

## BUSINESS TECHNOLOGY

# The Sound of High Fidelity Goes to the Rescue Of AM Radio

By PETER H. LEWIS

**I**N a demonstration of cooperation seldom witnessed in the highly competitive worlds of broadcasting and electronics, station owners and major electronics companies are banding together to save AM radio.

The result, which should be apparent to listeners in two years or less, will be the clear reception of high-fidelity AM signals that approach FM in sound quality.

"Listeners will hear full-fidelity AM radio for the first time in their lives," said Thomas R. McGinley, director of engineering for the First Media Group of Washington, D.C., which owns three AM and eight FM radio stations. Mr. McGinley and others in the broadcasting industry contend that if AM is given the same chances that FM has received to compete with such rival state-of-the-art technologies as tape and digital disks, the sharp decline in AM's popularity can be arrested and reversed.

Also, clearer AM signals are expected to breathe some life into AM stereo, a technology that has been stagnant since such stereo broadcasts were authorized five years ago. "This is not AM stereo," said Thomas B. Keller, director of science and technology for the broadcasters' association, "but AM stereo would sound terrible without it."

Car and home radios capable of reproducing the newly expanded AM signals, which adhere to a voluntary standard called NRSC, for the National Radio Systems Committee that devised and promoted it, were on display for the first time here this week at the annual meeting of the National Association of Broadcasters.

Owners of AM stations, as well as casual listeners, seemed to brighten considerably as they heard the new sound of AM. "It's a great step in the right direction," said Frank McCoy of WGCI AM/FM in Chicago.

Only a decade ago more people listened to AM radio than to FM. Today FM is by far the dominant format, attracting three out of four listeners and, as a result, the lion's share of ad-

vertising revenue and station investment.

The change to FM came with the listener's growing preference for high-fidelity and stereo sound, which were not available on AM.

To show how precipitously AM has fallen, if the curve that shows the decline of listenership is extrapolated, AM radio would theoretically be extinct by the year 1999.

The nation's oldest broadcast technology will not be allowed to perish, of course, because it carries news and public service programming over broader distances than FM, and is integral to the Emergency Broadcasting System.

The problem with AM is that it is noisy. Unlike FM it picks up interference from power lines, lightning and other man-made and natural phenomena, and it is also susceptible to splatters of overlapping signals from competing AM stations that are adjacent on the radio dial.

Adding to the problem is the tendency of AM station managers to "pre-emphasize" the high-frequency signals of their stations, in an attempt to make the treble range of the signal sound brighter. They do this because the makers of AM radios, in an effort to reduce noise in the increasingly

crowded AM spectrum, started narrowing the effective sound reproduction capabilities of AM sets in the 1960's to a bandwidth of 5 kilohertz or less, even though AM was capable of producing signals of much higher fidelity. In effect, they put mufflers on the radios, cutting off the high-end frequencies.

Voluntary standards established this year will more than double the band width of AM broadcasts, reducing interference and increasing fidelity, in effect achieving technical parity with FM. The improvements are intended to halt the decline of AM, which now accounts for 28 percent of all radio listening.

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FM radio, in contrast, evolved later, when high-fidelity was better understood, said Elliot Lifson, a supervisor at WQXR AM/FM in New York, and as a result the receivers were designed to reproduce signals in a much greater frequency range.

To counteract the mufflers on AM radios, station managers sometimes jack up the high end of their broadcasts. The amount of this pre-emphasis is not regulated and can vary from station to station, often by fiat, depending on how the signal sounds on the station manager's car radio. When the pre-emphasis exceeds the reproduction capability of the receiver, however, it is wasted energy.

This wasted energy can be harmful when it slops over onto the signal from weaker neighboring stations. The effect is often hideous to music lovers, adding heavy-metal drumbeats to a delicate classical piano concerto, for example.