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RadioWorld®

Vol 20, No 24

Radio's Best Read Newspaper

November 27, 1996

Radio Ponders DOJ Action

by Lynn Meadows

ROCHESTER, N.Y. Call it greed or call it business savvy, but the Department of Justice called the Rochester acquisition plans of American Radio Systems Corp. too much.

ARS originally wanted to buy four Rochester stations from The Lincoln Group: AM news/talk powerhouse WHAM, pop station WPXY-FM, adult contemporary station WVOR-FM and "hot talk" station WHTK(AM). The purchase would have given ARS a total of seven stations in Rochester, the local limit for markets with 30 to 45 stations.

Following an investigation, Justice determined that ownership of those seven stations, plus a joint sales agreement (JSA) with WNVE-FM, gave ARS control of more than 60 percent of the sales of radio advertising time in the city.

That proved too much for the Justice Department.

A settlement agreement announced last month between ARS and Justice calls for the radio group to divest WHAM(AM), WVOR-FM and WCMF(AM), which it currently owns. It also requires ARS to terminate the JSA with WNVE.

"When all the dust settles," said Michael Milsom, vice president, general counsel for ARS, the owner will enjoy a net increase. The group will walk away with about 40 percent of the radio advertising revenue in Rochester.

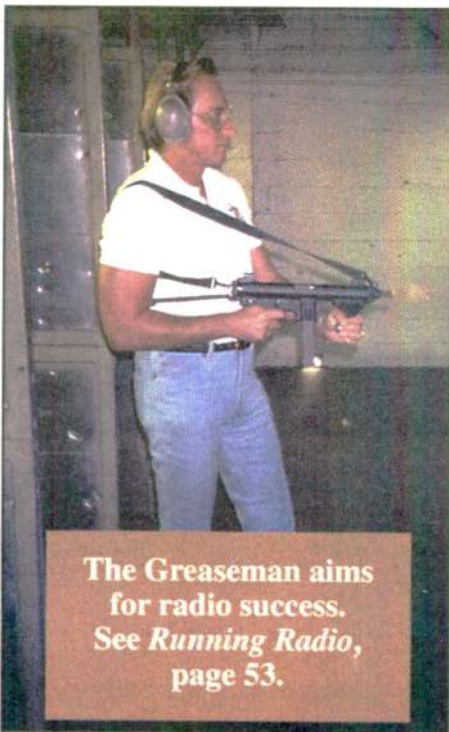
This is the second case since the Telecommunications Act passed in February in which the Justice Department has required merging radio groups to restructure a deal. This spring Justice required Jacor Communications Inc. to divest of WKQR-FM Cincinnati before it

could merge with Citicasters Inc.

Small or independent operators who cannot compete against a Goliath group may find comfort in knowing that the government's lawyers are watching the industry.

Andrew Langston is the chief

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Commercial DAB Comes To Canada

by James Careless

TORONTO, Canada Eight of Toronto's major radio broadcasters have announced their intention to launch full-time digital audio broadcasts (DAB), simulcasting their existing AM/FM signals from the downtown CN Tower starting in 1997. Once on air, the EKA-147 services will signify the commercial launch of DAB in North America.

The broadcasters, whose roster includes companies such as Rogers Broadcasting, CHUM, Shaw Communications, Telemedia and Standard Radio, are coordinating the project through Master FM, a company they jointly own, which already operates a shared FM transmission system for them on the tower.

"What Master FM is planning for is to construct a DAB system to accommodate as many of the Toronto broadcasters as practical."

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Supreme Court Sends Casino Ad Ban Back

by Matt Spangler

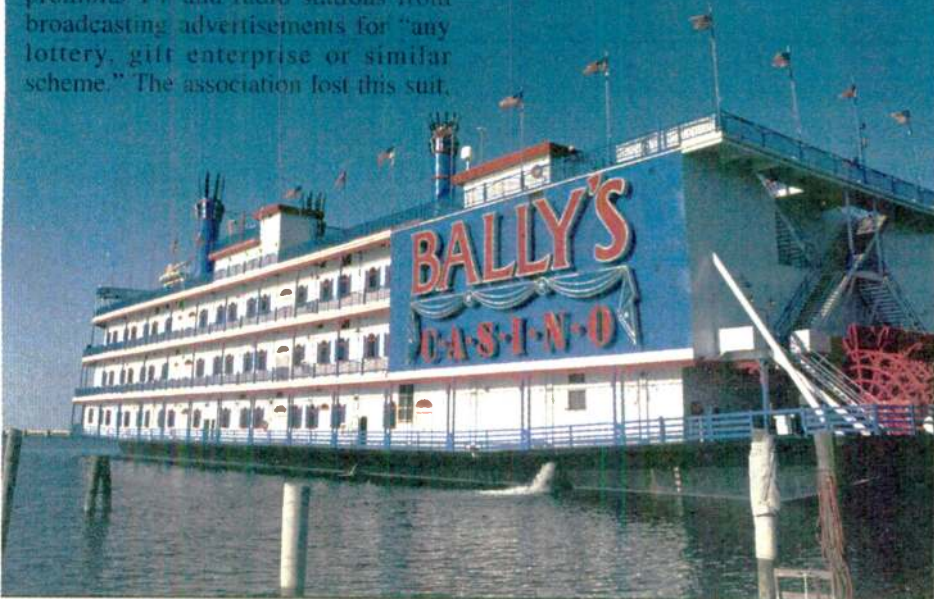
WASHINGTON Thanks to the U.S. Supreme Court, privately-owned casinos in Louisiana may soon be able to advertise legally on radio and television. The Court recently remanded *Greater New Orleans Broadcasting Association vs. U.S. and FCC* back to the 5th Circuit Court of Appeals in New Orleans for further consideration.

This petition, filed initially by the association in 1993 in Louisiana's Eastern District Court, challenged Section 1304 of the U.S. Code, which prohibits TV and radio stations from broadcasting advertisements for "any lottery, gift enterprise or similar scheme." The association lost this suit,

then lost again in the 5th Circuit, which upheld the legislation on constitutional grounds.

The Supreme Court was then asked to remand the case to the lower court and, in light of its recent landmark *44 Liquormart* decision, it did so. In the latter case, decided in May of this year, the court struck down two Rhode Island statutes that prohibited the advertising of retail liquor prices, calling the laws unconstitutional. The Department of Justice has filed a brief in the case as well.

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NEWSWATCH

Gunman Sentenced To 300 Years

PORTLAND, Ore. James H. Rincker, the gunman who shot and wounded two people and terrorized the KOIN-TV Center in January (*RW*, Feb. 7), has been sentenced to 300 years in prison.

KOIN Center, a downtown high-rise, also houses American Radio Systems stations KUPL-FM, KUPL(AM) and KKJZ(FM). None of the radio or TV employees were among those shot or taken hostage during the four-and-a-half hour siege.

With a minimum term of 77-1/2 years imposed by the judge, Rincker, 25, will

likely spend the rest of his life in prison. He would not be eligible for parole until the age of 102.

Rincker received the sentence under Oregon's dangerous offender statute. He was convicted on 14 criminal counts.

— by Bob Rusk

Ad Revenues Maintain 'Record-Breaking Growth'

DALLAS The Radio Advertising Bureau said combined local and national spot advertising revenue increased 9 percent in September compared to the same month a year earlier.

Local was up 7 percent, and national

spot increased 17 percent. National spot increases were largest in the west and southwest regions. Year-to-date combined revenues are up 6 percent through September.

RAB President Gary Fries said he expected national demand to continue through the fourth quarter, resulting in a record year and a strong start for 1997. He said the numbers reflect "advertisers' growing reliance on radio as a primary marketing vehicle."

Burk Gets OK To Offer EAS

WASHINGTON Burk Technology is

now approved by the Federal Communications Commission to sell its Emergency Alert System encoder-decoder.

Sales Manager Bill Gould said the company expected to begin shipping shortly, in time to meet the Jan. 1, 1997 deadline.

Features include: six balanced inputs, three RS-232 ports and 600-ohm balanced output.

List price is \$2,195. A remote panel that accesses all features on the main unit is available as an option for \$795.

The company joins TFT Inc., Sage Alerting Systems, Hollyanne Corp. and Gorman-Redlich on the list of companies with FCC approval to sell EAS products.

For more information call (508) 486-0086.

continued on page 3 ►

Lease a PhantomLite



You know the world is crowded with digital audio systems. When you are faced with making a decision, it can be a confusing mess of features, reliability, and cost considerations that would frustrate any broadcaster. If you're looking for an answer that has the flexibility to give you total control, a gleaming track record to calm your nerves and a payment plan that won't break your checkbook, Harris and RDS have made it easy with the PhantomLite.

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*Based on a 36-month lease of a basic PhantomLite system with a purchase price of \$7,995.00. First month payment is due in advance. Purchase option at end of lease term for \$1. Credit approval required. Other restrictions may apply. Limited time offer. 12-month and 24-month leases, also available.

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NEWSWATCH

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Arbitron Packets Due

NEW YORK The Winter 1997 Station Information Packet is due to be returned to Arbitron by Dec. 2.

The packet is mailed to radio stations within the 94 markets that Arbitron measures four times a year.

Pierre Bouvard, Arbitron's general manager for radio, said stations that carry nationally syndicated programs like Larry King, "American Top 40," Rush Limbaugh or a syndicated morning show, should "make sure they pay special attention to the program section.

Writing down the names of these kinds of shows within that section assures that a station gets the credit it deserves."

Hard Liquor Industry Returns to Air

WASHINGTON The hard liquor industry has ended its self-imposed ban on advertising of spirits on radio and television. The radio ban had been in place since 1936, the TV ban since 1948.

NAB President Edward O. Fritts said, "Despite NAB's staunch support of the First Amendment rights of broadcasters to advertise legal products, we are disappointed" with the decision of the Distilled Spirits Council of the United States.

"Over the years, individual stations have adopted their own standards regarding the acceptability of hard liquor advertising," Fritts said.

"We believe this process has served American consumers well."

FCC Chairman Reed Hundt said, "We're talking about the selling of dangerous activities here ... Exactly what rules need to be written, exactly how the government ought to handle it, that remains to be seen."

Amplifonix Inc. Purchases Fidelipac

by Alan R. Peterson

MOORESTOWN, N.J. Fidelipac, the well-known manufacturer of tape cartridges and supplies, studio equipment and consoles, has been acquired by Amplifonix Inc. of Philadelphia.

The announcement was made by Fidelipac president Roger Thanhauser. Plans for the acquisition had been in motion for over a year.

Dr. Arthur Riben, president and founder of Amplifonix, stated the company will continue to support Fidelipac products already in the field while moving ahead with new digital broadcast products. Thanhauser will be retained on a long-term basis as consultant.

'We're maintaining the entire company. Just about all of the people involved in the product in everything but clerical will be joining us.'

"We see this as a good future for the company in what I think is a pretty vibrant industry. Certainly with some of the new products that Roger (Thanhauser) has had in development, I think we're going to have some systems that are really at the forefront of the technology," said Riben.

Fidelipac was recently in Chapter 11 bankruptcy. Riben confirmed Amplifonix would assume the liabilities of the former company as well as the assets and personnel.

"None of the old vendors will be harmed, basically, from what they agreed to," said Riben.

Amplifonix will support past Fidelipac tape-based products with a continuing spare parts business, but Riben recognizes the lack of new growth in that direction.

"There is no future in tape," said Riben. "There is business and you can

console, according to Riben.

Consolidation of both companies under the Amplifonix roof in Philadelphia will take place within the next few months.



still make profit, but you're not going to grow from it. There is no reason to believe it won't disappear as the digital side of things takes over.

"I wouldn't want you to think we're dropping it," Riben continued.

"When I said it will disappear, it will disappear because customers don't want it anymore; not because we stop. We will proba-

"We're maintaining the entire company. Just about all of the people involved in the product in everything but clerical will be joining us," said Riben.

Of Thanhauser's new role as consultant, Riben said, "He really has a lot of reason to want it to expand. He will be consulting for us for several years."

"I've enjoyed the nearly 20 years in the industry, and feel grateful to all the people, including broadcasters, dealers, vendors and many others," said Thanhauser.

Fidelipac brands includes Dynamax studio equipment, Fidelipac tape products and Broadcast Audio consoles.

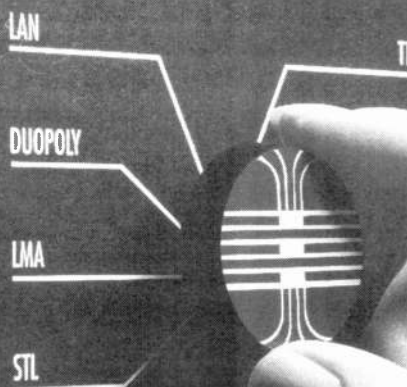
Amplifonix is a manufacturer of hybrid, bipolar and GaAs (Gallium Arsenide) FET low-to-medium power amplifiers and voltage-controlled oscillators.

Its customer list includes Hazeltine, Westinghouse, Scientific Atlanta, Harris and Marconi (England).

bly support it right up to the bitter end."

Newer products from Fidelipac include a less-expensive and improved DCR-1000 digital cart machine and the new MX/D digital

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This Isn't Your Father's RAB

DEARBORN, Mich. It was a cold and snowy city that greeted the Radio Advertising Bureau's board of directors earlier this month. In town for its semi-annual meeting, the group spent three days reporting on progress of established projects, unveiling new ones, brainstorming for the future and, most importantly, hearing from the Big Three car manufacturers.

There were wounded all over the battlefield but the end-result was very positive. Yes, radio heard some hard truths but this RAB and its board of directors rolled up their sleeves and went to work.

The full working meeting got under way on Saturday, Nov. 2, with a welcoming reception and a chance to visit. Sunday's packed agenda opened with remarks from Radio Advertising Bureau President and CEO Gary Fries.

Rising estimation

The good news is that after five years of cultivating the Big Three, the importance of radio in those companies' estimation has risen dramatically. Where before the RAB had to beg for an audience with these guys and plan ahead and pry open the lines of communications, the Big Three not only make time for RAB board members, but in this case, they traveled to the Ritz-Carlton and addressed the entire board (more on that later).

The bad news is that Gary admonished the radio executives gathered about "taking their eye off the ball."

"I am concerned about this industry," he said. "We have lost our direction." In his view, radio leaders are too "focused on DOJ" and "have no vision about growth for radio."

Gary urged the assembled directors to seize the opportunity that today's environment provides.

"You cannot compel the opportunity," he said. Gary further urged the board to really analyze where the dollar-development is taking place at each one of their respective groups. "We should go where

the money is and chase the dollars that exist," said Fries.

Although the development of new business is a worthwhile endeavor, he added, radio's sales efforts need to be redirected.

With that in mind, RAB unveiled a joint venture with the Arbitron Co. to research why money is being spent on newspaper. The results will be used to help develop a long-term perceptual change of radio vs. newspaper. In the past, radio has traditionally tackled newspaper head on by telling advertising clients, essentially, that they were spending their money stupidly when they spent it on newspaper. Let's face it, said Gary, no one takes kindly to being told that what they just

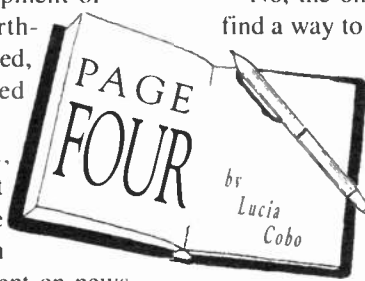
spent much effort and money on was a waste of time.

No, the onus of the joint venture is to find a way to make radio a more valuable marketing partner for advertisers.

It was a message that resounded all day Monday during the meetings with Chrysler, Ford, GM and the automobile dealers. The message from these guys was clear. If radio wants GM dollars, it has to learn how GM is positioning its car brands, who GM is targeting per car brand, and how best to reach these target consumers through a variety of well-targeted and developed campaigns using a variety of media vehicles.

Ditto for Chrysler and Ford.

What's more, the automobile dealers



(from the Detroit area) were very candid about their lack of satisfaction with newspaper advertising and how they had seized the opportunity of the strike in the market to abandon newspaper advertising altogether (except for local weeklies).

So indeed the opportunity seems to be afoot. What radio needs (and maybe today's mega-groups can facilitate this) is high-level sales executives who can approach Detroit with real marketing ideas that gel with the Big Three's marketing plans.

The RAB is doing a great job and I think they have been too modest about their efforts.

If your station has not become an RAB member yet, ponder this: 82 percent of all radio revenue earned goes to RAB-member stations. Since 1991, when membership was at an all-time low of 2,341 stations, the RAB, under Gary Fries and a very active board, has grown to 4,639 dues-paying members in September of this year.

Bayliss Media Roast

Several hundred gathered at New York's Waldorf-Astoria hotel for the eleventh annual Bayliss Media Roast.

Foundation scholarship recipients.

More than 145 potential broadcasters have received scholarships from the John Bayliss Broadcast Foundation since its inception in 1985. Total scholarship awards to date exceed \$265,000.



The broadcast industry's most influential and active owners, brokers, bankers and advertisers were there to "dis" honor the Honorable James H. Quello, FCC commissioner. Also attending were past and present Bayliss

Young people from more than 30 colleges and universities have been encouraged to further a broad spectrum of careers in the radio industry with these awards. The proceeds from

the annual media roast benefit the Bayliss Scholarship fund.

Pictured left to right: Tim Menowsky, Media Matrix Inc.; Frank Wood, Secret Communications; Paul Kagan, The Kagan Companies; Kit H.

11th Annual

THE JOHN BAYLISS MEDIA ROAST

Roastee:
James H. Quello
FCC Commissioner

* * *

October 30, 1996
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Make money with RDS

Dear RW,

I read with interest your Sept. 18 interview with Gary Shapiro, president of the Consumer Electronics Manufacturers Association, particularly the portion concerning the Radio Data System (RDS). Having considerable personal involvement with RDS, I'd like to commend you on your coverage of this important radio industry topic and offer another perspective on this issue of affordability of this technology, particularly in the smaller markets.

One of the beauties of RDS, from the broadcaster viewpoint, is the many things it can do beyond its numerous and well-publicized listener features. These things include sign and other device control, wireless LAN-type services and local and wide-area paging. RDS allows FMs to do one or more of these things with little or no impact to their other operations. And many of these RDS features offer stations in markets large and small the opportunity to produce significant non-spot revenue.

I believe that, rather than ask the question, "can I afford the two thousand dol-

lar expense necessary to adopt RDS," the broadcaster would better ask, "can I afford to ignore the revenue streams RDS technology offers me?"

My company — and others are also offering RDS opportunities — is actively building a nationwide paging network utilizing RDS technology. Our affiliates not only adopt RDS at no expense, they actually are paid a monthly rent to do so. They access listener features and we take advantage of RDS' paging data transmission capability. In essence, everyone wins. Already, our recently completed network in the eleven western U.S. states is allowing AXCESS Global affiliates to adopt RDS and earn millions of dollars in non-spot revenues.

Therefore, I would encourage broadcasters to view RDS not simply as an expense, but as a new potentially lucrative source of revenue.

Robert L. Adams, CEO/President
AXCESS Global
Metairie, LA

Missing the mark

Dear RW,

I enjoy your publication, however, I take exception to Mr. Lee Harris in "Ownership Returns to Bygone Days" (Oct. 2). Mr. Harris certainly misses the mark. I'm surprised there are so many people like him.

They are the ones who probably are great supporters of Social Medicine, etc. Let big government and a few big companies control all the wealth in our great country. I've been in broadcasting for nearly 40 years and I think big business now has a strangle hold on America. They control TV and newspapers. Radio was the last medium left and it was deserted by those in charge of regulation.

Try to watch daytime TV! In 1963 Newton Minnow said "TV is a vast wasteland." I think it is now a vast sewer and radio is going to become a great audio sewer.

With sadness I see the changes, but please Mr. Harris, don't try to tell young broadcasters it's getting better.

Just ask one of the 3,000 displaced general managers who have been replaced by spreadsheet totin' bankers. You're looking at broadcasting through their eyes and are blinded by their viewpoint — money is the only thing that counts. The American Public is the loser along with thousands of broadcasters. Broadcasting is not for broadcasters anymore!

At least we can still take up a pen and express our viewpoint. No, I'm not a displaced general manager, I own an AM/FM combo. I don't have bankers for partners, and yes, I think deregulation will fail, due to big business and its ruthless approach: inflated prices and lack of broadcasting experience, plus something it will never understand — a good broadcaster's love of the business.

Harold R. Shumway
KSWG(FM)/KBSZ(AM)
Wickenburg, AZ

Trust Radio's Judgement

The unilateral decision by Distilled Spirits Council of the United States (DISCUS) to break its decades-old voluntary ban on television and radio advertising of spirits sent waves of shock and dismay through the halls of the Federal Communications Commission as well as the National Association of Broadcasters.

In place since 1936 for radio, the ban left the field wide open for the wine and beer makers, both of which have gained market share on the hard liquor industry during the past decade (mostly by making huge splashes on the radio and on television events like the Super Bowl).

The outcry smacks of politics and hypocrisy. It is a legal product and while it remains so, can be advertised legally. There is a potent argument for the commercial speech rights of the hard liquor manufacturers to advertise their legal products. Furthermore, the Supreme Court recently handed down a landmark decision, *44 Liquormart*, striking down two Rhode Island statutes that prohibited the advertising of retail liquor prices, calling the laws unconstitutional.

In addition, as the story on page 1 of this issue indicates, the Supreme Court remanded *Greater New Orleans Broadcasting Association vs. U.S. and FCC* back to the 5th Circuit Court of Appeals in New Orleans for further consideration. Bottom line: Privately-owned casinos in Louisiana may soon be able to advertise legally on radio and television. This is as it should be. If a product can be legally sold, it should be advertised legally.

To wit: If broadcasters have a problem with accepting advertising from a particular type of advertiser, then it is their First Amendment right to refuse to do so. If, as radio constantly clamors, broadcasters are indeed tied to their communities and know their markets, then they will know, on a station-by-station basis, if accepting advertising spots from members of DISCUS is appropriate.

If broadcasters exercise their right to edit the material on their stations and educate, serve and inform their communities on an ongoing basis, there is no need for the heavy hand of regulation to tell us what can and cannot be broadcast. The fact that so many radio and television groups have long-standing policies of refusing to accept liquor money should further warn the would-be government censors to stay out of running our business. —RW

Switch with care

Dear RW,

Thank you for your fine magazine!

The article "Design RF Switching Systems with Care" by James F. Pinkham in the Sept. 18 issue brings out the very important point: RF switching design must be approached with much thought and care.

However, I winced when I read the last sentence in the section titled "Hot Switching": "Carrier may be interrupted either by 'blanking' at the exciter, or by removing transmitter 'plate voltage.'"

A fundamental rule is to never remove termination from the transmitter when Plate voltage is present on the final stage. Doing so can allow the transmitter PA to go into oscillation with nasty results.

This can damage not only the PA but also the switch and associated transmission line components between the PA and the switch.

The time delay designed into the RF switch control circuitry must allow the voltage change on the plate supply to decay sufficiently before those switch contacts open.

Some transmitters do not have bleeder resistors. If the RF drive is interrupted before power to the plate supply is, plate voltage can remain for a good long time. A bleeder circuit may need to be added.

Erling Manley, Transmitter Guy
KVOS-TV
Eastsound, WA

(The author responds: My statement giving two options, "blanking" or Plate voltage interruption, was to allow choice based upon transmitter parameters and design. In the majority of AM designs I always used plate voltage, while some FM operators preferred "blanking" especially with Grounded Grid Power Amplifiers which do not oscillate, when drive is removed. The time element is a

factor. The step-start cycle on many transmitters as Plate goes off and comes back on takes longer than the brief interval of "blanking." Your point is well taken.

Regardless of the means of removing "carrier," the point is DO NOT SWITCH WITHOUT REMOVING CARRIER!)

The Inverted V

Dear RW,

An "Inverted 'V'" antenna was always one-quarter wavelength above ground at its apex, and it was end-fed. More recently, with the popular and convenient use of 50-ohm coaxial cable, the original antenna design was modified somewhat and became the "Inverted 'V' Dipole," a half-wave long, center-fed dipole, one-quarter-wave above ground at its apex, with an included angle at the feedpoint of 90 degrees — a most effective High Frequency antenna when constructed and positioned right.

Your author, Al Parker, refers to his 75m antenna as an "Inverted-V (sic), 55 feet over ground." (RW, Sept. 18). A quarter-wavelength in space at 75m approximates 63 feet.

At 55 feet over ground, the included angle at the apex widens out beyond the ideal 90 degrees, and the ground space required lengths well beyond the 110 feet necessary to maintain a 90-degree angle at the 55 feet high apex, even if the antenna ends were tied down at ground level. Feedpoint impedance matching gets very hairy under these conditions, and antenna performance is unpredictable at best.

Hanging another "Inverted-V" from the same randomly selected feedpoint will only generate more random effects, especially if it's fed with 50 ohm coax.

Abelardo J. Massa, W5VSR
Director
Wireless Institute of New Orleans
Metairie, LA

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ext. 141

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Next Issue of Radio World
December 11, 1996

Court Remands Casino Ad Ban

► continued from page 1

Representatives for the association differ as to what will happen with the legislation now. Dan Cooper, the association's executive director, predicted that the circuit court will reverse its decision in light of the instructions from the Supreme Court, which say "it is appropriate for the court of appeals ... to reconsider (the First Amendment) issues in light of the guidance that can be drawn from *44 Liquormart*."

He also noted that the lone dissenting vote in the lower court's 2-1 decision came from its chief judge, who found that the statutes did not directly advance the government's interests and that they were unduly restrictive. (In this, the judge turned to the litmus test for government restriction of commercial speech provided in *Central Hudson Gas and Electric Corp. vs. Public Service Commission*.) Judge Edith Jones, who wrote the majority opinion for the circuit court, could not be reached for comment.

Ashton Hardy, the attorney representing the association, believes that the DOJ inquiry is designed to prolong the settlement of the Louisiana case until the federal government can bring a case before the Supreme Court that is more likely to move that body towards tighter control of commercial speech.

Hardy said he thinks this will probably be a tobacco industry case (tobacco ads on radio and television are prohibited by law). This, he feels, would give the federal government the right to maintain some jurisdiction over commercial speech.

"I frankly believe the U.S. government ... is concerned about losing control over its ability to limit commercial speech," he said.

Hardy and Cooper both said that the Circuit Court decision was based upon a

disparaging view of gambling, and not First Amendment issues. Cooper said, "The lower courts have been taking the attitude that if you have the greater right to ban the activity, then you have the lesser right to ban speech about it. The (Supreme) Court is saying now, you have this backwards: the greater right is the right to ban speech." Hardy said that



This still is taken from a television ad for Bally's Casinos in Louisiana that showcases casino services other than gambling.

Jones' opinion implies "that she simply opposed gambling and that's why she decided the case."

Both also see discrepancies in how the government has treated state-run and privately owned gaming. In 1976, Congress added to Section 1304 an exemption for the broadcasting of advertisements for state lotteries, and in 1988 Indian and charitable gambling joined the list of exemptions.

Hardy said, "It's inconsistent to allow advertising for a state-run lottery and then turn around and say that the federal government has a compelling interest to protect the citizens of Louisiana from the evils of casino gaming because they're in some way different from the lottery." Cooper referred to a company in

Louisiana that is prohibited from advertising its private casino, but suffers no such restriction for its Indian casino.

The National Association of Broadcasters sides with Cooper, believing that the high court's decision to send the case back to the lower court with reference to *44 Liquormart* will encourage the latter to turn over its decision. "Our view," said Steve Bookshester, associate general counsel for the NAB, "is that the 5th Circuit made what we thought was a very wrong decision."

A few days after the Supreme Court remanded the case, the NAB joined another lawsuit, filed in a U.S. District Court in New Jersey, claiming that Section 1304 violates First Amendment rights. The plaintiffs in *Players International vs. U.S. and FCC*, which include Players International Inc. (owner of several riverboat casinos in Louisiana) and a number of state broadcasting associations (including the Louisiana Association of Broadcasters), allege that the legislation "unlawfully violates plaintiffs' rights to commercial free speech under the First Amendment." Players says that the rules exempting Indian gaming have prevented its Louisiana riverboat casinos from competing fairly with land-based Indian casinos in the state.

'Archaic' rules

For its part, the Federal Communications Commission has asked Congress to amend casino advertising restrictions.

The commission sent a proposal to Congress last year recommending that it repeal Section 1304, which it termed "archaic and also of questionable validity under the First Amendment." The proposal cited the "administrative burden" placed upon the FCC as enforcer of the legislation, and the "economic boost" that would be given to broadcasters through the loosening of advertising restrictions.

The FCC ceased enforcing Section 1304 in Nevada in 1993, when the U.S. District Court in Las Vegas ruled the advertising ban unconstitutional, in order to "reduce uncertainty for broadcasters within the District Court's jurisdiction and to preserve the Commission's resources during the appellate process." That case is currently under appeal in the 9th Circuit Court of San Francisco.

The FCC proposal made its way into an amendment to the Telecommunications Act, submitted by Sen. Richard Bryan, D-Nev. In addition to the reasons outlined in the FCC proposal, the amendment also called the legalization of casino advertising "a states' rights issue." A congressional conference dropped the amendment from the final version of the act.

That broadcasters would stand to reap many profits from casino advertising is undeniable. A report by Competitive Media Reporting monitoring advertising revenue stated that nine casinos in Atlantic City pumped almost \$2 million into New York City stations in 1995, and 11 casinos put \$1.3 million into Philadelphia.

Fred Murr, president and general manager of Jacor of Las Vegas, which owns KFMS(AM), predicted, "There would be a major adverse effect on all advertising

media if casino advertising was not allowed (in Las Vegas)." Others, like Bill Ainsworth, general manager of WSHO(AM), a Christian station in New Orleans, believe that stations and local economies can rely too heavily upon gambling for revenue.

Station representatives are concerned about the violation of First Amendment rights that the legislation might represent. Rod Douglas, chief operator of KKV(AM), a Christian station in Las Vegas that does not run casino advertising, said if the government can limit commercial free speech, that could lead to restriction of private free speech.

"Next thing you know, if you get on the air and run a Christian advertisement, someone might say that's bad and take it off the air," he said.

Government hypocrisy?

Robert Namer, general manager of WTIX(AM) in New Orleans and host of a syndicated conservative talk show, believes that the federal legislation is illegal in that it restricts commercial speech. But he said his station will abide by the legislation as long as it is enforced by the FCC. Murr alleges that there is hypocrisy in how the government restricts itself and whom it represents.

"There is certainly freedom for politicians when they come on (the air) to say exactly what they want. No matter how slanderous or negative it may be, they are not prohibited from advertising," Murr said.

Murr also points out that casinos advertise many services other than gambling, such as their shows and restaurants. A representative from Competitive Media Reporting said Atlantic City casinos that advertise in New York City are similar in this regard. On the other hand, Namer claims that casinos in Louisiana only advertise these services to skirt the laws banning strict mention of gambling.

What, then, is the concern of Congress? A number of members object to gambling on moral grounds, and would not have it promoted over the airwaves. One of the most vocal opponents to Bryan's amendment was Rep. Martin Hoke, R-Ohio.

His opposition was sparked by the testimony in a hearing on the establishment of the "National Gambling Impact and Policy Commission" by ex-Mafioso Bill Jahoda, who claimed that legal advertising of lotteries and other types of gambling created stronger markets for illegal, underworld-run gambling.

Congress has not given a final word on casino advertising. A spokesperson for Bryan said Congress essentially tabled the measure until findings from the gambling commission are released. This commission will conduct a study of the effects of gambling on America's communities. The study is expected to take two years.

A lot was decided in Louisiana on election day, when a referendum gave individual parishes the right to legalize land-based casinos, riverboat gambling and video poker, respectively.

According to a representative of the Louisiana State Department of Elections and Registration, at press time land-based casinos had passed in New Orleans (the only parish in which that referendum applied), riverboat gambling had passed in most parishes and parishes were split on video poker.

Cooper says that he doesn't think advertisers will run into any problems in parishes in which gambling is outlawed. ☺

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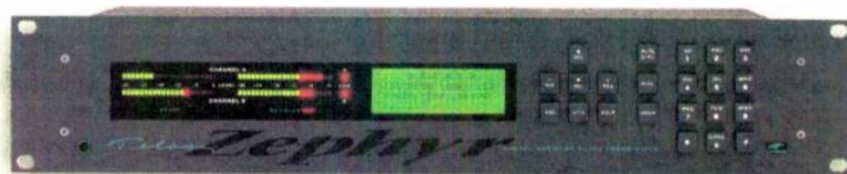
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World Radio History

NBA Team Objects To Portland Billboard

by Bob Rusk

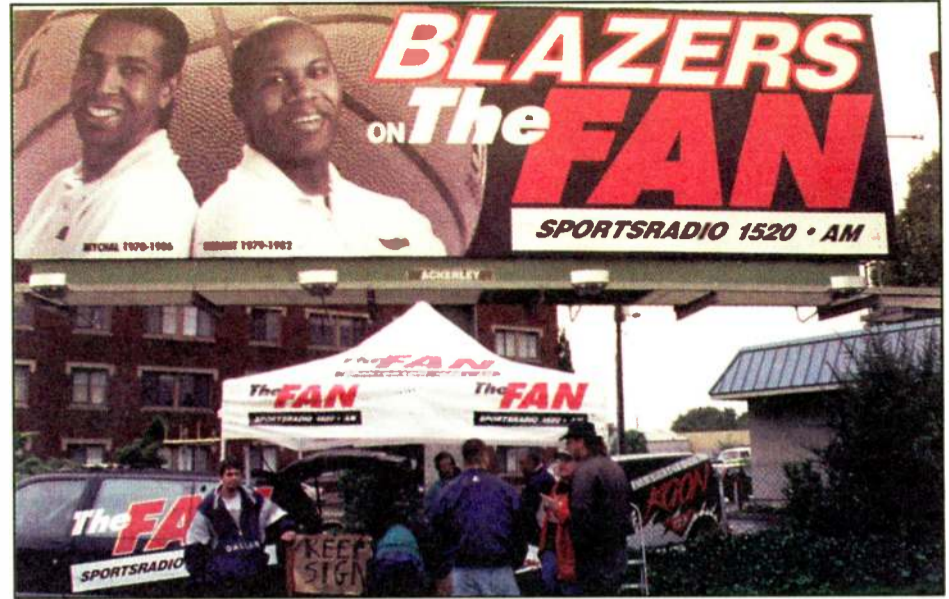
PORTLAND, Ore. The Portland Trail Blazers were no fans of KFXX(AM) when the radio station, which calls itself "The Fan," put up a billboard promoting itself.

Located just two blocks from the arena in which the Trail Blazers play, the billboard read: "Blazers on The Fan, SportsRadio 1520," next to pictures of afternoon drive talk-show hosts Mychal Thompson and Kermit Washington, both former Trail Blazers players.

Because of that connection to the NBA team, KFXX executives didn't think the billboard would cause a problem. But the Trail Blazers and KEX(AM), which carries the games, strongly disagreed. The Blazers threatened to sue KFXX unless it made changes.

Harry Hutt, senior vice president of marketing operations for the team, called the billboard "guerrilla-type marketing against KEX."

KEX General Manager Dave Milner told *RW*, "We pay for an exclusive rela-



KFXX held a remote in front of the offending billboard. A tarp, below, was a temporary solution.



tionship with the Blazers. (KFXX) tried to dilute that relationship."

The billboard went up on Oct. 1. The Trail Blazers demanded changes be made by Oct. 18. "We got a call from the Trail Blazers asking us to take the billboard down," said Tom Baker, general manager of KFXX.

"We wanted to accommodate them, but felt we had a right to do what we were doing because (Thompson and Washington) played for the Blazers. We weren't doing anything that was misleading," Baker added that KFXX did not consult with the basketball team

'It's love and kisses to everybody.'

before placing the ad.

"On the billboard we have the dates that (Thompson and Washington) played for the Blazers. Our attorneys felt that was sufficient," he said.

Instead of removing the billboard, Entercom-owned KFXX placed a tarpaulin over the word "Blazers" at the last moment.

The following Monday, the billboard had been reworked to read, "Ex-Blazers on the Fan."

In addition, the words "Warning: Blazer games are not on The Fan" were added to the bottom of the billboard.

Executives of highly-rated KEX, which is owned by Jacor Communications, remain unhappy with the billboard.

"I don't think it's much of a change," Milner said.

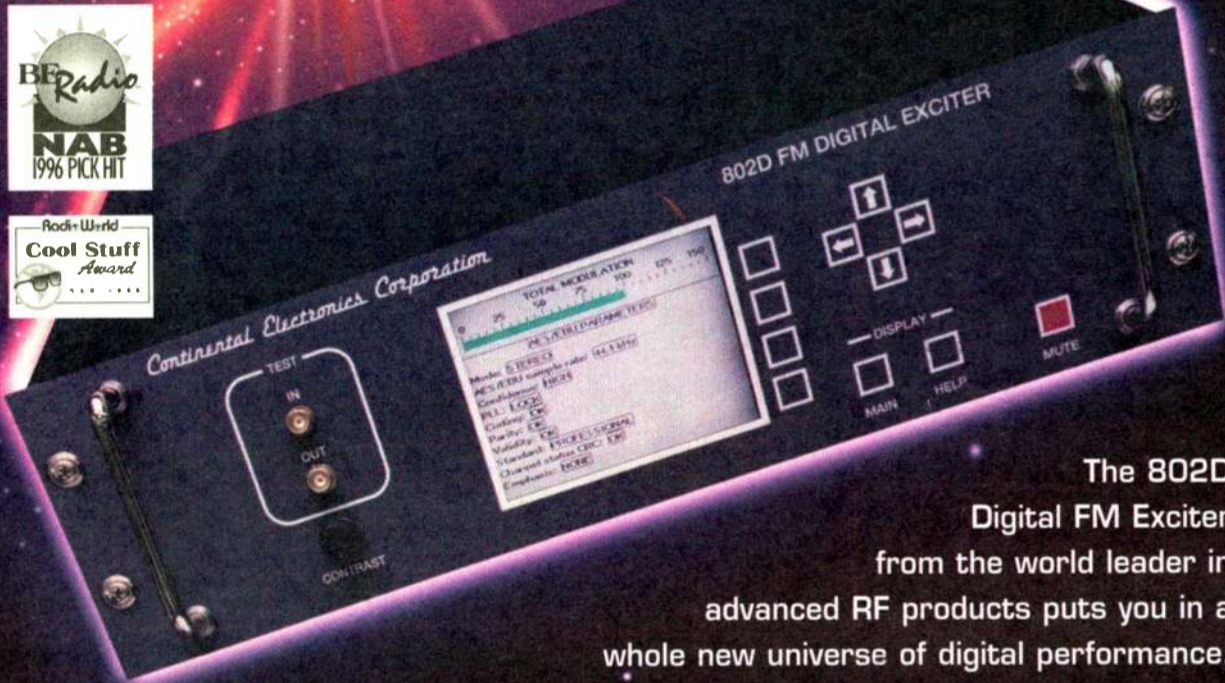
"It's almost like going to a friend's house and stealing their money. It's not right. But I guess you can get around the law in many different ways."

The Trail Blazers, who continued to advertise on KFXX during the billboard battle, now consider the case closed.

"We feel (the changes) solve the problem of misleading the public. Based on that, they can use our name," Hutt said.

"We are fine with the billboard as it stands now and it's love and kisses to everybody." ☺

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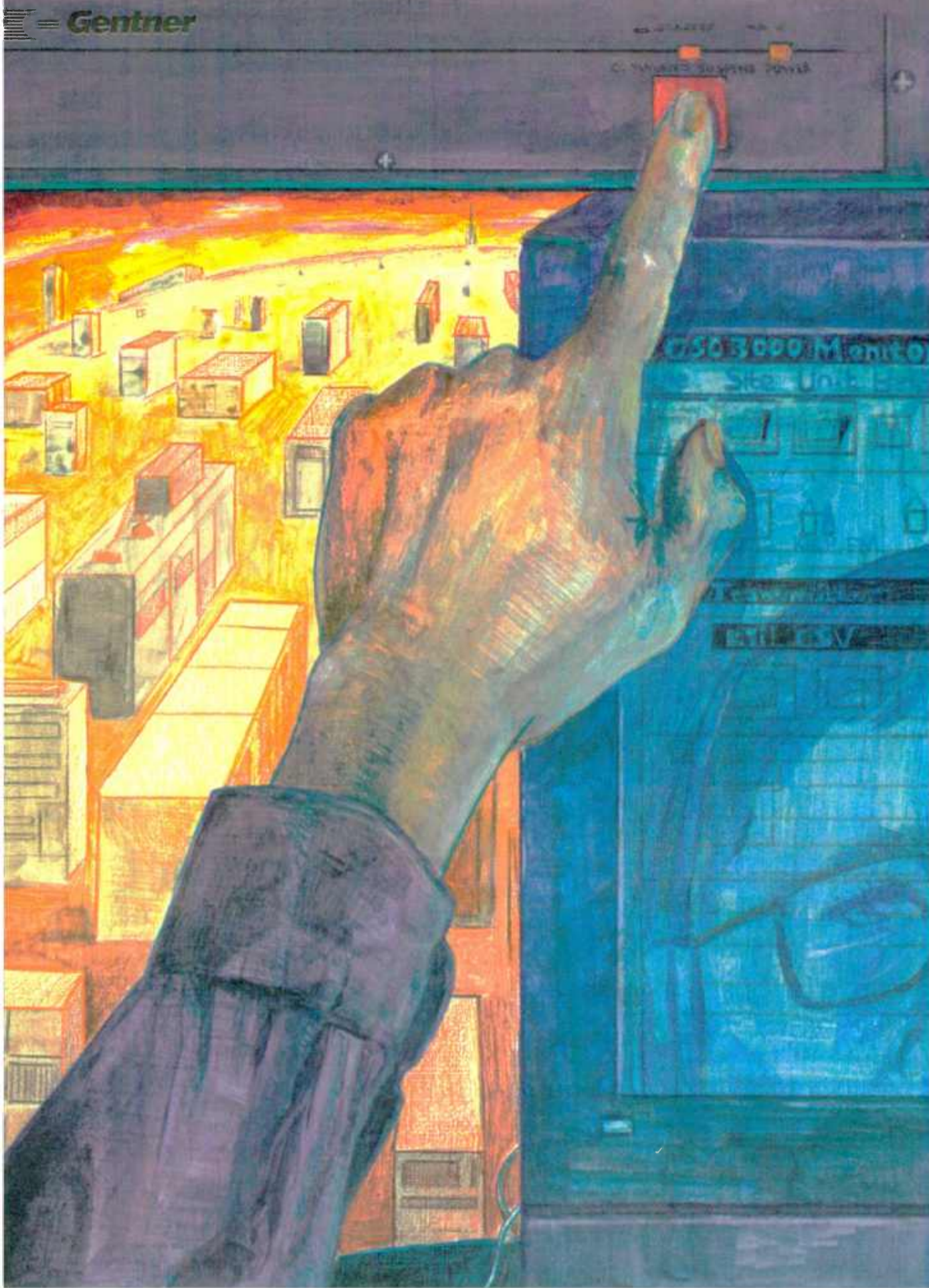
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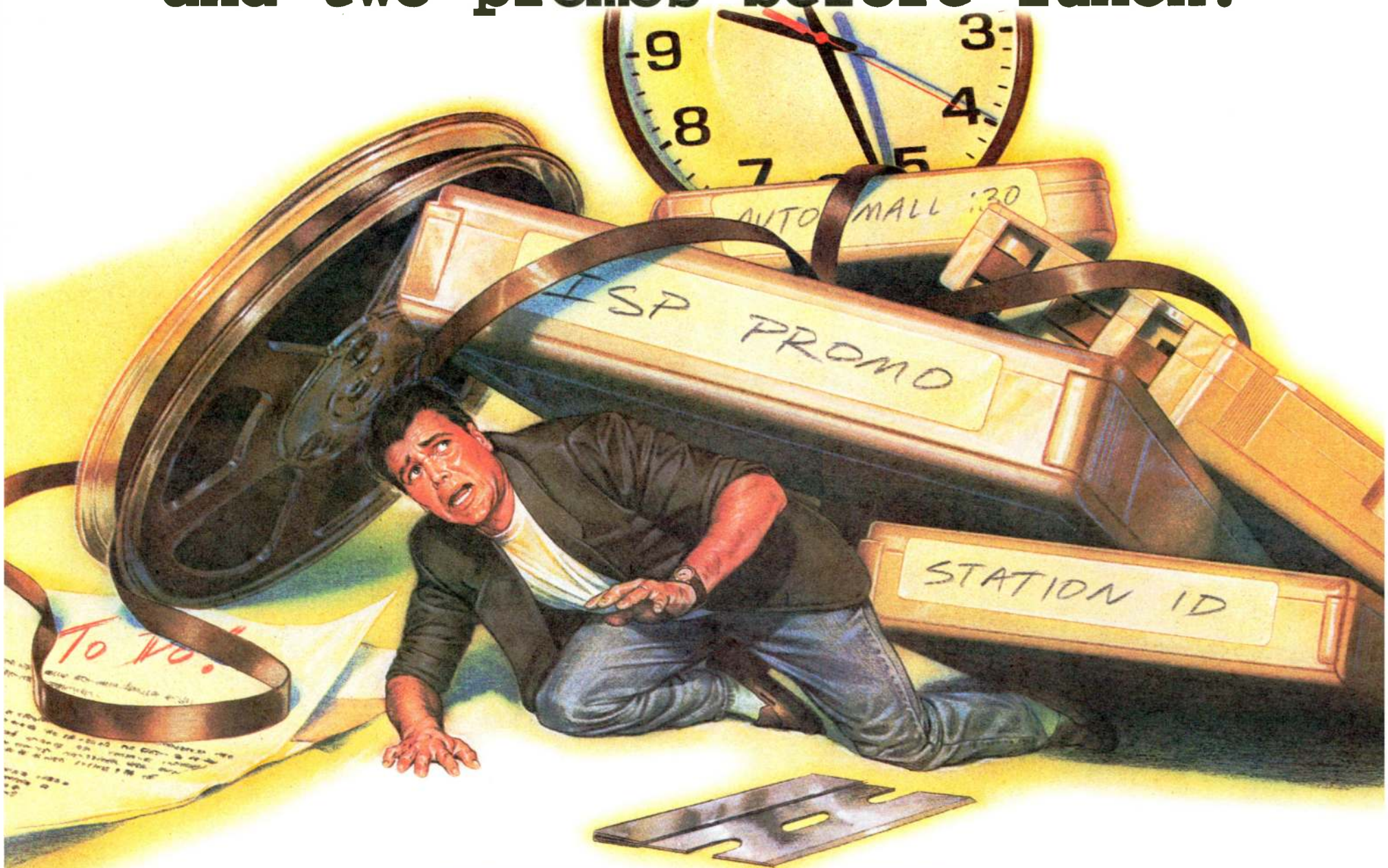
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World Radio History

Mickey Is Out and Kong Is In

by Matt Spangler

HOLLYWOOD Ozzie and Kazoo joined Jaws and King Kong last month as Radio AAHS began live broadcasts from Universal Studios Hollywood and Florida.

The 24-hour children's network broadcasts from the Hollywood location from 1 to 3 p.m. PST on Saturdays and from Orlando, Fla., from 1 to 3 p.m. EST on Sundays.

The partnership with the theme parks is called "a programming and promotions agreement."

Programming for Radio AAHS, which is owned by the Children's Broadcasting Corporation (CBC), is a mix of music,

news, stories and games designed for children ages 12 and under and their parents. It is broadcast live via satellite from WWTC(AM), the network's flagship station in Minneapolis.

More than two-thirds of the programming consists of music, including pop, jazz, oldies and movie soundtrack cuts.

In some cases the cuts are spun by young aspiring disc jockeys, as with the morning show "The All-American Alarm Clock."

Other shows include "The Kinetic City Super Crew," an adventurous science mystery show, and "What's Up? With Evan Roberts," a talk show hosted by the 13-year-old Roberts and broadcast live from his Long Island, N.Y., bedroom.

"Live from Universal Studios Hollywood!" began airing Oct. 12 and is hosted by AAHS veteran Bruce Barker. "Live from Universal Studios Orlando!" began the next day; it features DJ "Jammin' Jo Jo." The shows will be supported on the network with live and recorded promotions. In addition, every quarter listeners will be able to win family vacations to the studios. Joy Plaschko, a spokesperson for Radio AAHS, said "the quarterly promotions are a huge deal for us."

CBC President Christopher T. Dahl called the agreement "the beginning of a new era for all of us in terms of program-



ming and promotion."

It certainly seems to be a different arrangement than CBC had with former partner ABC/Walt Disney Co. As part of that strategic relationship, ABC/Disney was the national advertising sales

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Radio Studies Action

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executive officer of WDKX-FM Rochester which rates about sixth in the market. Forty percent "is a hell of a lot better" than 60, he said. As Langston pointed out, the chances of an individual station getting a share of the market diminish significantly if one group "owns" 60 percent.

Large group owners, however, may find little comfort in the settlement announcement. This is the first time Justice has challenged a joint sales agreement that gives one radio station the right to price and sell all of the advertising time of another station.

"A lot have viewed JSAs as a vaccine against antitrust concerns," said communications attorney and **RW** columnist Harry Cole. "What this seems to say is the white blood cells are not working as far as that is concerned."

Interestingly, according to David Turetsky, deputy assistant attorney general at Justice, ARS would have had to terminate the JSA agreement even if the group was not involved in this merger. Turetsky said WNVE and one of the ARS stations had been vigorous competitors. Rather than continuing to compete, he said, the ARS station formed a joint sales agreement with WNVE. Advertisers who were playing the two stations off one another for good rates lost out.

"This doesn't mean that all JSAs are anti-competitive," said Turetsky. What it does mean, however, is the Justice Department will be looking at JSAs in other markets across the country.

ARS learned its lesson. Milsom said the group planned to terminate another JSA in West Palm Beach, Fla.

JSAs aside, the ARS settlement agreement indicates that the radio industry is not getting through to the Justice Department with its message about advertising.

"My initial thought is that they are not looking at the total picture," said Steve Chartrand, general manager and co-owner of WNVE. Chartrand echoed the radio industry's battle cry that Justice needs to look at radio's place in the whole advertising picture rather than strictly at the radio revenue pie.

The bottom line, said Steve Shapiro, a high yield media analyst for CIBC Wood Gundy Securities Corp., is that radio has to educate the right people in Washington that it actually competes against televi-

sion, newspapers and direct mail for advertising dollars.

The National Association of Broadcasters has tried to make that argument with Justice. This spring, the association submitted a white paper pointing out that radio advertising is only one part of the whole advertising market.

"We've heard that argument and we've given it serious thought and investigation," said Turetsky. He said the Antitrust Division talked to many advertisers who rely solely on radio to reach the demographic they seek and others who use radio in addition to other media to reach their customers.

In the end, he said, Justice did not believe that a relatively small but sustained change in the price of radio advertising would lead to a migration to all of the other media suggested.

Rumors in the trade press have mentioned "ulterior motives" that the Justice Department must have for its investigations, including election year politics.

"Our investigations have been spurred by what's in front of everybody who pays any attention to this industry," said Turetsky, pointing to the explosion of transactions. Before the Telecom Act, he said, "It would have been pretty unusual for a transaction to spur antitrust concerns."

Turetsky said some in the industry have bemoaned the lack of hard and fast rules from Justice. "That's not the way the antitrust laws work," he said. In the absence of such rules, he said, the Antitrust Division can examine each market based on its unique characteristics.

Despite the apparent setback for ARS, Shapiro said the group did very well in Rochester.

"With the Telecom Act, the industry took five steps forward," said Shapiro. He said the decision should be viewed in light of where the industry was a year ago. The Justice Department decision in Rochester, he said, represents maybe one step backwards.

Meanwhile, if the Justice Department continues to challenge transactions in different markets, group owners can glean more information about how the government's lawyers define antitrust in radio. Since radio has joined the big leagues of big businesses and big mergers, it will have to adopt the trappings of those industries. In the future, one trapping that large group owners may find indispensable is a good antitrust attorney. ☺

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FCC Seeks Radio/Paper Comments

by Jacqueline Conciatore

WASHINGTON The Federal Communications Commission may relax the rules by which it waives the prohibition against newspaper-radio cross-ownership in the same community.

The FCC has called for comments on revising the 20-year-old restriction, which seeks to promote local diversity of viewpoint and economic competition.

In the call, the commission says there may be circumstances in which cross-ownership would serve diversity — if the only prospective buyer of a newspaper is a radio station, for example, or if the combination would strengthen local news service.

It is asking what changes, if any,

should be made to the waiver policy, and what kind of tests it should adopt for evaluating waiver requests. Some areas to be considered: How should market size and/or number of independent voices that would remain in a market be weighted? What media outlets should count as "independent voices"? How should the FCC define the geographical boundaries of a given market? Should size of newspaper be a consideration?

In the past, FCC policy allowed newspaper/broadcast combinations only when: an owner was unable to sell a station, or could sell it only at an artificially depressed price; a market could not sustain separate ownership of the entities; or there existed other special circumstances

that meant application of the ban would fail to serve its intent.

The National Association of Broadcasters has not yet stated a position; spokesperson Dennis Wharton said directors will take up the question in January.

For years Congress prohibited the FCC from using authorized funds to re-examine the cross-ownership restriction, adopted in 1975. But Congress removed that language from recent appropriations acts.

In a more immediate sense, the FCC call for comment was prompted by the merger of Walt Disney Company and Capital Cities/ABC, Inc. That deal created two newspaper-radio combinations, one in Dallas-Fort Worth and the

other in Detroit. The commission denied the waiver request, and also said it did not want to amend its waiver policy on an ad-hoc basis.

"Several of the issues raised by the parties in seeking the waiver would have been more appropriately considered in a comment proceeding rather than an application proceeding," said FCC spokesperson Roger Holberg.

To date, the FCC has granted only two permanent waivers of the cross-ownership restriction, both involving TV stations.

The deadline for filing comments is Dec. 9; for reply comments, it is Jan. 8. ☎

Moving Toward Commercial DAB

► continued from page 1

said Kirk Nesbitt, director of engineering for Rogers Broadcasting and president of Master FM.

"The existing users of Master FM represent 18 stations in the market, so we are considering the initial system will likely have capacity for 20 stations."

The new DAB system will include both AM and FM signals from these companies, with feeds delivered on site either by studio-transmitter links or leased telephone lines. "They'll (all) be direct studio feeds so there will be no degradation of the quality," Nesbitt said. "The DAB broadcast signals will all be equal in quality."

Nesbitt was vague about the transmission strength of the system, saying only that "the transmitter powers are likely to be a few hundred watts." He did confirm that the antennas themselves will likely be mounted on the

roof of the main seven-story pod of the CN Tower, located about halfway up its length.

"It's a tradeoff between transmission line loss and height," Nesbitt said. "We could put the antennas substantially higher, but at that high frequency at L-band, the line losses are considerable."

In terms of duplicating the coverage of Toronto's AM/FM stations on DAB, "the ultimate goal will be to provide that, but, as a first step, we're looking at an initial system that may have 40 kilometer (25 mile) radius of coverage." This coverage would take in most of greater metropolitan Toronto, he said.

So why is the Master FM group making this move now, when DAB receivers aren't due to hit the market until fall of '97?

"The industry has decided that it's the time to do this, that some time ago

Canada established DAB as a new broadcasting system for radio," said Nesbitt, "and the broadcasters who participated in Master FM are interested in demonstrating some leadership."

They're not the only ones showing such interest. So is Michel Tremblay, executive vice president of the Canadian Association of Broadcasters and a driving force behind DAB in Canada.

"As a result of that deal, (we expect) that other broadcasters from the Toronto area will also be latching on and announce some startup plans," Tremblay said.

"We are aware that discussions are going on currently in the Montreal and Vancouver markets. The bottom line is nobody wants to be first, but nobody wants to be the last either. So, on that ground, we should see some significant movement in the top three markets in 1997." ☎

The Land Of AAHS

► continued from page 11

representative for CBC, scheduled and billed network time on Radio AAHS and further agreed to work with CBC to strengthen and expand Radio AAHS.

Earlier this year CBC severed all ties with ABC/Disney and filed a lawsuit in the U.S. District Court in



Minnesota, citing the latter's "alleged deliberate attempts to misappropriate CBC's unique radio programming format and force CBC out of the children's radio market."

CBC further alleged that ABC/Disney used their partnership "to obtain confidential business information ... (in order) to develop and market a competing children's radio network in substantially the same format marketed by CBC."

Plaschko pointed out the differences between how ABC/Disney promoted Radio AAHS with the current arrangement with Universal, calling the latter "a big step forward." In some instances ABC/Disney distanced itself from AAHS; for instance, toy versions of Ozzie and Kazoo were not allowed in Disney theme parks. Universal, on the other hand, is giving the network the freedom to put such characters into shows, programs and the like.

The partnership with Universal is indicative of the network's intention to expand. Radio AAHS is currently heard on 32 AM stations, of which it owns seven, and covers approximately 40 percent of the nation.

"We're really pushing to fill out the top 15," Plaschko said. The network closed last month on the purchase of WPWA(AM) in Chester, Pa., which serves the Philadelphia area, and expects to close in January on WAUR(AM) in Sandwich, Ill., serving the Chicagoland area. In the meantime, Plaschko said the network will "move forward" and seek out other partnerships. ☎



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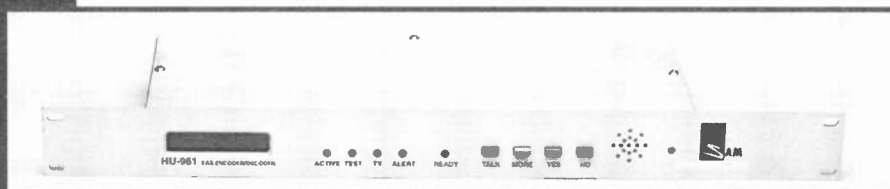
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Morey Amsterdam's Roots Were in Radio

by Bob Rusk

BEVERLY HILLS, Calif. Comedian Morey Amsterdam, who died last month, will be best remembered for his role on "The Dick Van Dyke Show," which ran on CBS TV from 1961-1966.

Long before TV was a twinkle in the eye of CBS, however, Amsterdam had



Morey Amsterdam, Center, With Familiar Friends

established himself as a veteran radio performer. He started at age 10 at KPO(AM), now KNBR, in San Francisco.

I had the pleasure of interviewing Morey Amsterdam many times over the years and he always enjoyed chatting about radio. I met him in 1982 when I created "Calling Hollywood," a celebrity interview show at KSWB(AM) in Seaside, Ore.

I made a trip to California to conduct interviews, and he invited me to his beautiful Beverly Hills home. It was late afternoon and I'll never forget the wonderful aroma that filled the air as his wife prepared dinner.

We got to talking about the other celebrities who lived on his street, like funnyman Danny Thomas. "He lives at the top of the hill," he joked, "and knocks on my door whenever he needs to borrow a cup of jokes!"

Music for the Mob

Amsterdam grew up in San Francisco where his father was concertmaster for the symphony. "I liked to sing," he recalled, "and somebody said, 'Why don't you audition for KPO?' So I did and was put on the air."

From there Amsterdam entered vaudeville with his brother, then went out on his own when his brother opted for a career in "legitimate" music.

By the late 1920s, Amsterdam, who by that time was an accomplished cello player, settled in his native Chicago. He was hired to play in a club owned by notorious gangster Al Capone, who was always nice to the young entertainer.

"At first I didn't even know who Capone was," he told me. "He was

introduced to me as Al Brown, a furniture dealer from Indianapolis."

But after the St. Valentine's Day Massacre in 1929, when gangsters killed seven rivals, Amsterdam decided that it might be a good idea to make a quick escape from the Windy City. He headed back to California and later joined "Al Pearce and His Gang" on the NBC Blue radio network.

"We had the most popular daytime show," said Amsterdam. "It was on for six years and we made personal appearances all over the country. I worked with the performers and built acts for all of them."

New York

It was during this time that he first ventured into television, doing experimental telecasts in Los Angeles. But the video medium was still years away from wide popularity. So Amsterdam eventually headed east, where he set a record that remains unbroken.

"After I had been overseas doing shows during World War II," said Amsterdam, "I went to work at WHN in New

York. There was one week I did 75 shows. That was theater, nightclub and radio performances."

"I was on the air from 9-10 a.m., 11-12, and 2:30-3:30 in the afternoon, plus 7:30-8 p.m.

"I recorded the 9-10 a.m. show when I got to the Strand Theater. While that was playing I went out on stage. When I

continued on page 16 ►

Postal Service Pulls New Anti-Radio Ads

by Bob Rusk

WASHINGTON A U.S. Postal Service newspaper advertisement that tried to convince businesses to spend money on direct mail instead of radio spots has been pulled. The person who developed it has resigned, although it was unclear whether his resignation was related to the flap over the campaign.

The ad stated: "The truth is, when your radio spot is on, only about a quarter of the people are really listening."

It went on to claim that "about half of all advertising on radio goes unnoticed." Similar ads touting direct mail over other advertising media were also part of the campaign.

The ad, which ran in the business section of The Los Angeles Times on Oct. 15, was condemned by Gordon Mason, president of the Southern California Broadcasters Association.

"Here is a taxpayer-supported bureaucracy that is not only in competition with private industry, but is knocking competitive media," Mason told RW. "I think it's a conflict of interest."

The statewide California Broadcasters Association, likewise, was extremely unhappy with the ad campaign, according to Mark Powers, the association's government affairs director.

"This was a case where somebody at an advertising agency said, 'Hey, what a great idea.' But nobody was thinking about (the ramifications)," Powers said.

Postal Service spokesman Frank Brennan said that he "didn't have a

HER BABY'S CRYING.
Sure, SHE'S LISTENING
TO YOUR RADIO SPOT.



clue" where the figures suggesting radio is an ineffective advertising medium came from.

"We didn't write that," he said. He said advertising agency Young and Rubicam did the ads. "It was a contentious campaign, but wasn't meant to be."

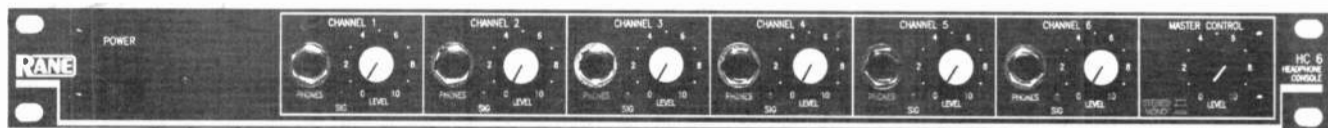
The campaign was developed under the direction of Loren Smith, the Postal Service's chief marketing officer, who resigned last month. Smith was hired in 1994 to make the Postal Service's marketing department more aggressive.

The anti-radio ad, which the Postal Service agreed to stop running at the end of October, was part of a campaign that also knocked television and print advertising. The Postal Service ran the ads in the Los Angeles Times, Wall Street Journal and New York Times.

Brennan said magazine publishers were the first to complain about the ads, which prompted the changes.

"We reevaluated the campaign and are going forward with it," stated Brennan, "but in a less adverse tone." ☹

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Harris Broadcast Expo 1996



RICHMOND, Ind. With our feet barely on the ground after WME, it's on the road again, this time to Harris Broadcast's Expo 1996. This year's free exposition of production and engineering technology will be held on Dec. 5 and 6 at the Clarion Leland in Richmond, Ind.

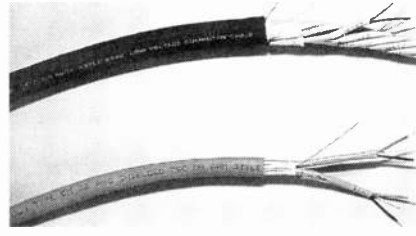
Things will actually get started on Wednesday, Dec. 4 with a welcoming reception at the Clarion. Refreshments will be provided, as are all meals throughout the expo. The exhibit floor opens at 9:30 a.m. Thursday; "early bird" attendees can attend a technical session entitled "Digital Connectivity" at 7:30 that morning. Another technical session, entitled "Nuts and Bolts," will be held that evening.

Friday's early management session will feature small market expert and publisher Bob Doll. The exhibit floor opens at 9:30 that morning, and the show officially closes at 3 p.m.

To obtain a registration form for Expo 1996, call Harris Broadcast at (800) 622-0022. Fax completed forms to Harris at (317) 962-0671.

The list of exhibitors as of press time:

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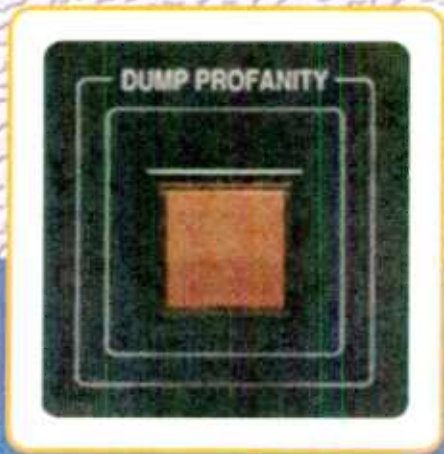
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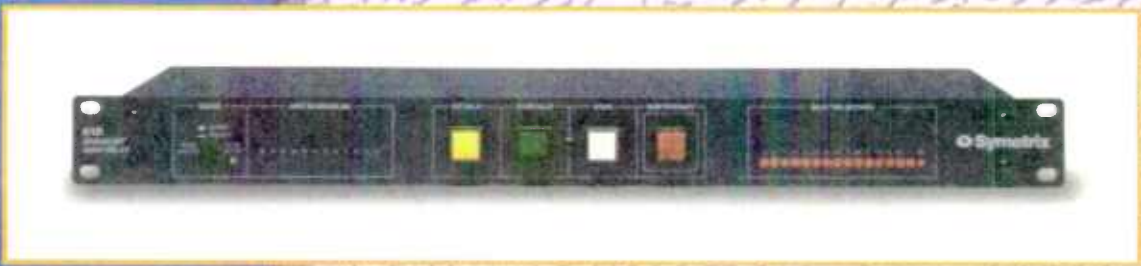
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A Big Day for a Tiny Island

by Andrew Yoder

JAMESTOWN, St. Helena Imagine waking up to find yourself as the station manager of a 1 kW station on a remote island with a population of less than 7,000. The good part is that everyone is listening to your station; on the other hand, there's no way to expand your audience. Or so you might think.

For decades, the tiny island of St. Helena, a British dependent territory 1,200 miles off the west coast of southern Africa, originally broadcast on 1511 kHz, but it was later changed to 1548 kHz. St. Helena is a mostly forgotten island,



known to the world mostly because it was the prison home of Napoleon. Obviously it would be an attractive, historic vacation spot, but there's a problem:

How can you attract potential business from tourists when your island is tiny and hundreds of miles from any land?

Do it on shortwave

Radio St. Helena solved these problems with creativity. They get the attention of the world through shortwave. With the help of John Eckwall and Jan Turner, two shortwave hobbyists from Sweden, Radio St. Helena broadcast via the transmitter of St. Helena Cable and Wireless on 11092.5 kHz USB on Oct. 27. Shortwave listeners around the world tuned in, participated in on-air telephone

continued on page 22 ►

Morey on The Radio

► continued from page 13

finished my act, I'd go upstairs and do the next hour from my dressing room. I had a whole radio setup there."

Amsterdam hosted "The Laugh & Swing Club," "For People Only" and the ever-popular "Gloom Dodgers."

"I wouldn't even walk into the studio 'til I heard the opening theme," he recalled.

"I didn't want to know who was on, and I ad-libbed the whole show. I had an orchestra and guests including Sarah Vaughan, Mel Torme and Vic Damone. Vic came to me when he was about 17 years old and I gave him his first job, singing on the show."

Amsterdam's other program was a disc jockey show, where he never played a record he didn't like. "If I didn't like a tune that was playing, I'd break the record on the air and say forget it!" he recalled with a chuckle.

His presence on the air drew the envy of other performers, including comedian Fred Allen, who once quipped, "The only thing I can turn on without getting Amsterdam is the hot water faucet!"

Morey and Carney

In June 1948 Amsterdam joined the CBS Radio Network, starring as the emcee in a comedy set at the fictional Golden Goose Cafe. Among his supporting players was young Art Carney.

In December of that year, "The Morey Amsterdam Show" switched to CBS television, where it lasted until the following March. It was then picked up by the DuMont network and aired until October of 1950.

That was just long enough for Jackie Gleason to catch a glimpse of Carney's laid-back humor. Gleason, who was getting set to take over as the host of the DuMont variety series "Cavalcade of Stars," brought Carney aboard and the two teamed up to create the male half of the classic "Honeymooners" sketches.

Amsterdam, meanwhile, began hosting TV's first late-night variety show, NBC's "Broadway Open House" in 1950, which later became "The Tonight Show."

A decade later he took on the now-famous role of comedy writer Buddy Sorrell in "The Dick Van Dyke Show." He continued to perform on TV and radio until his career was silenced at last by a heart attack on Oct. 28.

Amsterdam, whose career spanned nearly 80 years, never thought about retiring from the business he loved. "I don't have time for that," he said during our final chat.

"I'm busier than ever and am having a lot of fun. If I had my life to live over again, it would take too long!"

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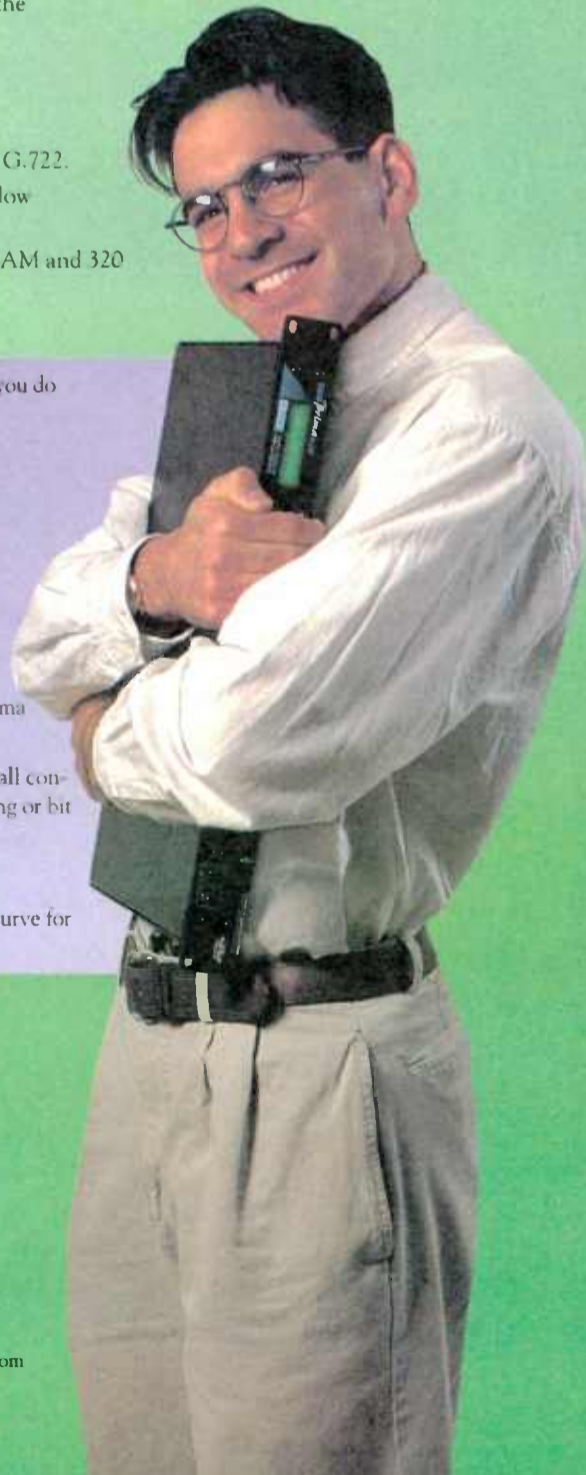
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Circle (41) On Reader Service Card

CIRCUIT THEORY

Find the RMS Voltage of a Sine Wave

by Harold Hallikainen

SAN LUIS OBISPO, Calif. In the previous article in this series (RW, Oct. 30), we discovered that the average voltage of a full cycle of a sine waveform is 0 volts (since the positive side "cancels out" the negative side), while the average of a half cycle of a sine waveform is the peak voltage times $2/\pi$.

This was determined first by taking the average of several instantaneous voltages through the half-cycle, then by increasing the number of samples towards infinity by applying a little calculus. This time, we'll look at the RMS voltage of a sine wave.

Root mean square

We have heard that RMS stands for "Root Mean Square," but that expression may not be the model of clarity. If we recall that the arithmetic mean of two numbers is just the average of those two numbers, the expression starts to make a little sense.

What we are doing is taking the square root of the average of the squares of the instantaneous voltages.

As a side note, I found while tutoring algebra this summer that the *mean* is a number that is part of a sequence of numbers that is between two other numbers.

If the sequence of numbers is an arithmetic sequence — where each successive number is the previous number plus some constant — each of the elements of the sequence between two other elements of the sequence are means of the other two.

For example, in the following sequence of numbers:

1, 4, 7, 10, 13, 16

each successive number is determined by adding three to the previous number. In this sequence, the means of 4

Radians	Degrees	Volts	Power (W)
0	0	0	0
0.392699	22.5	0.382683	0.1464463
0.785398	45	0.707107	0.5
1.178097	67.5	0.92388	0.8535543
1.570796	90	1	1
1.963495	112.5	0.92388	0.8535543
2.356194	135	0.707107	0.5
2.748894	157.5	0.382683	0.1464463
3.141593	180	0	0
3.534292	202.5	-0.382683	0.1464463
3.926991	225	-0.707107	0.5
4.31969	247.5	-0.92388	0.8535543
4.712389	270	-1	1
5.105088	292.5	-0.92388	0.8535543
5.497787	315	-0.707107	0.5
5.890486	337.5	-0.382683	0.1464463

Table 1: Instantaneous Voltage and Power.

and 13 are 7 and 10.

How about if there is only a single mean?

That single mean is then the *arithmetic* mean. If we try a couple examples, we find that 7 is the arithmetic mean of 4 and 10. Further, 7 is the average of 4 and 10

(because $(4+10)/2 = 7$).

So, to find the arithmetic mean of a couple numbers, just take the average.

Another kind of sequence is a *geometric* sequence. In a geometric sequence, each successive number is determined by multiplying the previous number by a constant (as opposed to adding a constant, which we did before). This geometric sequence is formed using a constant of 3:

1, 3, 9, 27, 81, 243

Nine and 27 are geometric means of 3 and 81 in this sequence. Nine is the geometric mean of 3 and 27 in this sequence.

We normally find the geometric mean by taking the square root of the product of the two numbers. Here, $3*27 = 81$, and the square root of 81 is indeed 9.

How about 27 and 243? Work it out: $27*243 = 6,561$ and the square root of 6,561 is 81.

Back on RMS, we will take the square root of the arithmetic mean of the squares of the instantaneous voltages.

Why? It has something to do with power.

Let's see what the average power delivered by a 1 volt peak sine wave is into a 1 ohm resistor.

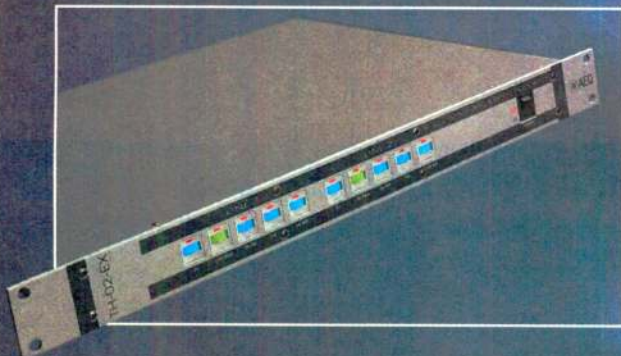
Starting with the formula for power, $P = IV$ and substituting Ohm's Law's $I = V/R$ for I , we get: $P = V^2/R$.

Further, the instantaneous voltage of the sine wave is: $V(a) = V_p * \sin(a)$ where V_p is the peak voltage and a is how far we are into the waveform in degrees or radians (depending upon which sine function we are using).

Table 1 shows the voltage at various points through a single cycle of a 1 volt peak sine wave.

continued on page 20 ►

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ROOTS OF RADIO

Remember These Radio Chefs?

by Richard W. O'Donnell

PORT RICHEY, Fla. Americans will have a lot of help preparing their Thanksgiving dinners this year.

There are great chefs all over the video screen. You can't channel surf without running into one of them. If it isn't the "Galloping Gourmet," it's "Today's Gourmet" or "Gourmet Cooking." There is even "Ciao Italia"! Can you guess what is cooking in that kitchen?

When was the last time you went to a friend's home for dinner, and been informed the main course would be concocted from a TV recipe? It seldom

happens. Don't blame the TV cooks; your home chef probably does not want to take any chances, and will use an old familiar recipe. Maybe that is why radio, in its formative stages, did not have any major national cooking shows. Think back. Famous radio chefs are more difficult to find than that little old haystack needle. Cooking shows failed to capture national ratings.

A&P and Spry

In 1930, NBC had something called "Our Daily Food." It was sponsored by the old A&P food store chain, and the show was loaded with recipes. It lasted

for a year or so, and then was gone. Those were the Depression days. Perhaps listeners lacked the money to buy the ingredients needed.

Remember "Aunt Jennie," the sweet lady who lasted on radio for two decades? At the end of most of her shows, she used to come up with a recipe. All required Spry, the cooking miracle that sponsored the daily soap opera on CBS. And you could find the recipes on labels on cans of Spry.

When Mary Margaret McBride first started her long run on the airwaves in 1934, she used another name. She was supposed to be the grandmother type who



Elsa Maxwell, with Jack Paar

knew all there was to know about everything, including cooking. She was on the air for more than three decades, but as her ratings climbed, she lost her cookbook.

Kate Smith also featured recipes on her daily show, when she came across food secrets she wanted to share with listeners.

The soap operas — Ma Perkins, Stella Dallas, Joyce Jordan and all the gang — were great at sneaking in recipes toward the end of a show. You were warned to "have your pencil ready" for the recipe or to take down the address to request a copy.

Hundreds of local stations had cooking shows but they never produced a "star" who went network in a big way.

In Boston, a chap named Gus Saunders read recipes over the air. At times, a woman named Marjorie Mills was with him at the microphone. She was chatty and popular, but it was Gus who handled the recipes. He had a magic touch, and could make you think toasting bread was an adventure. If there is a Hall of Fame anywhere for radio recipe readers, Saunders deserves the first pedestal.

Before the days of TV news, newspapers dominated. Each journal, whether morning, evening or Sunday, contained a household section loaded with fine recipes. This may help explain why radio did not fall head over heels for cooking shows. Then television shuffled the media cards, and our American press lost a fair share of its impact. Those newspaper recipes just weren't as important.

In the recipe department, radio also had to compete with magazines for women. In their heyday, they were the prime source of recipes for the home cook. No radio cooking show could reach as large an audience.

Creamy Kraft cheese

Of course, prime time radio reached an awesome audience. But few food sponsors took advantage of this opportunity. Sure, they pushed their products, but if you wanted recipes, they had an address you could contact.

An exception was the "Kraft Music Hall," a top-rated show in the '40s. Ken Carpenter and Mary Jane Higby did the Kraft commercials. Toward the end, announcer Ed Herlihy gave you the "Recipe of The Week":

"After you have mixed the spaghetti and tomato sauce together," ... pause ... "add the hamburger ... and blend well. Then, pour on," ... pregnant pause ... "your rich and creamy melted Kraft cheese ... and you will have a meal fit for a king. It will melt in your mouth."

After Herlihy was done with you, you would have knocked down the doors of your neighborhood market to get some Kraft cheese, even if you did not like cheese. That guy knew how to make you hungry in a hurry.

continued on page 19 ►

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World Radio History

SIGNAL-TO-NOISE

Automatic Mixing in the Field

by Frank Beacham

NEW YORK Soon after the verdict in the O.J. Simpson trial last year, ABC's "Nightline" called audio technician Steve Kirsch with a freelance assignment. The show that night would feature a "town meeting" with a cross section of citizens reacting to the verdict. Nearly 30 microphones would be needed for a free-for-all of spontaneous talk, shouting and debate.

Kirsch got the call because ABC knew his company, Silver Lake Audio in Rockville Centre, N.Y., was a specialist with the Shure FP410 IntelliMix audio mixer. The FP410 is the only battery operated portable mixer available that allows automatic, hands-free mixing with standard microphones.

"People were yelling and screaming," Kirsch said of that "spirited" broadcast. "We used some lavs and some audience mics ... 27 in all. It worked great."

Kirsch, who has mixed sound for the "Bob Costas' Coast-to-Coast" radio broadcast for nearly a decade, has used the Shure FP410 since its introduction in 1991. From locations such as noisy sports bars and cruise ships, Costas interviews sports figures for the weekly broadcast over a network of more than 200 affiliate stations. The FP410 has become Kirsch's mixer of choice, replacing the venerable Shure M267. Today, his company owns 18 units.

Adjusting gain

Though several manufacturers offer AC-powered automatic mixers for fixed and studio installation, the Shure FP410 dominates the market for field

production. It has proven valuable because the sound of location panel discussions and talk shows can be significantly improved by using automatic mixing methods instead of a large number of open microphones.

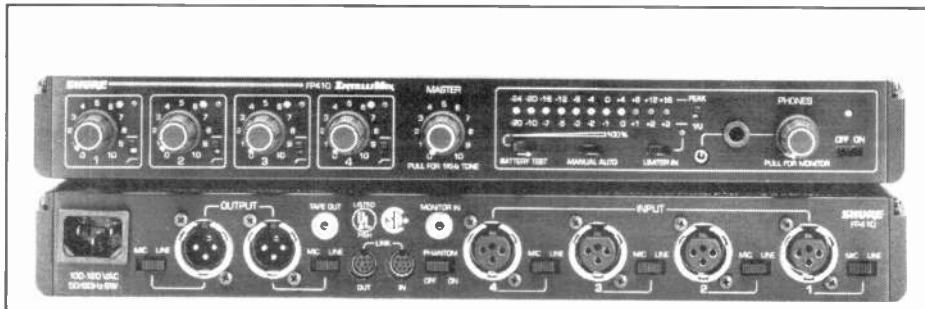
In essence, the Shure FP410 keeps unused microphones attenuated and automatically opens them within milliseconds when they are needed. It helps eliminate comb filtering, ambient noise, reverbera-

tion build-up and acoustic feedback problems that can plague remote broadcasts when multiple open microphones are employed.

Without an automatic mixer, each time the number of open microphones is doubled (i.e., one to two, two to four, four to eight) the overall system gain is raised 3 dB, said Michael Pettersen, a member of the original product development team for the FP410. As a result of this gain change, ambient noise and reverberation also increase. The FP410 compensates for this by lowering overall gain by 3 dB every time the number of open microphones doubles. This keeps ambient noise and reverberation constant no matter how many microphones are open.

The IntelliMix concept

The first, called "Noise Adaptive Threshold," activates microphones for speech but not for constant location back-



ground noise. This function continuously adjusts the activation threshold so that only signal levels louder than the background sound will activate a channel on the mixer.

Second, "MaxBus" limits the number of active microphones to solve the problem of comb filtering. With this circuit, one talker will activate only one channel even if multiple microphones are "hearing" the talker. The number of open channels will always equal the number of

talkers at any moment.

The third feature, "Last Microphone Lock-On," is a circuit that keeps the most recently activated microphone open until a newly activated microphone takes its place. It assures seamless background ambience. Without this feature, a long pause in conversation might allow all mics to turn off, creating the perception that the audio signal has been lost.

Though the FP410 has a good reputation for its performance, automatic mixing technology is not perfect. Extraneous sounds like clothing noise or the tapping of a pencil can trigger a mike to open accidentally without a talker.

"Automatic mixers can make mistakes and people do report occasional misses," said Dan Dugan, the man credited with inventing the first automatic microphone mixer. Dugan, owner of Dan Dugan Sound Design in San Francisco and the manufacturer of his own Model D studio automatic mixer, said he has personally tested the FP410.

"I recommend it as a good product even though it doesn't have my patent in it," said Dugan. "It is really the only viable portable to choose from."

List price for the FP410 is \$1,650. It's available from Shure Brothers; call (847) 866-2200 or contact a Shure dealer. Silver Lake Audio offers FP410s for rental. Phone: (516) 763-1776.

□□□

Frank Beacham is a New York-based writer and producer. Visit his web site at: <http://www.beacham.com>. Mail: 163 Amsterdam Ave. #361, New York, NY 10023. E-mail: frank@beacham.com

Cookin' on The Radio

► continued from page 18

Last, but certainly not least, we come to "Elsa Maxwell's Party Line," a show heard on NBC and Mutual during the early '40s.

Maxwell was billed as the world's most famous party-giver, and she had tons of tales about the famous and rich to tell on her show.

During her radio years, Maxwell was also a crusader. She urged overweight people to cut down their fatty foods and to get plenty of exercise. She was years ahead of the low fat champions we have today.

Her sponsor was Ry-Krisp, a tasty little cracker that was supposed to keep you trim.

Whenever possible, Elsa would come up with a low fat recipe to aid her listeners in the war against flab.

Interestingly, when the radio star first came on the air, she weighed almost 200 pounds.

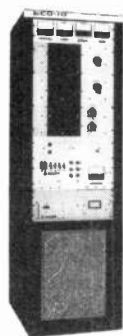
Elsa, who can best be described as roly-poly, was crusading at the same weight when her show was canceled.

Evidently, she could not resist all that delicious food served at the parties she tossed for her celebrated chums.

□□□

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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Sine Waves and RMS Voltage

► continued from page 17

To find the average of these instantaneous powers, we can merely add them up and divide by the number of samples.

My calculator shows the sum of the powers to be 8.0000.

Dividing by the number of samples (16), we find the average power is 1/2 watt (or 500 mW).

This continuously varying voltage dissipates 500 mW in a 1 ohm resistor. What DC voltage would dissipate that same power?

Above, we found that $P = V^2/R$. Solving for V, we get $V = \sqrt{P \cdot R}$. In this case, $R = 1$ ohm, so we can find the voltage by taking the square

root of the power.

Therefore, a DC voltage source of $\sqrt{500\text{mW}}$ would deliver the same power to a 1 ohm load as a 1 volt peak

What did we do? We took the square root of the mean of the squares of the instantaneous voltages, hence *root mean square*, or RMS.

We can keep increasing the number of samples toward infinity and find the true average of a continuously varying wave form.

sine wave does.

Doing the square root (more popular than the Macarena?), we find the equivalent DC voltage is 707 mV.

If we have a higher peak voltage, all the voltages in the Volt column of Table 1 would be multiplied by a constant (the peak voltage).

All the powers in the power column would be multiplied by the peak voltage squared, which would result in an average of $V_p^2/2$.

Taking the square root of the average, we get $V_p/\sqrt{2}$ as the RMS value of any sine wave. Messing around with the equation, we find that $V_p = V_{RMS} \cdot \sqrt{2}$.

Hence, a 117 VAC power line has a peak voltage of 165.463 volts. The instantaneous voltage varies between 165.463 and -165.463 volts.

We were lucky that our average turned out as well as it did.

Choosing 16 samples in a cycle gave us the exact relationship between RMS and peak voltage.

Recall from our discussion of average voltage last month that we can keep increasing the number of samples towards infinity and find the true average of a continuously varying waveform.

The equations in Figure 1 show how calculus can demonstrate the relationship between peak voltage and RMS voltage.

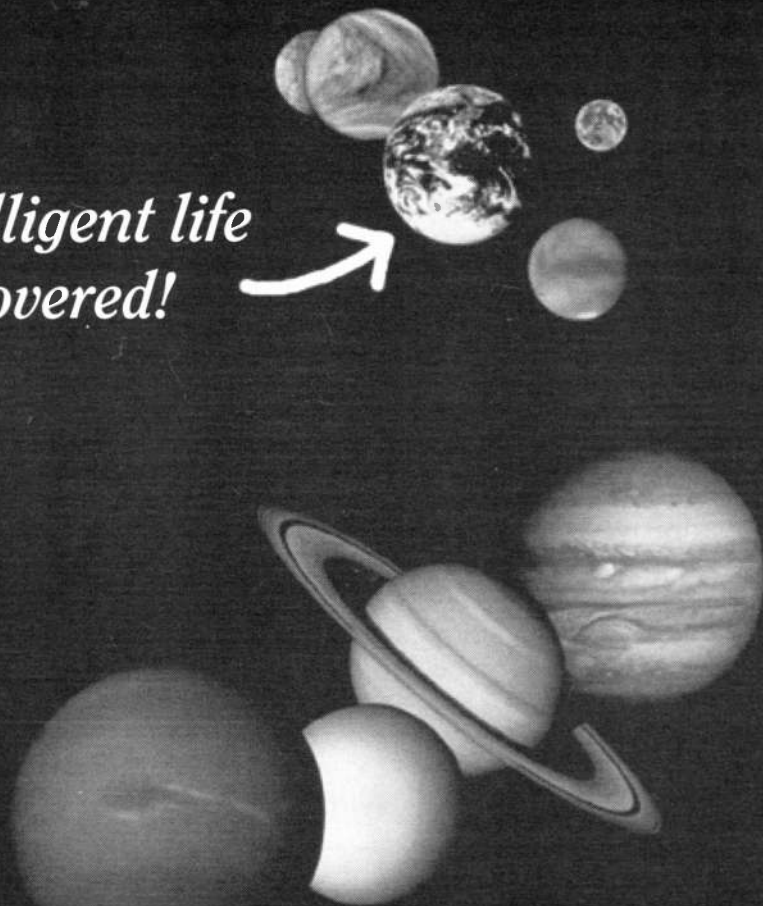
□ □ □

Harold Hallikainen designs transmitter control and lighting equipment for Dove Systems, a manufacturer serving the broadcast and entertainment industries.

He also teaches electronics at Cuesta College and is an avid contra dancer. He can be reached at (805) 541-0200, fax (805) 541-0201 or by e-mail at hhallika@slonet.org

An archive of these articles is maintained at <http://slonet.org/~hhallika> on the World Wide Web.

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Figure 1

$$V_{RMS} = \sqrt{\frac{\sum (V(t))^2 \Delta t}{T}}$$

$$V_{RMS} = \sqrt{\frac{\int_0^T (V(t))^2 dt}{T}}$$

$$V_{RMS} = \sqrt{\frac{\int_0^{2\pi} (V_p \sin(t))^2 dt}{2\pi-0}}$$

$$V_{RMS} = \sqrt{\frac{\int_0^{2\pi} V_p^2 \sin^2(t) dt}{2\pi}}$$

$$V_{RMS} = \sqrt{\frac{V_p^2 \int_0^{2\pi} \sin^2(t) dt}{2\pi}}$$

$$V_{RMS} = V_p \sqrt{\frac{\int_0^{2\pi} \sin^2(t) dt}{2\pi}}$$

$$V_{RMS} = V_p \sqrt{\frac{\frac{1}{2}(t - \sin(t)\cos(t)) \Big|_{t=0}^{2\pi}}{2\pi}}$$

$$V_{RMS} = V_p \sqrt{\frac{1}{4\pi} \left(\frac{(2\pi - \sin(2\pi)\cos(2\pi))}{-(0 - \sin(0)\cos(0))} \right)}$$

$$V_{RMS} = V_p \sqrt{\frac{1}{1/4\pi}(2\pi-0-0)}$$

$$V_{RMS} = V_p \sqrt{\frac{2\pi}{4\pi}}$$

$$V_{RMS} = \frac{V_p}{\sqrt{2}}$$

A Day in the Life of a Tower Man

by Troy Conner

BRASSTOWN, N.C. I am often asked by non-climbers what it feels like to climb a tall radio or television tower. I suppose they vicariously wonder what it is like to work in an environment so foreign to their own daily experiences, in an environment so utterly exposed and so far above the earth.

Well ... that depends almost entirely on Mother Nature. Sometimes, it's just plain beautiful. Given a sunny day and a light wind, all is well with the world. Even the heavy climbing belt and tools strapped on my fanny somehow seem lighter. In conditions like these, I approach the tower with a jaunty step and a whistle.

In my travels about the country, I have seen the Hudson River at sunset, from 850 feet above a mountain top in Poughkeepsie, N.Y. I have viewed the Statue of Liberty from a small, 260-foot tower owned by the Catholic Church in Brooklyn, N.Y. I have been awed by the Houston skyline at night from 1,377 feet and looked out upon Atlanta from 1,174 feet.

I can think of so many spectacular sights, from such unique panoramic vantage points: the immaculately groomed horse country of Lexington, Ky., the Black Hills of South Dakota, and Boston Harbor viewed from 1,100 feet.

In the District of Columbia, the landing pattern for Washington National Airport literally wraps around a 750-foot self-supporting tower. Standing atop that tower, you watch planes on final approach circle at eye level, spaced for landings only minutes apart. It is a neat synchronized parade of airliners.

Spectacular, dangerous work

One Fourth of July, while working in North Miami Beach, Fla., we rode the elevator to a platform at about 800 feet. That night, around us, we counted more than a dozen community fireworks displays.

One in particular was close enough that the explosions occurred roughly at our level and less than a half-mile away. It was an awesome perspective. The feeling was one of being in the middle of the fireworks.

Unfortunately, just as life is not all sunshine and balmy breezes, neither is tower work. The formidable enemies of the tower worker are darkness, wind, rain, snow and cold.

Each adversary presents its own unique difficulties, and any good tower worker worth his salt can recall at least a dozen good weather horror stories.

As a result of RF exposure recommendations, night work is becoming more common in the tower service industry. One night sticks in my mind as a truly miserable tower experience.

Due to commercial and programming considerations, our schedule called for us to start work just after midnight and finish shortly before dawn. Normally, Charleston, S.C., is pleasant, if a wee bit hot and humid. This particular night was foggy, with drizzling rain, and about 40 degrees.

A few minutes after the antenna was safely powered down, we boarded the tiny elevator and began our ascent. The ride to 1,737 feet took a little more than 15 minutes. At one point, we passed through a dense fog layer several hundred feet thick.

Once above the fog, our headlamps illuminated only the galvanized skeletal steel and the nearby drops of lightly falling rain. The remaining light then disappeared into the inky blackness only a few feet outside the tower.

Above us a layer of light gray rain clouds swirled and moved past.

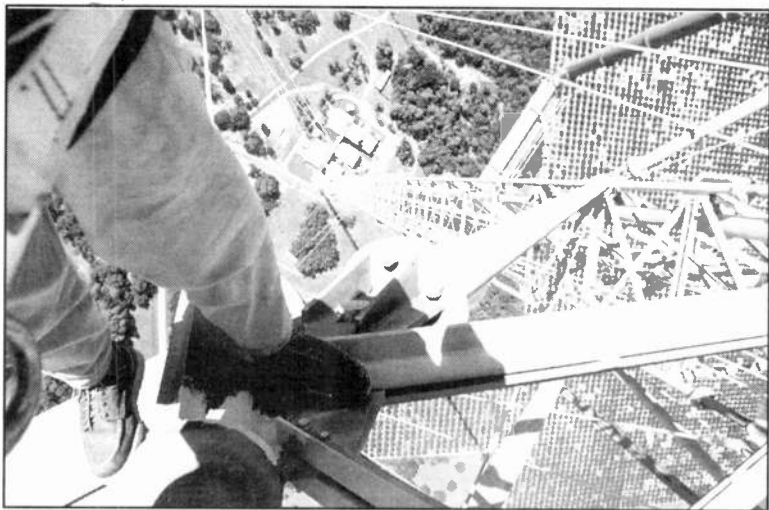
The fog layer below us blocked all but a muted yellow glow of the lights on the ground. The effect was ethereal, as though we were inside the clouds. It was a beautiful view from an extraordinary perspective that few people experience.

It would have been far more enjoyable if it hadn't been so damned cold and so very wet.

While the rain only amounted to a drizzle, water literally streamed down the steel from above us. An



The author snapped these photographs 200 feet above Morristown, Tenn., and 1,650 feet above Tampa, Fla.



occasional wisp of cloud or fog would envelop the tower, further soaking us. After six exhausting hours of wet, cold, numbing work, we descended the tower as dawn came.

Working at night is beautiful sometimes, but it's never really much fun. Working in the rain can be slippery and downright scary. Working in both — in the rain, at night — requires single-minded attention to safety and dogged concentration to the task at hand.

In bad conditions, one must dismiss the unpleasantness of the situation. Concentration instinctively becomes myopic; mental blinders focus you on the work and then on getting the hell off of that tower as quickly as possible.

Aside from rain and darkness, high wind and extreme cold challenge a tower climber. Few people realize how different the wind is at 300 or 400 feet up. Once clear of the trees, the wind begins to show its teeth.

Even a moderate, gusting 10–15 mph wind is disconcerting on a tower. At about 20 mph, jackets flap and snap like tattered flags. Even the normally simple task of taking notes becomes a challenge.

Conditions are almost always "a bit breezy" above about 500 feet. Anywhere above 1,000 feet, the wind can truly howl.

At certain wind speeds, most towers vibrate and buzz from aeolian vibration based on their height and mass. Again, mental concentration on the job at hand allows you to block out much of the buzzing, fluttering and flapping.

Way, way up

The Federal Aviation Administration and prudent engineering standards limit the height of steel transmission towers to 2,100 feet. Normally, this means about 2,000 feet of actual tower and 100 feet of antenna.

These massive towers are, without debate, the tallest man-made structures in the country. They are taller than the tallest buildings by a comfortable margin of 500–600 feet.

While the view is indeed stellar, better than the finest corporate corner office, the working conditions are slightly less plush. You see no



Man of Steel

mahogany desks or cushy leather chairs. Coffee breaks are rare, at best, and the bathroom is way down the hall. On the plus side, office politics are non-existent, everyone pulls their weight and the required attire is casual (if not a tad grubby).

As an owner, I often climb alone, doing inspections, taking notes and measurements, snapping pictures and otherwise preparing proposals.

These solo climbs are mentally much different than climbing with a crew.

When you are alone, the tower is much more intimidating and the sensory elements seem more extreme: man-vs.-tower, as it were.

With a crew, the atmosphere is normally much more relaxed and fun. You find chatter on the radio, jokes being told, good natured name-calling, humorous insults, how-to head scratching and a genuine camaraderie that often makes the day.

I think most full-time tower workers love what they do. It is a feeling of being part of a small group of elite professionals, a group viewed mostly as steel-nerved nuts, crazies who on a daily basis perform feats unimaginable to the general public.

Personally, I can't imagine a career more physically and mentally challenging that is also so immensely rewarding.

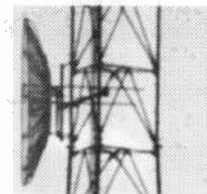
The satisfaction of a complex job well done, albeit one few people even know of, is tremendous. When asked my occupation, I usually tell people I have a Masters in Engineering but that I climb towers for a living and consider myself an ironworker.

□ □ □

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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Radio St. Helena Day

► continued from page 16

calls, and sent faxes and e-mail to thank Radio St. Helena for the fun, four-hour broadcast.

It consisted of music from St. Helena, contests, news and tourist information. Dozens of calls to the station were aired from England, Ireland, Germany, France, Belgium and Sweden. Even though the broadcast was beamed at Europe, the station also received calls from the United States, Canada, Australia and India.

Although Radio St. Helena was established in 1967, the shortwave semi-annual venture is a relatively new effort. The first shortwave transmission was in late October of 1990. The station returned for

a second Radio St. Helena Day in late October 1992 for the 25th station anniversary. The plans for the annual

The only access to St. Helena and Tristan da Cunha is via boat.

broadcast fell through in 1995.

Shortwave listeners, seeking strange and distant lands, typically seek out radio

stations in remote locations; Radio St. Helena Day is ideal for them. St. Helena is a speck in the South Atlantic. Its closest neighbors, still hundreds of miles away, are tiny Ascension Island, home of massive BBC and Voice of America shortwave relay stations, and Tristan da Cunha, far to the south, the location of the Tristan Broadcasting Service (known as the all-time greatest catch for shortwave listeners).

Just one ship

Although Ascension Island has an airport, the only access to St. Helena and Tristan da Cunha is via boat. Only one ship, aptly named the RMS St. Helena, travels regularly to St. Helena, with stops at Cardiff, Wales and Cape Town, South Africa.

These islands are far from self-sufficient; inhabitants are dependent on the

ship for virtually everything tangible: food, medical supplies, machinery, mail and tourists.

Radio St. Helena Day is an interesting event for shortwave listeners, but it is fascinating entertainment for the residents of this small, remote land.

"It was really an exciting evening for listeners on the island as well as, from all accounts, listeners in other parts of the world," said Tony Leo, station manager. "Being isolated as we are, it was a real thrill to have calls from so many (listeners)." Leo said the station also received faxes and letters, stating how pleased listeners were with the broadcast.

"It's not every day on St. Helena that you can hear people from France call you up and say, 'I wish you very, very well' ... very strongly."

Aside from the money earned from tourism, the only other income to St. Helena comes from the export of small quantities of fish, coffee, honey and local handicrafts. Radio St. Helena has improved the local economy by promoting tourism on the broadcasts, and selling Radio St. Helena T-shirts and special commemorative stamps through the Philatelic Bureau of the St. Helena Post Office. Most radio stations have no problem obtaining promotional CDs, but it's more difficult when you are working on a tiny island with only a few thousand inhabitants. The station came up with a

Radio St. Helena has improved the local economy by promoting tourism.

music-gathering CD lottery. The rules: each listener who sends in a CD of their choice will have their name entered into a drawing. The winner will receive a Radio St. Helena crested plaque. The second person picked will receive a Radio St. Helena tie. Tony Leo offered another new competition for 1996 to promote the broadcast and St. Helena.

The first people to respond correctly to three questions about St. Helena will receive a plaque and a book of St. Helena songs. With a local radio station that lacks music and with little access to the rest of the world, residents enjoy their own music. This year's broadcast featured a few local musical selections, including "My St. Helena Islands" by Dave Mitchell.

The broadcast was not flawless. After the lively trumpet interval at the sign-on at 1900 UTC, audio unexpectedly dropped out for one minute even as the governor of the island officially opened the Radio St. Helena Day festivities. Undaunted, the station staff carried on with a spirit of friendliness and adventure, if not slick professionalism.

The next broadcast is scheduled for Oct. 26, 1997.

Andrew Yoder is a freelance writer and author of numerous books and articles on shortwave radio and electronics. Send him e-mail at ayoder@cvn.net

For more information on the island of St. Helena and on the actual broadcasts, check <http://www.sthelena.sel> on the World Wide Web, or write to: Radio St. Helena, The Castle, Jamestown, St. Helena, South Atlantic Ocean. If you choose the latter, expect to wait a while for a response. After all, the RMS St. Helena can't get to the island every day.

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World Radio History

Hometown Station Memories

by Alan Haber

FARMINGDALE, N.Y. Even today, I can feel the torturous pedaling of my blue, no-speed Royce Union bicycle in my knees and in my thighs. I can close my eyes and imagine making my way up Main Street to the stamp shop for the most booty that 50 cents could buy. I can feel the air whipping around me, my breath shortened and my muscles stretched too far.

Without hesitation, I can summon up all of the feelings I felt growing up in Farmingdale, N.Y., so many years ago. I can feel my transistor radio pushing up against my right ear through my pillow, as I listened to radio stations far, far away. I can see myself sitting in my

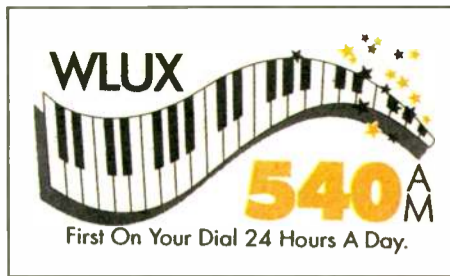


Joe Roberts of WLUX

room, jotting down the WABC(AM) survey spots one by careful one.

My world meant everything to me in my youth, as it does today. Radio was frequently at the center of my world, but my world often felt partially empty because Farmingdale didn't have its own radio station.

Not that I didn't give the fantasy a go — my "radio station" was more a figment of my imagination than a real and true broadcasting facility (after all, a kiddie microphone and a portable record player were its only components). It was in my bedroom, and the only



people who could "hear" it were the members of my family (if they were standing outside the door).

I've always held some kind of affection for Farmingdale. Time has warped and softened my memories of growing up there; the things that made me unsettled during my childhood seem not to taunt me as much these days.

I've come to terms with my inability to "fit in" with most other kids back then — I wasn't much into sports and I couldn't play chess worth a lick.

I was a radio junkie who could be seen many afternoons walking down the streets near my house, clutching my transistor radio to my right ear, singing along with the songs beaming out of WABC and aping their personalities' patter.

Boy, could I listen to the radio! How I would have loved having a radio station in Farmingdale to which I could ride my bicycle, where I could hang out and watch the DJs spin records and deal their clever patter. Oh, what heaven that would have been.

For now, though, Long Island Multimedia has made my decades-old wish a reality by undertaking its first radio venture.

Unforgettable

WLUX(AM), at 540 on the dial, has, since Oct. 27, 1995, been beaming 250 watts to Long Islanders and listeners as far away as Connecticut and Massachusetts.

And it's all coming out of *my hometown*. (Islip, on Long Island, is the city of license, but the station is physically in Farmingdale, and that's enough for me.)

Located in an industrial area on Smith Street off Route 110 in East Farmingdale, WLUX, formerly a religious station called WLIX, plays a wide mix of traditional popular music ... with a twist, according to Program Director and afternoon drive announcer Joe Roberts. Listeners dig into Frank Sinatra and Jackie Gleason and Dean Martin and Steve Lawrence and Eydie Gorme.

The trick, Roberts told me, is to not stay in any one musical genre for too long. About 25 percent of the music played on the station, which boasts a library of 3,700 songs, is of the contemporary variety.

With on-air voices like Roberts', WLUX has a unique, Long Island-esque sound that says *home* to the station's 35-64 target demo.

The station switches to ABC Networks' Stardust format during certain times on weekends, and evenings during the week. Some listeners, however, are younger, like the 22-year-old who told Roberts that WLUX plays all the time in her parents' pizza place.

Some people might consider the WLUX approach old-fashioned, and they would probably be correct. But what's wrong with old-fashioned? The station's mix of music and information, including various handy, household-type tips on such topics as working with pins and needles, sounds somehow familiar to my

continued on page 50 ▶

Audio quality and processing power

Digigram PCX audio. It's all in the cards!

When you choose a workstation that uses Digigram PCX digital audio cards, the deck is stacked in your favor.

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With Digigram PCX audio cards, you're assured a winning hand. Draw on a host of audio and multimedia applications of the more than 80 developers who bank on the Digigram platform.

Contact Digigram to learn more about how to make your next workstation less of a gamble.



Digigram PCX advantages

- Ease of use and enhance productivity.
 - Simultaneous play and record; pitch shifting; equalization; noise reduction; time compression/expansion; fade-in, fade-out, and cross-fade; audio file merging and fixing; and many other features.
- Several models. Applications for radio, television, recording studios, multimedia.

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EAS News & Views

LATE EDITION

HARRIS ANNOUNCES. . .

BUYBACK PLAN

Due to unprecedented demand, Harris Corporation Broadcast Division has announced a plan to solve buyer's remorse.

Those of you who purchased another brand the first time, may now trade in that unwanted EAS system toward the system you wanted all along, ENDEC by Sage Alerting Systems.

If you are in possession of a free and clear certified EAS (not EBS) system in mostly working condition, we will offer a trade-in of \$400 toward a Sage ENDEC system listed at \$2395.

Since everything you need is probably already in there, Harris and Sage make ENDEC an easy choice.

Stations not yet in the queue are still able to obtain delivery before the deadline of this January 1. BUT!, orders or requests for trade-ins should be made before November 20.

If you plan to program the unit (FIPS codes, etc.) you'll want a few days of programming time and "dry running". If you want your ENDEC programmed by us, let us know and give us at least 10 days lead time to accomplish programming for you.

Sage ENDEC has been called "the Elegant Solution." It is the one you want and need to meet January 1 compliance. Let us buy back any mistakes and supply you with the EAS unit that passes the tests of performance, ease of use, and value. ENDEC from Sage Alerting and Harris.



"Since everything you need is probably already in there, Harris and Sage make the ENDEC choice an easy choice."

For more information about making the best EAS decision for your station, contact the Harris Broadcast Sales Center today:

1-800-622-0022

FAX: 317-966-0623

<http://www.broadcast.harris.com>



11th Hour:

Don't let the EAS deadline catch you off guard.

"Ripken's rounding third after belting a long fly ball deep into right field! Here's the throw to the plate — it's going to be a close one! The crowd's on its feet, and the call is...."

"THIS IS A TEST, for the next 60 seconds, this station will conduct a test of the Emergency Broadcast System. This is only a test."

The intrusive two-tone alert signal punctuating Emergency Broadcast System (EBS) announcements has ruined many a ball game over the years. The good news for viewers is that this tired old system has been replaced by a souped-up enhancement that will eventually make the two-tone signal a thing of the past. The bad news for the operators is that, compliance is mandatory and must be on line at all radio stations by this January 1.

EBS is a product of America's "duck and cover" days, designed to create a pipeline over which the president could speak to the public in times of national emergency. By the start of the 90s however, complaints from every corner claimed that the two-tone test signals were a tune-out.

This new EAS system streamlines the process and creates an atmosphere that removes the "cry wolf" syndrome from listener's point of view and significantly reduces the tune-out factor for broadcasters.

The EASy Choice

by
GEORGE L. SOSSON
 CEO/PRESIDENT
 RADIO EQUITY PARTNERS

Running a group of 19 high performance radio stations is a daily challenge. Deciphering the FCC EAS rules and selecting the appropriate equipment to fulfill the FCC requirements is an even bigger challenge. One of the advantages of running a broadcast group like ours is the many talented resources we have at the station level. I asked our station engineering staff to investigate what Emergency Alert System equipment was available and how we could best satisfy the need of Radio Equity Partners while satisfying the FCC requirements. At present, there are only two FCC type certified Emergency Alert System encoders/decoders, the TFT 911 and the Sage ENDEC. We carefully studied them both. My station engineers are a tough bunch to satisfy, and they spent considerable time trying to understand the differences between the available equipment. When it was all over, I concluded that the Sage EAS ENDEC system was the right choice for us.

What were the important requirements of EAS equipment for REP stations? First and foremost, the equipment had to be easy to operate. We have a wide diversity of board operators ranging from superstars doing our shows to part-timers doing the weekend and night shifts. We had to be convinced that every one of them easily could meet the FCC requirements of sending and receiving weekly and monthly tests and relaying emergency messages from the National Weather Service, local civil authorities or even a national alert from the President of the United States. The Sage 4-button ATM design meets our needs. The competitive unit with more than 47 buttons was just too confusing.

Second, the equipment needed to interface easily with our many and

varied studio and transmitter facilities. Sage EAS ENDEC comes standard with six analog inputs and six digital input/outputs, and automatic program line switching for unattended operation which made it extremely versatile for our stations that are live, computer assisted or totally automated. We wanted to be able to operate in manual EAS mode during most dayparts and automatically switch to unattended operation at night when some of our stations are programmed by satellite or computer. The Sage ENDEC made it easy. The competitive unit required us to buy numerous options to achieve this level of performance.



Sage ENDEC

Third, we had to figure out how to deal with our duopolies and triopolies, understanding that the FCC allows co-owned and co-located stations to use the same EAS equipment. We found that Sage ENDEC, when equipped with its options, remote controls and multiple station relay panel, gave us the ability to operate up to three radio stations from a single ENDEC. In some cases, we decided this was a good idea, and, in other cases, we decided to buy and ENDEC for each station.

Fourth, we wanted to be sure that the product would be serviced and maintained properly in the future. We do not expect to be buying new EAS equipment for another 20+ years. Sage has an arrangement with Harris Broadcast Division to market service and stock the Sage ENDEC family of equipment. We have worked closely with Harris for many years, and we know

them to be reliable, credible and responsible folks. This helped our decision as well.

Finally, we need to be sure that we could buy everything we needed for a complete EAS installation from one source. The new EAS rules require that stations monitor two or more sources. We needed additional receivers for monitoring other AM or FM stations or, in some of our markets, VHF and UHF including the National Weather Service, public safety agencies, state emergency management organizations, etc. The Sage multiband modular receiver was just the right unit for our stations. Its modules were well thought out, as was the entire Sage ENDEC design.

It is not easy for non-technical folks like myself to make decisions about something as technical and important

as the Emergency Alert System. With the help of my engineers, we were able to home in on the important issues and we decided to standardize with the Sage EAS system. We are expecting delivery shortly and plan to be fully installed and operational way ahead of January 1, 1997, the date the FCC has mandated EAS be ready to roll.

For more information contact Chuck Maines or Gary Hardwick at the Harris Broadcast Sales Center:

1-800-622-0022

FAX: 317-966-0623

<http://www.broadcast.harris.com>



EAS NEWS & VIEWS • EAS NEWS & VIEWS • EAS NEWS & VIEWS • EAS NEWS & VIEWS



Give EAS Providers A Pop Quiz.

(Following questions provided by Harris Corporation for your EAS protection)

When you talk to a potential EAS provider, ANY EAS provider, obtain satisfactory answers to these pertinent questions before you buy. . .

- Will the EAS product transmit and receive simultaneously? (so that you don't miss any desired message)
- Will the EAS product protect you and your listeners by NOT bumping one message if another starts coming in? (If a tornado WARNING is in the process of coming in, could it be bumped and lost due to a thunderstorm WATCH that may start coming in on top of the tornado warning in progress??)
- Right out of the box, do you have to buy anything else or hook the basic EAS product up to more than your station receivers to make an automated station fully compliant?
- Does the EAS product come standard with less than 6 monitor inputs? 6 bi-directional serial comports? 3 programmable contact closures?
- Does the EAS product come standard with 2 audio inputs for pre-record capability?
- Is the EAS product fully supported by a reputable, reliable, responsible and world-recognized broadcast leader?
- If I require more than two monitoring inputs, will it be necessary to purchase them extra?
- Can I add codes to the encoder and decoder by myself or will that require factory intervention?
- Can I store my own radio in the unit to preannounce the alert?

For the EAS equipment that makes straight A's across-the-board when you put it to the test, call Harris to inquire about Sage ENDEC.

1-800-622-0022

FAX: 317-966-0623

<http://www.broadcast.harris.com>



HARRIS

EAS Q & A

The 1996 Radio Show in Los Angeles gave Harris and Sage an excellent opportunity to show the EAS ENDEC system to many broadcast executives including group chief engineers, group general managers, and program directors. The response to the Sage ENDEC EAS system was extremely gratifying and we believe that they have clearly addressed the concerns of radio and television broadcasters by designing a unit that is easy to operate, flexible in its interface to existing equipment and a unit which will operate reliably for long periods of time. Here are a number of questions that were asked repeatedly by customers like yourself.

Q Do I need a computer or remote control connected to the ENDEC to make it work?

A The answer to both is "no." The ENDEC can easily be operated from the front panel using the friendly menu-driven software and the 4 Soft-Keys.

The six standard serial ports are definable for all types of equipment from computers to interactive remote controls to interfacing with video character generators and LED signs. It is also possible to use one of these ports with a personal computer to modify and/or save your parameters.

Q Do you have a solution for television broadcasters? Do you support the Chyron CODI™?

A The answer to both is "YES". The Sage ENDEC may be interfaced directly to the Video Data Systems VCG840EAS or to the Chyron CODI™, with or without an additional MasterCG software package.

Q We have unattended transmitter sites all over our state public television network. How do we run the monthly tests that come at night if our transmitters are all turned off?

A The FCC rules say that in alternate months, monthly tests will be run either at 6:00 AM to local sunset or local sunset to 6:00 AM. If a station is signed off the air for any reason during the time of a monthly test, they must rebroadcast it soon after signing on. The ENDEC can be programmed to sense if the

transmitter is in an on or off condition. If the transmitter is off, the ENDEC will hold the message until a predetermined time after sign on and then automatically send the monthly test.

Q Your competitors seem to offer a lot of options for their units. They start off with a basic low priced unit, but by the time you add all the options required for compliance, it costs more than the Sage. What options, if any, are available or required for the Sage ENDEC?

A Our design philosophy was to make a complete unit that would serve every radio and television station in virtually every situation. The Sage ENDEC comes with six monitoring inputs, six serial data ports, two minutes of voice storage, printer, and a stereo program-interrupt built in. There are a few accessories available to complement the ENDEC, but none are necessary for basic operation. For a single FM station, the ENDEC is EAS compliant right out of the box. Just connect two optional receivers for your monitoring requirement, do the 'Quick Start' programming for your ENDEC, connect your program audio and you are EAS compliant.

Q We have more than one broadcast station in our facility. How can we relay and originate alerts for each of them separately with only one ENDEC?

A The ENDEC operating software includes the ability to independently control multiple co-located stations from one ENDEC. The Sage ENDEC has one stereo program interrupt built in for control of your first station. A Sage Multi-Station Relay Panel provides two additional stereo program interrupts and the ENDEC supports up to two MSRPs.

On a case by case basis, you program each station with its individual call sign and responsibilities and the mode in which each station will operate. . . Automatic, Manual, Live-Assist, . . . Basic Compliance or Enhanced Alerting for NWS and other Local Events. With the ENDEC, you are in complete control for each station in your group. There are no compromises, even if one of your stations serves a different operational area, the ENDEC can be programmed to provide your EAS alerts the way YOU want them handled. The addition of the Sage RC-1 Remote Control gives you full manual control of the ENDEC from anywhere in your facility and provides some 'One-Button' macros to expedite any local origination. Multiple station operation is not a problem for the Sage ENDEC.

Q I have heard that the ENDEC is difficult to configure.

A The Sage ENDEC uses an automated teller machine (atm) style of menu driven software. This menu and the four front panel buttons make programming the ENDEC a snap. In fact, the ENDEC has many basic features preprogrammed into it. For your station, you need only enter your call sign, local area (state and county), and tell the ENDEC which time zone you are in.

The ENDEC comes preprogrammed with enough incoming filters and outgoing templates to handle the necessary alerts, guaranteeing full FCC EAS compliance. One ENDEC can work for a radio or television station or a cable system. With all the features that are built into each ENDEC, there are many parameters that you may choose from to custom tailor the ENDEC to fulfill your implementation of EAS.

Q Is there a quick, easy way to get out of an alert which the station originated or an alert originated by another station? I am worried that if the stations upstream do not send the end of message (EOM) signal we could get hung up.

A The ENDEC features an override/abort mode by simply pushing the two right-hand buttons on the front panel simultaneously at any point. This will take you out of any menu and bring you back to the top of the menu stack or abort any transmission in progress. When this feature is used to abort a transmission, the end of message is automatically sent by the ENDEC so as to not hang up stations who are monitoring your station.

On the remote control, the bottom right hand corner button is boldly marked abort and has the same functions allowing an operator to return to normal operation with a single button keystroke.

For more answers to your questions on EAS or the Sage ENDEC, call Harris.

1-800-622-0022
FAX: 317-966-0623
<http://www.broadcast.harris.com>



HARRIS

Studio Sessions

**Microphones
For Your Eyes?**
See page 32.

Equipment and Applications for Radio Production and Recording

LINE OUT

Sizing Up the Marantz CDR615

by Bruce Bartlett

MARANTZ, Ind. Marantz has made it easier than ever to record your own CDs.

A standalone unit, the CDR615 needs no computer or software to operate. Just set some parameters, tap Record, and play your DAT tape or analog source. About an hour later you have a compact disc that will play on most CD players meeting Red Book standards.

Handsomely crafted in black with gold trim, the CDR615 resembles a CD player or cassette deck. In fact, it will work as a compact disc player. Besides the usual record-level and transport controls, it has features unique to CD-R recording.

A large, easy-to-read display shows control settings, disc status, error messages, levels, and time. There's also a telephone jack with level adjust. On the back are connectors for digital I/O (EC958 or SPDIF), XLR analog in, RCA analog out, a Sub-D connector for optional remote control and a Sub-D connector for parallel control of extra units.

The CDR615 can increment tracks manually or automatically by following the Auto Start IDs on your DAT tape. This also works with CD, DCC and MD. If you feed the unit an analog signal, the CDR615 can be set to increment the track number when the signal level is below a preset level for more than three seconds.

You can record an entire disc at once or record a track at a time. Recording starts where you left off. A single disc can be assembled from both analog and digital sources, even with varying sample rates.

With digital sources, the CDR615 does sampling-rate conversion to 44.1 kHz on the fly. It is claimed to eliminate jitter on the incoming digital signal. To avoid errors due to jitter, all digital sources should be recorded with sampling-rate conversion engaged, including 44.1 sources.

Compared to previous models, the CDR615 is said to have improved electronics and converters and an all-new CD mechanism. Its designers placed special emphasis on reliable data recording. The CDR615 conforms to the Orange Book II standard, so its recorded discs can be read by regular CD players.

Recording a CD

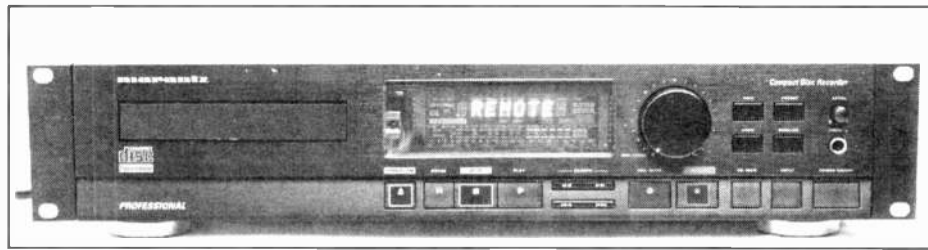
Here is a typical procedure for burning a CD: First, press Preset to toggle through the preset options. In this mode, select whether you want to increment tracks manually or automatically.

Now, select Auto-I, off or on. If on and in record standby mode, the unit will go into record mode when the first Start ID comes in, assuming a digital source.

Press Stop to store the presets. Now you are ready to insert a blank CD. Marantz recommends using their own

The recorder will calibrate for the optimum recording power.

Select an analog or digital source. Now press Record to go to record-standby mode. If your source is analog, adjust the recording level. Make sure that your presets and connections are correct



Marantz CDR615: CD Recording Made Easy

because you are about to record to disc. This is a write-once-only operation.

Press Play to begin recording and start your source. If Auto-I is on, just start your source. As stated before, the CDR615 will begin recording when it sees the first Start ID.

To increment tracks manually, press the TR. Incr button.

When done, press Stop to end the recording. The display says Buffer while recording the data that remains in the audio delay buffer. Then the display says Update as it updates the information in the preliminary table of contents.

If there is no digital audio data for four seconds and the unit is in Auto Track Increment mode, the unit will stop recording.

At this point, you can record more tracks if you wish. Each track can be from an analog or digital source.

When the recording is complete or the disk is full, press Finalize and Record. In two minutes, the unit records the final table of contents and the disc leadout.

There is your finished CD. It really is that easy.

I tried recording an all-digital CD in one pass with auto track increments. The unit worked flawlessly and the CD sounded great. I also recorded several tracks one at a time, some from analog sources and some from digital. The CDR615 handled anything I threw at it, including fades and manual track increments.

Operation was quick and intuitive. As expected, tracks made from analog-out to analog-in were less clear than pure digital copies.

Useful features

The Marantz CDR615 offers a number of useful features:

- **Audio Delay Time:** This delays the entire recorded audio signal relative to the track-number changes. This will allow all the songs to start, say, one second after the track increments. Delay time is 66 msec to four seconds.

This feature comes in handy if you

used Auto Start ID on your DAT recording. Because Auto Start IDs come in a little late, you would need to delay the audio so it starts slightly after each ID.

- **Auto Track Level:** Set the level at which Auto Track Increment occurs.
- **Input Sensitivity:** Choice of +4 dBu or

-10 dBu.

- **Record Mute Time:** If you are recording one track at a time, you can start the new track after a pause of two to five seconds.

- **Digital Fade In/Out:** The recorder can fade in automatically after starting recording, and/or fade out when you press Stop or Pause. Fade time is adjustable. To me the fades sounded quite smooth.

- **Error Correction:** If there is a disc error during recording, the CDR615 will try to repair the data. If it cannot, it will display Error-11 and the tray will open.

- Standalone sample-rate converter.

The \$2,600 Marantz CDR615 is well thought-out. Its designers included some truly useful features. The recording process is simple and intuitive, and the sound quality is excellent. What more could you want?

If your answer is "more," look into the next-level CDR620 Compact Disc Recorder also offered by Marantz. This has PC interconnectivity, a sample rate converter and a full-featured wired remote control. It goes for \$3,600.

For more information on the Marantz line of CD recorders, contact Marantz at

Product Capsule:
Marantz CDR615 Recorder

<p style="text-align: center;">Thumbs Up</p> <ul style="list-style-type: none"> ✓ Easy to use ✓ Error-free ✓ Many useful features ✓ Great Sound 	<p style="text-align: center;">Thumbs Down</p> <ul style="list-style-type: none"> ✓ Needs more record-level gain for low-level tapes ✓ Lacks RCA analog input
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For more information, contact Marantz at (708) 820-4800 or circle **Reader Service 62**.

SuperScope Technologies Inc., 1000 Corporate Blvd., Aurora, Ill. 60504

□ □ □

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

SHORT TAKE

BSI Dubbing Software

If you have a music library of several thousand songs, dubbing them one at a time into the new PC automation or music playback system can be a tedious chore. Rather than bring in a part-timer to handle the job over the course of several weekends, Broadcast Software International (BSI) solves the problem with a program called "Speedy."

This is an automated walkaway CD-to-PC process that can be performed while you take care of other tasks around the station, even while doing a show.

A CD is loaded into the computer's CD-ROM drive, the desired tracks are selected, the Recording button icon is clicked and Speedy takes care of the job. It even names and files each song for you.

Speedy uses non-proprietary WAV files, which means audio created on any Windows-compatible software (SAW,

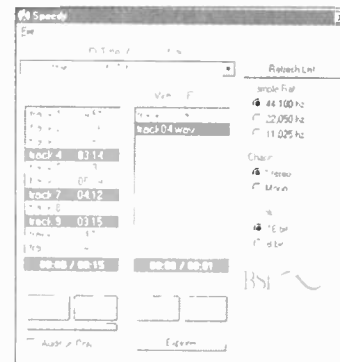
Cool Edit et al.) can be used without file format conversion. Samples-per-second and bits-per-sample are all selectable from Speedy's main window.

Speedy runs on garden-variety 486 computers equipped with a CD-ROM drive and Windows 95.

Sound quality is dependent on the choice of soundcard. BSI points out the CardD+ provides a S/N ratio of 83 dB input and 86 dB output and a THD of less than 1 percent.

Speedy is available from BSI for \$99 retail. Other BSI products include Stinger, an instant playback "wall of carts" program; the Call Master reel recorder replacement for telephone playbacks; and WaveCart cartridge replacement software.

Contact BSI for information on its entire product line by calling (602) 572-8525, on the Internet at www.bsiusa.com or by circling **Reader Service 85**.



Shure Field Mic Gets the Story

by Scott J. Rutherford

Most microphones do a fairly good job of coping with the abuse, but the sound from many hand-held dynamic omni-directional mics can often be lacking. Consider those occasions when the city board meeting you must cover will have members speaking several feet off-mic and projecting their voices in entirely the opposite direction, perhaps



even towards the next room. The mic is then required to capture sound clearly at extremely low levels with a minimum of background noise. Most dynamic omnis I have personally used have had their share of design shortcomings. Not to imply that dynamic microphones fall into any "dime a dozen" category, but let's face it: there are a lot of different models of the workhorse hand-held dynamic microphones out there. Still, I have to say I was extremely impressed with the performance of the Shure VP64.

Versatile

This mic proved to be a versatile piece of equipment, with an on-axis sensitivity nearing an electret condenser. But the omni characteristics of this Shure does something a directional condenser mic cannot: record a subject several feet off-mic and off-axis.

This scenario is extremely common in news gathering when trying to catch, say, a debate by a six- or eight-person commission as it is happening.

Shure has built a winner with this one, in my estimation. The impressive performance of the VP64 stems mainly from its signal-to-noise ratio. This is a category that comes down to "more is better" and the Shure delivers more. When gathering audio for news, "more" means nabbing that Zoning Commissioner's on-the-record-but-muttered comments your competitor's reporter sitting just one chair over did not get.

But beyond that, the frequency response of the VP64 was one of the few that addressed some of my usual gripes about garden-variety dynamics. They are normally muddy-sounding jobs that will give barely-acceptable audio.

Again, this Shure surprised me. Its response peaks between 6 and 10 kHz and this means that speech is captured clearly, distinctly and intelligibly. Its response peaks at what is normally the weakest point for dynamic mics and this makes the VP64 stand out.

Cutting through

The impressive sound of this mic also cuts through in hand-held interviews. The supplied windscreen comes with the usual foam shell, but also a nylon-webbed insert which does an effective job at cutting pops — no matter how emphatically your interview subject wanted to emphasize the Ps.

Shure also builds this mic with an effective internal shock-mounted cartridge. In the real world, this means a good degree of protection against mechanical noise.

When the mayor bangs on the podium to drive that point home or impatiently taps a pen on the mic stand, the shock-absorber keeps those bumps, taps and clicks away from your recording, avoiding drowning out the critical parts you actually wanted to catch on tape.

In all, I found the VP64 to be a valued addition to my bag of tricks, and this is coming from someone who generally drags around microphones the way sports photographers carry telephoto lenses: one or two for every possible situation just in case. This Shure is a versatile tool for field reporting. Who knows, it just may convince me to travel lighter.

For information on the VP64 or other mics in its product line, contact Shure Brothers at (847) 866-2200 or circle Reader Service 81.

Scott J. Rutherford is a news anchor and reporter for WLAD(AM) and WDAQ-FM, Danbury, Conn. He can be reached at (203)744-4800 or srutherford@prodigy.com

Move Up from Carts to Touchscreen Digital Audio

Play Any Audio at a Touch

Nothing else makes radio as fast or easy as having all your spots, sounders and sweepers start with your fingertip—always on-line and ready to play from hard disk. And nothing else makes your station sound as good or as exciting as touchscreen digital and creative talent with the new Scott Studio System!

Here's how it works: Six buttons on the left of the 17" computer touchscreen play what's on your program log. Scheduled spots, promos, PSAs and live copy come in automatically from your Scott System Production Bank and your traffic and copy computers. You see legible labels for everything, showing full names, intro times, lengths, endings, announcer initials, outcues, posts, years, tempos and trivia. Your jocks can rearrange anything easily by touching arrows (at mid-screen), or opening windows with the entire day's log and lists of all your recordings.

On the right, 18 "hot keys" start unscheduled jingles, sounders, effects, comedy or promos on the spur of the moment. You get 26 sets of 18 user-defined instant "hot keys" for your jocks' different needs.

Large digital timers automatically count down into times, and flash at 60-, 45-, and 30-seconds before endings. You also get countdowns the last 15 seconds of each event.



The Scott Studio System is your best way to make the move to digital audio and eliminate troublesome carts. Each button on the touchscreen plays whatever you want instantly. All scheduled spots, jingles, promos and scripts come in from your traffic and copy computers.



The World's Fastest Playback!

Touch either of the two buttons at the top right of the main screen to see our "Wall of Carts" with all your audio on-line! Touch the sound, spot, jingle, promo, PSA or comedy you want and it plays instantly. Or, you can put it anywhere you want in the day's schedule. Audio is displayed any five ways you like.

The Scott System also gives you a "Make Good" button so it's quick and easy to reschedule missed spots or promos.

Instant Requests from Hard Drive

Our most popular option is a 9 gigabyte disk with digital music. The audio quality of the Scott System hard drive meets or beats the best CDs. We'll pre-dub 1,000 songs from CDs off your playlist free!

Nothing is faster than requests from the Scott System! You get five "Wall of Carts" with music that plays at a touch! Songs are displayed by title, artist, year, length, category, or any ways you like.



Live Copy On Screen

Live tags, weather, promo copy, music trivia, contest copy and winners' lists automatically pop up on your Scott System's screen.

The Best Digital Audio

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Circle (22) On Reader Service Card

TC Finalizer Has Dynamic Digital Control

by Jim Smith

MARTINSBURG, W.Va. When the TC Electronic M5000 hit the market a few years ago, a lot of engineers — including me — were floored by the ability of its dynamics processors to make a pre-mixed digital recording sound better and louder at the touch of a button.

Some of us, however, were not really looking for all of the other M5000 features, and most of us didn't have the big bucks to pay for it anyway. We just knew we wanted something.

We waited, and now our time has come.

Finally, Finalizer

TC has introduced the Studio Finalizer, a one-stop-shopping solution for polishing up your audio. Hope you saw it on display at the recent AES show in Los Angeles.

With very minor exceptions, the Finalizer contains all of the acclaimed dynamics and EQ functions of the M5000 and has even thrown in some new tricks of its own.

These include a great user interface, and a one-touch Wizard for easy setup. To top it off, the price should be within the reach of small stations, production rooms and project studios.

Though reasonable in price, the Finalizer is a thoroughly top-of-the-line item: Full 24-bit digital throughput, 20-bit converters on the analog I/O, a great set of digital tools and a dizzying array of processing features.

Keeping all of these available parameters under control could be a daunting task.

Were it not for a thoughtful group of factory presets and some really accessible and visible front panel controls, LED meters and LCD displays, this would be true.

All of these features are what hook

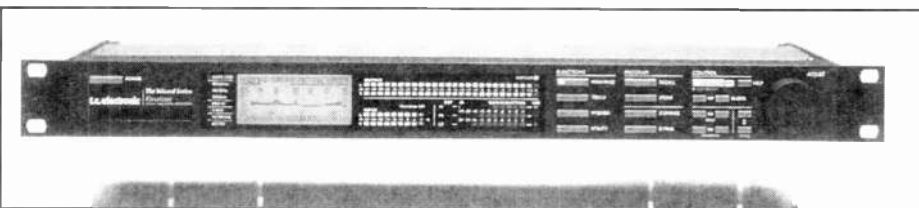
Expander, like the compressor that follows, uses the famous TC three-band dynamics.

Compressor is the heart of the system. *Limiters* catches those final peaks. This is also a three-bander.

Output provides digital and analog formats, dithering, level setting and auto-fades.

Tool kit

Beyond these central functions, you can also access a digital reference tone oscillator, phase meter, signal flow level meter, a peak meter and other digital



TC Electronic Finalizer

analysis tools.

So, with all of these adjustments and apparent decisions to make, how easy could the Finalizer really be to use?

Let me describe three specific experiences I had with different material using presets and the Wizard.

First is the CD Master preset. This is designed for material that is going to be peaking at maximum Digital Zero and contains no EQ.

I ran a pre-normalized and partially compressed music recording through this. It was much louder and tighter with no audible side effects.

Inserting the Digital Radiance Generator at this point created a subtle but pleasing effect which I would definitely consider using on some material.

Second is the Mix Master preset. This preset, again with no EQ, is designed for normal board output levels where the digital equivalent peaks should be -10 to

In short, with little understanding of source and destination levels, it is not hard to achieve good results quickly.

The other 23 factory presets are all labeled just as accurately and seem to work as well for their intended material as the ones I have described here.

You can also go well beyond "quick and good" with the Finalizer, in either positive or negative directions. As with any flexible, powerful device, the world of possibilities is huge.

Your search for quality becomes a lot more intelligible, however, if you make use of the Finalizer Compare function.

This allows fast and accurate A/B comparisons of signals.

Check either a straight preset or your original audio against the current processed version.

You can decide whether you like what you are doing to your sound without the psycho-acoustic impediment of different levels. I personally found this an invaluable aid.

Though my demo of this device has proved very satisfying, as of press time I had not the chance to use the Studio Finalizer in a setting that cries out for it: live broadcast.

Fortunately, TC Electronic just

unveiled a broadcast-specific version of the Finalizer dubbed the dBMax. So far, the company seems to be willing to trust me with one for awhile.

So, stay tuned to these columns in the near future, folks.

You will get a blow-by-blow audition of the dBMax at the head end of a

Finalizer Technical Specifications:

Analog Input

Max. Input Level: +22 dBu
THD: 0.003% @ 1 kHz, +10 dBu
Response: 10 Hz - 20 kHz, +0/-0.2 dB

Analog Output

Max Output Level: +22 dBu
THD: 0.008%
Response: 10 Hz - 20 kHz, +0/-0.5 dB

Digital I/O

AES/EBU I/O: XLR
SPDIF I/O: Coaxial RCA type
Sample Rates: 32, 44.1, 48 kHz

statewide all-digital public radio network. It is sure to be loud.

□□□

For information, contact TC Electronic of Denmark at (805) 373-1828 or circle Reader Service 105.

Jim Smith, NPR veteran, produces audio for radio, TV and compact disc under the name of Muddy Hole Studios. Send e-mail to mudsmith@intrepid.net

As with any flexible, powerful device, the world of possibilities is huge.

you into the real user secret weapon: the virtual processor chain.

I say virtual because the Finalizer is actually a very powerful single-processor engine.

Keep it discrete

By organizing your access to this processor into a chain of discrete components, TC has made it much easier to see what you are doing and how different control factors are interacting.

The virtual processor elements, each of which are individually adjustable and defeatable with lots of parameters, are as follows:

Input consists of analog and digital formats and level controls.

Equalization is three-band parametric with high and low shelving.

Insert allows the use of either a de-esser, a stereo image manipulator, or a Digital Radiance Generator which adds tube effect-type harmonics.

Normalization sets headroom and allows use of a clipper to take care of short-term spikes unique to digital audio.

-15. It would definitely not sound good with Digital Zero coming through.

While I was running a radio infomercial through this setting, the producer described the result as very "rich" sounding, and definitely improved. I found similar results with live music mixes.

Then there is the Wizard. This is a really great level analyzer that forces you to make a few simple decisions about your program material and allows you to choose from some standard EQ curves.

Once the choices are made, you play the material into the Finalizer and it decides where the levels should be.

Task at Hand

My task involved running a TV soundtrack through the Wizard with a loudness EQ curve. This worked well, especially after some slight modifications to the curve.

Because my ultimate destination was analog tape, I had to pull down the output level to make up for the optimized gain (normalization) that I had called for at the outset of the process.

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PRODUCERS FILE

Feed Your Head With DSM Mics

by Ty Ford

BALTIMORE Portable DAT machines, like the Sony TCD D7 and D8, have made binaural recording — the use of two microphones arranged in a way to simulate the human hearing experience — very easy and affordable.

Sonic Studios in Reedsport, Ore., has made a micro-industry out of knowing more than most people about battery-powered DAT decks and designing small, high-quality, electret condenser mics and other cabling paraphernalia.

Granted these are electret mics, so there is some noise relative to RF

condensers, but in cases where portability is important and the sound levels are high enough, the smaller electrets are hard to beat. And you have no phantom power supply to worry about.

When I referred to the Sonic Studios DSM mics as "binaural," Sonic Studios owner Leonard Lombardo corrected me.

"Among other methods," he said, "binaural recording used to refer to a system made up of a dummy head with mics placed in the dummy's ears to replicate the human listening experience. The Dimensional Stereo Microphones (DSM) are different than binaural. They're more a form of psycho-acoustical ambient

recording. It is not binaural as we call it now."

Meet the mics

The Sonic Studios DSM-6 Signature series (\$400) I tried are hand-selected for full frequency response and are phase-matched. The DSM-6 Standard set (\$300) is matched within 1 dB at 1 kHz.

Lombardo said the DSM mics are omnidirectional pressure mics, using a proprietary back-electret omni-directional condenser element. Frequency response starts at 5 Hz and goes as high as 23 kHz. The capsule is totally sealed except for a pressure relief hole for

altitude equalization.

Omni they may be, but like the human ear, they are directional at higher frequencies. Each mic is about the size of a small earring, encased in water-proof vinyl, and comes with a small loop that slides over the side-pieces of a pair of glasses.

You have seen these strange binaural "head" microphone assemblies, right? With the DSM-6, you are the head and the mics clip to your glasses.

You don't wear glasses? That's okay, there's a windscreen/headband (DSM-WHB) you can buy for \$100. You don't have a head? Then you need the 16-pound dummy head (DSM-GUY), for \$1,000. It comes with tripod, a WHB headband and two cases. It's a nice thing to have in case you get tired of standing in one place and not moving your head during recording.

One good thing

There is one good thing about using your own head and headphones. You can move to precisely the right spot. A few inches can make a big difference in what you get.

The Sonic Studio gear can power the hard-to-find Sony 24-bit SBM-1 (Super Bit Map) outboard A/D converter that uses the proprietary seven-pin I/O on the Sony D3, D7 and D8. Super Bit Mapping is always on on the SBM-1 and requires a heavier outboard battery, which of course, Sonic Studio also has.

Sonic Studios even has a \$75 mic plug-in upgrade that allows direct power and input deck connection for the D8 so you don't need the PA-6 power adapter for powering the electret. Although the DSM-6 and 6S both come with a one-eighth-inch molded stereo plug, I needed XLRs to get into my Panasonic SV-255 deck.

Sonic Studios had them and six others, a number of headphone/line drivers and an external power pack that can greatly lengthen continuous recording time.

In the field

My first opportunity to use the DSM 6S mics came when live mixer Craig Hopwood called to invite me to a 14-piece Big Band concert at the Polish Hall in stylish Fells Point.

On that occasion I was using a Tascam DA-P1 portable DAT machine. The DA-P1 comes equipped with mic pads. I found I needed them when I stepped up to the edge of the stage to catch the first tune, and caught some distortion as well.

At first I couldn't tell whether the distortion was due to the underpowered headphone amp or to overdriven mic pre-amps. I was using a pair of AKG 240 headphones to monitor, but found that the DA-P1 headphone amp was not up to driving them to the level I needed. I also recalled that the Sonic Studios literature had mentioned that full-scale level deflections with input knobs set below level 5 might result in preamp distortion. Mine were at level 4.

I popped in the DA-P1 20 dB pad, readjusted the input gain to around 7-8, left a bit of room at the top for a crescendo, backed off the headphone amp a bit and moved around to find the right spot.

Left/right positioning was easy to find; just move until you find the place that sounds right. The forward/backward thing was more difficult because I had live audience members behind me who were on their feet dancing and obviously

continued on page 35 ►

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When I Was Your Age Sonny ...

by Alan R. Peterson

surgically excise about one-sixteenth-inch of tape to remove the pop.

WASHINGTON Somebody help me. I'm geezing and I can't stop.

I am finding myself saying, "Back when I was on the air ..." entirely too frequently. I read about stations doing clever, kooky promotions and comment to anyone within earshot, "We did something like that 10 years ago at W —."

People who get promoted cause me to grouse. "I remember when he was just a news guy."

As they used to scream in the old monster movies, *what is happening to me?* Could I be hitting the age when nostalgic memories color my every thought?

Too young?

I had always hoped the "back-in-my-day" syndrome would not kick in until my 60s. I still feel too new, too fresh to let stuff like this get to me.

Digital technology has a lot to do with it. I am lucky in that I never got "downsized" due to automation or satellite programming. But like everybody else, I have been obligated to move with the industry and get on the Silicon Bandwagon.

Don't get me wrong. These are the most exciting times ever to be involved in audio-for-broadcast technology. But it has made me feel a little maudlin for all the good times I never got to have.

The "P" sound would remain, but the blast was gone. When you could do that with a blade and not leave a splice-thump, you knew you were hot.

I used to take great pleasure telling this one, until the guy tossed off, "Yeah, that's what I'm

The Windsor Fuel Oil Company, in my old hometown of Mineola, N.Y., once had a trio of 100-foot-tall coal towers circa 1940. Inside those towers was the most unbelievable reverberation ever experienced.

As kids, we were always trespassing in the yards and being "escorted" off the property by the cops, but I didn't care. The sound inside those dirty old chutes was angelic.

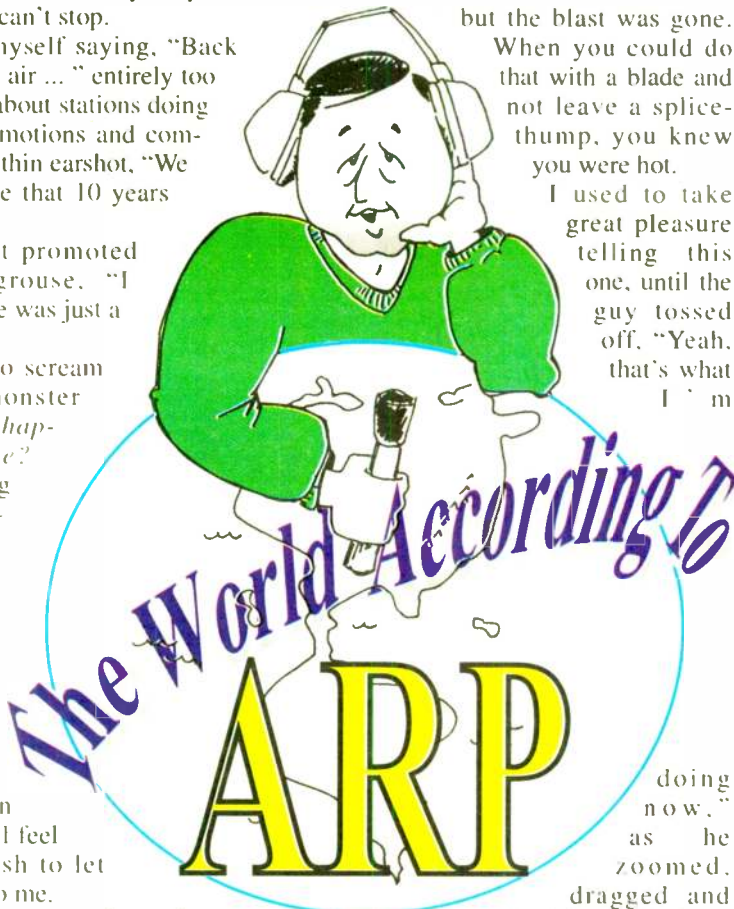
Moving your head slightly would create amazing changes in the density and color of the reverberation. You could climb the ladder inside and hear where the nodes occurred in the overall sonic signature.

I didn't understand acoustics back then, but really dug the sound. It might have been only concrete and steel rebar, but it was a Duane Eddy record brought to life.

It is probably a good thing the towers were finally torn down last winter.

If I were to go inside one today, I'd clap my hands, hear the well-remembered sonic signature and think to myself, "Wow, that sounds just like the Lexicon PCM-90, but with a long pre-delay and a comb filter tuned for a tunnel effect."

And that is when I would have called the demolition crew myself. Not to take down the towers but to use their wrecking ball to knock some of the geezing right out of my head.



doing now." as he zoomed, dragged and double-clicked. In less time than it took to peel a layer of paper off a grease pencil, the edit was complete.

I did not mind the ease with which he executed his task; I can do it myself just as easily. It just really stung to have a great anecdote shot down in mid-tale.

I stopped myself before I launched into the cliché you-don't-know-how-easy-you-got-it-sonny shpiel. The one that begins, "I had to walk barefoot in the

Geezing is healthy, but you have to know when to switch it off.

For example, as a teen, I always wished a four-track analog reel machine would miraculously appear one day in my basement so I could launch a home studio and emulate my favorite guitar heroes of the day.

I sprang for a Tascam multitrack cassette deck but it wasn't the same. I wanted real live half-inch tape going by those heads at 15 ips. I was so passionate about wanting one, the thought of donating my older brother to science crossed my mind.

Then one day, I got the four-tracker I always wanted when I became production director of WNNK-FM, Harrisburg, Pa. But by then it was 1993, and my recorder was months away from being obsoleted by a digital workstation. That felt very weird.

Pro wrestling

Recently, while watching a fellow wrestle with a difficult edit on a DAW, I began spinning a favorite tale from my tape days, circa 1981.

The oft-told yarn was of a station client who popped his Ps on his commercials. We would record his dry tracks and

snow five miles twice a day just to get to a store that sold leader tape."

When did this story attain prehistoric status? Why does it now sound like a line from the Davey Crockett theme song?

Instrument-maker Danny Ferrington of Pacific Palisades, Calif., has an interesting philosophy about it all. Ferrington recently told *Strings* magazine, "If Stradivari were to wake up now and go to a violin convention, he'd be ticked! 'Man, you all've had 300 years and you're still making this?'"

I believe Ferrington is right. As revolutionary as ol' Strad was, today he would probably ditch his horsehide glues and gut strings and leap headlong into composite materials, modern epoxies and — dare I say it — electronics. And he would love it.

An attachment to the old ways has a certain romance to it. But when that attachment hangs on too long, you risk removing yourself from competition. Too many of my friends have made that choice and severely limited their futures.

To that end, I suppose the occasional foray into geezing is healthy, but you have to know when to switch it off.

65 Years Ago

Reprinted from Radio World (June 27, 1931).
Editor's note: The RW of old, printed for a time in the 1920s and 1930s and today's RW are unrelated except in name

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Looks happy, doesn't he?



(his on-air phones work!)

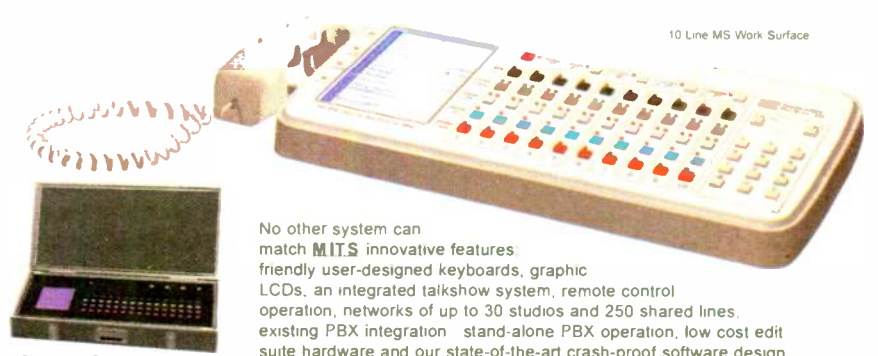
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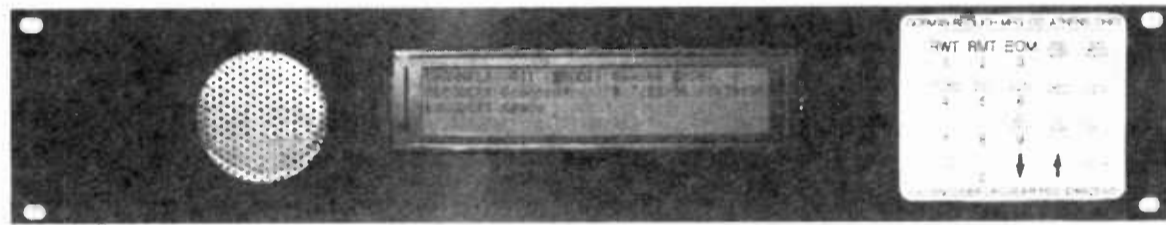
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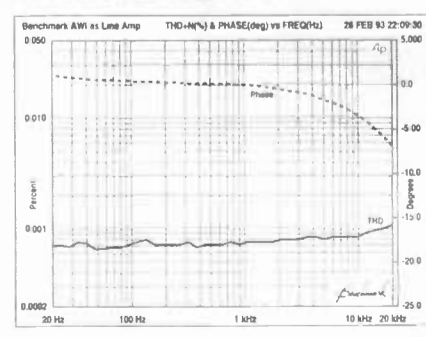


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READER SERVICE NO. 97

DSM Head Mics

► continued from page 32

enjoying themselves. I soon found that hugging the edge of the stage, which put me no more than 15 feet from the players, got me close enough to overpower most of the distracting audience sounds. At the end of each number I backed up a few steps to get the crowd's reaction.

There were a few mics onstage for zone reinforcement. Because of how close I was standing to the band, however, its amplification through the small house system wasn't really a factor. I got some great sounds during instrumentals but, because the vocals were obligated to come through the house system, those recordings were very compromised. Even if I backed off enough to hear the vocals in the PA — which put me too far back in the audience — it still sounded like vocals through a middlin' PA.

I decided to punt and ordered a crab-cake platter and something to wash it down with.

Second crack

My second attempt was in the studio with GML (George Massenberg Labs) and Millenia Media mic preamps and Apogee converters feeding AES/EBU signals right to my DSE 700FX workstation. I attached the mics to my glasses and leaned over the face of my D28S Martin steel-string guitar.

Quiet fingerpicking showed up the self-noise of the electret mics. Louder flatpick rhythm was more successful — better than I expected. Instead of sounding like "an acoustic guitar being recorded by a microphone (or two)," the binaural effect made for an extremely natural sound.

If you have some extra tracks, recording a few instruments this way could add dimension to the mix, even if you pan the pairs around a bit to make room for other instruments. Instead of using delay on a single track to spread the sound of the instrument, this method may result in something more real or dimensional. Combining the two tracks to mono caused some minor amount of high frequency loss due to the expected phase cancellation.

My final test was using a Panasonic SV-255 DAT and the DSM 6S for the recording of a group of madrigal singers in the Baltimore Winchester Hall, a converted downtown church with a graveyard containing Edgar Allen Poe's remains.

With all the pews removed, a 20 foot-wide raised apron built around the edge of the room and towering cathedral ceilings, I was not surprised to find reverb ringout times of between five and six seconds. I had the singers line up on the front edge of the apron in a slightly curved line so they could maintain good eye contact with each other. As they warmed up, I moved around — mics mounted on my glasses and headphones on — until I found the right place about 4-5 feet away from them.

I would have liked to have moved further back to get a more diffused blend of voices, but the reverb in the space was so strong that it overwhelmed the voices when I backed off.

Back in the studio, I listened to the recording of the madrigals. I became aware of the difference between

listening to binaural recordings on monitors versus headphones (actually, X/Y recordings do something similar).

On the monitors, the stereo image was blurred. I couldn't really place the bass singer, or many others for that matter, although I knew exactly where everyone had been standing. Listening on headphones re-established the stereo spectrum, but not being able to hear the stereo spectrum correctly over monitors caused me to make a call.

Hello, Leonard?

According to Lombardo, correct positioning of the monitors is fairly critical to

recreating a holographic acoustic field, more critical than with a typical multimic recording.

He suggested angling monitors inward to a spot just in front of yourself, much like focusing a holograph laser. So I tried it.

With the monitors about 5 feet apart, I cranked them in each about 20 degrees. As I moved back to a point 2 or 3 feet before their projected point of intersection, the stereo spectrum formed properly.

As a side note, I got a "reality jolt" on several occasions when I was listening on phones while walking around the studio with the portable DAT machine.

The first time it happened, I had popped the tape into the DAT
continued on page 39 ►



Note the DSM mics on glasses.

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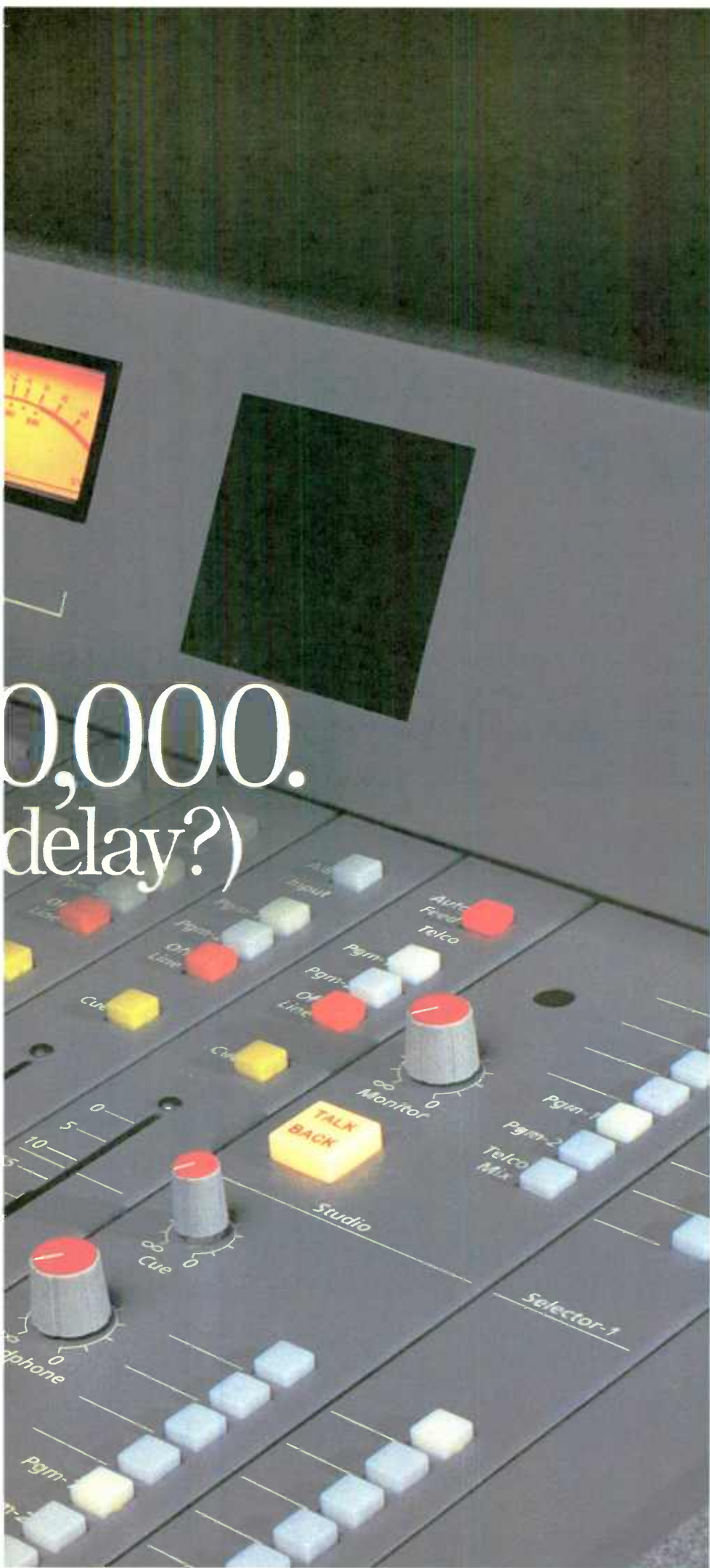


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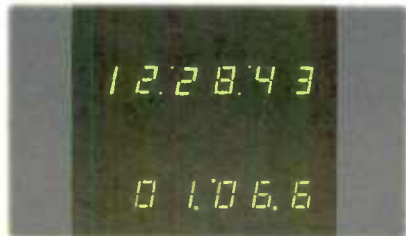
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Instant Twin Peaks

by Alan R. Peterson

WASHINGTON Remember the little person from the TV show "Twin Peaks" who danced and moved in reverse?

Even though his speech was going in reverse, it was intelligible to a degree and made sense. It was also bewildering to the viewing public: just how did he do that?

This is an easy and fun effect to apply in radio production. All it takes is a little practice, some patience and a good ear.

Roll the tape or DAW and record something simple, like, "Hello, I am Danny DeeJay."

Now, flop the tape or use the DAW's Reverse feature to hear your recording backwards, which will sound something like, "Eeyazsh-eed eednad maa-ehh oowelluh."

This part may get a little confusing, especially when trying it for the first time. Loop the reverse playback on a cart, in a sampler or just set the DAW for continuous playback of that one piece. Now begin trying to say the loop phonetically.

Once you can successfully say "eeyazsh-eed eednad maa-ehh oowelluh" reasonably well — without laughing — try recording it a couple of times. Change your pacing and your pitch a few times.

Now, flop the playback of this new track so it now plays in reverse. It may sound robotic, disturbing or even a little Beatlesque, but there you will hear a disconcerting voice vaguely resembling your own say-

ing, "Hello, I am Danny DeeJay."

Sure it's your own voice, but just listen to it. It is going in reverse, yet it isn't. The phonetically-pronounced "eeyazsh" now reads as the Queen's English (while the Queen was having a bad day).

Dump the track through a tight buzzy flange program for an evil robot effect. Send it through the pitch shifter for a demon voice. Tack a little reverb onto "Oowelluh," and when reversed, the tail of the reverb now becomes the head and precedes the voice track by a half-second. This is a popular monster movie trick from way back.

Try it once and have fun, or "nuf evah dna ecno ti yrt."

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RadioWorld



You Are the Microphone

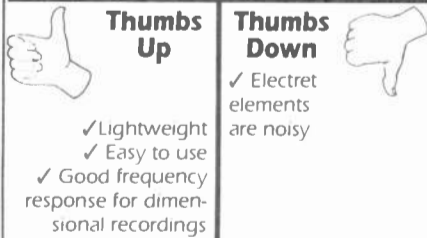
► continued from page 35

machine while walking into the studio. I had the headphones on and plugged in. As the recorded sound hit me, for a split second, I was right back there in front of the big band I had been recording.

Of course, as a listener, if you hadn't been there for the original recording (maybe even at the exact same spot) you might or might not have had the same kind of *déjà vu* reaction.

Product Capsule:

Sonic Studios DSM-6 Stereo Microphones



For more information, contact Sonic Studios at (541) 459-8839 or circle **Reader Service 64**.


Project studios in search of creating new dimensions with ambient recordings of acoustic instruments and other sounds are prime for the DSM mics. The more traditional studios will probably move to accept more slowly, but with the right project and producer, these mics should get the attention they deserve.

□□□

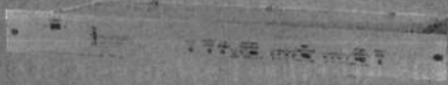
Ty Ford warns implanting these mics surgically on the sides of one's head may be over-doing it. The navel-mounted battery pouch is definitely over the top. Try and talk him out of it by contacting him at tford@jagunet.com

AM, RADIO-DATA AND MEASUREMENT PRODUCTS

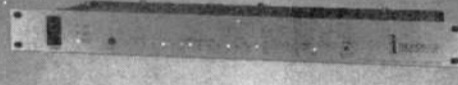
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PRODUCT GUIDE

Companies with new product announcements for Studio Sessions Product Guide should send them to:
Radio World, c/o Studio Sessions Editor, P.O. Box 1214, Falls Church, Va. 22041

EASE Acoustical Design Software

Renkus-Heinz of Irvine, Calif., introduces EASE (Electro-Acoustic Simulator for Engineers) and EASE JR, two software products for analyzing and designing acoustic space.

EASE and EASE JR both operate with a mouse under Windows. Both feature full-color screens, cutaway views of rooms with spin and rotate options, and open databases of loudspeaker data and more than 100 surface materials.

Features of EASE include an Acoustical Probe showing detailed analysis of suspected problem areas, Ray Tracing and a Movie module that provides an animated display of sound dispersion inside a room. EASE JR is a less-expensive version with fewer features.

EASE and EASE JR can run on a 386-33 computer with coprocessor (486 recommended) with VGA monitor and requires 2.5 MB hard disk space.

For information, contact Renkus-Heinz at (714) 250-0166 or circle Reader Service 82.

TASCAM Dual Cassette Deck

TASCAM is shipping the 302 double auto-reverse cassette deck for duplication and long-format usage.

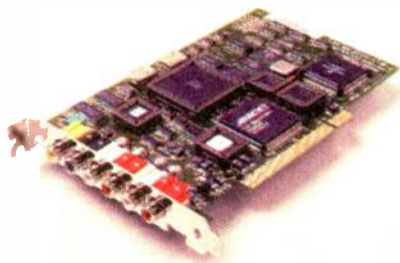
Each deck on the 302 is capable of recording individually or simultaneously and has its own discrete set of interface connectors and transport keys. The 302 has advanced control I/O and Cascade Out capability, allowing connection of up to 10 machines for multiple dubbing or long format playback and record operations.

The unit has Dolby B, C and HX Pro noise reduction and ± 10 percent pitch controls on both decks. In dubbing mode, the sync reverse function enables both decks to be reversed at the same time. Options include the RC-302 wired remote control

and the WR-7000 synchronization cable.

For information, contact TASCAM at (213) 726-0303 or circle Reader Service 83.

Digidesign Audiomeia III



The Digidesign division of Avid Technology has the Audiomeia III card for both PC and Mac-based computer platforms.

The Audiomeia III card has PCI bus architecture, a Motorola 56002-based 24-bit DSP processor, 18-bit stereo A/D-D/A conversion and a S/N ratio of 90 dB, A-weighted. When used with Session v2.5 software, the Audiomeia III delivers eight bands of assignable, real-time parametric EQ, effect sends and returns, on-screen mixing and user-definable crossfades.

Manufacturers of several popular MIDI sequencer programs either currently support Audiomeia III or plan to.

For information, contact Digidesign at (415) 842-7741 or circle Reader Service 65.

AMEK Rembrandt Console



The AMEK Rembrandt is an automated music and post-production console. It is available in 40 or 56 input chassis with onboard or external patchbays.

Dual-path input modules provide 80 or 112 inputs, each with an identical four-band semi-parametric EQ. Microphone amplifier circuitry uses discrete transistor arrays similar to the AMEK Angela console. There are 24 output mix busses, 16 auxiliary sends and

direct outputs from each module.

Thirty Rembrandt consoles have been delivered to studios around the world, with installations in the United States in Chicago and Houston. Prices range from \$114,352 for the 40 channel version to \$146,895 for the 56 channel configuration.

For information, contact AMEK U.S. Operations at (818) 508-9788 or circle Reader Service 84.

Road Trip Is Jock Full of Radio

by Alan Haber

WASHINGTON Radio. Heard of it? Yeah? Wanna be a jock? Are you a morning person? Do you like to get up at 4 a.m.? Have you *seen* yourself at 4 a.m.?

So many questions, so little time. Thank God comedy writer/producer Rusty Humphries has taken to the radio road to get the must-have answers that we crave.

"Radio in America: The Jockumentary," a video from TM Century, is a love letter (maybe L. could be V) to the radio community. It features a "Who's Who" of radio's best-known practitioners, from King of the Countdowns Casey Kasem, to He-Who-Would-Be-King-of-All-Stern-Competitors Mancow Muller in Chicago. Humphries' journey may not always be enlightening — after all, this tape is preaching to the choir — but it's almost always interesting.

For example, in the "if you can't actually get him on camera, talk about him" department, Howard Stern is a satisfying, if predictable, topic of conversation. Muller, the WRCX(FM) morning man and Stern competitor, relives an encounter with Stern henchman Stuttering John Melendez, who had been sent to taunt Muller at a morning show bootcamp. At the event, Muller ripped Melendez's cell phone out of his hands and threw it like a missile to the ground.

Who will win the battle for morning show supremacy, Mancow or Stern? Muller's got it all figured out: "It's math. Okay? He is an old man, and he's in the movies and he wants to be a superstar. I want to do one thing: radio. I want to do the best radio in America. Period. I'm young, he's old. Figure it out. Eventually, the meek — the Mancow — shall inherit the Earth!"

Meanwhile, in the Big Apple, WPLJ(FM) morning man Scott Shannon tips his hat to Stern.

"Howard Stern brought in a different approach ... more of a reality-based show, and I think his success changed an awful lot about morning radio," he said.

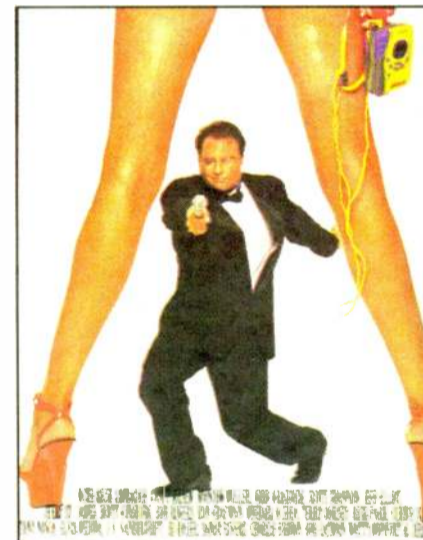
"For the better, really."

This tape has more than just Howard Stern. All manner of lurid promotion lore is in the spotlight,

courtesy of Muller sidekick Turd (that's right, Turd). There's talk about getting up early in the morning. There are shots of DJs smoking cigars.

We also hear some tough truths. Shannon on syndication: "Obviously, it's got some drawbacks, because somebody's not working."

Dave Richards of WCRX offers



some observations about air personalities: "They're going to ask for the world. They're going to want more money. They're going to want more promotion. They're going to want more everything. They're always going to want. They're never going to stop. They're going to call you at 11 o'clock at night. They're going to bitch and they're going to complain. And those are the good ones."

There's more: a pretty good Rick Dees impersonation by Brian Whitman of KGB-FM in San Diego; lots of talk by "radio widows;" and a poignant story about how the Jeff 'N' Jer Show in San Diego raised \$48,000 to help a family pay for medical expenses after a hit-and-run driver killed their son.

Oh, there's also a great segment in which Casey Kasem teaches Humphries how to do a good Casey Kasem impersonation (the secret: talk from the upper palate of your mouth and a little through your nose).

You'll likely find something in this tape to savor.

If you don't, and you find your mind wandering, immediately park your popcorn trough on the coffee table and go do some show prep, young radio person!

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Nets: A Framework of Ham Radio

by Al Parker, N2SAG

HICKSVILLE, N.Y. If technical knowledge and service are the foundations of amateur radio, "nets" are the framework. They provide structure and reference points like landmarks on a map. A ham radio net is simply a network of hams who congregate at fixed times and frequencies to discuss issues of common interest. Such nets cover the gamut of human endeavor, from emergency communications, to antique radio collecting. Some nets are for mariners, others for pilots. Political discussion nets can make TV's "McLaughlin Group" sound like a knitting circle.

Trader's Nets: a Net plus

Trader's Nets or Swap-Nets are among the most popular. Just about every night of the week, hams are bartering, buying and selling equipment somewhere, on some frequency. Ham radio may not be used for commercial purposes, except for buying and selling such ham-related gear.

An air of excitement prevails as net time draws near. The pre-net kibitzers nervously jockey for position, tuning and checking propagation. A jovial veneer covers an intensely competitive underpinning. When the Net Control (a master of ceremonies) starts taking check-ins, it's a free-for-all stampede to be heard and listed *early*.

The earlier you post your listing, the more likely someone with money in his pocket will react on impulse. The best way to visualize this audio experience is to imagine a radio version of the floor of a chaotic commodity exchange. Things far more powerful than soybeans, corn or cattle futures are offered. Boyish dreams are up for grabs, the shattered dreams of sellers and the unfulfilled fantasies of buyers.

Some hams seem obsessed with trying out every new rig that comes down the pike. They buy a super high-end Ten-Tec, Kenwood, Icom, or Yaesu, and by the time they've tried out all the bells and whistles it's time to move along to the new super-duper version.

"Hey Wilke, that new Yacomwood 777777 even has the DSP on the golden bias supply."

"Wow, Rube, I guess I gotta try that mother out."

Hams reason that if they keep the original packing and leave all the plastic film on the knob inserts, the "box" can be moved to the next owner for only a few hundred dollars below the original purchase price.

Status is the goal for many of these folks. Youthful job experience with a prestigious camera manufacturer taught me that many of the most expensive cameras were purchased as fancy necklaces, a kind of male jewelry. A fair number of these owners rarely ran any film through these pro cameras. Similarly, lots of high-end, dual receiver, multi-VFO, super-QRM fighting transceivers are also more for show than go, sitting eternally on one frequency, for chatting with one or two buddies "down the road a piece." A \$50 C.B. would probably do just as well, maybe better.

The other major category of folks hooked on the Swap Nets are the people with "more dream than green."

Traders' Nets offer, and often satisfy,

the promise of a real ham radio for an unreal price. The remote possibility that some latter-day John Beresford Tipton ("The Millionaire") might appear on the net to give away a Yaesu 1000 MP keeps the hopefuls poised, with fingers over the telephone keypad.

More likely, a perfectly good radio will find its way to a happy second or third owner for a reasonable price. Newer vintage ham radio equipment purchased through these nets often is indistinguishable from new. Many rigs have been bought and pampered with pre-depreciation resale in mind. The newer rig's surface mount technology also discourages tampering.

Honesty is still a highly regarded virtue in amateur radio circles. "Crooks," slow-payers and those who misrepresent their gear are quickly assigned *persona non grata* status.

At the other end of the spectrum are AM Swap Nets. One would think that they would be identical to the single-sideband variety, except for the carrier and an extra sideband, but this is not the case. Where the SSB nets are competitive horse races, the AM Swap Nets are more like cracker barrel meetings at the old general store. The atmosphere is relaxed, perhaps owing to the more laid-back attitude of most AM'ers. Also, the equipment involved may be long past any

concerns about depreciation. Viking IIs, Rangers and Apaches gave up depreciating before many of the net participants were born. Many of these old classics are slowly but steadily *appreciating*. There's no panic to sell today, for tomorrow the old boat anchor might be worth a few more bucks.

Everyone's picking on me

The weekly AM Swap-Net held in the Northeast, generally out of New England, is one of the most pleasant of its type. It takes place Thursday on 3.885 MHz, at 7:30 p.m. EST. There is an old-fashioned quaintness to it, maybe owing to the Net Controller's New England accent, his trademark train whistle sound-effect to open the net, and the good-natured eagerness of the assembled multitudes.

continued on page 43 ►

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How to Build an Audio Processor

by Jim Somich

BROADVIEW HEIGHTS, Ohio

The audio processor is the heart of any processing chain. Here is what it takes to build a killer system.

More than any other component, the wrong audio processor will limit your on-air flexibility. A well-designed processor will give you the flexibility you need to

makes major changes easier to implement.

Some audio processors on the market sound good only within a narrow set of adjustments and require extensive modification or pre-processing to perform in certain applications. The frustration of trying to achieve the desired sound with these boxes can be daunting. This article is intended to explain the basic require-

manufacturer's viewpoint, based on years of hands-on experience.

Components

A modern broadcast audio processor usually consists of the following components:

- 1) Levelers to ride gain and present the compressors with a well-controlled audio signal.
- 2) Compressors to reduce dynamic range inaudibly.
- 3) Peak limiters to reduce the peak content of program material and add punch.
- 4) Clippers to brickwall final system peaks and allow maximum legal modulation.

Most modern audio processors contain these basic building blocks, but how the blocks are realized in circuitry and how they are integrated into the final product vary widely by manufacturer.

Multiband processing

Multiband processing splits the audio spectrum into several bands and processes each individually. The processed bands are then re-combined at the output of the processor.

Multiband processing has been with us since the 1970s and has proven to be the most effective way to process audio for broadcast.

Critical decisions are the number of bands and the slope of the bandpass filters. The ideal processor should have three or four bands. In my view, two bands are too few, and more than four introduce colorations in your sound that are not generally desirable.

One two-band FM processor I know of has a narrow "sweet spot." Many users need to add pre-processing to keep the signal in a range where the box sounds good. For most applications I prefer a four-band processor for maximum flexibility.



The slope of the bandpass filters dividing audio into individual bands is critical. Early processors used broad-sloped filters to avoid phase delay problems. These resulted in imprecise band control which overlapped into adjacent bands. With computer design, a manufacturer can easily create phase-corrected, tight, band-splitting filters that are precise and sound great.

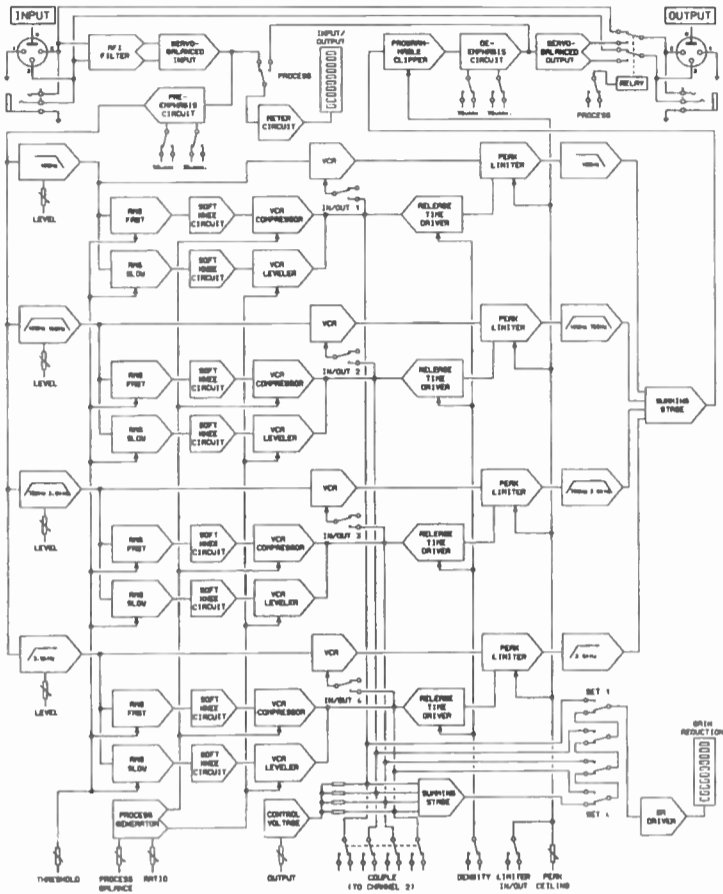
Look for phase-corrected 24 dB/octave Butterworth filters for best results. These are far more desirable than the 6 dB/octave slope filters of earlier processors.

The band-split points are critical to good sound. The ideal points for a four-band processor are 180 Hz, 750 Hz and 3.5 kHz. If the box has an adjustable band-splitter, it should include this range. In practice, you will seldom change the band-split points.

Gain control

The gain control element is the heart of the audio processor. At least four types are in use, each with advantages and disadvantages.

The optical (LED-photocell package) continued on page 44 ►



tailor your sound to a wide range of requirements, from laid-back easy listening to driving modern rock.

The wrong processor choice will limit your options and make changes in your sound more difficult. The right processor

ments for a flexible, cost-effective broadcast processor.

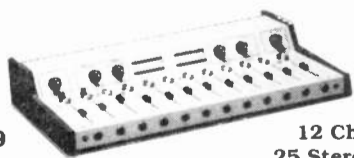
Audio processing, including and perhaps especially on-air processing, is subjective. Ask three experts and get three opinions. Those expressed here are one

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PIONEER PROFILE

Rumrunners and Other Advertisers

by Barry Mishkind

TUCSON, Ariz. It is the lifeblood of our industry, yet often the most criticized feature of radio programs. Listen to your favorite radio station, and before long you probably will hear it: the commercial.

Without it, radio broadcasting in this country likely would have taken an entirely different direction, perhaps similar to systems in countries that fund broadcasting from tax revenues. The

robust experimentation and creativity that characterized early broadcasting in the United States would not have been possible if stations were administered by government bureaucrats.

Indeed, in early 1922, when Secretary of Commerce Herbert Hoover convened a Conference on Radio Telephony to address various issues affecting the fledgling broadcast industry, program content and advertising were near the top of the list.

The Conference favored a total ban on "direct" advertising. Summing up the general view regarding broadcasting in those days, Hoover stated, "It is

inconceivable that we should allow so great a possibility for service, for news,

They termed it Toll Broadcasting' and the Queensboro Corp. was very pleased with the results.

for entertainment, for education, and for vital commercial purposes to be drowned

in advertising chatter."

You will notice the word "commercial" is used in contrast to "advertising." Although the Department of Commerce licensed "commercial" stations in the early 1920s, the word "commercial" did not mean the same as it does to us today.

A commercial station was essentially a station owned by a business that made or sold products to the public. The term had nothing to do with the manner of how the station would be financed. Of course, the first stations were not initially constructed to make money from the broadcasts. They were built to attract attention to the owners' business.

Westinghouse, owner of KDKA and WBZ, made receivers. The owners of WWJ, WGN and WSB ran newspapers. WOR was built by Bambergers

continued on page 49 ►

Ham Nets Are a Hit

► continued from page 41

You can't help but come away with the feeling that the goal is more to help the other guy than to make a killing. While the "open architecture" of the old gear is an irresistible temptation to some butchers, many pieces amazingly are intact. At any rate, most sellers are forthcoming about the condition of the rigs offered.

The one problem with this therapeutic radio tonic is the presence of raiding slop-buckets (SSB stations). While I've never heard an AM'er interfere with an SSB Trader's Net, the courtesy is not reciprocal. For some reason, some members of the single-sideband community can't resist jamming out some of the weaker AM stations trying desperately to participate. Maybe the reason some SSB congenital-jammers single out the AM Swap Net for abuse is that the congregation of so many dedicated AM'ers is somehow threatening. Maybe the net demonstrates a light-hearted vitality somewhat lacking in the expanding community of technically deprived "plug-n'-play" appliance operators.

An RW reader recently provided a tape of another excellent AM Swap-Net. The informal West Coast AM Net meets nightly on 3.870 MHz around 9:30 PST. A formal session takes place Wednesday at 9 p.m. This edition features a Swap-Net. The taped example features Randy, KE7TV, as Net Controller. His mighty signal forms a kind of protective umbrella around the less powerful participants. Randy's exuberant personality and quick wit add zest to the proceedings. The "N.C." is the key ingredient in the success of any amateur radio net. The Net Control has to have the signal of a broadcast station, the memory of a Cray Super Computer and a receiver that can pluck the needle from an RF haystack.

Like the Internet, amateur radio nets cater to every taste. Next time, we'll explore the "seamy" side of ham networking.

□ □ □

Al Parker writes about amateur radio and photography. Contact him at (516) 681-6733.

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Building a Processor

► continued from page 42

type provides smooth RMS control but is slow and will not control peaks. The FET type is simple and relatively fast, but is difficult to control precisely and requires adjustment for good operation.

PWM modulator types provide precise control, but tend to be complex and noisy with poor dynamic range. Last, voltage controlled amplifier (VCA) types give high-quality precision control but must be well designed for low distortion operation.

Arguably, the best gain control element is a VCA. While optical and FET control elements remain popular, they predate the era of inexpensive, high

quality VCAs and a well-designed VCA has the widest dynamic range and the lowest noise and distortion.

Levelers and Compressors

A multiband leveler is vital to consistent processor performance.

The leveler accepts the wide dynamic range audio from your console and presents it to the compressors in well-controlled form.

This is not unlike having a skilled operator slowly and carefully riding gain on the program material. If a processor does not contain a multiband leveler, you usually must add a pre-processor to perform this function.

The multiband compressors are the most critical function of the audio processor. Compression ratio should be adjustable (generally 2:1 up to 6:1).

A compressor set at 2:1 will exhibit a 1 dB output level change for a 2 dB input level change.

Compressor design will affect processor sound more than any other element. Attack and release time can be adjustable, but modern trends are toward intelligent compressors that automatically select optimum attack and release times for the program material.

Most modern audio requires dynamic control of attack and release times so this automatic control is desirable. Dynamic attack and release time circuits make the processor easier to set up. They also adapt better to a wide variety of input sources.

Peak Limiters

The multiband peak limiters should truncate system peaks without materially affecting the sound. Increased density can be achieved at the peak limiting stage by making peak limiter release time variable. This adds punch to your signal.

Peak Clippers

Multiband peak clipping should be used to catch any peaks that are too fast for the peak limiters. These peaks can rob you of valuable modulation unless they are tightly controlled. Modern peak clippers are intelligent and self-adjusting. This makes over-clipping your audio impossible. The best clipper circuits contain distortion-reducing circuitry to make clipping distortion inaudible.

All-in-one boxes

There is a choice. You can buy an integrated audio processor/stereo generator or you can buy separate components. It may make sense to buy an integrated box, because at one time separate components integrated poorly, causing excessive overshoots. Modern circuitry has virtually eliminated this problem.

Still, I find separate components to be more flexible and economical. You can make changes in your chain without jeopardizing your entire processor investment.

Debate between manufacturers goes on about this topic, but you as a user must decide what approach fits your situation best.

Digital signal processing

Digital signal processing, compared to other processing technologies, is in its infancy. More DSP processors are entering the marketplace and a definite shake-out is going on.

Be wary of DSP processors that lock you into a narrow range of adjustments. The ability to tweak these boxes is limited only to the choices the software designer gave you.

Many early DSP boxes used fixed-point processors to calculate gain control functions.

These processors tended to sound rougher than the floating-point processors available today. So to this end, DSP processing is slowly advancing beyond a "1960s" phase.

At this time, a number of software coders are not audio processing experts. Until this happens, advanced analog techniques are an ideal choice for state-of-the-art processing.

Choosing a high performance audio processor need not be a hit-or-miss task. Careful attention to these design considerations will help you make an intelligent and cost-effective choice.

Figure 1 on page 42 is a block diagram of the Combinator, a flexible four-band audio processor. It is based on a Behringer design; my company modifies the product for use as a broadcast processor.

The figure demonstrates the level of sophistication that is possible with modern analog design techniques. It takes all of this circuitry to produce the dynamic on-air sound demanded in today's competitive marketplace.

□ □ □

Jim Somich is a radio engineering consultant and vice-president of engineering for Processing Solutions, Inc., a manufacturer and distributor of broadcast equipment. Send him e-mail at jsomich@gnn.com

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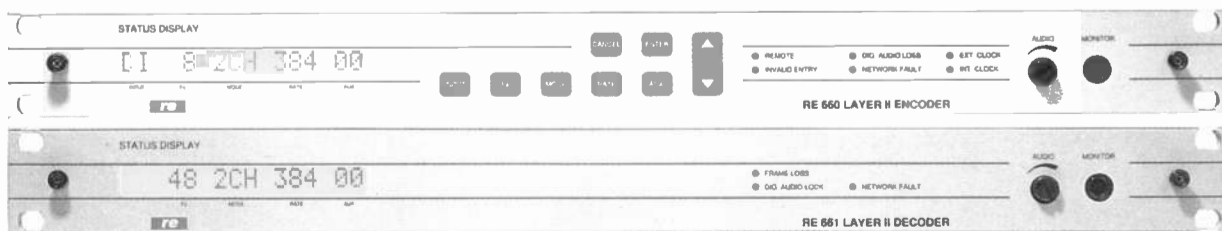
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EAS Case Studies

The FCC's deadline for mandatory EAS compliance is rapidly approaching. Many broadcasters are beginning to feel the heat—especially since the FCC continues to maintain there will be no extension beyond the deadline.

Since the scramble for equipment began several months ago, many broadcasters have asked how the Sage ENDEC can address their special problems.

CASE 1 Our area's LP1 (primary EAS station) and an LP2 (the backup) have different philosophies on alerts. The LP1, an all-news station, carries all important watches and warnings from the National Weather Service and local authorities. The LP2, a music station, carries the most severe warnings. If the LP1 is off air, the LP2 will carry warnings the LP1 would carry. Can ENDEC accomplish this automatically?

Yes, if the LP2 has ENDEC's Modular Receiver. The receiver has outputs to indicate the presence of both the carrier and modulation on the station being monitored. If ENDEC's manual override is set to the LP2/LP1 function, the following happens: As long as the LP1 is on the air with modulation, the LP2 carries only the alerts it has agreed to run. If the LP1 goes off the air or loses modulation, ENDEC senses the condition and switches the profile of the LP2 to the LP1. This enables the LP2 act as a full backup to the LP1, carrying all significant warnings and alerts.

CASE 2 A triopoly (three stations in the same facility) has an automated news and talk program on AM and two live music programs on FM. How can one ENDEC and the relay panel get appropriate alerts on the AM first, without delay, then allow the two FMs to run the alerts at an appropriate time?

By using ENDEC and a two-station relay panel, the unit can independently switch the audio of three radio stations. The first station is directly into the ENDEC and the second two stations are on the relay panel. By programming the profile of each station separately, ENDEC can be commanded to automatically put the appropriate alert on the AM immediately upon receipt, and then allow the two FMs to preset which will carry the alert next. This ensures that the alert will get on the AM immediately and fit into the programming of the two FM music stations during appropriate commercial breaks.

CASE 3 A totally automated FM music station wants to carry appropriate EAS

alerts for its area but doesn't want to constantly cut into its music format to put the alerts on the air. Can ENDEC do this?

Yes. With ENDEC's commercial tally function, it's a snap. The ENDEC has a number of programmable relay functions that allow closures, latching closures, and pulse closures at every stage of an incoming or outgoing alert. In the case of this automation system, a relay is programmed so that it closes in an appropriate sequence when a valid incoming message is stored in the ENDEC. This tells the station's automation system to make the next event the emergency message stored in the ENDEC. The automation system sends back a relay closure or voltage to the ENDEC, holding off transmission of the alert until the next event is ready. At that time, the ENDEC automatically interrupts the program line, sends the alert, then returns control to the automation. The result is perfect program continuity in a totally unattended automated station with the alert getting on as quickly as possible.

CASE 4 An AM news and talk station has four studios, any one of which could be on the air at any time. How do you control the ENDEC in the manual or timed relay mode from all of these locations if the ENDEC is mounted in the control room rack near the STL?

ENDEC can support up to five full-featured remote controls simultaneously, allowing access to all of ENDEC's functions from up to five independent locations. In this case, the ENDEC was installed in the engineering space about 150 feet away from each of the four studios. Each studio is equipped with a remote control that is mounted on the side of the console where the operator can easily read the 8-character display and activate all the buttons. Once one of the studios has seized control of the ENDEC to send or relay the alert, other users purposefully are locked out until those functions are completed. At this time, all of the stations can again control the ENDEC. The remote control makes it possible to push a single button to listen to the message stored in ENDEC, to send weekly and monthly tests, and to put an alert on the air immediately. With the remote control, you also can store dozens of area-specific messages—one to a button—on the programmable keypad.

CASE 5 The National Weather Service in our area sends a lot of watches and warnings on the NOAA Weather Radio System. Our station is the news and talk authority of the town. We pride ourselves on keeping the public up to date on all important

events. However, the announcer at the National Weather Service is just awful. His pronunciation and diction sound awful on the air. How can we take these messages, get them on the air, but replace the audio with our own announcer?

ENDEC makes it easy to replace audio on an incoming stored message. Once the message is received, the operator can read the text on the printout or the display screen. The operator can also listen to the audio and make notes about the alert. By connecting a non-program output of the console (cue or audition) to ENDEC's encoder, it is possible to replace audio in storage with audio from a local announcer yet still retain the digital codes and end of message sent by the Weather Service.

If you are using the remote control, you simply hit the record button and send audio from the console to the ENDEC via the encoder in connection. This will replace the audio stored in the ENDEC, even if lengths of the original message and your replacement message are different. When you re-send the alert, the digital data will be exactly what was sent by the National Weather Service, but the voice will be your announcer doing the alert in a clear and concise manner.

CASE 6 Our TV station has three newsroom areas and a master control. All areas need to know about incoming alerts and warnings. However, since we only control ENDEC from master control, we don't need remote controls in newsroom areas. How can we get information out to all these locations?

ENDEC supports up to five multicolored LED signs that crawl the text of incoming and outgoing messages as long as the alert is valid. Designated colors give news crews and operators information about a message's urgency: Green indicates tests; orange is used for watches, and red indicates warnings. Signs can even be made to beep when a message arrives! Signs come in many sizes, and are ideal for radio stations as well as TV stations.

If you have special EAS case that you need addressed, call Harris today.

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EAS Installation

Sage ENDEC Installation is EAS-Y

For any configurations you need to provide some basic information to your ENDEC.

Power up your new ENDEC, it will perform a self-test routine and provide the menu screen. Install the printer paper, program your call sign or group name, location and time zone information, per the "Quick Start" section in the manual. Your ENDEC is now capable of basic operation.

For a Single Radio Station:

You will need the Sage ENDEC and receivers to meet your level of involvement in your State EAS Plan. (Two sources, minimum) The Sage RM-3 receiver frame provides 1 AM, 1 FM and 1 NWS receiver in a double shielded, very selective, 1 rack unit package.

Set your receivers for your monitoring requirements, hook the receiver audio to the ENDEC Monitor Audio Inputs, plug your program audio through the built-in Program Interrupt, Set Levels and you are done with the physical installation.

The programming to the ENDEC's Incoming Message Filters and the locally originated Outgoing Message Templates comes next.

For basic EAS compliance, you must Auto-forward any National Level messages, relay the Required Monthly Test within 15 minutes of receipt and initiate a Required Weekly Test in the weeks that a Monthly Test is not scheduled.

The Incoming Message Filters are configured at the Menu Selection "Presets". These Filters allow you to be in complete control of how your ENDEC functions during alerts. On a file by file basis, you will prioritize any incoming alerts and tell the ENDEC how to handle them.

If you plan to locally originate any alerts you may configure Outgoing Message Templates. The "Presets", "Outgoing" Menu selection prompts you to enter all the necessary information for your Operational Area. With these Outgoing Message Templates in place, it is simple to originate an alert. The operator will pick the appropriate Template, assign an event duration time and place the alert On-the-Air.

Outgoing Message Preset Templates allow your operators to quickly and accurately originate any local emergency alerts.

With the Filter and template programming complete, your ENDEC is operational. Let's look at some ways the Sage ENDEC may be implemented to satisfy multi-station requirements.

For two (or more) stations at one location, simulcast;

Program and setup the ENDEC as described for a single station application. Then connect a contact closure from the ENDECs' rear panel (Encoder Active Relay) to your stations simulcast switch control, causing the ENDECs output to drive both stations. Need a different audio level for the second station? Not a problem! The ENDEC provides an additional alert audio output on the rear terminal strip.

For two (or more) stations at one location, independent control;

Use multiple ENDECs. You may distribute the receivers audio to the individual stations. Then program the ENDEC in each station for that stations own requirements. This is moderately more expensive (for a two station application) than the next scenario, but provides absolute independent control and redundancy.

For two (or more) stations at one location, independent control;

Program and connect the ENDEC as before for one station, then add the Sage RP-2 Multistation Relay Panel for two additional stereo program interrupts. (or one stereo, and two mono interrupts) Add Sage RC-1 remote controls in the air studios of stations 2,3, & 4, to provide independent control of the ENDEC. With the MSRP (multi station relay panel) option enabled from the Menu, you may now program Incoming Message Filters for stations 2,3 & 4 to custom tailor the ENDEC operation for each station in the group. Each additional stations programming is identified by its' own call sign, so it is easy to verify each stations operation on the printed record.



SAGE ENDEC



**SAGE ENDEC RC-1
REMOTE CONTROL**

For more information, contact Chuck Maines or Gary Hardwick at Harris:

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Early Radio Schemes

► continued from page 43
department stores, and so on.

The concept of selling airtime in small segments to run advertisements is generally accepted to have been pioneered by AT&T on Aug. 28, 1922, at their new station WEAJ, New York. They termed it "Toll Broadcasting" and the Queensboro Corp. was very pleased with the results. WEAJ moved to capitalize on this success and within a year had more than 30 clients.

Still, with newspaper editorials and listener groups of the time echoing the attitude of Secretary Hoover, stations were cautious in presenting advertisements for businesses other than that of the station owners. But, because all local stations originally shared a single frequency, shorter-form advertisements would not have been efficient anyway. Advertisers would need to buy time on stations to ensure regular exposure.

An effective alternative would be to sponsor a program featuring popular local artists with the program carrying the name of the client. This worked reasonably well at first, but as radio became more popular, performing artists wanted more and more payment for their work.

This did not leave much from the sponsorship fees for the station. Thus, some companies decided the costs of their stations could no longer be justified, and either closed them down or sold their time allotment to another station.

Other stations, especially smaller ones, scrambled in order to survive. KMED in Oregon would shut down and send everyone out to sell air time. When they succeeded, they returned and put the transmitter back on.

Some stations became even more creative. More than one religious program was suspected of being involved in the "numbers" game, and we do not mean ratings. Lost to antiquity is the name of the person who first realized announcing certain scriptural citations at a certain time would give listeners the "number" of the day. From time to time, regulators would discover the ruse and a few stations lost their licenses.

National Prohibition was also a factor in the 1920s. This led to another novel scheme. It was at a Seattle station well known to the authorities: KFQX. Owner Roy Olmstead was an ex-policeman. Yet KFQX never seemed to lack operating funds. It was virtually an open secret that Olmstead was the "king" of Puget Sound rumrunners.

However, the real reason the station was built was an awareness by Olmstead's wife that Prohibition would not last forever. Elsie Olmstead thought radio was "the coming thing" and a good place to invest their money.

KFQX certainly benefited from Elsie's talents. It had one of the strongest transmitters in the area — originally 600 watts, later more. Elsie spent a lot of time developing quality programming and making the station popular in the community. Remote lines were installed to broadcast dance music live from the clubs. KFQX had the best of the local bands.

Elsie wanted to broadcast concerts, plays and lectures to the community. Plush studios were built in downtown Seattle for this purpose. Elsie herself became "Aunt Vivian" each night at 7:15

on KFQX's most popular program, reading bedtime stories for the children.

Or were they just bedtime stories? Somehow, husband Roy's booze boats managed to learn just when and where to

It was a dark, rainy Monday evening. Nick Foster was running the transmitter. Elsie was doing the "Aunt Vivian" show. Suddenly, Nick felt the cold steel of a .45 automatic on his neck. "Turn that thing off," said the man with the gun; and Nick did so without delay!

The commotion made the front page of the paper, and in due course Roy

Over the years, the Olmstead station evolved into KFGA, KXA, KRPM, KULL and is now on 1090 kHz as 50 kilowatt KRPM.

Fisher went on to develop a different KOMO, but that is another story.

□□□

Some of the material on Roy Olmstead and Seattle radio history came from the book "Puget Sounds." A labor of love, this interesting and entertaining hard-bound history of Washington radio can be acquired directly from the author for \$16.95 postpaid. Send check or money order to David Richardson, Rt. 1, Box 81, Eastsound, WA 98245-0081.

Barry Mishkind can be reached at (520) 296-3797. He invites e-mail to barry@broadcast.net and invites you to his home page at <http://www.broadcast.net/~barry/>

KMED in Oregon would shut down and send everyone out to sell air time.

unload their cargo of Canadian liquor. Was there a "secret code" in those stories for children? In any event, the clock was running out for KFQX. Federal agents were closing in on the Olmsteads, anxious to stop their non-broadcast activities.

Olmstead was convicted of liquor conspiracy and sentenced to four years at hard labor.

KFQX survived however, leased out to Birt Fisher, who changed the calls to KTCL, then KOMO.

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The NAUTILUS JUKEBOX system runs on IBM compatible PC's with no proprietary hardware needed for installation. Being an open system it can be configured for each user, and it can grow with Your needs. You can have one or more workstations communicating via network. The number of analog and/or digital audio channels is limited only by the user, and the audio storage capacity can reach several thousand hours.

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You Read It Here...

Here's what people were talking about, as read in the pages of RW ...

One Year Ago

"I am not trying to bash Microsoft's new stable of products. I am only suggesting that it might be best to let the new products 'mature' before you plunk down your hard-earned cash. ... I intend to try the new operating system some time in the future, but for now I will wait and see."

— Richard Mertz
"How Ready Are You for Windows 95?"
Oct. 18, 1995

Five Years Ago

"Some 40 attendees representing all major facets of the radio manufacturing and broadcast industry showed up for the first meeting of the Electronic Industries Association (EIA) subcommittee on DAB. ... Chairman Randall Brunts from Delco Electronics ... acknowledged that having individual systems proponents working on the committee was 'a concern,' but said their presence is necessary."

— News item
Nov. 20, 1991

Fifteen Years Ago

"Unconfirmed reports indicate that the FCC staff will have completed their study of which system they believe is 'the best' AM stereo system by late January, 1982."

"This selection, or at least official recommendation, is what some of the proponents and industry trade associations have long advocated."

"It could nevertheless be overturned by the Commission and the decision could go the way of the teletext decision. Let's hope so since AM broadcasters need AM stereo now!"

— News item
November 1981

Classic NY Radio

► continued from page 24

ears. WLUX is involved in the Long Island community. The station is big on veterans, even giving an award to the veteran association of the month.

A merit award, presented each week in conjunction with Genovese drug stores, honors an unsung community hero.

"We feel like it's important to recognize people, and give them a little bit of recognition, not because they ask for it, but (because) they deserve it," said Roberts. "And they're all fellow Long Islanders."

The station's Ambassador Club consists of listeners who act as liaisons between their organizations and WLUX.

"They are charged with going out and spreading the word," said Roberts. "And they do it."

Roberts puts out "Joe Roberts' Service Department" newsletter, which includes tips like those he offers during his show.

The last sentence in a recent issue seems to sum up Roberts' and WLUX's feelings for listeners: "Until we meet again, my friend, this is Joe Roberts hoping that only good things will happen for you."

Very Long Island

"The music you love, the information you need," says Roberts one afternoon, leading into Roberta Flack and Donny Hathaway doing

The top of the hour jingle plays, and all is right with the world.

"Where Is the Love."

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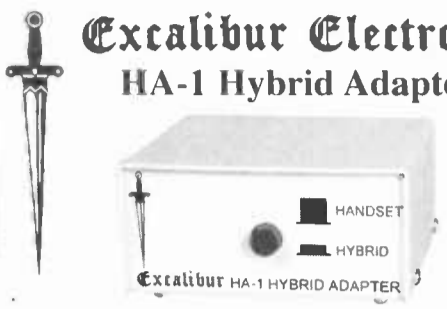


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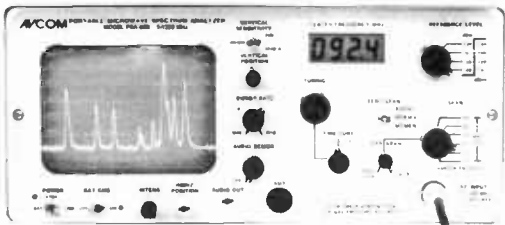
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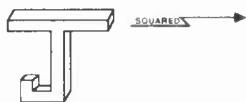
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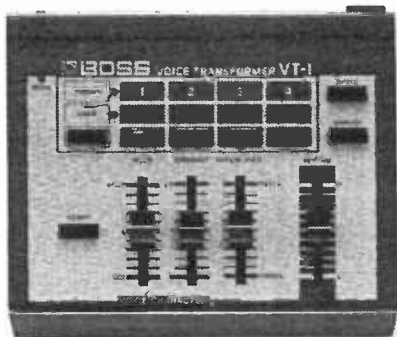
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Greaseman Shoots for Laughs

by Alan Haber

LOS ANGELES His voice seems to zip up and down like a wiggly roller coaster, darting in and out of air pockets like a snake barreling through blades of grass at top speed. Emphasizing various syllables within his sentences in the style of the great cartoon characters, he keeps his listeners on their toes, admittedly a tough position for anyone to maintain for more than a few short minutes.

He is the Greaseman (a.k.a. Nino Greasemanelli and a host of other aliases), Westwood One Entertainment's man of a thousand stories and all-around hard-workin' radio guy. Spiraling all manner of stories into the airwaves five mornings a week, Doug Tracht is one of those microphone jockeys who really gets off on his job.

With newscaster Marcia Shipley and producer Bill Scanlan along for the ride — not to mention a host of behind-the-scenes types — the Greaseman treats the airwaves like an empty canvas, as an artist would, although he uses words instead of paints and brushes and rarely, if ever, wears a smock.

These days, Grease is syndicating to stations in Washington, Atlanta, Baltimore, Grand Junction, Colo., Jacksonville, Fla., Roanoke, Va. and Poughkeepsie, N.Y. He emigrated to his perch on the left coast from the nation's capital in 1993 after more than 10 years at WWDC-FM.

Westwood One Entertainment, in partnership with Infinity Broadcasting, is in the thick of rounding up radio stations to add to the Greaseman's syndication corral. A New York affiliate is sought to replace WXRK(FM), which

carried the program at night until it was retooled as a morning entity.

Grease's laugh fest is now marketed as a (basically) music-less morning show. The Grease did nights after he moved to Los Angeles from Washington; he continues to air at night on WJFK-FM back in Washington.

Grease went west because he felt he needed to give Los Angeles a try.

"I think if you're going to be on the radio and swappin' stories, you might as well do it in the place where you have other opportunities to do other things, so I was California bound," he said. "Plus, I like the lifestyle. Sunshine all the



Doug Tracht — The Greaseman

time."

Not that the Greaseman sees a whole lot of sunshine during the rather early hours he keeps, early even for a morning radio guy: He rises at midnight, and mans the microphones at Westwood One in Culver City from 3 to 7 a.m.

Don't cry for sleepy Grease, however: he's a shift sleeper, he says, so sleep's not a problem.

"I'm like a submarine commander, you know?" he said. "What's that? Two

minutes 'til they contact the enemy? I'll be taking a nap. Wake me in my cabin when we're close to torpedo time."

Early Grease

The Greaseman's sights were set on radio from the get-go. He grew up in the Bronx, the fifth Beatle (er, borough) of New York City. The on-air antics of the WABC(AM) jocks and the WMCA(AM) Good Guys tickled his fancy (for example, he liked WABC's Dan Ingram). He was convinced that being on the air would be fun.

The radio bug was planted in the young Greaseman when, as a kid, he listened to WFUV(FM), the radio station at New York's Fordham University. One day, Grease called up the station; he was told that people who went to that school could get on the radio.

That sounded great to him. He promptly broke bread with his guidance counselor at DeWitt Clinton High School in the Bronx, telling the counselor he wanted to

be on the radio. Before he knew it, Grease found himself in 1968 at Ithaca College in upstate New York, working on the institution's WICB(AM) and

continued on page 60 ▶

Big Texas Dreams

by Chris Hamaker

ODESSA, Texas Radio revenue in the Odessa-Midland market is thriving, thanks to a new-found economic optimism in the region.

Leading the ratings in this resurgent market is country KGEE(FM). Its owner, New Frontier Communications, is mining the riches of local radio revenue, holding three other licenses in the market. Also in the family: country station KNFM(FM), AC outlet KODM(FM) and talk/nostalgia station KMND(AM).

The boom goes bust

Hard economic times experienced in Odessa-Midland have not been forgotten. The area sits over a major portion of the oil reserves in the United States, and the region thrived until the oil "bust" of the mid-1980s.

The economic vacuum created when major oil companies began to pull out was filled gradually. Independent oil companies moved in, followed by new retail establishments.

"There's been ... a shift in the marketplace in terms of employment away from these huge, monster, giant companies to smaller,

continued on page 61 ▶

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WINS(AM) News Team Covers Airline Disaster

by John Montone

NEW YORK July 17, 8:30 p.m. The pager on the editor's desk in the WINS(AM) newsroom sounded the initial alarm.

"It started beeping and bouncing," said night shift editor Fred Hornby. The printout from a company called Breaking News Service said a plane had gone down in the ocean off Long Island. Hornby immediately ordered inside reporter Howard Liberman to get on the phone.

Liberman made calls to the Federal Aviation Administration and the Port Authority, which operates the three

major airports of metro New York City. He quickly confirmed a plane had gone down in the Atlantic Ocean somewhere near the eastern end of Long Island.

Fire at sea

The pager then sounded a second time. The printout said the plane may have hit a freighter because there were reports of "fire at sea." Minutes later, Liberman learned from the Port Authority that radar had lost contact with a TWA commercial flight.

Relying on instinct and 27 years of experience, Hornby began calling out the troops. His first call went to Ben Mevorach, a 1010 WINS reporter who



lives in Nassau County on Long Island. Mevorach recalled that he had just finished working a 10-hour day when the phone rang and he heard "a screaming editor say something about a plane down."

"Where?" Mevorach wanted to know.

"I don't know," Hornby said. "Just go!"

Mevorach hopped in his car and headed east.

Hornby then called reporter Juliet Papa, who lives in Manhattan. Papa had also worked all day.

"I was watching TV in my sweats, Hornby was on the desk. He barked, 'Get your clothes on. Your going to the Hamptons, a plane is down.'"

The third reporter summoned was Anthony Johnson, who was working the night shift. Hornby sent him to Kennedy Airport. Hornby correctly predicted family members would begin to gather there.

With reporters deployed, the next step was to talk to the bosses. Hornby called News Director Steve Holt, who agreed with his decision to "throw bodies at the story."

"You have to do it instantly," Holt said later.

Even as reporters were racing out to eastern Long Island, Howard Liberman had collected enough information to go on the air. His first report was preceded by a sounder that blared, "Breaking news now from the 1010 WINS newsroom."

'I tried to be responsible and measured without getting caught up in the hysteria. Obviously it was very emotional.'

Fundamentals

Liberman gave the first sketchy details. A TWA flight that had left JFK airport shortly after 8 p.m. had crashed into the Atlantic.

Soon listeners began calling the station with dramatic reports of fire in the sky, explosions and a bright orange glow at sea. After consulting with Executive Editor Mark Mason, Holt decided to "break format and go wall-to-wall" with this one story.

It was a major decision for 1010 WINS, which runs three 20-minute news cycles an hour, 24-hours-a-day, 365 days a year. Each cycle normally contains 10 to 15 stories. The station has used this format for more than 30 years. But this night was different.

Mason canceled all commercials, a move that he said cost the station thousands of dollars.

"It would have been a disservice to our listeners to run spots," he said.

Mason also took weather, traffic and

sports — all staples of the 1010 WINS product — off the air.

"It's just good fundamental broadcasting," he said. "You want to own the story so you're the place people go."

Ralph Howard had just finished his regular anchor shift. Hornby called him back in to "special anchor" the story. From 11 p.m.

until 5 a.m., Howard talked into the microphone. He interviewed officials, read the latest copy, switched to network updates from ABC and CNN and put reporters Papa and Mevorach on the air from the official command center in East Moriches.

Overnight, three more reporters were summoned: Al Jones, Stan Brooks and me. I got a call from Holt at 1:45 a.m., about two hours before I normally get up to begin my morning drive shift.

Dawn unveils tragedy

Mevorach, wandering about the marshes of the Moriches Inlet, came upon a boater pulling into a small slip. He stopped and came away with some incredible information: The boater had been out to the crash sight. He had pulled bodies and debris from the water, and had seen flames on the surface of the ocean.

"It was our first indication that there were no survivors," said Mevorach, who got the report on the air immediately.

Then ensued a rapid sequence of impromptu news conferences on the beach with officials from the FAA and the National Transportation Safety

Board. When they weren't covering these, Mevorach and Papa talked to people who had heard the explosions and looked skyward. Explaining how she related this horrible story to listeners that night, Papa said, "I talk person-to-person as if I'm

saying, 'I just heard this news.' I tried to be responsible and measured without getting caught up in the hysteria. Obviously it was very emotional."

In the studio, Ralph Howard did a phone interview with the principal of Montoursville High School in Pennsylvania, who confirmed that a group of students from his school were on the plane. The dimensions of the tragedy were becoming apparent.

As Brooks, Jones and I took over reporting duties at 5 a.m., Mevorach managed to get aboard a Coast Guard cutter that set out searching for possible survivors.

Using his cell phone, Mevorach brought listeners to the crash scene. He told them of a suitcase floating on the water and of chunks of the giant aircraft being pulled out of the Atlantic.

My Chevy Blazer is equipped with a Remote Mix C+ by JK Audio. I feed my stories through it. But that morning I couldn't get the car close to the beach so

continued on page 57 ►

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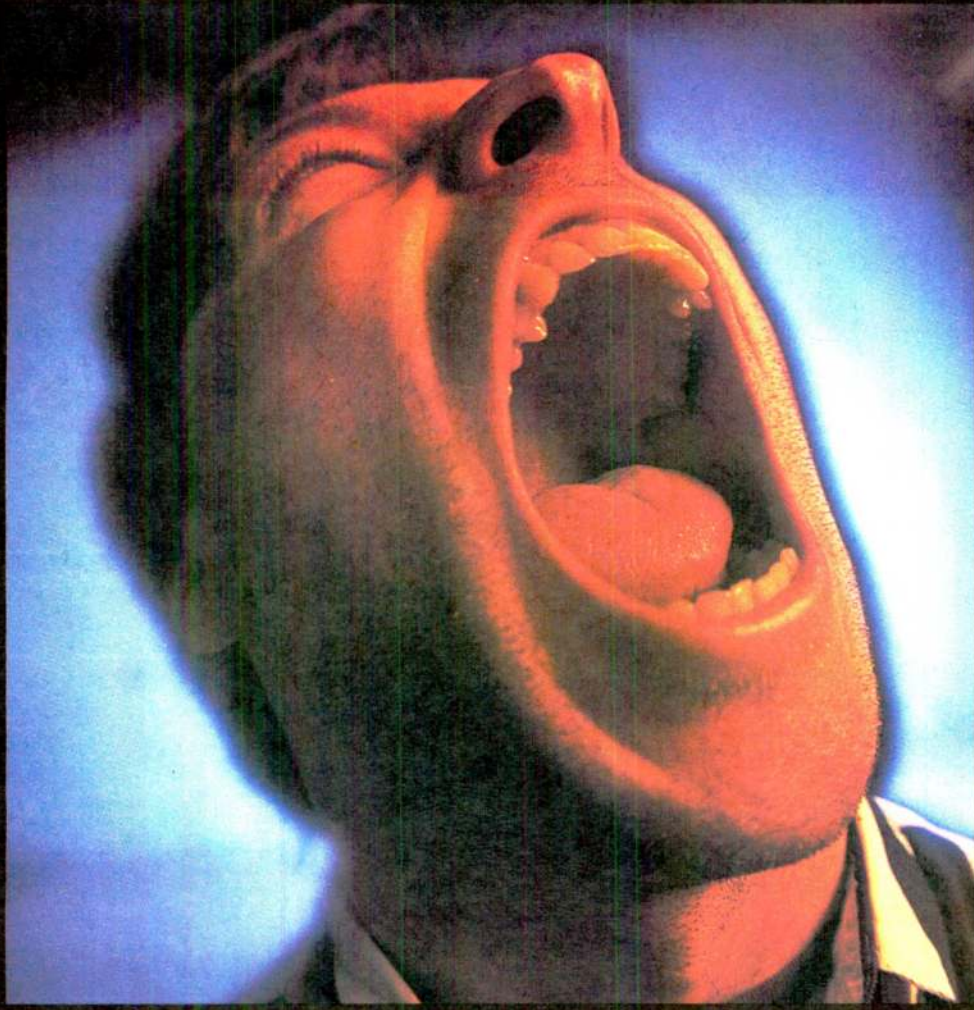
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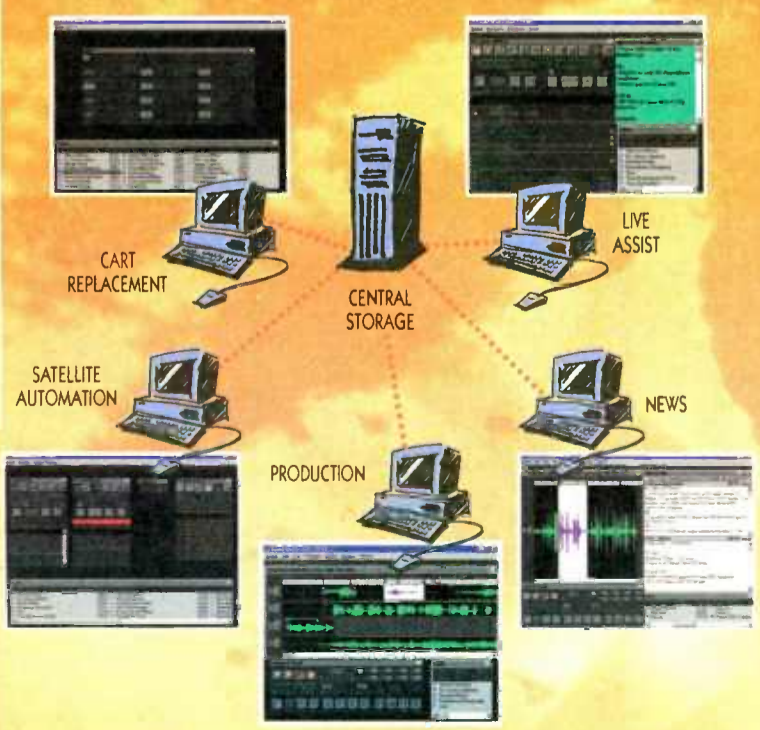
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Dalet users abroad include:

BBC (UK), CBC (Canada), Cadena SER (Spain), Caracol (Columbia), Deutsche Welle (Germany), EMAP Radio (UK), Radio France (France).



Circle (40) On Reader Service Card

World Radio History

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News Radio and TWA 800

► continued from page 54

I ripped my cell phone out of my car and hoped the batteries lasted. They did.

Great sense of loss

Later our reporters filed stories from a 32-foot Winnebago brought in by the ABC Radio Network and equipped with an Inmar Sat Digital



WINS cooperated with ABC News Radio in Long Island. ABC's Vic Ratner, Jim Hickey and Tim Scheld stand behind a satellite telephone.

Satellite Terminal and two C-band satellite channels. ABC also used an A.E.T.A. Scoop Reporter digital codec, which allows broadcast-quality sound to be transmitted over a cell phone.

On land, Brooks and I were struck by a tremendous contrast. A

Using his cell phone, Mevorach brought listeners to the crash scene. He told them of a suitcase floating on the water ...

beautiful, sunny summer day was dawning on the beach, yet nine miles off shore, 230 people were dead. We used that to set the tone of our reports.

Normally we get 45 seconds to tell a story.

That morning we stayed on for two or three minutes at a pop, relaying everything we knew, conveying the great sense of loss, knowing that the ears of New York were relying on us.

□ □ □

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

PERSONNEL LEVEL

Work the Phones to Get Ahead

by Sue Jones

SPRINGFIELD, Va. Think about the most irritating things in your daily routine. I bet that one item on your list is relating to people on the telephone.

Consider the number of times you place phone calls and how many you receive daily. The phone is an important part of your communications internally and externally. It can be your link to critical information necessary to repair a transmitter or hook up remote ISDN lines. It certainly is an important sales

link with clients and potential clients; and what would radio be without request lines?

Radio or any business without telephones is almost unimaginable, yet telephone skills and courtesy are often overlooked in the hectic daily pace. Telephones have been part of the business world for decades, but I am sure you can think of an example within the past week of a frustrating or unusually pleasant telephone experience. Poor skills and lack of courtesy on either end of the line can delay or frustrate your efforts. Conversely, polished

professional telephone skills can speed you along and improve relations with business partners and listeners.

Some good ideas

Check your phone skills against the following list.

Think about the information that you need before you place the call. If you have several points to discuss, write them down first so that you conduct all of your business in one conversation. Remember, telephone calls are usually interruptions. Having a list of items demonstrates personal organization and

continued on page 63 ►

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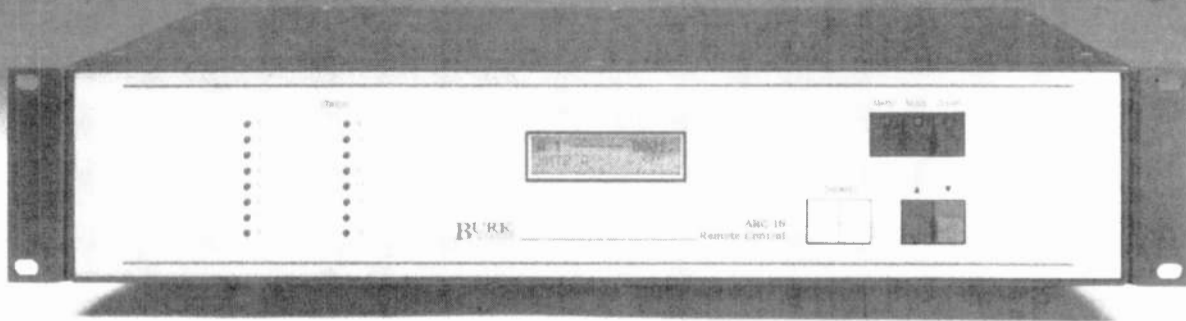
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Harder Talks to America

CANTON, Maine Talk America 2, the new second network from the Talk America Radio Network, received a boost when it signed on well-known host Chuck Harder. His program airs in the 2-5 p.m. block, Monday through Friday.



followed by the Robert Namer Show from 5-7 p.m.

Talk America 2 is available on Satcom C-5, Transponder 15, Channel 17.1, and on Spacenet 3, Transponder 9, Channel 5.4. The network is also heard on the Internet (<http://www.talkamerica.com>).

For more information contact Talk America Radio Network, (617) 828-4546, or circle Reader Service 101.

A Holiday Dozen

BEVERLY HILLS, Calif. If you are looking for an alternative to traditional hymn and carol programming during the Christmas season, try the 12-pack of radio dramas from Charles Michelson Inc. Radio Program Suppliers is available for airing throughout December.

Following Michelson's suggested schedule, tested last year in a dozen markets, stations carry a one-hour block of programming on the first three weekends of December, a three-hour block on Christmas Eve and all 12 half-hour programs on Christmas Day.

For more information contact Charles Michelson & Sons, (310) 278-4546, or circle Reader Service 118.

A Hot Potato on the Internet

DALLAS Small- to medium-market stations can receive audio files of major-market voices for use in their commercials and promos via The RadioInterNetWork, a new service from Radio Potato offering audio voice tracks over the Internet.

Stations with a PC or Macintosh and an Internet service provider receive software, an emergency BBS back-up system, a special e-mail address and technical support.

"The RadioInterNetWork is going to provide the smaller, satellite-intensive stations with a limited staff and financial resources a pool of major-market voices at a very cost-effective price," said Head Potato Marshall Such.

For information contact Marshall Such at Radio Potato, (817) 481-4453, or circle Reader Service 104.

ABC Beefs Up Music Offerings

DALLAS ABC Radio Networks inked deals extending its relationships with

Owens Broadcasting and expanding its association with Radio Today.

A multiyear contract with Owens Broadcasting, L.L.C., a Buck Owens Company, allows ABC to continue airing Real Country, the 24-hour traditional country music-based format that debuted on three stations in 1990 and is now heard on more than 130 affiliates.

ABC Radio Networks also agreed to handle national advertising sales for four more Radio Today broadcast services. Radio Today continues its role as ABC Radio Networks' affiliate relations rep for "Rick Dees Weekly Top 40," "American Gold with Dick Bartley" and other ABC syndicated programs.

For information contact Tom Shovan at Radio Today, (972) 448-3342, or circle Reader Service 120.

'Day' Dawns in Washington, New Orleans

DALLAS USA Radio Network added two major-market stations to its affiliate list for the syndicated morning program "Daybreak USA." WWRC(AM) in Washington became an affiliate in early August, followed in September by WSMB(AM) in New Orleans.

WSMB(AM) airs the five-hour program in its entirety.

The program focuses on current issues and topics and is heard on more than 100 affiliates. "'Daybreak USA' continues to be a huge success with markets of all sizes, especially large- and medium-sized markets," said Mike Tyler, co-owner of The Clearance Group, which is responsible for placement and clearance of the program.

For information contact Patricia Evans at The Clearance Group, (214) 669-1597, or circle Reader Service 103.

Customized Features and a 'Handyman'

NEW YORK Westwood One Radio Networks offers two new CNRRadio services that give affiliates customized reports and features.

NewsSource provides live and taped reports from three radio news veterans on major news stories, such as Hurricane Fran and the Olympic Park bombing. John Bisney, Dale Willman and Gary Baumgarten are the NewsSource correspondents. Ken Pauli coordinates NewsSource from the Atlanta headquarters of CNRRadio.

GuestSource, through cooperation with CNN television, allows affiliates to conduct custom interviews with newsmakers and experts on issues of the day.

"Competition in the news and information arena is fierce, and it is our intention to give our affiliates every possible advantage in the marketplace," said Robert Garcia, general manager of CNRRadio.

Westwood One Entertainment announced the Oct. 5 national launch of "Ask the Handyman with Glenn Haeg," featuring advice on home improvement from Haeg and other leaders in the field. The two-hour program is fed live on Saturdays.

"Ask the Handyman with Glenn Haeg" originated at WXYT(AM) in Detroit, where it aired for more than 13 years.

For information contact Renee Casis at Westwood One, (212) 641-2052, or circle Reader Service 102.

Win Friends and Enhance Revenue

BALTIMORE Computer telephony company Tango Communications has created Matchmaker, an interactive date matching service that is the company's first non-spot revenue program.

Listeners call in to use the service, providing the station with demographic



information. Tango pays affiliate stations 30 percent to 40 percent of the pay-per-call revenue.

Tango Communications was formed by Eric Becker, principal of Sterling Capital, and resulted from the acquisition of Teleport, Houston; Cyber Media, Indianapolis; and Cooper Media, Cincinnati.

For information contact Jim Fox at Tango Communications, (410) 769-5908, or circle Reader Service 119.

Jingle-Jangle

FALLS CHURCH, Va. Radio stations in Texas and Washington are using the latest jingle packages from TM Century. KSCS(FM) in Ft. Worth picked up the Country jingle package, as did KYNG(FM) in Dallas. WBIG-FM, in the nation's capital, will use the Upbeat Oldies package.

New jingles also are available for the Oldies, Adult Standard and Soft AC channels from Westwood One, and ABC's Pure Gold, Country Coast to Coast and Star Stations formats. For more information contact Beth Tepper at TM Century, (972) 406-6822, or circle Reader Service 86.

A 'Rebel' Yell from L.A.

LOS ANGELES "Radio rebel" Dr. Judy Jarvis broadcast "The Judy Jarvis Show" Oct. 10-11 from the NAB Radio Show and World Media Expo.

The three-hour program, which competes with the Rush Limbaugh and Dr. Laura Schlessinger programs, offered commentary and call-ins on topical issues. The program is distributed Monday through Friday by ABC Satellite Services.

For information contact Deb Shillo, (860) 242-7276, or circle Reader Service 68.



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Greaseman Is Oiled and Ready

► continued from page 53

WICB(FM). The young Greaseman was serious about being on the radio, and he could claim something not many other college broadcasters could: he had a paying job for three years while attending school, at rocker WTKO(AM) in Ithaca. He has also worked at rocker WENE(AM) in Binghamton, N.Y.

Even though he was itching to further his radio career, he said "no" when, two years into college, he got an offer to work in Buffalo at WYSL(AM). He remembers his parents being "so crestfallen at the thought of me dropping out" of college. Instead he finished school "for Mom and Pop." After that,

he reasoned, "I was on my own."

Or, rather, the Greaseman was, because the name by which Doug Tracht is now known came into being while he worked at WTKO.

"Back in the late sixties, everybody was saying that they were cooking," he said. "One day, I wanted to outcook the other guys. I said I was cookin' with heavy grease. One of the other DJs was referring to me on the station. ... He said, 'Oh, as the Greaseman would say,' and I thought, 'Well, hey, there's a name.' So I've been using it ever since."

At one point early on, Tracht called himself Dougie T., the Greaseman. However, while he was doing time at Rochester, N.Y.'s WAXC(AM), somebody told him two names were confusing. When he switched and began calling himself simply "The Greaseman," he says his "alter-ego kicked in. I almost made a character to fit the name, as opposed to a name to fit the character."

Tracht says he never set out to become a character. "When I started using just the Greaseman name and nobody could see me, I started conjuring up all these make-believe visions of what the character really looked like," he said. "By the time I was done, I had a 56-year-old beer-bellied truck driver. People would come to the station, ask to speak to the Grease, and I'd be sitting there saying, 'Well, now, he doesn't see anybody. He keeps low-key.' I'd say 'Make sure you say "hi" to him when he comes out.' ... It was pretty wild."

Basically, Tracht said he thought "it was more mysterious if there was this magical voice and nobody knew what he looked like." Thankfully, today's version of the Greaseman is more of a public kind of guy, representing his show at

various functions. He's also caught a bit of the acting bug, having appeared in three television movies of the week.

Morning Grease

The Greaseman got his first taste of morning radio in 1974 at WPOP(AM) in Hartford, Conn. He also cut his morning teeth at WAPE-FM in Jacksonville, Fla.

And, make no mistake about it, the Grease likes the a.m. shift.

"I like the fact that you start the day when everything is new," he said. "You know, all the breaking news, all the lat-



Tracht Record: The Faces of Grease

est stories. Everything is new and fresh. You get to put your own fresh spin on it."

Mornings are a real shot in the arm for the Greaseman. "By the time I stumble in the shower and get a couple of cups of java in my belt, get the adrenaline from knowing I have to perform in —" Tracht adopts the Greaseman persona — "a zillion markets across this great nation of ours, that combination of

caffeine and adrenaline just gets me goin' nuts, nuts, nuts!"

The Greaseman's longest consecutive radio stint to date was at DC-101 in Washington.

Interestingly, he says that people told him that he would never translate "into a

I always wondered what it must be like to strap on a gun and pin on a badge.

— The Greaseman

major market that's more cosmopolitan," he remembers.

"When people heard I was going to Washington, they said, 'Washington. Politics. Too stuffy. Never be a success there.'"

When the Greaseman hit big in Washington D.C., he felt his success "proved what I've thought all along — if it's a funny show, it's a funny show, and it'll be funny anywhere." The only difference "between towns is people's accents," he said.

The Greaseman must be doing something right, or at least something that's getting under the skin of his competition: Howard Stern and Don and Mike, for example, have taken repeated on-air jabs at the Greaseman. None of this bothers Tracht, however.

"I mean, people only whine and yell about things that scare them, really. I'm flattered that I must be getting under peoples' skin for some reason. I don't know why." His voice adopts the Greaseman persona. "Perhaps there's envy at work."

For Grease, there's enough to do — juggling all of his topics, bits, stories and jokes during his time on the air — without having to deal with petty DJ feuds. "The last thing I concern myself with is some other broadcaster," he said.

Fast thinking Grease

Being funny is the Greaseman's only concern, at least while he's on the air. Off air, Greaseman the radio guy and all-around nice guy has worn another hat: that of a reserve police officer in Jacksonville.

"You can do it on the weekends, after your radio shift is over," said Tracht. He adopts his Greaseman vocal stylings once again.

"I did it because I always wondered what it must be like to strap on a gun and pin on a badge."

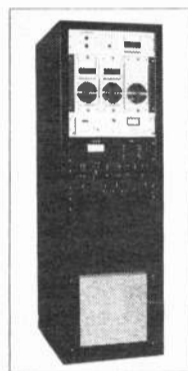
There are many similarities between law enforcement and broadcasting, said Grease. "You gotta think fast," he said. "No two days are alike. And, if you screw up, you're in deep s—t."

So Doug Tracht, a.k.a. the Greaseman, goes on, lighting up the airwaves with his brand of humor.

But if his radio gig ever ended — say, if people stopped listening to radio and bass fishing became the number one leisure activity — what would the Greaseman do?

He'd get right back to being a cop. "Instead of breakin' records," he said, lowering his voice, Greaseman-style, "I'll be breakin' heads."

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Circle (51) On Reader Service Card

Retail Spurs Growth

► continued from page 53

more independent operations," said Tommy Vasocu, president of New Frontier Communications and general manager of its four stations. "And we've seen a lot of that same kind of entrepreneurial spirit in a lot of other businesses in West Texas."

The leaner oil operations helped stabilize and revitalize the Odessa-Midland economy, attracting new businesses to the area.

"The oil companies create jobs, and there's all kind of other service companies from accounting services, to grocery stores, to oil and lube businesses. Most of our business comes from direct retail-type businesses that are the by-product of all these changes."

The flourishing economy in the region largely is due to a new-found spirit of cooperation between the two cities, which in 1993 set aside their rivalry mentality and took advantage of an Office of Management and Budget option to reclassify as a single metropolitan area.

'It's phenomenal'

"Historically, (Odessa-Midland) was always seen as two separate (counties)," said Vasocu. "But about two-and-a-half years ago it got joint ... status."

Retailers no longer saw two separate areas, but one large region with a combined population of more than 200,000.

"All of a sudden the Circuit Cities, the Best Buys, the Office Depots, the Office Maxs, all of these companies discovered ... this target area that needed to be developed," Vasocu said. "So we have had a small mini-boom of new businesses ... during just the last three years. It's phenomenal."

Two years ago New Frontier bought KMND and KNFM, a country station that brought in nearly \$1 million in revenues in 1995 and now ranks just below New Frontier's KGEE, which brought in an estimated \$1.25 million during the same period.

Having two top-rated stations with the same format in such a small market, particularly a market with the historic cross-county rivalries of Odessa-Midland, presents unique challenges.

"KGEE has its offices and studio in Odessa. KNFM has its studio in Midland," Vasocu explained. "The majority of their listenership comes out of their ... home county. Eighty percent of the listenership for KNFM comes out of Midland County. Eighty percent of KGEE's listenership comes out of Ector County," where the city of Odessa is located, Vasocu said. "It doesn't seem to be that way for other formats in the marketplace."

As long as revenues stay healthy, Vasocu is pleased with the partisanship of area country music fans. "We've come to recognize that we can't do a whole lot about it. At the moment, it works okay for us."

Separate sales staff

With its daytime-only status, KMND pulls in the least revenue of New Frontier's four stations, taking in an estimated \$200,000 in 1995. Though pleased with its performance so far, Vasocu expects New Frontier's sales approach will generate higher revenues in the future.

"KMND ... was sold in combo and didn't have a separate sales staff," Vasocu said. "We've created a separate

sales effort with KMND and we have a separate sales effort with each of the four stations. We don't do a lot of combination selling. That's just a philosophy we subscribe to."

KODM takes the lion's share of the AC station revenue in Odessa-Midland. Last year the station generated a healthy \$650,000. Vasocu foresees KODM again finishing third in total revenue among his stations, but he said it "may be a close second" to KNFM, which is "up by a good margin this year."

Owning the two top-rated stations as well as two others in the market does not mean ad revenue is easy to find.

"We compete pretty aggressively,"

said Vasocu of the hunt for ad revenue in the Odessa-Midland market. The competition includes two daily newspapers (one in each county), four network television affiliates and two cable systems.



Vasocu believes in emphasizing the traditional strengths of radio, particularly its ability to target different demographic groups. "That's the strong selling point of buying radio today," said Vasocu. "The fragmentation that's taking place in television and cable with the different

channels on certainly makes it a tougher sale for those guys."

Vital to the success of any radio station is community service. "All of our stations are actively involved. I think that's a cornerstone to any successful radio station in any market anywhere in this country," Vasocu said.

Rounding out the keys to success in the Odessa-Midland market, Vasocu acknowledged the New Frontier personnel who provide a quality product to its listeners.

"We have a talented group of people at all of our stations. They do great things for our listeners, clients and company."

"If we do a good job of providing quality programming for our listeners ... we'll have the type of audiences that advertisers ... will want to reach with their messages," he said.

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Circle (37) On Reader Service Card

Special Events Bring Special Risk

by Paul J. McLane
and Susan Ashworth

WASHINGTON If station managers are not careful, a good time can get them in trouble.

Radio stations increasingly are using major events to promote themselves and their advertisers. A variety of venues, from music festivals, to boat giveaways, to live concerts carried on the Internet, are being used for promotions.

Preparing for the pitfalls

But if management does not prepare for the pitfalls, a badly planned promotion could cost the station a great deal of money and trouble.

Before a station dives into scheduling and hosting a big event, managers and programmers should consider liability and other safety questions to protect themselves and their audience.

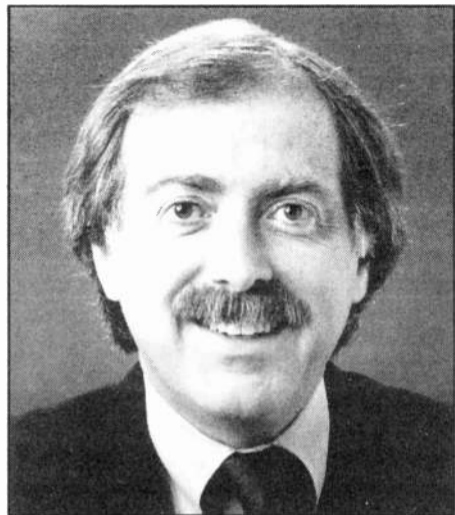
"Event promotion is necessary because this is a competitive world and you have to set yourself apart," said Mark J. Prak, a partner with Brooks, Pierce, McLendon, Humphrey & Leonard in Raleigh, N.C., who specializes in communications law.

"But these events are fraught with opportunities to expose yourself to big-time liability if you're not cunning in protecting yourself."

Managers can put their stations at risk if they do not take the time to set some

guidelines and get their station insured, he said.

"Let's say you want to sponsor a hot air balloon festival. You have to cross a lot of bridges to protect the crowd and to protect yourself against liability," Prak said. "For example, if you're a rock station, do you serve beer? You have to han-



Barry Umansky of NAB

dle questions about serving alcohol ... in terms of liability exposure."

This is something with which Pat Fant, general manager of KTBZ(FM) in Houston, is all too familiar. Once a week his station drives two Hummer vehicles through town, shooting T-shirts at passers-by with an air gun. Even though

it might look like an insurance nightmare, the station has had no problems with the event. The key, Fant said, "is to think like a parent."

"Think about everything that could happen," Fant said. "Talk to your insurance people and your attorneys. Make them give you an answer. Make them show you how you can do it, not just tell you you can't."

The station also hosts a thousand-person Labor Day music festival and a Halloween concert, often bringing along a 40-foot half-pipe skateboard ramp. But the station does so only after it is properly insured and has taken all necessary precautions, Fant said.

Sometimes, even when a broadcaster takes precautions, the station is at risk. One problem is the "mosh pit" that forms in front of concert stages. Audience members slam against one another or pass each other overhead.

"That's really an activity that you can't prevent. You can't just say 'please don't do this' because people do," Fant said. "The whole mosh pit thing is a growing problem without an answer. Insurance companies won't insure mosh pit-related accidents. So whoever is producing the event is really out there on a limb. You can't get it insured and you can't stop people from doing it."

Think like Mom and Dad

This has given radio stations, event producers and promoters second thoughts about producing stadium-size events because they can't stop the moshing and the potential risks are high, Fant said.

One solution: warn attendees that a situation may be dangerous, videotape the warning and ask people to sign a release before they enter a potentially dangerous area.

"Again, think like a parent," Fant said. "Warn people, put signs up. It doesn't buy you much, but everything helps."

"This is not rocket science," said Barry Umansky, general counsel for the National Association of Broadcasters, which hosted a station liability session at the World Media Expo last month. "But there are plenty of stations that have done plenty of events, so there is a perspective and a culture that knows how to plan carefully for major events."

The rules for promotion giveaways are also issues stations should take into consideration, said communications lawyer Prak. He cited the example of a station that paid insufficient attention to its rules and was obliged to give away two boats instead of one. He also pointed to problems of stampedes and concert crowd control.

FCC rules, music licensing problems and keeping an event from being stolen by the competition are other important issues that station managers may need to discuss with an attorney before hosting an event. Station managers may not even be aware of some of the potential complications of their events, including Internet access, separate copyrights and the risk of cancellation.

"What about performance rights?" Umansky asked. "What if you sponsor a concert and carry it live on the World Wide Web? What issues does this raise? (There are) sponsorship ID issues too. Stations are much more active in this realm, with events, tie-ins to advertisers,

concert promotions. Some managers may have forgotten to go back to basics and apply common sense."

Stations should plan events well in advance to determine what kinds of risks the station is willing to take, Umansky said. "Get whatever insurance might be necessary to protect the station in case things go wrong," Umansky said.

Just because an activity is risky, however, doesn't mean stations should shy away from taking chances, Fant said.

"If you're not doing something to make (the insurance guys) nervous, then you're holding back and you're not really doing enough," he said. "You're not going forward enough, you're not aggressive enough to really step out there and make things happen."

"We need to market our station for memorability and awareness, and that doesn't mean backing off all this stuff because it could be risky," Fant said. "But show me how I can do it and protect my station at the same time."

Promo Tips

RW asked Barry Umansky and Pat Fant for some tips that station managers can use to protect themselves as they plan promotional events.

- **Start early.** Determine what kind of event a station wants to host and look at the consequences. "Will you have alcohol, dancing, a mosh pit? How can you design it so that you won't have problems?" Umansky said. "Some things can be solved by getting release forms signed by participants."

- **Review scheduled events with your insurance company.** It's a good idea to have events scheduled with your insurance company so there are no surprises. "Don't think that you're covered just because you have general coverage," said Pat Fant. "That may exclude certain activities."

- **Think like a parent.** Warn attendees of possible danger. Don't provide alcohol at an under-21 event. Demonstrate that you've taken the proper precautions and given the proper warnings. "Be able to prove you've taken all the precautions necessary to ensure a safe event," Fant said.

- **Share responsibility.** Both the station and the venue must take responsibility for attendee safety. "If problems are created by (the venue's) inability to perform, the station is really at risk," Fant said. "If you share liability, rather than relying on the venue, you both are responsible for solving any problems that arise." Meet with the representative of the venue to discuss these matters.

- **Look into other issues.** Abide by FCC rules. Understand music licensing issues. Make sure your event is trademarked so it can't be stolen by the competition. Contact a lawyer to confirm "you've taken the steps to make sure the station is not placed in a position of possible legal jeopardy," Umansky said.

— Susan Ashworth

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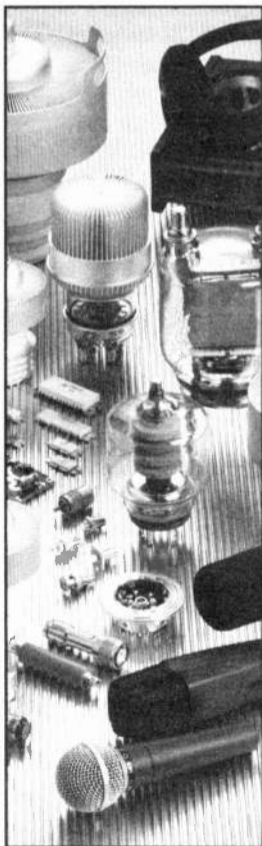
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Telephone Skills and Smarts

► continued from page 57

preparation. Rambling and repetitive phone calls waste time and can irritate people.

When calling, identify yourself first. Your voice may be familiar to the person you are calling. However, that person may be focused on something else. If you are unknown to the caller, also identify your position at the station. This basic information gives the other person a framework.

Keep it short and sweet

Succinctly state the purpose of the call. Remember, the person may be extremely busy when you call. When you state the purpose of the call clearly, it gives him or her the opportunity to address your questions immediately or possibly postpone them until more time is available to respond.

Perhaps he or she must get a file or more information. Maybe the person you called is not the one to conduct your business, and your call should be referred to someone who can help you. Business associates will appreciate that

Having a list of items demonstrates personal organization and preparation. Rambling and repetitive phone calls waste time and can irritate people.

you respect their time and form a more favorable opinion about your business savvy.

Answer the telephone with an understandable response. Even if you answer 100 phone calls each day, the 99th caller may be the most important call.

If you race through an answer that no one could understand, the unspoken message to the caller is: "You are not important enough to me to take the time to speak intelligibly." You have not saved time by racing and mangling words; if anything, the persistent caller will inquire if he or she has reached the correct number and person. If the caller has misdialed, an understandable response will resolve the issue much quicker.

Return all phone calls and return them promptly. Nothing is more frustrating than making several attempts to reach someone without a response. Undoubtedly, you receive calls from people marketing products, or other calls you find annoying. If you are not interested, return the vendor's call and explain that you or the station are not interested at this time. This lets the vendor know that further calls will not yield results. The vendor will focus on other potential customers. Instead of taking three calls from the same vendor, you only had to deal with one. The same courtesy would apply to a co-worker or friend who calls too often.

Try returning calls within the hour, if

possible. Certainly return them within the same day. If you will be unavailable, leave that information on your voice mail message. Also leave a contact name and phone number of someone who can handle important matters while you are away.

Chew and swallow

Do not carry on a telephone conversation while you eat.

The other person may not see you, but he or she can hear you eating. Once again, the message is that the caller is not important enough to receive your undivided attention.

If you are eating when the telephone

rings, at least chew and swallow your food before answering the phone.

Think about leaving a voice mail message before you dial the number.

The possibility of reaching voice mail is high. Consider in advance what you want to discuss, to avoid a rambling, disorganized message.

You will sound more professional and will increase your chances of a return call. Let the person know why you are calling.

If you need information, the person will most likely have it when he or she returns the call.

Do not keep people on hold for an extended period of time. If you need to

retrieve information, respect the caller's time and explain that you will need more time to get the needed information and will call back as soon as you have it. Make sure you follow through on the promise.

If these telephone courtesies are already part of your skill set, your professionalism is showing and others will notice.

If you have not routinely used all of the above guidelines, add them to your existing skills and see if you notice any difference in the responses of your co-workers and business contacts.

□ □ □

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

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OFFBEAT RADIO

Cab Gab Is Fare Play in Chicago

by Dee McVicker

CHICAGO Cabdrivers, like bartenders, make pretty good listeners.

Which explains why, for the past two-and-a-half years, the Checker Taxi Association has run a weekly radio talk show for the cabdrivers in greater Chicago.

"Cabstand!" is "the voice uh de taxi industry," according to the heavily accented refrain by John Moberg, ex-cabdriver and now host of the show, airing Thursdays on WCEV(AM).

It's no mistake that "Cabstand!" ended up on WCEV, an acronym for We're Chicago's Ethnic Voice. The station, a

brokered-time, 1 kW outlet licensed to Cicero outside of Chicago, airs programs in 10 languages serving a dozen ethnic groups.

Cabbies could be considered one of the largest ethnic groups in Chicago. An estimated half are Pakistani, another 25 percent are black. Many of the latter are African immigrants. Herman Rowe, WCEV sales manager, considers the cab industry as much an ethnic group as the Croatians who broadcast on his station.

"Taxi drivers? They've always had an ethnic presence," he said.

WCEV is owned by the Migala family and shares its frequency with another local broadcaster. This small 1 kW

station has managed to compete with roughly 130 signals coming into the Chicago market by brokering its time, mostly to ethnic organizations.

A rifle shot in Chicago

"Let's face it, you see what's going on in every major market: these mega-groups that are controlling these 50,000 watts or equivalent FM stations, and they're controlling 50 percent of the stations and 80 percent of the dollars," said Rowe.

In the rough-and-tumble Chicago radio market, he said, "We're a rifle shot. We're narrowcasters instead of broadcasters. My audiences tune in and tune out. I go from



Cabstand! Host John Moberg

Gospel to some days polka, into Polish, to Lithuanian, Ukrainian, Czech."

And cab talk. Much of what Chicago listeners hear on any radio show is also heard on "Cabstand!," with a cabby bent. They get taxi news: a man who fatally shot a Chicago cabdriver in 1991 is sentenced to 100 years in prison. They get convention news: Chicago welcomes 22,000 visitors to the Kitchen Bath Industries show. They get ads: a favorite cabby hangout invites cabdrivers in for a bite, while Chicago Motors pedals used police and municipal vehicles.

There is plenty of cab gab, talk of parking tickets and airport traffic, conventions and politics. Cabbies, it turns out, are not at all shy about voicing their opinions.

"Talk to any government department, it's like singing to a cow," said one cabdriver on the air, quoting an old saying from his native Pakistan.

Chicago has more than 13,000 licensed cabdrivers, and about 5,500 cabs. The greater Chicagoland area has many more, trailing only New York in taxi numbers.

Bish Krywko, the producer and an executive at Checker Taxi Association, an affiliation of independent cab operators, said the show is a natural on AM.

Looking to syndicate

The taxi association has been putting out its goodwill message on the show. It underwrites and produces "Cabstand!," and pays for it in part with commercial time during the 90-minute show.

Krywko had heard of a similar show airing in the 1930s in New York. Now he hopes to drum up interest elsewhere in the nation with the '90s version. His concept is to deliver "Cabstand!" over satellite feed to similarly brokered time stations in Los Angeles, Las Vegas, New York and other cities with a high density of taxi cabs.

Cabbies are considered ambassadors for the city, perhaps the best reason yet to give them a radio show, according to Krywko. He said that when the Democratic Convention came to Chicago, for example, cab drivers were the first to greet visitors coming off of airplanes, and the last to bid them farewell before their flight home. They told convention-goers which restaurants to visit, where to stay, the best jazz bands playing.

"Cabstand!" did the same, with a remote broadcast from a restaurant a few blocks from the convention.

"We work closely with the people in the restaurant association and the hotel association, mainly because their customer base is the same," remarked Krywko. "(We) feed off each other."

□ □ □

Dee McVicker is a regular contributor to Radio World. Reach her at (602) 545-7363 or roots@primenet.com

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WSIX - Nashville, Tennessee "Country Music Station of the Year"

A-500 Studio Furniture delivered March 1993
A-500 Console S/N 20789 delivered April 1993
A-500 Console S/N 20792 delivered April 1993
A-6000 Studio Furniture delivered March 1995
A-6000 Console S/N 22536 delivered March 1995
R-16 Console S/N 22557 delivered March 1995
SP-5 Console S/N 22593 delivered April 1995

1995 Academy of Country Music Award
1995 Marconi Country Music Award
1995 Billboard Country Music Award
1995 Country Music Association Award
1995 Country Music Association SRO Award
1995 Gavin Country Music Award
1996 Gavin Country Music Award
1996 Academy of Country Music Award

Wheatstone Model A-6000 Audio Console shown

 **Wheatstone Corporation**
tel 315-452-5000 / Syracuse, NY.

Circle (46) On Reader Service Card

World Radio History