

The cover features a dark blue background with a series of concentric circles in a lighter shade of blue, creating a ripple effect. A bright blue rounded square in the upper left contains the text 'AUD'. A wavy orange line spans across the middle of the page. The title 'The Audiometer Calibration Handbook' is written in large white font, with a subtitle in smaller blue font below it. At the bottom, the publisher and date information is provided in white text.

AUD

The Audiometer Calibration Handbook

ANSI/ASA S3.6-2025, OSHA 1910.95, and a defensible
hearing-conservation program

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The Audiometer Calibration Handbook

ANSI/ASA S3.6-2025, OSHA 1910.95, and a defensible hearing-conservation program

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This e-book is editorial and educational commentary published by the BiomedRx network in July 2026. It summarizes publicly reported standards and regulatory developments as an aid to health-technology-management professionals; it is not legal, clinical, or compliance advice, and it does not replace the primary standards, manufacturer service manuals, or the judgment of a qualified clinical-engineering professional. Regulatory requirements change; always verify against the current edition of any cited standard. No statement here should be read as a guarantee of accreditation outcome or clinical result.

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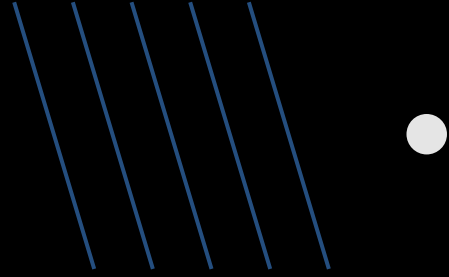
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Foreword

Equipment does not fail politely. It drifts, it degrades, and it usually chooses the worst possible moment to remind you that maintenance is not paperwork — it is patient safety. This field guide exists because occupational audiometry sits at exactly that intersection, where a quiet calibration drift or a skipped preventive-maintenance visit can become a clinical event.

Everything in these pages is grounded in the standards and regulatory developments in force as of July 2026. We have tried to write the book we wish we'd had on our first solo service call: specific, checklist-driven, and honest about the difference between what the standard requires and what good practice adds on top.

Read it front to back once, then keep it on the bench. The checklists at the end of each chapter are meant to be photocopied, argued with, and improved for your own facility.

Chapter 1 — Why Calibration Is the Whole Game

An audiogram is a legal and clinical record. If the audiometer that produced it was out of calibration, every threshold on that record is suspect — and standard threshold shifts, the trigger for intervention and recordability, become impossible to defend. Calibration is not a maintenance chore adjacent to the hearing program; it is the foundation the entire program stands on.

This handbook treats calibration as a cadence, not an event: something checked daily, verified annually, and proven exhaustively on a two-year rhythm.

Field Checklist

- Establish a daily functional-check routine
- Schedule annual and biennial calibrations
- Keep calibration certificates with the audiograms

Chapter 2 — ANSI/ASA S3.6-2025: Stability as a Feature

The 2025 revision of ANSI/ASA S3.6 reaffirms the existing performance and calibration specifications for audiometers without introducing new technical changes. For program managers this is good news: reference equivalent threshold levels do not move, existing calibration protocols remain valid, and there is no scramble to re-baseline.

The right response to a stable standard is not complacency but consolidation — use the stability to tighten documentation, retrain staff, and close gaps that a moving target would have hidden.

Field Checklist

- Confirm your calibration house certifies to S3.6-2025
- Verify transducer reference levels are current
- Document that protocols remain unchanged

Chapter 3 — The OSHA 1910.95 Cadence

OSHA's hearing-conservation appendix defines three rhythms. A functional (biological) check before each day of testing compares the audiometer against a person with a known, stable audiogram; a shift of 10 dB or more at any frequency must be investigated before testing continues. A periodic exhaustive calibration checks output levels, frequency accuracy, attenuator linearity, and signal purity. And an electroacoustic calibration to ANSI/ASA S3.6 is performed at least every two years.

The daily check is the cheapest and most powerful of the three. It costs five minutes and catches the failures that would otherwise silently corrupt a day of testing.

Field Checklist

- Daily: biological check, investigate any 10 dB shift
- Annually (or after repair): exhaustive calibration
- Biennially: full electroacoustic calibration to S3.6
- Log every check with date, listener, and result

Chapter 4 — The Test Environment

A perfectly calibrated audiometer in a noisy room still produces bad data. Background sound-pressure levels must be low enough not to mask the test tones, and the booth, cushions, and transducers all contribute to the measurement. Calibration and environment are two halves of the same obligation.

Measure the booth, don't assume it. Ambient noise creeps up as HVAC ages and as the building around the booth changes.

Field Checklist

- Verify background noise levels in the booth
- Inspect cushions and transducer seating
- Confirm booth door seal and ventilation noise

Chapter 5 — Standard Threshold Shifts and Recordability

The entire occupational purpose of audiometry is to detect standard threshold shifts early enough to intervene. That only works if the instrument is trustworthy and the baseline is sound. Calibration discipline and STS detection are therefore inseparable: a calibration failure can manufacture a shift that isn't there, or hide one that is.

When a shift appears, rule out the instrument before you conclude anything about the worker.

Field Checklist

- Confirm calibration status before confirming an STS
- Re-test to rule out temporary threshold shift
- Document the instrument's calibration at test time

Chapter 6 — Recordkeeping That Survives an Audit

A defensible program can produce, for any audiogram, the calibration certificate in force at the time, the daily check for that day, and the technician's credentials. If any of those three is missing, the audiogram is vulnerable. Build the records so they are retrievable by date, not buried by volume.

Store calibration certificates and daily checks alongside the audiograms they validate, not in a separate binder nobody opens.

Field Checklist

- Link each audiogram to its calibration record
- Retain daily checks by date
- Keep technician certifications current

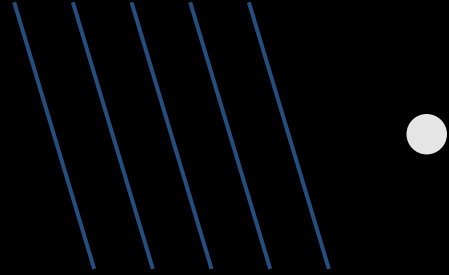
Chapter 7 — Running a Multi-Site or Mobile Program

Mobile and multi-site testing multiplies the calibration challenge: transducers travel, environments vary, and daily checks are easy to skip under schedule pressure. The programs that hold up are the ones that make the daily check non-negotiable and route calibration on a fixed calendar regardless of location.

Distance and schedule pressure are where hearing programs quietly fail. Systematize the daily check and the rest follows.

Field Checklist

- Standardize the daily check across all sites
- Route calibration on a fixed calendar
- Track transducer moves and re-checks



Conclusion: The Discipline of Boring Excellence

The best maintenance programs are boring. Nothing dramatic happens because the dramatic things were prevented three visits ago. The daily check that catches a 10 dB shift, the trend line that flags a tired membrane before it fails, the PM sticker that is current when the surveyor walks in — none of these make headlines, and that is precisely the point.

Regulators in 2026 are converging on the same message from different directions: show us the outcome, not just the binder. Joint Commission's consolidated Physical Environment chapter, CMS's continued scrutiny of the Conditions for Coverage, and FDA's servicing-versus-remanufacturing line all reward programs that can demonstrate — with data and disciplined records — that equipment is safe and ready.

Build the boring machine. Document relentlessly. Trend before you fail. That is the whole job, and done well, it is a genuine competitive advantage.

References & Sources

All developments summarized in this guide are grounded in the following publicly reported standards and rules, current as of July 2026:

1. NFPA 99, Health Care Facilities Code — current 2024 edition; 2027 edition in development (National Fire Protection Association).
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5. The Joint Commission, 2026 Comprehensive Accreditation Manual for Ambulatory Care (CAMAC), released Oct 15, 2025.
6. ANSI/ASA S3.6-2025, Specification for Audiometers; OSHA 29 CFR 1910.95 Occupational Noise Exposure.
7. FDA, Remanufacturing of Medical Devices — Final Guidance (2024); FY2026 appropriations report language.