PART III:

ENVIRONMENTAL PROTECTION AGENCY

RAILROAD NOISE EMISSION STANDARDS
CHAPTER 1—ENVIRONMENTAL PROTECTION AGENCY

PART 201—RAILROAD NOISE EMISSION STANDARDS

On July 6, 1974, notice was published in the Federal Register (39 FR 21460) announcing the Environmental Protection Agency's final regulations, promulgated under 49 U.S.C. 20964, to establish noise emission standards for railroad equipment. The purpose of this notice is to establish final noise emission standards for railroad equipment, as required by the Federal Railroad Safety Act of 1970 (PL 91-508).

INTRODUCTION

In section 17 of the Noise Control Act, Congress charged the Federal Administration with responsibility for control of noise from railroad sources. The Act requires the Administrator to establish noise emission standards for railroad equipment to allow the public to be informed of the noise produced by railroad equipment.

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The purpose of the Administrator's regulations is to establish final noise emission standards for railroad equipment, as required by the Federal Railroad Safety Act of 1970 (PL 91-508). The Administrator's regulations are intended to provide a reasonable balance between the need for noise abatement and the economic feasibility of noise abatement technology.

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being established by this regulatory action, or may be proposed pursuant to the EPA's authority to set emission standards for new products specified in section 3 of the Act,\footnote{143} among other things, to the extent that such new products are to be manufactured, sold, and distributed by the Agency in order to facilitate compliance with the regulations. This is a matter which the Agency believes warrants further discussion.

5. The Scope of railroad facilities and equipment regulations. The number of comments brought into the final version of the regulatory proposal, and the response to it, indicates the considerable interest in the subject. Much of the interest was centered on the fact that the Agency was considering the regulation of noise from railroad facilities and equipment, including the use of such facilities and equipment in residential areas. The Agency has also been concerned with the question of how to regulate such noise, and has attempted to provide a comprehensive set of regulations that will be effective in reducing noise levels to acceptable levels.

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The EPA has determined that the use of such warning devices in and around railroad yards is not entirely out of place due to the heavy concentration of workers and mobile equipment in industrialized areas. These areas are instances where the EPA's recommendations for railroad and community interaction are as close to those for industrialized areas as possible.

Another concern raised is the potential for additional noise levels that exist in motor vehicle interiors due to radio and other noise sources.

**Acoustical analysis available to the Agency indicates that the effectiveness of acoustical warning signals as used on police and emergency vehicles as well as urban buses and trucks is not only a function of amplitude or intensity but also of local characteristics. That is, the recognition of the characteristics of the noise sources is an important factor in the effectiveness of acoustical warning signals.**

In view of the above, it seems appropriate to proceed with the rulemaking process in order to facilitate compliance with the regulations. The Agency believes that it is the responsibility of the EPA to provide a comprehensive set of regulations that will be effective in reducing noise levels to acceptable levels. The Agency will continue to work with the industry and other interested parties to develop regulations that will be effective in reducing noise levels to acceptable levels.

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840,000 to 890,000 per unit, and with the extensive use of grade level crossings in the United States, for example Illinois having approximately 15,000 crossings without drop gates, the cost would be $875 million or more in that State alone.

Some acoustic warning devices do serve the interests of safety and, in the Agency's opinion, can best be regulated at the local and State level for the reasons indicated. EPA does not propose to regulate railroad acoustic warning devices at this time.

b. Repair and maintenance shops, terminals, marshaling yards, bumping yards, and similar rail-related activities. Some commenters objected to the exclusion of rail facilities through local fixed facility and area-type sources from the regulation, while others were explicitly in favor of not including such sources.

A major national railroad association commented that the EPA should prescribe noise standards for area-type sources such as yards and terminals.

The facilities and equipment found within yards and terminals differ from those found in technical rail yards, with the exception of locomotives, rail cars, and some mobile special equipment, are permanent installations which are normally subject to the environmental noise regulations of only one jurisdiction.

The Agency has determined that such facilities and equipment are best controlled at this time at the local level, employing measures which do not require the repairment of trains and therefore do not require national uniformity of treatment. Local regulations are familiar with the particular conditions of their community/railroad noise situation, and can employ measures which will achieve greater sensitivity in prescribing practical and cost effective solutions to the local noise problem. Increased use of the railroad association—which has encouraged the establishment of Federal area noise standards for yards and terminals—has specifically pointed out in its remarks that such facilities may vary in size and nature. In general, the noise sources present are diverse. The EPA recognizes that the communities which neighbor these yards and terminals are equally diverse, varying in land use and population density and distribution. As such, Federal regulations which successively produce substantial population health and welfare benefits at one locality may produce little or no such benefit at another locality. For example, the regulation of a railroad yard facility which is developed by a residential community would not achieve similar population health and welfare benefits when equally applied to a similar railroad yard facility which exists within a large industrial park complex. This observed differential is directly attributable to the difference in community size and population density and distribution characteristically of the two communities.

Additionally, the single jurisdictional nature and the diversity which characterize railroad yards and terminal facilities and their neighboring communities, and citing the virtual absence of evidence that non-uniform State and local regulation of railroad yards and terminal facilities in fact substantially burdens interstate commerce, the Agency at this time does not propose to establish standards for the regulation of railroad yard and terminal fixed facility noise.

Two commenters as well as other Federal agencies expressed the belief that the EPA impose property line standards on railroad noise using an LA0 noise level standard. The use of property line noise standards is applicable primarily to the regulation of noise from fixed facility and area noise sources. In the regulation of railroad noise such sources include mainline yards, marshalling yards, bumping yards, and terminals. Since EPA has not covered those facilities in the regulation, the use of such area noise levels in standards in the regulation is not appropriate.

The Department of Transportation commented that the EPA should regulate railroad-related emissions. They indicated that for trains that are to be scheduled by October 1970 since established barrier technology makes it possible to meet that schedule. They further state that a plan to convert to replaceable inert retarders should be implemented by 1974.

The EPA recognizes that rail car retarding operations may produce individual peak levels up to 120 db (A) at 100 feet, and may be a problem noise source to the surrounding community. The Agency states that replacement facilities, retarders are subject to the authority of only one jurisdiction, and as such can best be regulated at the local level by means which do not in themselves affect the movement of trains and therefore do not require national uniformity of treatment.

The Agency's study of railroad yard noise (including train noise) indicated that concern for noise from rail yards is apparently limited to ear protection of railroad workers in a national concern. This is due in large part to the location of the number of yards in nonresidential areas and relatively few existing retarder systems, approximately 120 today. This local nature of the retarder noise problem further reduces the desirability of a Federally prescriptive regulation. DOT's comment in support of a Federally prescriptive retarder noise regulation which would unite barrier technology does not consider the local characteristics of each community which is impacted by retarder noise. For example, in a situation where a retarder yard is located on the side of a residential area and on all other sides by an unpopulated wooded area, a barrier could be beneficial to public health and welfare only if erected on that side of the retarder which faces the residential area. Under such circumstances a community would receive insufficient health and welfare benefits and be relatively few installed by a Federally prescriptive regulation which would require installation of barrier walls on both sides of retarder mechanisms. At the currently estimated material costs of $70 to $100 per linear foot for barriers, barrier costs would run from $75 to $150 thousand per railroad yard and from $150 to $210 million for the entire railroad industry Maintenance and replacement costs, yard down time, and track modification costs have not been fully identified. Expenditures should be assumed to be substantially less than, have not been identified, and are peculiar to the particular characteristics of the individual railroad yards, and as such may be accounted for in local regulations.

A Federal regulation for conversion of inert retarders to replaceable inert retarders would be subject to considerations similar to those discussed for the erection of barriers around active retarders, except that reinstallation and materials costs would be considerably greater for conversion than for the erection of barriers. The Agency estimates that conversion to replaceable inert retarders would cost $7.5 thousand per retarder, not including labor, yard down time, or maintenance costs. Assuming a gross estimate of 28 thousand such inert retarders nationally, estimated reinstallation costs, exclusive of labor, down time, and operational costs, would be $150 million. Although the costs of conversion are considerable, EPA proposes to regulate retarder noise, it does recommend that local jurisdictions establish regulations which require railroads to utilize barrier technology where needed, and where both practical and feasible. Further consideration may be given by the EPA to possibly providing further incentive to encourage new railroad installations to be equipped with replaceable inert retarders, computer control systems, and other available technical developments which result in significant noise reduction from retarders as a need for such regulation is demonstrated relative to the costs involved and the availability of technology.

DOT also commented that the EPA should promulgate a regulation which projects railroad workers as well as the community from retarder noise.

For reasons outlined above, the EPA does not presently propose to regulate retarder noise from either the community or the health and welfare of the occupational health and safety point of view.

The latter consideration is specifically under the purview of the Occupational Safety and Health Administration (OSHA) and is properly addressed by that Agency.

Currently, the Federal Railroad Administration (FRA) is proposing a regulation which would limit noise exposure to railroad workers within railroad worker's sleeping quarters. This proposal is in response to a petition from the National Railway Labor Relations Board that the FRA institute a rule making proceeding to prohibit railroad noise from occurring during or providing ongoing noise levels in sleeping quarters less than one mile from...
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its property or yards where switching or
hunting operations are performed. The
FRA's proposed regulation attempted to
reinstate this aspect of the 1970 standard
without specifying actual noise limits for
switching yard operations.

2. Special purpose equipment. A major
national railroad association commented
that the EPA should promulgate a standard
for noise from special purpose equipment.

Examples of special purpose equipment
which may be located on or operated from
rail cars include: Ballast grading machines,
roadheaders and scrapers, boil cars, brack
water, contactors, concrete mixers, water
agitation devices, yard clocks, and high-
pressure water sprayers. In addition to
machines, electric warning signals, street
lights, pull horns, rail switches, rail lasers,
track layers, sandblasters, snow plows,
strike drivers, spotters, and other numer-
cous types of moved-on-railway equip-
ment.

The Agency realizes that special pur-
pose equipment such as that used for
maintenance-of-way activities is essen-
tially construction equipment, and that
such may cause loud intermittent noise.
Railroads may avoid noise problems by
keeping crews maintained in a reasonable
time and keeping noise-producing equip-
ment as far away from people as possible.
For example, a community may want to require
reasonable noise levels during normal work
time. The community may wish to require
reasonable noise levels, but excepted
operations, noise standards for such equip-
ment are more difficult to enforce.

The initial decision by the Agency was
not to regulate noise from all sources pro-
duced by rail cars while in motion only.
To leave to state and local authori-
ties the control of whatever noise is
produced by rail cars while stationary.
This decision was made because there
are only two types of rail cars that are
parked near noise-sensitive areas (rail
noises being distinguishable from other
railway noise). While the cars are in motion, and because it was felt that such noises problems could be reduced by measures such as
the relocation of such cars to less sensi-
tive areas.

The Agency would continue to be
concerned with the extent of the problem
that can be caused in specific instances
by continuous operation of the diesel
or gasoline engines which operate on
such cars. Noise levels as high as 73
dBA (25 meters/45 feet) are possible
from refrigerated rail cars parked with
their diesel engines running in mar-
shalling yards and terminal yards.
Noise levels from such refrigerated rail
are very high and may be due to the fact
that such cars are often parked in areas
in large numbers. Additional data is need-
less. The Agency has stated that the
problem exists not only with rail cars,
but also with various passenger-related
cars such as dining cars, lounge cars,
club cars, and baggage cars. These cars
are equipped with self-contained
power units; and that the abatement
of such noise is not possible unless
the engine is moved from within one jurisdic-
tion to another. The Agency has con-
cluded that the existing data is insuffi-
cient to make a determination as to
whether such engines are being
regulated herein. It is the
Agency's present position that such
systems are specifically excluded from
regulation under section 7 of the Noise
Control Act of 1974. The
Agency has proposed a rule whereby
the use of existing

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On this basis, the Agency has determined that Federal Railroad Administration's (FRA) regulations for the control of noise from auxiliary power units operating in a stationary position on locomotives are appropriate. However, the noise from such sources was not specifically addressed by the Agency during rule making, and the standards as proposed only consider idle setting noise emissions from the primary propulsion engines of the stationary locomotives. Because passenger locomotives do spend considerable time in a stationary position with auxiliary power units operating at the same time that the primary diesel engines are idling, the Agency feels the circumstances where the auxiliary units noise emissions are a significant portion of the noise emissions from the idling locomotive, and thus be appropriate for regulatory action. After further consideration of this matter the Agency may address noise standards for such auxiliary units in a separate rule making. However, because the intent of the Act was to provide a national uniformity of treatment where non-uniform State and local ordinances or regulations would likely impose a burden on interstate commerce, and because the locomotive as a whole is subject to this Act, the Agency feels that its regulatory action relative to locomotive noise emissions is also preemptive with respect to State and local ordinances relative to noise emissions from the auxiliary units which are also a part of many such locomotives.

The Agency is also concerned that the FRA has not issued any standards to which electric locomotives are subject, and has not designated the federal standard as so which electric locomotives are subject, and it is not clear that the FRA has designated the federal standard as so.

The FRA has considered the above comments and only objections to the Federal regulations, and that the regulations are generally acceptable for the relevant Federal regulations.

The FRA has not considered the comments concerning the FRA's regulations and that the regulations are generally acceptable for the relevant Federal regulations.
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but stated that EPA's definition of roadway surface conditions should be improved.

The EPA strongly believes that a stationary as well as a moving locomotive standard is necessary in order to account for the varying nature of locomotive noise. Compilation of both stationary and moving standards also facilitates adequate and accurate enforcement. The additional measurement criteria which are being incorporated by the EPA as part of the new regulations specify roadway surface conditions in greater detail.

A major railroad passenger corporation indicated that the moving locomotive standard should be raised to as 95 decibels. The company stated that they favored raising the maximum allowed noise level by 10 decibels. Any increase in a speed-related correlation. The high speed noise emissions levels exhibited by some locomotives appear to be within the EPA's 95 dB standards,

The EPA data indicates that while stationary noise problems are relatively easy to address, moving noise problems are much more difficult to address. The provision of dual-tracks and speed reductions can curtail noise levels but at a significant cost. The provision of noise barriers can curtail noise levels but at a significant cost. The provision of noise barriers can curtail noise levels but at a significant cost. The provision of noise barriers can curtail noise levels but at a significant cost.

(4) Standards for railroad operations. D.O.T. indicated that it is appropriate to limit any car operation to a maximum of 12 degrees or less with a locomotive as the limiting factor.

The Agency concurred with that statement and has made the appropriate changes in the Railroad Car Standard.

One private car owner was concerned that the EPA Rail Car Noise Standards would require unusually scheduled service by the railroad. The EPA (1971) Railroad Freight Car Safety Standards document allows for such scheduling.

The EPA Rail Car Noise Standards are based on the noise levels achievable through best maintenance practice. The noise levels were derived from noise measurements of typical railroad cars which were subject to maintenance requirements. Big, more restrictive than those currently prescribed by the FRA Railroad Freight Car Safety Standards.

Since the data which were used to determine the railroad car noise standards were based on current maintenance requirements, compliance with the noise regulations is not anticipated to cause any additional maintenance problems.

A private car owner stated that the Federal standards on rail car noise should not apply to privately owned cars because private owners do not have the ability to raise costs in interstate commerce. The Agency realized that while ultimate responsibility and liability for rail car noise annoyance with rail car owners, immediate responsibility and liability is assumed by the rail carrier who is in interstate commerce, and who does possess the ability to service rail cars.

(5) Best maintenance practice locomotive standards. DOT stated that the 95 decibel standard would provide a significant improvement to rebuild old locomotives in compliance or to specify new locomotives be delivered with the mufflers needed to achieve compliance.

A major railroad passenger service indicated that the moving locomotive standard should be raised to 95 decibels. The company stated that they favored raising the maximum allowed noise level by 10 decibels. Any increase in a speed-related correlation. The high speed noise emissions levels exhibited by some locomotives appear to be within the EPA's 95 dB standards.

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(6) Retrofit standards for in-use locomotives. A major railroad association stated that the Agency's proposals both indicated their support of newly manufactured locomotive regulations and one manufacturer concerned that the technical and production capabilities do not exist for new locomotive muffler applications. Having received no comments on the proposed standards, the Agency is considering the noise emission standards applicable to locomotives which are manufactured after December 31, 1979.

However, there were no such occurrences regarding the regulation of various emissions from existing locomotives. A proposal made widely known as "retrofit", only 30 percent of the total cost of the total cost to the entire railroad industry, with the remainder of the costs being paid out by the companies. The fractional impact of these costs on the marginal and back-end railroads is expected to be relatively small. The cost of this new standard is estimated to be $4.5 million per year, or 0.25 percent of the total cost to the entire railroad industry, with the remainder of the costs being paid out by the companies. The fractional impact of these costs on the marginal and back-end railroads is expected to be relatively small. The cost of this new standard is estimated to be $4.5 million per year, or 0.25 percent of the total cost to the entire railroad industry, with the remainder of the costs being paid out by the companies.

Several commenters claimed that the introduction of a new standard on locomotives will cause numerous technical and environmental problems.

A major railroad association and several other commenters warned that the use of mufflers, especially when combined with smoke abatement, will cause increased backfire, which will result in increased fuel consumption and increased atmospheric pollution.

The Agency notes that are well within the manufacturer's warranty backfire specifications for both smoke and smoke. The Agency receives additional information concerning the availability of technology that may allow the Agency to reconcile these widely varying retrofit cost estimates, the collection of such data would be a costly and time-consuming process which may produce a retrofit cost estimate which remains subject to relative to the public health and welfare benefits which would result. For this reason, the Agency has decided to remove the retrofit requirement from the regulation being promulgated herein. Acknowledging the uncertainties which currently accompany any estimate of this type, the Agency may reconsider the retrofit issue and may modify or rescind the requirement at a future date. The Agency may also consider the retrofit issue and may modify or rescind the requirement at a future date. The Agency may also consider the retrofit issue and may modify or rescind the requirement at a future date.
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the exhaust gas prior to the passage of those vehicles through the outlet section of the spark arrestor for discharge through the exhaust pipe. While it could be questioned that exhaust gas might conceivably collect within such nozzles, such is in tandem with or is integrated into spark arrestors. It could also be postulated that such exhaust collection might be more evident as spark arresters, but it could also be postulated that such exhaust collection might be more evident as spark arresters. Therefore, the Agency was concerned over the installation of spark arresters or within exhaust pipes, and the Agency sees no indication that the installation of such arresters will substantially increase the potential for such a fire hazard.

A major railroad association withdrew concern that increased railroad rates to cover compliance costs might not be justified, commenting that the costs are tantamount to the need for such major railroad rate increases. However, there does not appear to be any likelihood of diverting railroad traffic to safer railroad routes as a result of increased rail traffic. The decision of the Agency was based upon a growing number of railroads whereby rail cars are parked so that their use may be shared among several operating companies to avoid those noise problems peculiar to them that are not preempted by Federal regulatory action.

Numerous comments were received raising the issue of local noise regulations and the effects of Federal preemption on the relationship between State and local noise regulations. The Agency has determined that special local conditions should be interpreted broadly, and some commenters felt that State and local standards were feasible they should not be preempted by Federal regulations.

Most of the comments from State and local authorities indicated that local regulations must be consistent and that they be allowed to attempt to control specialized noise problems such as those caused by trains which affect residential areas. Such local regulations are not preempted by this regulatory action. The Agency has explained the concept of the pre-emptive effect of the Regulatory Action in another section of the preamble and feels that such explanation should serve as a guide to the future status of such State and local regulatory efforts.

(10) Measurement methodology and enforcement regulations. There were a number of comments from State and local governments, professional groups, and industry relating to measurement methodology and enforcement procedures. Several recommendations were made indicating that a measurement methodology and enforcement procedures be incorporated into the regulation. Comments were also received concerning the use of the measurement procedures published in the Background Document to the proposed regulation.

The proposed regulation did not include a detailed measurement methodology since the Agency was concerned that such methodology would be included as part of the com-

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The Agency feels that it is acting properly in including the criteria as part of this final rulemaking without proposing them separately because the methodology on which the criteria were taken was published in the Background Document to the proposed regulation and was commented on as a result of the public review process. In addition, that methodology has been subject to thorough review by concerned Agencies of the Federal government, including the Department of Commerce/National Bureau of Standards, and the Department of Transportation/Federal Railroad Administration, and been revised by the EPA in response thereto.

A comment period, with respect to the additions criteria in Subpart C only, of 30 days from the date of publication of this regulation will be provided for those who have suggestions or questions regarding these criteria. Written comments shall be submitted in accordance with the provisions of Subpart C, Section 1.3 of the preamble, entitled Notice of Proposed Rulemaking.

The Agency also indicated that the C scale would be more appropriate for the noise standards than the A scale. It has been argued that the C-weighted sound level adequately discriminates against low-frequency components in noise levels, whereas the A-weighted sound level is more appropriate for human response. That since the correlation between A-weighted sound level and human response is more closely related to the C-scale, this would not be as accurate.

The Agency believes that the measurement procedures using the C scale would give an accurate and representative measurement of the noise levels at the particular site. The Agency also indicated that the C scale is more sensitive to low-frequency noise components, which are more disturbing to human hearing. It is important to have a scale that can accurately measure these components to ensure that they are not overlooked.

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changes are not substantial; they are only intended to further clarify the
intent of the regulation.

The first substantive change is that the more stringent longer range locomotive
noise emission standards for both stationary and moving conditions will now
apply only to those locomotives newly manufactured, effective December
1973. The changes are reflected in §§ 201.11 and 201.12 of this regulation.

Because of the requirements for the identification of the applicability of
"available technology," specifically as it applies to mufflers, and the reasonable
discovery of such costs attendant to the appli-
cation of that technology, the refund requirement for the existing locomotive
first has been deleted. The Agency is continuing to study the evolution of
muffler technologies which may be ap-
plicable to locomotives without incurring
the significant restructuring costs re-
quired to install current muffler designs. At
such time that the Agency determines that such muffler technology is available at
reasonable cost, relative to the health
and noise benefits to be accrued, regula-
tions requiring the refund of existing
locomotives may be proposed.

The second substantive change to the
regulation involves modifying the pros-
posed "local" level to be calculated by
increasing allowable noise emissions from the proposed level to 70 dB(A) at
100 feet. This change was made in order to accommodate new data which demon-
strates that certain locomotive models appear to be incapable of compliance
with a 70 dB(A) standard through the
application of mufflers alone due to the constant influences of struct-
urally radiated noise during idle oper-
ations. The Agency has been unable to
identify available technology to solve this
problem in locomotives.

The third substantive change to the
regulation is that the effective date of
the new standards has been changed from
270 days to 265 days from the date of
amendment in response to comments
from the EPA.

The final substantive change to the
regulation is the incorporation of addi-
tional measurement criteria into the
standards as a separate subparagraph C
of the regulation. The noise emission standard described in the Agency's regula-
tions must be fully and definitively specified so that there is no question as to the
EPA standard being promulgated. Ac-
cordingly, the following conditions and
parameters necessary for the consistent and accurate measurement of the sound levels
specified have been included in the regulation being promulgated herein.

These changes made to clarify the in-
tents of the regulations and the reasons
therefor are as follows:

Section 201.11 Definitions. The de-
nition of "sound level" was changed slightly to be consistent with the defini-
tion of that term as used in the docu-
tment "Information on Levels of En-
vironmental Noise Requirements for Public Health and Welfare with an Ade-
quately Safeguarded," issued by the
Environmental Protection Agency in
March 1974.

"Fast meter response" has been ex-
thended for clarity.

"Interstate commerce" has been modi-
fied to insure that any questions as to its scope may be resolved by reference to
Section 203(a) of the Interstate Com-
mers Act, consistent with the reference
to that Act in section 171(b) of the Noise
Control Act.

"Pacific" has been deleted since the
word is no longer used in Subpart B of
the regulation.

"Sound pressure level" has been deleted
since the words are no longer used in
Subpart B of the regulation.

"Special purpose equipment" has been
added in order to clarify the meaning of
the term as used in the final regulation.

"Special track work" has been added in order to clarify the meaning of the
term as used in the final regulation.

"National" has been modified slightly to
specify the reference pressure of 20
micropascals.

Section 201.10 Applicability. This sec-
tion has been modified slightly to ac-
curately reflect the publication of § 201.11(a) and (b) to gas turbine powered locomotives
and to any locomotive type which cannot be silenced by any standard notated to a
load cell, and to more clearly specify the
assumptions of intramural mass transit
any terms consistent with the defini-
tion of "carrier" cited in the Act. In
addition to the changes in the section
has been modified to more clearly include the application of the standards to refrigera-
tion and air conditioning units on loco-
motives and rail cars. Finally, the expres-
exclusion of the applicability of the standards to railroad facilities, rights-of-way, or any other railroad appliances or facilities not specified in the
regulation has been deleted as unneces-
sary.

Section 201.11 and 201.12 Standards
for locomotive operation under station-
ary and moving conditions, respectively.
In addition to the applicability and ef-
fective date changes previously outlined, the reference to measurement site sur-
face has been deleted and replaced by
language referencing the measurement
criteria in Subpart B of the regulation.

Also, the phrase for the equivalent
sound level in real use to a load cell has
been deleted.

Section 201.13 Standards for rail car
operations. Track curvature require-
ments for measurement sites identical to
those specified in 201.12 for locomotives
were incorporated into this section in
addition to identical interim measures
relying on the measurement criteria of Subpart
C as used in §§ 201.11 and 201.12 for
locomotives. Also, the language in
the section was modified slightly to
so as to include the regulatory purpose
the total sound emitted by rail cars while
in motion, and to restrict compliance
requirements for rail car track work or bridges or trestles. The change in the effective date previously
described also applies to this section.

Procedural

Though the Noise Control Act speaks
devaunting the issuance of final rules in
unambiguous terms, the various sources of railroad noise are sub-
ject to such complex interrelationships that it is not possible to identify all regu-
lation in prior to ultimate promulgation of
not yet prepared. It is necessary to examine certain aspects of the regula-
tion to determine the extent to which it is
to be controlled, and the reasonable
of the various alternatives to be considered.

As to those regulations
subject to procedures, the pro-
spective effect may be varied under
pursuant to the Administrator
"railroad facilities" as those which will
be regulated by the Act, and governmental agencies where questions of the prospective effect of Federal rail carrier noise regulations are
are to be promulgated:

In view of the many comments rec-
ceived in response to the proposed regu-
lations, the Administrator is intended to
the effect of the regulations prior to
the issuance of final regulations. The
and local governments can deal with
railroad noise problems in different
different ways. The first, the method

to meet their needs, is to set emis-

In a similar manner, the

emissions standards on rail car equip-
ment. These standards can be set on the
basis of technology available today, or
by a combination of available and fore-
seen technology. However, the

approach of the use of property line stan-

dards, where measurements are taken is
the railroad property boundary. Third,
they can impose alternative requirements
on rail car equipment or facilities ("de-

design" or "equipment" standards), such as
the installation of mufflers on locomotives,
the elimination of wheel fans on rail cars, or the construction of noise barriers along rights of way. A fourth possibility is to regulate, license, control or restrict the use, either
in all or any part of a facility. For example, prohibiting idling of locomotives on tracks without consuming or prohibiting railroad yard operations be-
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between the hours of 10:00 p.m. and 1:00 a.m. Furthermore, a State or community may set receiving land use standards for allowances in railroad noise based on the property line of residential property area. The EPA must consider whether allowances for railroad noise, such allowances as established by the railroad company to which the railroad belongs, if such allowances are reasonable, may be adopted by the State or community. The EPA may require that the railroad company establish noise limits in accordance with procedures which are being developed.

COMPLIANCE PROCEDURES

Compliance regulations are to be developed and promulgated under separate publications by the Department of Transportation.

Background Document

"Background Document and Environmental Impact Statement for the Proposed Interstate Rail Carrier Noise Regulation" was prepared prior to publication of the proposed regulation. This document has been revised and new data have been added. The new document is quite lengthy and it would be impractical to publish it in its entirety in the Federal Register. Copies may be obtained from the EPA Public Information Center, 511 Mary E. Jackson Building, West 400, Washington, D.C. 20460. To the extent possible, the significant aspects of the material have been summarized in summary form in the following sections. The topics contained in the summaries are as follows:

1. Summary data and regulatory process
2. Background of the railroad industry
3. Sources of railroad noise and consideration for Federal regulation
4. General procedure to measure railroad noise
5. Economic effects of a repertory program
6. Summary of what the regulation requires
7. Environmental effects of the final regulation
8. Economic effects of the final regulation
9. Index of public comment on the proposed regulations
10. Appendices
recommendations are solicited from all interested persons as to new or advanced technology and its projected cost, the effectiveness of the regulation, or any other topic relevant to these regulations or revisions thereof. Prior to actual formulation of any revision to these regulations, notice of proposed rulemaking will be published so that there may be maximum contribution to the rulemaking development process by interested parties. Written data or views may be submitted to the Director, Standards and Regulations Division, or the Office of Noise Abatement and Control (AW-711), U.S. Environmental Protection Agency, Washington, D.C. 20460.

In addition, as also referenced in the following Agency response to public comments, any personal hearing comments regarding the measurement criteria included in this final regulation may submit such comments to the Director, Standards and Regulations Division, or the Office of Noise Abatement and Control (AW-711), 400 M St. NW, Washington, D.C. 20460.

This regulation is promulgated under the authority of 42 U.S.C. 1378a, 50 Stat. 1324.


J ohn J. Quinlan,
Acting Administrator.

Support B—General Provisions

§ 201.1 Definitions.

Support B—Interstate Rail Carrier Operations Standards

Subpart B—Interstate Rail Carrier Operations Standards

Subpart D—Interstate Rail Carrier Operations Standards

§ 201.10 Applicability.

The provisions of this subpart apply to all rail cars and locomotives, except steam locomotives, operated or controlled by carriers as defined in Subpart C of this part, except that § 201.10(a) and (b) do not apply to gas turbine-powered locomotives and to any locomotive which cannot be connected by any standard method to a load cell. They apply to the total sound level emitted by rail cars and locomotives operated under the conditions specified, which include the sound produced by refrigeration and air conditioning units which are an integral element of such motive or auxiliary power sources not to apply to the sound emitted by a warning device, such as a horn, whistle or bell, when operated for the purpose of safety. They do not apply to special purpose railcars or coaches, such as their use in suburban or intercity electric railways which are operated as a part of a general electric system of transportation.

§ 201.11 Standard for locomotive operations under stationary conditions.

(a) Commencing December 31, 1976, no carrier subject to this regulation shall operate any locomotive to which this regulation is applicable and of which manufacture is complete on or after December 31, 1976, which produces sound levels in excess of 96 dBA at any threshold level, as hereinafter specified in Subpart C of this Part, at a location 10 feet from the geometric center of the locomotive and perpendicular to the centerline of the track.

(b) No carrier subject to this regulation shall operate any locomotive to which this regulation is applicable and of which manufacture is complete on or after December 31, 1976, which produces sound levels in excess of 96 dBA at any threshold level, as hereinafter specified in Subpart C of this Part, at a location 10 feet from the geometric center of the locomotive and perpendicular to the centerline of the track.

This publication is available from the American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018.

(m) "Warning device" means sound emitting devices used to alert and warn people of the presence of railroad equipment.

(n) "Special track work" means track work other than normal tie and ballast bedding or welded rail or other connected devices such as railcuts or switching mechanisms.
tion of track which exhibits less than a two (2) degree curve (or a radius of curvature greater than 673 meters (2,200 feet)).

(b) No carrier subject to this regulation shall operate any locomotive or combination of locomotives to which this regulation is applicable and of which the manufacturer is complied with December 31, 1977, which produce sound levels in excess of 80 dBA (A) when moving at any time or under any condition of track, load, acceleration, or deceleration, measured in accordance with the criteria, as specified in Subpart C of this part, with fast-motor response at 10 meters (100 feet) from the outer edge of any section of track which exhibits less than a two (2) degree curve (or a radius of curvature greater than 673 meters (2,200 feet)).

§ 201.13 Standard for rail car operations.

Effective December 31, 1976, no carrier subject to this regulation shall operate any rail car or combination of rail cars which, while in motion, emits sound levels in excess of (1) 85 dBA (A) at rail car speeds up to and including 72 km/hr (45 mph), or (2) 80 dBA (A) at rail car speeds greater than 72 km/hr (45 mph) when measured in accordance with the criteria specified in Subpart C of this part, with fast-motor response at 3 meters (100 feet) from the outer edge of any section of track which is free of open track work or bridges or trestles and which exhibits less than a two (2) degree curve (or a radius of curvature greater than 673 meters (2,200 feet)).

§ 201.20 Applicability and purpose.

The following criteria are applicable to and contain the necessary parameters and measurements of the noise emissions specified in the standards of Subpart C of this part. These criteria are specified in order to further clarify and define such standards.

§ 201.21 Quantities measured.

The quantities to be measured under the test conditions described below are the source sound levels for fast-motor response as defined in the American National Standards Institute (ANSI) review.

(a) A sound level meter or alternate sound level measurement system that meets, as a minimum, all the requirements of American National Standard Institute (ANSI) review 51.15-1971 shall be used with the "fast" meter response characteristics.

(b) In conducting the sound level measurements, the general requirements of American National Standards Institute (ANSI) review 51.15-1971 shall be followed. This publication is available from the American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018.

(c) Microphone wind-screen recommended by the manufacturer of the sound level meter or microphones of an alternate sound level measurement system shall be used.

§ 201.23 Acoustic environment, weather conditions and background noise.

(a) The standard test site shall be such that the locomotive or rail car radiates sound into a free field over the ground plane. This condition may be considered satisfied if the test site consists of an open space free of large, sound reflecting objects, such as barriers, hills, mountainous, parked vehicles, locomotives or rail cars on adjacent tracks, buildings or structures within the boundaries described by Figure 1, as well as conforms to the other requirements of this § 201.23.

(b) Within the complete test site, the top of at least one rail upon which the locomotive or rail car is located shall be visible (free of objects) from a position 4 feet above the ground at the microphone location, except as provided in paragraph (c) of this section.

(c) Ground cover such as vegetation, fences, road, telephone poles, etc., shall be limited within the area in the test site between the vehicle under test and the measuring microphone such that 80 percent of the top of at least one rail along the entire test section of track be visible from a position 4 feet above the ground at the microphone location.

(d) No rail noise measurements shall be taken for more than hour from the microphone location, except as provided in paragraph (c) of this section.

(e) The ground level at the microphone location shall be within plus or minus 2 feet of the elevation of the top of the rail at the location in line with the microphone.

(2) Within the test site, the track shall exhibit less than 2 degree curve or a radius of curvature greater than 2,200 feet (673 meters). This paragraph shall not apply during a stationary test. The track shall be in use and ballasted, free of special track work and bridges or trestles. (3) Measurements shall not be made during precipitation.

(4) The maximum A-weighted fast responses sound level observed at the test site immediately before and after the test shall be at least 10 dBA (A) below the level measured during the test. For the locomotive and rail car pass-by tests this requirement applies after the train containing the rolling stock to be tested has passed. This background sound level measurement shall include the contribution from the operation of the load cell, if any, including contribution during testing.

(5) Noise measurements may only be made in a wind velocity of 13 mph (13.3 Kph) or less. Gust sound measurements of up to 25 mph (32.2 Kph) are allowed.

§ 201.24 Procedures for the measurement of locomotive and railcar noise.

(a) Microphone position:

(1) The microphone shall be located within the test site for the specified locations given in the test procedures of paragraphs (b), (c), and (d) of this section, and shall be positioned 4 feet above the ground. It shall be oriented with respect to: (1) the source in accordance with the manufacturer's recommendations.

(b) The microphone shall be positioned on a line perpendicular to the track at a point 100 feet from the track centerline.

(c) The sound meter level observed during the test shall be utilized for compliance purposes.

(d) Measurement of locomotive noise shall be made with all tooling fans operating.

(e) Add car pass-by test: (1) For rail car pass-by tests, the microphone shall be positioned on a line perpendicular to the track 100 feet from the track centerline.

(f) Rail car noise measurements shall be made when the locomotives have passed a distance of 100 feet or 10 rail car lengths, whichever is not at the intersection of the track and the line which extends perpendicularly from the track to the microphone location, provided any other locomotives are also at least 300 feet or 60 rail car lengths away from the measuring point. The maximum sound level observed in this manner need not exceed the noise levels specified in § 201.15 shall be utilized for compliance purposes.

(g) Measurements shall be taken on reasonably well maintained tracks.

(h) Noise levels shall not be recorded of brake sound during the test measurement.

(i) Locomotive pass-by test: (1) For locomotive pass-by tests, the microphone shall be positioned on a line perpendicular to the track at a point 100 feet from the track centerline.

(j) The noise level shall be measured as the locomotive approaches and passes by the microphone location. The maximum noise level observed during this period shall be utilized for compliance purposes.

(k) Measurements shall be taken on reasonably well maintained tracks.

(2) The observer shall not stand between the microphone and the source whose sound levels is being measured.
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