

Occupational Noise Exposure for Railroad Operating Employees

Railroad Safety Advisory Committee
(RSAC) Presentation

May 20, 2003

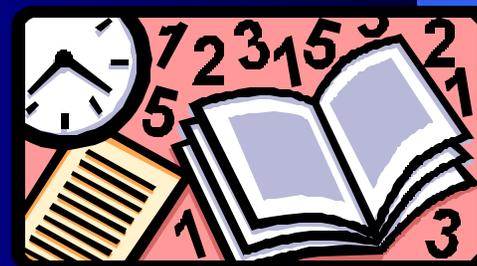
by

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History of Issue

- FRA's Current Noise Standard,
 - 49 CFR 229.121
- OSHA's General Industry Standard,
 - 29 CFR 1910.95
- Legislation/Report to Congress
- RSAC Working Group



FRA's Current Locomotive Noise Standard

Section 229.121 - Locomotive Cab Noise

- Promulgated in 1980.
- Limits employee noise exposure to an 8 hour TWA of 90 dB(A), with a 5 dB(A) doubling rate.
- Provides for upper limit of 115 dB(A).
- Establishes procedures for noise testing.

FRA's Current Locomotive Noise Standard

Section 229.121 - Locomotive Cab Noise

- Does not contain/require:
 - Noise monitoring,
 - Hearing Conservation Program,
 - Employee hearing testing (audiogram),
 - Employee training,
 - Employee Hearing Protection (HP).

OSHA's Occupational Noise Standard

Walsh-Healy Act – passed by Congress and then adopted by OSHA.

Final Rule covering the Hearing Conservation Amendment – 1983.

29 CFR 1910.95 Contains:

- Noise Monitoring, Permissive noise exposure limits, and administrative and engineering controls.
- Hearing Conservation Program with employee audiograms, and training,

Legislation/Report to Congress

- Rail Safety Enforcement and Review Act of 1992.
- Locomotive Crashworthiness and Cab Working Conditions Report to Congress (1996).

History of RSAC Locomotive Cab Working Conditions Working Group

- First Meeting – September 1997.
- Locomotive Sanitation Rulemaking
 - NPRM: January 2, 2001.
 - Final Rule: April 4, 2002.
- Noise Task Force.



RSAC Task Statement

Task Number: 97-2

Purpose: To safeguard the health of locomotive crews and to promote the safe operation of trains.

Noise: Revise existing cab noise limits to take into account current requirements of the OSHA standard, specifically as it relates to hearing conservation provisions. Further, continue efforts to evaluate engineering controls and other measures used to minimize noise exposure in locomotive cabs.

Working Group Members

AASHTO

APTA

ASLRRA

AAR

BLE

IBEW

BMWE (associate member)

Amtrak

RPI

SMWIA

TWUA

UTU

FRA

Summary of Proposed Rule

- Located in a new CFR Part, 227.
- Working Group used OSHA's General Industry regulation, 29 CFR 1910.95 as a model.
- Incorporates the concepts of a Hearing Conservation Program.
- Proposes design, build and maintenance requirements for new locomotives, and maintenance requirements for existing locomotives.

Part 227

Subpart A - General

- 227.1 Purpose and Scope.
- 227.3 Application.
- 227.5 Definitions.
 - Action Level,
 - Baseline Audiogram,
 - Hearing Protector (HP),
 - Standard Threshold Shift (STS), and
 - Time-weighted-average-eight-hour (TWA_8).

Part 227

Subpart A – General (2)

- 227.7 Preemptive Effect.
- 227.9 Penalties.
- 227.11 Responsibility for Compliance.
- 227.13 Waivers.
- 227.15 Information Collection.

Subpart B – Occupational Noise Exposure for RR Operating Employees

227.101 Scope

This subpart shall apply to the working conditions of:

- (1) any person who regularly performs service subject to the provisions of the hours of service law governing “train employees,”
- (2) any direct supervisor of these employees, and
- (3) any other person whose duties require frequent work in the locomotive cab and whose primary noise exposure is reasonably expected to be experienced in the cab...

Subpart B – Occupational Noise Exposure for RR Operating Employees (2)

227.101 Scope

Exceptions:

- (i) employees who move locomotives only within the confines of locomotive repair or servicing areas, i.e., inside hostlers;
- (ii) employees who move a locomotive(s) for distances of less than 100 feet and this incidental movement of a locomotive(s) is for inspection or maintenance purposes, or
- (iii) contractors who operate historic equipment in occasional service.

Subpart B – Occupational Noise Exposure for RR Operating Employees (3)

- 227.103 Noise Monitoring Program.
- 227.105 Protection of Employees.
- 227.107 Hearing Conservation Program
 - For all employees that are exposed to noise at or above the action level.

Subpart B – Occupational Noise Exposure for RR Operating Employees (4)

- **227.109 - Audiometric Testing Program**

- Costs
- Instruments
- Periodic Audiogram
- Evaluation of Audiogram
- Follow-up Procedures
- Revised Baseline
- Standard Threshold Shift
- Tests
- Baseline Audiogram

Subpart B – Occupational Noise Exposure for RR Operating Employees (5)

227.111 Audiometric Test Requirements

- Section is identical to OSHA with the exception of the “exhaustive calibration” of audiometers used in mobile vans which FRA proposes to require annually.

227.113 Noise Operational Controls

- Offers railroads the option of using them when employees are exposed to sound exceeding 8-hour TWA of 90 dB(A).

Subpart B – Occupational Noise Exposure for RR Operating Employees (6)

● 227.115 Hearing Protectors

- Required for employees exposed to noise exceeding an 8 hour TWA of 90 dB(A).
- Made available to all of the employees in HCP at no cost to employees.
- Employee required to use if he/she hasn't had a baseline audiogram or has experienced a Standard Threshold shift.
- Railroad shall provide employees with a variety of suitable HP.
- Railroad shall provide training in the use & care of HP.
- Railroad shall ensure proper fitting & supervise the correct use of all HP.

Subpart B – Occupational Noise Exposure for RR Operating Employees (7)

● **227.117 Hearing Protector Attenuation**

- Railroad should evaluate hearing protector attenuation for the specific noise environments in which the protector will be used.
- Hearing Protector shall attenuate employee exposure to an 8 hour TWA of 90 dB(A) or lower.
- For an employee with an STS the protector must attenuate employee exposure to an 8 hour TWA of 85 dB(A).

Subpart B – Occupational Noise Exposure for RR Operating Employees (8)

- **227.119 Training Program**

- Offered annually and required triennially for all employees included in the HCP.
- Training Program shall include and materials reflect 9 items, including: 5 OSHA training items and 4 additional FRA items.

Subpart B – Occupational Noise Exposure for RR Operating Employees (9)

● 227.121 Recordkeeping

- General Requirements: availability and electronic.
- Exposure measurements: retain at least 3 years.
- Audiometric tests: retain for duration of employment.
- List of persons or positions included in HCP.
- Training materials: maintain copies for 3 years.
- STS Records: maintain annual record of employees that have experienced a STS within the prior year; and retain for 5 years.

Part 229

- 229.5 Definitions
 - Decibel, Excessive Noise Report
- 229.121(a) Performance Standards for Locomotives
- 229.121(b) Equipment Maintenance
- Appendix H Static Noise Test Protocols - In-Cab Static Measurement Procedure

Part 229 (2)

Performance Standards for Locomotives

- Section 229.121(a)(1)
- New locomotives manufactured after January 1, 2005 shall average less than or equal to 85 dB(A)...
 - Railroads may rely on certification from the equipment manufacturer.
 - Manufacturer may determine compliance by testing a representative sample of locomotives or an initial series of locomotives.

Part 229 (3)

Performance Standards for Locomotives

- **Section 229.121(a)(2)**
 - Maintenance of new locomotives.
- **Section 229.121(a)(3)**
 - Requirement to follow the static test protocols in Appendix H to determine compliance with paragraph (a)(1).

Part 229 (4)

Section 229.121(b) Equipment Maintenance

- If an *excessive noise report* is filed, then RR should maintain a record, and repair as noted.
- Items that may lead to an excessive noise report include: defective cab window seals, defective cab door seals, broken or inoperative windows, deteriorated insulation, broken or inoperative doors, and air brakes that vent inside the cab.

Part 229 (5)

- **Section 229.121(b) Equipment Maintenance (continued)**
 - A railroad meets its obligations if it makes a good faith effort to identify the cause and repair item.
 - Maintenance Records: maintain written or electronic records of repair that is also part of a system that is auditable.

Appendix H – Locomotive Static Noise Test Procedures

- Appendix H Task Force was established in July 2002.
- Completed Appendix with Task Force Agreement in November 2002.
- Members:
 - BLE, UTU
 - AAR, Amtrak, UP, EMD, CSX
 - FRA, Volpe Center

Appendix H – Locomotive Static Noise Test Procedures (2)

- **Measurement Instrumentation**
 - Use Type 1 iSLM, if not available then may use a Type 2 iSLM.
- **Test Site Requirements**
 - Test site shall follow requirements including:
 - no large reflective surfaces within 25 feet;
 - windows and doors closed; and
 - HVAC system operating on high . . .

Appendix H – Locomotive Static Noise Test Procedures (3)

● Procedures for Measurement

- Metric is the L_{av} , using a 5 dB exchange rate and set for A-weighting.
- Measurements taken at 4 locations.
- Locomotive shall be tested under self-loading conditions if so equipped. If not then an adjustment of 3 dB is added to the measured level.

Appendix H – Locomotive Static Noise Test Procedures (4)

- **Procedures for Measurement (continued)**
 - Measurements taken at the highest horsepower or throttle setting.
 - The highest of the four L_{av} shall be used for compliance purposes.
 - If a locomotive fails to meet the requirements then it can be re-tested.

Appendix H – Locomotive Static Noise Test Procedures (5)

● Recordkeeping

- Records shall be maintained to demonstrate compliance, and they may be written or electronic.
- Records are required to maintain items, including: description of locomotive being tested, description of iSLM being used to conduct the test, the recorded measurements at each test location, and if a locomotive fails a test and is retested – the suspected reasons for the failure.

Current Status of draft NPRM

- FRA completed current draft for Working Group vote on April 29, 2003.
- Working Group voted on May 16, 2003.
- Full RSAC presentation May 20, 2003.



Next Step:

- Full RSAC Vote – June 2003.
- Publish NPRM in *Federal Register* by September 2003.
- 90 day comment period.



After NPRM:

- FRA to collect Public Comments.
- FRA to return to Working Group and Full RSAC.
- Publish Final Rule (2004).



Questions ???



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RSAC Presentation: Occupational
Noise Exposure NPRM

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