

Soldiers cite 'Medic!' as a top hearing priority

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'Medic!', 'Hold fire!' and grid references are amongst the highest priorities for soldiers to be able to hear while on duty, according to new research from the University of Southampton.

Researchers have asked serving personnel to rank battlefield sounds and commands based on their importance, regularity and the number of soldiers who hear them in the line of duty. The results form an index that will be used in the development a new hearing test, specifically designed to assess whether soldiers have sufficient hearing ability to be effective in a combat situation.

The study aimed to establish which of 17 auditory tasks (identified in a previous study by the team) could be termed mission-critical auditory tasks (or MCATs) according to the severity of the consequences of poor performance, how often the tasks are performed in training or on a tour of duty, and how many soldiers carry out the tasks.

The research team surveyed soldiers from four regiments to establish which of 17 military auditory tasks (identified in a previous study) should be used to test auditory fitness-for-duty. The study, published in the journal *Noise and Health*, identified the following nine MCATs:

1. Accurately hearing command in a casualty situation
2. Accurately hearing grid references
3. Accurately hearing directions on patrol
4. Accurately hearing directions in a vehicle

5. Accurately hearing fire control orders
6. Accurately hearing "stop" commands
7. Accurately hearing the briefing before a foot patrol
8. Locating a small arms firing point
9. Identifying the type of weapon systems being fired

The current measure of auditory fitness-for-duty used in British military medical examinations is 'pure-tone audiometry', which assesses the ability to hear individual tones of different frequencies in quiet surroundings.

"The problem with the pure-tone audiometry test is that it doesn't relate to the circumstances that soldiers encounter in the line of duty," says the University of Southampton's Hannah Semeraro, primary author of the study.

"By establishing what soldiers need to be able to hear and react to, and weighting these auditory tasks to reflect operational priorities, we can create an auditory fitness-for-duty test that is related to the scenarios that the soldiers actually experience."

Having completed this job analysis, the team will now set about developing and validating clinical auditory fitness-for-duty tests. The MCATs will enable the development of a new test(s) that will assess the types of auditory skills needed to perform in the situation, rather than necessarily featuring exact replicas of it.

For example, a test based on speech understanding in a noisy background might be better able to predict how [soldiers](#) perform on the MCATs related to communication (such as 'accurately [hearing](#) directions in a vehicle') than pure-tone audiometry and therefore better suited for testing auditory fitness-for-duty in the military.

More information: "Fit for the frontline? Identification of mission-critical auditory tasks (MCATs) carried out by infantry and combat-support personnel." *Noise Health*. 2015 Mar-Apr;17(75):98-107. [DOI: 10.4103/1463-1741.153401](https://doi.org/10.4103/1463-1741.153401)

Provided by University of Southampton

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