Audiometric Test Booth Certification Form

Command Owning Booth: _____ Date: _____
☐ Shore Stationary Booth ☐ MOHCAT/MOHCAV Booth
☐ Shipboard Booth ☐ Pier-side/Cold Iron ☐ Pier-side/Lit-Off ☐ Underway Speed: ____ (knots)
Booth Location (Bldg/Rm/Space): _____ Single/Double Wall: _____
Booth Manufacturer: _____ Serial/Prop #: _____
Booth Lights (On/Off): _____ Booth Fan (On/Off): _____

Types of Audiometric Testing	**Octave Band Center Frequency (Hz) *Max SPL allowed (dB)**							****Certified** to conduct this type of audiometric testing **(Yes/No)**
	125	**250**	**500**	**1000**	**2000**	**4000**	**8000**	
Medical Surveillance Testing (Ears Covered) - HCP (2215/16), physical exams, PHA's, etc	N/A	N/A	27	29	34	39	41	
Diagnostic Audiology Testing (Ears Covered) - Headphones or insert phones	39	25	21	26	34	37	37	
Diagnostic Audiology Testing (Ears Not Covered) - Sound field testing or bone conduction testing	35	21	16	13	14	11	14	
SPL Measured Inside Booth (dB)								

SPL Measured Outside the Booth (Info Only): (dBA): _____ (dBC) : _____

Field Pre-Calibration (Ref dB/Measured dB): _____/_____ ☐ PASS ☐ FAIL
Field Post-Calibration (Ref dB/Measured dB) : _____/_____ ☐ PASS ☐ FAIL

EQUIPMENT DATA	**Manufacturer**	**Model #**	**Serial #**	**Cal Date**
SLM				
Microphone				
Octave Band Filter				
Calibrator				

Comments/Notes:

_____

Certifier Name (Print) Signature Command Phone

* Max permissible ambient noise level (MPANL) criteria per ANSI S3.1, 1999 (R2008) and DODI 6055.12 (03 Dec 2010)
****** Any significant new noise (inside or outside the booth) or relocation of the booth requires recertification

Basic Procedures for Audiometric Booth Certification

Refs: (a) NMCPHC TM6290.91–2 Rev. B IHFOM, Chapter 5
(b) NMCPHC TM6260.51-99-2 Navy Medical Department HCP Procedures dtd 15 Sep 2008

Background Information

- All audiometric booths require, at minimum, annual certification (365 day interval).
- Coordination with an Audiologist is critical to clearly identify what type(s) of audiometric testing is conducted in the booth, as there are three distinct approval criteria depending on booth purpose.
- If audiology testing will be conducted down to -10 dB hearing level (HL), then ambient noise levels in the booth must be at least 3 dB lower than maximum permissible ambient noise levels (MPANLs).

Procedures

- At a minimum, a Type I sound level meter with octave band filter/analyzer is required. The SLM, OBA and microphone must be capable of measuring at least 3 dB below the applicable criteria "Max SPL" values listed in the table on the certification form. Frequently, SLM, OBA and microphone ensemble will not meet this stringent criteria specified for "Diagnostic Audiology Testing, Ears Not Covered (sound field & bone conduction testing). The SLM, OBA, microphone, and calibrator must each have been professionally calibrated within one year.
- Obtain measurements inside the booth during normal operational conditions during activity levels that are representative of anticipated use conditions, including internal conditions (lights and ventilation turned on).
- Take readings at all frequencies listed on the form, measuring one octave below the lowest frequency to be tested. For example, record the sound pressure level at 125 hertz (Hz) if the clinician tests at 250 Hz and above.
- Perform pre and post-field calibration of the sound level meter.
- Obtain octave band readings in the "Linear" or "All Pass" setting, slow response mode. Significant errors occur if the "A" weighting network is engaged.
- Sit in the patient's chair with sound level meter held away from your body at head height.
- Select the desired octave band, dial in slow response, and take the reading. Record results for each required octave band.
- For multiple station booths, check levels at seats closest and furthest from the door, and record the higher values.
- Have someone talk outside the booth to see if the booth is certifiable under that condition. If external conversation precludes valid testing, annotate this on the certification form.
- Record all values, and document all equipment data on the form. Sign, date, and post the certification on the exterior of the booth or on an adjacent wall. Retain a file copy.
- For MOHCAV/MOHCAT booths, follow same procedures as above. Conduct certification procedure at the location most often used (the major customer). Realistic external noise/activity should be in effect for an accurate and meaningful certification.
    - It is impractical to re-certify mobile booths each time they are moved to a different location, however, readings may be taken at each of the primary customer locations.
    - Occasional cross-traffic, generators, flyovers, and small crafts pier-side all have the potential to invalidate test results. Some alternatives to ensure test validity:
        - Conduct/document booth certification at each prospective test location in worst case conditions
        - Do a test audiogram (on a normal listener) at each location prior to beginning patient care
- Shipboard booths that were certified pierside cannot be used underway until they have been evaluated under representative underway conditions. Type of conditions should be annotated.
- Any significant new noise (inside or outside of the booth) or relocation of the booth requires recertification.

Troubleshooting Non-Certifiable Booths

- If low frequencies fail certification, re-check ambient levels with the fan turned off. If fan noise is determined to be the problem, then initiate fan repair or replacement.
- Electrical lighting may be a source for low frequency noise in the form of 60-cycle hum, with harmonics migrating into the 500 Hz test range. Initiate repair or replacement
- Leaks may be occurring around the jack panel. Sound attenuating material should be carefully packed around the wiring to seal the opening. Contact Biomedical Repair staff to conduct continuity checks and clean/replace jacks and plugs as needed.
- Door seal problems may occur due to hardened or worn out foam seals. These can be replaced. The door may also be hung improperly.
- If the above actions do not solve the problem, consider removing/relocating external noise sources, relocating the booth, adding vibration dampers aboard ship, or obtain a replacement.
- Evaluate internal noise sources (chairs/stools, privacy curtains, etc.). Carpeting/rubber mats may dampen noise.