

TO: Chairman and Members

DATE: March 14, 2013

**SUBJECT: Guidelines for Hearing Abilities of
Local Adult and Juvenile Corrections Officer Applicants**

AGENDA ITEM: J

RESOURCE PERSON: Shelley Montgomery

**ACTION:
INFORMATION: X**

Summary:

This information item is included to inform the Board of State and Community Corrections about research and findings for the development of hearing guidelines for local Adult and Juvenile Corrections Officer applicants.

Background:

The hearing guidelines for entry-level Adult and Juvenile Corrections Officers were last updated in 1987. To establish new hearing guidelines, the Standards and Training for Corrections (STC) Program took the following actions:

- Supplemented existing job analyses with research that supplied additional information on hearing-critical job functions and activities that represent the current jobs.
- Incorporated scientific advances in research methods related to hearing abilities to produce a guideline supported by strong empirical evidence.
- Measured and recorded background noise in a representative sample of local jails and juvenile detention facilities.
- Utilized advanced, standardized statistical methods for analyzing workplace noise environments to determine their impact on hearing-critical job functions.
- Incorporated recent methods to test hearing ability, especially as they relate to speech communication in quiet and in noisy environments.
- Supplemented the methods used to test hearing ability so that individuals with auditory prostheses (hearing aids, cochlear implants, and other devices) can be tested.

Findings:

Highlights of the research findings are as follows:

- Both Adult and Juvenile Corrections Officers must rely on effective speech communication to perform hearing-critical job functions such as responding to a variety of disturbances and emergencies, communicating orally with detainees or other Corrections Officers, and coordinating movements with other officers.

- Speech communication is a frequently used and demanding job function in jails and juvenile detention facilities.
- Over half the cues for detecting incidents and emergencies involve hearing.
- Hearing-critical functions are performed during all shifts.
- Background noise levels in local detention environments average between 65 dB(A) and 80 dB(A). This is comparable to the noise levels in a noisy restaurant.
- The likelihood of effective speech communication in local detention noise environments for a person with normal hearing is compromised.
- Even small reductions in effective speech communication caused by hearing impairment can have substantial adverse consequences because effective communication is already made difficult by the background noise levels in jails and juvenile detention facilities.
- Measures of speech recognition in noise are better predictors of functional hearing abilities used by Adult and Juvenile Corrections Officers to than previous measures based on pure-tone audiometry.

Screening Test and Guideline:

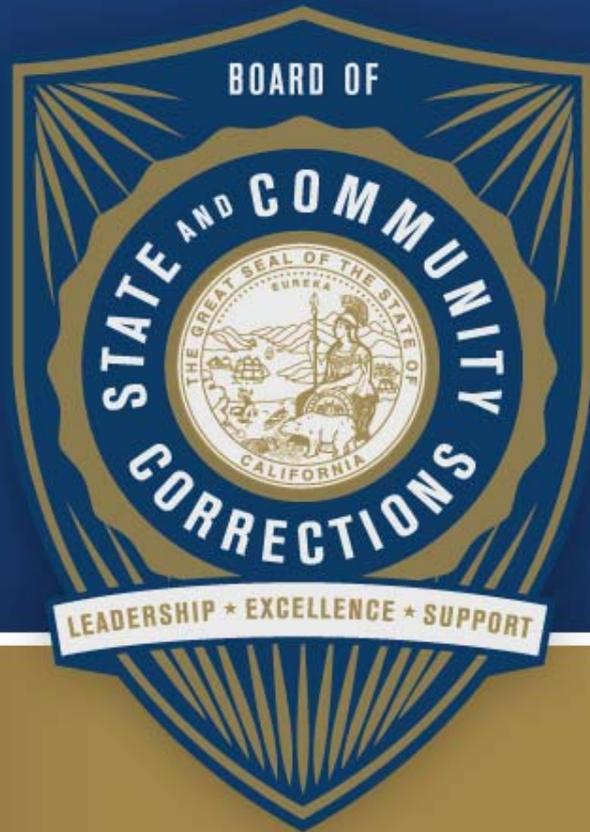
The most appropriate and valid test for evaluating the functional hearing ability of applicants for the Adult and Juvenile Corrections Officer position is the Hearing in Noise Test (HINT). The HINT provides better objective prediction of an applicant’s ability to perform hearing-critical job functions than do measures of hearing sensitivity obtained with other methods such as pure-tone audiometry.

The new guideline is based on measures of speech recognition in quiet and in a background noise condition that is representative of the levels existent in the Adult and Juvenile Corrections Officer’s workplace.

Recommendation/Action Needed:

Information only

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Hearing Guidelines for Entry-Level Corrections Officers

Local Detention Facilities

Adult Corrections Officer

- Detention Officer
- Correctional Officer
- Deputy Sheriff (Jail)
- Police Officer (Jail)

Juvenile Corrections Officer

- Juvenile Counselor
- Group Supervisor
- Detention Officer
- Youth Supervisor



Reasons for Update

- Changes in job
- Changes in work environment
- New technologies for testing
- New technologies for treating hearing loss



Criteria for Guidelines

- Nexus between job and screening criteria
- Legally defensible
- Most accurate test technologies
- Practical to administer
- Applicable with auditory prostheses



Research Strategy

- 1) Identify hearing-critical (HC) job functions
- 2) Determine most important hearing abilities
- 3) Assess impact of background noise
- 4) Assess impact of hearing impairment
- 5) Select screening tests
- 6) Select selection criteria



Hearing-Critical Job Function

Definition:

No other sense modality or behavioral adaptation can substitute for hearing.

Example:

“Man Down”



Sources of Information

- Job analyses
- Incident reports
- Interviews with incumbents and supervisors
- On-site observations
- Measurement of noise levels



Job Analysis

HC job functions (examples):

1. Question detainees
2. Respond to auditory messages

Equipment (examples):

1. Personal alarm
2. Radio



Incident Reports

- 400 Reports, 27 juvenile facilities
- 424 Reports, 29 adult facilities
- Most common locations, times



Incumbent Interviews

- 24 JCOs; 24 facilities; 101 examples
- 36 ACOs; 36 facilities; 179 examples
- Structured questions and discussions



Interview Questions

- Speech and non-speech sounds
- Volume, distance, visibility
- Level of background noise
- Locations, times
- Consequences



HC Job Functions

- When: all shifts
- Locations: housing and detainee movement
- Over 50% job functions involve hearing
- Over 50% hearing functions involve speech



Speech Communication

- Over 50% during routine day and emergencies
- Vocal effort: Usually raised or loud
- Repetition: Commonly relied upon



Incumbent Descriptions

Noise Levels	Juvenile	Adult
Quiet	26%	12%
Moderate	56%	60%
Noisy	18%	28%



Focus: Speech Communication

- Speech communication most demanding
- If speech communication ok, other hearing ok
- National standards to measure speech communication



Background Noise Measurements

Sample:

- Geographical regions
- Size (rated capacity)
- Locations, times
- Male and female facilities
- All security levels



- 28 juvenile halls and camps; 36 jails
- 124 recordings (J); 185 recordings (A)



Background Noise Findings

- Average 65 dB to over 80 dB
- Like noisy restaurant
- Speech communication difficult over 85 dB



Hearing Impairment

- Local facilities noisy places
- Demanding even with normal hearing
- Speech repetition often required



80 dB, loud voice, short distance

Effective speech communication

- Likelihood w/normal hearing = 95%
- Likelihood w/ moderately impaired hearing = 55%



The Guideline

- Understand Speech Communication in Quiet
- 27 dB (A)
- Understand Speech Communication in Noise
- 61 dB (A)



Hearing In Noise Test (HINT)

- Best technology for measurement of speech communication in quiet and in noise
- Strongest link to functional hearing
- Good reliability and sensitivity



Conclusion

Strong nexus:

- **Job**
- **Guideline**
- **Method of Testing**

