

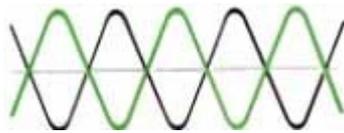
Why would you want Electronic Noise Cancellation?

Communication headsets used in high noise conditions are typically of the circumaural type. A rigid cup encloses the ear, and a cushion seals the cup to the side of the head. These headsets passively attenuate noise by isolation. Hearing protection is provided by a rigid wall between the ear and the noise.

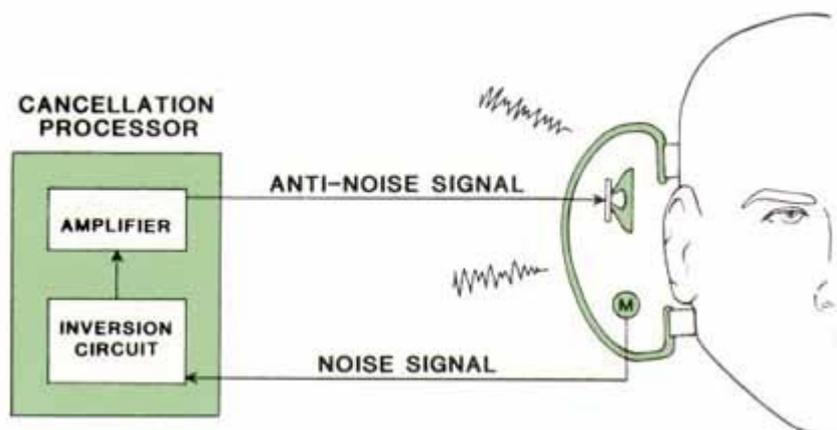
In a carefully designed headset this passive attenuation is very effective at reducing a broad spectrum of audio noise, but it does not achieve high attenuation for low frequencies (e.g. below 200 Hz). This is unfortunate because most aircraft generate very high sound levels at low frequencies. In response to these conditions David Clark Company developed the Electronic Noise Canceling Headset System. (ENC)

How does Electronic Noise Cancellation work?

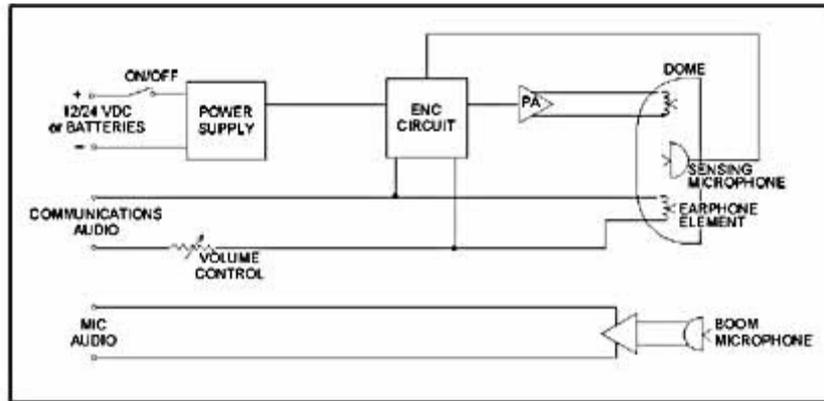
Active reduction of unwanted noise is achieved by a process which amounts to cancellation of the noise by generating a signal identical in sound pressure level (SPL) but exactly reversed in phase to the offending noise; the effect being a cancellation. This is accomplished in the following manner:



A miniature microphone is placed in the ear cup next to the earphone element and as near as possible to the entrance of the ear canal. This microphone senses the noise as it enters the ear. The signal developed by the sensing microphone represents noise which has penetrated the passive attenuation barrier, and is composed of predominantly low frequencies. This signal is fed to a circuit where it is inverted in phase, amplified, and then drives an earphone creating an anti-noise signal which cancels the intruding noise. This is a type of feedback control system.



An important feature of the product, exclusive to our design, is true "fail-safe" operation. By having dual earphone drivers, which are electronically independent, no interruption of communication can result from failure of the ENC system or its power source.



SIMPLIFIED ENC BLOCK DIAGRAM SHOWING ISOLATED AUDIO PATH FOR TRUE FAIL SAFE OPERATION

Our ENC Headset System is manufactured to the same high standards as our conventional headsets. Superior passive attenuation is combined with state of the art electronic noise cancellation in a product providing exceptional communication clarity.

David Clark Company is proud of our reputation for innovative products that work. Our ENC headsets represent a step forward in the evolution of the company known as the "Headset Pros".