

ILLINOIS POLLUTION CONTROL BOARD
September 4, 2003

IN THE MATTER OF:)
)
NOISE RULE UPDATE:) R03-8
AMENDMENTS TO 35 ILL. ADM.) (Rulemaking - Noise)
CODE 900 AND 903)

Adopted Rule. Final Order.

OPINION AND ORDER OF THE BOARD (by M.E. Tristano and W.A. Marovitz):

Pursuant to 35 Ill. Adm. Code Part 102 Subpart B and Sections 27 and 28 of the Illinois Environmental Protection Act (Act), 415 ILCS 5/27/28 (2002), the Illinois Pollution Control Board opened this rulemaking to amend and update the Board's noise rules in Noise Rule Update: Amendments to 35 Ill. Adm. Code 900 and 903, R03-8 (Sept. 19, 2002).

The noise rules affected are set forth at 35 Ill. Adm. Code 900 and 903. These are general provisions dealing with the definitions of acoustical terminology, prohibition against noise pollution, and sound measurement procedures. The proposed changes involve the updating of definitions and sound measurement procedures. The Board adopted these definitions and measurement procedures in 1973 in Noise Pollution Control Regulations, R72-2 (July 31, 1973), and modified them in 1987 in General Motors Corp. Proposed Amendments to 35 Ill. Adm. Code 900.103 and 900.104, R83-7 (Jan. 22, 1987). In 1987, the Board modified the regulations by adding a one-hour equivalent sound averaging period based on General Motors Corporation's proposal. The bases for the changes proposed in this rule are: extensive research conducted by the Board and the Department of Energy and Natural Resources¹ from 1986-1991 and the American National Standards Institute updates from the years 1998-2001.

The Board also proposes to repeal Part 903, which specifies rules and regulations for the control of noise from motor racing facilities. Since the adoption of these rules, Section 25 of the Act has been modified to exclude organized sporting events, including motor racing facilities from the Board's noise regulations. 415 ILCS 5/25 (2002).

The instant rulemaking is closely associated with the recently opened docket Proposed New and Updated Rules for Measurement and Numerical Sound Emissions Standards Amendments to 35 Ill. Adm. Code 901 and 910, R03-9 (Feb. 20, 2003). R03-9 revises outdated numerical sound emission standards for property line noise sources found at 35 Ill. Adm. Code Parts 901 and adds Part 910 to the Board's rules that incorporates noise measurement techniques currently contained only in Illinois Environmental Protection Agency (Agency) rules at 35 Ill. Adm. Code 951.

¹ In 1995, the Department of Natural Resources Act P.A. 89-50 (eff. July 1, 1995) (20 ILCS 5/801 *et seq.* (2002)) merged DENR into the Department of Natural Resources.

By today's action the Board adopts the proposed amendments. The rules offered for adoption are unchanged from those accepted by the Board's April 3, 2003 proposed second-notice opinion and order. Notice Rule Update: Amendments to 35 Ill. Adm. Code 900 and 903, R03-8.

PROCEDURAL HISTORY

The Board issued a proposal for public comment on October 3, 2002. Noise Rule Update: Amendments to 35 Ill. Adm. Code 900 and 903, R03-8 (Oct. 3, 2002). The Board elicited comments from the public and those involved in prior rulemakings involving noise regulation. Individuals who were on the notice list were sent drafts of the rule and the hearing dates. In addition, the proposed rule was posted on the Board's website. The Board has held three hearings in this matter. The first hearing was held in Chicago on November 7, 2002, and the second hearing was held in Springfield on November 21, 2002. There were no members of the public in attendance at the hearings. The Board received one comment from the Agency on December 12, 2002 (PC 1). On December 19, 2002, the Board adopted the proposal for first notice.² Finally, a hearing was conducted in Chicago on May 15, 2003, regarding the economic reasonableness and technical feasibility of the rule. The first-notice proposal was published at 27 Ill. Reg. 1889 (Feb. 7, 2003), and the first-notice comment period closed March 24, 2003.

The Board received seven public comments since the Board issued the proposal. The public comments are PC 1 and 5 filed by Kyle Rominger of the Agency; PC 2 filed by Paul Schomer of Schomer and Associates; PC 3 filed by Greg Zak of Noise Solutions; PC 4 filed by Thomas Thunder of Acoustic Associates, Ltd.; PC 6 filed by Joel Sternstein of the Attorney General's Office for George Kamperman of Kamperman Associates Inc.; and PC 7 filed by Joel Sternstein of the Attorney General's Office. The comments were generally supportive but did raise important issues which the Board will address later in this opinion.

On April 3, 2003, the Board determined that due to the significant modifications made to the proposed rulemaking during first notice, a pre-second notice comment period of 45 days should be opened. All parties to the service list and commentors were given a copy of the Board's revised proposal. The Board also published the modified rule on its website. The Board received no comments during the comment period.

The Joint Committee on Administrative Rules (JCAR) extended the second-notice period on July 14, 2003 for an additional 45 days to assume the Board could adequately address a committee members questions. Board Chairman Johnson did so through a letter written on July 30 and JCAR issued a "No objection to Rulemaking" certification on August 17, 2003.

² Noise Rule Update: Amendments to 35 Ill. Adm. Code 900 and 903, R03-8 (Dec. 19, 2002). First notice publication occurred in the *Illinois Register*, February 7, 2003, at 1889 *et seq.* and 1909 *et seq.*

The Board adopted the proposed rule for second notice, pursuant to the Illinois Administrative Procedure Act (5 ILCS 100/1-1) on June 5, 2003. No comments were received during the additional public comment period of 45 days afforded this rule after the first notice period.

PROPOSAL OVERVIEW

The noise rules affected are set forth at 35 Ill. Adm. Code 900 and 903. These are general provisions dealing with the definitions of acoustical terminology, prohibition against noise pollution, and sound measurement procedures. The proposed changes involve the updating of definitions and sound measurement procedures. These definitions and measurement procedures were adopted in 1973 and were modified in 1987 in General Motors Corp. Proposed Amendments to 35 Ill. Adm. Code 900.103 and 900.104, R83-7 (Jan. 22, 1987). The most important updates relate to the definition of ambient, intermittent sound, and period of observation. The basis for these changes is the American National Standards Institute (ANSI) updates from the years 1998-2001. The Board also incorporates by reference the ANSI updates.

The Board also proposes to repeal Part 903, which specifies rules and regulations for the control of noise from motor racing facilities. Since the adoption of these rules, Section 25 of the Environmental Protection Act has been modified to exclude organized sporting events, including motor racing facilities from the Board's noise regulations. 415 ILCS 5/25 (2002).

COMMENTS AND MODIFICATIONS

During the first-notice public comment period, the Board noted the need to include three additional definitions and the inclusion of another document by reference. These definitions are discrete tone, highly impulsive sound and the acronym for Land-Based Classification Standards.

Discrete tone: a sound wave whose instantaneous sound pressure varies essentially as a simple sinusoidal function of time.³

Highly impulsive sound either a single pressure peak or a single burst (multiple pressure peaks) for a duration usually less than one second. Examples of impulsive sound sources are a drop forge hammer and explosive blasting.⁴

LBCS: the Land-Based Classification Standards which designate land use functions by means of numeric codes.

³ This definition is taken from the Agency's regulations at 35 Ill. Adm. Code 951.103.

⁴ Due to a typographical oversight, the first-notice opinion and order did not include a definition of impulsive sound. The Board has a current definition of impulsive sound found at 35 Ill. Adm. Code 900.103. Today, the Board includes a definition of "highly impulsive sound" to be consistent with the terminology used in the Board's proposal in Noise Rule Update: Amendments to 35 Ill. Adm. Code 902, R03-9 (Feb. 20, 2003). The Board also includes erroneously omitted definitions for "bus," "motor vehicle," and "IHRA."

Also, to be consistent with Noise Rule Update: Amendments to 35 Ill. Adm. Code 902, R03-9 (Feb. 20, 2003), the Board has incorporated by reference the *International Electrotechnical Commission, IEC 804-2000, Integrating/Averaging Sound Level Meters*.

During the first-notice period, four of the public comments, PC 2, PC 4, PC 6, and PC 7, suggested that the Board incorporate the ANSI S12.9-1993 (R 1998) *American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound, Part 3: Short-term Measurement with an Observer Present*. Mr. Thunder's comment is typical of those received. PC 4. Mr. Thunder notes that the Board has incorporated Part 1 which addressed definitions for standard quantities but does not include Part 3 which is the most relevant American National Standard dealing with the type of measurements and procedures. PC 4 at 2. The Board agreed that it was logical to add Part 3 and modified the proposed rule to include this document as an incorporation by reference at Section 900.106.

Mr. Thunder also suggested that the Board modify the definition of "background sound level" to be congruent to the definition in ANSI S12.9 Part 3. PC 4 at 2. Accordingly, the Board has changed the definition of "background sound level" to "background ambient sound level," with a cross reference to 35 Ill. Adm. Code 910, which sets forth protocols for measuring the background ambient noise. Also, the Board added some clarifying language to the definition of "ambient" at Section 900.103. PC 2 at 2. Mr. Thunder argued that the use of the term "period of observation" within the draft is not fully consistent with current ANSI terminology and suggests that "measurement period" is more appropriate. PC 2 at 2. The Board agreed and made changes to Section 900.103 to reflect the new terminology.

The Agency requested that the Board amend language to 35 Ill. Adm. Code 900.103 and 900.104. PC 1 at 1. The reason for the requested changes was that the Agency no longer operates a noise program. PC 1 at 1. Therefore, the Agency requested that its affirmative obligations and discretionary authority under the Board's noise regulations be repealed. The Board will continue to include discretionary authority in Section 900.103. The Board will not remove the affirmative obligations from Section 900.104. As Section 900.104 contained no changes at first notice, the Board is prohibited from making any changes for second notice. *See* 5/ILCS 100/1-90(b)(1); 1 Ill. Adm. Code 229.600 (a)(3). Subsequent to the publication of second notice on June 20, 2003 no public comments were received or changes made to the Noise rule.

MEASUREMENT PERIOD AND ONE HOUR EQUIVALENT SOUND LEVEL (LEQ) HISTORICAL PERSPECTIVE

The Board adopted its first comprehensive noise regulation on July 31, 1973. Noise Pollution Control Regulations, R72-2 (July 31, 1973). In the Board's opinion in support of the noise regulation, the Board describes the regulation as "designed to protect people in the state from the unreasonable exposure to environmental noise burdens." Noise Pollution Control Regulations, R72-2 (July 31, 1973), slip op. at 20, 36. The limits established in 1973 and contained in Part 900 and 901 as adopted in 1973, calculated the nuisance noise level by taking the maximum sound pressure exerted during the observation period. Noise Pollution Control

Regulations, R72-2 (July 31, 1973), slip op. at 6. Further, the regulations allowed one to define the period of measurement as 24 hours.

General Motors Corporation (GM) filed a petition for modification of the Board's noise regulation on February 24, 1983. GM proposed amendments to 35 Ill. Adm. Code 900.103(b) "Measurement Procedures" applicable to Part 901 to require the use of "one-hour L_{eq} averaging in determining compliance with the regulation." The Board held hearings on the proposal on June 22 and November 22-23, 1983. General Motors Corp. Proposed Amendments to 35 Ill. Adm. Code 900.103 and 900.104, R83-7 (Jan. 22, 1987), slip op. at 1. GM, the Agency and Department of Natural Resources were the only active participants in these proceedings. On November 7, 1985, the Board proposed for first notice these amendments to its rules. Subsequent to publication the Board received three public comments which led to modification of the proposed rule but not the areas addressing L_{eq} or the measurement period. General Motors Corp. Proposed Amendments to 35 Ill. Adm. Code 900.103 and 900.104, R83-7 slip op. at 2. (Jan. 22, 1987).

By amending Section 900.103(b) in 1987, the Board further endorsed the use of ANSI standards and introduced L_{eq} averaging as the statistical measure for measuring noise and established a one-hour measurement period. The Board's decision of 1987 reflected the recognition of enhanced measuring capabilities and the emergence of L_{eq} as the standard sound level measurement. GM was concerned that the longer 24-hour period, prior to Board modification, coupled with an inaccurate equation for determining equivalent sound levels, would overstate fluctuating sound of high intensity. In support of adoption of the L_{eq} , the Board referred to research completed contemporaneous or subsequent to the 1973 rule adoption such as:

- 1) *Public Health and Welfare Criteria for Noise*, published July 27, 1973 by the United States Environmental Protection Agency (USEPA);
- 2) *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, published in April 1974 by the USEPA;
- 3) *Toward a National Strategy for Noise Control*, published in April 1977 by the USEPA's former Office of Noise Abatement and Control;
- 4) *Sound Level Descriptors for Determination of Compatible Land Use*, from ANSI S3.23-1980; and
- 5) *Method for Assessment of High-Energy Impulsive Sounds with Respect to Residential Communities*, from ANSI S12.4-198X (June 1983 Draft).⁵

⁵ General Motors Corp. Proposed Amendments to 35 Ill. Adm. Code 900.103 and 900.104, R83-7 (Jan. 22, 1987), slip op. at 10-11.

Each of these documents provided support that L_{eq} averaging was clearly becoming the standard sound level measure to accurately describe community response to noise. General Motors Corp. Proposed Amendments to 35 Ill. Adm. Code 900.103 and 900.104, R83-7 (Jan. 22, 1987). Once the Board accepted the concept that use of a measurement statistic which averages sound pressure levels as appropriate rather than the maximum sound pressure, the Board needed to address the period of measurement. In 1987, much of the literature spoke about a 24-hour observation period, but the Board concluded that if an averaging method such as L_{eq} were used, then requiring a 24-hour observation for each of the 8 octave bands would be too daunting a requirement. General Motors Corp. Proposed Amendments to 35 Ill. Adm. Code 900.103 and 900.104, R83-7 (Nov. 7, 1985), (Jan. 22, 1987). The Board determined that an observation period of one hour would be a reasonable requirement for enforcement purposes.

During first notice the Board circulated Part 900 without modifying either the use of L_{eq} or the one-hour period of observation for all types of sound measurement. Seven public comments were received suggesting that the Board further enhance its rule to reflect the dichotomy between steady and non-steady sound. The commenters agree that a one-hour measurement period is reasonable when confronted with non-steady sound but excessively lengthy when the potential noise pollution is caused by a steady source. Some suggest a modification of the observation period for steady sound in the range of one minute (PC 3, PC 4), 10 minutes (PC 2), and 30 minutes (PC 4). The Board modified the first notice proposal to reflect a ten-minute measurement period for steady sound; no comments were received from the public during the pre-second notice period. In today's proposal at Section 900.103(b)(1)(B), the Board proposes at least a ten-minute measurement period for steady sound.

The Board agrees to modify the first-notice proposal to reflect a difference in the period of observation for steady and non-steady sound emissions. It accepts the argument that the L_{eq} measurement of steady sound would not be significantly affected by reducing the measurement period.

In addition, the Board received technical and non-substantive comments from the Joint Committee on Administrative Rules which the Board incorporates into the second-notice proposal.

ECONOMIC REASONALBENESS AND TECHNICAL FEASIBILITY OF THE PROPOSAL

During the first notice, the Board received no comments discussing economic reasonableness and technical feasibility of the proposed rule. On April 9, 2003, pursuant to Section 27(b) of the Act (415 ILCS 5/27(b) (2002)), the Board requested that the Department of Commerce and Economic Opportunity (DCEO) conduct an economic impact study on the proposed rule. On April 17, 2003, DCEO responded that does not have staff or budget resources to perform economic impact studies on proposed rulemaking. At the May 15, 2003 hearing on the economic reasonableness and technical feasibility of the proposed rule, the Board provided copies of the DCEO letter and the Board's request. The Board received no comments at hearing or public notice.

CONCLUSION

Based on the record developed to date in this matter, the Board finds adoptions the following update to the Noise Rule, Amendments to 35 Ill. Adm. Code 900 and 903.

ORDER

The Board directs the Clerk to file the following adopted rule with the Secretary of State for publication in the Illinois Register for final notice and adoption in the Illinois Administrative Code.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE H: NOISE
CHAPTER I: POLLUTION CONTROL BOARD

PART 900
GENERAL PROVISIONS

Section	
900.101	Definitions
900.102	Prohibition of Noise Pollution
900.103	Measurement Procedures
900.104	Burden of Persuasion Regarding Exceptions
900.105	Severability
<u>900.106</u>	<u>Incorporation by Reference</u>

APPENDIX A Old Rule Numbers Referenced ~~OLD RULE NUMBERS REFERENCED~~

AUTHORITY: Implementing Section 25 and authorized by Section 27 of the Environmental Protection Act (~~Ill. Rev. Stat. 1985, ch. 111 1/2, pars. 1025 and 1027~~) [415 ILCS 5/25 and 27].

SOURCE: Originally filed as Part 1 of Chapter 8: Noise Pollution, effective August 10, 1973; amended at 2 Ill. Reg. 27, p. 223, effective June 26, 1978; amended at 5 Ill. Reg. 6371, effective June 1, 1981; amended at 5 Ill. Reg. 8533, effective August 10, 1981; amended at 6 Ill. Reg. 10960, effective September 1, 1982; codified at 7 Ill. Reg. 13579; amended in R83-7 at 11 Ill. Reg. 3121, effective January 28, 1987; amended in R03-8 at 27 Ill. Reg. ____, effective _____.

Section 900.101 Definitions

Except as hereinafter stated and unless a different meaning of a term is clear from its context, the definitions of terms used in this Chapter ~~are shall be~~ the same as those used in the Environmental Protection Act. All definitions of acoustical terminology ~~must shall~~ be in conformance with those contained in American National Standards Institute (ANSI) S1.1 §1.1 – 1994 1960 (R1999) “American National Standard Acoustical Terminology:” and S12.9- 1988 (R1998)

“American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound - Part 1,” incorporated by reference at Section 900.106. As used in 35 Ill. Adm. Code 900 through 910 905, the following terms mean:

A-Weighted Sound Level: dB(A), in decibels, a frequency-weighted 10 times the logarithm to the base 10 of the square of the ratio of the A-weighted (and time-averaged) sound pressure level, to the reference sound pressure of 20 micropascal. The frequency and time weighting must be determined by the use of the metering characteristics and A-weighted network specified in accordance with ANSI §1.4-1971 (R. 1976) S1.4-1983 (R2001) “American National Standard Specification for Sound Level Meters”, incorporated by reference at Section 900.106 and the latest revisions thereof. The unit of sound level is the decibel (dB) with the letter (A) appended to the decibel unit symbol to indicate the frequency weighting and written as dB(A).

~~AHRA: American Hot Rod Association or its successor body.~~

Ambient: the all-encompassing sound associated with a given environment without contributions from the noise source or sources of interest.

Angle of incidence: the orientation of the microphone relative to the sound source.

ANSI: American National Standards Institute or its successor bodies.

Antique vehicle: a motor vehicle that is more than 25 years of age or a bona fide replica thereof and which is driven on the highways only going to and returning from an antique auto show or an exhibition, or for servicing or demonstration, or a fire-fighting vehicle more than 20 years old which is not used as fire-fighting equipment but is used only for the purpose of exhibition or demonstration.

~~Background ambient sound level Sound Level: means the ambient sound level the A-weighted sound level, measured in accordance with the procedures specified in 35 Ill. Adm. Code 910. Section 900.103, which is exceeded 90 percent of the time during the period of observation, during which sounds from motor racing facilities are inaudible. The period of observation need not necessarily be contiguous; however, the period of observation must be at least of 10 minutes duration.~~

Bus: every motor vehicle designed for carrying more than 10 passengers and used for the transportation of passengers; and every motor vehicle, other than a taxicab, designed and used for the transportation of persons for compensation.

C-weighted sound level Sound Level: in decibels, a frequency-weighted sound pressure level, determined by the use of the metering characteristics and C-weighted network specified in ANSI document §1.4-1971 S1.4-1983 (R2001. 1976) “American National Standard Specification for Sound Level Meters;,” incorporated by reference at Section 900.106.

Construction: on-site erection, fabrication, installation, alteration, demolition or removal of any structure, facility, or addition thereto, including all related activities including, but not restricted to, clearing of land, earth-moving, blasting and landscaping.

Daytime hours: 7:00 am to 10:00 pm, local time.

dB(A): see "A-weighted sound level ~~Sound Level~~ in decibels."

Dealer: every person engaged in the business of selling vehicles to persons who purchase such vehicles for purposes other than resale, and who has an established place of business for such activity in this state.

Decibel (dB): a unit of measure, on a logarithmic scale to the base 10, of the ratio of the magnitude of a particular sound pressure to a standard reference pressure, which, for purposes of this Chapter, shall be 20 micronewtons per square meter ($\mu\text{N}/\text{m}^2$) or 20 micropascals (μPa).

Discrete tone: a sound wave whose instantaneous sound pressure varies essentially as a simple sinusoidal function of time.

~~Drag racing: any acceleration contest between two racing vehicles racing from a standing start over a precisely measured, straight line course.~~

~~Drag racing facility: any motor racing facility upon which is conducted drag racing.~~

~~Drag racing vehicle: any racing vehicle which is participating in a drag race at a drag racing facility.~~

Exhaust system: the system comprised of a combination of components which provides for the enclosed flow of exhaust gas from engine parts to the atmosphere.

~~Existing motor racing facility: any motor racing facility, the construction of which commenced prior to August 10, 1973.~~

Existing property-line-noise-source: any property-line-noise-source, the construction or establishment of which commenced prior to August 10, 1973. For the purposes of this sub-section, any property-line-noise-source whose A, B or C land use classification changes, on or after August 10, 1973, is shall not be considered an existing property-line-noise-source.

Farm tractor: every motor vehicle designed and used primarily as a farm implement for drawing wagons, plows, mowing machines and other implements of husbandry, and every implement of husbandry which is self-propelled.

Fast Dynamic Characteristic: the dynamic characteristic specified as fast in ANSI §S1.4-1983 1971 (R-2001-1976) “American National Standard Specification for Sound Level Meters,” incorporated by reference at Section 900.106 and the latest revision thereof.

Fast meter response: as specified in ANSI §1.4-1971, S1.4-1983 (R2001) “American National Standard Specification for Sound Level Meters,” incorporated by reference at Section 900.106 or subsequent revisions.

Fluctuating sound: a class of nonsteady sound where sound pressure level varies over a range greater than 6 decibels (dB) with the “slow” meter characteristic, and where the meter indication does not equal the ambient level more than once during the period of observation.

Frequency-weighted sound pressure: root mean square of the instantaneous sound pressure which is frequency-weighted (i.e., filtered) with a standard frequency characteristic (e.g., A or C) and exponentially time-weighted in accordance with the standardized characteristics slow (S), fast (F), impulse (I) or peak, with both weightings specified in accordance with ANSI S1.4-1983 (R2001) “American National Standard Specification for Sound Level Meters,” incorporated by reference at Section 900.106. The frequency weighting used shall be specified explicitly (e.g., A, C or octave band). The unit frequency-weighted sound pressure is the pascal (Pa).

Gross Vehicle Weight (GVW): the maximum loaded weight for which a motor vehicle is registered or, for vehicles not so registered, the value specified by the manufacturer as the loaded weight of the vehicle.

Highly Impulsive Sound: either a single pressure peak or a single burst (multiple pressure peaks) for a duration usually less than one second. Examples of highly impulsive sound sources are drop forge hammer and explosive blasting.

Highway: the entire width between the boundary lines of every way publicly maintained when any part thereof is open to the use of the public for purposes of vehicular travel.

~~Impulsive sound: either a single pressure peak or a single burst (multiple pressure peaks) for a duration usually less than one second. Examples of impulsive sound sources are a drop forge hammer and explosive blasting.~~

IHRA: International Hot Rod Association or its successor body.

Intermittent sound: a class of nonsteady sound where the meter indicates a sound pressure level equal to the ambient level two or more times during the measurement period. The period of time during which the level of the sound remains at a value different from that of the ambient is of the order of one second or more.

LBCS: the Land-Based Classification Standards which designate land use functions by means of numeric codes.

~~L_{eq}~~ ~~L_{eq}~~: equivalent continuous sound pressure level in decibels: 10 ~~ten~~ times the logarithm to the base 10 ~~ten~~ of the ratio of a time mean square sound pressure, during the specified time period, to the square of reference sound pressure. The reference sound pressure is 20 micronewtons per square meter or equivalent continuous frequency-weighted sound pressure.

L_{eq} (A): A-weighted time-average (equivalent-continuous) sound pressure level.

L_{eq} (octave band-Hz): time-average (equivalent-continuous) sound pressure level in the octave band specified by its center frequency e.g. L_{eq} (125-Hz).

Measurement Period: the time interval during which acoustical data are obtained. The measurement period is determined by the characteristics of the noise being measured and must be at least ten times as long as the response time of the instrumentation. The greater the variation in indicated sound level, the longer must be the observation time for a given expected precision of the measurement.

~~Midget racing vehicle~~: a front engine, single seat, openwheel racing car smaller and of lesser engine displacement than standard cars of the type.

~~Motor racing facility~~: any facility or course upon which is conducted motor racing activities or events.

Motor driven cycle: every motorcycle, motor scooter, or bicycle with motor attached, with less than 150 cubic centimeter piston displacement.

Motor vehicle: every vehicle which is self-propelled and any combination of vehicles which are propelled or drawn by a vehicle which is self-propelled.

Motorcycle: every motor vehicle having a seat or saddle for the use of the rider and designed to travel on not more than 3 wheels in contact with the ground, but excluding a tractor.

~~Motorcycle racing~~: any racing event between two or more motorcycles.

~~Motorcycle racing facility~~: any motor racing facility upon which is conducted motorcycle racing, except oval racing facilities or drag racing facilities.

Muffler: a device for abating the sounds of escaping gases of an internal combustion engine.

~~NHRA~~: National Hot Rod Association or its successor body.

~~New motor racing facility~~: any motor racing facility, the construction of which commenced on or after August 10, 1973.

New snowmobile: a snowmobile, the equitable or legal title to which has never passed to a person who purchases it for purposes other than resale.

Nighttime hours: 10:00 pm to 7:00 am, local time.

Noise floor: the electrical noise (in decibels) of the sound measurement system. When the noise floor is determined by placing a calibrator over the microphone of the sound measurement system, the noise floor may include acoustic noise due to leakage around the calibrator.

Noise pollution: the emission of sound that unreasonably interferes with the enjoyment of life or with any lawful business or activity.

Non-steady sound: a sound whose sound pressure level shifts significantly during the measurement period of observation. Meter variations are greater than +/- 3 dB using the "slow" meter characteristic.

Octave band sound pressure level: the sound pressure level for the sound being measured contained within the specified octave band. The reference pressure is 20 micronewtons per square meter.

~~Oval racing: any contest between two or more racing vehicles on a closed or oval racing surface.~~

~~Oval racing facility: any motor racing facility, upon which is conducted oval racing.~~

~~Oval racing vehicle: any racing vehicle which is participating in an oval race at an oval racing facility.~~

Pascal (Pa): a unit of pressure. One pascal is equal to one newton per square meter.

Passenger car: a motor vehicle designed for the carrying of not more than ten persons, including a multi-purpose passenger vehicle, except any motor vehicle of the second division as defined in 625 ILCS 5/1-146 Ill. Rev. Stat. 1981, ch. 95 1/2, par. 1-146, and except any motorcycle or motor driven cycle. ~~++1~~

Person: any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, political subdivision of this State, any other State or political subdivision or agency thereof or any legal successor, representative, agent or agency of the foregoing.

Preferred frequencies: those frequencies in Hertz preferred for acoustical measurements which, for the purposes of this Chapter, consist of the following set of values: 20, 25, 31.5, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10,000, 12,500.

Prominent discrete tone: sound, having a one-third octave band sound pressure level which, when measured in a one-third octave band at the preferred frequencies, exceeds the arithmetic average of the sound pressure levels of the two adjacent one-third octave bands on either side of such one-third octave band by:

5 dB for such one-third octave band with a center frequency from 500 Hertz to 10,000 Hertz, inclusive. Provided: such one-third octave band sound pressure level exceeds the sound pressure level of each adjacent one-third octave band, or;

8 dB for such one-third octave band with a center frequency from 160 Hertz to 400 Hertz, inclusive. Provided: such one-third octave band sound pressure level exceeds the sound pressure level of each adjacent one-third octave band, or;

15 dB for such one-third octave band with a center frequency from 25 Hertz to 125 Hertz, inclusive. Provided: such one-third octave band sound pressure level exceeds the sound pressure level of each adjacent one-third octave band.

Property-line-noise-source: any equipment or facility, or combination thereof, which operates within any land used as specified by 35 Ill. Adm. Code 901.101. Such equipment or facility, or combination thereof, must be capable of emitting sound beyond the property line of the land on which operated.

Quasi-steady sound: a train of two or more acoustical impulses. Examples of quasi-steady sound are that from riveting and pneumatic hammer.

~~Racing vehicle: every self propelled device, in, upon or by which any person may be transported and which is participating in a motor racing activity or event at a motor racing facility.~~

Reflective surface: any building, hillside, or similar object (other than the flat ground surface) that reflects sufficient sound to affect the sound pressure level readings obtained from a noise source. Not included as reflective surfaces are small objects such as trees, posts, chain-linked fences, fire hydrants, vegetation such as bushes and shrubs, or any similar object.

Registered: a vehicle is registered when a current registration certificate or certificates and registration plates have been issued for it under the laws of any state pertaining to the registration of vehicles.

Residential dwelling unit: all land used as specified by the Land-Based Classification Standards (LBCS) Codes 1100 through 1340 Standard Land Use Coding Manual (SLUCM) Codes 110 through 190 and those portions of land used as specified by LBCS SLUCM Code 6222 6741 used for sleeping.

SAE: Society of Automotive Engineers.

Slow Dynamic Characteristic: the dynamic characteristic specified as "Slow" in ANSI document §1.4 1971 (R. 1976) S1.4-1983 (R2001) " American National Standard Specification for Sound Level Meters." incorporated by reference at Section 900.106.

SLUCM: ~~the Standard Land Use Coding Manual (1969, United States Government Printing Office) which designates land activities by means of numerical codes.~~

Snowmobile: a self-propelled device designed for travel on snow or ice or natural terrain steered by skis or runners, and supported in part by skis, belts, or cleats.

Sound: a physical disturbance causing an oscillation in pressure in a medium (e.g., air) that is capable of being detected by the human ear or a sound measuring instrument.

Sound exposure (SE): time integral of squared, frequency-weighted instantaneous sound pressure over a given time interval. The time period of integration must be specified: when the sound exposure of the background noise is a significant contributor to the total sound exposure; or when the threshold sound level of the instrument (a level below which the instrument does not accumulate contributions to the integral) used is above the level of the background noise; or when such data is needed to identify a source; or when the time period of integration is otherwise useful. The customary unit for sound exposure is pascal-squared second (Pa²-s).

Sound exposure level (SEL or L_{eT}): 10 times the logarithm to the base 10 of the ratio of sound exposure to the reference sound exposure (E₀) of 400 micropascal-squared seconds (μPa²-s). For a given measurement time period of T seconds, the sound exposure level (L_{eT}) is related to the time-average sound level (L_{pT}) as follows: L_{eT} = L_{pT} + log (T/t₀) where t₀ is the reference duration of 1 second. The time period of intergration (T) must be specified. The frequency weighting used must be specified explicitly (e.g., A, C or octave band). The A-weighted SEL and C-weighted SEL are abbreviated ASEL and CSEL respectively. An octave band SEL is expressed in terms of the center frequency (e.g., SEL at 125-Hz). The unit for sound exposure level is decibel (dB).

Sound level (weighted sound pressure level): ~~in decibels, a weighted sound pressure level, determined by the use of metering characteristics and frequency weightings specified in ANSI §1.4 1971 "Specification for Sound Level Meters."~~ 20 times the logarithm to the base 10 of the ratio of the frequency-weighted (and time-averaged) sound pressure to the reference pressure of 20 micropascals. The frequency weighting used shall be specified explicitly (e.g., A, C or octave band). The unit for sound level is decibel (dB).

Sound pressure: the root mean square of the instantaneous sound pressures during a specified time interval in a stated frequency band. The unit for sound pressure is pascal (Pa).

Sound pressure level: ~~in decibels~~, 20 times the logarithm to the base 10 of the ratio of the ~~magnitude of a particular sound pressure to the standard reference sound pressure of 20 micropascals. The standard reference pressure is 20 micronewtons per square meter.~~ ANSI S12.9- 1988 (R1998) "American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound - Part 1," incorporated by reference at Section 900.106, reserves the term sound pressure level to denote the unweighted sound pressure. The unit for sound pressure level is decibel (dB).

Special mobile equipment: every vehicle not designed or used primarily for the transportation of persons or property and only incidentally operated or moved over a highway, including but not limited to: ditch digging apparatus, well-boring apparatus and road construction and maintenance machinery such as asphalt spreaders, bituminous mixers, bucket loaders, tractors other than truck tractors, leveling ~~levelling~~ graders, finishing machines, motor graders, road rollers, scarifiers, earth-moving carryalls and scrapers, power shovels and drag lines, and self-propelled cranes and other earth-moving equipment.

~~Special motor racing event: any motor racing event held on two consecutive days or less in which a substantial number of out-of-state motor racing vehicles are competing and which has been designated as such a special motor racing event by the owner or operator of the motor racing facility.~~

~~Sports car: any automobile which meets the requirements and specifications of the General Competition Rules of the Sports Car Club of America, or its successor body, or any other sports car organization.~~

~~Sports car racing: any competitive event involving one or more sports cars.~~

~~Sports car racing facility: any motor racing facility upon which is conducted sports car racing.~~

~~Sports car racing vehicles: any racing vehicle which is participating in a sports car race at a sports car racing facility.~~

~~Sprint racing vehicle: a front-engined open-wheel racing car used especially on short dirt tracks.~~

~~Supercharged racing vehicle: a racing vehicle equipped with a blower or compressor for increasing the volume air charge of an internal combustion engine over that which would be drawn in through the pumping action of the pistons.~~

Steady sound: a sound whose sound pressure level remains essentially constant (that is, meter fluctuations are negligibly small) during the measurement period. Meter variations are less than or equal to +/- 3 dB using the "slow" meter characteristic.

Tactical military vehicle: every vehicle operated by any federal or state military organization and designed for use in field operations, but not including vehicles such as staff cars and personnel carriers designed primarily for normal highway use.

Time-average sound level (or equivalent-continuous sound level or equivalent-continuous frequency-weighted sound pressure level): 20 times the logarithm to the base 10 of the ratio of the time-average (frequency-weighted) sound pressure to the reference pressure of 20 micropascal. The frequency weighting used must be specified explicitly (e.g., A, C or octave band). The unit of time-average sound level is the decibel (dB).

Time-average (frequency-weighted) sound pressure: square root of the quotient of the time integral of frequency-weighted squared instantaneous sound pressures divided by the time period of integration; or the square root of the quotient of the sound exposure, in pascal-squared seconds ($\text{Pa}^2\text{-s}$), in a specified time period, divided by the time period of integration in seconds. The frequency weighting used must be specified explicitly (e.g., A, C or octave band). The unit of time-average sound pressure is the pascal (Pa).

Unregulated safety relief valve: a safety relief valve used and designed to be actuated by high pressure in the pipe or vessel to which it is connected and which is used and designed to prevent explosion or other hazardous reaction from pressure buildup, rather than being used and designed as a process pressure blowdown.

Used motor vehicle: a motor vehicle that is not a new motor vehicle.

Vehicle: every device in, upon, or by which any person or property is or may be transported or drawn upon a highway.

Weekday: any day which occurs during the period of time commencing at 10:00 p.m. Sunday and ending at 10:00 p.m. Friday during any particular week.

Weekend day: any day which occurs during the period of time commencing at 10:00 p.m. Friday and ending at 10:00 p.m. Sunday during any particular week.

Well-maintained muffler: any muffler which is free from defects which affect its sound reduction. Such muffler shall be free of visible defects such as holes and other acoustical leaks.

(Source: Amended at ____ . Reg. ____, effective _____)

Section 900.103 Measurement Procedures

- a) Procedures Applicable to all of 35 Ill. Adm. Code: Subtitle H, Chapter I

The Agency may adopt procedures which set forth criteria for the measurement of sound for all Parts except 35 Ill. Adm. Code 900 and 901. Such procedures shall be in substantial conformity with standards and recommended practices

established by the American National Standards Institute, Inc. (ANSI) or the Society of Automotive Engineers, Inc. (SAE), incorporated by reference at Section 900.106. and the latest revisions thereof, including ANSI S1.1-1960, ANSI §1.8-1969, ANSI §1.2-1962, and SAE J-184. Such procedures shall be revised from time to time to reflect current engineering judgment and advances in noise measurement techniques. Such procedures, and revisions, thereof, shall not become effective until filed with the Administrative Code Division of the Office of the Secretary of State as required by the Illinois Administrative Procedure Act [5 ILCS 100] ~~Ill. Rev. Stat. 1985, ch. 127, par. 1001 et. seq.~~ Measurement Procedures for 35 Ill. Adm. Code 900 and 901 shall conform to 35 Ill. Adm. Code 910.

- b) Procedures Applicable only to 35 Ill. Adm. Code 901
- 1) All measurement and all measurement procedures to determine whether emissions of sound comply with 35 Ill. Adm. Code 901 ~~shall be in substantial conformity with ANSI §1.6-1967, ANSI §1.4-1971—Type I Precision, ANSI §1.11-1966, and ANSI §1.13-1971 Field Method,~~ and shall, with the exception of measurements to determine whether emissions of sound comply with 35 Ill. Adm. Code 901.109, be based on L_{eq} L_{eq} averaging, as defined in 35 Ill. Adm. Code 900.101, using a reference time as follows: ~~of one hour.~~
 - A) Except as specified in subsection (b)(1)(B) for steady sound, a reference time of at least 1 hour shall be used for all sound measurements and measurement procedures.
 - B) For measurement of steady sound as defined in Section 101 of this Part, the reference time shall be at least 10 minutes.
 - 2) All such measurements and measurement ~~measurements~~ procedures under subsection (b)(1)(B) of this Section must for the 1 hr L_{eq} shall correct, or provide for the correction of such emissions for the presence of ambient or background noise as defined in ANSI §1.13-1971 in accordance with the procedures in 35 Ill. Adm. Code 910. All measurements must be in conformity with the following ANSI standards, incorporated by reference at Section 900.106:
 - A) ANSI S1.4-1983 (R2001) “American National Standard Specification for Sound Level Meters.”
 - B) ANSI S1.6-1984 (R2001) “American National Standard Preferred Frequencies, Frequency Levels, and Band Numbers for Acoustical Measurements.”

- C) ANSI S1.11-1986 (R1998) “American National Standard Specification for Octave-Band and Fractional-Octave-Band Analog and Digital Filters.”
- D) ANSI S1.13-1995 (R1999) “American National Standard Measurement of Sound Pressure Level in Air.”
- E) ANSI S12.9-1993 (R1998) “American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound - Part 3: Short-Term Measurements With an Observer Present.”

c) Procedures Applicable only to 35 Ill. Adm. Code 902

- 1) Measurement procedures to determine whether emissions of sound comply with 35 Ill. Adm. Code 902.120 through 902.123 ~~must shall~~ be in ~~substantial~~ conformity with the following ANSI standards incorporated by reference at Section 900.106: ANSI §1.4 1971 — Type I Precision or Type II General Purpose, and ANSI §1.13 1971 Field Method, provided that
 - A) ANSI S1.4-1983 (R2001) “American National Standard Specification for Sound Level Meters.”
 - B) ANSI S1.13-1995 (R1999) “American National Standard Measurement of Sound Pressure Level in Air.”
- 2) The procedures for sound measurement under 35 Ill. Adm. Code 902.123 must conform to the ANSI standards prescribed in subsection (c)(1), above, provided that the procedures are ~~shall be~~ in substantial conformity with those established by the U.S. Department of Transportation under 49 CFR 325 pursuant to Section 17 18of the Federal Noise Control Act of 1972, 42 USC U.S.C. §4901 et seq.
- 32) The ~~Board Agency~~ may provide for measurement at distances other than the 50 feet specified in 35 Ill. Adm. Code 902.120 through 902.123 provided that correction factors are applied so that the sound levels so determined are substantially equivalent to those measured at 50 feet and the measurement distance does not exceed 100 feet. The correction factors used shall be consistent with California Highway Patrol Sound Measurement Procedures HPH 83.1 (October 1, 1973, as amended November 9, 1975), incorporated by reference at Section 900.106.

~~d) Procedures Applicable only to 35 Ill. Adm. Code 903~~

- 1) ~~Measurement procedures for 35 Ill. Adm. Code 903 shall be in substantial conformity with ANSI §1.4 1971 Type 1 Precision or Type 2 General Purpose and ANSI §1.13 1971 Field Method.~~
- 2) ~~The Agency may provide for measuring sound emission at distances other than 50 feet specified in 35 Ill. Adm. Code 903.162, provided that correction factors are applied so that the sound levels so determined are substantially equivalent to those measured at 50 feet.~~

d e) Procedures Applicable only to at 35 Ill. Adm. Code 905

- 1) Measurement procedures to determine whether emissions of sound comply with 35 Ill. Adm. Code 905.102(a) and 905.103(a)(1) ~~shall~~ must be in ~~substantial~~ substantial conformity with the following standards incorporated by reference at Section 900.106: ANSI §1.4 1971 Type 1 Precision or Type 2 General Purpose and SAE Recommended Practice J192a, "Exterior Sound Level for Snowmobiles."
 - A) ANSI S1.4-1983 (R2001) "American National Standard Specification for Sound Level Meters."
 - B) SAE Recommended Practice J192 "Exterior Sound Level for Snowmobiles." March 1985.
- 2) Measurement procedures to determine whether emissions of sound comply with 35 Ill. Adm. Code 905.102(b) and 905.103(a)(2) shall be in substantial conformity with the following standards incorporated by reference at Section 900.106: ANSI §1.4 1971 Type 1 Precision or Type 2 General Purpose and SAE Recommended Practice J1161, "Operational Sound Level Measurement Procedure for Snow Vehicles."
 - A) ANSI S1.4-1983 (R2001) "American National Standard Specification for Sound Level Meters."
 - B) SAE/ANSI Recommended Practice J1161 "Operational Sound Level Measurement Procedure for Snow Vehicles", March 1983.
- 3) The Agency may establish criteria for measuring at distances other than the 50 feet specified in 35 Ill. Adm. Code 905.102 and 905.103, provided that correction factors are applied so that the sound levels so determined are substantially equivalent to those measured at 50 feet. In adopting new or revised criteria, the Agency shall comply with the requirements of the Illinois Administrative Procedure Act, [5 ILCS 100] Ill. Rev. Stat. 1985, ch. 127, par. 1001 et seq.

(Source: Amended at __ Ill. Reg. ____, effective _____)

Section 900.106 Incorporation by Reference

The Board incorporates the following material by reference. These incorporations include no later amendments or editions.

- a) American National Standards Institute, 25 West 43rd Street, 4th Fl., New York, New York 10036. (212)-642-4900.
- 1) ANSI S1.1-1994 (R1999) “American National Standard Acoustical Terminology.”
 - 2) ANSI S1.4-1983 (R2001) “American National Standard Specification for Sound Level Meters”
 - 3) ANSI S1.6-1984 (R2001) “American National Standard Preferred Frequencies, Frequency Levels, and Band Numbers for Acoustical Measurements.”
 - 4) ANSI S1.8-1989 “American National Standard Reference Quantities for Acoustical Levels.”
 - 5) ANSI S1.11-1986 (R1998) “American National Standard Specification for Octave-Band and Fractional-Octave-Band Analog and Digital Filters.”
 - 6) ANSI S1.13-1995 (R1999) “American National Standard Measurement of Sound Pressure Level in Air.”
 - 7) ANSI S12.9- 1988 (R1998) “American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound - Part 1.”
 - 8) ANSI S12.9-1993 (R1998) “American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound - Part 3: Short-Term Measurements With an Observer Present.”
 - 9) ANSI S12.31-1990 (R2001) “American National Standard Precision Methods for the Determination of Sound Power Levels of Broad-Band Noise Sources in Reverberation Rooms.”
 - 10) ANSI S12.32-1990 (R2001) “American National Standard Precision Methods for the Determination of Sound Power Levels of Discrete-Frequency and Narrow-Band Noise Sources in Reverberation Rooms.”
 - 11) International Electrotechnical Commission, IEC 804-2000 “Integrating/Averaging Sound Level Meters.”

- b) Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096. (877) 606-7323.
- 1) SAE Recommended Practice J184 “Qualifying a Sound Data Acquisition System.” November 1998.
 - 2) SAE Recommended Practice J192 “Exterior Sound Level for Snowmobiles.” March 1985.
 - 3) SAE/ANSI Recommended Practice J1161 “Operational Sound Level Measurement Procedure for Snow Vehicles.” March 1983.
- c) California Highway Patrol Sound Measurement Procedures HPH 83.1 (October 1, 1973, as amended November 9, 1975. Available at Illinois Pollution Control Board Clerk’s Office, 100 W. Randolph Street, Suite 11-500, Chicago, IL 60601. (312) 814-3620.

(Source: Amended at ___ Ill. Reg. ___, effective _____)

TITLE 35: ENVIRONMENTAL PROTECTION
 SUBTITLE H: NOISE
 CHAPTER I: POLLUTION CONTROL BOARD

PART 903

RULES AND REGULATIONS FOR THE CONTROL OF NOISE FROM MOTOR RACING
 FACILITIES (Repealed)

~~SUBPART A: OPERATIONAL PROCEDURES AND RACING WITHOUT MUFFLERS~~

Section	
903.101	Operational Procedures
903.102	Racing Vehicles without Mufflers

~~SUBPART B: DRAG RACING FACILITIES~~

Section	
903.120	Muffler Requirements
903.121	Sound Level Measurement Requirements
903.122	Sound Emission Limits

~~SUBPART C: OVAL RACING FACILITIES~~

Section	
903.140	Muffler Requirements
903.141	Sound Level Measurement Requirements
903.142	Sound Emission Limits

~~SUBPART D: SPORTS CAR RACING FACILITIES~~

Section	
903.160	Muffler Requirements
903.161	Sound Level Measurement Requirements
903.162	Sound Emission Limits

~~SUBPART E: MOTORCYCLE RACING FACILITIES~~

Section	
903.180	Muffler Requirements
903.181	Sound Level Measurement Requirements
903.182	Sound Emission Limits

~~SUBPART F: EXCEPTIONS AND COMPLIANCE DATES FOR PART 903~~

Section	
903.200	Exceptions
903.201	Compliance Dates for Part 903

~~APPENDIX A OLD RULE NUMBERS REFERENCED~~

~~AUTHORITY: Implementing Section 25 and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1981, ch. 111 1/2, pars. 1025 and 1027).~~

~~SOURCE: Repealed in R03-8 at ____ Ill. Reg. ____, effective _____.~~

~~SUBPART A: OPERATIONAL PROCEDURES AND RACING WITHOUT MUFFLERS~~

~~Section 903.101 — Operational Procedures~~

~~The owner or operator of a motor racing facility shall reduce noise emissions from the public address system by using noise abatement methods and operational changes — for example, by reducing the volume of the loudspeaker system, by increasing the number of speakers so that the volume of individual speakers can be further reduced, and by relocating and redirecting the speakers away from residential property.~~

~~Section 903.102 — Racing Vehicles without Mufflers~~

~~No person shall cause or allow the use or operation of any motor racing vehicle that does not require a muffler in accordance with this Part in any motor racing event started after 10:30 p.m.~~

local time on any particular weekday or after 11:00 p.m. local time on any particular weekend day.

SUBPART B: DRAG RACING FACILITIES

Section 903.120 — Muffler Requirements

- a) ~~No person shall cause or allow the use or operation of any drag racing vehicle equipped with a normally aspirated gasoline burning engine at a drag racing facility unless such drag racing vehicle is equipped with a well-maintained and properly installed muffler. Except for any motorcycle used as a drag racing vehicle, all mufflers required in accordance with this subparagraph (a) shall meet the requirements specified in subparagraph (b).~~
- b) ~~Except for any motorcycle used as a drag racing vehicle, all mufflers required in accordance with subparagraph (a) shall have noise reducing characteristics which will produce a reduction in total vehicle noise of at least the amount listed in the following table when such drag racing vehicle is operated in a manner simulating wide open throttle competition. Such noise reduction shall be determined by using measurement procedures specified in 35 Ill. Adm Code 900.103.~~

~~Total Vehicle Noise Reduction Requirements
for Mufflers Installed on Drag Racing Vehicles
(Except Motorcycles) During Wide-open
Throttle Acceleration Run~~

Type of Drag Racing Vehicle	Date	Total Vehicle Noise Reduction dB
Group A	On and after March 15, 1979	Muffler only
Group A	On and after March 15, 1980	10 dB
Group A	On and after March 15, 1983	14 dB
Group B	On and after March 15, 1980	Muffler only
Group B	On and after March 15, 1981	10 dB
Group B	On and after March 15, 1983	14 dB
Group C	On and after March 15, 1981	Muffler only
Group C	On and after March 15, 1982	10 dB
Group C	On and after March 15, 1983	14 dB

- 1) ~~Group A includes all drag racing vehicles in the National Hot Rod Association (NHRA) classes of ET Bracket, Stock and Super Stock; the International Hot Rod Association (IHRA) classes of ET Bracket, Stock and Super Stock; the American Hot Rod Association (AHRA) classes of~~

Selectra, Stock, Super Street and Super Stock; and all other similar drag racing vehicles.

- 2) ~~Ground B includes all drag racing vehicles in the NHRA class of Modified; the IHRA class of Super Modified; the AHRA class of Modified/Street; and all other similar drag racing vehicles.~~
- 3) ~~Group C includes all drag racing vehicles in the NHRA classes of Competition and Pro Stock; the IHRA classes of Super Comp and Pro Stock; the AHRA classes of Top Competition and Pro Stock; and all other similar drag racing vehicles.~~

Section 903.121 ~~Sound Level Measurement Requirements~~

- a) ~~The sound emissions from each drag racing vehicle required to have a muffler in accordance with Section 903.120 must be measured before competing in terms of A weighted sound levels using sound level meters in conformance with American National Standards Institute (ANSI) Standards §1.4 Type 1 or Type 2 requirements and using procedures specified in 35 Ill. Adm. Code 900.103. All sound level measurements must be made with the microphone one half meter from the exhaust outlet with the engine gear box in neutral at an engine speed of 4000 rpm. It shall be the responsibility of the drag racing facility's owners or operators, or designated agent, to measure and record the required sound level data. Upon reasonable request, the owner or operator shall make such recorded sound level data available to the Agency. The owner and operator must keep such recorded sound level data for the duration of the racing season.~~
- b) ~~The Agency shall publish techniques for determining compliance with Section 903.120 under static test conditions.~~
- e) ~~On and after March 15, 1979, before any motorcycle racing vehicle required to have a muffler in accordance with Section 903.120 competes at a drag racing facility, the noise emissions from such motorcycle racing vehicle must be measured in terms of A weighted sound levels using sound level meters in conformance with ANSI Standards §1.4 Type 1 or Type 2 requirements and using procedures specified in 35 Ill. Adm. Code 900.103. The microphone shall be located one half meter from and in the horizontal plane of the rearmost exhaust outlet at an angle of 45 degrees behind the exhaust outlet and from the normal line of travel of the motorcycle. The engine shall be run with the gear box in neutral at an engine speed equal to one half of the manufacturer's recommended maximum engine speed. If no manufacturer's recommended maximum engine speed is published for a particular motorcycle, then an engine speed equal to 60 percent of the engine speed at which maximum horsepower is developed shall be used. If no manufacturer's recommended maximum engine speed is published, then the engine speed during the sound level measurement shall be calculated from either of the following formulae:~~

$$\text{Engine Speed} = \frac{306,000}{\text{stroke in millimeters}}$$

OR

$$\text{Engine Speed} = \frac{12,000}{\text{stroke in inches}}$$

~~Section 903.122 — Sound Emission Limits~~

~~On and after March 15, 1979, no person shall cause or allow the use or operation of any motorcycle racing vehicle required to have a muffler in accordance with Section 903.120 whose sound emissions exceed 115 db(A) when measured in accordance with Section 903.121 and when measured one half meter from the rearmost exhaust outlet.~~

SUBPART C: OVAL RACING FACILITIES

~~Section 903.140 — Muffler Requirements~~

- ~~a) — Except as provided in subparagraph (b), no person shall cause or allow the use or operation of any oval racing vehicle at an oval racing facility unless such oval racing vehicle is equipped with a well maintained and properly installed muffler. Except for any motorcycle used as an oval racing vehicle, all mufflers required in accordance with this rule shall meet the requirements specified in subparagraph (c).~~
- ~~b) — The following oval racing vehicles shall not require a muffler in accordance with subparagraph (a);~~
 - ~~1) — Sprint racing vehicles;~~
 - ~~2) — Midget racing vehicles;~~
 - ~~3) — Supercharged oval racing vehicles.~~
- ~~c) — Except for any motorcycle used as an oval racing vehicle, all mufflers required in accordance with subparagraph (a) shall have noise reducing characteristics which will produce a reduction in total vehicle noise of at least the amount listed in the following table when such oval racing vehicle is operated in a manner simulating wide open throttle competition. Such noise reduction shall be determined by using measurement procedures specified in 35 Ill. Adm. Code 900.103.~~

~~Wide open Throttle Noise Reduction Requirements
for Mufflers Installed on Oval Racing Vehicles
(Except Motorcycles)~~

Date	Muffler Noise Reduction Requirement, dB
On and after March 15, 1979	Muffler only
On and after March 15, 1980	10 dB
On and after March 15, 1982	16 dB

~~Section 903.141 — Sound Level Measurement Requirements~~

- ~~a) — The requirements for measuring noise emissions from oval racing vehicles, other than motorcycles used as oval racing vehicles, shall be identical to those specified under Section 903.121(a) for drag racing vehicles.~~
- ~~b) — The Agency shall publish techniques for determining compliance with Section 903.140 under static test conditions.~~
- ~~c) — The requirements for measuring noise emissions from motorcycle racing vehicles competing at oval racing facilities shall be identical to those specified under Section 903.121(c) for motorcycle racing vehicles competing at drag racing facilities.~~

~~Section 903.142 — Sound Emission Limits~~

~~No person shall cause or allow the use or operation of any motorcycle racing vehicle required to have a muffler in accordance with Section 903.140 whose sound emissions exceed 115 dB (A) when measured in accordance with Section 903.141 and when measured one-half meter from the rearmost exhaust outlet.~~

SUBPART D: SPORTS CAR RACING FACILITIES

~~Section 903.160 — Muffler Requirements~~

- ~~a) — Except as provided in subparagraph (b), on and after March 15, 1979, no person shall cause or allow the use or operation of any sports car racing vehicle competing at a sports car racing facility unless such sports car racing vehicle is equipped with a well maintained and properly installed muffler.~~
- ~~b) — The following sports car racing vehicles shall not require a muffler in accordance with subparagraph (a): all sports car racing vehicles which are supercharged.~~

~~Section 903.161 — Sound Level Measurement Requirements~~

~~During all qualifying runs, noise emissions from each sports car racing vehicle required to have a muffler in accordance with Section 903.160, must be measured in terms of A-weighted sound levels using sound level meters in conformance with ANSI Standards §1.4 Type 1 or Type 2 requirements and using procedures specified in 35 Ill. Adm. Code 900.103. All measurements must consistently be made at the same measurement site; provided, however, that such~~

measurement site can be changed if necessitated by good faith circumstances making the use of the first measurement site impossible or impractical. It shall be the responsibility of the sports car racing facility's owners or operators, or designated agent, to measure and record the required sound level data. Upon reasonable request, the owner or operator shall make such recorded sound level data available to the Agency. The owner and operator must keep such recorded sound level data for the duration of the racing season.

Section 903.162 — Sound Emission Limits

No person shall cause or allow the use or operation of any sports car racing vehicle required to have a muffler in accordance with Section 903.160 whose sound emissions while accelerating, as measured in accordance with Section 903.161, exceed 105 dB (A) when measured 50 feet from the center of the lane of travel of such sports car racing vehicle while accelerating on the track.

SUBPART E: MOTORCYCLE RACING FACILITIES

Section 903.180 — Muffler Requirements

- a) — Except as provided in subparagraph (b), on and after March 15, 1979, no person shall cause or allow the use or operation of any motorcycle racing vehicle competing at a motorcycle racing facility unless such motorcycle racing vehicle is equipped with a well maintained and properly installed muffler.
- b) — The following motorcycle racing vehicles shall not require a muffler in accordance with subparagraph (a): supercharged motorcycle racing vehicles.

Section 903.181 — Sound Level Measurement Requirements

The requirements for measuring noise emissions from motorcycle racing vehicles competing at motorcycle racing facilities shall be identical to those specified under Section 903.121(c) for motorcycle racing vehicles competing at drag racing facilities.

Section 903.182 — Sound Emission Limits

No person shall cause or allow the use or operation of any motorcycle racing vehicle required to have a muffler in accordance with Section 903.180 whose sound emissions exceed 115 dB (A) when measured in accordance with Section 903.181 and when measured one half meter from the rearmost exhaust outlet.

SUBPART F: EXCEPTIONS AND COMPLIANCE DATES FOR PART 903

Section 903.200 — Exceptions

- a) — Sections 903.120 through 903.182 shall not apply to any special motor racing events, provided that not more than three special motor racing events are conducted at any motor racing facility during any calendar year. The owner or

~~operator of any motor racing facility which is conducting a special motor racing event must previously notify the local public that a special motor racing event will be conducted.~~

- ~~b) Sections 903.120 through 903.182 shall not apply to motor racing facilities which conduct motor racing events on fewer than five days per calendar year.~~
- ~~e) Sections 903.120 through 903.182 shall not apply to fairground motor racing facilities during motor racing events held in conjunction with a state or county fair.~~
- ~~d) Sections 903.102 through 903.182 shall not apply if there are no residential dwelling units within two miles of such motor racing facility's racing surface.~~
- ~~e) Sections 903.102 through 903.182 shall not apply to any motor racing facility whose sound emissions do not at any time exceed the background sound level by more than 7 dB(A) at any residential dwelling unit.~~
- ~~f) Sections 903.102 through 903.182 shall not apply to any existing motor racing facility whose sound emissions do not at any time exceed the allowable octave band sound pressure levels specified in 35 Ill. Adm. Code 901.102(a) when measured at any point within any receiving Class A land.~~
- ~~g) Sections 903.102 through 903.182 shall not apply to any new motor racing facility whose sound emissions do not exceed at any time during daytime hours the allowable octave band sound pressure levels specified in 35 Ill. Adm. Code 901.102(a) or at any time during the nighttime hours the allowable octave band sound pressure levels specified in 35 Ill. Adm. Code 901.102(b) when measured at any point within any receiving Class A land.~~

~~Section 903.201 — Compliance Dates for Part 903~~

- ~~a) Every owner or operator of an existing motor racing facility shall comply with the requirements of this Part by September 24, 1978.~~
- ~~b) Every owner or operator of a new motor racing facility shall comply with the requirements of this Part when motor racing activities commence at such new motor racing facility.~~

~~Section 903.APPENDIX A — OLD RULE NUMBERS REFERENCED~~

~~The following table is provided to aid in referencing old Board rule numbers to section numbers pursuant to codification.~~

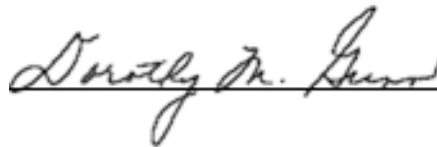
~~Old Part 4 of Chapter 8~~

~~35 Ill. Adm. Code Part 903~~

Rule 401	Section 903.101
Rule 402	Section 903.102
Rule 403	Section 903.120
Rule 404	Section 903.121
Rule 405	Section 903.122
Rule 406	Section 903.140
Rule 407	Section 903.141
Rule 408	Section 903.142
Rule 409	Section 903.160
Rule 410	Section 903.161
Rule 411	Section 903.162
Rule 412	Section 903.180
Rule 413	Section 903.181
Rule 414	Section 903.182
Rule 415	Section 903.200
Rule 416	Section 903.201

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on September 4, 2003, by a vote of 5-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board