

# **STANDARDS RELATED DOCUMENT**

## **SRD AJMedP-4-8**

### **PROTECTION OF HEARING**

**Edition A Version 1**

**JANUARY 2019**



**NORTH ATLANTIC TREATY ORGANIZATION**

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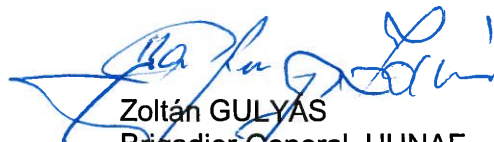
**NORTH ATLANTIC TREATY ORGANIZATION (NATO)**

**NATO STANDARDIZATION OFFICE (NSO)**

**NATO LETTER OF PROMULGATION**

14 January 2019

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Brigadier General, HUNAF  
Director, NATO Standardization Office

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<b>PROTECTION OF HEARING</b>
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**Related Documents:**

Directive 2003/10/EC of the European Parliament and of the council

ISO STANDARD 1999:1990: Acoustics: Determination of occupational noise exposure and estimation of noise-induced hearing impairment

ISO STANDARD 3864-3:2012: Safety Colors and Safety Signs

ISO STANDARD 4869: Acoustics; Hearing protectors

ISO STANDARD 9612:2009: Acoustics - Determination of occupational noise exposure – Engineering method

**INTRODUCTION**

1. This SRD describes the principles for the protection of the hearing of personnel from damage as a result of exposure to noise, encountered during military activities and operations

**DEFINITIONS**

2. The following terms and definitions are used for the purpose of this SRD:
  - a. Hazardous noise: Sound with noise exposure level (LEX,T) exceeding 80 dB(A) during a representative working day of 8 hours or peak sound pressure level exceeding 135 dB(C), based on the Directive 2003/10/EC of the European Parliament. For Non EU countries different action levels may be applicable.
  - b. Audiometry: Audiometry according to ISO Standards especially ISO 8253 Acoustic Test Methods, or to equivalent national or military standards. The methods and apparatus used shall be adapted to the prevailing conditions particularly in the light of the characteristics of the noise to be measured, the length of exposure, ambient factors and the characteristics of the measuring apparatus.
  - c. Personnel at risk: Personnel at risk according to national or military standards or codes of practice complementing ISO 1999-1990.

**GENERAL**

3. Hearing Conservation Programme: The hearing conservation programme shall include at least the following preventive measures according to the Directive 2003/10/EC:
  - a. Instruction: Instruction of all personnel on the hazards of exposure to noise and on ways of minimizing its effect on hearing.

- b. Evaluation of Noise: Undertaking of noise surveys in areas and situations where exposure to hazardous noise is suspected. The minimum acceptable method to be used for determining the potential hazard of a noise source on hearing is the International Organization for Standardization ISO STANDARD 1999-1990. This international standard does not comprise a complete guide and for practical use it must be complemented by national standards or codes of practice.
- c. Marking of Zones: Designating and placarding all hazardous noise areas wherever practicable (Annex A).
- d. Noise Control:
  - (1) Where possible appropriate measures should be taken to prevent introduction of new noise sources and/or to reduce noise emission at its source and/or its transmission;
  - (2) Minimize the duration and/or the intensity of noise exposure required for duty performance; Therefor one of the international or nationally accepted steady-state and/or impulse-noise criteria must be used in the health hazard assessments of noise sources for the purpose of establishing the risk to hearing from impulse and steady-state noise.  
When carrying out the risk-assessment particular attention must be given to any effects on workers' health and safety resulting from interactions between noise and work-related ototoxic substances, and between noise and vibrations; Also give attention to any indirect effects on workers' health and safety resulting from interactions between noise and warning signals or other sounds that need to be observed in order to reduce the risk of accidents. And give attention to interaction between noise and sleep to prevent an insufficient sleeping quality related to noise adversely influencing the work performance of deployed personnel.
  - (3) If the risks arising from exposure to noise cannot be prevented by other means, appropriate, properly fitting individual hearing protectors must be used by workers. The individual hearing protectors shall be so selected as to eliminate the risk to hearing or to reduce the risk to a minimum and to secure continuation of the operational activities especially necessary communications and situational awareness; Protection Equipment: ISO 4869 must be used to determine and report the noise attenuation characteristics of devices used for the protection of personnel. Depending on the type of hearing protector e.g. passive, active or level-dependent, the most suitable method must be chosen.  
If at the same time a communication device must be used e.g. a headset or CEP2, appropriate hearing protection should preferably be integrated into this communication device to increase both the actual use of the hearing protectors and the speech intelligibility.

- (4) Provide adequate information and training to instruct workers to use work equipment correctly in order to reduce their exposure to noise to a minimum and provide supervision.

e. Hearing Surveillance:

- (1) Conduct initial and periodic audiometry on personnel at risk and take appropriate action for those with evidence of changes in hearing level;
- (2) Refer for further examination all exposed personnel showing a shift in the current audiogram of an average 10 dB or more, in either ear, from the previous Health Surveillance audiogram at 2000, 3000 and 4000 Hz. If there is no previous Health Surveillance audiogram available, then refer exposed personnel showing a shift in the current audiogram of 30 dB or more, in either ear, from the pre-exposed baseline in any one of the audiometric frequencies from 500 to 8000 Hz inclusive.

**SYMBOL INDICATING HAZARDOUS NOISE ZONE**

1. Meaning: hearing protection must be worn.
2. Colour: white symbol on a blue background.



3. Informative reference: International Standard ISO 3864-3:2012  
Safety Colours and Safety Signs