

ILLINOIS POLLUTION CONTROL BOARD
November 23, 1977

IN THE MATTER OF)
) R75-11
MOTOR RACING NOISE REGULATIONS)

ORDER OF THE BOARD (by Mr. Goodman):

The Board hereby proposes to adopt the following amendments to Chapter 8: Noise Pollution Regulations, and orders that these amendments be published and that the record in this matter be held open for 60 days from the date of this Order to allow for public comment on the Board's proposal. The Draft Opinion proposed for adoption in this matter shall be made available for public inspection at the Board's office.

PROPOSED FINAL DRAFT ORDER

Amend Rule 103 by adding the following:

(d) Procedures Applicable only to Part 5 of Chapter 8

1. Measurement procedures for Part 5 shall be in substantial conformity with ANSI S1.4-1971--Type 1 Precision or Type 2 General Purpose and ANSI S1.13-1971 Field Method.
2. The Agency may provide for measuring sound emissions at distances other than 50 feet specified in Rule 514 of Part 5, provided that correction factors are applied so that the sound levels so determined are substantially equivalent to those measured at 50 feet.

Amend Rule 201(b) to read:

(b) Class B Land

Class B land shall include all land used as specified by SLUCM Codes 397, 471 through 479 inclusive, 511 through 599 inclusive, 611 through 649 inclusive, 652 through 673 inclusive, 675, 692, 699, 7124, 7129, 719, 721, 722 except 7223 ~~used-for-automobile-and-motoreycle-raeing~~, 723 through 761 inclusive except 7311 ~~used-fer-automobile-and-motoreycle raeing~~, 769 through 790 inclusive, and 922.

Amend Rule 208(a) to read:

- (a) Rules 202 through 207 inclusive shall not apply to sound emitted from land used as specified by SLUCM Codes 110, 140, 190, 691, ~~7311-except-as-used-for-automobile-and-motorcycle racing~~, and 742 except 7424 and 7425.

Amend Rule 208 by adding the following:

- (f) Rules 202 through 207 inclusive shall not apply to sound emitted from land used as specified by SLUCM Codes 7223 and 7311 when used for automobile and motorcycle racing; and, any land used for contests, rallies, time trials, test runs or similar operations of any self-propelled device, and upon or by which any person or property is or may be transported or drawn, when such self-propelled device is actually being used for sport or recreation and is actually participating in an activity or event organized, regulated, and supervised under the sponsorship and sanction of a club, organization or corporation having national or statewide recognition; PROVIDED, however, that the exceptions granted in this Rule 208(f) shall not apply to automobile and motorcycle racing, contests, rallies, time trials, test runs or similar operations of any self-propelled device if such activity is conducted between the hours of 10:30 p.m. to 7:00 a.m., local time.

Amend Rule 101 by adding the following definitions:

AHRA: American Hot Rod Association or its successor body.

Background Sound Level: The A-weighted sound level, measured in accordance with the procedures specified in Rule 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.

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.

Existing motor racing facility Any motor racing facility, the construction of which commenced prior to the effective date of this Part.

IHRA: International Hot Rod Association or its successor body.

Midget Racing Vehicle: A front engine, single seat, open-wheel 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.

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.

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 the effective date of this Part.

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.

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.

Residential dwelling unit: All land used as specified by SLUCM Codes 110 through 190 and those portions of land used as specified by SLUCM Code 6741 used for sleeping.

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.

Add the following new Part 5 to Chapter 8:

PART 5: RULES AND REGULATIONS FOR THE CONTROL OF NOISE FROM MOTOR RACING FACILITIES

Rule 501: Motor Racing Facilities--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.

Rule 502: Motor Racing Facilities--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 day.

Rule 503: Drag Racing Facilities--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 Rule 503(a) shall meet the requirements specified in Rule 503(b) of this Part.
- (b) Except for any motorcycle used as a drag racing vehicle, all mufflers required in accordance with Rule 503(a) of this Part shall have noise reducing characteristics which will produce a reduction in total vehicle noise of at least the amount listed in Table 1 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 Rule 103 of this Chapter.

Table 1. Total Vehicle Noise Reduction Requirements
for Mufflers Installed on Drag Racing Vehicles
(Except Motorcycles) During Wide-open
Throttle Acceleration Run

<u>Type of Drag Racing Vehicle</u>	<u>Date</u>	<u>Total Vehicle Noise Reduction, dB</u>
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

Notes: 1) Group A includes all drag racing vehicles in the NHRA classes of ET Bracket, Stock and Super Stock; the IHRA classes of ET Bracket, Stock and Super Stock; the AHRA classes of Selectra, Stock, Super Street and Super Stock; and all other similar drag racing vehicles.

2) Group 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.

Rule 504: Drag Racing Facilities--Sound Level Measurement Requirement

- (a) The sound emissions from each drag racing vehicle required to have a muffler in accordance with Rule 503 of this Part must be measured before competing in terms of A-weighted sound levels using sound level meters in conformance with ANSI Standards S1.4 Type 1 or Type 2 requirements and using procedures specified in Rule 103 of this Chapter. 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 Rule 503 under static test conditions.
- (c) On and after March 15, 1979, before any motorcycle racing vehicle required to have a muffler in accordance with Rule 503 of this Part 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 S1.4 Type 1 or Type 2 requirements and using procedures specified in Rule 103 of this Chapter. The microphone shall be located one-half meter from and in the horizontal plane of the rear-most 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

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

Rule 505: Drag Racing Facilities--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 Rule 503 of this Part whose sound emissions exceed 115 db(A) when measured in accordance with Rule 504 of this Part and when measured one-half meter from the rearmost exhaust outlet.

Rule 506: Oval Racing Facilities--Muffler Requirements

- (a) Except as provided in Rule 506(b) of this Part, 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 506(a) shall meet the requirements specified in Rule 506(c) of this Part.
- (b) The following oval racing vehicles shall not require a muffler in accordance with Rule 506(a) of this Part:
 - 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 Rules 507(a) of this Part shall have noise reducing characteristics which will produce a reduction in total vehicle noise of at least the amount listed in Table 2 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 Rule 103 of this Chapter.

Table 2. Wide-open Throttle Noise Reduction Requirements
for Mufflers installed on Oval Racing Vehicles
(Except Motorcycles)

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

Rule 507: Oval Racing Facilities--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 Rule 504(a) of this Part for drag racing vehicles.
- (b) The Agency shall publish techniques for determining compliance with Rule 506 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 Rule 504(c) for motorcycle racing vehicles competing at drag racing facilities.

Rule 508: Oval Racing Facilities--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 Rule 506 of this Part whose sound emissions exceed 115 dB(A) when measured in accordance with Rule 507 of this Part and when measured one-half meter from the rearmost exhaust outlet.

Rule 509: Sports Car Racing Facilities--Muffler Requirements

- (a) Except as provided in Rule 509(b) of this Part, 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 Rule 509(a) of this Part:

All sports car racing vehicles which are supercharged.

Rule 510: Sports Car Racing Facilities--Sound Level Measurement Requirements

During all qualifying runs, noise emissions from each sports car racing vehicle required to have a muffler in accordance with Rule 509 of this Part, must be measured in terms of A-weighted sound levels using sound level meters in conformance with ANSI Standards S1.4 Type 1 or Type 2 requirements and using procedures specified in Rule 103 of this Chapter. 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.

Rule 511: Sports Car Racing Facilities--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 Rule 509 of this Part whose sound emissions while accelerating, as measured in accordance with Rule 510, 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.

Rule 512: Motorcycle Racing Facilities--Muffler Requirements

- (a) Except as provided in Rule 512(b) of this Part, 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 Rule 512(a) of this Part:

Supercharged motorcycle racing vehicles.

Rule 513: Motorcycle Racing Facilities--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 Rule 504(c) for motorcycle racing vehicles competing at drag racing facilities.

Rule 514: Motorcycle Racing Facilities--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 Rule 512 of this Part whose sound emissions exceed 115 db(A) when measured in accordance with Rule 513 of this Part and when measured one-half meter from the rearmost exhaust outlet.

Rule 515: Exceptions


- (a) Rules 503 through 514 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) Rules 503 through 514 shall not apply to motor racing facilities which conduct motor racing events on fewer than five days per calendar year.
- (c) Rules 503 through 514 shall not apply to fairground motor racing facilities during motor racing events held in conjunction with a state or county fair.
- (d) Rules 502 through 514 shall not apply if there are no residential dwelling units within two miles of such motor racing facility's racing surface.
- (e) Rules 502 through 514 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) Rules 502 through 514 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 Table 1 or Rule 202 of Part 2 of this Chapter when measured at any point within any receiving Class A land.
- (g) Rules 502 through 514 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 Table 1 of Rule 202 of Part 2 of this Chapter or

at any time during the nighttime hours the allowable octave band sound pressure levels specified in Table 2 of Rule 203 of Part 2 of this Chapter when measured at any point within any receiving Class A land.

Rule 516: Compliance Dates for Part 5

- (a) Every owner or operator of an existing motor racing facility shall comply with the requirements of Part 5 of this Chapter 90 days after the effective date of this Part.
- (b) Every owner or operator of a new motor racing facility shall comply with the requirements of Part 5 of this Chapter when motor racing activities commence at such new motor racing facility.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Order was adopted on the 23RD day of November, 1977 by a vote of 3-0.



Christan L. Moffett, Clerk
Illinois Pollution Control Board