit center for us, and the program enables us to reach the exact people we want to reach to provide a catalog," Amari said. "Our catalog makes about one-fourth of our revenue. Half of our revenue is generated in our retail marketplace, and about a fourth of our revenue comes through the radio show."

Amari said he demanded superior sound quality for these historic broadcasts. "About three-and-a-half or four

years ago, I got the idea to produce the top-of-the line product of old-time radio. I did not want one click, or one pop or any distortion. I wanted it to be perfect.

"The only system we saw out there that would do this was Sonic Solutions with No Noise. We started off with one computer, and now we have four. We do it all in-house."

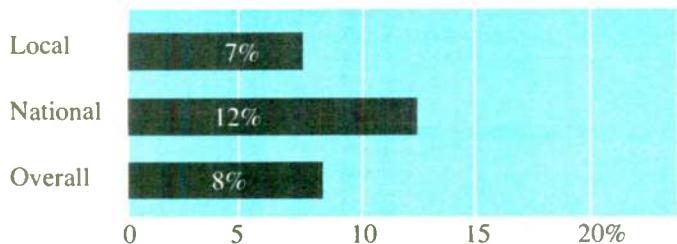
Amari said his commitment to quality has paid off. "The last two years our company has been in the 'Inc. 500,' Inc. magazine's list of the fastest-growing privately held companies. Our company over the last three years has grown more than 1,000 percent per year. Last year we grew 1,800 percent. Most of that is because of the retail (sales)." Amari currently employs 15 people.

Stations interested in the Radio Spirits programs can contact David West, Affiliate Coordinator at (201) 385-6566. The Web site is [www.ICTX.com/DBA](http://www.ICTX.com/DBA)



Read Burgan is a free-lance writer and a former public radio station manager who can be reached at (906) 296-0652 or through e-mail at [rgb@up.net](mailto:rgb@up.net)

## RADIO REVENUE : YEAR TO DATE



Strong gains in the Western region of the country propelled national revenue during January, according to the Radio Advertising Bureau.

The West saw a 22-percent jump over the same month last year, helping maintain double-digit growth in national ad money.

Local sales increased seven percent, buoyed by the Southwest, which posted a 12 percent increase.

Commenting on the record gains of last year, RAB President and CEO Gary Fries said improving on that rate of growth "will be quite a challenge for our industry."

RAB revenue figures are based on a revenue index of more than 100 markets.

## Ways to Master the Web

► WEB, continued from page 57

"We are trying to directly support the radio broadcaster who has an audio broadcast going already and wants to enhance that." This comes from solidifying the station's role in its actual, and virtual, communities. Hickey wants to help the radio station "become the nexus, the central point of the local Web."

From a sales perspective, this may offer a major opportunity. "Many classic radio advertisers, and some 'not-yet' radio advertisers, are putting up Web sites. These are locally oriented, local businesses," he said.

Just what shape the "broadcast of the future" will take is anyone's guess. The success or failure of the Dalet and RCS products is likely to yield valuable clues.

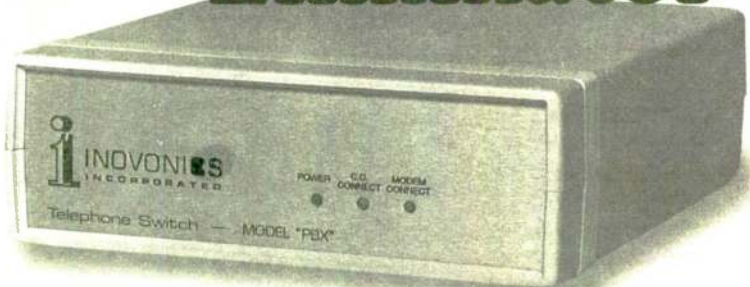
Some Internet aficionados claim Webcasting to worldwide audiences will undermine radio. Zarecki of RCS disagreed.

"Local is still where the action is, despite all the incredible technology. You use Web technology to add value not for people all around the world, but for listeners in your own market. It is ironic, but gets back to radio's prime mission: to reach people in the local community."



Carl Lindemann is developing "Cyberscene," a daily feature for syndication, and is the former production director for WCDQ(FM) and WSME(AM) in Maine. Reach him via e-mail to [carl@radioshow.net](mailto:carl@radioshow.net)

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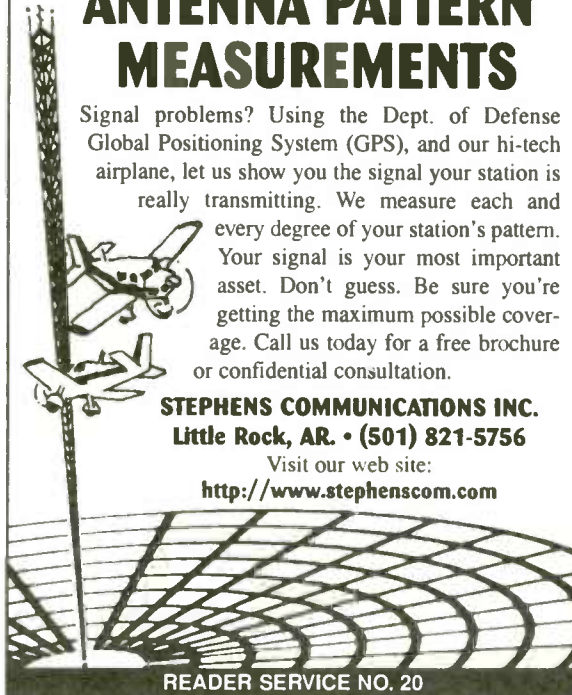
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•••••



# Pamplin's KPAM Signs On

► KPAM, continued from page 50

on, however, owners Jerry Collins and Victor Ives opted to sell to Pamplin for \$1.2 million.

KPAM, which has studios and offices in Portland, originally was to be licensed to the suburb of Fairview because of the way the contours fell for nighttime coverage, Collins said. When the contours were improved, the city of license was changed to Troutdale, another suburb.

The towers for KPAM are located at the site of KVAN(AM) at 1550 kHz,

KPAM(AM), at 1410 kHz, switched to a religious format. Today the frequency is KBNP(AM), which airs business news.

The original KPAM(AM) was the first station in Portland to attempt a contemporary Christian format. That connection, along with the natural fit with Pamplin's name, convinced Kennedy that the call letters should be brought back.

"That was a brainstorm on my part," Kennedy said. "I never dreamed that they would still be available."

*Ratings information quoted above is copyright 1998 The Arbitron Company.*



Darrell E. Kennedy

directly across the Columbia River and near Vancouver, Wash. KPAM has a non-directional daytime pattern, using a single tower. The nighttime pattern, with 5 kW, is doglegged, sending most of the signal to the southwest. Two KPAM towers are diplexed with one of the two KVAN towers, said James Boyd, contract engineer for both stations.

The KPAM call letters have a history in Portland that stretches back long before the station was even planned. The call letters once belonged to a popular top 40 AM-FM combo. What was KPAM-FM is now oldies station KKSJ(FM). In the early 1980s, then-

## More Stations

In addition to KPAM(AM), Pamplin Communications has purchased an AM station in the Eugene area (the second largest market in Oregon) from Jerry Collins and Victor Ives. That station, KTZU(AM) at 660 kHz, will operate with a 10 kW non-directional daytime pattern; it will have a non-directional nighttime power, but with just 75 W. The combined signals of KPAM and KTZU will serve the largest population center in Oregon. KTZU (which was scheduled to go on the air in March) will partially simulcast with KPAM, Pamplin President Gary Randall said. KTZU will operate with separate management and sales staffs, however.

Randall confirmed that Pamplin has also "made an offer in writing to purchase an existing 50 kW station in Washington state," but declined to identify the station.

— Bob Rusk

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# ◆ STATION SERVICES ◆

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Originating from Tampa, Fla., "Smoke This!" lights up the airwaves for two hours each weekend.

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market or their preferences among premium cigars. The host, Cigar Dave, is not just a cigar enthusiast but is well-versed in "the finer things" beyond cigars, such as good food and wine.

"Smoke This!" is available with 17 minutes of inventory per hour, and a 6-minute news window at the top of the hour.

Potential affiliates are encouraged to ignite ad support for "Smoke This!" by contacting cigar retailers, tobacconists, luxury car dealers, men's clothiers and other accounts.

For more information on the program contact Victoria Miller-Raymer in Florida at (813) 832-1971; or circle Reader Service 86.

six-and-a-half-hour documentary divided into 13 half-hour segments.

"Reagan Reconsidered" weaves

## RADIO AMERICA

together music, Reagan speeches, and interviews with Reagan friends and relatives such as William F. Buckley Jr., Michael Deaver and Michael Reagan. The executive producer is Radio America President James Robert, who described the documentary as "not uncritical."

Radio America is making the program available at no cost to 4,000 commercial and public radio stations.

For more information on the program contact Suzanne Marosi in Washington, D.C., at (202) 408-0944; or circle Reader Service 138.

### Maltin Teaches Effective Movie Viewing

Skip Leonard Maltin's "Movie & Video Guide" and occasional appearances on "Entertainment Tonight." If it's Maltin movie reviews you want, hear them on the radio.

"Leonard Maltin's Video Views" is available from Dick Brescia Associates. The two-minute segments can air five times a week. The program is distributed on CD.

"Leonard Maltin is one of the nation's most respected video critics and one of the best liked personalities in his field," said Dick Brescia, president of DBA.

For information on the program contact David West at Dick Brescia Associates in New Jersey, (201) 385-6566; or circle Reader Service 216.

### Remember Twisted Sister?

How could we forget the mid-to-late-1980s heyday of "hair metal," the musical genre that exploded like a big bouffant hairdo before limply yielding to the law of gravity?

Brace yourself. If "The House of Hair" is the start of a "hair metal" resurgence, those days may be on the way back. If not, what's the harm in getting a little nostalgic?

Hosted by Dee Snider, former lead singer of Twisted Sister, "The House of Hair" spews two hours of head-banging "classics" from the likes of Ratt, Winger and Great White.

No new perms are required before listening to "The House of Hair."

For more information on the program contact Mike Stafford at Premiere Radio Networks in California at (818) 377-5300; or circle Reader Service 112.

### Reagan Reassessment

For Ronald Reagan's 87th birthday, the former president was honored by the United States Congress, which renamed a Washington-area airport in his honor. That was just the beginning.

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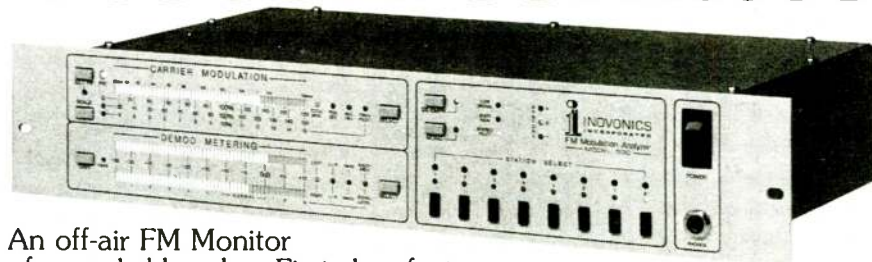
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dbx 760X stereo mic pre w/phantom, new in box w/manual, new in box w/manual, \$150; MXR pitch manipulator w/digital readout module, excel cond, \$300; Stanton 310 TT, R/P preamp w/input load matching, mint cond, \$100; ATI M-1000-2 precision desktop mic dual preamp, new cond, \$200. M Shea, 212-989-2684.

Digital Audio Labs stereo waveform editor v.3 for Windows 3.1, 16 bit to 48 kHz, zoom, on screen help, includes CardD, never used, \$240/BO. D Michaels, 530-926-1332.

Panasonic DAT-3700, \$600; Thunders Bay effect library, \$50. J Coursolle, 920-236-4242.

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Skylight Skycue & Skydata interface systems for use with Skylight network automation system, BO. R Howard, 520-797-3700.

Smartcaster 2000 w/ (2) R/PB audition units, (2) prod units, D-4000 SCS, (4) Akai digital editor, (2) SC-45 Smart Touch, SS-1 traffic/billing system, (2) SW-4 switches, (2) MOD-2 modem, SC-500-5 network node, (4) IPF plus all necessary cabling & wiring, \$50,000. E Swanson, 920-236-4242.

Arrakis Digilink systems (3) w/Gemini, capable of 3 stations & production, gd cond, will sell as package, all well networked, BO. C Eastham, 870-534-8978.

Want to Buy

Digilink System wanted, any model. Todd/Jim, 906-228-9700.

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ITC triple deck, \$900; ITC Delta R/P, \$875; SMC 712, \$200; Dynamax ESD-10 splice locator, \$500; various cart racks, \$10-\$150. J Coursolle, 920-236-4242.

PR & E Tomcats (3) in rack w/spare set of cards, one rcd r w/o rack set of all, working, BO. M Shea, 212-989-2684.

Tapecaster X-700RPS stereo R/P, like new cond, \$350; Tapecaster X-700PS PB (4), gd cond, \$150 ea; Fidelipac ESD10 Dynamax eraser/splice detector, excel cond, \$400. M Gollub, 410-535-2201.

Audicord DLPS, stereo PB cart deck, like new, \$750; Audicord DLRP, stereo R/P cart deck (2), like new, \$1075 ea. R Evans, 704-369-5033.

Dynamax ESD10 cart eraser, excel cond, \$450. D Brou, 318-445-4843.

ITC Delta PB, mono, 2 cue, gd cond, \$450; ITC Delta R/PB, 2 cue, gd cond, \$550; Audicord DL-RM R/PB, mon, 2 cue, gd cond, \$350; Audicord TDS-1, dual deck, twin play, gd cond, mono, 3 cue, \$450; Tapecaster 700-RP R/PB, mono, 2 cue, gd cond, \$250. R Chambers, 530-257-2121.

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Want to Sell

Pioneer PD-M403, \$50; JVC XLV 211, \$50. J Coursolle, 920-236-4242.

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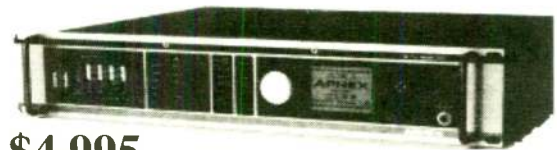
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Stanton Trackmaster (2), gd cond w/2 new extra stylus w/cases, sell by pair only, \$149. J Licano, 520-473-3938.

Ultimate silver speaker stands, \$100/pr. D Kocher, 610-776-1455.

### Want to Buy

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UREI LA2A, LA3, etc, will pay \$1200 for any black UREI 1176LN, other gear wanted. Dan, 415-546-0200.

Teletronix LA-2A's, UREI LA-3A's & LA-4's, Fairchild 660's & 670's, any Pultec EQ's & any other old tube compressor/limiters, call after 3PM CST, 972-271-7625.

## MICROPHONES

### Want to Sell

Audio Technica 813R phantom powered electret cardioid mics w/case, like new cond, \$50; Radio Shack hand-held dynamic mics, \$25. Jim, 717-842-6065.

Light duty mic crane, \$20; Telex V220 sportscaster headset mic, \$145; Atlas desk stand, \$10. J Coursolle, 920-236-4242.

EV 2576, \$75; EV MC-100, \$30; EV MC-200, \$30; (3) Audix CD11, \$30 ea +\$10 shpg. J Swafford, 615-384-4121.

Neumann U47, \$3900; U67, \$3300; U87, \$1800; KM83 or 84 pairs, \$1400; KM88s, \$950 ea; RCA 77DX, \$1200; BK5, \$700; BK1A, \$300. W Gunn, POB 2902, Palm Springs CA 92263. 760-320-0728.

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Circuit Werkes AC-12 coupler bay w/3 cards, \$700; Koss TD/75 headphones, \$10; Henry super relay, \$75; Pyramid 12v 3A pwr supply regulated, \$50; Gorman Redlich CD EBS decoder, \$10; Intertel PBX KTU + telephones, 20 extensions, \$8500. J Coursolle, 920-236-4242.

Gentner TS-612 6 line hybrid w/screenwair, \$2000; Gentner TS-612 network interface, \$275; display cases, \$50; 7" home rack, \$400; 6"x2"x2" gray Panduit, \$2/lin ft; Pelican case, \$50. J Coursolle, 920-236-4242.

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Jerrold VHF audio & video modulator, \$95. G Wachter, 602-817-1030.

RE America RE-522 Slimline RDS/RBDS encoder for FM, composite loop-thru, new w/all software & documentation. D Payne, 317-816-4000.

Belden mic wire, (2) 100', (1) 50', short lengths, all have XLR connects, \$150/all. P Paquin, 508-385-0805.



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**Jennings JCS500-15S** RF vacuum capacitor, adjustable 50-500 pF @ 15 kV w/mounting brackets, \$500. D Thompson, 612-290-1599.

**PCL-725** computer relay card (2), new, \$120 ea +shpg. M Butzner, 510-885-3588.

**TM Century** Ultimate Digital Studio, interface plus connectors, BO. J Lotspeich, 915-533-2400.

**ADC TT (Bantam)** Patchbays, \$149; TT or 1/4" cords, \$10; new short MRL test tapes, \$229 for 2", 1/4", \$79; Gates dual stereo tube limiter, \$1200; Gates tube level, \$595; Allen & Heath GL2 rack mixer, mint, 14x4, \$795; CBS Labs Audimax, \$400 ea; tube preamps, \$300-400; MX10 mixers, \$795. W Gunn, POB 2902, Palm Springs CA 92263. 760-320-0728.

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**Want to Sell**

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**Potomac Instruments** AM-19/PMA-19, 6 tower, 2 pattern antenna monitor, AM-19, vgc, PMA-19 needs DVM, \$2000/BO. D Niccum, 505-622-6450.

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**Pioneer RT-1011L** 10.5" r-r tape deck in walnut case, 4 trk, stereo, \$200; Pioneer RT-701 7.5" r-r tape deck 4 trk stereo in metal case, free-

shipping or rack mounted, \$200. Jim, 717-842-6065.

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2Watt \$1,664	30Watt \$1,499
4 Watt \$2,138	300Watt \$3,174
20 Watt \$3,880	600Watt \$5,960
40 Watt \$5,046	1KWatt \$8,716
100 Watt \$6,206	2KWatt \$11,905
200 Watt \$9,874	4KWatt \$20,741
400 Watt \$13,171	
800Watt \$18,295	
1KWatt \$22,900	
2KWatt \$38,900	

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| 20 KW FM 1977 RCA BTF 20E1  | 5 KW AM 1969 Harris BCH5H        |
|                             | 5 KW AM 1979 Harris MW-5A        |
|                             | 5 KW AM 1980 Harris MW-5A        |
|                             | 5 KW AM 1980 Collins 828E-1      |
|                             | 5 KW AM 1982 Continental 315F    |
|                             | 5 KW AM 1982 Continental 315R-1  |
|                             | 50 KW AM 1978 Continental 317C-1 |
|                             | 50 KW AM 1981 Continental 317C-1 |
|                             | 50 KW AM 1981 Harris MW-50B      |
|                             | 50 KW AM 1982 Harris MW-50B      |

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LPB 25C AM, vacuum tube, 25 W w/coupler & (2) crystals, very little usage, \$600. J Morinelli, 610-715-1720.

McMartin BA1K, 1 kW AM, in service since 1985, still working when removed, \$1500 +shpg. R Howard, 520-797-3700.

Continental 317C2 1982 50 kW AM on 1020 kHz, spare finals, complete tech manual, currently on air, call for info. D Niccum, 505-622-6450.

Gates BC 250GY 250 W AM, gd standby, 800 pounds, local pick-up only, can be upgraded to 500 W, \$1000; 3 phase, 10 kW, electric start 208 V generator, \$500. G Kenny, 417-451-1440.

Harris FM2C 2 kW FM current-carrying w/exciter, \$6000; Harris/Gates WM250C 250 W FM w/exciter, ready to ship, \$600. J Stromquist, 218-722-3017.

# Radio World

5827 Columbia Pike, 3rd Floor Falls Church, VA 22041 • PHONE: 703-998-7600 • FAX: 703-998-2966

### Select from these categories for best ad positioning:

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| Acoustics                  | Consoles                   | Recorders                  | Tax Deductable       |
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| Antennas & Towers & Cables | Financial/Leasing Services | Repair Services            | Transmitter/Exciters |
| Audio Production (Other)   | Limiters                   | Satellite Equipment        | Training Services    |
| Business Opportunities     | Microphones                | Software                   | Tubes                |
| CD Machines                | Miscellaneous              | Stations                   | Turntables           |
| Computers                  | Monitors                   | Stations Generators        | Positions Wanted     |
|                            | Receivers & Transceivers   | Tapes, Carts, Reels & CD's | Help Wanted          |

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	1x	3x	6x	13x
1-9 col inch (per inch)	\$75	73	70	63
10-19 col inch (per inch)	\$70	68	65	58
19-29 col inch (per inch)	\$115	113	110	99
Professional Card	\$80	78	76	68
Station/Studio Services	\$175			
Classified Line Ad				\$2.00 per word
Blind Box Ad				\$16 additional

To compute ad costs: Multiply the number of ad inches (columns x inches) by the desired rate schedule for your per unit cost. Example: a 3" ad at the 1x rate is \$225, at the 3x rate \$219, at the 6x rate \$210, at the 12x rate \$189, etc.



# EMPLOYMENT

## HELP WANTED

### Chief Engineer

Major Midwest broadcaster seeks hands on, well organized engineer. Three studios, three towers, six transmitter sites, mobile units. Competitive salary, company vehicle, outstanding benefits package. Reply to: Radio World, POB 1214, Falls Church VA 22041. Attn: Box # 98-3-18-1RW.

**Assistant Director of Engineering: #1 combo in sunny San Antonio seeks hands-on engineer with digital audio and RF experience. Novell or WinNT a plus. Send resume or letter telling about yourself plus salary history: DOE, KTSA/KTFM, 4050 Eisenhower, San Antonio, Texas 78218. Fax 210-599-5575. 401K, EOE/Minorities encouraged.**

### Radio Broadcast Technician

Sinclair Radio of St. Louis, Inc. is seeking an experienced Technician to work in its expanding St Louis MO facility. The candidate should provide a minimum of five years experience in the radio broadcast industry with knowledge of advanced electronics, computers & computer networks, audio & RF technologies. Applicants should be knowledgeable in the maintenance of high power AM and FM transmitters, microwave, studio & related equipment. FCC license & SBE certification helpful.

Qualified applicants please send or fax resume & cover letter to:

Sinclair Radio Division  
Attn: Lynn Deppen  
2000 West 41st St  
Baltimore MD 21211  
Fax: 410-662-5678

No calls please  
Sinclair Radio of St Louis Inc. is an equal opportunity employer

**Chief Engineer** for group of FM/AM radio stations in Colorado Ski Country. Seeking full time engineer with experience in RF, digital, satellite, audio, and computers. Must be able to work on mountain top sites and be comfortable with severe winter conditions. Fax resume and cover letter to: 970-949-6208.

### Broadcast Engineer Needed

Learfield Communications, Inc., owner of ten College Sports Networks, three Statewide News Networks, and an Agricultural Network is seeking a qualified Staff Engineer or possible Assistant Chief to join our engineering team in Central Missouri. Must have extensive troubleshooting, component level repair experience along with all aspects of studio/audio chain maintenance. Must exercise good judgment in an emergency situation, be resourceful and have good problem solving skills. Must have good communications skills and be able to help affiliates troubleshoot problems over the telephone. Strong people skills and work ethic a must. Satellite uplink/downlink experience a plus. Full benefits, moving costs and a very competitive salary discussed upon formal inquiry. Contact: Charlie Peters, Learfield Communications Inc., 505 Hobbs Road, Jefferson City, MO 65109, Telephone number (573) 893-7200 or e-mail cpeters@learfield.com

**Come live in the rich hills of Vermont - ski the mountains, hike the trails. Vermont's leading AAA station seeks Regional Sales Manager to coordinate four station statewide system. Right candidate must be self-directed, self-motivated and entrepreneurial in nature. Fax resume to Vermont Radio network, (802) 223-1520.**

### CHIEF ENGINEER

For a large Los Angeles audio production facility. Must have extensive experience in studio maintenance, digital work station operation and maintenance, as well as computer network skills. Position requires experience in designing and building new studios and familiarity with all building support systems i.e. air, power, etc. Strong people skills and work ethic a must. Full benefits, moving costs and a very competitive salary discussed upon formal inquiry. Send resume to: Radio World, POB 1214, Falls Church VA 22041. Attn Box #97-10-15-1RW.

**Computer Expert:** Broadcast group in sunny Florida seeks networking expert to run IT department. Resume and salary history to: POB 39454, San Antonio, Texas 78218-1454. Fax 210-805-8990. EOE/Minorities encouraged.

### AM Antenna Products

Results only sales position for manufacturer of AM antenna products. US & Int'l, languages desirable, excellent commissions. Expected to develop new markets, support rep network, sell direct accounts. Resume to LBA-HA, POB 8026, Greenville NC 27834.

**Enjoy Montana.** Run engineering operation at Great Falls' dominant radio group. Position requires ability to install, maintain and repair all types of equipment including high power grounded grid transmitters, AM transmitters, digital audio work stations and studio equipment. Strong people skills and work ethic a must, on-call, weekends and evening work required. EOE. Fax resume to Terry Strickland, (406) 727-7218.

### SERVICE MANAGER AND SERVICE TECHNICIANS

Looking for a career opportunity? A Houston, Texas based company is looking for a Service Department Manager and Service Technicians for an Aviation Obstruction Lighting Company. Technical experience and working knowledge of all types of lighting systems a must. Position requires travel and tower climbing. Company benefits include medical, dental and a 401K plan.

Please fax your resumes to  
713/973-9352  
or mail resumes to:  
P.O. Box 55606  
Houston, Texas 77050.  
Salary commensurate with experience.

**Morris Communications** stations KGNC AM & FM in Amarillo, Texas seeking Chief Engineer for 10,000 watt full-time AM and 100,000 watt FM. Computer and digital broadcast experience is important. Fax resume to Bob Russell, 806-354-8779.

## POSITIONS WANTED

**CE** seeks group or stations, lots of exper, digital upgrades, station buildouts, ongoing maintenance. GRB, POB 6753, Avon CO 81620.

**I'm that bright, articulate, informative & witty Morning Personality** you're searching for. Currently working in major market, desire challenge/community involvement, consider all markets. 216-398-6532.

**Interactive Hot Mix DJ** avail for remixes, custom tape mixes, live/club mix shows, formats include house, techno, disco, top 40, R&B & retro, 10 yrs radio prod, club/freelance exper. Dave, 888-981-5321.

**Oklahoma City area,** just out of school & looking for my first chance, trained, mature, reliable w/positive attitude. Tom, 405-794-0516.

**Relocated to Houston TX.** Award winning news broadcaster, copywriter, 10 yrs exper radio sales, news, on-air production, seeking sales, news, on-air, production position, glowing references! S Hanks, 281-367-3398.

**Voice of tomorrow,** ready today, bdcg school grad ready for radio station work, great on-air persona, Oklahoma stations preferred. Robert, 405-737-5959.

**15 yr vet, AC/Oldies,** seeks on-air program/music director position, excell on-air, digital prod, Selector, computer, marketing, promotions & remote skills, avail immed, willing to relocate. Mike, 609-390-4539 or e-mail MIK-ER983@AOL.COM.

**Experienced & avail** for news announcing, production, AT for Adult Standards, Classic Country. Alex McKuen, 513-777-8423.

**FCC licenced 21 yr old** seeking position at central jersey station, for demo tape contact Brian: 27 Lindstrom Dr, Somerville NJ 08876.

**Let me fill your Midday or** Nighttime vacancy, 8 yrs on-air exper, ready to relocate. Drew, 330-633-5323.

**Looking for a career** in mgmt, on-air, or any other positions in broadcasting. Robert, 405-732-4041.

**Morning AT,** gd phone & fun, looking for new challenge, will consider any shift, anywhere. Kevin 517-739-0328.

**Radio personality,** hard working, self-starter seeks

full time position in production or as on-air talent, many voices for any media task. Dave, 254-259-3042.

**Young & new broadcaster** looking to join a team, recent graduate w/copywriting skills, board ops & voice. Jon, 405-360-1338.

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Desktop Management	James Cornett	Accounts Receivable	Steve Berto

### Advertising Sales Representatives

U.S. East: Skip Tash	703-998-7600 ext 160	Fax: 703-998-2966
U.S. West: Dale Tucker	916-721-3410	Fax: 916-729-0810
U.S. Midwest: Sandra Harvey-Coleman	765-966-0669	Fax: 765-966-3289
Southwest Sales: Christopher Rucas	415-922-5595	Fax: 415-922-5597
Other Regions: Stevan B. Dana	703-998-7600	Fax: +1-703-998-2966
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UK, Ireland: Phil Guy	+44(0)1869-337508	Fax: +44(0)1869-337509
Europe, Africa, Middle East: Raffaella Calabrese	+39-2-7030-0310	Fax: +39-2-7030-0211
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 Wheatstone Corporation

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World Radio History





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