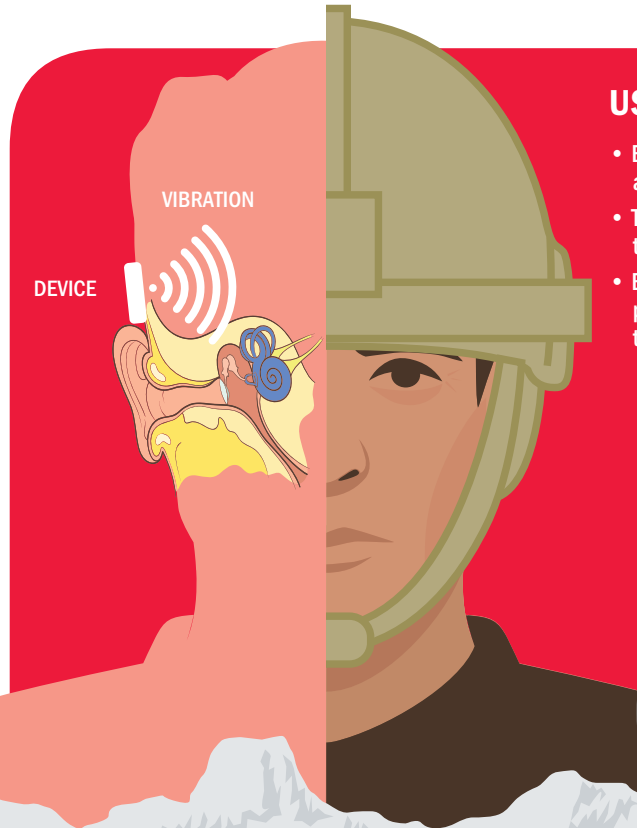


# PIONEERING BONE CONDUCTION TECHNOLOGY FOR THE MILITARY

## HOW BONE CONDUCTION WORKS

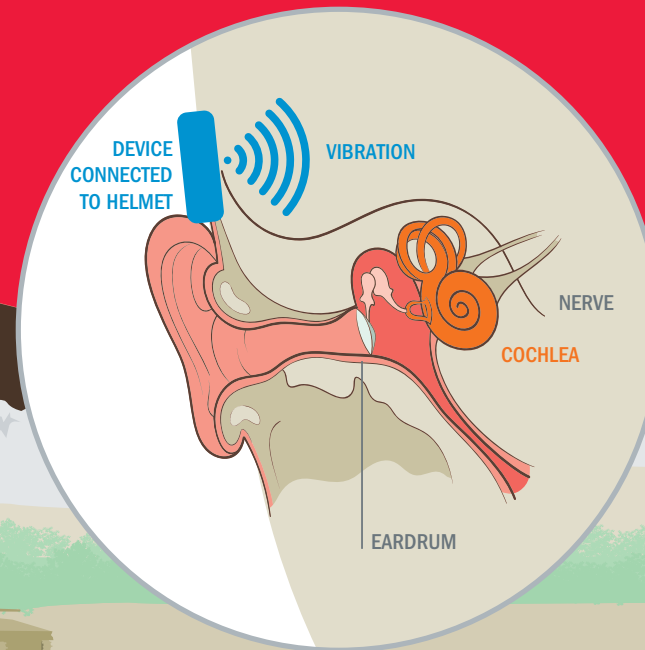
THE HUMAN BODY CAN TRANSMIT SOUND THROUGH BONES AS WELL AS VIA SOUND WAVES TRAVELLING THROUGH THE EAR CANAL.

BONE CONDUCTION BYPASSES THE EAR DRUM, CONVERTING SOUND WAVES INTO VIBRATIONS THAT ARE SENT THROUGH THE CRANIAL BONES DIRECTLY TO THE COCHLEA.



## USING BONE CONDUCTION TO AID THE ARMED FORCES

- BAE Systems has developed an innovative bone conduction device to maintain situational awareness, whilst ensuring proper protection from noisy battlefield scenarios.
- The technology supports the military's drive towards wearable technology. It allows soldiers to safeguard their hearing with ear protectors and reduces the need for bulky audio systems.
- BAE Systems' engineers have adapted consumer technology to significantly improve its performance, while reducing the size to something similar to a five pence piece, allowing the transducer to be integrated into helmets.



## THE HISTORY OF BONE CONDUCTION TECHNOLOGY

**1550**  
AN ITALIAN MATHEMATICIAN DEMONSTRATES A METHOD TO TRANSMIT SOUND THROUGH A ROD HELD BETWEEN THE TEETH.

**1711**  
A BRITISH MUSICIAN DEVELOPS THE TUNING FORK.

**1798**  
BEETHOVEN FINDS A WAY TO HEAR MUSIC BY ATTACHING A ROD TO HIS PIANO AND CLENCHING IT IN HIS TEETH.

**1876**  
THE FIRST COMMERCIAL BONE CONDUCTION HEARING AID IS DEVELOPED IN ITALY.

**2013**  
GOOGLE GLASS® LAUNCHED, USING BONE CONDUCTION TO RELAY INFORMATION TO THE USER THROUGH A TRANSDUCER THAT SITS BESIDE THE EAR.

