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Digital Signals Spark Static From AM Radio

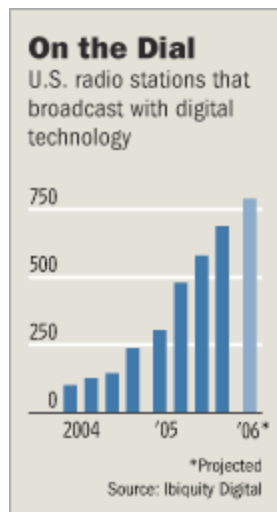
By SARAH MCBRIDE

March 2, 2006; Page B1

Bill Harms of Elkridge, Md., likes to listen to Frank Sinatra crooning on Vegas Radio, which broadcasts at WTRI-AM 1520, a Washington-based station. But over the past year, he's had trouble tuning in to Vegas as he drives through certain neighborhoods. As he complained to WTRI owner Buddy Rizer in an email, "there's a hiss, a hiss that did not exist in the past."

A growing number of radio listeners are encountering similar interference -- hisses, whistles or static -- on their favorite AM stations. The problem for WTRI began about a year ago, when Bonneville International Corp.'s WTOP, the AM station at 1500, began using a digital signal that interfered with WTRI's analog signal in some broadcast areas. It's one of the unexpected consequences of the radio industry's transition to digital broadcasts.

Digital radio is touted as broadcast radio's golden ticket, a technology that allows broadcasters to squeeze more stations into frequencies that currently hold just one. Advocates say the technology will allow radio to better compete with niche-oriented products like Internet radio and with other entertainment technologies, like iPods.



Big radio companies, such as [Clear Channel Communications Inc.](#) and [CBS Corp.](#)'s CBS Radio, have raced to embrace digital broadcasting, adding digital signals and rolling out new programming. But that has left behind many smaller AM stations that are still broadcasting only an analog signal. They are experiencing so-called side-channel interference -- a phenomenon brought on in part by the fact that AM stations are packed tightly onto the dial, with only 10 kilohertz separating each one. (The problem doesn't affect FM stations

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much because they reside 200 kilohertz away from each other.)

The AM stations most affected are those whose neighboring stations -- nearby on the dial -- add a digital signal. In most cases, including Mr. Rizer's, the interference doesn't stretch into a station's core coverage area, as defined in its Federal Communications Commission license. But in fringe areas, signals can be fuzzy, or lost entirely.

AM stations can improve the situation by going digital themselves. But that's expensive. In tiny Bishopville, S.C., station owner James Jenkins says the signal for his bluegrass station, WAGS, isn't stretching as far west as it used to, because a sports station near WAGS on the dial, owned by Clear Channel, added a digital signal. Upgrading WAGS would cost \$35,000 for studio equipment, says Mr. Jenkins, plus an additional \$13,000 or so for a digital-ready transmitter. But WAGS will gross around \$40,000 this year at best, he estimates; since he bought it in 2000, it hasn't broken even in any one year, and he can't afford the new equipment.

The problem for stations like WAGS and WTRI is likely to expand before there's any resolution. As of the end of 2005, there were 4,757 AM stations and 8,903 FM stations in the U.S.; 700 had added a digital signal. (Stations don't substitute digital for analog signals, because most listeners still have only analog radios.) That number will grow as more listeners buy digital radios, and more stations broadcast to them. Radio engineers hope to find new technologies that will assist small AM stations, but there isn't much yet.

For some small AM operators, it adds insult to injury that the only company licensing the digital broadcast technology is one backed by the small stations' deep-pocketed competitors: Ibiquity Digital Corp., based in Columbia, Md., is the only company selling the "in-band, on-channel," or IBOC, technology, that allows digital signals to be broadcast alongside analog signals. Investors in Ibiquity, a closely held company, include most of the major radio companies, including CBS and Clear Channel, as well as automotive companies such as [Ford Motor Co.](#), communications equipment makers such as [Harris Corp.](#), and venture capital and private-equity firms such as [J.P. Morgan Chase & Co.'s J.P. Morgan Partners](#).

In 2002, the Federal Communications Commission approved the use of IBOC for FM broadcasts and for daytime AM. The agency is still reviewing the use of IBOC for AM broadcasts at night. (Currently, AM broadcasters must switch off their digital transmission at night, when AM radio signals are more erratic, to cut back on interference.)

Critics question why Ibiquity's technology is the only terrestrial digital-radio technology approved by the FCC. (Digital radio transmitted by satellite is a separate issue.) Ibiquity's IBOC technology "allows...our domestic radio industry to transition to a digital radio future without requiring more spectrum," says Peter Doyle, chief of the audio division at the FCC. That advantage more than makes up for any shortcomings, he says.

One critic is Leonard Kahn, a New York-based radio engineer and patent lawyer who has developed a hybrid digital-radio system for AM -- Kahn Cam-D -- that he says is better than the IBOC system, in large part because it doesn't cause interference on neighboring stations. Several stations around the country have bought the Kahn system to boost their

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signals. Last month in federal court in New York, Mr. Kahn filed a lawsuit against Ibiquity, along with Clear Channel, alleging antitrust violations. Clear Channel declined to comment because it hasn't yet seen the suit. A Ibiquity spokeswoman said "we are in the process of reviewing it."

In many ways, digital technology is good for AM radio; broadcasting digitally can give an AM station the same high-quality sound as an FM station. Most broadcasters think digital technology will revitalize AM radio, which is now programmed mostly with talk, and that the advantages outweigh the disadvantages.

Still, many small AM operators worry that Washington might someday mandate a switch-off of analog to create more room on the radio spectrum or to simplify the transmission of digital signals. The financial pressure would, "in effect, squash the small station," says Mr. Jenkins, who runs the bluegrass station

Mr. Rizer and his partner, Martin Sheehan, didn't anticipate the digital problem when they bought WTRI, a former Korean-language station, in 2004. They quickly built a fan base in Washington's western suburbs. While the signal remains clear in WTRI's core coverage area, it's now harder to pick up in towns like Potomac or Rockville, Md. For the moment, Mr. Rizer has resigned himself to focusing on his core area around Brunswick, broadcasting on the Internet, and hoping to upgrade to digital himself one day.

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