



MINISTRY OF DEFENCE

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See Distribution

Our Reference:
BATCIS/17/1712/
0047/8

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BATCIS IPT: SAFE AND SUITABLE FOR SERVICE USE (S3)

PERSONAL INTERFACED HEARING PROTECTION (PIHP) SYSTEM

OPERATIONAL USE - FEBRUARY 2009

INTRODUCTION

1. (SSUN) The User requires a hearing protection system for dismounted close combat soldiers which can be worn comfortably throughout a battlefield mission with minimal loss of general situational awareness, and which provides a level of protection automatically against the impulse noise of blast attack or the firing of weapons sufficient to maintain the operational capability of the section/platoon and mitigate against permanent hearing damage.
2. The hearing protection system is to be capable of integration with PRR, Bowman and other radio systems in order to maintain operational C2. The selected solution is the Racal Acoustics Frontier 1000 system with custom-moulded in-ear plugs.
3. Safety advice is required to inform operational use of the Racal Acoustics Personal Interfaced Hearing Protection (PIHP) system, initially by personnel of 19 Bde on Op Herrick 10.

PURPOSE AND SCOPE

4. This S3 letter is issued to HQ LF, Combat Equipment branch as "advice for the safe use of PIHP". HQ LF, CE is recommended to review the content of the S3 letter and to forward the S3 letter, or to issue equivalent Instructions and Warnings, to PIHP users through the chain of command.

5. As procuring authority, I hereby provide advice for the safe use of the Racal Acoustics Frontier 1000 Personal Interfaced Hearing Protection (PIHP) system as defined below:
- a. PIHP:
- Custom-moulded ear plugs:
 - Microphone/ loudspeaker earpiece transducer units
 - Talk-Through System (TTS) Electronics Unit
- b. Use:
- (1) On operations, initially by personnel of 19 Bde on Op Herrick 10.
 - (2) Non-operational, including Pre-Deployment and other training

SAFETY INSTRUCTIONS AND WARNINGS

6. All personnel are expected to have been issued with PIHP custom-moulded ear plugs and to be aware of the necessary health precautions to prevent ear injury or infection.
7. Safety assessment of PIHP has identified risks relating to audio Situational Awareness and hearing damage. Safety Instructions and Warnings to mitigate these risks are at Annex A, including:
- a. General Warning of risk of Hearing Damage
 - b. General Warning of risk arising from Inability to Receive Audio Information from surrounding environment, including orders, warnings or the sound of incoming fire.
 - c. PIHP Safety Instructions
 - d. PIHP Safety Warnings
8. Other PIHP Hazards, for example the ear-moulding process, reliability, and spares supply, are considered to be either Low risk or not relevant to non-operational use of PIHP.

SAFETY ASSESSMENT

9. The safety assessment of PIHP for operational use is recorded at Reference A and in the associated Hazard Log, available from DES BATCIS-Sys1.
10. Safety assessment of PIHP is continuing, in particular to identify recommended hearing protection solutions for personnel exposed to continuous noise, e.g. AFV passengers, and to very high levels of impulse noise, e.g. mortars.

AUTHORISATION

11. I should be most grateful if you could acknowledge receipt of this letter and advise BATCIS IPTL formally if there are any safety issues I have inadvertently overlooked.

[Original signed]

Annexes:

- A. Safety Instructions and Warnings

References:

- A. BATCIS/17/1712/0047/8, 26 February 2009 - PIHP - Safety Assessment - Issue 3 - Operational Use

Distribution:

External:

Action:

HQ LF - CE

Information:

Racal Acoustics Ltd
DES SE CESO-ASE-NOISE
HQ LF - CBM

Internal:

Information:

DES BATCIS-ProjMgr	DES BATCIS-Sys1
DES BATCIS-SysMgr	DES BATCIS-Req2
DES BATCIS-ReqMgr	DES BATCIS-Sp2d
DES BATCIS-BusMgr	DES BATCIS-PSOa

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SAFETY INSTRUCTIONS AND WARNINGS

General Warning - Risk of Hearing Damage

Users are to be aware that sound levels experienced in operations and training, including:

- Impulse noise from weapons firing,
- Continuous noise from vehicles,
- Radio voice traffic in headsets

will cause either or both of:

- Permanent hearing damage, either from a single event or accumulating over time,
- Temporary hearing damage

General Warning - Risk of Inability to receive Audio Information (lack of Audio Situational Awareness)

Both permanent and temporary hearing damage, and the use of hearing protection equipment, may affect the ability of personnel to receive audio information from their surrounding environment, including orders, warnings or the sound of incoming fire, and could lead to loss of mission effectiveness, personal injury or death.

PIHP Information

The level of hearing protection provided by the Racal PIHP system is generally less than that provided by current devices but this disadvantage is offset by the PIHP capability to restore audio Situational Awareness.

The Racal PIHP system is suitable for use in generally quiet situations, requiring audio Situational Awareness, where protection is required against unpredictable loud noise from weapons and explosives.

The Racal PIHP system should not be used as a substitute for existing protection in other circumstances especially where high levels of protection are required.

The Racal PIHP system might be worn in several configurations:

- a) Ear plugs only, i.e. "OPEN". (Not to be used in this configuration)
- b) Ear plugs with stoppers (lanyard ends) fitted ("STOPPED")
- c) Ear plugs with earpiece transducers fitted, but TTS either switched "Off" at the Electronics Unit, or otherwise not working ("PIHP OFF")
- d) Ear Plugs with earpiece transducers fitted, TTS switched "On" and working. ("PIHP ON")

PIHP Safety Instructions

PIHP Ear Plugs - Not to be used "OPEN".

Users are not to use PIHP ear plugs in the "OPEN" configuration (without lanyard stoppers or earpiece transducers fitted) as they do not provide hearing protection against either impulse noise, e.g. weapon firing, or continuous noise, e.g. in AFVs.

PIHP - Radio Volume to be reduced

Users are to adjust PRR or other radio volume to as low a level as possible while retaining communications.

PIHP Safety Warnings

PIHP - Audio Situational Awareness.

Users are to be aware that the Racal PIHP system will only provide audio situational awareness and hearing protection when the complete system (ear plugs, earpiece transducers and TTS Electronics Unit) is correctly worn, correctly connected, a functioning battery is correctly fitted and TTS is switched ON.

PIHP - Loss or Impairment of Audio Situational Awareness.

Users are to be aware that use of PIHP will affect the user's ability to hear and assess sounds from the surrounding environment, e.g. orders, warnings or the sound of incoming fire. This may lead to increased hazards to users.

PIHP - Training and Familiarisation.

Users are to be aware that training and familiarisation in the use of PIHP are essential to enable users to become used to the effects of PIHP on their audio situational awareness.

PIHP - Reliability.

Users are to be aware that PIHP reliability has not yet been fully proven.

PIHP - Radio Volume

Users are to be aware that radio voice traffic volume is not limited by PIHP and may easily exceed the permissible noise exposure limits. The reduction of background noise by PIHP should allow effective radio communications at lower radio volume. Users should therefore adjust PRR or other radio volume to a low level when first switched on and whenever possible thereafter.

PIHP - Continuous Noise

Users are to be aware that PIHP "ON" will provide less hearing protection than when "OFF" or "STOPPED". User are recommended either to switch PIHP "OFF" or to use additional hearing protection whenever possible against high levels of continuous noise, e.g. in helicopters, AFVs and heavy 'B' military vehicles.