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RadioWorld®

Vol 19, No 23

Radio's Best Read Newspaper

November 15, 1995

AMs Swapped In Seattle

by Bob Rusk

SEATTLE Two AM stations in the nation's 13th largest market have switched frequencies in a deal both call a "win-win" transaction. KNWX, which had been at 1090 on the dial, has moved to 770, taking over the position held by KRPM, now heard on 1090.

With the move, KNWX is adjacent to its sister AM station. Heritage Media-owned KRPM gets 50 kW both day and night in the swap.

continued on page 3 ▶



FCC Extends Deadline For EAS Implementation

by Lynn Meadows

WASHINGTON Bowing to industry pressure, the Federal Communications Commission (FCC) extended the deadline for Emergency Alert System implementation to Jan. 1, 1997.

The commission released a Memorandum Opinion and Order last month resolving five petitions for reconsideration that tagged along behind the original Report and Order on EAS issued last November.

The original July 1, 1996, implementation deadline was extended thanks to a petition from the National Association of Broadcasters (NAB) who argued that the earlier date did not provide enough time for broadcasters to make the switch.

RBDS and EAS

The commission denied petitions regarding the use of RBDS with EAS. In its original rule, the FCC had encouraged but did not require broadcasters to use RBDS in the new emergency system.

"RBDS has always been an option," said Frank Lucia, acting chief of EAS for the FCC.

In petitions, Sage Alerting Systems Inc., Federal Signal Corp., and Delco Electronics Corp. asked the FCC to provide more specifics to FM broadcasters who will be using RBDS with their EAS systems.

Their petitions concerned requiring the use of specific alarm codes for RBDS and special codes to allow RBDS to synchronize with FM stations transmitting emergency warnings.

Also included in those petitions was a request that when sending an EAS warning, stations using RBDS be allowed to increase both the percent of FM station modulation from their subcarriers and their total radio modulation.

Petitions opposed

The NAB opposed the RBDS petitions warning commissioners that because the RBDS is a voluntary standard, incorporating the current version into the rules for EAS would hurt its development.

Data Broadcasting Corp., however, which uses subcarriers to send information like stock quotes, asked the FCC not to encourage the use of RBDS with EAS at all. DBC said that the 57 kHz signal could interfere with the data information service it provides on a different subcarrier.

In the mandate, the FCC agreed with the NAB on RBDS.

"We see no reason for regulatory intervention in this developmental process." The commission added that it wanted to allow FM operators "maximum flexibility" in operating their subcarriers.

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SBE Mission to Provide 'Tools' for Engineers

MILWAUKEE There are at least three Cs in broadcast engineering for newly-elected SBE president Terrence (Terry) Baun: convergence, communication, and change.

Baun is principal of Criterion Broadcast Services which provides technical support services to radio stations in the upper Midwest. He has been active in the Society of Broadcast Engineers for almost 20 years holding offices in the Milwaukee chapter and serving two terms as national vice president.

Growth and education

Along with promoting fellowship and a sense of camaraderie, Baun said the primary purpose of the organization is the professional growth and education of the membership.

"I think that's one of the things that obviously is paramount right now. We need to help provide the tools that our members need to make them successful

in their business. That's really what we're all about is providing the tools."

Convergence

Baun said the biggest challenge for broadcasters in the future is convergence.

"What is really happening here is we are seeing that what we formerly thought of as little boxes — in other words here we have the radio business, here we have the television business, and here we have the PC and the electronic business" — are coming together very quickly, he said.

He used radio stations with web pages as an example. "That is just an incredible kind of jump for an oral medium to all of a sudden decide that it is important for them to have an electronic presence on the electronic network - on the World Wide Web."

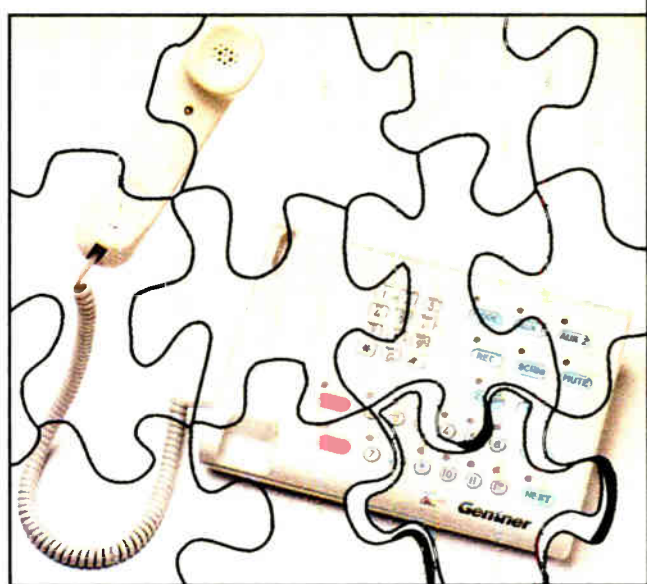
"Everything seems to be coming together and that convergence is providing tremendous opportunities but it is also

continued on page 6 ▶

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NEWSWATCH

Engineering Awards

WASHINGTON The National Association of Broadcasters (NAB) is seeking nominations for the 1996 Television and Radio Engineering Achievement Awards. Nominations must be received by Dec. 5.

The awards recognize individuals in radio and TV for outstanding contributions to the broadcast industry. Engineers can be nominated for anything that warrants recognition such as inventions, new techniques, dissemination of technical knowledge and literature or leadership in broadcast engineering affairs.

Nomination forms and requirements are available by calling Sandra Schultz at 202-429-5346.

Station Ownership

NEW YORK The M Street Database reported statistics on group ownership versus non-group ownership of radio stations in the U.S., as well as information on stand alone stations.

All licensed stations and construction permits that have been assigned call letters were used in the tabulations — 12,754 stations total.

According to the statistics, group owned

stations make up 40 percent of the total with 42 percent of these stations being FM stations. Of the 60 percent of non-group owned stations, 62 percent are AM stations.

The statistics show that 43 percent of all stations are stand alones and within this group 63 percent are FM stations.

The M Street Database defined groups as those who own more than one station in more than one market. Combos/duopoly in a single market are not a group. M Street defined a stand alone as a station with no AM or FM sister stations. Each is one station in one city which could be group or non-group owned.

Evergreen Media to Acquire WKLB-FM Boston

IRVING, Texas Evergreen Media

Corp. announced that it has signed an agreement to acquire WKLB-FM in Boston from Fairbanks Communications Inc. for \$34 million in cash.

"With the addition of WKLB, Evergreen will be the nation's third largest radio broadcaster as measured by both revenues and broadcast cash flow," said Chairman and CEO of Evergreen Media, Scott K. Ginsburg.

The acquisition of WKLB-FM would result in Evergreen controlling a total of 24 FM stations with three in the Boston market. If deregulatory legislation does not pass, Evergreen will have to divest certain stations and/or seek waivers in order to meet the FCC's multiple ownership rules.

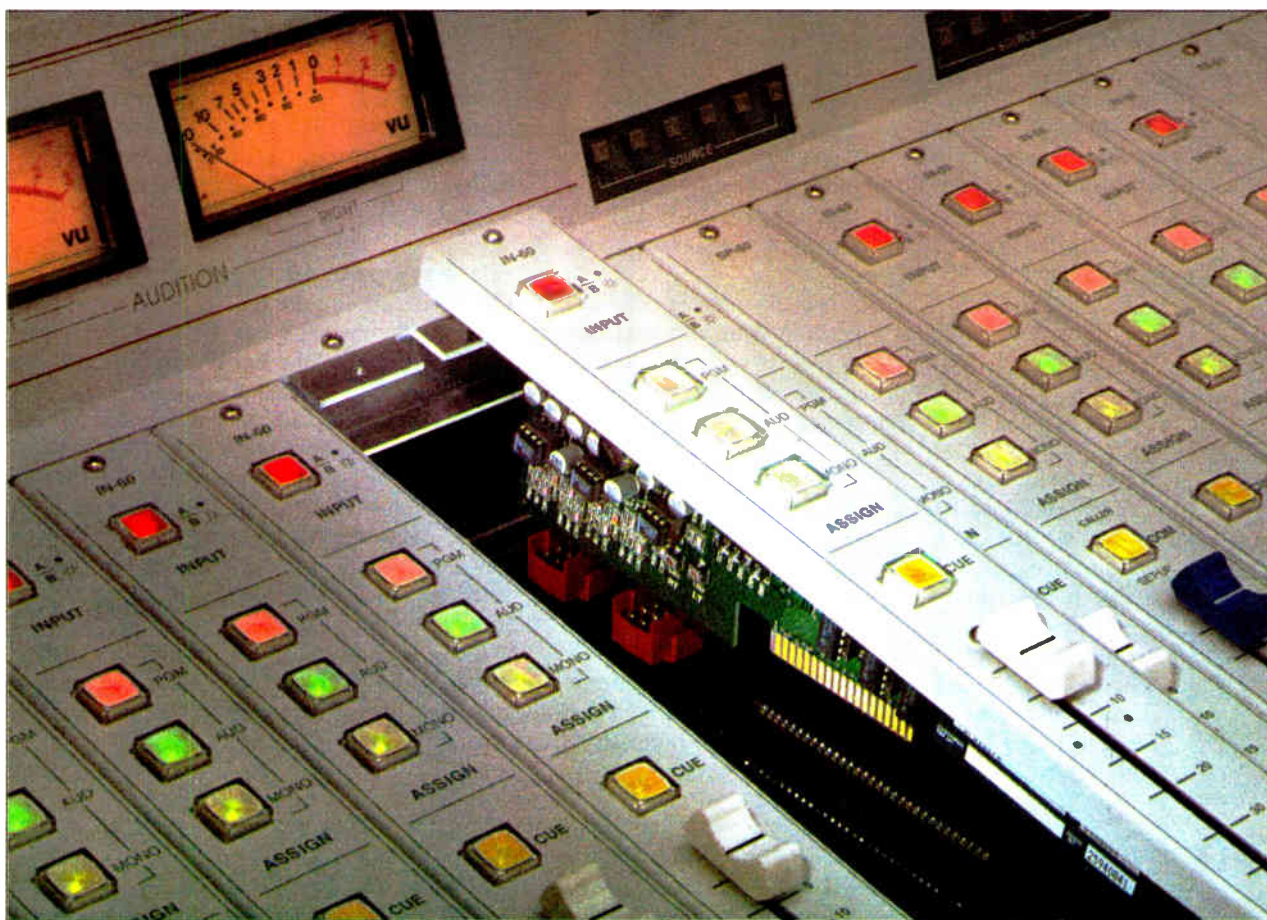
CCA Electronics Offers Service School

ATLANTA CCA Electronics will hold their next semi-annual service school at their plant facilities in Atlanta on Jan. 18-20, 1996.

The school will cover installation, operation, service, trouble shooting and repair of CCA's line of FM broadcast transmitters.

continued on next page ►

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AUDIOARTS' ENGINEERING

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Registration is \$250 and includes a complete operating manual for any CCA transmitter as well as lunch each day.

Attendance is limited to the first 25 applications. Contact Kerstin Benton for details at 404-964-3530 or fax 404-964-2222.

Eastern Broadcast Expo '95 Focuses on Change

ORLANDO, Fla. Changes taking place in the broadcast industry will be the focus of Eastern Broadcast Expo '95 being held Dec. 7-10, 1995 at the Walt Disney World Dolphin Hotel.

Seminars and exhibits will concentrate on the effects of the Telecommunications Act of 1995 and the convergence of TV, radio, computer, telephone, software, entertainment and cable industries.

Management seminars on the Telecommunications Act of 1995 and its impact on local radio and TV stations will be presented by industry CEOs and government leaders.

The Television Bureau of Advertising and the Radio Advertising Bureau will present sales tracks for maximizing revenues in the changing world of broadcasting.

Engineering seminars by the Society of Broadcast Engineers will focus on new technology and its effect on companies' bottom lines.

Consumer Electronics Manufacturers Association Emerges

SCOTTSDALE, Ariz. The Electronic Industries Association's (EIA) Board of Governors promoted its Consumer Electronics Group to sectoral status and changed its name to the Consumer Electronics Manufacturers Association (CEMA).


Joining the Telecommunications Industry Association as an industry sector of EIA, CEMA represents U.S. manufacturers of audio, video, home office, mobile electronics, multimedia and accessories and produces the Consumer Electronics Shows.

"This name change reflects the importance of the consumer electronics industry and its relatively unknown but significant manufacturing presence in the United States. With over 170,000 employees spread out over hundreds of factories, consumer electronics is...an important feature in the U.S. economy," said CEMA Board of Directors Chairman Joe Clayton.

Degrees in Broadcasting

BOSTON The Northeast Broadcasting School received permission from the Commonwealth of Massachusetts' Higher Education Coordinating Council to confer associate degrees in broadcasting and recording arts and to change its name to the Northeast College of Communications.

The average enrollment of the trade school, which offered one-year certificates in radio and TV broadcasting and recording arts, averaged approximately 300 students per year. College President Howard E. Horton expects enrollments initially to increase by at least 10 percent.

The College will continue to offer the one-year certificate program in addition to associate degrees. 

AMs Swapped in Seattle

► continued from page 1

simulcasting the "Kickin' Country" format of sister KRPM-FM. According to Paul Fiddick, Heritage Media radio group president, "This deal goes back to 1988, when we bought the 770 AM signal. We acquired a construction permit allowing the station to go from 1,000 watts to 50,000 watts."

Heritage had a difficult time finding a

KIRO NEWSRADIO 710AM

tower site, however, with zoning restrictions and interference concerns to deal with. After two years, the company reached an agreement with King Broadcasting to diplex on King's 1090 AM towers.

"An important part of the deal," explains Fiddick, "was an agreement that in return for letting us lease space on their towers, King had the right to swap frequencies with us if they found our new signal was better than their signal at 1090."

King ultimately sold 1090 AM to Bonneville International. Bonneville was eager to move the station to 770, next to the company's long-dominant property in Seattle, KIRO 710 AM.

Some listeners in suburbs east and south of the city have a difficult time hearing the 1090 AM signal at night. XEPRS, which sends its 50 kW signal north from Mexico, interferes with it.

Heritage Media looked closely at that, but according to KRPM operations manager Ray Randall, "Having 50,000 watts was more important to us than some of the coverage we might lose."

"We had been broadcasting the Tacoma Rockets (hockey team) and wanted to cover far enough south to keep them happy. But when they moved to Canada that became a moot point."

The stations switched frequencies on Sept. 16, at 12:01 a.m. KNWX rolled out an all-news format, complementing the separate programming at news-talk KIRO.

"To protect KIRO and its well-established image," said news director Dennis Kelly, "we created the all news format to prevent a competitor from taking that formatting tack." KNWX is the market's only 24-hour-a-day all news outlet.

"The feedback has been positive," said Kelly.

"A lot of people felt Seattle was ready for an all-news station, primarily based on the fact that the city now has the fourth worst traffic problem in America.

"In the middays it had been difficult to find a traffic update on radio. We're the only station during that period offering updates every 10 minutes." The station broadcasts live updates from 5:00 a.m. - 11:00 p.m.

Several KIRO staffers do double duty on KNWX. KIRO/KNWX program director Tom Clendening does not feel this is a drawback, though. "It definitely eliminates the boring periods," he says with a chuckle. "You just have to try and accomplish more in the same amount of hours every day. We see this as giving us a lot of great products to offer to listeners and advertisers."

The sales staff not only represents KNWX/KIRO, as well as KIRO-FM, but also the Mariners baseball and Seahawks football networks (KIRO is the flagship station for both networks). Bonneville took over KNWX in February, but did

not begin a TV and bus marketing campaign until October, after the switch to 770 was complete. KNWX has 50 kW during the day and 5 kW at night.

Both the 770 and 1090 frequencies have a rich history in Seattle, going on the air in 1925 and 1927, respectively. The original call letters on 770 AM were KXA, used until the 1980s. Up to that time the station's "T" antenna was a landmark downtown, with a longwire strung between two towers.

KING, named after King County, were the call letters on 1090 AM. It was the flagship station of King Broadcasting and remained a dominant station throughout the 1970s, with a top 40 format.

In recent years, KING programmed news and talk. When Bonneville purchased the station, the company decided that along with the frequency change, it would apply for new call letters.

"KNWX has such a powerful sound," said Kelly, who worked at KING from 1983 - 1987. "KNWX looks like 'news.'"

KNWX is an affiliate of AP News and runs the network overnight. AP Business and sports reports are also carried during the day. "Outside of that," Kelly adds, "everything is done by our local news anchors. Much of what we're doing is working in the tried-and-true fashion of the CBS and Group W all-news-stations." KNWX uses a variation of the Group W slogan, saying, "Give us 30 minutes and we'll give you the world."

Even though KIRO and KNWX air

similar formats, Kelly says there is room for both stations.

"Through our research," he explains, "we feel there won't be an adverse impact on KIRO, because that station has so many of the personality aspects of radio. KNWX is a utility-driven product. Listeners tune in to KNWX just for the information. The approach is, "just the facts."


"We feel this is a product that was bound to come to the market. All news is a new format here, but we feel it will become a household name in Seattle."

According to Fiddick of Heritage Media, his company spent "between one million and two million dollars" to convert the AM 770 station from 1 kW to 50 kW, which was the only financial element of the frequency switch.

Fiddick points out that "the money we



spent was far less than what it would have cost to construct our own tower site. Even with the frequency swap, the signal we now have for KRPM is much better than what we could have built for ourselves.

"We are very happy with the swap. The 50,000 watts is far better than the 1,000 we started out with at 770," said KRPM General Manager John Rogers. "It's the difference between night and day." 

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Longevity Elusive in Broadcasting

WASHINGTON The first order of business is to introduce you to Sandra (Sandy) L. Harvey-Coleman. Sandy joined us Nov. 13 as Midwest sales representative after operating an in-house ad agency for Roy M. Ridge, Allied Broadcast, and then as manager, worldwide advertising for Harris Allied's broadcast division.

Sandy brings more than nine years experience in the radio broadcast industry.



Sandra L. Harvey-Coleman

Prior to joining Allied, she was an advertising artist for a Gannett newspaper, a free-lance artist and, along the way, has held various positions in sales management.

Sandy can be reached at 317-966-0669; fax: 317-966-3289; or write her here, care of RW Sales Manager Skip Tash.

★ ★ ★

Longevity is not an easily attainable goal in the broadcast business. On the engineering side, not only is it hard to attain, but one moment of carelessness or one ill-conceived notion can ruin a reputation that took years to build. Or not even ruin, but slightly sully, perhaps.

OK, what am I babbling about? It seems that a certain high-profile contract engineering firm is mass mailing direct mail pieces to some highly-ranked radio stations' sales and general managers. Come again? To the sales managers?

It seems that this firm is suggesting to these sales and general managers that perhaps their own engineers are less than professional. And don't they want to hire



a first-rate contracting firm? I realize that business is tough these days, but stabbing your engineer colleagues in the back in an effort to drum up business is not the way to operate.

What's more, if, as has been the case at some high profile stations around here, the sales and general managers go to their engineers and ask "Who is this and what do they want from us?" the firm in question is going to appear unprofessional and untrustworthy to all.

If the effort was merely a mass mailing, then the firm looks stupid for not qualifying its leads a little better.

I know — it is a dog-eat-dog world out there — but chances are you'll have a better shot at professional longevity if you excel at your chosen profession and leave the backstabbing to others.

★ ★ ★

Now for some fun news. The well-known broadcast team of Lorianne Crook and Charlie Chase will premiere in national syndication with "The Crook and Chase Country Countdown." Beginning January 1996, Jones

Satellite Networks will offer the four-hour countdown program to radio stations across the United States, and as I write this, is beginning its exclusive distribution efforts.

The program will feature exclusive

interviews with major recording artists as well as news from Nashville and the other country music hot spots. The country music rage does not seem to be abating, and this is a great coup for the Jones Satellite Networks.

Broadcast industry execs know Crook and Chase for their long-running broadcast programming (12 years), including reports and commentary on The Nashville



NEW YORK Several hundred of the broadcast industry's owners, brokers, bankers and advertisers were present at the roast of CBS correspondent and anchorman Charles Osgood. Also in attendance were present and past Bayliss Foundation scholarship recipients. More than 130 potential broadcasters have received scholarships from The John Bayliss Broadcast Foundation since its inception in 1985. Total scholarship awards to date now exceed \$220,000.



(l to r) H. Ossie Mills, Vice President of Programming for INSP; Greg Liptak, President of Jones International Networks; Gus Bailey, Vice President of Development for Jim Owens & Associates; Jim Owens, President Jim Owens & Associates, Inc.; television personalities Lorianne Crook and Charlie Chase; Eric Hauenstein, Vice President of Jones Satellite Networks; and Jerry Fox, Vice President and General Manager of Jim Owens & Associates, Inc.

Network, and as hosts of "The Nashville Record Review," on TNNR (The Nashville Network Radio) which will continue through December of this year.

Jim Owens, president, Jim Owens & Associates will produce the program for Jones.

★ ★ ★

Harris Allied is gearing up for another Richmond Expo. To be held Dec. 4 and 5, the gathering will include lively and informative sessions as well as a sizeable exhibit floor. Those of you who attended last year's Expo know what I'm talking about. In fact, the popularity of last year's one-day show has pushed the event into a two-day affair.

Harris Allied puts on a great expo with some real quality time for hands-on product demos (unlike the crushing crowds of NAB) and practical sessions with some of their best experts.

If you want more info, give them a call at 317-962-8596.

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Grace under fire

Dear RW,

I read with great interest your recent stories about the trials and tribulations at WTIM Taylorville. It really brought back a lot of fond memories for me.

It isn't the first time that station has had to fight back. In 1977, I was program director/morning jock at WTIM. One morning while I tried to take a day off, the old Gates BC-1F decided to also take some time off. Permanently! Shortly after 6 a.m. sign-on, off it went to stay. By 9:30 the chief engineer (the late Bill VanArsdall) and I determined that it was just too far gone to repair. A phone call to Harris netted us a stroke of luck. They just happened to have an MW-1 on the test floor already running at 1410. I believe it was built for WING in Dayton, Ohio, who agreed to wait a little longer for its transmitter.

Bill got into a truck to go pick up the transmitter and I met him at the tower site when he returned. WTIM was back on the air by 5 p.m., surely setting a record for needing a transmitter, buying it, getting it and installing it: seven-and-a-half hours.

At the time (1977) our studios were located in an old hotel in downtown Taylorville. Wanting to move to an industrial park area, plans were made in the fall of 1977 to move. The lease at the hotel was not renewed and a building was purchased. Work was started and progressed nicely until three weeks before the move. At that time Bill suffered a heart attack that would take him out of action for several months. With studios only half done and commitments made, I became an engineer. With a lot of luck, help from the entire staff and consulting engineer Don Markley, and the support of the owner (the late Jon Ulz), we somehow got the

station moved Dec. 17, 1977.

I cannot take credit for picking the tower site that Randy has to deal with, but I was there. The tower site was placed between the sludge ponds of Georgia Pacific Paper Co. and the leach fields of the Holland Dairy. Not what you consider prime land. However, we believed that it would only flood every 100 years. Well, the every-100-year flood came before the towers were finished. Somewhere I have a picture of a tower man swimming out into the field to attach a cable to his winch truck to pull it out of the water. All you could see was the very top of the winch. Consultant Don Markley wrote perhaps the greatest Environmental Impact Study that I have ever seen to prove that putting a tower at this location would not hurt the environment at all. We also had a problem with the FAA because a tower at this site would mean Class D aircraft would have to circle Taylorville a little higher than normal if landing on the "grass" runway. I doubt if a 747 has ever come close to Taylorville, then or now.

Within a week after putting the site on the air, water came over the tower insulator and shut us down. At this point we strung a long-wire antenna from the building up to the tower. This make-shift antenna stayed there for a long time and was used numerous times when flood waters got too high.

We also had fun when we moved our FM (WEEE) to the site. Great anticipation flowed as we wired everything up, got everything ready, pushed the plate on and watched the transmitter overload. Seems the tower crew forgot to install the bullet in the transmission line. As was our luck, the missing bullet had to go at the antenna. So we waited until the next day when we could climb the tower.

I look back on those days as perhaps my favorite time of my career. It was a local station, committed to the local residents. The station was very well respected and a lot of talent went through its doors. A lot has changed since I left in 1978, but I know Randy has carried on tradition.

Both Bill VanArsdall and Jon Ulz are gone now, but I know they would both smile at your stories about WTIM knowing that some things never change. I am sure they would both join me in saluting Randy and his staff at WTIM for their grace under fire.

Lee J. Freshwater
Ocala, FL

Needs of the few

Dear RW,

I can see my "bleeding-heart" friend Fred Baumgartner (RW, July 26) is like many, confusing non-commercial radio with "government supported radio." I have no problem with 88.1 - 91.9 MHz remaining an educational mecca. (Thank goodness the FCC did not get a chance to divide up the AM band.) All I am asking is that the needs of the few (less than 4 percent) be paid for by all.

If this programming is so important to the educational development of all, let it

Staying in the Game

Radio production personnel continue to be at a disadvantage when it comes to education on the latest equipment trends. Many stations do not even subscribe to the audio production magazines and do not send their production staff to the trade shows. You usually can find the chief engineers and the managers at the spring NAB convention. And at the fall

NAB Radio Show, you can find the programmers and again the managers, but not many production technicians.

That leaves the Audio Engineering Society (AES) annual convention. You would expect that this large show would be the conclusive one for production personnel. After all, companies are showing the latest versions of digital audio workstations, processors, hard disk recorders, DAT, compression boxes, cart replacement, amplifiers, consoles, monitors and microphones. In short, everything a radio station uses and plenty of it.

But judging from the attendance at the 1995 AES show in New York, there were few radio station badges to be seen.

Yes, the production staff is always busy, but not including at least one station representative from the department in trade show plans seems unwise. Who better to know than the person who uses the gear as to what features make the department more productive (within the station's budget, of course)? Although the chief engineer can do a good job of selecting equipment and reporting back from the NAB show, there is no substitute for direct, hands-on tryouts by the production folks.

Do not let decisions to purchase multi-thousand dollar workstations occur without informed input from the production staff. The combination of good audio and good creative will have an impact on your bottom line. The ads, liners and IDs can enhance your image and help reduce tune-out.

To complete the equipment education process, at the very least, station or station group production directors should be sent to the trade shows along with the chief engineer, so they, too, can get an idea of the trends. After all, an enlightened production staff enhances the bottom line; a station will get better quality commercial spots, jingles and on-air audio.

— RW

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November 29, 1995**

be mandated by parents or a church, but not the federal government.

A lesson in radio economics: Commercial radio is supported by its listeners. Yes, believe it or not, if the listener does not buy the product advertised on the station, the advertiser will not be buying additional time. The station will fail. Non-commercial should be no different. If the listeners will not directly support it then maybe it should not exist.

I know Fred is offended by the pitches presented by many advertisers. Sad but true. Like music and art, this is but a reflection of our society. Don't blame radio. It's just the messenger (and a free one at that).

I agree with Fred that radio is supposed to provide alternative opinions and public service. My problem is who is to dictate what the "alternative opinions" are supposed to be. Surely not the federal government. Let's let the listeners decide. They have that final vote with the on-off switch on the radio.

Paul Montoya
Lakewood, CO

Not so fast

Dear RW,

I was caught by your front page story in the Aug. 9 issue. In an article by Frank Beacham concerning radio on the Internet there seemed to be some errors. Number one of which was the claim that KPIG-FM (Freedom, Calif.) and WKSU-FM (Kent, Ohio) were the first call letter

stations in the United States to offer a range of their audio programming in real-time over the Internet's World Wide Web. This is not the case.

I have enclosed a press release explaining KJHK's presence on the Internet. I have also enclosed several other articles from various publications concerning our pioneer Internet service. Maybe I'm missing something in the article, but I can't see Mr. Beacham's claim that KPIG and WKSU were first by beginning last March.

Additionally, their real-time presence is still not at the same level of development as KJHK's in that we offer a continuous real-time signal of our on-the-air programming, not merely tidbits of audio. Our programming can now be heard by modem on both Apple- and IBM-based systems. Our signal is quite good and has been serving the world for more than eight months.

KJHK's story was also told at last April's NAB convention during the "A Primer on Multimedia and the Internet" seminar, the Federal Communications Bar Association "Program on Radio over the Internet" and the Radio Show in New Orleans.

You may reach the KJHK Home Page at: <http://www.cc.ukans.edu/~kjhknet>

Thank you for your review of this matter. Incidentally, I really enjoy your newspaper and will continue to use it in the future.

Gary L. Hawke
General Manager, KJHK
Lawrence, KS

SBE Elects President

► continued from page 1

causing some tremendous anxieties because, of course, once barriers are broken down, our comfort level changes and we are not so sure exactly where we stand anymore."

"I'm not sure where we are going as an industry, myself, but I feel that it is incumbent on us as the SBE to find out where we are going and then provide our membership with the tools they need to get them there."

According to Baun, that will require an emphasis on education, entrepreneurial skills and a commitment to quality. Baun stressed that all engineers whether they are self-employed or working for a huge company need to develop entrepreneurial skills and communicate the fact that they have those skills to management.

Communication

Baun said that improved communications could help the plight of under-appreciated engineers.

"What we need to do as engineers is first of all explain what we do a little bit better to people so that they understand basically what's happening," he said.

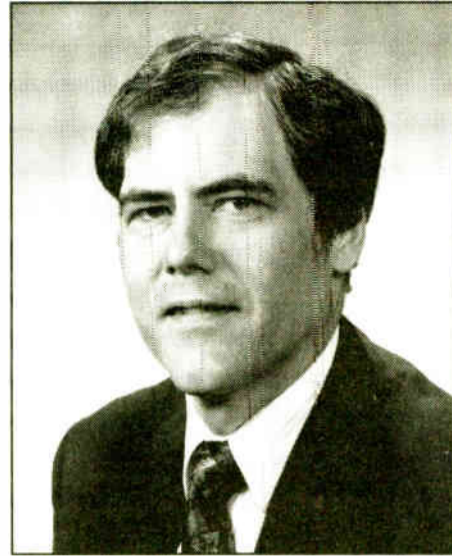
Management sometimes looks at engineers as a "necessary evil," said Baun. He said that engineers need to show management that they understand the expense and revenue sides of the business.

Engineers need to communicate to management that engineering can also provide income, said Baun. He used stations that lease subcarrier space, tower space, and transmitter building space as examples of revenue enhancers that management can appreciate.

"I think we need to have the engineering community being looked upon as a potential profit area as well as a potential expense area." He encouraged engineers to look beyond the immediate problems they were solving to see how their work affects other departments and fits into the

whole process of operating a facility.

According to Baun, the national SBE has been working on improving communication with its own members. He said that each officer and director in the



SBE President Terry Baun

national organization had been made a liaison for a number of chapters nationwide to improve the exchange of questions and ideas.

Change

Baun said he could not predict how broadcast engineering will evolve in the future.

"I'm not so sure that what we are going to be involved in is broadcasting in the way we know it today."

He added that two of the challenges facing engineers right now are rapid change and a need for increased communication since "engineers have a tendency not to be the world's best communicators and we also have a tendency not to like change very much."

Asked how the future looks for broadcast engineers just graduating, Baun said they should not limit themselves.

"If someone came to me right now and said I'd like to be a radio engineer, I'd say great. I think that is a very nice thing to be, and I think that there will be an interesting future in this business, but start thinking of yourself as a media engineer."

"I can't tell you where we are going to be in 10 years or 15 years. We may not have the mix of media that we see right now. You may be in a situation where you have to have additional skills so don't limit yourself going in."

DARS

One of the changes in store is the coming Satellite Digital Audio Radio Services (DARS). Industry watchers wonder how the new service will affect terrestrial radio.

"Everything could be considered a threat if it is something that could potentially take away a listener," said Baun, adding that CB radio was perceived as threat to radio in the 1970s.

He said the key issue will be something that engineers don't have much control over - programming. If the programming is better, said Baun, people will listen.

On the technical side, however, Baun thinks the portability of radio may be its ultimate salvation. He said that although the use of small dishes built into the roofs of cars will be workable on the road, it may not be practical in the home.

"For a wired system whether it is digitally delivered cable radio or satellite, you've got to think a little bit about where you want to listen and make provisions for the listening area." On the other hand, said Baun, you will always be able to move a portable radio into the garage to catch a ball game while you work.

What's Next

Baun did not know what next year will bring, let alone the next decade. "What we are seeing is a coming together of areas that formerly were very disparate. We are seeing radio and television com-

ing together. We are seeing cable coming together and it's all sort of being centered around the PC revolution."

"As I said, I'm not sure where we are going as a society of broadcast engineers. I'm just sure that wherever it is, it is going to be a media support type of emphasis."

"I'd like to think that our membership is broadly based and it has enough technical savvy to be able to provide technical support to a wide range of media no matter how our industry may develop and I think that part of our mission right now is to promote that."

— Lynn Meadows

NRB Debates Licensing

by Lynn Meadows

CAMARILLO, Calif. With ASCAP licenses set to expire next month, the National Religious Broadcasters' Music License Committee (NRBMLC) is crusading for a better music license for stations that do not use a lot of copyrighted music.

"We are interested in helping the radio industry realize this is a historical moment and they need to take advantage of a very unique opportunity to gain music licensing reform," said Russ Hauth, executive director of the committee.


According to Hauth, the fee for a blanket license is 1.65 percent of the adjusted gross revenue of a station. For the current per program license, he said, it is three to four times as high. A station playing 25 percent music might as well use the blanket license said Hauth.

Hauth added that paperwork is a drawback to the current per program license because stations have to log all music played and send the list to ASCAP every month. The NRBMLC would prefer that stations be able to use sampling to file reports which Hauth said is how ASCAP pays royalties to its members.

Bill Slantz, director of broadcast licensing at ASCAP, said that the time of day that music is played is relevant in a per program agreement because ASCAP charges more for "weighted hours" like morning drive.

Hauth said the current per program license is mostly a "token" which is not cost efficient unless a station is 100 percent talk.

The NRBMLC currently represents more than 400 radio stations including classical stations which play almost no copyrighted music. Slantz said that fewer than 900 of the more than 11,000 stations with ASCAP licenses use the per program license.

While negotiations continue between NRBMLC and ASCAP, the committee is attempting to set a trial date for next summer. It is seeking retroactive settlements for the past two music license periods and a per program license with parity to the blanket license. 

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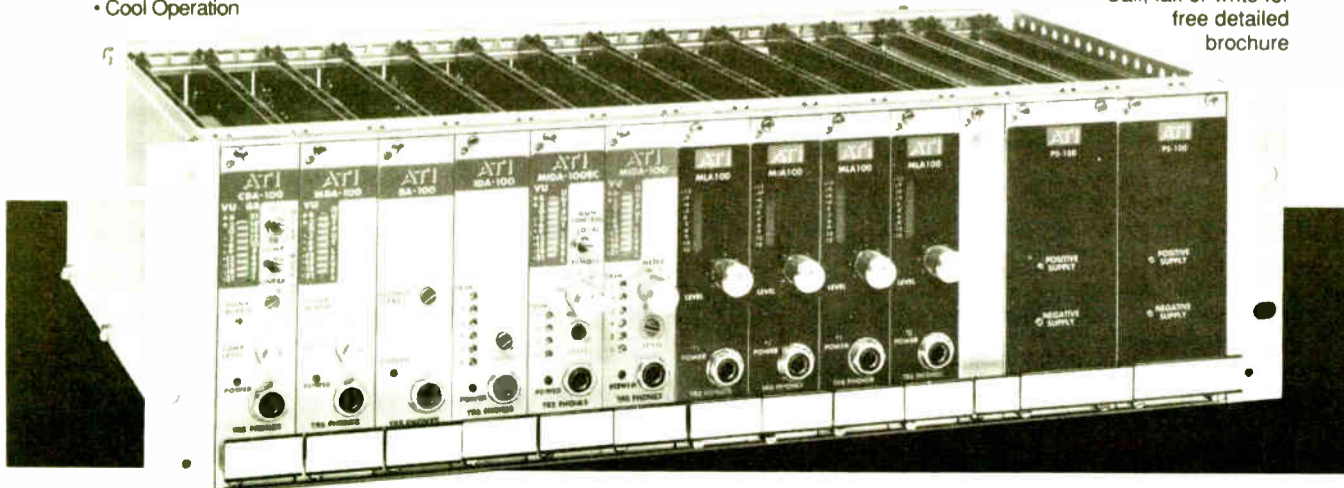
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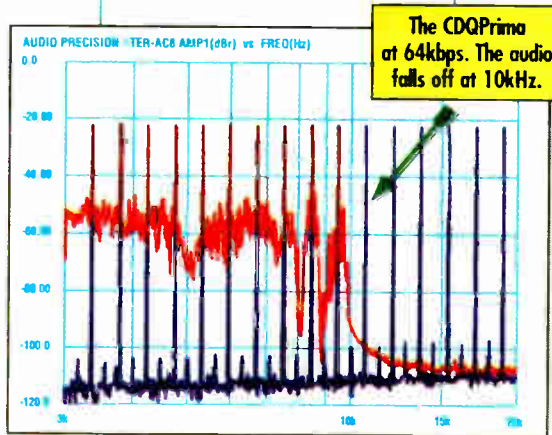
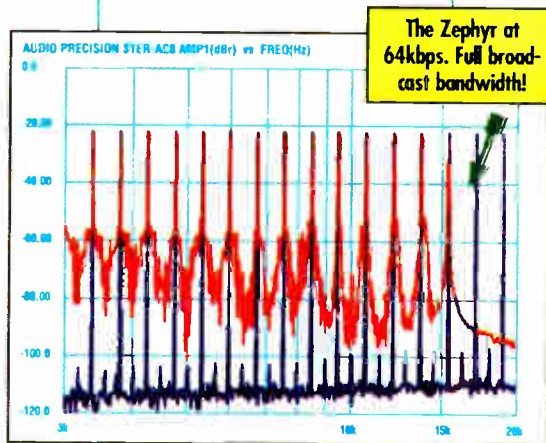
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SBE Glad to Be out of Convention Business

by Lynn Meadows

MILWAUKEE SBE President Terry Baun gave RW a look at what some of the issues are that SBE has been working on recently.

For one, he said, the SBE has stabilized its convention situation. "We do a lot of things very well," said Baun. "For example, education and seminars and that sort of thing, but running conventions is a whole different ball game."

Baun said the society is pleased with its current situation at the

spring and fall shows where it offers technical seminars.

"We are doing what we do best, but we are out of the convention business which, quite honestly, is something we never really wanted to be in as a business."

Regional seminars are another way Baun feels the SBE meets members' needs for increasing educational opportunities. The regional seminars "are intended to be small and very affordable sort of miniconventions." The seminars, which sometimes include exhibits, are put on in

smaller areas for smaller groups of people.

The SBE has been actively looking out for its members' interests both at the Federal Communications Commission and on Capitol Hill. Baun said the SBE's FCC Liaison Committee offers guidance to the (FCC) on issues in which the SBE is especially interested and competent.

"One of the most critical areas that the FCC liaison committee is looking at is the continued intrusion, if you will, into the auxiliary spectrum," said Baun.

"Everybody seems to want a piece of the spectrum and we want to make sure that our

the SBE has been trying to get Congress to pass legislation that will require that one of the assis-

The Emergency Alert System has also been a hot topic for the SBE.

broadcast industry is able to maintain its operation in that area because it is a very important one for licensees."

In a tangentially related issue,

tants each FCC commissioner is allowed to hire be an engineering person.

"We feel that the commission primarily is an organization that is not known for its depth of engineering expertise especially at the commissioner level and I think that the absence of that is very telling in some of the things that happen at the FCC," said Baun.

Also in Congress, the SBE has been following ongoing legislation concerned with RF regulation closely.

"That is a very important topic for our membership — exposure to RF radiation both for people who work in the field of broadcast engineering and for those who live and work adjacent to broadcast stations."

The Emergency Alert System has also been a hot topic for the SBE.

"The EAS is probably the first issue that we've had that's come along for a while where we've really had the chance to do some working with the federal government and try to set up a program that's workable," said Baun. He said the SBE will have an EAS primer available soon to help broadcasters implement the new rules.

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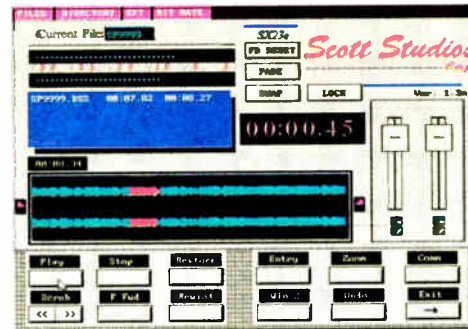
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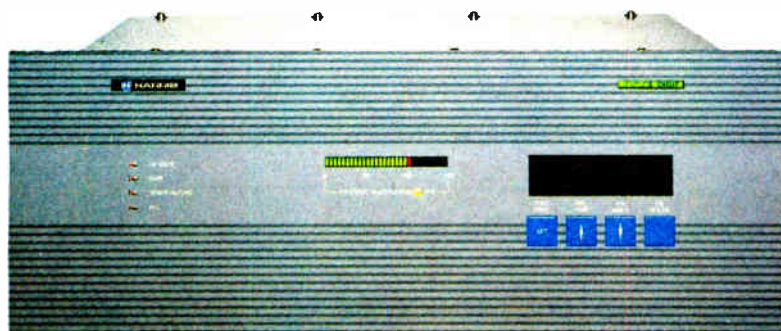


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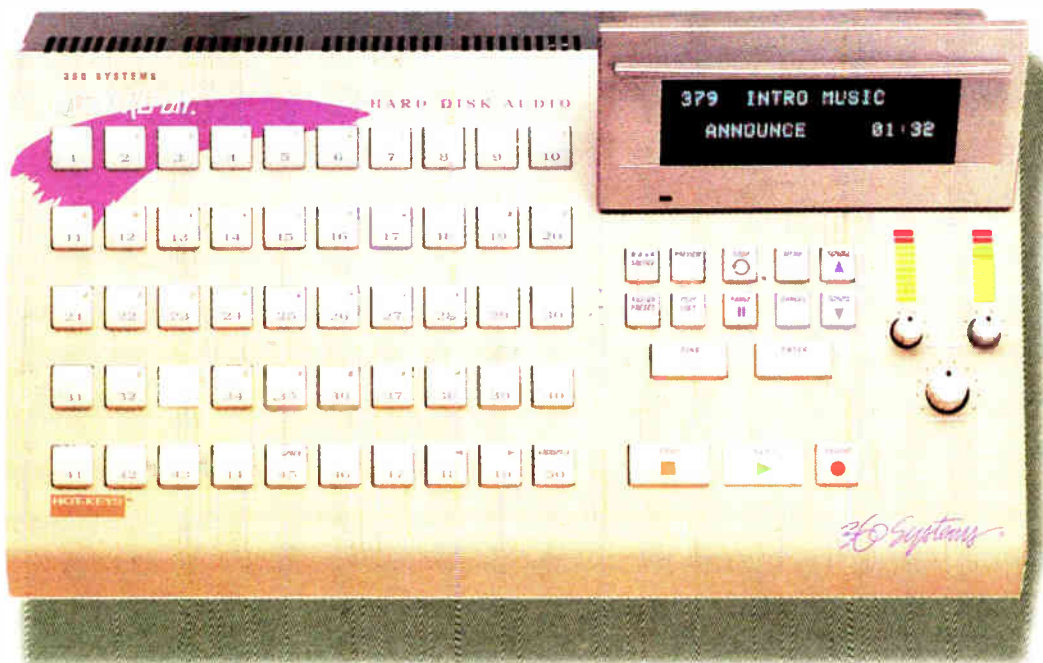
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World Radio History

Orban Adds Interface Ease to DSE

by Ty Ford

BALTIMORE Building on the success of its DSE-7000 workstation, Orban has recently added high-speed computer network support for both the Broadcast Electronics AudioVAULT and the Enco DAD486x digital audio systems. The resulting alliances provide a highly efficient system for transferring mono and stereo productions from the Orban DSE-7000, via coax or twisted pair wiring, to either the BE AudioVAULT or Enco DAD486x systems for on-air playback.

Key to the success is the development of a bi-directional communications system that provides the DSE-7000 access to the BE and Enco databases. Separate software was developed for each system.

"We adapted the DSE-7000 system to the BE and Enco configurations. This allows us to interact with and write to their databases. The Enco system is using a Novell file sever. The BE system uses a distributive system without a central file server," said Geoff Steadman, DSE-7000

product manager at Orban.

After a mono or stereo production is mastered and saved to the DSE-7000 library, a "cart" or "cut" is created.

During the "make cart" process the operator is prompted to fill in information, including Category, Name/Number, Replace, Description, Duration, Outcue, Start Date, Kill Date, Client/Artist, Class (list of servers), Create Date, Sample Rate, Mono/Stereo, Compression Type (or linear), Compression Ratio and Scale (digital gain) Level. The Enco database information is similar, although there are minor differences. If the cart name or number is already in use in the on-air system, the operator is prompted to pick a new number or overwrite the existing number.

First in the country to run the new DSE-7000/AudioVAULT network is KSBL, Santa Barbara.

"Our operations director Paul Cavanaugh was interested in getting the station on a network for print, programming, sales and the Internet. He asked Orban about networking the DSE-7000 to our AudioVAULT. They said yes, so we became a beta test site," said general manager/part owner David Perry.

"This is our second DSE-7000. We bought our first one about a year ago for our other two stations here, KTYD and KQSB(AM). The first DSE-7000 is connected to two Format Sentry systems by analog lines, so it is not networked right now, but after seeing how well the DSE-7000/AudioVAULT LAN is working, we expect to expand the network when we upgrade the Format Sentries."

Cavanaugh is equally pleased with the new networked system.

"When we were getting KSBL up and

running we were loading 600 songs and hundreds of commercials and program elements into the AudioVAULT. We were loading commercial and audio from two



Paul Cavanaugh, Operations Manager, Criterion Media Group Inc.

other sources to the same hard drive, all at the same time," he said.

"We used to mix our spots to DAT, and sometimes had to leave one studio and go to another to feed them into the system. Being able to transfer right from the DSE-7000 to the AudioVAULT saves a lot of time."

Because the AudioVAULT supports a variety of MPEG compression ratios, and because KSBL's hard drive was filling quickly, Cavanaugh experimented to find out which, if any, compression ratio would be suitable.

"We found you really can't hear the 3.2:1 ratio. Everyone thought it sounded the most natural, without any artifacts," Cavanaugh said.

Meanwhile, at WSBT(AM) and WNSN-FM in South Bend, Ind., radio studio supervisor Mike Green oversees the operation of two production rooms and the on-air studios.

"There's a DSE-7000 in one production

room and an Enco DAD486x workstation with less production capability in the other," Green said.


"Each DSE-7000 requires its own network card and at least one in the Enco server. Before we had the DSE to Enco transfer capability, and MPEG compression, we used to mix to DAT in the production studio and then load the DAT into the Enco system so it could be available for air-play.

"That meant we had to go to a different room to do the transfer. Now it's all done on the network. Both on-air rooms read from that server."

According to Green, "There's also one Enco DAD486x workstation in the AM studio and another in the FM studio. In each of those computers there's a card that can playback two sources simultaneously. We have 1400 spots for both stations stored on one Enco audio server running Novell 3.12 software. Sometimes the same spot is playing back at slightly different

times on both stations from that server." About 2.1GB of the 3GB Enco storage is used for the 1400 spots, but as Green notes, "That includes a five-hour weekly football game. The neat thing is we normally start playback before the game is over, so we're playing and recording at the same time."

Green has found the MPEG Layer II compression rate operated at 5.3:1 and applied to their 32 kHz sample rate has not raised a flag with the station's golden ears. With compression, done by a card in the DSE-7000, Green says it takes about one minute to transfer a stereo minute of compressed audio to the Enco server.

At both the Santa Barbara and South Bend facilities, the key to the success has been the ease of use of the DSE-7000, its powerful production capabilities, and Orban's ability to create and implement solutions for network integration of both the BE and Enco systems. 

Rating Arbitron

by Lynn Meadows

BALTIMORE The final report on Arbitron's Radio-Schedule Audience Estimate Reliability study concluded that radio's favorite ratings system is a "valid and reliable tool" for estimating the size of the radio audience. It was released in October.


For the study, Arbitron contracted Dr. Roland Soong of Audits & Surveys Worldwide to perform the primary study and conducted additional analysis with his input. The study included 30 metropolitan areas, 104,166 diaries, and 39,600 schedules.

This is the fourth study in 20 years. It was prompted by a growing interest on the part of advertisers to get "guarantees" from stations as to the number of listeners that will hear their spots.

Arbitron offers no opinion on whether or not stations should give guarantees. But Thom Mocarisky of Arbitron said that stations do need to know if the guarantees they offer are reasonable. The report provides formulas to assist stations.

The report found that the reliability of multiple-station Gross Rating Points will be better than that of a single station's GRP.

Arbitron concluded that the reliability of radio schedule audience delivery can vary significantly by market size and the reliability of radio schedule audience estimates can be affected by the breadth of age and sex demographics.

The report also noted that computing GRPs from Arbitron's published AQH ratings instead of unrounded persons projections can add "meaningful additional variance to that GRP." 

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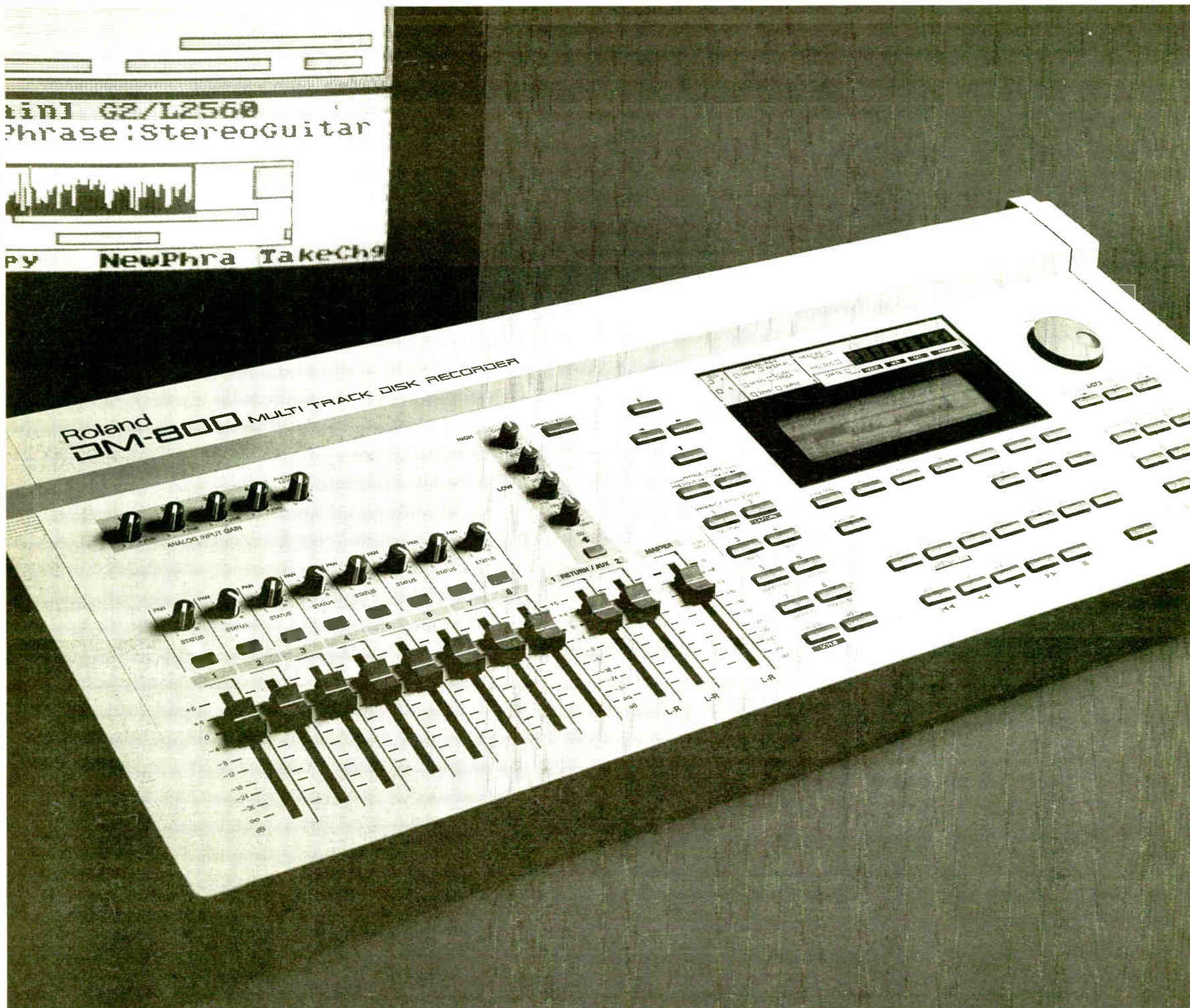
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World Radio History

Industry Mourns New York's 'Nightbird'

New York Radio, Colleagues Will Miss Steele

by Alan Haber

NEW YORK True radio pioneer Alison Steele, who flourished on the New York airwaves as the Nightbird, died on Sept. 27, of cancer.

Steele will be remembered not only for her accomplishments as a top female major-market personality in a male dominated field but also for her unique ability to connect with her listeners.

"Alison and New York radio - Alison was unbelievable," said Scott Muni, a New York radio legend whose legacy includes WABC(AM) and WNEW-FM. "She was incredible."

The Nightbird was everything to her listeners: "She was able," said Muni, "with her voice and her mix of music and her space trips (to) transport people from ... whatever world they wanted to get away from ... she just was magic."

First flight

Steele developed her special style on the air at WNEW-AM-FM. Her career as the Nightbird began on Jan. 1, 1968.

"(I) thought about the night time, and it's my favorite time. I knew that when people didn't feel well, they felt worse at night," said Steele in a 1992 interview on Fred



Alison Steele

Migliore's "Another Unconventional Sunday Morning" program on National Public Radio affiliate WFIT-FM in Melbourne, Fla.

"When they were lonely, they were lonelier at night, and I knew that I just couldn't go on the air and say, 'Hi, this is Alison Steele.' I felt if I could develop a relationship with my audience and bring them together, knowing that there were other people out there at night who felt the same as they did, that I would have something, and sure enough it worked."

"(My) most vivid memory is of the night of the 1977 blackout in New York City," said Rachel Ehrenberg, who was an engineer at WNEW in 1976-1977 and now works at KCAL-TV in Los Angeles. Via e-mail, Ehrenberg described the situation:

"FM was completely shut down. I got AM running with a battery-operated console — an old Collins 212Z. I think it was — patched directly into the phone line to our transmitter which was in New Jersey, which had power.

"Til the AM staff could get in — we were in a baseball game and only the

news reader was there, and myself — Alison filled in on the AM side. Her voice had a calming effect on us at the station, and I could imagine the folks who were listening could have only shared that feeling."

One of a kind

As the Nightbird, Steele had a special ability to connect with her audience over the years.

"I think she was extremely conversational, in a sexy way," said Mark Chernoff,

program director at WNEW-FM when Steele was working on WNEW.

"She was not threatening to male or female. I think both sexes enjoyed listening to her."

The Nightbird, said Chernoff, was "one of a kind in a lot of ways. There were a lot of imitators, but there was nobody quite like her."

Format changes at WNEW-FM resulted in Steele's move to WNEW. Soon thereafter, she was hired by K-ROCK to help bring some perspective to the station's simulcast with VH-1 of the movie, "Woodstock." She worked at K-ROCK,

according to Program Director Andre Gardner, until June of this year.

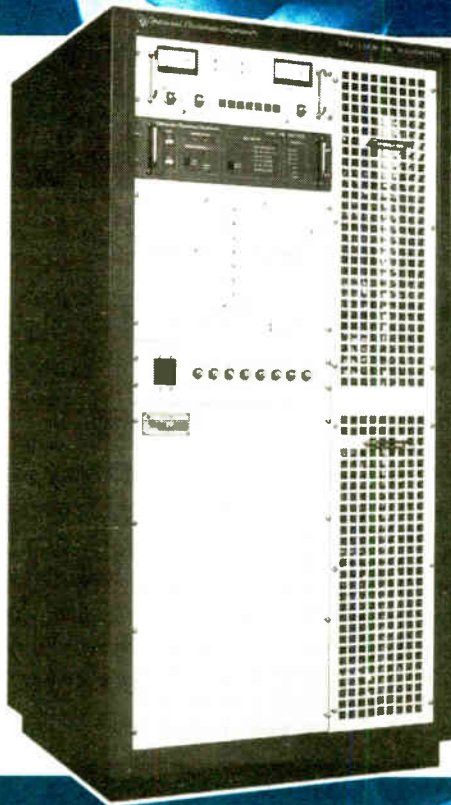
"Everybody should give something — you know, contribute something," the Nightbird told Migliore in 1992. She recited the last line of a poem she said was very important to her: "The importance of life is to count, to stand for something, to have it matter that you lived at all."

(Thank you to Fred Migliore of 1480 East Radio Productions, who allowed portions of his October 1992 interview with Alison Steele to be used in this appreciation).

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AES Show Coverage



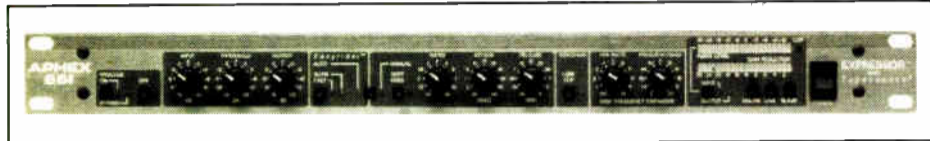
Tubes Talk of the Town at AES Show

by Ty Ford

NEW YORK Vacuum tubes are back, big time, in the Big Apple. At the recent AES show held here, you could not spit without hitting hot glass.

amount of riding from the glass and wire purists this past year for the co-mingling of solid state and tubes in its Tubessence technology.

The Tubessence is now under patent, and guess what? A lot of other players



Aphex Model 661 Tube Expressor Single-Channel Compressor/Limiter

Part of the allure is a response to general boredom on the part of the designers. There is also something romantic about basking in the glow of the filaments.

The other thing is, solid state developments have pretty much stalled out until the next major chip discovery squirts out of R&D. Those guys are spending most of their time trying to decide why — or if — there is a market for a digital microphone and whether it should be AES/EBU or optical.

Let me clarify. By the term "tube amp," I am referring to amplification stages that have at least one vacuum tube. In my humble opinion, Aphex took an undue

out there are doing something similar. A tip of the hat to Aphex for making the move and taking the heat.

Aphex has most recently applied the Tubessence approach to its new Model 661 Tube Expressor single-channel compressor/limiter. This uses a 12AT7 in a transformerless, one rack-space chassis. The Tube Expressor is switchable to work at -10 or +4 levels.

From the "I could stand and watch it for hours" department comes the Studer D19

MicVALVE (\$4,950). This is a two-channel, transformer-balanced, mic/line preamplifier. It has analog outputs as well as 20-bit A/D converters and AES/EBU, ADAT optical or TDIF (DA-88) digital outputs.

The D19 uses DSP dithering and noise-shaping to convert the 20-bit signal to 16-bit. Studer makes a point of mentioning that the 20-bit A/D converter is modular and can be easily upgraded. While the main signal path is solid state, the "Valve Dignifier" stage's two ECC 81 tubes can be switched into each of the two pre-amps.

How about these control names? Bass

There is something romantic about basking in the glow of the filaments.

Warmth, Angel Zoom and Valve Drive. This signals a rather amazing evolution from the historically conservative company. Watch for a D19 test drive article soon.

The D19 Mic AD (\$7,950) is also new to the Studer line. This is a rack-mounted unit that houses eight solid-state mic/line preamps and 20-bit A/D converters. No Valve Dignifiers here, but plenty of extras, including remote control from MicAD Master Remote Controller, Studer mixing consoles, and via MIDI.

Although the new L-200 compact rack-mounted system from API is solid state and not tube-based, its efficient design and good sound qualities make it notable.

The L-200 is a compact, 12-slot, rack-mounted miniframe system. This frame accommodates API's 212L preamp (\$579), 215L sweepable Hi/Lo pass filter (\$495), 235L expander/gate (\$595), 225L compressor/limiter (\$595), 245L de-esser (\$595), 255L balanced line driver (\$529), 265L single-channel mixer module and 275L stereo master mix module.

The L-200 main frame (\$795) is two RU high and accepts a mix of any of the above modules. Once you get started, as with potato chips, it is hard to stop.

Another of my favorite pieces was the dbx single-channel 1650T tube mic preamp (\$3,000). Greg Hanks' explanation of the attention to detail had a great deal to do with my appreciation. More than just a tube mic preamp, the 1650T is also a compressor/limiter with complete gain reduction controls, including switchable preset "compressor simulations" of classic units.

The presets on the dbx 1650T can simulate the Fairchild 660, Neve BA3, Urei LA-2, SSL quad buss and dbx 165A compressors. There are rear-panel jacks for side chain and coupling operation, and for inserts and returns.

According to Hanks and the brochure, the 1650T is unusual because circuit paths are balanced all the way through the entire box. The 1650T uses no AC feedback in its circuits to improve fidelity, but does use some DC and common mode feed-

back in the gain cell and output stages.

At its price point you probably will not find the 1650T in many basement studios any time soon, but it is on my list of "must hears." Hopefully, I'll have the time to do some hands-on articles on all of these boxes later this year.

□□□

Ty Ford found a restaurant on 2nd Ave. that makes great scungilli. He can be reached at 410-889-6201 or Tford1010@aol.com

Mic Legend Shure Dies at 93

by Lynn Meadows

EVANSTON, III. Sidney N. Shure, chairman and founder of Shure Brothers Inc., passed away Oct. 17 at age 93.

S.N. Shure, as he was known, started the Shure Radio Company in 1925 as a wholesale parts supplier for home radio set builders. Seventy years later, it is the world's largest manufacturer of microphones.

Shure started by renting an office in Chicago for \$5 a month where he published a radio parts catalog, one of only six U.S. firms to do so at the time. In 1928, when his brother joined, Shure changed the name to Shure Brothers Inc.

The first microphone produced by Shure was the two-button carbon microphone which was released in 1932. In 1937, Shure introduced the first modern noise-canceling microphone followed by the first controlled magnetic microphone. By 1939, Shure had invented the Unidyne, the world's first single-element directional microphone.

During World War II, the U.S. government needed huge quantities of reliable, shock proof microphones. Shure recruited and trained hundreds of new employees in a crash production program based on the slogan "Microphones are weapons of war." Later the U.S. government awarded the company three Army-Navy "E" awards for excellence in service.

After the war, Shure decided to continue to build all products to military specification so they would be better for the end user. The company boasts that many of its most popular products benefit from design and manufacturing technologies initially developed for the military.

"Mr. Shure's visionary leadership placed Shure Brothers Incorporated at the absolute forefront of the audio industry and kept it there through decades of growth," said James Kogen, company president. Shure is survived by his wife Rose, who is actively involved in the management of the company, and two children.

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New Mic Technology at AES Show

by Ty Ford

NEW YORK The AES show at the Jacob Javits Center is always a fun romp, even though the Pope's travelcade made getting around tougher than it had to be. Once inside the Javits, all of the gear and noise made it a challenge to stay focused.

I was looking for special microphones and while I am certain I missed some, the following represents what I saw and heard. Incidentally, kudos to **Sony** and **Acoustic Systems**, both of which had isolation booths (Acoustic Systems sells the booths, of course).

All mic manufacturers should try this,

especially those interested in presenting comparative listening demonstrations. Trying to make any sense out of what you hear in headphones on the show floor is impossible.

This was **Neumann's** first showing of the new M149 tube mic (\$4,200). In spite of the price tag, there was a lot of interest. The price includes mic, power supply, cable, suspension mount and carrying case.

Significant firsts

This is the first new tube mic from Neumann in 30 years and the company's first transformerless tube mic. The M149 uses a version of the Neumann K49 pres-

sure gradient capsule. The circuitry of the M149 uses a tube amplifier coupled with Neumann's FET 100 transformerless circuitry. According to Neumann's Jeff Alexander, Neumann has optimized the M149 tube to have a sound character very similar to that of its U47. The M149 has nine polar patterns and a nine position high-pass filter.

Jerry Graham of GPrime had several new condensers from **Gefell**. The exotic looking M900 (\$995), the UM92.1S (\$2,495) and the M296 (\$950) were the most interesting of the lot.

The M900 is a large-diaphragm cardioid condenser with a chromium-plated backplate covered by a one micron layer of Teflon. The five micron thick Mylar membrane is gold-sputtered. This mic has incredible off-axis HF response. Gefell also makes a hyper-cardioid version, the M910 (\$995).

The UM92.1S is a three-pattern pressure gradient design using two large gold-sputtered handmade PVC-on-glass membranes. It uses the same large diaphragm M7 capsule as in the MT71 and the UMT70S. The UM92.1S features updated tube circuitry with the currently manufactured EF86 tube, rather than the hard-to-find EC92 type.

The Gefell M296 uses a four-micron one-inch nickel pressure capsule in an omni pattern. The mic has a transformerless output. The "price-is-right" large diaphragm Russian **Oktava** MK219 (\$499) and MK 012 omni/cardioid/hyper-cardioid set (\$549) were on display at the Harris Allied booth. A.S. McKay was also showing the Russian **Nevaton** condenser and a new line of Russian dynamic mics from **Byetone**.

There are six dynamic mics in the product line. Five are targeted at the SM57 and SM58 market and the sixth, the handheld, omnidirectional **Byetone** M757, is gunning for the ElectroVoice 635.

Dan Wright from **Curtis Technology** showed the AL-1 transformerless stereo mic system (\$2,000).

The AL-1 is comprised of two mics, a dual-triode vacuum tube design, single rack space power supply and suspension mounts. The mics sounded nice, but you

really could not tell much on the floor. The two-mic approach was interesting, but the lack of specs on the brochure and Wright's close-to-the-vest approach about details made me wary.

Further along, David Josephson of **Josephson Engineering** was showing some of the fifteen condenser mics in his line. Perhaps the most noticeable are the Series Seven.

Condenser news

The C700 (\$2,800) pressure/pressure gradient condenser is approximately a foot tall and two inches in diameter. The basic C700 uses both a 16mm omnidirectional pressure element and a 26mm figure-eight gradient element that terminate in a five-pin XLR.

The signals from the two capsules can be used separately or mixed together.

Recording them on separate tracks allows the amount of directionality of the mic to be adjusted during mixdown.

The C700S (\$3,800) stereo version has two 26mm gradient elements placed at a 90 degree angle (45 degrees left and right), and a 16mm pressure capsule that faces forward.

Back down in the "great deal" price range, I found the **beyerdynamic** TG-X50 (\$249).

This high-output cardioid dynamic mic with a hand-grenade design is thicker sounding than a Sennheiser 421 and has at least as much "whump" as an RE20. I predict the size, shape and sound of this mic will make it attractive to broadcast studios for on-air use.

I did have the opportunity to compare the TG-X50 with a 421 near a computer monitor. The

TG-X50 did a much better job of rejecting EMF from the computer monitor.

Finally, from **ACO Pacific** is the PS9200KIT precision microphone kit (\$1,650). The kit includes the PS9200 two-channel power supply, a 4012 one-half inch preamplifier, CA4012-5 Preamp Cable, PS9 adaptor, WS1 wind-screen, your choice of one of the four half-inch mics and the SC1 storage case.

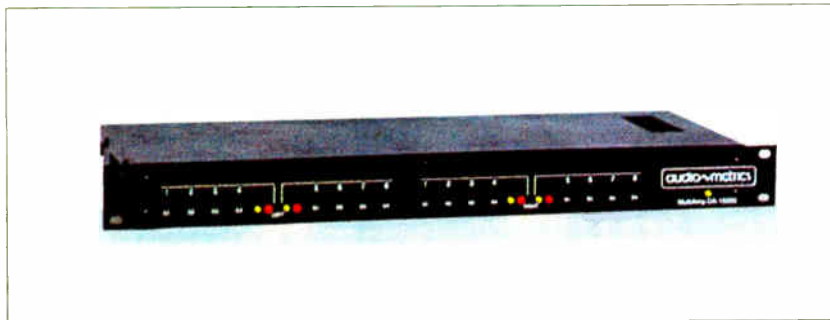
If you are interested in flat frequency response from 2 Hz to 40 kHz and the critical measurement of noise from buildings, printers, auto brakes, tires, rockets, hard disks, cookie crispness analysis and other performance testing, this system deserves a look. ☺



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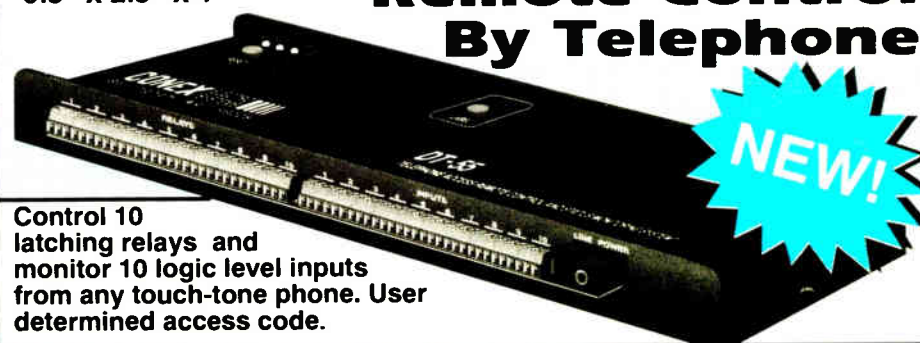
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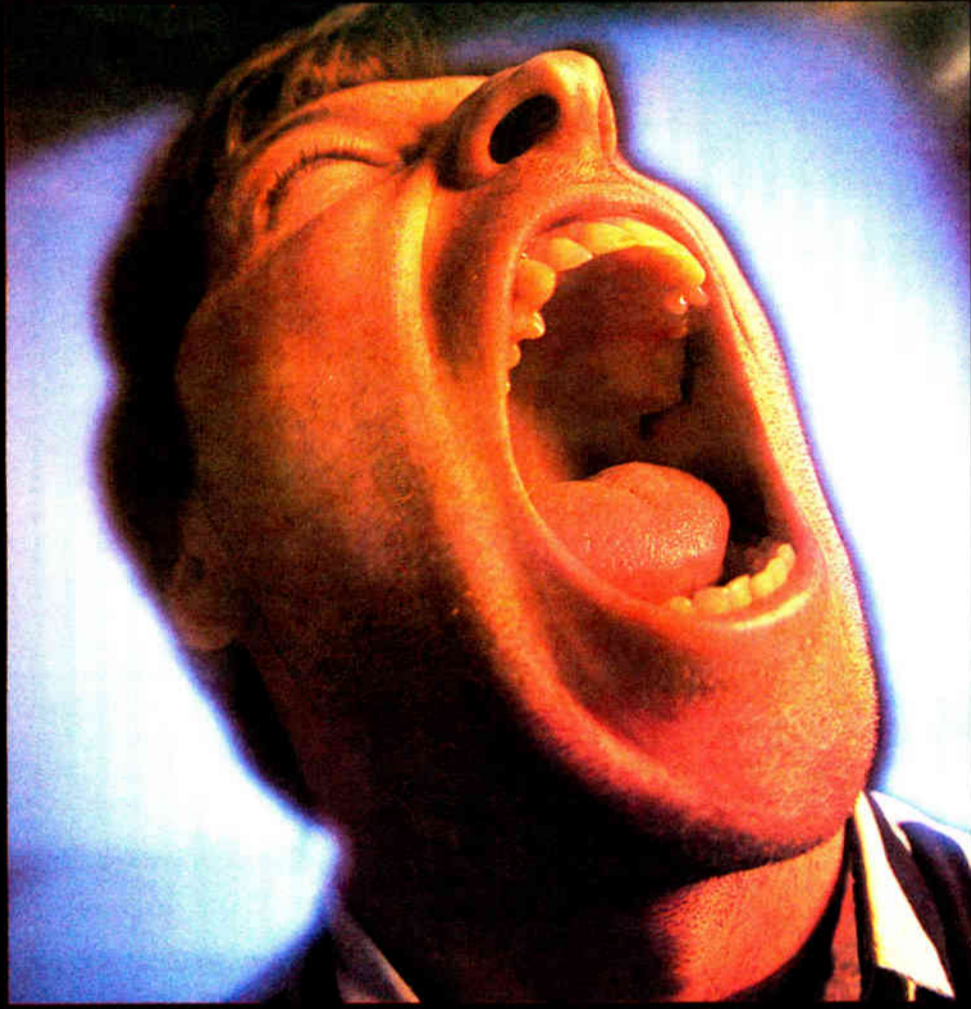


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World Radio History

Innovative Audio for Radio in New York

by Alan R. Peterson

NEW YORK The Audio Engineering Society's annual convention has long been a shopper's paradise for audio engineers and broadcasters alike.

As in previous years, the broadcast community was conspicuously outnumbered by representatives from the recording and music industries as well as film and television production.

Radio broadcasters present at the Jacob Javitz Center in New York discovered new products for broadcast recording and processing, and witnessed the continued integration of analog, tube and solid-state technologies.

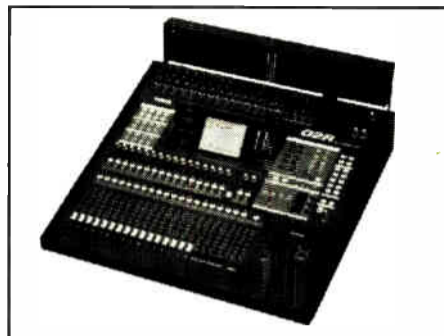
Recording and production console technology allows manipulation of analog audio by digital control or entirely within the digital domain. Companies specializing in both showed the very best they offer.

The long-awaited **Yamaha 02R** digital recording console was finally introduced to the audio community in New York.

Considered the next evolutionary step up from the ProMix 01 mixer, the 02R features analog and digital inputs, real-time automation with motorized faders and an LCD screen to display console functions.

Studer debuted the D940 production console, featuring dynamic automation

and digital or analog input options. Studer's D941 console is similar, but has



Yamaha 02R Digital Console

a control surface optimized for on-air use.

Enhancements to **Solid State Logic's** product line include automation features for the G-Plus console and new features and benefits for the Axiom system.

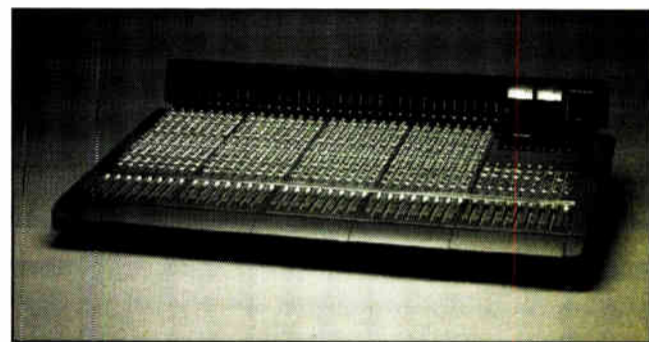
Soundcraft entered the high-end on-air and broadcast production arena with the B800 console appropriate for network facilities, large remote vans and major market affiliates. Soundcraft also exhibited the Lm1 portable mixer for precision field recording. The Lm1 can operate for

approximately 18 hours on a set of dry cell batteries.

Two interesting mid-priced production consoles were exhibited by **Tascam** and **Ensoniq**.

Tascam's M2600 mkII is an eight-bus multitrack console with enhanced EQ and power supply circuitry, switchable -10 or +4 dB inputs and is configured for 16, 24 and 32 channels. Pricing begins at \$3,199 for the 16 channel model.

Ensoniq used the show to announce the early 1996 release of its new eight-bus 1682-fx board. This will have eight mono and four stereo inputs and an internal 24-bit effect processor. Suggested price for the console will be



Tascam M2600 MKII Eight-bus Console

less than \$2,500.

Mackie redesigned its successful 1202

EAS Deadline Extended

► continued from page 1

But Gerald LeBow, president of Sage Alerting whose system includes digital inputs for RBDS monitoring, said he was pleased with a paragraph the commission added into the rules that briefly describes RBDS.

Cable

The NAB petitioned against the requirement that cable television systems provide a video interruption and an audio EAS message on all channels.

The NAB said this was a violation of the Copyright Act as well as must carry provisions. The association wrote that cable systems should only be allowed to override the audio and video on channels that were not retransmitting broadcast signals.

Time Warner Entertainment Company opposed the use of selective override equipment that would only override certain channels. Such equipment, they said, would be expensive and make existing override systems obsolete.

The FCC dismissed the NAB's arguments and denied the petition. The commission has yet to issue an order on the role of small cable systems and alternative video service providers in EAS.

Next Step

The commission can now proceed with equipment certification, Lucia said. Certification was expected to be completed this month. Manufacturers have been waiting eleven months to be able to start producing.

Darryl Parker, director of marketing at TFT, said the company expected to have "limited quantities" of its EAS 911 encoder/decoder available in January. LeBow said Sage will be ready with the ENDEC in early spring.

Lucia said his office is busy doing workshops to help stations get up to speed on EAS.

"We are probably doing on average one maybe two workshops a week," he said.

The SBE has also been very active in EAS education. Chapter 24 in Wisconsin will hold a 90-minute teleconference tonight (Nov. 15) starting at 8 p.m., CST, that will focus on EAS. The satellite Ku downlink coordinates are: Telstar 401, transponder 6(H), 11,855 MHz.


In July, **RW** reported that Quad Dimension had a patent that it said covers geographically specific alarm codes in a

very general sense. Because the new EAS system uses geographically specific alarm codes, the company sent letters to equipment manufacturers informing them that they would need a license agreement to use the patented technology.

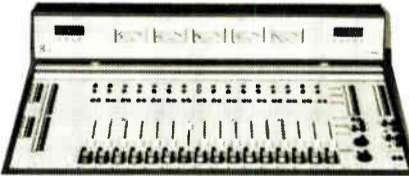
The FCC had intended to create an emergency system with non-proprietary technology and believed it had because its system is similar to the one the National Weather Service uses. Accordingly, the question of the patent has been dropped in the lap of the Department of Commerce (DOC) which houses both the patent office and the weather service.

Patent pending

"The operative word is pending," said John Raubitschek, patent counsel for the DOC. He is planning to review the patent file. The results should be interesting. Inside the folder that the patent officer reviewed to ensure Quad Dimension had a unique system is a report detailing the National Weather Service's system.



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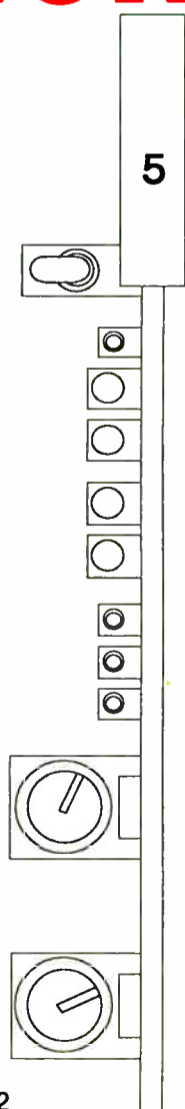
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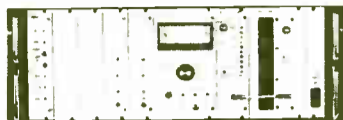
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AXS is a modular design that begins as a simple cart replacement and grows to any combination of CD, hard disk, satellite or specialty programming with ease.

AXS has all the sophisticated feature options including device independent multi-channel background audio record and replay. Macro programming makes tough to run event sequences easy. Software drives a powerful programmable real time IOMAP.

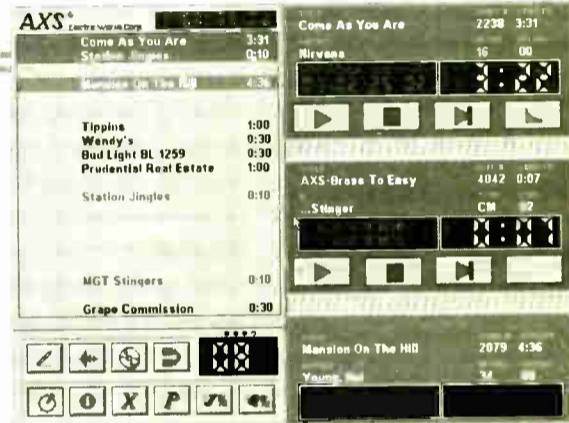
Jocks love AXS: A fast 99 page, 28 button Jock F/X panel that can be time linked and remote wired is standard.

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Hot Audio Products

► continued from page 19

mixer into the 1202VLZ with three-band EQ, mute buttons and balanced XLR outputs.



Mackie 1202VLZ Mixer

Clones of the popular Mackie compact mixer were in abundance, most notably the 12-input Topaz Mini from Soundtracs, the Phonic MM122 mixer with slide faders and the new Rolls MX1204, soon to be released.

Samson took the concept to a much smaller scale with the Mixpad 9 ultra-compact design mixer. It features three phantom-powered XLR mic connectors, three stereo inputs, balanced stereo outputs and two effect send busses. Fittingly enough, the Mixpad 9 is housed in a nine-by-nine inch chassis.

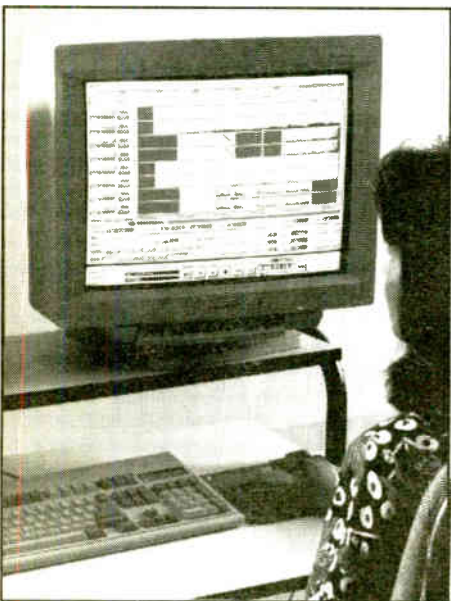


MTG UM92.15

Recorders

Audio pros had their pick of hard drive or tape technologies, with major improvements in both decks and workstations.

The Timeline company announced a third-party agreement with Peavey



Spectral Prisma V2.0 DAW

Electronics to introduce the Media-Matrix DSP audio processor. This Windows-based processing feature allows fine control over EQ, compression and delay within Timeline's Studioframe digital audio workstation.

Timeline also debuted a prototype of the MMR-8 magneto-optical disk

multitrack recorder. While more suited to film post-production, the final design specifications are still pending and may include radio production applications.

Digidesign announced a flurry of new products for its Mac-based line of desktop audio workstations, including the Focusrite digital EQ plug-in, the TC Tools reverberation package and the ProControl modular mixer control surface.

The ProTools III (version 3.1) audio production system allows 16 to

48 tracks of digital audio and supports ADAT and DA-88 formats.

While primarily in the audio-for-Mac business, the company also introduced the AudioMedia III card with Session software for the Windows platform.

Radio production integration was the key to Sonic Solutions' new Radio Workgroup Architecture. The digital audio system is linked through Media-Net, eliminating central servers and allowing all workstations access to the same audio. The Sonic System for radio includes time compression and optional NoNoise sound restoration

tools for noise elimination.

The company's Software Audio Workshop (SAW) now allows a maximum of 32 tracks of realtime playback and 100 simultaneous sound files when run on a Pentium 90 platform.



Mics from Shure

Otari's RADAR hard disk multitrack recorder has been enhanced with the company's new RADAR VIEW monitoring software. All session information, including audio display of all 24 tracks, can be displayed on an SVGA monitor.

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Spectral unveiled enhancements to the Prisma music system and the flagship 16-track AudioEngine workstation. The Snap Manager feature allows the Prisma to line up random phrases to start on a single beat. The wave redraw on AudioEngine has been improved, as has networking and cross-platform audio production.

Digital Audio Labs joined the fray with the V8 multitrack workstation for IBM-compatible PCs. The V8 can be configured for up to 16 tracks of playback, eight DSP channels and optional ADAT and DA-88 interfaces.

Fairlight drew attention with the Dali two-track recorder/editor, and attracted broadcasters with the MFX3 Main-

continued on page 22 ►

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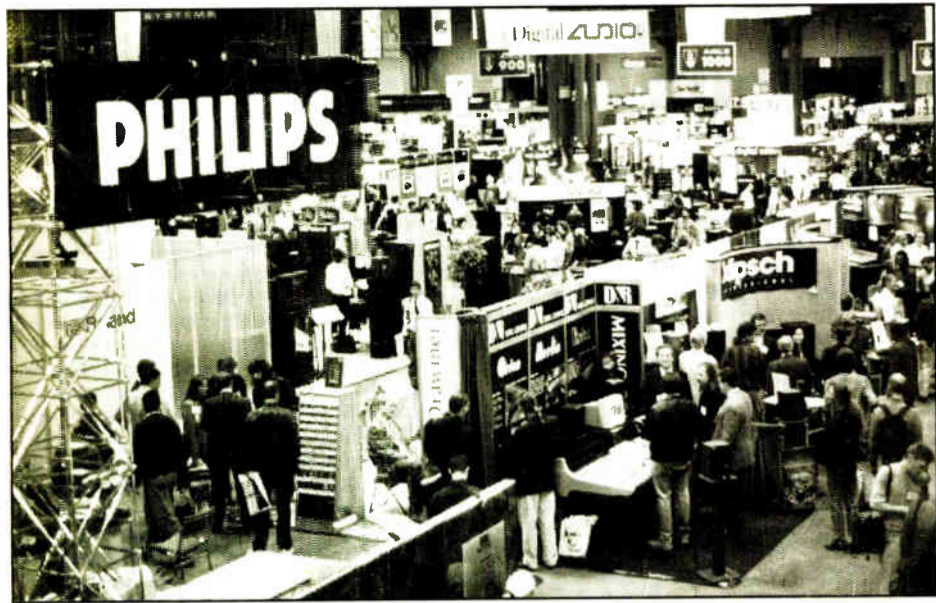
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New and Classic Gear

continued from page 21

frame and Mini digital multitrack workstations. The computer-based hard disk recorder is flexible and can be

table sample rates. A prototype MIDI-based add-on fader console and mixing software was shown for the eight-track recorder.



New products filled the floor at the 1995 AES convention in New York City.

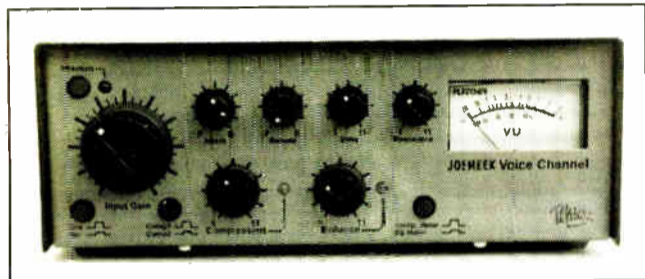
used as a music production system and for producing radio programming and spots.

Quality inexpensive multitrack record-

ing was provided by a number of companies. **Fostex** exhibited its line of ADAT-compatible digital multitrack tape recorders and introduced the new DMT-8 hard disk recorder. The DMT-8 resembles a portable cassette-style multitrack recorder, but records digital audio to a hard disk.

The big buzz from **Alesis** and **Panasonic** was the debut of both company's enhanced ADAT-based multitrack recorders. The Alesis ADAT-XT and the Panasonic MDA-1 (built by Alesis) are nearly identical in form and function. Both have high-speed transports and allow for digital cut/paste editing of audio tracks.

Tascam's booth was highlighted by the



JOEMEEK Compressor from Interstudio Ltd.

market.

Vestax displayed the HDR-6 and HDR-8 multitrack hard disk recorders. Both are self-contained rack-mounted units featuring internal digital EQ, mixing and selec-

Technical Emmy awarded for its DA-88 multitrack technology. Examples of the DA-88 as well as the entry-level Porta 03 mkII cassette-based multitrack recorder were on display.

The **Roland DM-800** continued to be a major draw for the synthesizer/pro audio manufacturer. The 12-pound portable eight-track workstation was demonstrated as a radio commercial production tool and sound-for-video post-production recorder.

Processing

The hot topic in processing technology was the tubes, as even more companies connected a 12AT7 or similar component to state-of-the-art silicon circuitry.

Aphex led the charge with its newly-patented Tubessence technology, which runs a small triode's plate at low voltage level. Tube sound is obtained from circuitry that is neither bulky nor costly to produce.

The new model 661 compressor/limiter, utilizing Tubessence, was unveiled at the company's exhibit.

Rolls Corp. is marketing the **Bellari** line of tube products, including the RP220 dual tube mic preamp, RP-282 compressor/limiter, ADB3 stereo direct box and MP110 Direct Drive mic preamp. All use 7025 vacuum tubes and have 20 Hz - 40 kHz response.

Rolls also markets its own line of equalizers, limiters and miniature mixers.



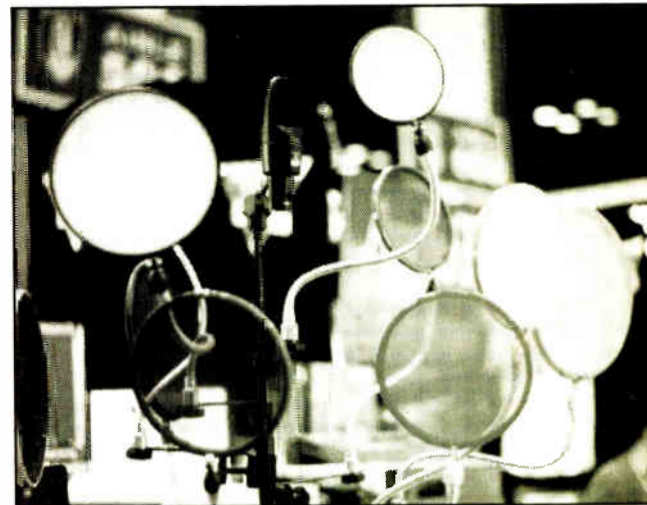
FX cards for the Lexicon PCM80

Tube and 20-bit work together in the new **Studer D19 MicVALVE** preamplifier. The preamp combines a fully adjustable tube stage with a 20-bit A/D converter. Optional ADAT and TDFI digital outputs are available.

Drawmer Distribution displayed the new 1962 Digital Vacuum Tube Pre-Amp, available also as an analog-only unit with a digital retrofit.

Voce Inc. returned to a classic tube

and photocell audio path design from past decades for its new vacuum tube audio compressor. Voce also manufactures sound modules for the musician's



Pop Filters on Display at AES

market.

Applied Research and Technology, Inc. (ART) showed up with the smallest tube preamp in the show. The Tube MP uses a single 12AX7 in a chassis slightly larger than a portable CD player. It has XLR and unbalanced I/O, a full 70 dB of gain and lists for less than \$150.

Solid-state processors and analog products held their own in the new wave of technology for the audio professional.

Interstudio Limited of London exhibited the JOEMEEK product line designed by Fletcher ElectroAcoustics.

While not tube-based, the core of the product line has the classic design used by producer Joe Meek during the recording of "Telstar" by the Tornados.

JOEMEEK products are identified by their rich green panels.

Tubes were not the only "new" idea on the AES exhibition floor. Solid-state processors and analog products held their own in the new wave of technology for the audio professional.

Ensoniq arrived at the show with the DP/2 and DP/4+ effects processors. The newer DP/2 is an affordable version of the DP/4+ with two independent 24-bit processors, MIDI control and up to 600 memory locations.

dbx Professional Products announced the addition of the 790 Studio Reverb and dual studio compressor/limiter to the affordable Producer product line. A quad auto compressor and stereo dynamics processor also joined the dbx lineup.

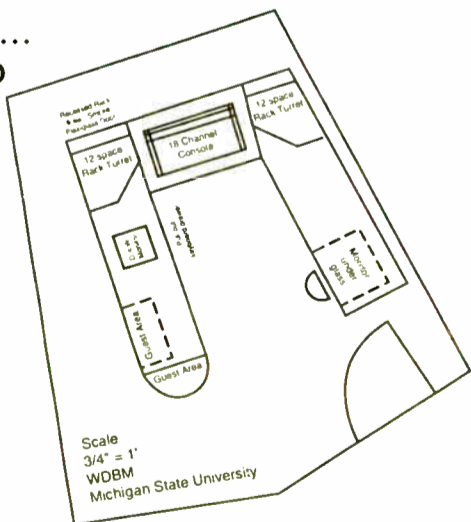
The **Lexicon PCM 80** has new FX data cards available for the versatile digital processor. The cards plug into the PCM 80 and present the user with all new reverb, delay and pitch change programs.

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"I can't believe Bob finally did it!"

*Karen Savelly
Mid-Day Air Personality
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Bob Deitsch, director of engineering at WCSX, has been in radio for 35 years and until he saw the DDS Digital Delivery System, he didn't believe anyone could come up with a digital alternative that answered the stations' needs.

Studio talent wanted the familiar, easy feel of a cart machine. Engineering needed ultra dependability and redundancy.

DDS by Radio Systems answers everyone's needs.

The cart machine emulator interface is a breeze to learn and use.

Jocks air spots while the dual CPUs record and store all of the commercials, jingles and liner audio.

DDS has been on the air at WCSX for over three months and not one spot unit has been missed!



For WCSX-FM, Bob placed four

DDS cart machines in the main air studio, a single unit in the news

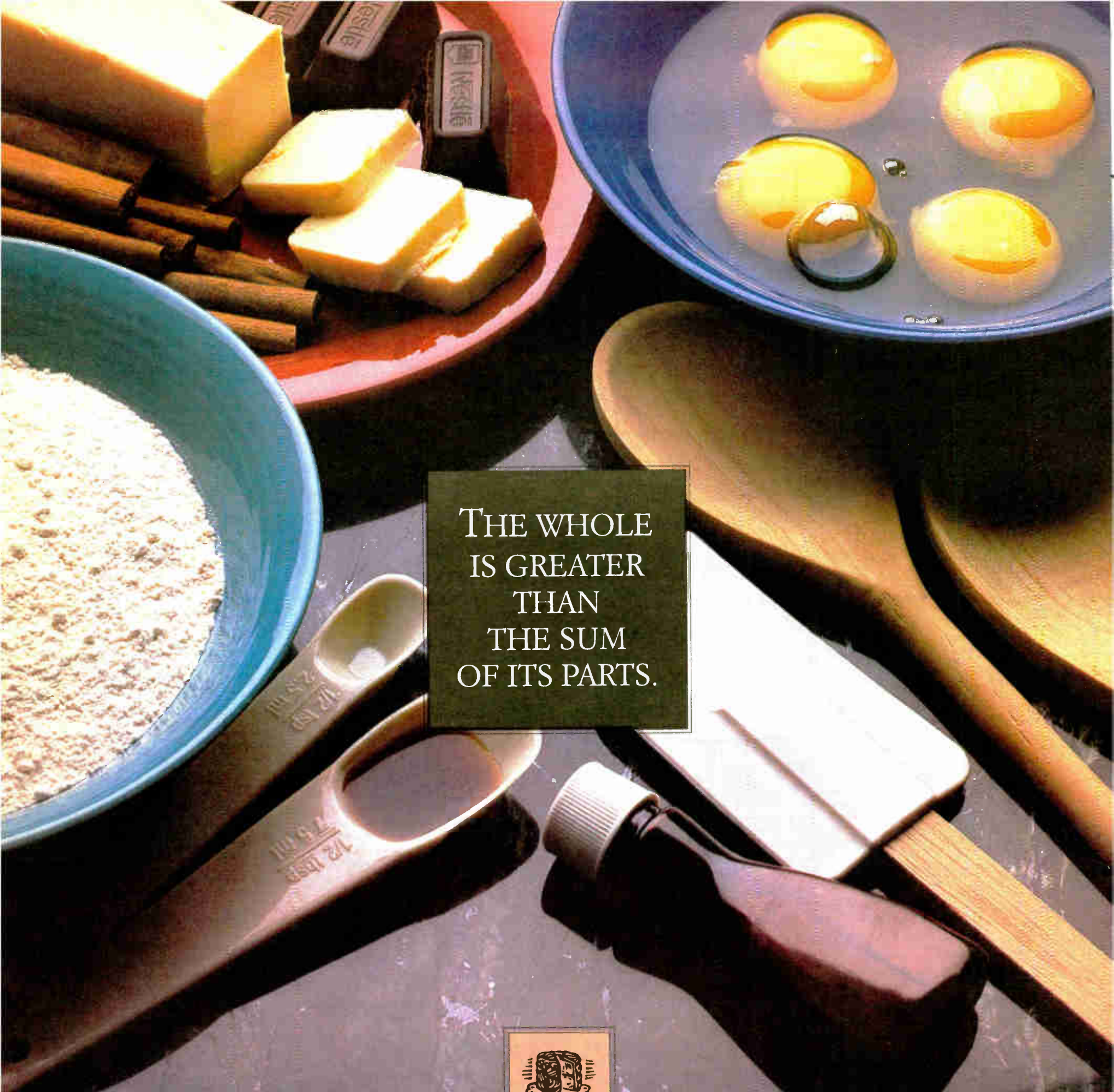
area, and a CRT terminal in

each of the two production facilities.

Contact Harris Allied to find out why DDS is making believers out of the radio industry's toughest customers.

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DIGITALLY INTEGRATED SATELLITE CONTROL

AVCR Store & Forward

the NEW digital workstation that brings you custom network services !!!!!!!

is here at last !!!

and it is only \$2,500 from

Arrakis Systems

with **Wegener** *digital satellite systems*



Arrakis Systems inc. ☎ 2619 Midpoint Drive, Fort Collins, CO. 80526 ☎ Voice 303-224-2248 (New area code 970)



Why AVCR Store and Forward is so exciting...

Imagine what it would be like if your radio station was on-line and interactive via satellite and telephone with ALL of your network program services: such as news, talk shows, weather, sports, and short & full time satellite programming. Imagine that you received your spots and music currents on-line as well, and that all of this was available at your fingertips to just put into a play list to play on air, without the need for any recording, dubbing, or editing. Imagine not having to make out and mail affidavits... no more reels of tape... a system that calls the network for a resend if there is a problem... Imagine this and much more, and you can imagine AVCR by Arrakis Systems, the #1 manufacturer of digital audio systems for radio.

Question- What is AVCR store & forward?

Answer- AVCR store & forward is a new and better 'digital' way for satellite network services to be supplied to affiliate stations. This is accomplished by placing an inexpensive AVCR digital workstation at the affiliate end of the satellite feed. That workstation is digitally controlled from the network to digitally record network programs. Those programs can be then played back by either network or local control.

Question- What can an AVCR store and forward system do for me?

Answer- Simply put, AVCR saves and makes money for networks and affiliate stations alike. It does this by reducing labor, improving reliability, and providing the capability for dramatic new network services such as localized and customized network programming for affiliate stations. It also improves the quality of your sound, is far more reliable than tape equipment, automatically records the liners, programs, & spots from the network without any affiliate labor, can call the network if there is a problem, can automatically file affidavits back to the network, and can be interfaced to each affiliate's existing digital automation system.

Question- What is the Arrakis AVCR workstation?

Answer- AVCR stands for 'Audio VCR,' and, like a consumer video cassette recorder (VCR), the AVCR is a simple and easy to use record and playback device for network audio. Unlike a VCR which stores programs on magnetic tape, AVCR stores audio digitally on computer hard disk and is actually a compact, dedicated, and inexpensive digital audio workstation. Like the #1 selling Digilink workstation with nearly 2,000 in the field worldwide, the AVCR is from Arrakis Systems inc., the #1 manufacturer of digital audio workstations for radio.

Question- What is an Arrakis DISC System?

Answer- The acronym DISC means 'Digitally Integrated Satellite Control' and stands for a system where one or more AVCR's are connected to an Arrakis Digilink workstation. The Digilink workstation, #1 selling in radio, can then integrate the network programs directly into your station's play list. Simply browse through the latest network feeds, audition the programs, review the tagged text and network E-mail files, and then integrate the network programs into your play list for air in any way you want. While an AVCR may be controlled by non-Arrakis workstations, it receives its full power when working within an Arrakis Digilink environment.

Question- How do Arrakis & Wegener work together to create a complete store & forward system?

Answer- The Arrakis AVCR is designed to work together with the patented Wegener ANCS network control system and addressable digital receivers in such a way that the features of the two products complement each other. As an example, while AVCR may be playing a real time network feed out its own audio output, it can also be playing a time zone delayed feed out the Wegener receivers audio output.

Question- Can I use AVCR as a digital workstation by itself?

Answer- Absolutely !!! That is why AVCR is such a powerful addition to your station. It is a simple, easy to use, and inexpensive black box digital workstation with dozens of options & hundreds of uses throughout your station... *a workstation that also has the remarkable capability for sophisticated network interfacing.*

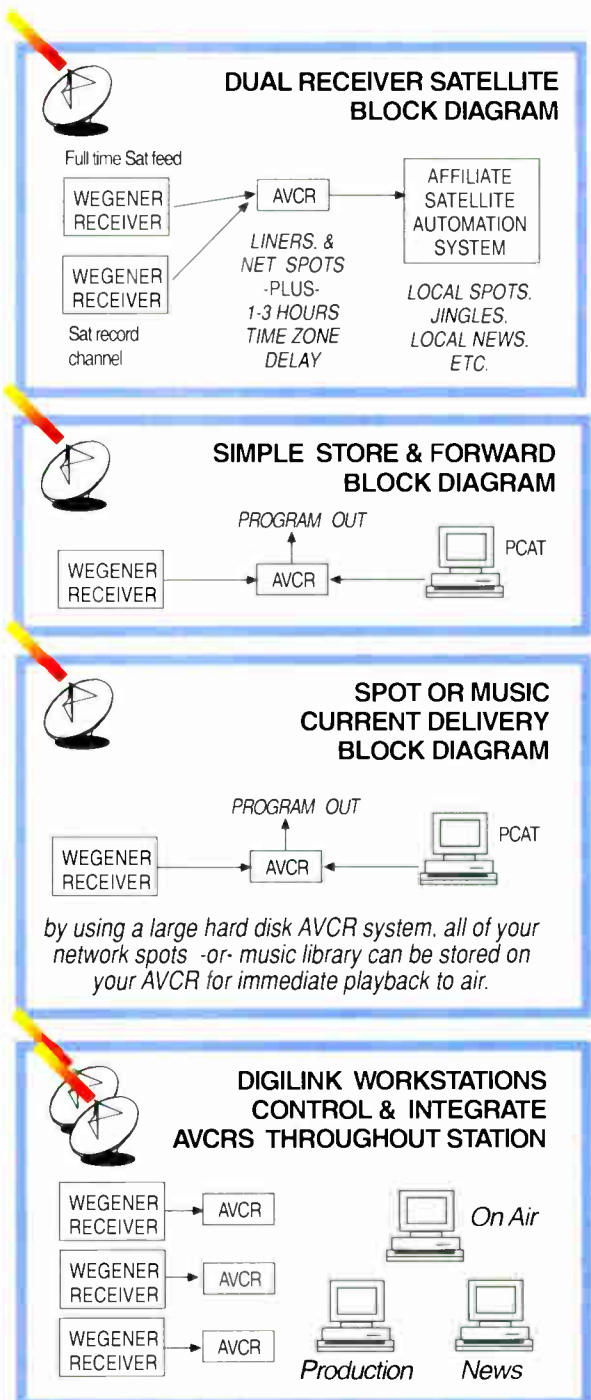
**To answer questions, arrange a factory demonstration, or find out how to place your order,
call Jon Young at Arrakis Systems 303-224-2248 (New area code 970)**

Features

- Prices start at \$2,495 list for a complete 5 hour system supporting network time zone delay & store forward
- ISOMPEG Layer II Compression
- Dual stereo output channels for program and cue outputs
- Modem option for remote control, affidavit retrieval, etc.
- E-mail support from the network
- Supports two Wegener digital receivers for simultaneous
 - 1) Real time record & cue of network feeds -plus-
 - 2) Time Zone delayed main program output
- Digilink workstation control compatible
- 9600 baud data channel embedded into MPEG audio
- many optional system configurations and drive sizes...

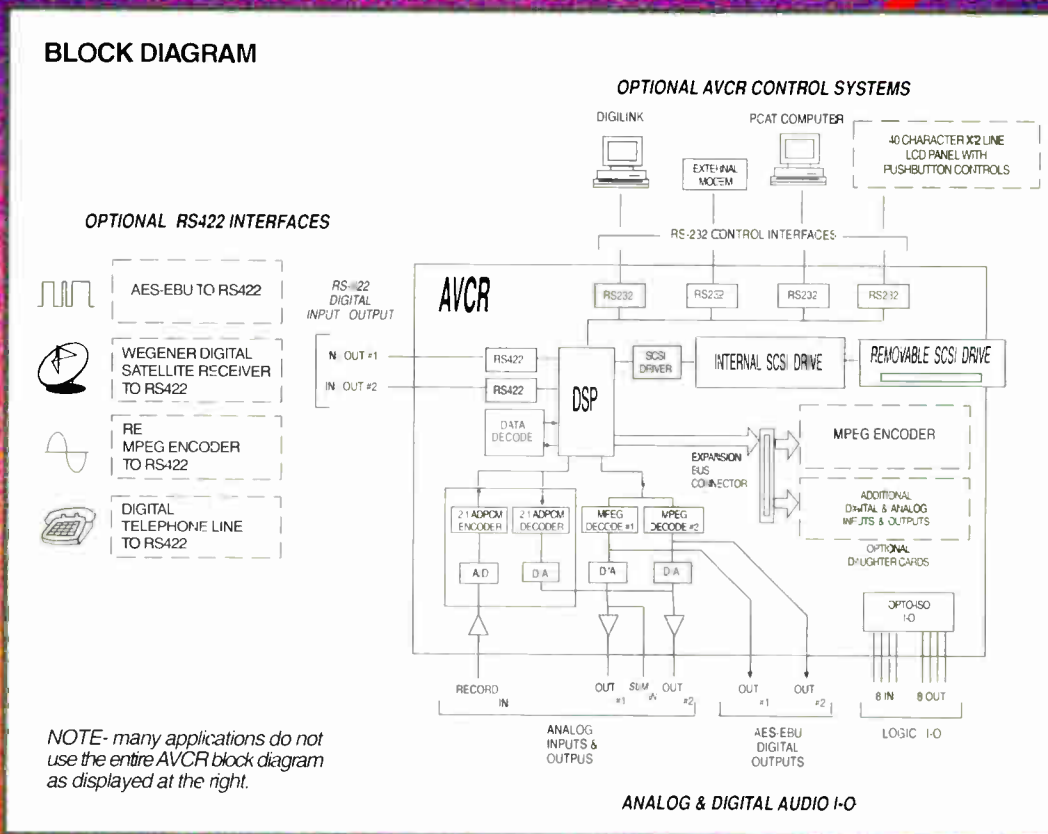
Typical Applications...

- **Improving 'Standard' Satellite Network Services**
AVCR can be used as an entirely network controlled workstation to dramatically improve standard network services: such as network updating of liners, providing regionalized network spots, sending network E-mail, and providing localization & custom network services to individual affiliates. Up to two receivers may be used with a single AVCR to simultaneously be recording new network programs for later play, while receiving and time zone delaying a full time satellite feed. The AVCR can provide standard relay control for the affiliate satellite automation system.
- **Satellite Delivery & Digital Storage of Network Programs**
For networks that send a variety of programs to affiliates for pick and choose playback, AVCR can be used to store network programs while the affiliate reviews, auditions, and then plays them back right from the AVCR workstation. This type of service is ideal for news, weather, sports, etc.
- **Network Spot Delivery Service**
Network spots are presently delivered by mail & various one day services, dubbed, and then played to air. With AVCR, spots can be sent instantly to affiliate stations over satellite and played to air immediately without the need to dub. This saves both time and money.
- **Music Library and Music Current Delivery Service**
Just like network spots, music current services send thousands of CD's to stations every week. With AVCR, new songs are available immediately and at a fraction of the cost in time and dollars of current services.
- **Use Digilink Workstations for Total Integration**
While AVCR's may be controlled in many ways: by the network, a PCAT computer, switch closures, an LCD control panel, etc, by far the most complete control is via an Arrakis Digilink workstation. The Digilink literally shows you the files on the AVCR as if it was in the Digilink itself and allows you to place the AVCR audio in the Digilink playlist. As the #1 selling hard disk workstation for radio with nearly 2,000 workstations in the field worldwide, Digilink is the ideal interface for the AVCR.

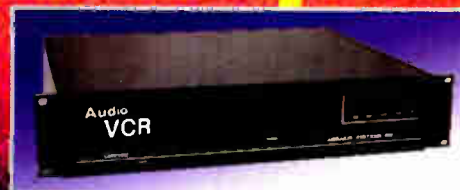


Note- affiliate control interfaces can be closures, LCD, PCAT, or Digilink workstations

The block diagram below shows the complete AVCR with several current options. Fundamentally, the system is a black box that is optionally configurable for a variety of digital workstation applications from a network interface to a sophisticated stand alone workstation. To meet these varied needs, the AVCR has two stereo digital RS422 digital input-outputs, four RS232 control ports, optoisolator input-output logic controls, and several analog and AES-EBU input-outputs. An internal expansion connector allows the addition of a daughter card to expand the number of inputs and outputs. Hard disk size for audio storage is optional. Contact the factory for prices on custom configurations to meet your specific network or station needs.



Features, specifications, & prices are subject to change.



2 rack unit AVCR workstation

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Running Radio

One on One
with
George Burns
See page 35

Your Resource for Business, Programming & Sales

David Brenner Jumps into Talk Radio

by Alan Haber

NEW ORLEANS David Brenner is wearing a shirt that suggests he is the modern incarnation of Ray Bradbury's Illustrated Man. He is wearing what can only be described as a patchwork shirt — one that looks like it is composed of flashing swatches of fabric stitched together to form a cohesive whole.

One might consider each of these swatches to represent a different facet of the funnyman's professional life: standup comedian; guest host and frequent guest on "The Tonight Show"; host of his own late-night program, "Nightlife"; Broadway star; maker of documentaries he won almost 30 industry awards and citations, including an Emmy, for his work; author (his latest book is "If God Wanted Us to Travel"); and now, host of the aptly-titled "The David Brenner Show" which is distributed by Westwood One to 92 markets and airs weekdays 3 -

Larry King. Now, I had substituted for other people, but I substituted for Larry King, and just sitting there, when he had his night show, and the whole idea of being there and talking all over America and people calling in — it just intrigued me.

When Westwood One approached me, when Larry King was going to leave, and they said, "How would you like to ... take over Larry King's radio show?" I jumped at the opportunity.

RW: You told me earlier that when you started doing your show, you didn't know anything about radio. Now that you're about 15 months into it, what do you know? Are you a lot smarter now about radio? Do you feel like you're a veteran yet?

B: I'm not a veteran. I think radio changes so much, you can't be a veteran. It's changing. It's always flowing. What I've learned about radio is that

of the people. I tailor myself to my own taste, and also I don't do a radio show that everyone else is doing.

I'm not an extremist, on either side of the

political spectrum. I don't hang up on people. I don't insult people. I'm not a portrayer of doom that America's going to hell and we're all going down with it. I'm not a man of violence. I'm not saying that this party's no good, or that's no good, or this race is no good. I'm not a man of hate. I'm

continued on page 27 ▶



Alan Haber (l) and David Brenner

5 p.m., EST.

After broadcasting his program from the floor of the 1995 NAB Radio Show, Brenner and his patchwork shirt joined me for some lively conversation in a quiet room away from the hustle and bustle of the New Orleans Convention Center. I made the observation that it looks like he is having a good time with his show, which has now been on the air for about 15 months.

"Yeah," he said. "It's turning out good."

RW: You are very truthful — you've always been very honest in your comedy. Why did you decide to do a radio talk show?

B: Well, I had always been interested in radio. I loved radio. As a matter of fact, when I was in college, I took radio courses, as well as television, and I happened to go into television and went that way. But one night I substituted for

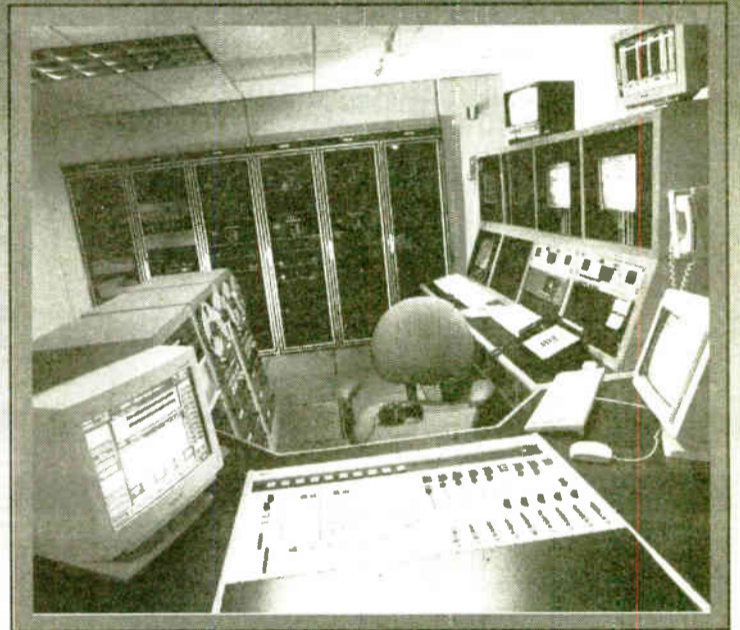
I've learned what it isn't. It isn't television without a camera. Radio is its own kind of animal. It's an intimacy - theater of the mind as they call it.

RW: When you are talking about a topic, or you are doing a riff on something, does the person in Peoria hear it the same way as the person in Los Angeles? Are you constantly thinking, "Boy, I wonder how this is going to play out in different areas of the country," or do you just go for it?

B: I go for it because I do the same thing with comedy. I never limited myself and said, "Well, this will go over well on the East Coast, but the people down South won't understand it." I never did that, and I've always tried to stay as true. By staying true to myself I'm staying true to the people listening, and if they get it, they're going to listen. If they don't get it, they're not going to listen anymore. I don't tailor myself to the taste

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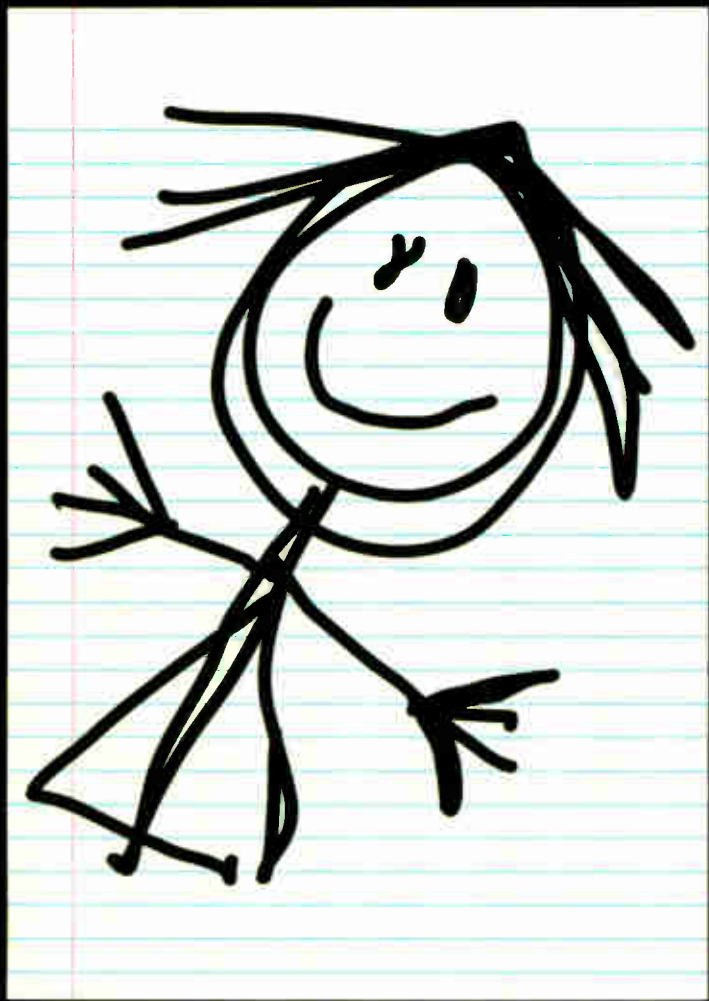
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"Because it Sounds the Best"

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Brenner Talks It Up

► continued from page 25

not a bigot. I'm not prejudiced. I'm who I am, and I believe in who I am, and if people don't believe it, hey, that's their business. They can listen or not listen. I think I'm trying to entertain everyone, no matter what political spectrum they're sitting or standing on.

RW: *One of the topics that is on broadcast indecency. Howard Stern, of course, comes up all the time when that subject is at hand. What do you think about people who try to get shows like Stern's off the air, and, as they say, clean up the airwaves?*

B: First of all, I think Howard Stern is a very strong force in radio. I have been a Howard Stern fan since he worked in Washington on a local station (WWDC-FM). I have been totally supportive of him, and in spite of the fact that we go at each other on the radio and we're friends, I am more afraid of violating the First Amendment than I am about what happens to people's ears who have a choice whether to listen to something or not listen to it.

I think that you have to be very, very careful when it comes to censorship, whether it's keeping Huck Finn out of the schools or it's keeping Howard Stern off the airwaves. Everyone is entitled. As much as I don't like the neo-Nazi party, they are entitled to meet, to converse, to talk. It's when you are "inciteful" — I think you've got to watch the people who are inciteful. And I think there are radio shows that are inciteful. I think there are radio shows that distort the truth, that tell lies.

You know, Adolph Hitler used the radio as it had never been used before, but, on the other hand, so did Franklin Delano Roosevelt, and there are a lot of Adolph Hitler-type shows in this country today. I think that's what's frightening. I don't think Howard Stern talking about his penis is frightening. I think people talking about hating blacks and others is frightening. I don't think the four letter words that we censor from being heard are frightening. I think four letter words like hate are frightening.

RW: *One of the ways you deal with topics, coming from a comedy background, is with humor — something that is absent in other areas of the radio spectrum. I assume you would think that humor is one of the reasons for your success on the air.*

B: Well, I think that one of the things lacking is humor. Without humor, I couldn't have gotten out of the neighborhood. See, I come from a poor background, and when things were really bad, my father taught me how you use humor to make it so it's not so bad. I think humor is like a salve that you put on a wound until you can get to the doctor and have surgery. I think the American people have got to learn to laugh more. I think at the same time that we're being so concerned about being politically correct, we ought to think about being humorously correct. I think we need more humor ... when you can't laugh at something, you start to be afraid of it or you start to attack it.

RW: *When you grew up in South and West Philadelphia, I assume you listened to the radio. Which stations did you listen to?*

B: WIP and WIFL. WIBG. In Philly, we gave them names. Funny they don't do that. We never called it W-I-B-G, we called it "Wibbage." We didn't say W-I-P, we said "Wip." W-F-I-L was "Wiffle."

I listened to a lot of music ... I didn't see too many talk (shows). There wasn't too much talk then. It was mostly music ... I grew up in rock and roll, and jazz and blues. I was a big radio listener that way.

RW: *Do you listen to other talk radio shows?*

B: No, I don't listen to talk — the only talk radio I listen to is Howard Stern. He's the only one I really enjoy, and the rest of them, I don't really. Here's the story, I know what I don't know. And I know that all the information I get is from my computer, my radio, my TV, my magazines, my newspaper. And I have no inside tracks and neither do they.

RW: *A lot of people talk about localism in radio. When you're talking to a national audience, you're talking to a lot of communities. How do you maintain a national sense of localism, so you can relate the things you're saying to people in different localities around the country?*

B: Well, first of all, I think radio's ridiculous to be afraid of (localism), any more than television. Television is network and local, and you combine the two, that's all. You have breakaways for local, you have local news, you have local programming, but you have national. You can't be closed minded and only have local, only have national, you've got to have both.

Secondly, there is no such thing as local. What does local mean? You know, I was raised as a citizen of the world. My mother told me that there's no such thing as an American, a European, an Asian, just like there's no such thing as a black person, a white person. They're human beings, and we're members of the world community. That's how I was raised, and

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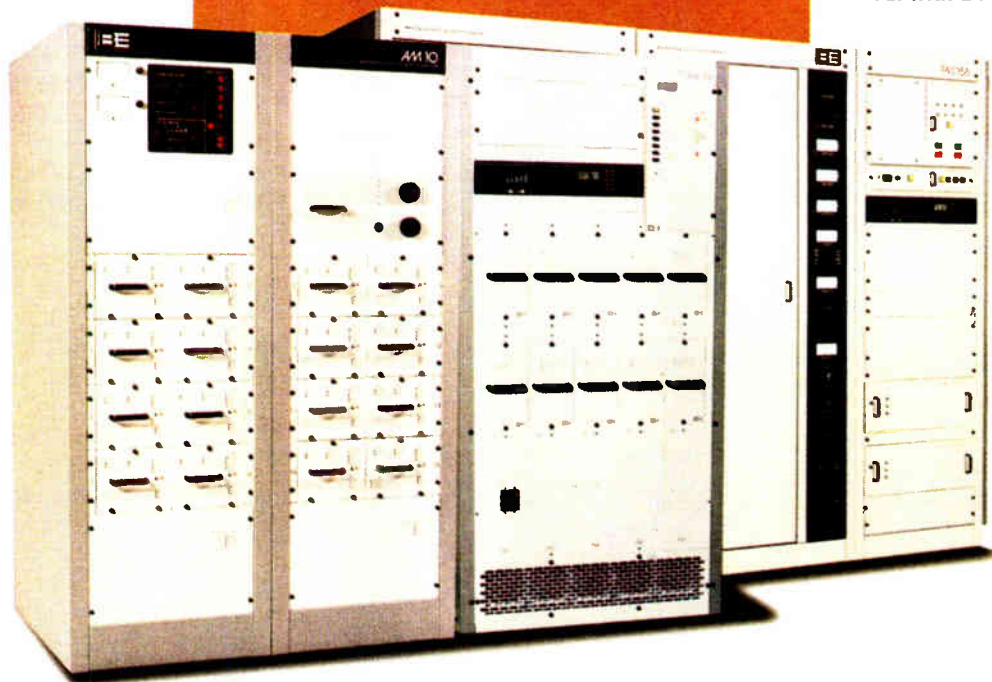
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Revolutionize Radio Advertising

At NAB '95, Ty Ford was commissioned by NAB to present a paper titled "Better Profit and Ratings from Better Copy and Production." The paper was based on the concept that better management of spot breaks will result in reduced active and passive tune-out.

By reducing tune-out, a station gains quarter hours and cume. With better ratings, the station can charge more for its spots and thereby increase revenues. The next several parts deal with how to re-connect with your clients to better serve them and how to better connect with your audience to keep them from tuning out.

PART IV

by Ty Ford

BALTIMORE In parts 1-3 of this excursion, I've identified the reasons that radio advertising isn't working as well as it could. I've demonstrated the problems associated with having weak (or non-existent) commercial policies, and how that weakness contributes to active and passive tune-out. Based on the mail I've received, it appears that a lot of other people have been having some of the same thoughts.

In this installment, I'm headed into some of the gritty details; the actual stuff that makes people actively or passively tune-out. You don't have to be a creative director to understand the concepts. Unfortunately, we've been abusing the language for so long that we've become deaf to the results of our abuse. I call the results "Ad Speak," and it's the number one cause of tune-out.

About five years ago someone faxed me a copy of Chris Lytle's "Killer Cliche" list; a list of words and phrases that have become totally devalued, yet

they appear in ad copy every day. It was simultaneously hilarious and sobering. Here are some of his, and a few I've added since:

- The biggest giant super sale of the century
- You can't beat the prices
- For all your (?) needs
- Conveniently located or located at (?)

RADIO spots

- Now that (?) is in the air
- Perfect as perfect can be
- All the names you know and love/trust
- Don't forget
- Stretch your budget/dollar with values like (?)
- You'll save big on (?)
- Check out a select group of (?)
- The friendly folks at (?)
- Everyday low prices
- We won't be undersold
- Don't miss out

Phrases that are constructed to lure the listener, but offer benefits that cannot be easily provided are the soft porn of ad copy.

The list is growing bigger every day. These words may have meant something when they were first used in ad copy, but they don't any more. Now the only response they elicit is, "Yeah right,

boring ... tune-out!"

These words and phrases still get used because of massive inbreeding in the copy-writing pool. Some overworked copywriter somewhere needs to fill 60 seconds for the client. The writer may have one or two good ideas, but perhaps not enough to fill 60 seconds. The copywriter, knowing that the spot must air in two hours, goes into "automatic mode."

Out pours the Ad Speak to fill in the gaps, and boom ... there's your spot.

This poor excuse for a radio spot doesn't exist

only at your local radio station. If

you listen, you can also hear it on national spots written by people who are getting paid big bucks for their mediocre work.

Redeemable language

Let me interrupt myself for a moment. Many Ad Speak phrases are capable of redemption. Take "everyday low prices," for example. If the copy successfully explains that a company's everyday low prices are significantly different or better than the com-

petition's, the phrase is redeemed. The key is whether the phrase in question offers a benefit that can easily be provided.

Phrases that are constructed to lure the listener, but offer benefits that cannot be easily provided are the soft porn of ad copy. They debase the integrity of your air sound, which diminishes the loyalty of your listeners.

I think a "No Ad Speak" in-house promotion would be an interesting experiment. Give the writers 30 days, or even six months, to clean up their act. Expect each job to take longer than usual because they'll need more time to write spots that don't contain Ad Speak. They'll also need to spend more time with the clients to get the information they need so they can stop relying on Ad Speak.

Then, to keep the air clean, offer a prize for any station employee who catches an Ad Speak phrase on the air. Let the ad agencies that buy your station know about your concern, and what you've done to improve the sound of the station. You probably won't be able to force the agencies to stop using Ad Speak, but your in-house campaign will send an indirect message that may result in their cooperation.

If you do start a No Ad Speak campaign, keep in mind that Ad Speak is not just about a list of words. I wish it was that simple. Ad Speak is about both the words and their intent and use. If you implement the program improperly, you run the risk of turning your

employees into a semantic lynch mob. That's not what this is about. The next installment, Part V, will be about servicing the client. Specifically, it will offer suggestions on helping your client give you the information you need to make spots that work better for them and your station.

□□□

Ty Ford has an attractively priced three-cassette box set of the almost two-hour-long session from NAB '95. He may be reached at 410-889-6201 or Tjford1010@aol.com

David Brenner

► continued from page 27

if they discover life on Mars, I'll be a member of the universe — a citizen of the universe.

I think that the world has grown so small there's no such thing as local. I think you pepper in the local because people want to know if their cars can go down highway 95 or (if) it's going to be jammed. I think they want to know if their mayor has really slept with a sheep. I think they want to know that, and they should. But at the same time, you can't close off the world.

It's all about dialogue, and radio is the best form of dialogue we have. Unfortunately, a lot of it is in the mouths of people who are negative and are preaching hate, and that I find offensive as a human being. Nothing else, not as a comedian, not as a radio person, but as a human being.

RW: If you were given a chance to program a radio station from the ground up, what would you do? What are the kinds of things you'd like to see in the perfect radio station?

B: I'd like to see open minded talk. I'd like to see humor. I'd like to have music. I like diversification. I would like to see new ideas, an exchange of ideas ... and I would like to see no hate talk ... and a major profit, where I get so rich, I'm on a sailboat for the rest of my life.

RW: What are your future plans for the show?

B: Well, you know, (producer and sidekick) Mark (Drucker) and I have become a great team up there ... We're going to keep that there. And we're going to keep the format going the way we are. We're in the target zone now. We know exactly what the show is.

When I went to Westwood One I said, "Let me tell you how serious I am about this." They had a two year contact. I said, "I'm in this for the decade. I'll do this for a decade, because I can do everything else in my life while I do this." That's how serious I am, and I hope that the prophecy is that come next June we don't say "Thank you so much, it's been a great experience and I wish all of you good health and good luck and good-bye," and we say "Tomorrow our show will be ..."

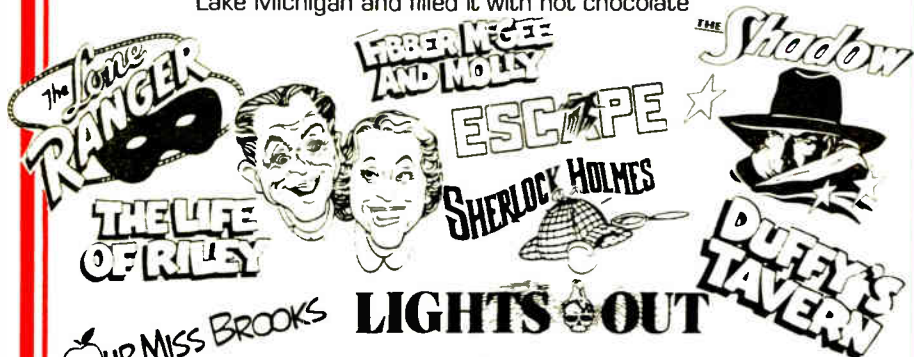
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SW Networks Offers Talk Programming Services

NEW YORK SW Networks unveiled its Talk Programming Services package.

SW Networks Talk Programming Services package is offered on a market exclusive basis and consists of a Clipping Service, which culls the most provocative news items from newspapers across the country and the world and provides talking points to stimulate conversation; and a TV Monitoring Service which keeps track of issues from national shows ranging from Larry King and "Nightline" to the Sunday Morning News.

SW's TV Monitoring service provides affiliates with brief synopses of issues and points raised, enabling affiliates with hosts and producers to know at a glance each day's hot-button issues, and Guest Booking Services staffed by experienced talk radio producers who can provide the inside tracks to guests of every sort. As major stories break, SW Networks' producers will have articulate, relevant experts ready for its affiliates to interview. SW's Talk Programming Services package also includes TV Talk Show Excerpts featuring audio clips of the most entertaining and outrageous moments from each day's TV talk-fest.

Staffed by talk radio professionals with extensive experience on both the local and

national levels, SW Networks Talk Programming Services will provide affiliates with the tools they need to remain ahead of the curve in their markets. In the months ahead SW Network's Talk Programming Services Package will continue to expand to meet the needs of its talk radio affiliates.

For more information, contact John McKay, SW Networks, 212-833-5636; or circle Reader Service 11.

New Sunday Program on the USA Radio Network

DALLAS Do your Sunday evenings need some help increasing listeners and ratings? The USA Radio Network now has the answer for you: "Internet @ Night."

This is interactive multimedia geek radio with Tony Reynolds. You can now bring cyberspace to your listeners as they discuss:

- e-mail
- browsing the Web
- newsgroups and usenets
- tools in accessing the Internet
- tips and techniques
- file transfer protocol

Better yet, you can bring new dollars to your station with a proven revenue producer. In Dallas, this unique program was able to triple audience share and AQH in just one

book. Also, your station will enjoy complimentary Internet sign-on, the Internet Service Provider Program, a presence on the World Wide Web and much more.

Starting in October, you can hear "Internet @ Night" from 10 p.m.-1 a.m., EST on the USA Radio Network. Now available on SATCOM C-5, Transponder 15, and Spacenet III, Transponder 7H.

Call the USA Radio Network Affiliate Services Department at 800-829-8111; or circle Reader Service 17.

Gibbons Signs Agreement with Premiere Radio Networks

LOS ANGELES Premiere Radio Networks, Inc. (NASDAQ: "PRNI") announced that Leeza Gibbons, star of CBS' hugely successful "Entertainment Tonight" and NBC's multiple daytime Emmy-nominated daily talk show, has signed an exclusive agreement with Premiere to syndicate "Entertainment Tonight on the Radio" and "Blockbuster's Top 25 Countdown with Leeza Gibbons." The current programs reach approximately 150 radio station affiliates.

The company also stated that together they plan to pursue the production of long-form programs and radio specials. These programs will be created in conjunction with her production company

The Leeza Gibbons Enterprises (LGE). For more information, contact Harold Wrobel, Premiere Radio Networks, at 818-377-5300; or circle Reader Service 203.

Overnight Sports Talk Show Debuts

SAN FRANCISCO Sports Byline USA, hosted weeknights by Ron Barr and America's No. 1 radio sports talk show, has expanded its overnight lineup to include Sports Overnight America.

Sports Overnight America, hosted by David Brody, provides five hours of live sports talk Monday through Friday, 1-6 a.m. EST following Sports Byline USA, 10 p.m.-1 a.m. EST.

Earlier this year Sports Byline USA added eight hours of programming Saturday and Sunday with Sports Byline USA-Weekend featuring the "Regular Guys."

"We are very pleased to now offer eight hours of live sports talk programming seven days a week," said Barr. "It gives listeners the opportunity to talk with David and share their views with other sports fans across America."

The overnight show debuted on Sept. 18 with nearly 200 affiliates.

David Brody began his sports broadcasting career in 1981 and has handled college

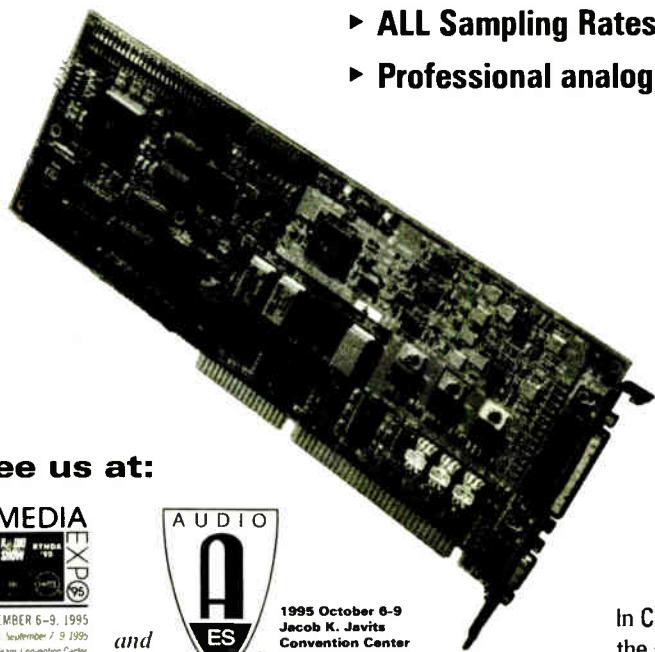
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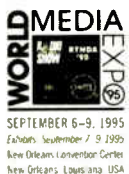
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- March 6:** Radio Networks
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- April 17:** Sports & Event Marketing
- May 1:** Programming & Sales Research

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Circle (34) On Reader Service Card

Rush Limbaugh Loses Initial Legal Battle

by Lynn Meadows

BOULDER, Colo. A Rush by any other name ... could cost \$20 million.

Last year, conservative talk show host Rush Limbaugh filed a lawsuit against Aaron Harber. Harber was the host of "After the Rush," a show described as "progressive."

According to counsel for Harber, the Limbaugh case centered around the argument that he should own exclusive rights to his own name. In October, a judge determined that the use of the word "rush" did not violate Limbaugh's rights as far as his name was concerned.

Still to be determined at press time, however, was whether a consumer could

confuse the name "After the Rush" with the "Rush Limbaugh Show." Harber has approximately 50 affiliates nationwide. Limbaugh has 645.

Harber had renamed the show "The Aaron Harber Show" after the lawsuit began. With the recent decision, it will change again to "Against the Rush." Harber said the new name "does a better job of conveying my opposition to the 'rush' of conservative talk show hosts."

According to Harber, the case is a "frivolous lawsuit filed to intimidate an opponent." He said that both sides could waste over \$250,000 on time and legal resources arguing the case. The Limbaugh team had "no comment" on the case.



Rush Limbaugh

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 - **Dual audio outputs for On Air and Cueing (DL2 has one)**
 - **Do On Air & Production from a single workstation !!!**

Digilink III is a *NEW* multipurpose digital audio workstation for Live On Air, Production, and Automation. Fully compatible with the #1 selling and industry standard Digilink II, the Digilink III has four times the raw processing power of the Digilink II and features a second audio output for cueing an audio piece while playing on air.

The triple play and dual output capability of the Digilink III makes it ideal for very sophisticated Live On Air operation -and- makes it capable of operating an On Air & Production studio from a single workstation. For fast and complex live on air applications, the DL3 can play 3 files at once so that you can lay down a bed, play a phoner, and drop in a sound effect at the same time. Or, you can be playing on air with crossfade while independently recording, playing, and editing a phoner.

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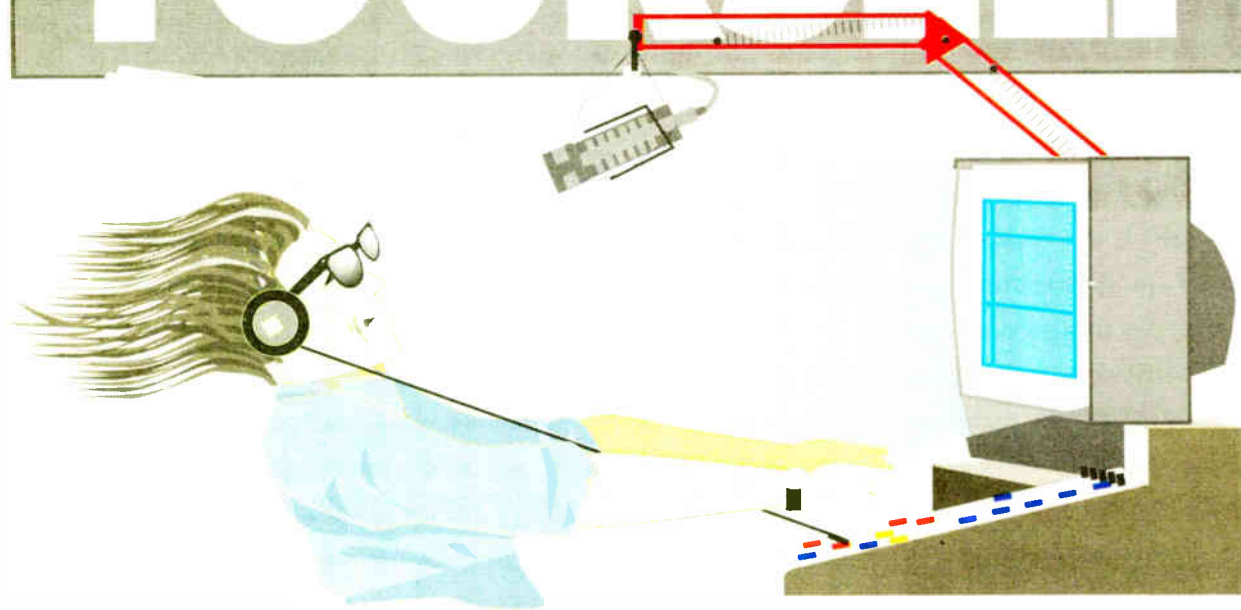
As illustrated in the Sony Worldwide Networks master control studio on the right (one of seven Arrakis studios in the Manhattan, New York complex), Arrakis can provide complete major market studios with Arrakis consoles, digital workstations, video-audio switchers, furniture, and system prewiring.

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Comedy Duo Benefits Early Radio

by Bob Rusk

SEASIDE, Ore. George Burns and Gracie Allen, one of the most popular husband-and-wife comedy teams, pulled in huge ratings for both CBS and NBC throughout the 1930s and '40s. They made their radio debut, however, across the Atlantic on the BBC. While making personal appearances in London, they received an offer to do five broadcasts.

"We didn't take radio too seriously then," Burns said in one of the many interviews I've done with him. "But what did impress us was the extra 100 pounds they offered us, so we accepted. They wanted us to do six minutes. At that time there wasn't a network, so we did the same routine on all five broadcasts."



George & Gracie in Their Prime

The first broadcast was heard in London. The second one was heard in Manchester, the third in Bristol, the fourth in Blackpool, and the fifth in Glasgow.

"What really surprised us," said Burns, "was the number of people who heard those broadcasts. We may not have been impressed with radio at first, but that quickly changed.

"I couldn't wait to return to New York. I thought if the radio audiences liked us in America as much as they did in England, there would be no telling how far Gracie and I would go in this new

CLASSIC BURNS AND ALLEN

GRACIE: On my way in, a man stopped me at the stage door and said, "Hiya, cutie, how about a bite tonight after the show?"

GEORGE: And you said?

GRACIE: I said, "I'll be busy after the show but I'm not doing anything now," so I bit him.

GEORGE: Gracie, let me ask you something. Did the nurse ever happen to drop you on your head when you were a baby?

GRACIE: Oh, no, we couldn't afford a nurse. My mother had to do it.

GEORGE: You had a smart mother.

GRACIE: Smartness runs in my family. When I went to school, my teacher was in my class for five years!

thing called radio!"

Burns and Allen were heard stateside for the first time the following year, 1931, as guests on crooner Rudy Vallee's "Fleischmann Hour." Then in 1932 they teamed up with bandleader Guy Lombardo on "The Robert Burns Panatela Program" (named for the cigar company sponsor).

Joint remotes

This show is considered the first broadcast to regularly use joint remotes, with Burns and Allen in one city and Lombardo broadcasting from another location much of the time.

The next season Burns and Allen finally got their own show, which ran until 1950. Gracie was the quintessential scatterbrain, with George perhaps the best straight man in the history of radio. It was the perfect combination.

George and Gracie were both veterans of vaudeville before their radio careers. She was a dramatic Irish actress and he was a struggling comedian. At that time Burns was making very little money, but he was in show business and that was all that mattered.

"You see, I was a success even when I was a failure," he said. "I was in love with what I was doing. But I didn't make

it until I met Gracie. I had done all kinds of acts, and they all went no place. But the minute I met Gracie ... Gracie was a big talent."

Burns, who celebrates his 100th birthday in January, was 27 when he was introduced to Gracie.

Backstage meeting

"She came backstage to visit some girl," he said. "I was playing a little vaudeville theater and her girlfriend was on the bill. I was working with some other guy, doing a lousy act. We split up after we played three days.

"Gracie was out of work and her friend said, 'Those two guys, they're splitting up. Why don't you go out front. Maybe you'd like to work with one of them.'

continued on page 45 ►

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► continued from page 29
football and basketball assignments.

For more information, contact Charles C. Coane, Sports Byline USA at 800-783-7529; or circle Reader Service 104.

SW Networks Announces Affiliates, Services

NEW YORK SW Networks announced the start-up affiliates for its new Alternative Rock Network. Affiliate line-up includes WHFS(FM) Washington, KDGE(FM) Dallas, WEND(FM) Charlotte, WRCX(FM) Chicago and KSHE(FM) St. Louis.

SW Networks offers affiliates programming services in the areas of Country, NAC, Urban, Talk and Alternative. Like all of SW's programming services packages, The Alternative Rock Network includes a daily show prep text service

written especially for each format and aimed at providing on-air staff with both comic material as well as the latest and hottest celebrity and world news. Affiliates also receive satellite delivered Entertainment News audio and text services containing entertainment features with celebrity soundbites and quick read newsbites taken live from the front row, backstage, cyberspace and Hollywood, as well as a genre-specific Music News audio and text service.

Programming services packages also include SW Production CDs which are a collection of exclusive, original music beds, sound effects, stingers and punctuators—in short, everything affiliates need for commercial, promotional and programming production. Affiliates also receive SW Biostats, which are edited artist bios that provide bullet-pointed, compelling copy for on-air use, and SW

Newsclips, a clipping service that combines the latest offbeat music news with radio-ready stories that are interesting, odd and outrageous.

For more information, contact John McKay, SW Networks, at 212-833-5636; or circle Reader Service 131.

Radio Show Celebrates Fourth Anniversary

NEW YORK The Sports Collector's Radio Show, the first and only internationally syndicated radio program devoted exclusively to sports collecting, celebrated its fourth anniversary on Oct. 29. The show is now aired on 116 stations in the United States and Canada.

The Sports Collector's Radio Show can now be heard anywhere, whether or not your local radio station airs the show. The program has become one of the first and

only worldwide syndicated radio shows. It is now broadcast in RealTime Audio on the Internet (<http://www.worldlink.ca/KOOLCFRA/>). Anyone in the world can listen in live if he or she has a computer, modem and speakers.

Giveaways are a major attraction of the program. During each show over a dozen boxes of new trading cards, autographed baseballs and other collectibles are given away to lucky listeners. The combination of the giveaways, the call-ins and the top hobby and sports guests keep the show fast-moving and fun to listen to.

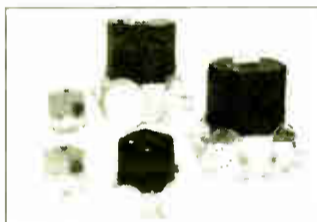
The Sports Collector's Radio Show is broadcast live via satellite and the Internet from New York every Sunday from 8-10 p.m. EST.

For more information, contact Joe Rashbaum or Kristen Speranza, Raybin Communications, at 212-573-8100; or circle Reader Service 32.

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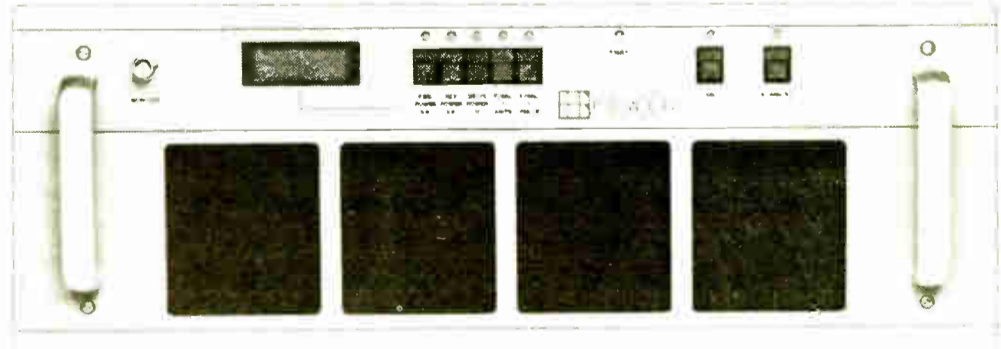


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READER SERVICE NO. 213

MANAGER'S NOTEBOOK

Solving Crises with Team Management

Handling Unexpected Crises Reveal Management Styles That Work and Those That Aggravate Problems

by Sue Jones

BURKE, Va. You have heard the saying: "When the going gets tough, the tough get going." Broadcast management is one of the best places to apply it.

Think back over the last three months of your station's operation. Was there a time when the workload on one or more of your staff members was heavier than normal? Perhaps a jock had just quit and you had to ask some of the other jocks to handle extra hours on the air or handle an additional remote broadcast until another jock could be hired.

Your engineer may have been working with four hours of sleep for a week because in addition to handling his routine duties, he was on call 24-hours-a-day, handled a power failure at 1 a.m. and installed a new telephone system that had to be ready by an inflexible deadline. Maybe your sales manager was out for a week because of the unexpected death of an immediate family member.

How did you (or how would you) handle these situations? Some real-life examples that I have observed include:

- barking orders at employees to work longer hours with fewer breaks to cover the workload of a missing employee
- telling staff members to work extra hours or assume extra duties with no additional compensation
- telling an employee who has worked several hours overtime in a week that he must be present at a staff meeting at 9 sharp the next morning
- ignoring the problem and assuming that everyone will make the necessary adjustments and be glad they are employed.

Making sacrifices

Put yourself in the employee's position and consider how you would feel if you were on the receiving end of any of the above examples. If you had vacation plans made with non-refundable airline tickets for the family, you might be forced to pay a large penalty or not receive any money back for the tickets if you could not use them.

Not only would you lose the money, but your family would have to reschedule the vacation. This might become more difficult if your spouse also works and would have to reschedule vacation time with his/her employer. You think, what heartless general manager would do that to employees?

The sacrifice for the employee may not involve rescheduling a vacation, but it might mean that someone misses a parent/teacher conference, a Little League game, a promised long-awaited weekend get-away with the spouse, or rescheduling medical/dental appointments.

No matter how understanding the employee may be about the reduced staff level and the need to provide some extra help in this situation, there will most likely be some adjustments by the person

and/or the families.

Typically, general managers do not have new staff members ready to start the day a key person leaves the station. The standard two week notice of resignation is inadequate for recruiting and hiring a new staff member. In the best of situations, you may have two to four weeks after the resignation date before a replacement can be found for a key employee. Finding yourself short-staffed is not unusual.

Different approaches

Getting staff members to do additional tasks to fill in for that missing person, even for a short period of time, will depend on how professional you are in your approach. Here are some ideas of how you might handle staff shortage situations.

1. Pitch in and do some of the work yourself if you have the skills. You may have to work some additional hours, but that is what you are asking your staff to do. Spend three hours pulling a weekend board shift, if you are comfortable with that task. Make some sales calls. Answer the telephone.

There are several benefits to this approach. You keep in direct touch with the station's positions and have real-life experience in doing those tasks. This is always a good idea even in smooth operating periods. It will be less costly because you will be doing the work and will not be paying someone else to do it. Moreover, your employees' opinion and respect for you will skyrocket. The employees will be more willing to work longer hours because they will see you contributing extra hours and work to help get the job done.

2. Provide extra compensation for those staff members who work extra hours when the staff level is low. Money will not make up for lost time at a Little League game, but will help offset losses for canceled reservations and perhaps pay for tickets to the pro-game to make up for the lost quality time when your employee could not accompany a child on a scouting campout.

Extra compensation

Compensation could take several forms. You could offer additional time off after the crisis period has passed. You could

you just lost your receptionist or office manager, you could contact a temporary employment agency for a receptionist or accountant. If you experience an overload of technical problems or are upgrading equipment, several major markets have contract engineering firms to handle the overload or fill in temporarily and as reserve support for your engineer. Some stations are out-sourcing engineering on a permanent basis.

This is not an exclusive list of ways to get the job done when the management task of covering all of the work gets tougher than normal. It should, however,

Typically, general managers do not have new staff members ready to start the day a key person leaves the station.

give the employee(s) trade items. Additional overtime pay or bonus money for duty above and beyond expectations would be another form. You could also offer the employee(s) who provide the additional time a choice of their preferred extra compensation.

One person may find the extra money useful while another would like additional time off. One "sales approach" that I have used successfully is to ask the staff in a meeting, "Who would like to earn some extra money, double time pay for the next two weeks for overtime?" Needless to say, I had several volunteers.

Hire temporary help

3. Hire the needed workers from a temporary agency or professional firm. If

get your creative mind thinking of better ways to handle nightmare staffing problems and keep your station operating smoothly while supporting the staff who keeps you on the air.

Note: If you would like to share some creative management approaches that you have successfully used for this type of problem, fax the information to me at 703-323-8942 or leave the information on my voice mail at 703-323-0491. Please remember to identify yourself and give your telephone number with an area code in case I need more information about your message.

□ □ □

Sue Jones is a senior manager for Computer Data Systems Inc. in Rockville, Md. She can be reached at 703-323-0491.

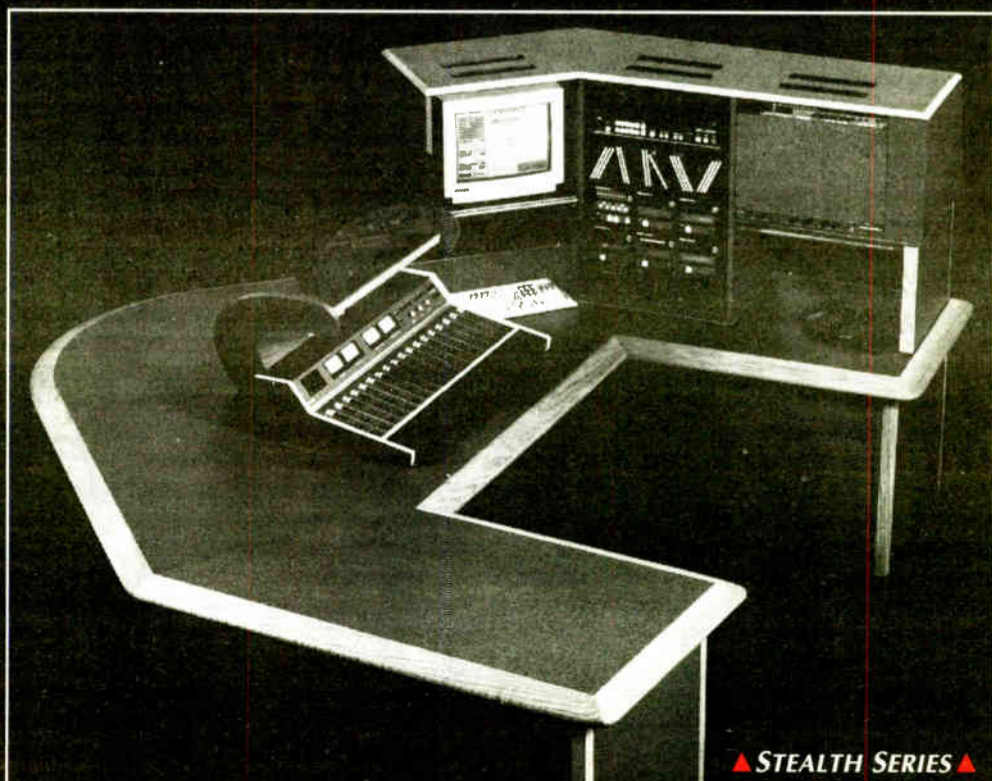
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Irreverence, Intrigue, Ingenuity on the Net

by Alan Haber

ALEXANDRIA, Va. It has been a wild, wacky couple of weeks here at the plush, spacious, generally hipper-than-it-has-a-right-to-be *Haber Space* Global Headquarters, what with the mandatory post-NAB period of getting used to being back on *terra firma* (read: off airplanes for awhile).

There has also been a flurry of activity on the Web that has caused me to nearly overload and stare with vacant eyes into my computer monitor as I look at some psychology professor's photos from his vacation in Switzerland for the 99th time.

Oh yeah, that's the problem. I've been goofing off. Oh, well. I'm back. And I've got a whole buncha stuff to share with you, not the least of which is this month's Neat-o Site of the Month.

Neat-o Site of the Month? Yeah, neat-o. It's not just "neat" anymore. In honor of this month's winner, I've decided to rechristen the "Neat Site of the Month" the "Neat-o Site of the Month." Believe me — when you lay your eyes on Sanford, Maine, classic/contemporary rocker WCDQ-FM's Web site at <http://www.wcdq.com> "neat-o" will be about the only thought that will spring to mind.

WCDQ, known as Mt. Rialto Radio,

pulsates with "Real Rock 'n' Roll." The station's cool site is heightened by a generous dollop of irreverence and peppered by a good measure of marble (in the background, that is).

The offbeat station profile begs more questions than it answers, making the site seem mysterious. For example, reading through the profile, you'll discover that WCDQ broadcasts "from its fog enshrouded peak, 24,000 centimeters above the glittering lights of the city floor." You'll also discover that the station is "near the border, visible only on crystal-clear winter mornings."

You'll also find out that this is one station that means business. According to the profile, the station is "an eclectic, creative brew of the history of rock and blues, served up live 24 hours a day by people who would not work anywhere else. (And probably couldn't get another job.)"

Site visitors can click on four large custom metallic buttons and look at the offbeat station profile, find out about the station's specialty programming, link to a number of "Elegant Sites" and find out about the station's DJs.

By the way, each of the "Elegant Sites," which includes Ticketmaster Online, the Rock 'n' Roll Hall of Fame, and the Boston Red Sox, can be linked to by clicking on some very cool custom buttons that feature colorful logos.

All of this graphic elegance doesn't come without a downside, however. The graphics take a while to load, and I can see how this would turn some people off. Nevertheless, the wait is worth it, and site visitors will be rewarded if they hang in there during the lengthy downloads.

(T.J. Marks, who designed and created WCDQ's site, told me by e-mail that this situation "will be resolved soon.")

Undoubtedly, my newly christened Neat-o Site of the Month!

Since last month's column, I also ran



into WAZY-FM's Web site at <http://dcwi.com/~wazy/wazy.htm>

The station is playing "Hits of the '80s and '90s" in Lafayette, Ind. A dynamite design job, with lots of custom (although perhaps a bit too large) graphics and a refreshing sense of humor; for instance, among the large clickable buttons on the home page is one that asks you to "Meet the Airstaff" — and features a photo of the Village People!

I learned a valuable lesson while visiting the Web site of Haverford (Pa.)

continued on page 43 ►



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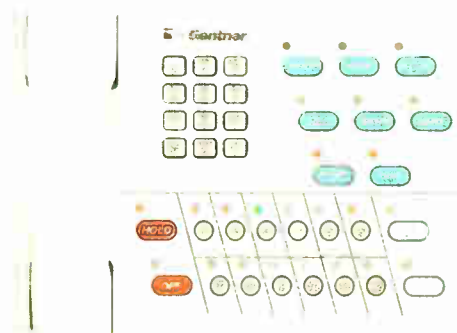
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 World Radio History

Intrigue on the Internet

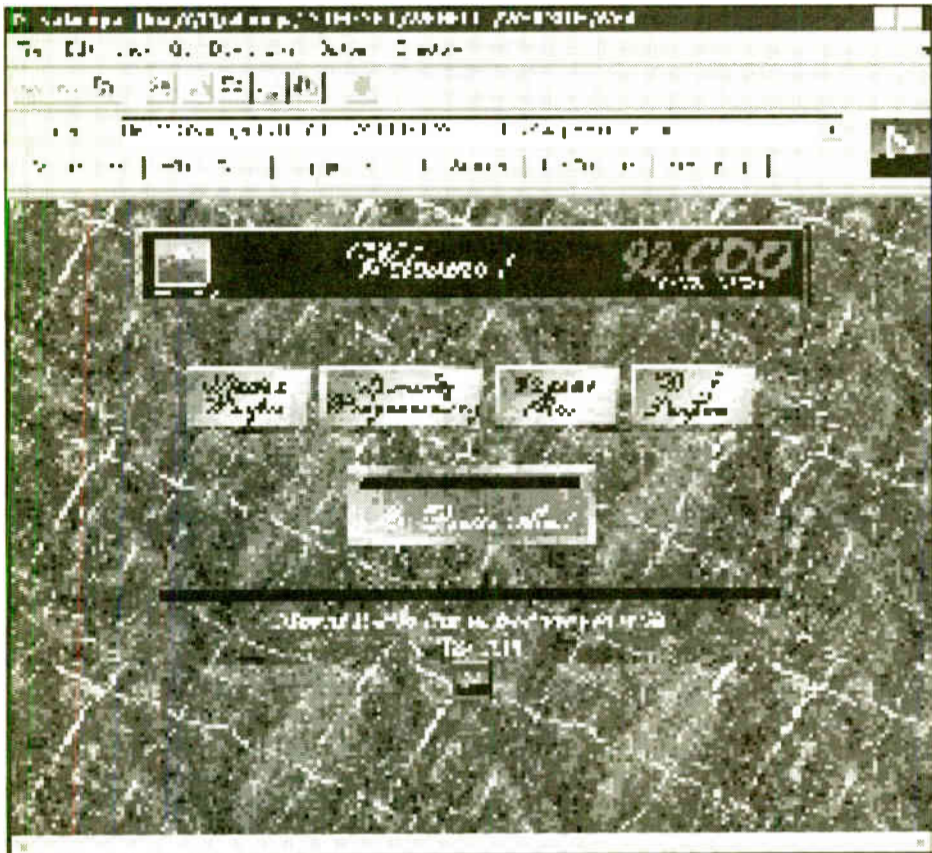
► continued from page 38

High School's radio station, WHHS-FM at <http://www.netaxs.com/~dbrouda/whhs/> I shoulda paid more attention in class!

What a nice site. Browsing through the pages, you find out that the station started in 1949 "as an experiment in radio electronics" at the school. Principal Oscar

to the backgrounder on the site. "The experience gained from WHHS is priceless," and some of the station's DJs now work for commercial radio stations around the country.

WHHS's format is basically alternative, but the station does broadcast specialty shows and a news program called "Haverford Happenings."



WCDQ's Site of the Month

Granger got a license from the FCC. The station changed frequencies from 89.3 to 107.9 in 1992; it covers a 5-10 mile area and boasts an audience of around 700 people.

Students who go on the air have to get an FCC license, use the necessary equipment and "organize air time." According

This is one cool cyberstop, folks. I hope to have more about it for you next month.

Airwaves

I've probably been remiss in not mentioning the wonderful Airwaves Media site at <http://radio.aiss.uiuc.edu/>

[~rrb/index2.html](#)

Jam-packed with solid information, it came out of the Airwaves Radio Journal, an Internet 'zine covering radio. The site also compiles messages from the rec.radio.broadcasting Usenet newsgroup, which I'm sure all *Haber Space* readers congregate at every once in awhile.

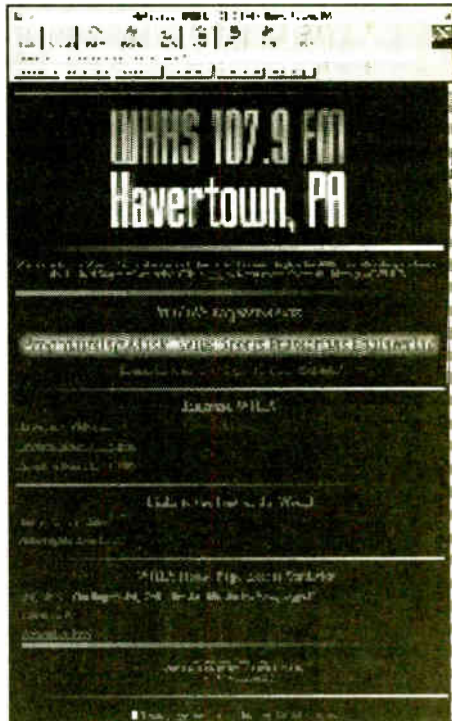
Anyway, the site has back issues of the Journal, loads of links to radio stations and networks and such, and even television links (you know — radio with pictures, as William Pfeiffer, who doubles as the rec.radio.broadcasting newsgroup's moderator, says). You can even choose to search the FCC's AM radio database at <http://radio.aiss.uiuc.edu/~rrb/fccdb.html>

The mailbag

I heard from Paul Nixon, production director at CHR Power 103 and country Y-99 in Abilene, Texas. Paul wrote to say he enjoys reading *Haber Space* - thanks for the kind words. I checked out your sites (Power 103 is at <http://www.abilene.com/power103.html> and Y-99 is at <http://www.abilene.com/y99/index.html>) and liked what I saw: loads of links and lots of station information, including DJ pix and bios. Check 'em out, pardners.

Gary Johnson, who calls himself "an old radio guy," dropped me a line. Gary's currently co-owner of the New Work Corporation, which concerns itself with how people work in today's economy (<http://www.newwork.com>). He says he wishes that he had "the resources of the Internet available when I was on the air everyday over a period of many years."

Jerry Burger also wrote me recently:



WHHS' Web Page

he's webmaster of WebOvision. "Providing WWW links to media around the world." This site features, among other things, links to U.S. and world radio stations and programs. Jerry has even included a handy search feature. Check out WebOvision at <http://www.webovision.com/media/>

Time to make tracks and get back to surf'n' the Web. Remember: If your station is on the Web, let me know about it, and I'll make mention in this space. I'm at zoogang@ix.netcom.com — 'Till next month, cyberfolk.

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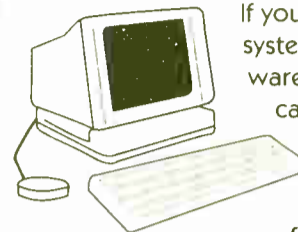
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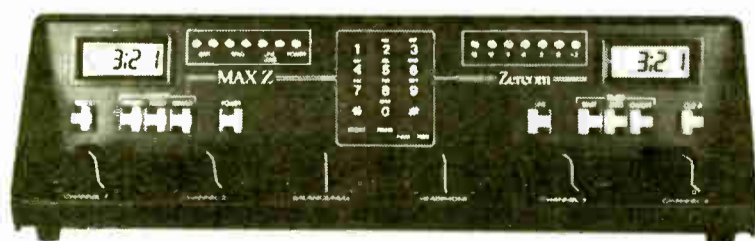
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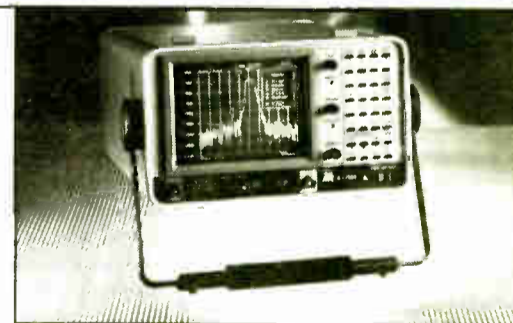


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PROMO POWER

Is Logo Redesign Really Necessary?

by Mark Lapidus

WASHINGTON The best logos are simple. The trouble is, it's not easy being simple! Making a logo for a radio station can be a frustrating, time-consuming practice.

I once had a promotion director tell me he needed a new station logo in less than two weeks.

"Two weeks," I exclaimed. "Why so fast?" He went on with a long story about t-shirts that had to be printed for a concert and the due dates for artwork and delivery and you name it ... I stopped him.

"Wait a second...you mean you want to rush a logo that you'll have to live with for the life of the format, all for the sake of a t-shirt?" Upon reflection, logic prevailed and he came to the right conclusion.

File this one away for the next time you launch a new station or decide to modify your current format. A logo is one of the most important decisions you'll make.

Why a new logo? The best reason for a new station logo is that you're signing on a new format. Of course, listeners hear this as a "new station" signing on in their

city. It doesn't occur to them that the same group of people may still own or operate the property. They look at everything as being new.

Why new?

Nothing says new better than an entirely new on-air moniker (new call letters, slogan, etc.), as well as a new logo on everything visual. The only other reasons to alter a logo are: 1) to show a significant alteration in the product; or 2) the logo was awful, unreadable and unrecognizable to your listeners. If you've inherited a logo this bad, you've probably also just taken over a radio station that requires a lot of what I cited in point number one. The worst reason to change a logo is just because you don't like it.

How to start? Begin with a budget. It's not unreasonable to spend \$2,000 to \$5,000 on a totally new treatment. For this amount of money you should see a minimum of eight different treatments and wind up with the finalized artwork on computer disk and in black and white stat sheet form. You should also own the logo. Do not allow the artist to retain

"ownership" based on a discount or enter into an annual leasing situation.

Direction: It will help your artist immensely if you provide him with other logos you like. Don't know what you like? Call any of the many bumper sticker companies and take your pick. Just don't rip off any designs; they're probably registered. If you see one you really like, you may save a lot of time and money just by calling the station to see if it will sell you the design. If you're using this artist for the first time, you should have already reviewed his portfolio to see if you like his approach.

The most prominent item in a station logo should be what you call the station. If you call it "The Pig," then that name had better be the most visible. Don't feel you have to use call letters if you don't intend to use them on-air. You also need your frequency and finally, a positioning statement.

Many stations leave out the positioning statement because they feel it clutters the logo. That may be true if the logo is designed incorrectly. If the design is right, your position (Modern Rock; Country; '70s, '80s, '90s; talk, etc.) will blend with the rest of the treatment. If you don't tell people what format you are, all you're telling them is that you're a radio station. Big deal.

Test it

Put it to the test. A logo is highly subjective. What matters most is what your listeners think. Select a small group of station people: program director, general

manager and promotion director. Narrow it down to three choices. (You need a different group if none of these people fit your target demo.) Take these three choices to a focus group and get their feedback. Yes, everyone can do this type of focus group and it doesn't have to cost a dime.

Go on-air and invite listeners to join you for a logo party. Pick 10 people in your target group and take them out for pizza. Show them the logos and discuss what they like and what they don't. You may learn that they hate all of them and you'll have to begin again. Or, perhaps they like one, but it needs to be modified. You may even wish to show them your chief competitor's logo to discover what advantage it may have over yours.

Once done, your new logo has to go on everything. Don't phase it in gradually on anything highly visible to the public. I'm okay with using up stationary or business cards, if necessary, because so few people see them. However, you shouldn't leave up old billboards, run old TV spots or let your van drive around town with the old look.

Love those logos

By the way, I love looking at new logos. If you've got one in development and would like an unbiased perspective, feel free to send it to me in care of **RW**. I'll give it the once over, free of charge. You may not like what I say, but that's what free advice sometimes gets you. Come to think of it, that's kind of like a focus group. Here's looking at you!

□ □ □

Mark Lapidus is director of marketing for Liberty Broadcasting. Liberty owns stations in Washington; Baltimore; Richmond, Va.; Long Island and Albany, N.Y.; Hartford, Conn.; and Providence, R.I.

Burns and Allen

► continued from page 35

"Gracie watched us work," said Burns, "and liked what I did. We met, started to rehearse on Thursday, and two weeks later we were doing an act together."

Touring in vaudeville, Burns and Allen did the same routine for a year as they traveled by train to theaters in every corner of the country. It was a small audience compared to what they would play to on radio.

"It was the first time people did not have to leave home to see you," Burns said. "You performed for them by coming right into their living rooms. On radio we reached millions of people in one night. But I soon realized that it wasn't us, it was the invention that was such a sensation. If it wasn't for that little crystal set, I'd still be playing Altoona!"

Personal note

George Burns is the first of hundreds of celebrities I've interviewed, and he is still my favorite. The first time we talked I was in college. I had just finished his book "Living it Up," and read that his office was at General Service Studios in Hollywood.

I thought it would be fun to call and say "hi." I got the studio's phone number from information and nervously dialed. The receptionist gave me the direct number to the Burns office. I dialed it, and when his secretary answered I said that I was a college student majoring in radio and admired Mr. Burns.

I was put on hold for a few seconds, then a familiar voice came on the line and said, "Hi, Bob. This is George Burns." At the time, I did not realize that very few stars take calls from fans.

With my heart racing a mile a minute and my palms sweaty I managed to say, "Thank you for taking my call, Mr. Burns."

"Tell ya what, kid," he said, "How about if I call you Mr. Rusk? You can call me George. It makes me feel old when people call me Mr. Burns."

George was a youthful 82 at the time.

We chatted for a few more minutes and he ended the conversation by saying, "Come down to Hollywood and see me, kid. I'll take you out for a drink." He didn't know that I was just 19.

Shortly after that, I went to work at KSWB(AM) in Seaside, Ore. George was one of the first people I called. During my 11 years at the station, he was always happy to do interviews and the listeners loved hearing his wonderfully funny stories. I also spent time with him during my frequent trips to Hollywood.

His friendship gave me confidence as I pursued my dream of a career in radio. For that I say, thanks for being so nice to this kid, George.

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WORKBENCH

Digital Delay Tames Squelch Tails

by John Bisset

SPRINGFIELD, Va. Bob Schmid is president of S-COM Industries in Loveland, Colo. He recently faxed a data sheet for a little device his company makes.

It is a digital audio delay module that is only 2.1 by 2.7 inches square, runs on 9 to 15 VDC, and delays up to 197 milliseconds.

The modules are used to kill "squelch tails." In the two-way business, these are the noise bursts you hear when a receiver goes from unsquelched to squelched condition. The devices are also useful for killing DTMF signalling tones.

The board has a built-in audio gate which is controlled by an outside signal. The signal can be switch-selectable to either high- or low-active. The amount of delay is controlled by a dipswitch and ranges from 12 to 197 milliseconds.

The response is only 30 Hz to 5 kHz, but this is sufficient for voice. Remember, it was designed for the two-way industry.

The module costs less than \$100 and a data sheet is available. For more information, you can contact S-COM at 970-663-6000 or circle **Reader Service 81**.

By the way, Bob shared a mic with RW's John "Q" Shepler on the Milwaukee School of Engineering's campus carrier-current station back in the early seventies. Ah, those humble beginnings.

★ ★ ★

Looking for your own "AM improvement" by upgrading your processing? I tested a pre-production version of a new, low-cost box for a client who did not have the money for one of the industry "cadillacs."

For much less than \$2,000, the DMS Sound box was an improvement over this client's Early American four-band. If you would like a data sheet, circle **Reader Service 135**.

★ ★ ★

Responding to a *Workbench* column on tower painting (these folks love Sherwin-Williams), I received an informative newsletter from Applied Engineering and Construction.

This is a division of Broadcast Communications in Wisconsin and in addition to tower work, the company can acquire and manage sites and provide project management.

The newsletter had a column on winterizing towers and we have permission to share some tips with our readers.

The first way to winterize towers is to inspect the tower anchors before the ground freezes. Digging 18 inches down at each anchor to check for corrosion is an important part of any complete inspection. Early detection of anchor failure is extremely important for the integrity of the tower and communications system.

With the high winds and icing conditions winter brings, guy wire tensioning is very important. Loose guy wires create a "galloping" motion that is dangerous to a loaded tower. According to manufacturers, galloping guy wires can bring down

towers 40 percent of the time during an episode.

Ice clips, also known as end sleeves, are normally installed on the end of each guy wire preform at the anchor. This safety device helps prevent the release of the preform and guy wire as ice slides down the guy wire.

Ice breakers are cone-shaped galvanized iron castings which protect the preforms and hardware securing the guy wire to the anchor head. They are bolted onto the guy wire two to three feet above the preforms with the point of the cone facing the tower. As a tube of ice slides down the guy wire, it shatters as it hits the ice breaker. Unless specified on your tower, they can be added later as an option.

Junction boxes for tower lighting and wiring will expand and contract during winter temperature extremes. The AC wiring or conduit can detach from the junction box, disconnecting the tower lighting. To help eliminate winter wiring damage, the junction boxes should be permanently attached to the tower with brackets and sealed from possible moisture.

If mid-level lighting is required on a tower, ice shields are an important addition. Ice falling from the upper half of the tower can smash the beacon glass and destroy a fixture worth \$1,000 to \$1,500. Obviously, a galvanized ice shield is a good investment.

Ice shields can also be installed to protect side lights and antennas.

Abandoned antennas and lines add unnecessary wind loading to a tower. During freezing rain conditions, all surface areas become heavily laden with ice. Even new towers only a few weeks old have collapsed from overloading caused by ice storms. If you have antennas or lines that no longer serve a purpose on your towers, have them removed before winter sets in.

We appreciate Broadcast Communications sharing these tips with our readers. If you would like more information on their tower services, call 608-527-5670 and ask for Jean Muehlfelt.

★ ★ ★

Power supply problems seem to stretch from the United States to the Northern Mariana Islands. That is where Bob Springer, chief engineer for Far East Broadcasting, found one such problem with his SMC 252 carousels.

Bob's tip is noteworthy because not everyone has gone to a hard disk system (yet), and his repair tip is applicable to all cart machines in general.

The mystery appeared to begin in the 150 Hz trip tone circuit because the automation would advance intermittently. His first thought was the presence of false 150 Hz cue tones on carts. Everything there was clean.

Given the machines were over 20 years old, Bob next checked the power supply for ripple or noise. Again, everything came out fine. He finally tracked the problem to transients on the AC line.

Using an old variac, he rapidly varied the voltage from 95 to 120 volts. As the

DC voltage varied, the 150 Hz cue detector relay tripped with every dip of DC voltage. The diagnosis: insufficient filtering.

Turning back to the power supply, he found the original 1100 mfd capacitors had been replaced with 1000 mfd caps. Even though the caps were okay, Bob paralleled a 220 mfd cap across the input section. Modifications were made to the other two carousels in service, and the

problem was alleviated.

If you wish to contact Bob Springer, febespneng@mcimail.com is his e-mail address.

□ □ □

John Bisset is a principal with Multiphase, a contract engineering and special projects company based in Washington, DC. He can be reached at 703-323-7180. The Workbench Column can be reached on-line at wrwbench@aol.com or submissions for the Workbench column can be faxed to 703-764-0751. Printed submissions qualify for SBE certification credit.

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STATION SKETCHES

Peak Performance from Analog Recorders

by Tom Vernon

HARRISBURG, Pa. In the Sept. 20 RW, I talked about aligning analog tape recorders. The point was made that the mechanical alignment must be verified before proceeding to playback and recording adjustments.

First, a few words about alignment tapes. You should purchase tapes that match your reference fluxivity level — normally 180 or 250 nWb/M (nanoWebers per Meter) — and with the proper equalization standard, normally NAB.

Alignment tapes wear out over time, resulting in reduced HF levels. Plan on replacing them every year or two. Almost all alignment tapes are full track, and cannot be used to verify low frequency response below 500 Hz at 15 inches per second (ips) due to an anomaly known as the fringing effect.

Avoid fast forward, stop, and rewind functions when using an alignment tape. They will stretch the tape and reduce its lifespan considerably.

Tones on tape

Having completed head alignment last time, the first step in playback alignment is setting the reference level and high-frequency (HF) equalization. Use the 1 kHz reference tone to set the output level to +4 dB, and the VU meter calibration pots to 0 VU.

Next, set the HF EQ pots for 0 VU at 10 kHz. If you had to adjust the HF pot, go back and verify reference level, as there may be some interaction if EQ was way off. Play the frequency response section again and log response for both channels between 500 Hz and 20 kHz. It should fall well within the manufacturer's specifications.

If you are maintaining several machines

in one plant, consistency between machines is critical. For this reason, use the same physical piece of tape for all azimuth adjustments.

Having satisfied yourself that your machine's playback electronics are up to snuff, you may finish off adjustments with the record section. Adjustments usually begin with the bias circuits.

Although often overlooked, the first thing to check is bias frequency. Although absolute bias frequency is not critical to audio performance, an off-frequency bias oscillator can cause problems. Bias traps and erase peaking resonance circuits will not work properly if the oscillator is misbehaving.

Next, follow any manufacturer's instructions for adjusting bias traps and peaking circuits. Always check bias traps after replacing heads.

Critical settings

Setting bias levels is the next step, and a critical one. Improper bias will result in high harmonic distortion and noise, degraded midrange headroom, and poor high-frequency response.

There are several methods for adjusting a machine's bias levels. Older manuals often recommend recording a

1 kHz tone at reference level, and adjusting bias for a peak while monitoring playback. Because this peak is very broad, it is unlikely you will end up at the point of minimal noise and harmonic distortion. If a machine is badly out of adjustment, this procedure will get you in the ballpark quickly, but is not recommended for final tweaking.

The most common method is over-biasing. To do this, you will need to start with the proper oscillator frequency and level for the speed you are working with. For 15 ips, use 10 kHz, for 7.5 ips use 5 kHz, and use 20 kHz for 30 ips. In all cases, adjust for standard reference level. Begin with the bias pots turned completely down, and gradually increase them while observing playback output.

Adjust for peak output and continue increasing for a 1.5 to 3 dB decrease, as per manufacturer's instructions.

The most precise method of adjusting bias is for minimum distortion. Do this by recording a 1 kHz tone at reference level and adjust bias for minimum harmonic distortion. This method only works if wow and flutter are within specs.

Continue alignment with HF record equalization. Adjust for a flat response at 10 kHz. On some machines, with certain tape, you may have to retweak the bias slightly for optimal HF response.

Provisions for lows

Many recorders also have provisions for adjusting low-frequency (LF) playback response. To do this properly, you use the recording section, because the fringing effect makes LF playback adjustment impossible below 500 Hz. While recording, sweep the oscillator between 100 and 250 Hz. You should see a peak somewhere in this vicinity. You may now set the low frequency equalizer for optimum overall flatness.

Make another sweep and confirm 1 kHz and 10 kHz are still okay, as there may be some interaction. Finally, check overall frequency response and be sure it is within specs.

While many machines have a set of "tweakers" for high and low speed adjustments, others may not. If this is the case, you must optimize the machine for the speed you use the most, or settle for a compromise. This is especially true if there is only one adjustment for record level.

The quality of service manuals for reel-to-reel equipment varies considerably. In some cases I have had to rewrite manuals where the originals left out critical information or were misleading. Do not hesitate to call the manufacturer and pester the customer service department if things are not clear; that is why they are there.

With care, patience and a regular maintenance routine, you should be able to narrow the gap between CD and analog sound quality.

□□□

Tom Vernon divides his time between consulting and completion of a Ph.D. at the University of Pennsylvania in Philadelphia. E-mail him at TLVernon@aol.com or call 717-367-5595.

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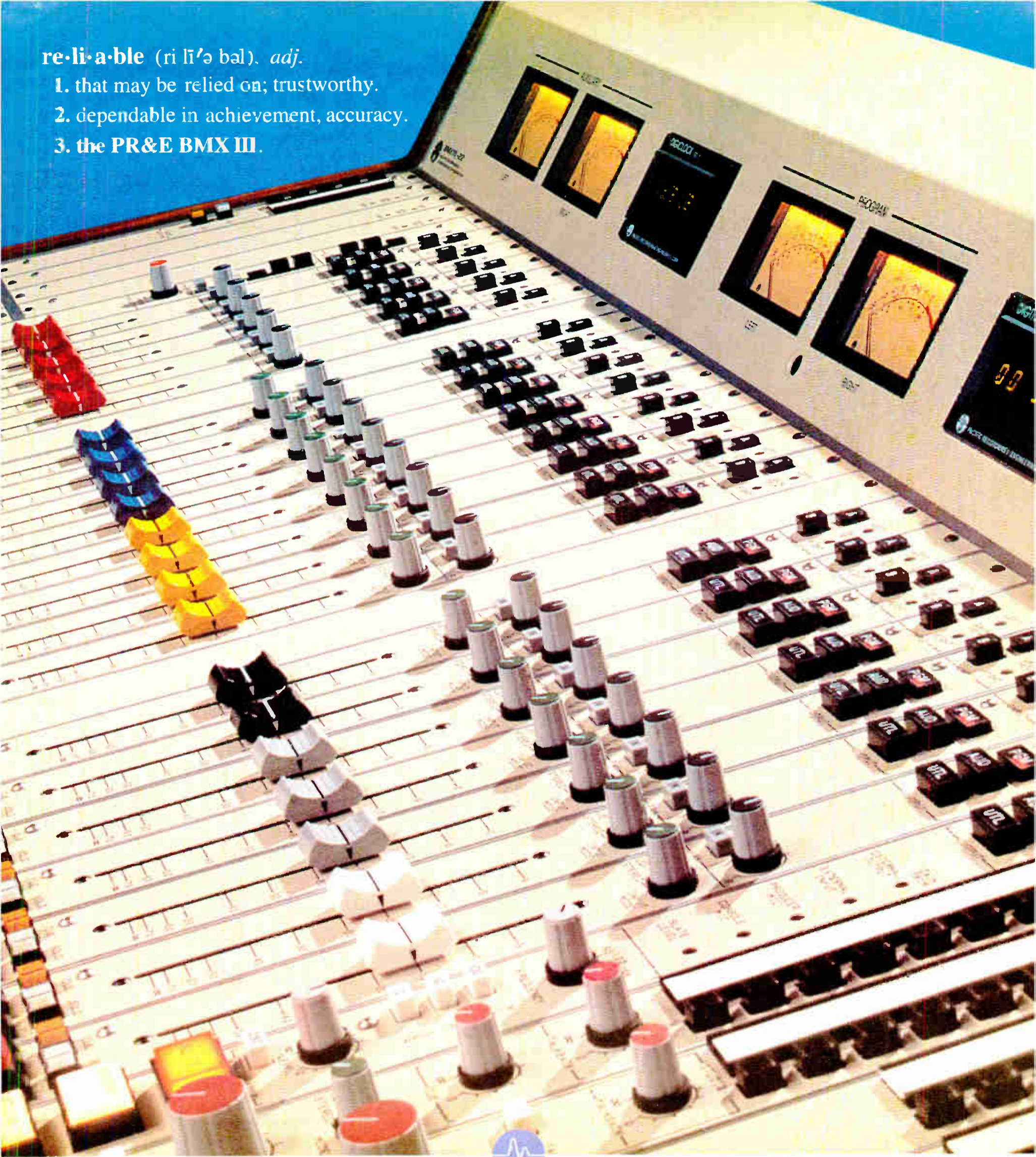
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World Radio History

Microcontrollers for the Station

by Jim Somich

CLEVELAND Microcontrollers have become a part of our everyday lives, from the control systems of VCRs to programmable thermostats and coffee pots. The microcontroller is a stripped-down computer designed to do a specific task or a range of specific tasks.

With the introduction of simple, application-specific microcontrollers to the experimenter market, it is now possible to use them to monitor and control functions around our broadcast plant. Rather than build complex relay-logic circuits to perform simple operations, we can now control complex functions with a relatively simple piece of hardware programmed with application-specific software that we write.

The cost of microcontrollers has been reduced and they are often less expensive to use than other forms of control or logic. Applications around the broadcast plant include transmitter monitoring and control, used as simple automation switchers and machine control systems as well as hundreds of other uses.

Introduction

There are hundreds of microcontrollers on the market, from very simple devices like the Parallax Basic Stamp to elaborate processors with as much memory as a PC.

This month we will take a close look at the Blue Earth Micro-440e controller. It is a good middle-ground between very simple and very complex devices. The 440e is readily available, low-cost and simple to program in BASIC or assembly language. The manufacturer, Blue Earth Research of Mankato, Minn., provides excellent support through complete users' manuals, data books and a BBS.

Experimenting with the Micro-440e is a good introduction to the world of microcontrollers. A basic microcontroller like the 440e has many uses: To monitor and control electronic devices; To assist in writing and debugging assembly language programs; As the brains of an electronic project; To link your PC with real world sensors and peripherals; As a prototyping platform for product designs; To control appliances, lighting, and heating & air conditioning equipment; As a remote data collection device; As a programmable tester in the station environment; To control electronic experiments.

What is it?

The primary difference between a microcontroller and a microprocessor is that the microcontroller provides for considerably more on-board processing ability than a simple microprocessor. The 80C32-compatible microcontroller used in the Blue Earth 440e is based on the 8051 controller. The 8051 features: An eight-bit CPU optimized for control applications; Extensive Boolean processing (single-bit logic) capabilities; 64K Program Memory address space; 64K data Memory address space; 4K bytes of on-chip program memory; 128K bytes of on-chip data RAM; 32 bi-directional and individually addressable I/O lines; Two 16-bit timer/counters; Full duplex UART (Universal Asynchronous Receiver-Transmitter); 6-source/5-vector interrupt structure with two priority levels; On-chip clock oscillator

A block diagram of the 8051 core is shown in Figure 1.

When the processing power of a microcontroller like that of the 8051 family is combined with application-specific peripherals in a single package, the combination results in a compact, low-cost microcontroller system with enormous power for its size and price. The Blue Earth Micro 440e is an excellent example of this power.

A look inside

Figure 2 is a block diagram of the Blue Earth Micro 440e microcontroller. The major components included in the figure are:

- 1) An 80C32-compatible microcontroller
- 2) A 32K-byte CMOS EPROM with BASIC and MONITOR-51
- 3) A 32K-byte CMOS static RAM with

write protect feature

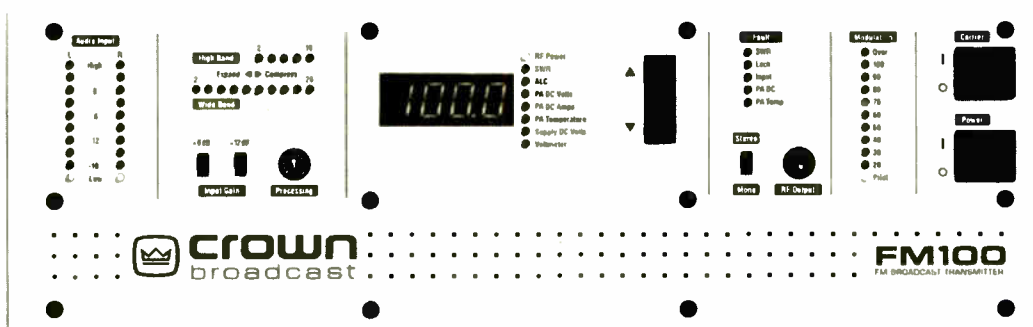
- 4) A Real Time Clock/Calendar with interrupt generating capability
- 5) An 8-channel, 8-bit Analog to Digital Converter
- 6) A precision low-power five-volt regulator
- 7) A 3.6-volt lithium backup battery with 10 year minimum lifetime
- 8) Two 25-pin D-Sub connectors providing access to CPU ports and bus signals
- 9) An RS232-C driver/receiver providing two communications channels

The 440e uses an 80C32-compatible CMOS microcontroller running at 12 MHz (1µs instruction cycle time).

continued on page 54 ►



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PIONEER PROFILE

'Doc' Herrold and His Arc-Fone

by Barry Mishkind

TUCSON, Ariz. Long before anyone thought about the question of who was the first broadcaster, a list of young men around the world were experimenting with the new wireless transmitter technology that Marconi had brought forth. Fessenden, de Forest, Tesla, Hertz, Edison, Conrad, Herrold, Stubblefield, and many more were out there.

When the Department of Commerce began issuing licenses in 1911, a number of amateurs applied for licenses to cover experimental stations they had

constructed over the previous five or six years. By the way, that legendary "first" license was issued to George Lewis of Cincinnati.

In the main, Marconi, Fessenden, Hertz, Edison and even de Forest came to be better known as scientists and inventors rather than broadcasters. KDKA truly has its place in history as the earliest commercial licensee, even though "commercials" as we know them were years off.

Even so, several stations can trace their history to before November 1920 and KDKA's predecessor, 8XK.

With all this to consider, attempting to define the "father" of broadcasting may not be a reasonable assignment. For example, what about Charles D. Herrold?

Charles who?

A decade before Frank Conrad built the station that would become KDKA (as part of a bet on the accuracy of his watch), Charles Herrold was experimenting in San Francisco. The initiation of voice transmissions from his "Herrold College of Wireless and Engineering" at San Jose, Calif., in 1909 made Charles "Doc" Herrold a true pioneer.

Herrold was born November 16, 1875 in Illinois. His father was a farmer and inventor, and it was natural that Charles would also be keenly interested in science and mechanics. Like his father, he was an inventor developing new products in dentistry, surgery, photography and music.

His early love of astronomy led to his invention of a clock-driven telescope. The loss of his school's only astronomy professor caused him to move into physics and electricity, where the wireless took over his life.

Eventually Herrold built a 15-watt spark gap transmitter, but he wanted more than just telegraphy. He wanted to transmit voice information.

In an effort to increase output power, a carbon microphone was connected in series with the B+ high voltage supply of the spark transmitter. As much as 50 watts of output power could be developed this way.

Early listeners began to hear "This is the Herrold Station" or "San Jose Calling." The call letters "FN" were adopted for a while, as were 6XE, 6XF and SJN.

Transmission time was curtailed by the need to replace the carbon element every one or two hours.

Refinements

Improvements were made that led to the invention of the "Arc Fone."

The Arc Fone was essentially six arc lights connected in series, developing a high-frequency arc carrier which could be modulated by voice. At first, the necessary 500 volts was tapped from the street-car lines. A special water-cooled microphone had to be built to prevent it from burning out. The Arc Fone was patented on Dec. 21, 1915.

In the meantime, Herrold had decided one of the best uses for his invention was to feed the interest of experimenters with regular programs that would publicize his college.

He set up a listening room with chairs and 24 receivers at a local furniture store. Later, he would set up a second transmitter at the Fairmont Hotel in San Francisco. In effect, he became a pioneer of two-way broadcasting in 1912.

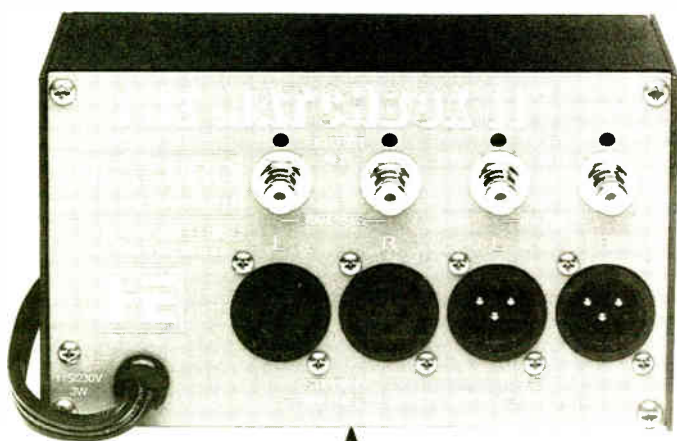
Unique programming

It may well be that the weekly "Little Ham Program," sent out every Wednesday evening at 9 p.m., qualifies as the start of broadcasting — at least by the definition Herrold himself used. As the son of a farmer, the concept of "broadcasting" seed was well known to Herrold. He claimed to have been the first to adapt the term to wireless transmission, particularly in relation to regularly-scheduled entertainment programs.

The DJ on Herrold's station was noteworthy. The first woman to broadcast was his wife, Sybil, who played records provided by the Sherman Clay music store. In doing this, the Herrolds quite likely developed the first commercial "trade-out."

Listeners from as far away as 900 miles called to request records during the program.

continued on page 54 ►



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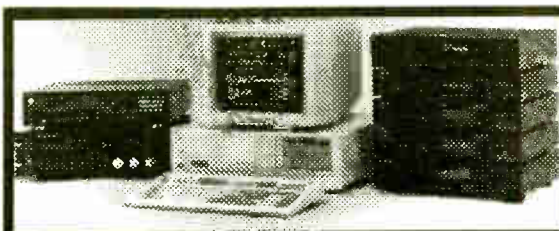
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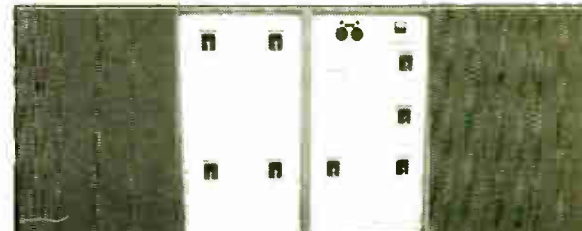
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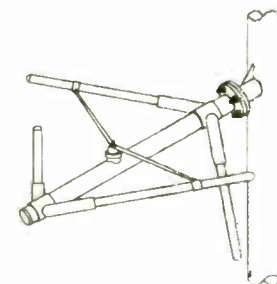
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READER SERVICE NO. 195

Inside the 440e Microcontroller

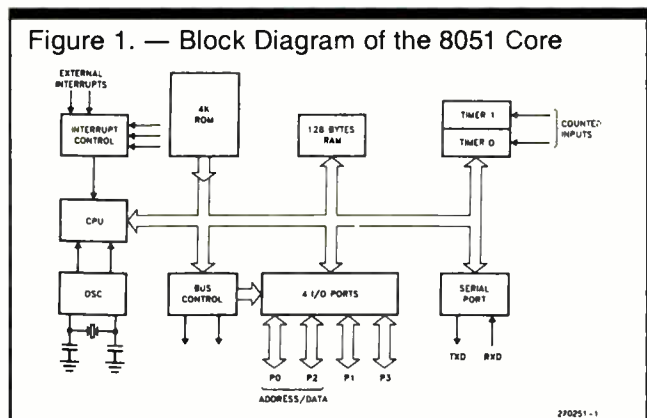
► continued from page 51

The CPUs used include the 80C154 and the 8xC51FX series, with the 80C51FA being standard. Both are enhanced versions of the Intel MCS-51 family, a world standard eight-bit architecture.

The 8xC51FX has features that make it a powerful microcontroller for a wide range of control applications. It is ideal for applications that require pulse width

accidental erasure or overwrites. The user may add additional memory by interfacing to the expansion port connector.

The real time clock/calendar (RTC) module allows the controller to keep track of the current day, date and time. It has counters to track from seconds up to years. The RTC also features a 12/24 hour format, automatic leap year setting, a 30-second error adjustment function and an interrupt output which has a selectable period of 1/64th second, one second, one minute or one hour.



modulation, high speed I/O and up-down counting capabilities. It also has a versatile serial channel that simplifies multi-processor communications.

Memory Configuration

The controller includes 32KB of low power CMOS EPROM that can be read as program (code) memory. In standard configuration, the Micro will only access 16KB as code memory. This 16KB contains an 8KB floating-point BASIC interpreter and an 8KB debug monitor.

The BASIC interpreter allows the user to program the controller using standard BASIC commands and statements. The debug monitor provides development tool features which can be used to assist in assembly language program development. The remaining 16KB can be accessed by changing the EPROM access jumper.

The controller includes 32KB of low power CMOS static RAM usable for program and/or data storage. Blocks of memory may be write-protected to prevent

ended, differential or pseudo-differential operating modes. It can be used to measure the output of various transducers that generate signals in the range of 0 to 5 VDC. One of the input channels is dedicated to measuring the controller's input supply voltage.

The Micro provides two independent RS232C-compatible asynchronous communication channels. The primary channel is typically used for communicating with a host computer or terminal at up to 19.2 kilobits per second (kbps). The second channel can be used for hardware handshaking, as an alternate communications channel, or as a line printer port (with BUSY input) to support BASIC List# and Print# statements.

Any DC power source capable of 7-16 volts at 75ma can be used to power the unit. An on-board regulator provides a stable +5 volts for proper operation. The power supply also includes reverse input polarity protection, CPU reset circuitry and battery backup.

A 3.6-volt lithium thionyl chloride battery with a rated 0.85 ampere-hour

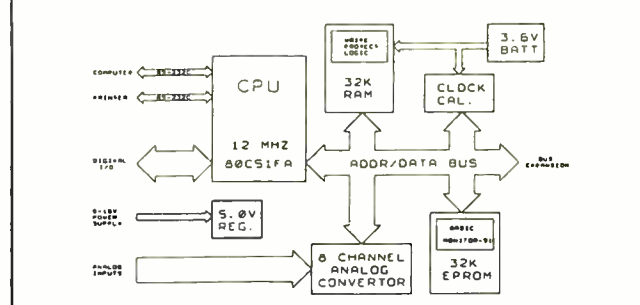
capacity provides backup power to the RTC and memory. Continuous clock operation and data integrity will be maintained for a period of at least ten years with no external power applied.

The I/O port connector on the controller allows the user to interface to 14 of the CPU's port 1 and port 3 I/O lines. Both assembly language and BASIC can directly access these lines.

External circuits may be easily interfaced to the controller through the expansion port. All of the bus signals necessary for adding additional external memory or I/O devices are provided.

All of this processing power is bundled in a compact package that fits in the palm of your hand and costs less than \$200.

Figure 2. — Block Diagram of Blue Earth Micro 440e Microcontroller



For more information on the Micro 440e, contact Blue Earth Research at 507-387-4001. Jim Somich is a radio broadcast engineering consultant and president of MicroCon Systems Ltd., a manufacturer of broadcast equipment. He can be reached at 216-546-0967.

Was Charles Herrold Father of Broadcast?

► continued from page 52

Among the techniques used by Herrold to cultivate audience interest was the awarding of weekly prizes to regular listeners.

Aside from ads for his college and the trade-outs for records, Herrold had no commercials as we know them. He apparently had some ideas on the subject and wrote the Department of Commerce to ask about using the station for paid advertising.

The reported response was, "Under the laws we can find nothing by which we can prevent your selling merchandise over the air, but by the Lord Harry we hope that somebody does."

The big test

By 1915, Herrold's station SJN was well-known throughout the region by amateur radio enthusiasts. It was during the World's Fair of that year that the new medium was given a real stress test.

Lee de Forest had set up a transmitter and receiver at the Fair, but the transmitter failed to operate. The upshot? Herrold's Arc Fone transmitted from San Jose — 50 miles away — to the fairgrounds, eight hours a day during the Fair.

The demonstration amazed fairgoers, who listened to music and news about the Fair. One of Herrold's associates reported that people who came into the booth would often start looking under the table or in the back. They just could not believe the voices and music were coming from 50 miles away!

Recognition elusive

With all this background, why is it that many books and historians ignore "Doc" Herrold and his achievements?

Perhaps it was just a matter of timing. In April 1917, all non-governmental broadcasting was ordered off the air for the duration of the war. During that time, all radio patents were "pooled" in order to provide the best radios for the military. Electronic advances tied to de Forest's Audion tubes as well as other advances

made the mechanical Arc Fone obsolete.

After the war, Herrold rebuilt his station to conform with the new technical standards, but had a hard time keeping his station going into the 1920s.

In 1921, the Department of Commerce assigned KQW as the station identification. His dream began to unravel as he was forced to sell KQW in 1925. Sadly, the "handshake" arrangement he had with the First Baptist Church broke down and he was soon fired as the station engineer.

The last change in calls was in 1949 and the station is known today as KCBS, San Francisco.

Over the years, Herrold tried various ways to stay near broadcasting. He was one of the first time-brokers, buying time from stations, and then re-selling it to others. An effort to establish himself as "the Father of Broadcasting" failed to attract much attention from the broadcast community. The last years of his life were largely marked by a string of menial jobs, including that of a security guard.

A saddened Charles Herrold died at age 73 on July 1, 1948.

Was Charles "Doc" Herrold the Father of Broadcasting? Possibly. What is certain is that he was a father of broadcasting.

If you or your station has a written history or any information on the roots of broadcasting, please share them with Barry Mishkind. Books, news clippings, old licenses, ratecards, EKKO stumps, radio guides, photocopies or anything that would illuminate the trailblazing stations and the pioneers who built them are of benefit. Send them to Barry Mishkind, 2033 S. Augusta Place, Tucson, Ariz., 85710. The information will be added to the OLDRADIO infobase, and eventually donated to an archive open to all.

Barry Mishkind can be reached at 520-296-3797, or barry@broadcast.net via the Internet. Find his home page at <http://www.broadcast.net/~barry/>

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With Gentner's SCREENWAIR software and a PC, a screener uses a keyboard and a headset instead of a control surface, and preselects calls for on-air, adding names, comments, city of origin and other information. An additional monitor is placed in the studio where the talent can see who is on screened hold.

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With the TeleHybrid, the hassle and expense of dedicated phone lines are a thing of the past. Your regular telephone system becomes your "on-air" system. Anyone in your facility can screen a call or transfer it to the studio or boardroom. Best of all, the TeleHybrid is very affordable.

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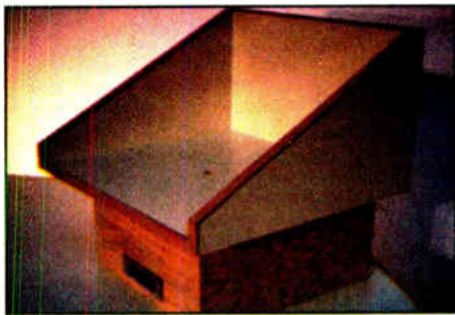
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MARKETPLACE

Recently Introduced Products for the Radio Broadcast Professional

Digital Turret From Spacewise

Spacewise Broadcast Furniture is now offering the DT-1, a studio accessory that allows eye-level contact with digital studio monitors. The DT-1 rotates 240



degrees and comes with a three and one-half inch floppy drive mounting bracket.

Options include a pull-out keyboard mount that fits under existing studio furniture and a three and one-half inch floppy drive and controller card. Spacewise also offers several choices of colors for the DT-1.

For more information, contact Peter Palagonia in Arizona at 800-775-3660; fax: 520-579-9877; or circle Reader Service 37.

New Quartz Crystal

Raltron Electronics has introduced a new ultra-thin quartz crystal for frequency

control in small, portable products. Because of a smaller crystal blank and new header base, the new Model H-10 has a smaller profile height and footprint area.

The crystals are rated at +/- 50 ppm at +25 degrees C and shunt capacitance is specified at 7.0 pF max. Factory selection among crystals produces fundamental frequencies from 16 MHz to 32 MHz, third overtones from 28 MHz to 84 MHz and fifth overtone frequencies from 84 MHz to 100 MHz.

For more information, contact Sandy Cohen in Miami at 305-593-6033, or circle Reader Service 42.

Philips Debuts Digital Sound Processors

The IS5021 and IS5022 digital sound processors from Philips combine a digital sound processor, sample rate converter and A/D and D/A converters into one compact package. A/D conversion is 20-bit, high-precision, while D/A conversion is also high-precision and completely linear.

The sample rate converter offers a choice of 44.1 kHz or 48 kHz output sampling frequency while 16-bit audio signals are improved by moving noise outside the



audible range. Both the IS5021 and IS5022 offer a comprehensive set of digital processing features and the IS5022 comes in a compact 1U rack-mountable package and is both AES/EBU (IEC958) and SPDIF compatible.

For more information, contact Hilarie Hackendahl in Illinois at 708-820-4800; fax: 708-820-8103; or circle Reader Service 88.

GPS Receiver for Precision Time Applications

New from Datum is the StarTime GPS Clock, consisting of an IRIG B time code output, one pulse per second (PPS) traceable time, front panel LED time and unit status display, and a standard RS-232 interface for remote on-site and off-site control.

At a size of less than two inches by seven and one-half inches by three

Aphex Introduces Compressor/Limiter

Aphex Systems has introduced the Model 661 Tube Expressor, a single-channel compressor/limiter that provides three compression curves and allows for higher compression ratios without the "dullness" usually associated with compression and limiting.

Switchable link modes include stereo link, master/slave link, and unlink. Side chain access is provided on the back panel and the nominal operating level is switchable from -10 dB to +4 dB with a bar graph output meter on the front panel.

For more information, contact Chrissie McDaniel in California at 818-767-2929; or circle Reader Service 84.



inches, StarTime's accuracy is better than two microseconds relative to the Universal Time Coordinated (UTC).

For more information, contact Richard Bailey in California at 714-533-6333; or circle Reader Service 91.

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The BC-500 Mixing Console

- ▶ The AEQ Mixing Console BC-500 has in mind those radio stations seeking the best audio quality at a competitive price. Its designers paid great attention to the control layout.
 - ▶ Logical control design ensures a quick learning period as well as trouble free operation.
 - ▶ Advanced true modular design allows total flexibility.
 - ▶ The chassis incorporates built-in meters and speakers. The standard configuration includes the following features:
 - ▶ Six dual stereo inputs.
 - ▶ Four mono inputs (Mic/Line selectable).
 - ▶ One Telephone Hybrid interface.
 - ▶ Studio control Intercom monitor.
 - ▶ One main stereo output plus mono sum output.
 - ▶ Power supply for On Air signaling.
- The BC-500 provides 4 blank modules to enhance this configuration.

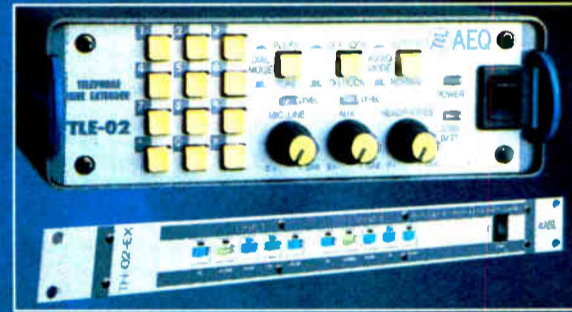


The MP-10 Portable Mixer

- ▶ Five transformer balanced inputs (Mic/Line selectable).
- ▶ Front panel input controls.
- ▶ Can be linked together to increase number of inputs.
- ▶ Transformer balanced outputs.
- ▶ Internal Ni-Cad rechargeable batteries provides 4 hour autonomy.
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- ▶ Dual mode dialing keypad (tone/pulse).
- ▶ Three headphone output jacks.

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- ▶ No adjustment required.
- ▶ Ideal companion for TLE-02 Portable Mixer.

The TLE-02 Portable Mixer

- ▶ On Air phone call with audio presence, depth and clarity of voice. No "telephone sound".
- ▶ Designed for non-technical users, ideal for field reporters.
- ▶ Light weight (3.3 Lb) and great autonomy, using 8 AA batteries.
- ▶ Dialing pad in front panel (pulse/tone selectable).
- ▶ Independent level control of Mic/Line input, auxiliary input and headphones.



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AMPLIFIERS

Want To Sell

Denon DRA-400 tuner/amp, beautiful enclosed display with rosewood trim, exc condition, \$150. Ray, 941-923-8239.

Gates GTM-88R RF amplifier, \$50. B Preston, 503-947-3351.

Want To Buy

RCA BA-13A program amp w/shelf & knobs if possible. D Dintenfass, Transcription Service, 7549 27th Ave NW, Seattle WA 98117. Fax 206-784-6963.

Tube Hi-Fi, speakers, tubes. Altec, Marantz, McIntosh, Western Electric, coax/trix and corner speakers, tubes-VT-4C, 845's, etc. 405-737-3312 FAX: 405-737-3355.

TUBE EQUIPMENT, record cutting lathes. 612-869-4963.

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Collins 37 hr 40 kW 4 bay 95.3; ERI-4 CP 95.3; Phelps Dodge 3 bay CP 100.95; JB Crawley, POB 185, Campbellsville KY 42719-0185. 502-465-5764 or 502-465-8884.

ERI 300', 3-1/8 rigid transmission line. \$2000. C Marker, WHWL, 130 Carmen Dr., Marquette MI 49855. 906-249-1423.

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Rohn 200', 20' sections, inc top light beacon, 2 side lights, bolts, guy cables, on the ground, gd cond. Barry, 207-255-3140.

1983 Jampro LP-2-bay, good low-cost low power 2-Bay antenna, FOB, Yreka, CA, \$1250. Fred Missman, 916-842-4158.

Andrew 87 N 1-5/8 coax to N female connector, \$50. R Sweatte, 509-586-8625.

ERI 4-bay FML Series Rototiller on 104.9 MHz, max input 9000 W, end fed, leg mounts, comes with stub for lightning protection, 25% off new price/Best Offer. E Joe Eck, Eagle Broadcasting, Box 69, Abilene KS 67410. 913-263-1560.

Scala CA5-FM yagi, (4) cut to 98.3 MHz, very broadband, used on 96.7 MHz, \$200 ea; Scala CA5-FM-EB, (4) 5-element yagi, rear mount, 9 dDd, \$200 ea; Scala PD4-2222 power divider, 4 output ports, \$100. D Magnuson, 423-525-6358.

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300-500' & 100 or higher self supporting tower. P Lopeman, 414-482-1959.

FM antenna on 104.3, 1, 2 or 3 bay, low price, for back up antenna. P Deen, WAJQ, POB F, Alma GA 31510. 912-632-1000.

High power FM antenna on or near 107.1 FM, prefer 8, 10 or 12 bay. B Michaels, Unique Bdcg, Bay City TX. 409-244-4170.

Six bay FM antenna for authorized power increase (99.3), cheap. M Coburn, KTOX, 520-855-9000.

AUDIO PRODUCTION

Want To Sell

California Digital Digimod 2000 cards, 1622-XT for Optimod 8100 w/XT chassis, new in box, \$750/BO. M Guthrie, WFNS, 7201 E Hillsborough Ave, Tampa FL 33610. 813-620-9100.

Eventide H-910 Harmonizer, old but works well, \$650. J Winters, Wintersound, 45 E Washington St, Elizabethtown PA 17022. 717-367-1119.

Lexicon PCM-70 classic reverb, \$1350; dbx 503 expander/comp, \$350; Roland SRV 2000 classic reverb, \$525/BO; Orban 245-E stereo synthesizer; Audimax & Volumax compressors, Altec 352-A vintage audio mixer, T Coffman, Rolltop Music, POB 17203, San Diego CA 92177. 619-571-5031.

ABC 32T pulsing unit, \$100. B Preston, 503-947-3351.

Linn Drum classic drum machine w/MIDI update, \$100; Adams-Smith Zeta III-B synchronizer w/cables for JH-24 & JH-110 recorders, recent software, \$950; Barcus-Berry 202-R sonic maximizers (2), rack mountable, Mark, 512-472-8975.

Spectro Acoustics 210 stereo graphic EQ, 10 bands, \$85; Furman LC-2 comp/limiter w/de-ess, adjustable attack & release, \$300; dbx-2-124 NR system, \$70; Teac AN-180 NR unit, \$65; Realistic stereo graphic EQ, 5 bands, \$35; Archer 15-278 video sound processor, \$35. D Jackson, WQQQ, Wilton, CT. 203-762-9425.

Turtle Beach 56K digital editor, 56K hard disk editor, fast & great sounding workstation for PC, 1 yr old, \$850. Keith, 504-595-8623.

Valley 400 mic processor, \$400. M Rollings, 314-968-4212.

dbx 166 stereo compressor, \$350. W Gunn, 619-320-0728.

Want To Buy

MXR-Neve-API EQ's, mic-pres, delays, etc. T Coffman, Rolltop Music, POB 17203, San Diego CA 92177. 619-571-5031.

AUTOMATION EQUIPMENT

Want To Sell

Cetec 7000 automation system with encoder & cables, (3) ITC PB reels with racks, (3) IGM 42 tray Go-Carts with racks, (2) IGM 24 tray Go-Carts with cks, printer & paper. All machines rebuilt & in good working condition, BO for all. T Yarbrough, WEDT, 1201 S College St, Winchester TN 37398. 615-967-2201.

SMC MSP automation system, works good, complete with all manuals, battery backup & 25/1000 Hz tone generator. SMC green racks (3) mdl 452 Carousel (2) ARS 1000 reel PB (3) single cart PB (2) 10 channel switcher. You pick up in Southern Virginia, \$2250. H Espravnik, WVCP, 1360 Nashville Pike, Gallatin TN 37066. 615-452-8600 or 615-452-3983.

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Computer Concepts 8x4 switchers (4), \$1800 ea; (2) Sentry Systems Air Sentry silent sensors, \$150 ea; Gentner silence sensor, \$300. M Rollings, 314-968-4212.

SMC DP-2 automation, 4 Carousels, 5 reel to reels; (2) SMC ESP-1 automation units, 4 Carousels, 4 reel to reels; SMC MSP automation, 3 Carousels, worked fine when replaced in 1994/5, all 4 units delivered to your Mainland USA site, \$6250. SBC, 600 N. Kiwanis, Sioux Falls, SD 57104. 605-334-1117.

Sonomag ESP-1, complete system, (3) model 350 Carousels, silence sensor, (3) reel to reel, computer, excellent condition, \$4000. L Mariner, 210-775-9583.

CART MACHINES

Want To Sell

ITC SP, stereo play, 3 tones; Tapecaster 700P, mono play, both guaranteed excellent condition with manuals, \$495/both. K Lamson, 510-447-7405.

Tapecaster RP, 6 hrs running time, as new w/secondary cue tone generator and detector. R Franklin, Supersound Studios, POB 1, Norristown PA 19404. 215-646-7788.

Tapecaster cart machines (2), 700-P, factory re-built, one spare motor, \$200 + shpg. B Barrett, KZPI FM, Deming NM. 615-399-8059.

UMC Beaucart 11-113-001 PB unit, good condition, \$175 including shipping. D Aloisi, Heart Radio Productions, POB 280, Purchase NY 10577. 914-698-5217.

BE stereo R/P, excel cond, \$600. G Miner, 719-632-3536.

ITC Series I, \$1200. M Rollings, 314-968-4212.

Tapecaster X-700 mono R/P with auxiliary tone generator & detector, \$500. R Franklin, Super Sound Studios, POB 1, Norristown PA 19404. 610-279-4515.

Tapecaster 700-P old style, \$400; Spotmaster Ten-70, has rapid recue feature, motor recently rebuilt, \$350, w/manuals, we'll pay shipping. Andy, 315-696-6550.

Tapecaster X7800RP & 700s, all in gd to excel cond, \$100-\$495. A Ishkanian, Focus on Truth, 1802 Hilliard Rd, Richmond VA 23228. 804-262-4330.

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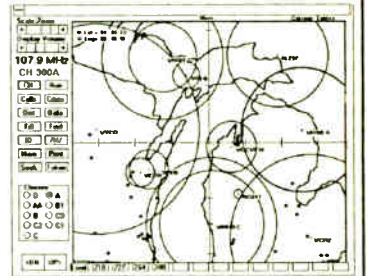
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Denon 950FA, working or not. P Lopeman, 414-482-1959.

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IBM PS/2 mdl 30, 286 machine ISA bus 1.4M floppy, 30M hard drive, 1M memory, BO/trade. P Cibley, 212-532-2980.

PC clones (6), 486 computers in several configurations, desk & tower, ram from 512K to 16MB, hard drives from 44MB to 2.3 gig. R Franklin, Super Sound Studios, POB 1, Norristown PA 19404. 610-279-4515.

Want To Buy

Tandy 6000 HD with at least one floppy drive. Mel Crosby, 408-363-1646.

CONSOLES

Want To Sell

Autogram IC-10 mono/stereo mixer, 28 stereo inputs, like new, BO. J Price, 214-321-6580.

Harris Stereo 80 console, \$300. KCMG, 800 N Hubbard, Mtn Grove MO 65711. 417-926-4650.

Russko 5 channel mono console, great shape, \$100 + shipping. B Barrett, KZPI FM, Deming NM. 615-399-8059.

Wheatstone A20 2 mic, 10 line, timer, line selector, A/B select, good condition, \$4500/Best Offer. R Scott, WHFS, 8201 Corporate Dr, Landover MD 20785. 301-306-0991.

Altec 1567A tube-type mike mixer w/meter (vintage), \$350; Yamaha RM-804 recording mixers, 8 channels, \$400; Shure M-68P mic submixer, \$70. D Jackson, WQQQ, Wilton, CT. 203-762-9425.

Otari 50/50 BIII, 2 track, like new, \$3800; Panasonic 3900 DAT w/controller, like new, \$2250; Yamaha SPX900 effects reverb, like new, \$700. J James, 310-824-4846.

Shure mixer, \$600; 2-line Comrex, \$2100. T Balistreri, 414-784-2863.

Gates Yard board, new tubes, \$395. W Gunn, 619-320-0728.

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Manual/schematic for Quantum QM-22 console. M Craft, 941-954-1280.

Spare cards for an Audiotronics 110, specifically 1ME & SpF4. D Webb, KESY, 4807 Dodge St, Omaha NE 68132. 402-556-6700.

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Gates M-6467 FM Top Level. \$50. B Preston, 503-947-3351.

GE BA-9-B Uni-Level amp (tube compressor), 6386, 6AL5, (2) 6V6, 5Y3-GT, gd cond, \$150. R Franklin, Super Sound Studios, POB 1, Norristown PA 19404. 610-279-4515.

Orban Optimod 8000A, exc condition, manual incl. \$1795. C Ellington, 334-867-4824.

Want To Buy

Gates, Inovonics, Fairchild, RCA, UREI, Teletronics (all types), solid state & tube. T Coffman, Roltop Music, POB 17203, San Diego CA 92177. 619-571-5031.

Gates M6467 FM top level amplifier. F Hollon, WAHL, Rt 1 Box 72, Plymouth IL 62367. 217-392-2340.

Optimod 8100A, working or not. P Lopeman, 414-482-1959.

Teletronix LA-2A's, UREI LA-3A's & LA-4's, Fairchild 660's & 670's, any Pultec EQ's & any other old tube compressor/limiters, call after 3PM CST, 214-271-7625.

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Want To Sell

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RCA microphones, 44, 77 & BK-5, also RCA 90-A floor stand. W Davies, 818-761-9831.

Sennheiser Binaural MKE 2002 mic with head & all adapters & cables, excellent condition with carrying cases. \$300. J Swartz, Face Company, 237 Frost Ave, Rochester NY 14608. 716-235-4928.

EV PL20 (RE20) mics, good condition, \$325; RCA 77DX mics, re-conditioned with new ribbons; Neumann KM84 pair. W Gunn, 619-320-0728.

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Lapel mikes, condensor/piezoelectret in pouch, 3 with Canons out, 2 with phone plugs, \$65; Shure 571 dynamic lapel mike with tie clip, long cord. Canon out, red velvet-type bag, \$30; Shure 444T controlled magnetic desk mike, grey with PTT bar & gain control grey, \$25; Astatic T-UG8-D104, chrome finish, stand with PTT bar, new in box. D Jackson, WQQQ, Wilton, CT. 203-762-9425.

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Nagra 4-S stereo sync machine. \$4500. W Gunn. 619-320-0728.

Ampex ATR100 taperecorders for parts. Circuit cards, heads, motors, machine parts, or electronic parts. Call 818-907-5161.

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Want To Buy

FM or Regional AM in WI, MI, IN, OH, or IL, CP's, dark or troubled OK. P Lopeman, 414-482-1959.

Retired couple seeks small East Coast AM & FM combo w/R/E troubled or dark OK, 718-893-4328.

STEREO GENERATORS

Want To Sell

Gentner Lazer, \$4500. M Rollings, 314-968-4212

STUDIOS

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Pams Jingles reference tapes from the years of 1951-1976, avail from every radio market in the US, Canada & Europe, call after 3PM CST, 214-271-7625.

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HP 141 spectrum analyzer with 8553, 8532 plug-ins, Tek Scope 5110 with 5A15N (2) 5b10N time base; PR57 Sencore Powerit, Phoenix mico System 5500 data communications analyzer, Tek 520A vectorscope, Tek 147 NTS gen. Best Offer/or trade for educational gear or recording studio equipment for educational station. Barry, 207-255-4722.

Potomac Instruments AM-19 2 tr antenna monitor, \$1000. B Campbell, KRIG, POB 877, Bartlesville OK 74005. 918-333-7943.

Potomac Instruments AA-51 audio analyzer w/IX-51 input transformer, \$1200. R Sumner, CAVU Corp, 44632 Guilford Dr, Ashburn VA 22011. 703-450-2288.

HP 130C rack mount, oscilloscope, \$200. P Deen, WAJQ, POB F, Alma GA 31510. 912-632-1000.

Trilithic 700A signal level meter, Best Offer; Peca ACM 719XE field strength meter, 54-216 MHz, 470-890 MHz, Best Offer; Jerrold 704B field strength meter 54-220 MHz, Best Offer. J Whatley, WNUZ, Alexander City AL. 205-234-2492.

Want To Buy

McMartin AM-25 AM noise meter. R Sweatte, 509-586-8625.

TRANSMITTERS

Want To Sell

CCA FM-10000D 10 kW FM transmitter, less exciter. Includes spares, harmonic filter, directional coupler & AC panel breaker boxes, call for details. D Lacy, Mountain States Broadcasting, Colorado Springs CO. 719-636-2470.

Gates BC1F 1000 watt AM transmitter, \$1000. KCMG, 800 N Hubbard, Mtn Grove MO 65711. 417-926-4650.

Power Pax FM exciter, 5-30 watts, works great, tuned to your frequency, \$400 + shipping. B Barrett, KZPI FM, Deming NM. 615-399-8059.

RCA 5 kW transmitter, just removed from service, works great, you haul, \$4900. G Wyatt, WPSL, 8245 Business Park Dr, Port St Lucie FL 34952. 407-340-1590.

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1 kW AM reasonable, will pick up within 200 miles of Savannah GA. FM solid state exciter, working or not, reasonable price a must. P Deen, WAJQ, POB F, Alma GA 31510. 912-632-1000.

QEI 675 or 695 exciter. P Lopeman, 414-482-1959.

McMartin AM/FM transmitter, any model, exciter or stereo modules. Goodrich Enterprises, 11435 Manderson, Omaha NE 68164. 402-493-1886.

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TURNTABLES
Want To Sell
 Technics SP-25, good condition, \$250; Audio-Technica ATP-12T professional tone arm, like new, \$150. R Franklin, Super Sound Studios, POB 1, Norristown PA 19404. 610-279-4515.
 Technics SP25 with se & arm, Best Offer. T Gayne, KTMC, POB 848, McAlester 74502. 918-423-1400.

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EMPLOYMENT

To place ads in this section, use the ActionGram form. To respond to box numbers write Radio World, PO Box 1214, Falls Church, VA 22041. Attn: _____

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Available: pro anncr, network voice, former VOA, can do combination of announcing, master cntrl in radio or TV, exc voiceover delivery. Alex, 513-777-8423.

Broadcasting young gun w/1 yr exper plus strong production/copywriting background seeks position. John 405-848-7626.

Country/AC morning AT/promotions, topical/humorous/adult communicator. Women 25-54 & phones! Mike 510-432-6300.

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Young, fresh out of school, looking to start at your stn as on-air, prod talent, willing to relocate. Louis, 405-739-0551.

Ready to make a move, 15 yrs in business, exp on-air, prgmming, prod and engineering, major mkt background. Dade, 713-448-6912.

CE w/12+ exper seeks employment, AM/FM, group or similar communications position. 303-772-3916.

HELP WANTED

Engineer Virgin Islands with: Harris 10 kW FM transmitters, combiners, satellites; RF; and computer skills, send cvi, salary needs, etc to: Chairman, PO Box 333, Miami FL 33280.

WBQB/AVI-VA Radio in Fredericksburg, Virginia seeks experienced chief engineer. Must have superior command of AM/FM RF, state of the art audio, digital and computer automation. FCC compliance knowledge a must. Renovated physical plant. Competitive salary/benefits package. Start November 13. Resume to General Manager, WBQB/WFVA, P.O. Box 269, Fredericksburg, VA 22404. EOE.

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Any individual can run a "Position Wanted" ad, FREE of charge (25 words max), and it will appear in the following 2 issues of Radio World. Contact information will be provided, but if a blind box number is required, there is a \$10 fee which must be paid with the listing (there will be no invoicing). Responses will be forwarded to the listee, unopened.

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005	027	049	071	093	115	137	159	181	203
006	028	050	072	094	116	138	160	182	204
007	029	051	073	095	117	139	161	183	205
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