AUDIOMETRIC TEST BOOTH CERTIFICATION SURVEY

IH UIC:	**Activity:**	**UIC:**	**Field Office:**
Bldg./HULL#:	**Shop Location:**	**Shop Code/Name:**	
☐ **Shore Stationary Booth**	☐ **MOHCAT/MOHCAV Booth**	☐ **Shipboard Booth**	
☐ **Pier-side/Cold Iron**	☐ **Pier-side/Lit-Off**	☐ **Underway**	**Speed (knots):**
Booth Manufacturer:	**Serial/Prop #:**		
Booth Location (Bldg./Rm/Space):	**Walled:**	**Booth Lights:**	**Booth Fan:**

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) – supra-aural headphones	35	25	21	26	34	37	37	
Diagnostic Audiology Testing (Ears Covered) – insert earphones	59	53	50	47	49	50	56	
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)								**DOEHRS Sample #**

SPL Measured Outside the Booth (Info Only):	**(dBA):**	**(dBC):**
DOEHRS Sample #		

Field Calibration: Pre-Calibration Date _____ **Time:**_____ **Date:**_____
Field Calibration: Post-Calibration Date:7/10/25 **Time:**_____ **Date:**_____
Field Calibration OK: _____ **Field Calibrated By:** _____

Equipment Data	**Manufacturer**	**Model #**	**Serial #**	**Cal Date**
SLM				
Microphone				
Octave Band Filter				
Calibrator				

Signature Date

* Max permissible ambient noise level (MPANL) criteria per ANSI S3.1, 1999 (R2018) and DODI 6055.12, Latest Edition
****** Any significant new noise (inside or outside the booth) or relocation of the booth requires recertification

Basic Procedures for Audiometric Booth Certification

References: (a) NMCPHC TM6290.91, Latest Edition. Industrial Hygiene Field Operations Manual, Chapter 5
(b) NMCPHC TM6260.51-99, Latest Edition. Navy Medicine Hearing Conservation Program Technical Manual
(c) American National Standards Institute. 2018.American national standard maximum permissible ambient noise levels for audiometric test rooms (ANSI/ASA S3.1-1999 (R2018)
(d) Chung, K. 2023. Calibration matters: I. Sound level meter basics. *Journal of Communication Disorders*, *101*, 106300. https://doi.org/10.1016/j.jcomdis.2022.106300

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 four distinct approval criteria depending on booth purpose.

Procedures

- Obtain the appropriate instrumentation - at a minimum, a Type I sound level meter with a 1/1 octave band filter/analyzer is required. The SLM, OBA and microphone shall have a self-noise more than 3 dB below the applicable criteria "Max SPL" values listed in the table on the certification form. If the measured ambient noise is between 10 and 3 dB greater than the self-noise of the SLM, OBA, and microphone, an appropriate correction accounting for the instrumentation self-noise shall be applied. (see below).
- Frequently, SLM, OBA and microphone ensemble will not meet these 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.
    - If the criteria "Max SPL" value is 10 dB or higher than the self-noise level, no correction factor is needed.
    - When the self-noise level is between 3 and 10 dB of the criteria "Max SPL" value, the following actual ambient noise level calculation should be applied: $L_{ActualAmN} = 10 \log(10^{MeasuredAmN/10} - 10^{SLMSelfN/10})$, dB SPL; where:
        - **$L_{ActualAmN}$:** represents the actual ambient sound level generated by the background, corrected for the instrument's self-noise.
        - **MeasuredAmN:** represents the total ambient noise level measured including the instrument's self-noise.
        - **SLMSelfN:** represents the self-noise level of the instrument (may require contacting the manufacturer).
- 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 pier side 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.