

INFORMATION OVERLOAD: Researchers Desi

“**I**nformation overload” is an ever-increasing concern for human performance, both in and outside the military environment. In air and ground operations, the sheer amount and complexity of information can exceed the amount a person can comprehend, especially in high-tempo, critical missions.

One type of information overload stems from the necessary use of headphones in aircraft and in many ground command-and-control stations. Headphones bring remote, multiple communications directly to the ear. They reduce background noise and thereby increase the signal-to-noise ratio. But there is a cost — every sound in a headphone emanates from the same point in space, just outside the ear. If two, three, or four voices or other signals are heard at once, it can be extraordinarily difficult to sort them out. Richard McKinley’s research at Wright-Patterson AFB has shown that such auditory congestion can make it impossible for headphone wearers to understand what is being said to them.

In ordinary, headphone-free listening, the human brain clears away much of the auditory congestion by identifying sounds according to their positions in space. This ability to attend selectively to regions in auditory space is often called the “cocktail party phenomenon.” In a room crowded with talkers, a person can listen rather selectively to one conversation, then another, and another, without moving about the room. The