ENVIRONMENTAL PROTECTION AGENCY

BUSES

Noise Emission Standards for Transportation Equipment
PROPOSED RULES

ENVIRONMENTAL PROTECTION AGENCY
[40 CFR Part 205]
[FRL 769-31]

BUSINES
Noise Emission Standards for Transportation Equipment

AGENCY
Environmental Protection Agency.

ACTION
Notice of proposed rulemaking

SUMMARY
This notice proposes interior and exterior noise emission standards for buses having a Gross Vehicle Weight Rating (GVWR) in excess of 10,000 pounds. This action is being taken pursuant to the Noise Control Act of 1972. Compliance with the proposed standards should on the average reduce the exterior noise generated by buses by maximum acceleration by 5 dBA and the noise inside buses by maximum acceleration by 7 dBA. The agency consult letter that health and welfare impact of bus noise control by reducing three intrusive effects of bus noise, namely, sleep, waking, sleep disturbance and speech interference. The lowering of exterior noise is expected to result in a 60-90 percent reduction of these intrusive noise effects.

DATES:
The official docket "Docket Number 40 FEDERAL REGISTER 205-9" for the proposed Noise Regulation will be open for the submission of comments until 45 days from date of publication. At that time all materials submitted for the record, including transcripts of all public hearings, will become part of the official record Public hearings will be held on October 25, 1977, commencing at 8 a.m. in the Quality Inn Capitol Hill, 415 New Jersey Avenue NW, Washington, D.C. 20001, and on November 1, 1977, commencing at 9 a.m. in the St. Francis Hotel, 35 Powell Street, San Francisco, Calif. 94110.

ADDRESSES:
Persons submitting written comments to the docket should write to Director, Standards and Regulations Division, Office of Noise Abatement and Control, Room 219B, U.S. Environmental Protection Agency, 491 M Street SW, Washington, D.C. 20460.

SUPPLEMENTARY INFORMATION:
1.0 Introduction
Through the Noise Control Act of 1972, Pub. L. 92-571, 86 Stat. 1234 et seq., 42 U.S.C. 4901 et seq., the "Act", Congress established a National policy to "promote an environment for all Americans free from noise that jeopardizes their health and welfare" In pursuit of that policy, Congress stated, in section 2 of the Act, "that, while primary responsibility for control of noise rests with State and local governments, Federal action is essential to deal with major noise sources in commerce, control of which requires national uniformity of treatment. As part of this Federal action, section 5(b)(1) of the Act requires the Administrator to consult with appropriate Federal Agencies, to publish a report or series of reports "identifying products or categories of products which, in his judgment are major sources of noise" Pursuant to section 5(b)(1), the Administrator issued in the Federal Register, 40 FR 23105, May 28, 1975 a report which identified "buses" as major sources of noise.

Section 8 of the Act requires the Administrator to publish proposed regulations for each product which is identified or which is a part of a product class identified as a major source of noise, where in his judgment noise standards are feasible. Such regulations are to include standards that set limits on the noise emissions from such an identified new product "to protect the public health and welfare, taking into account the magnitude and conditions of use of such product - alone or in combination with other noise sources - the degree of noise reduction achievable through the application of the best available technology, and the cost of compliance."

Section 8(d)(1) of the Act specifies that the manufacturer of each new product shall warrant to the ultimate user and each subsequent purchaser that the product is designed, built, and equipped so as to conform at the time of sale with the regulation.

Under section 8(d)(3), no State or political subdivision thereof may adopt or enforce any law or regulation which takes a limitation on noise emissions from new products regulated by EPA, unless such law is identical to the applicable EPA regulation or "identical" to the standard and those elements of the measurement methodology which define the standard. Unless the law is identical to those in the EPA regulation. However, other elements of the State or local law need not be identical. Such elements include the list of persons subject to the regulations, sanctions, enforcement procedures and correlatable or equivalent "short test" used for enforcement purposes.

Section 8(e)(2) of the Act specifies that nothing in section 8 shall preclude or delay the right of any State or political subdivision thereof to establish and enforce controls on environmental noise and sources thereof through the licensing, regulation, or restriction of use, or operation, or prevention or combination of products. Such controls which are reserved to State and local authority under this section include, but are not limited to, the following:
1) Controls on the time of day during which products may be used.
2) Controls on the places or zones in which products may be used.
3) Controls on the noise emission level of products during use and operation which are enforceable against the consumer.
4) Controls on the number of products which may be operated at the same time.
5) Controls on noise emission level from the properties on which products are used.
6) Controls on the licensing of products.
7) Controls on the manner of operation of products.

State or local time-of-sale noise emission regulations applicable to products which are not covered by Federal regulation and which are in no way preempted by these regulations.

Section 10 of the Act establishes prohibitive acts in relation to products for which section 8 regulations are appli-
cable. Distribution in commerce of any new product manufactured under the effective date of regulations specified in section 6, is prohibited, unless it is in conformity with such regulations. Removal or rendering inoperative of any device or element of design incorporated into any product in compliance with section 6 regulations, other than for purposes of maintenance, repair, or replacement, prior to its sale or delivery to the ultimate purchaser or while it is in use of the product after such device or element of design has been removed or rendered inoperative by anyone is prohibited.

Section 11 of the Act specifies enforcement penalties for violation of any prohibited act under section 10(a), (b), (c), (d), or (e). Such penalties for first violations include a fine of not more than $5,000 or imprisonment for not more than one year, or both. For second or subsequent violations, the penalty doubles for each subsequent violation.

Section 15 of the Act provides the authority for the Administrator to require a manufacturer to establish and maintain records, make such reports, and provide such information as is necessary for him to determine compliance.

Section 15 of the Noise Control Act establishes a process by which the Federal Government will give preference in its purchasing to products where noise emission standards are significantly below those required by the Federal noise emission standards promulgated pursuant to section 15 of the Act. Accordingly, the EPA has published procedures for Certification of Noise-Emission-Producing (40 CFR Part 201).

For buses the specific noise emission level criteria required for Low-Noise-Emission-Producing (LNEP) determination are contained in 205.19(g) of Subpart C of the proposed regulation. Section 16(b) grants the Administrator the authority to issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents to assist him in obtaining information to carry out the purposes of the Act.

2.0 THE PROPOSED REGULATION

The proposed noise emission standards, effective dates, and enforcement provisions of the proposed rule are set forth in Table 1, applicable to buses while operating at maximum noise emission conditions during the peak operating mode. The proposed exterior standard specifies an average A-weighted sound pressure level measured at a height of 1.22 meters (4 feet) at the center line of bus travel. The proposed interior standard specifies an average A-weighted sound pressure level measured at the interior of the passenger compartment. The proposed noise emission standards are based on a time-weighted average of the noise levels during steady-state operation.

The proposed exterior noise emission standards are 72 dB(A) and are based on a time-weighted average of the noise levels during steady-state operation. The proposed interior noise emission standards are 68 dB(A) and are based on a time-weighted average of the noise levels during steady-state operation.

The information gathered by the Agency concerning all aspects of this regulation may be found in the Background Information section of the rule.

2.0 BACKGROUND INFORMATION

3.1 General. The proposed regulation is another in a series of transportation equipment noise regulations to be proposed under section 6 of the Act. In arriving at the proposed regulation, the Agency carried out detailed investigations of the potential environmental and health and welfare benefits associated with the application of various noise control measures; of bus design technology, including bus manufacturing and assembly processes and available bus noise control technology; of bus noise measurement methodology; of costs attendant to bus noise control methods; and of possible economic impacts.

To meet the requirements of the Act, in considering the best available technology "to protect the public health and welfare," the Agency identified the following legal, technical, economic, and other relevant criteria.

- "Best available technology" defined to include the current state of the art and to define the standards that manufacturers will be able to meet by the effective date, through the application of currently known noise attenuation techniques and materials.
- "Cost of compliance" defined as the cost of identifying what action must be taken to meet the specified noise emission level, the cost of taking that action, any additional cost of operation and maintenance caused by that action, and the cost of disposing of that technology.
cost of noise testing and record keeping required by the regulation.

To determine what constitutes the best available technology, the Agency undertook, from a range of sources including: (1) studies performed by Agency personnel; (2) studies performed under contract to the Agency; (3) submissions by other Federal agencies; (4) submissions by industry; and (5) data in the available literature.

Representatives of the Agency carried out extensive interviews with key members of firms in the bus industry to gain first-hand knowledge of the industry and its products and to obtain and verify technical and financial information. Similar interviews were conducted with key persons in interested bus companies, transit authorities, school districts, and bus industry trade associations as well as officials of various Federal agencies including the U.S. Department of Transportation.

3.2 Product Definition. The Agency recognizes that there are many different types of buses commonly operated for the transportation of people and property in the United States. As a result of study and analysis, the Agency has determined that the reasonable definition for "bus" applicable to this noise regulation would be bus type vehicles which have a Gross Vehicle Weight Rating (GVWR) of over 10,000 pounds.

The large majority of bus type vehicles under 10,000 pounds GVWR appear to be vehicles composed of a light vehicle chassis with specialized bus body application. It is reasonable to assume that the technology characteristics of such vehicles are more akin to light vehicle terminology and characteristics than to bus type vehicles over 10,000 pounds GVWR. Accordingly, buses have been defined by the Agency as motor vehicles with a GVWR in excess of 10,000 pounds designed for the transportation of passengers as part of a public road or highway and includes a partially or fully enclosed engine compartment and an enclosed passenger compartment. The principal types of buses that are within this definition are those commonly referred to as school buses, transit buses and intercity buses. There are however, other buses that meet the criteria specified by the Agency and are not typically identified in the above three types of buses. These may include airport buses and similar specialized application buses which are over 10,000 pounds GVWR. Such vehicles are also subject to these regulations. Details regarding the identification of the above vehicles for noise control regulation, their design features and functional characteristics are contained in the Background Document.

3.3 Measurement Methodology. As explained in the Background Document, noise level data for buses were collected by EPA from a number of sources including: (1) submissions by manufacturers; (2) EPA sponsored testing programs at various sites throughout the United States; and (3) data available in the open literature. The Agency placed the interior noise levels under maximum acceleration conditions at a position 15.2 meters (50 feet) perpendicular to the center line of travel were found to be (1) school buses 75-89 dBA, (2) transit buses 75-88 dBA and (3) intercity buses 76-86 dBA. The range of interior noise levels under maximum interior acceleration conditions measured at a height above the bus floor of 1.25 meters (4 feet) inside the area closest to the engine was found to be (1) school buses 81-89 dBA, (2) transit buses 80-89 dBA and (3) intercity buses 77-84 dBA.

The results of studies performed to assess noise control techniques applicable to bus noise indicate that some vehicles design changes may be necessary to control fan and engine related noise. These changes vary in amount and type when applied to the different types of buses over 10,000 pounds GVWR. In the average, it is estimated that improved fan and engine performance and increased fan to engine clearance, and the use of various fan configurations can reduce fan noise by as much as 5 to 8 dBA. It is also estimated that engine casing noise can be reduced by 6 to 8 dBA through the application of acoustically absorbent material to the interior surfaces of the engine compartment. Further design of the engine compartment to modify the engine enclosure and acoustically treat the surfaces of the enclosure will further reduce exterior noise emissions. Finally, substantial reduction in engine exhaust noise can be accomplished by the use of improved mufflers. Current estimates indicate that 6 to 11 dBA for the same buses, the installation of larger mufflers causes relocation concerns and in some cases the loss of rear seat space. When translated into overall vehicle noise reduction, that is, a reduction of noise from a bus during a maximum acceleration measurement test, it is estimated that reduction of 8-10 dBA for all types of buses observed by a logarithmic aggregation of reductions in all component source noise levels can be achieved through the application of available technology.

Related to the reduction of exterior noise levels is the concurrent reduction of interior bus noise levels, which can be accomplished with the application of some additional technology to minimize the transmission of noise from the engine and the exhaust system to the interior compartment of the bus. The principal technologies for reducing interior noise relate to the reduction of vibration transmission along with the application of absorbent material to the interior surfaces of the bus. Where the addition of sound absorbent materials to the interior of the bus may be necessary to reduce the interior noise levels to the regulatory standard, the durability of the materials and their attachment to the bus should be evaluated with existing durability requirements already in effect for the same vehicle type. With the application of these isolation techniques and in some cases interior sound absorbent materials it appears to the Agency that average interior noise levels of 4 to 10 dBA can be achieved across all bus types through the application of available technology.

Details concerning the specific technology applications, their design features, and functional characteristics for each type of bus considered for regulation are presented in the Background Document.

3.4 Measurement Methodology. The Agency desires, whenever practicable, to utilize these measurement standards and techniques voluntarily developed and in general use. However, such standards frequently were developed for non-regulatory purposes and their application to Federal rulemaking necessitates certain modifications. The C-25 exterior noise measurement methodology for buses is a modification of the Society of Automotive Engineers (SAE) J350b method currently employed by many bus manufacturers for new design control purposes. The method encompasses those buses which have automatic transmissions that cannot be normally locked into a specific gear. Besides requiring a modified SAE J350b acceleration sound level test procedure, the Agency is also requiring that these buses be tested according to a new procedure, which, in the Agency's opinion, is a more reliable test procedure. The Agency is pursuing this course of action because it has reasoned that certain buses equipped with engine brakes even when properly locked can generate noise emissions substantially above the proposed standards.

In regard to the selection of the proposed interior sound level measurement procedure, the utilization of the same bus operational procedure as the exterior measurement procedure, a single measurement point representing the noisiest location in the bus interior has been selected for determining compliance with the interior noise standards.

In arriving at the proposed exterior and interior measurement procedures, the Agency has endeavored to arrive at simple, low cost test methods that will provide the necessary product verification at a manufacturer's plant and for compliance testing in the field.

The Agency recognizes that situations may exist or arise where other measurement methodologies, both for exterior and for interior noise, may be just as appropriate for obtaining the required data and, for that matter may have a more substantial use. To this end, the Agency has provided for the consideration of other measurement methodologies where information is furnished showing...
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to the satisfaction of the Administrator that the data from such methodol-
ogy is available to the Public

4.0 RATIONALE FOR STANDARDS SELECTION

In arriving at the proposed regulation, the relative cost of a number of classification schemes which addressed the usage of different types of buses was measured in different urban and suburban environments and the areas where the largest number of citizens are exposed to bus noise, both as bus riders and bystanders. The transit bus, used primarily in highly populated urban and suburban areas, is clearly one appropriate classification. The other classifications, school buses and intercity buses, operate in rural as well as in urban and suburban areas. The health and welfare benefits derived by reducing the noise generated by school and intercity bus buses result from their operation in land use areas where population densities are high as well as in areas of lesser densities. In concluding that all buses above 10,000 pounds GVWR should be regulated to the same level in the same time frame, the Agency looked at relationships among vehicle usage, population impact, noise levels generated with the technologies.

Of particular concern to the Agency was the appropriateness of making the regulations applicable to school buses. The relative cost of reducing school bus noise is high when compared to the health and welfare benefits resulting from noise control of the other on-rural buses. The dilution of the noise benefits caused by this particular type of buses covered by this regulation. For the following reasons, however, EPA proposes to make the regulations applicable to school buses, even though intercity buses operate primarily on major interstate highways and transit buses operate mainly on primary urban/suburban roads. School buses not only travel along these roads but also on secondary streets in suburban residential areas. The only other truck type vehicle which is routinely encountered in these neighborhoods is the "garbage truck." The "garbage" or "solid waste" compactor is presently the subject of a separate proposed noise emission regulation. Accordingly, if not subject to these regulations the school bus would become an issue over time, as all other major sources of urban transportation noise are reduced by regulation, to be the sole source of vehicular noise in the community.

An examination of the regulation of bus noise is the relationship between the technologies to reduce external noise is an ongoing process that is not yet complete. Intermittent studies have shown that, without constant reductions in external bus noise, internal noise problems have not reduced or reduced to the desired. As a result, the regulation of external school bus noise, the health and welfare benefits to be accrued from the regulation of internal school bus noise is required. Requiring noise control regulation of school buses affects uniform treatment of noise control for all types of buses and prevents school buses from becoming the noisiest source of urban/suburban street vehicle noise. This may be even more important in the future in light of the potential for a future increase in the number of diesel vehicles in the school bus fleets of some school districts and the resulting noise increase which would likely occur in the absence of noise source reduction.

If noise control standards were not made applicable to school buses, a group of medium truck chassis vehicles might be allowed to escape the standards already set forth for such vehicles. This is true because the bus industry is highly cost competitive and, as a result, truck chassis manufacturers may not apply truck chassis noise abatement techniques to school bus chassis, since the increase in cost for quieter school bus would be a market disadvantage.

Public comment is particularly invited on the question as to whether these regulations should be applicable to school buses.

The Agency examined the health and welfare benefits that would accrue if bus noise levels were reduced to various selected study levels corresponding to the approximate current average sound levels for each class of vehicle. (m) levels measurable within a sound-proof laboratory, and (n) levels that the Agency believes attainable through the application of "best available technology." The benefits attendant to these levels were then assessed in terms of the number of people who would be exposed to single event noise exposure from both exterior and interior bus noise emissions and the number of people who can be removed from such impact through regulation of bus noise.

In reviewing the noise control technology applicable to bus noise reduction, lower regulatory standards than those found in this proposed regulation (for both exterior and interior bus noise) were studied and were found technologically feasible. However, after assessing the additional costs for such technology and the additional benefits that a future increase to be ascertained from such standards, the Agency determined that the proposed standards were more reasonable to impose.

Estimates of the costs to quiet these vehicles were developed on an engineering cost basis, assuming that incremental reductions from present day average noise levels could be applied to each class of buses. The Agency also examined the potential economic impact that may result from imposition of the various levels of noise reduction technology. The Agency concluded that in order to take advantage of available technologies and the health and welfare benefits from the reduction of noise levels of these vehicles was a better alternative than specifying that all vehicles meet the lower sound intensity levels in one step.

The attainment of the health and welfare benefits from the reduction of bus noise emissions depends on continuous compliance of these products with the Federal noise emission standards during actual use. To ensure that manufacturers develop and apply desirable sound reduction measures to their products, the Agency believes it will be necessary to establish a specific period of time during which newly manufactured products must, as a minimum requirement, comply with the Federal standard. It is the Agency's opinion that this time period should be 2 years of operation to ensure that a 1-2 year compliance with the standard during this period, the Acoustical Assurance Period, is unlikely that the noise emissions of the bus would be increased above the standard for the remainder of the expected life of the product. Provided that the product is properly maintained and operated, the product will be capable of performing at or below the required sound level, and second it relies on the owner/user to properly maintain the product. (The responsibility of the owner/user is discussed in other portions of this preamble. See discussion of anti-tampering infra.)

The Agency considers the concept of an Acoustical Assurance Period necessary because if the product is not built such that it is even minimally capable of meeting the standards while in use over this initial period when properly used and maintained, the standard becomes a nullity and the anticipated health and welfare benefits illusory.

The Agency considers the concept reasonable because in the information which is available to it, it finds that the noise levels of diesel buses do not exceed, appreciably over the initial 2 year period or 200,000 miles where the product is properly used and maintained, and the Agency finds that the industry is technologically capable of designing these products to assure minimal degradation in the noise control features. This capability was considered within the technology, maintenance and cost assessments attendant to the standards proposed in this regulation.

In making the determination that the Acoustical Assurance Period for buses should be 2 years, or 200,000 miles, EPA took into account the magnitude and conditions of use of the major maintenance attendant to noise control, and the cost of compliance.

Among the specific factors considered were:
1. The likelihood that acoustical degradation of noise control features and the resultant increase in noise levels above the standard, would not occur during the Acoustical Assurance Period.
2. The low maintenance required on buses during their years of use; and
3. The relative usage cycles of these products during their early years of use.

In assessing the noise control technology which is needed for compliance
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The proposed bus standards, the Agency found no components which cannot be built to assure minimal or no degradation (therefore in the bus's sound level): Provided, That the bus is properly maintained and used. The Agency has also found that the bus industry, in general, agrees it is possible to produce a long lasting, durable product by using component parts of high quality and bus designs which can withstand and extend use. As a result of the above studies, the Agency has concluded that the AAP requirement will impose additional maintenance or equipment costs over those already estimated as attributable to the proposed regulations.

It is important to understand what AAP means to the manufacturer. The manufacturer will be required to produce a noise-free product that is capable of meeting the standard. The proposed emission standard for the AAP allow the product to be designed and built at the level of the standard assuming no degradation in noise control features with time, or built with noise levels somewhat below the standard to account for some degradation with time. But in neither event can the product exceed the standard during the Acoustical Assurance Period.

EPA is also proposing a procedure whereby the manufacturer must account for sound level degradation in the EPA's compliance testing and verification program. In EPA's testing and verification program by applying a Sound Level Deposition Method (SLDM) or the noise emission standard. The manufacturer estimates that the noise level of his product may exceed 3 dB during the AAP and SLDM would be 3 dB. Then, for production verification (discussed below), the manufacturer would test his product at a level which is 3 dB lower than that specified by the standard. For example, if a manufacturer estimates that the noise level of his product may exceed 3 dB during the AAP and SLDM would be 3 dB. Then, for production verification (discussed below), the manufacturer would have to test his product at a level which is 3 dB lower than that specified by the standard. If a product is not expected to degrade during the AAP, the SLDM will be zero. EPA estimates that in most cases the SLDM would be near or equal to zero.

Manufacturers would be subject to federal enforcement actions consistent with section 11 of the Noise Control Act if the noise emission level during the AAP exceeds the noise emission standard. If the noise emission level during the AAP exceeds the noise emission standard. This concept does not impose any additional burden on the manufacturer for proper maintenance and use. That is, if the product is not properly maintained and used during the AAP, the manufacturer is subject to enforcement actions. In this regard, maintenance instructions from the manufacturer to the owner/maintenance responsible for the product retests with the owner/user.

EPA solicits comments on the approach that has been taken to assess the health and welfare benefits associated with this regulation. EPA also solicits comments on the length of the AAP together with the rationale and data to support the period taken.

5.0 ESTIMATED IMPACT OF PROPOSED REGULATIONS

5.1 Health and Welfare. Approximately 10 million Americans are exposed to 70 dB or more daily noise. This exposure is a component of the urban noise problem. Assessment of the health and welfare impact of bus noise is addressed below. Three indicators of the noise impact of bus noise, which may jeopardize their health and welfare. The consequences of exposure to bus noise for the individual are not well known. EPA is currently involved in efforts to more fully understand the noise measurement techniques utilized in the health and welfare analyses, refer to the Background Document.

5.2 Cost and Economic Impact. Estimates of the costs to quiet buses can be expressed in terms of increased list price. It is estimated that the list price increases of new buses will range from 1.6 to 6.8 percent, depending on bus type and size, resulting in a weighted average list price increase of 3.2 percent for all bus vehicles. There are indications that several small firms in the bus industry, by virtue of their smaller market share, specialized product and other factors, could incur relatively higher manufacturing costs which may result in higher list prices. The Agency is desirous of minimizing disruptive impacts that may be experienced by users as a result of these regulations and solicits data and information which would indicate whether such disruptive impacts could reasonably be expected to occur should these regulations be promulgated as proposed herein.

The total of the costs to users through the year 2085 is estimated to be about $40 billion. For school buses, this results in a potential average increase in the cost of buses per school district of $2.39 per year. The above cost per school district is based on the assumption that the number of students per school district is 1.6 percent of total school production. If the number of students per school district is less than 1.6 percent of total school production, the cost per school district may be increased. The above estimate is based on the assumption that the percentage of diesel school buses produced will remain relatively constant at about 11 percent of total school production. If the percentage of diesel school buses increases significantly, the cost per school district may be increased. The above estimate is based on the assumption that the percentage of diesel school buses produced will remain relatively constant at about 11 percent of total school production.

A portion of any cost increase resulting for transit buses will probably be funded through Federal programs under the Omnibus Transportation and Relocation Act (OMTRA). The above estimate is based on the assumption that the percentage of diesel school buses produced will remain relatively constant at about 11 percent of total school production. If the percentage of diesel school buses increases significantly, the cost per school district may be increased. The above estimate is based on the assumption that the percentage of diesel school buses produced will remain relatively constant at about 11 percent of total school production.
to 50 percent funding of local transit company operating costs. In trying to assess the maximum impact of the proposed regulation on transit and intercity bus fares, the agency assumed that the increased total costs of the regulation would be roughly equal to fare increases. This is an extreme case since almost any increase in fare will result in fare increases. Utilizing such a (worst case) assumption, the agency projects a maximum of a 0.9 to 1.7 percent fare increase as a result of this regulation.

Various aspects of potential economic impact were assessed to evaluate economics which could occur due to implementation of these proposed regulations. Since many effects are difficult to quantify, a qualitative summary follows:

1. Impacts on Suppliers. Some component suppliers may increase their sales depending on their ability to reduce the noise emissions of their product and thereby contribute to the reduction in overall vehicle noise. Further, there are suppliers specializing in the manufacture of sound damping and sound absorbing materials and other products required for abatement would be expected to experience increased sales.

2. Impacts on Exports. Products manufactured for export are not required and therefore comply with the regulation. Accordingly, because the technology studied is readily available, vehicles for export can be readily produced without noise abatement equipment; therefore, compliance is expected to have no effect on foreign trade.

3. Employment Impacts. Regulating the noise emissions of buses will probably have negligible overall effect on employment. The existing research and development (R&D) staffs of major firms and independent suppliers of these services would appear to be able to readily meet the bus industry's R&D requirements for noise abatement. There may, in fact, be a modest increase in supply as new labor to design, build and install the necessary noise abatement materials. This potential increase may be offset by a corresponding decline in regular production of noise abatement products. However, the demand for regulated buses results in this latter point is uncertain since it is also probable that the industry will increase their sales efforts to counter any potential decline in demand in this highly competitive market.

4. Effect on Other National Policies. The proposed regulation is not expected to directly affect the number of buses are produced. The required time for manufacture of the component parts of a bus is - 0.5 years. It is expected that manufacturing

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AL price increases of buses would probably be offset by equal percentage decreases in demand; the net result being an unchanged GNP as expressed in current dollars.

6.0 Enforcement

6.1 General. The EPA enforcement strategy will place a major share of the responsibility for enforcement of the regulations for pre-sale testing to determine the compliance of new vehicles with these regulations and the interior and exterior noise emission standards at the time of sale. This approach leaves the manufacturer in control of many aspects of the compliance program and imposes a minimal burden on the EPA. The effectiveness of this strategy necessitates limited record-keeping and reporting by the manufacturer and monitoring by EPA personnel of the tests conducted and actions taken by the manufacturer to comply with the regulation. Compliances are solicited on this strategy and in particular the reporting requirements contained in the regulation.

The strategy proposed in this regulation for enforcement of both the interior and exterior standards consists of three parts: (1) Production Verification (PV), (2) Before-Enter-Service Auditing (SEA), and (3) In-Use Compliance.

The manufacturer who assembles the complete bus, as in the case of intercity and transit buses, is responsible for satisfying the PV, SEA and in-use requirements of this regulation for both the interior and exterior standards. In the case of buses which are assembled by two manufacturers, such as many Type 3 school buses, the chassis manufacturer is responsible for compliance with the PV, SEA and in-use provisions of this regulation with respect to the vehicle exterior noise emission standard. The body assembler不可能 cause the vehicle exterior noise emissions to exceed the standard and is subject to SEA provisions of the regulation for the exterior standard.

The following discussion of PV, SEA and in-use provisions applies to the enforcement of both the interior and exterior standards and is applicable to the appropriate manufacturer as discussed above.

6.2 Production Verification (PV). This process is to be conducted by each manufacturer of models of a category or configuration of the product, and submitting a report to the EPA. This process, using the proposed methodologies, for both interior and exterior testing, gives the EPA some assurance that the interior and exterior noise control technology is in place and the capability to apply it to the production process. Models selected for testing must have been assembled using the manufacturer's normal assembly method and must be units assembled for sale.

PV does not include any formal EPA approval or issuance of certificates subsequent to manufacturer testing. The proposed regulation would require that, prior to the distribution of any regulated product, a product must undergo production verification. Section 205.105-2a would allow a conditional issuance of EPA certificates, based on tests conducted after sale and in section 205.105-3 of the regulation. The Administrator reserves the right to place any test (including simultaneous testing with the equipment) or to require that a manufacturer ship products for testing to the EPA's Noise Enforcement Facility in Sandusky, Ohio or to any other site the Administrator may find appropriate.

The basic production unit selected for testing purposes is a pre-sale test group, which is a set of vehicles grouped together on the basis of parameters as imposed in § 205.105-3. The manufacturer would be required to verify each configuration. The regulations, however, also allow manufacturers to group configurations into categories based on the parameters proposed in § 205.105-3 and to verify by category. This is done by selecting the configuration in each category that the manufacturer determines will have the highest level of noise emissions at the end of its Accrued Assurance Period (AAP) and will conduct compliance testing on engineering judgment. If in test results do not exceed a sound level defined by the new product standard minus 10 dB and in-use noise degradation over the period of its AAP, the all configurations in that category are considered to be in compliance. This applies to both the interior and exterior standards.

The Administrator also reserves the right to test vehicles at a manufacturer's test facility in place of test conducted by the manufacturer. This will provide the Administrator with an opportunity to observe the manufacturer's test facility and equipment meet the specifications proposed in the regulations. If it is determined that the facility or equipment does not meet these specifications the Administrator may disqualify it from further use for testing under this subpart.

Under proposed § 205.105-11 the Administrator may require that manufacturers submit to him any vehicle, including those tested or scheduled to be tested pursuant to these regulations at such time and place as he may designate.

If a manufacturer proposes to add a new configuration to the product line or to change or modify an existing configuration with respect to any of the configurations, he must verify the new configuration either by testing and submitting data or by filing a report which demonstrates verification on the basis of previously submitted data. A manufacturer may production verify a configuration at any time during the model year or in advance of the model year if he so desires.

Production verification is an annual requirement. However, the Administrator...
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tor, upon request by a manufacturer, may permit the use of data from previous production and test runs for specific configurations or categories.

Production verification performed on the basis of a sample may be used to establish or maintain the noise emission standard limits and the possibility that non-comforming products are distributed in commerce. Because the possibility still exists that subsequent production runs of a vehicle may not conform, selective enforcement auditing testing is incorporated in these proposed regulations.

6.3 Selective Enforcement Auditing. Selective enforcement auditing (SEA) is the testing of a statistical sample of assembly line production vehicles from a specified vehicle configuration or category to determine whether the vehicles comply with the applicable noise emission standards. The Agency proposes to utilize this strategy to oversee compliance with both the interior and exterior standards of SEA testing is initiated when a test request is issued to the manufacturer by the Assistant Administrator for Enforcement or his designated representative. The test request will require the manufacturer to test a batch of vehicles of a specified category or a configuration produced at a specified plant. An acceptable configuration or category may be designated in the event that vehicles of the level for which a test is requested are not available for testing.

The testing will be performed by a technique known as inspection by attributes. The basic criterion for acceptability or rejection of a batch is the number of sample vehicles in the batch which meet the standard, rather than the average noise level of the vehicles tested. A sequential batch sampling inspection plan will be used for SEA testing. Sequential sampling differs from single sampling in that small test samples are drawn from sequential batches rather than one large sample being drawn from a single batch. It offers the advantage of reducing the number of vehicles tested to a minimum when the majority of such vehicles are meeting the standards.

A batch will be defined as the number of vehicles produced the recent or prior scheduled time period specified in the test request. This will allow the Administrator to select batches small enough to keep the number of vehicles to be tested to a minimum and still ensure that the sample size is statistically valid conclusions about the noise emission performance and levels of vehicles in that category or configuration.

The sampling plans proposed in these regulations are based on the size of the batch from which a sample is to be drawn. Each plan specifies the sample size and the acceptance and rejection number for the established acceptable quality level (AQL). This AQL is the maximum percentage of vehicles exceeding the applicable noise emission standard under the local noise level degradation factor that for purposes of sampling inspection can be considered satisfactory. An AQL of 0 percent was chosen for both the interior and exterior standard to take into account some test variability. The upper limit of variability is compared to the acceptance and rejection numbers for the appropriate sampling plan. If the number of failures is less than or equal to the acceptance number, then the batch is acceptable. If the number of failing vehicles is greater than or equal to the rejection number, then there is a high probability that the percentage of non-complying vehicles in the batch is less than the AQL and the batch is acceptable. The number of failing vehicles is greater than or equal to the rejection number, then there is a high probability that the percentage of non-complying vehicles in the batch is greater than the AQL and the batch fails.

Since the sampling plan involves a multiple sampling plan, in some instances the number of failures in a test batch may not allow acceptance or rejection of a batch before test results may be obtained. It may be required until a decision can be made to either accept or reject a batch.

When a batch sequence is tested and accepted in response to a test request, the testing is terminated. When a batch sequence is tested and rejected and the manufacturer chooses to continue production and introduction into commerce of the failed configuration (category), the Administrator may require 100 percent testing of the vehicles of that configuration or category produced at that plant. It may then define the individual vehicles that pass the test. Regardless of whether a batch is accepted or rejected, failed vehicles would have to be repaired or adjusted and passed before the product can be distributed in commerce.

The manufacturer can request a hearing over the issue of non-compliance of the rejected category or configuration. During the hearing, the manufacturer is allowed to present evidence in response to a test order and may consider any evidence in completing all testing. The proposed approach is to establish a limit on test time per vehicle. It is estimated that the time required to test a vehicle exterior and/or interior noise measurement can test a minimum of five (5) vehicles per hour. However, manufacturers are required to present any data or information that may affect a revision of this estimate.

6.4 Administrative orders. Section 11(a)(1) of the Act gives the Administrator authority to issue remedial orders to supplement the criminal penalties of section 11(a). This provision grants the Administrator discretionary authority to impose remedial orders to supplement the criminal penalties of section 11(a). The proposed regulations provide for several types of orders in several situations: (1) Recall orders for failure of vehicles to comply with regulations, (2) cease to distribute orders for vehicles not properly production verified; (3) cease to distribute orders for failure to test, (4) cease to distribute orders for failure to test, and (5) cease to distribute orders for failure to test.

In addition, 40 CFR 120.4(c) provides for cease to distribute orders for substantial infraction of regulations requiring testing and the ability to label the vehicle and the in-use compliance label that must be applied to the vehicle and the in-use compliance label that must be applied to the vehicle.

6.5 In-use compliance. In-use compliance provisions are included in 40 CFR 120.5. The language of the Act requires that the manufacturer provide a warranty to purchasers, the manufacturer in defining those acts that constitute a violation to purchasers that constitute a violation to the purchaser and to all subsequent purchasers that the manufacturer will make available to the ultimate purchaser and to the ultimate purchaser and to all subsequent purchasers that at the time of sale the product was designed and manufactured to meet the applicable noise emission standards. Specific confessions on the advantages and disadvantages of increased costs to the level of the standard on the compliance label are solicited from all concerned parties.

It should be noted that the warranty is a time-of-sale warranty. Section 6 of the Act requires that a manufacturer make a warranty to the ultimate purchaser and all subsequent purchasers that at the time of sale the product was designed and manufactured to meet the applicable noise emission standards. A warranty claim can be made by the ultimate purchaser at any time throughout the actual life of the product so long as it relates back to a non-compliance at the time of sale.

6.7 Acoustical assurance period (AAP) compliance label. The manufacturer must also design his product so that it will meet the noise standard for the period of the Acoustical Assurance Period beginning at the date of delivery to an ultimate purchaser. EPA does not specify what testing or analysis a manufacturer must conduct to determine that his vehicles will meet the AAP requirements of these regulations. Therefore, these regulations do require the manufacturer to make a determination regarding the expected degradation and maintain records of the test data and other information upon which the determination was based.
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may be based on information such as tests of critical noise producing or abatement components, rates of noise control degradation, engineering judgments based on previous experience, and physical durability characteristics of the product or product components.

The mechanism used in these regulations to express the amount of expected degradation, if any, is the sound level degradation factor (SLDF). The SLDF is the degradation (noise level increase in A-weighted decibels) which the manufacturer expects will occur on a configuration during the period of time specified as the AAC. The manufacturer must determine an SLDF for each of his vehicle configurations.

To ensure that the vehicles will meet the noise standard throughout the AAP, they must emit a time of sale sound level less than or equal to the new product sound emission standard minus the SLDF. In no case shall this noise level exceed the federal standard. In the case of the SLDF, a negative SLDF may not be used. Production verification and selective enforcement audits shall be used to verify compliance with this principle.

If the product's noise level is not expected to deteriorate during the AAP when properly used and maintained, and the SLDF is 0, if a manufacturer determines that a vehicle configuration will become quieter during the expected service period, the configuration must meet the standard at the time of sale, and an SLDF of 0 must be used for that configuration.

This standard should impose little, if any, additional cost on the manufacturer. In fact, a basic assumption in our analysis and data has been that the noise level of a product which is properly used and maintained will not degrade, at least, not at any appreciable amount. However, EPAs is not dictating that the product's noise level cannot deteriorate in the AAC, but rather merely requiring that it not deteriorate above the standard. It may be that most of the data required to determine an SLDF will already be in the hands of the manufacturer. In any event, EPA is not now requiring that long-term durability tests be run as a matter of course.

It is practically impossible to predict the performance of a manufacturer's products and to ensure that new products are not subject to any particular degradation. Any attempt to do so will only lead to increased costs for the manufacturer and to the imposition of unnecessary and unrealistic requirements on new products.

A detailed description of the enforcement regulations may be found in the Background Document.

7.0 PROPOSED RULES

The Agency is pursuing a strategy through which major contributors to overall transportation noise will be identified and subsequently regulated. This coordinated approach is necessary because a number of different types of vehicles are operated at the same time on the highway system and the quieting of only one vehicle type will not in itself be sufficient to adequately reduce the noise from the transportation system to a level the Agency believes requisite to protect the public health and welfare with an adequate margin of safety.

The Agency intends to continue its investigations pursuant to noise regulatory actions for other transportation vehicles. Consequently, the levels specified for the standard in this proposed rulemaking are consistent with the Agency's objective to ultimately reduce the total noise emitted from all transportation vehicles, including medium and heavy trucks, buses, automobiles and light duty vehicles and motorcycles.

6.0 PUBLIC COMMENT

The Agency is committed to statute and policy to public participation in the decision-making process for its environmental regulations. That policy encourages and solicits communications and comments on all aspects of the proposed regulation, including EPAs's determination that there are a major sources of noise that may affect the environment and to which public comments are invited. Public comments are invited on the draft environmental impact statement for the Proposed Noise Emission Regulation.

The Agency is not required to address all comments on public comments. However, the Agency is committed to considering all comments on the draft environmental impact statement and to taking all reasonable and necessary steps to address all comments.

7.0 BACKGROUND DOCUMENT

The document entitled "Draft Environmental Impact Statement, and Background Document for the Proposed Bus Noise Emission Regulation" may be obtained from:

U.S. Environmental Protection Agency, EPA Public Information Center, Room 311B, 1315 L Street, N.W., Washington, D.C. 20460

This regulation is proposed under the authority of sections 6, 10, 11, 13, and 15 of the Noise Control Act, 42 U.S.C. 5063, 5067, 5073, 5074, and 5086. U.S.C. 4095, 4096, 4110, 4112, and 4114.

Date: August 28, 1977.

DOUGLAS M. COSTER, Administrator.

Authority: Sec. 8, Noise Control Act (42 U.S.C. 4095) and additional authority as specified.

Subpart C—Buses

§ 205.100 Applicability.

These regulations apply to any bus or vehicle (as defined in 205.101) which meets the definition of the term "new product" in the Act.

§ 205.101 Definitions.

(1) "Acceptable quality level" means the maximum percentage of failing vehicles that, for purposes of sampling inspection, may be considered satisfactory as a process average.

(2) "Acceptance of a batch" means that the number of noncomplying vehicles in the batch sample is less than or equal to the acceptance number as determined by the appropriate sampling plan.

(3) "Acceptance of a batch sequence" means that the number of rejected batches in the sequence is less than or equal to the acceptance number as determined by the appropriate sampling plan.

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(4) "Acceptance of a vehicle" means that the noise emissions of the vehicle, when measured in accordance with the applicable procedures as delineated in this subpart, conform to the applicable standard minus the applicable SLDP.

(5) "Batch" means the collection of vehicles of the same category or configuration as designated by the Administrator in a test request, from which batch sample is to be drawn and inspected to determine performance with the acceptability criteria.

(6) "Batch sample" means the collection of vehicles of the same category or configuration which are drawn from a batch from which test samples are drawn.

(7) "Batch size" means the number as designated by the Administrator in the test request of vehicles of the same category or configuration in a batch.

(8) "Batch sample size" means the number of vehicles of the same category or configuration in a batch sample.

(9) "Base" means any vehicle which has an enclosed passenger compartment.

(10) "Category" means a group of vehicles which are identical in all material aspects with respect to the parameters listed in §205.105-2.

(11) "Configuration" means the basic classification unit of a manufacturer's product line and is comprised of all vehicle designs, models, or series which are identical in material aspects with respect to the parameters listed in §205.105-3.

(12) "Designed for the transportation of passengers on a highway or a street" means that the vehicle:
   (a) Is self-propelled and is designed for the transportation of passengers; and
   (b) Is capable of maintaining a maximum cruising speed of at least 25 mph over a level paved surface.

(13) "ERP" means equipment or systems used in vehicles to reduce the noise emissions from vehicles measuring or testing is to be conducted pursuant to the measurement method specified in §205.104.

(14) "Evaluation" means any vehicle selected for testing, verified pursuant to the production verification requirements of this subpart.

(15) "Exhaust system" means the system comprised of a combination of components which provides for enclosed flow of exhaust gas from engine exhaust port to the atmosphere.

(16) "Failure vehicle" means that the noise emissions of the vehicle, when measured in accordance with the applicable procedure, exceed the standard minus the applicable SLDP.

(17) "Gross vehicle weight rating" (GVWR) means the value specified by the manufacturer as the loaded weight of a single vehicle.

(18) "Governing engine speed" means the maximum engine speed achieved under the regulation test conditions, where wide-open-throttle is maintained through the end point.

§205.102 Vehicle noise emission standards

(1) "Low noise emission product" means any vehicle which emits noise in quantities significantly below the levels specified in noise emissions standards under the applicable regulation.

(2) "Maximum rated engine speed" means the maximum engine speed, as determined by the manufacturer, above which the "uncovered engine" should not be operated.

(3) "Model year" means the manufacturer's annual production period which includes January 1 of such calendar year: Provided, That if the manufacturer has an annual production period, the term "model year" shall mean the calendar year.

(4) "Noise control system" includes any noise control system, the primary purpose of which is to control or cause the reduction of noise emitted from a vehicle.

(5) "Noise emission test" means a test conducted pursuant to the measurement methodology specified in §205.104.

(6) "Rejection of a batch" means the number of noncomplying vehicles in the batch sample is greater than or equal to the rejection number as determined by the appropriate sampling plan.

(7) "Rejection of a batch sequence" means the number of rejected batches in a sequence is equal to or greater than the rejection number as determined by the appropriate sampling plan.

(8) "Shift" means the regular production work period for one group of workers.

(9) "Sound Level Degradation Factor" (SLDF) means the sound level degradation factor for a given vehicle.

(10) "Test sample size" means the collection of vehicles from the same category or configuration which is drawn from the batch sample that will receive noise emission tests.

(11) "Test sample size" means the number of vehicles of the same category or configuration in a test sample.

(12) Vehicle means any motor vehicle, with a gross vehicle weight rating (GVWR) in excess of 10,000 lbs, designed for the transportation of passengers on a street or highway and includes a partially or fully enclosed engine compartment.

§205.104 Vehicle noise emission standards

(1) "Low noise emission product" means any vehicle which emits noise in quantities significantly below the levels specified in noise emissions standards under the applicable regulation.

(2) "Maximum rated engine speed" means the maximum engine speed, as determined by the manufacturer, above which the "uncovered engine" should not be operated.

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(7) "Rejection of a batch sequence" means the number of rejected batches in a sequence is equal to or greater than the rejection number as determined by the appropriate sampling plan.

(8) "Shift" means the regular production work period for one group of workers.

(9) "Sound Level Degradation Factor" (SLDF) means the sound level degradation factor for a given vehicle.

(10) "Test sample size" means the collection of vehicles from the same category or configuration which is drawn from the batch sample that will receive noise emission tests.

(11) "Test sample size" means the number of vehicles of the same category or configuration in a test sample.

(12) Vehicle means any motor vehicle, with a gross vehicle weight rating (GVWR) in excess of 10,000 lbs, designed for the transportation of passengers on a street or highway and includes a partially or fully enclosed engine compartment.
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§ 205.103 Maintenance of records; Submittal of information.

(a) Except as otherwise provided for in this regulation or in the applicable part of any new vehicle subject to any of the standards or procedures prescribed in this part, the manufacturer shall have on file and retain the following adequately organized and indexed records:

(1) General records.

(2) Description and description of all vehicles, including a test vehicle, on which the manufacturer will perform production testing.

(3) A description of any procedure other than those contained in this regulation used to perform noise tests on any test vehicle.

(4) A record of the calibration of the acoustical instrumentation as required by § 205.104-1.

(5) Individual records for test vehicles.

(6) A complete record of all noise emission tests performed on PV and SEA test vehicles, including all individual workcards and other documentation relating to each test, or each copy thereof.

(7) A record and description of all repairs, maintenance, and other service performed on PV and SEA test vehicles, giving the date and time of the maintenance and the name of the person authorizing it, and the name of the person responsible for the conduct of the maintenance or service.

(8) A properly filed production verification report following the format prescribed by the Administrator in § 205.103-4 fulfills the requirements of paragraphs (a)(1), (2), (3), (5), and (6) of this section.

(9) Records required to be maintained under this part shall be retained by the manufacturer for a period of three (3) years from the production verification date. Records may be retained at hard copy or alternatively reduced to microfilm, microfiche, etc., depending on the record retention procedures of the manufacturer; however, all of the information essential to the reason for the test shall be retained in the alternative method if such a method is used.

(b) The manufacturer shall, pursuant to a request made by the Administrator, submit to the Administrator the following information with regard to new vehicle production:

(1) Number of vehicles, by category or configuration, scheduled for production for the time period designated in the request.

(2) Number of vehicles, by category or configuration, produced during the time period designated in the request.

(3) For vehicles with manual transmission, or for vehicles with automatic transmissions which can manually be held in gear, an acceleration point shall be established on the vehicle path at 16.7 meters (100 feet) before the microphone.

(4) For vehicles with automatic transmission, or for vehicles with manual transmission, or for vehicles with automatic transmissions which cannot be manually held in gear, a starting point shall be established as described in paragraph (a)(1) of this section.

(5) An end point shall be established on the vehicle path at 30.5 meters (100 feet) from the acceleration point and 15.2 meters (50 feet) from the microphone.

(6) The end zone is the last 12.2 meters (40 feet) of vehicle path prior to the end point.

(7) The measurement area shall be the triangular paved-concrete or sealed asphalt area formed by the acceleration point, the end point, and the microphone location.

(8) The reference point on the vehicle, used to indicate when the vehicle is at any of the points on the vehicle path, shall be the front of the vehicle except as follows:

(1) If the engine is front mounted and the bottom distance from the front of the vehicle to the exhaust outlet is more than 6.1 meters (20 inches), length of vehicle path test shall be run using both the front and rear of the vehicle as reference points.

(2) If the main body of the engine is located rearward to the center of the vehicle or up to the approximate center (15 meters, 5 feet) of the chassis, the rear of the vehicle shall be set as the reference point.

(3) If the vehicle contains the microphone path and the microphone location plane (AABCDE) shall be flat within ±0.05 meter (±2 inches).

(4) Measurements shall not be made when either the road surface or the measurement surface area is wet, covered with snow, or other precipitation.

(5) Not more than one person, other than the observer reading the meter, shall be within 15.2 meters (50 feet) of the vehicle path or instrument and the person shall be directly behind the observer reading the meter, on a line through the microphone and observer.

(6) A cable should be used between the microphone and the sound level meter. No observer shall be located within 1 meter (3 feet) in any direction of the microphone location.
(11) The maximum A-weighted fast response sound level, observed at the test site immediately before and after the test shall be at least 10 dB below the regulated level.

(12) The road surface within the test site upon which the vehicle travels, and at minimum, the measurement area shall be smooth concrete or smooth sealed asphalt free of extraneous material such as gravel.

(13) Vehicles with diesel engines shall be equipped with a number 2D or number 2D diesel fuel possessing a cetane rating of 42 to 50 inclusive.

(14) Vehicles with gasoline engines shall be allowed to enter the test site immediately before and after the test shall be at least 10 dB below the regulated level.

(15) Vehicles equipped with thermostatically controlled radiator fans (fan clutches) shall be tested with the fan engaged in a "lock up" mode such that the fan drive hub and the fan are turning at the same speed as in the same mode as in the design limits of the particular fan clutch design.

(c) Procedure.—(1) Vehicle operation for vehicles equipped with manual (standard) transmissions or for vehicles with automatic transmissions which can be manually held in gear. Full throttle acceleration and closed throttle deceleration tests shall be used. A minimum engine speed and proper gear ratio shall be determined for use during measurements. Closed throttle deceleration tests are required only for those vehicles equipped with an engine brake. In the procedure contained in paragraph (a) of this section, the phrase "governed engine speed" applies to vehicles which are equipped with engine speed governor, while the phrase "maximum rated engine speed" applies to vehicles which are not equipped with engine speed governor.

(i) Select the highest rear axle and/or transmission gear ("highest gear") for use in the usual sense; it is synonymous with the lowest numerical ratio and an initial vehicle speed such that at wide open throttle the vehicle will accelerate from the acceleration point.

(A) Starting at no more than two-thirds (66%) of maximum rated or governed engine speed.

(B) Reaching maximum rated engine speed (if the vehicle is not equipped with an engine governor) or governed engine speed (if the vehicle is equipped with an engine governor) at the test site within the end zone.

(C) Without exceeding 56 km/hr (35 mph) before reaching the test site.

(D) Should maximum or governed rpm be attained before reaching the end zone, the test path is that the vehicle has passed the test site in the opposite direction of travel and is used for the sound measurement tests.

(E) The vehicle shall then be accelerated, as rapidly as possible to establish a wide open throttle, until the first transmission shift point is reached.

(F) The vehicle shall then be accelerated, as rapidly as possible to establish a wide open throttle, until the first transmission shift point is reached.

(G) The vehicle shall then be accelerated, as rapidly as possible to establish a wide open throttle, until the first transmission shift point is reached.

(H) The vehicle shall then be accelerated, as rapidly as possible to establish a wide open throttle, until the first transmission shift point is reached.

(I) The vehicle shall then be accelerated, as rapidly as possible to establish a wide open throttle, until the first transmission shift point is reached.

(J) The vehicle shall then be accelerated, as rapidly as possible to establish a wide open throttle, until the first transmission shift point is reached.

(K) The vehicle shall then be accelerated, as rapidly as possible to establish a wide open throttle, until the first transmission shift point is reached.

(L) The vehicle shall then be reversed for sound testing.
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(1) For the acceleration test, accelerate the vehicle from a standing position with the front of the vehicle at the starting line (located by marking the ground); the test shall be performed by using paragraph (c)(2)(i) of this section, as rapidly as possible to establish a steady rate. The acceleration shall continue until the entire vehicle has reached the end zone.

(1) If the vehicle being tested is equipped with an engine brake, it must be also be tested at: (a) Approach the reference point at maximum rated engine speed (if the vehicle is not equipped with an engine speed governor or governed engine speed (if the vehicle is equipped with an engine speed governor)); in the gear utilized for the acceleration test. When the vehicle's reference point reaches the microphone point, close the throttle immediately apply the engine brake fully and allow the vehicle to decelerate to one-half of maximum rated or governed engine speed. The vehicle reference point shall be as indicated in paragraph (c)(2) of this section. The engine brake must be held on during the test.

(2) Measurements. (1) The meter shall be set for "fast response" and the network weighted.

(2) The sound meter shall be observed during the pass when the vehicle is accelerating. The acceptable readings shall be the highest sound level obtained for the pass. The test shall be repeated if unrelated peaks should occur due to extraneous ambient noise.

(3) Sound level measurements shall be taken on both sides of the vehicle. The average of the two shall be the average of the two past-by-measurements for that side, if they are within 0.5 db. The average of the measurements on each side shall be computed separately. If the first two measurements do not agree within 0.5 db, two additional measurements shall be made on each side, within 2 db of each other, shall be added to the measured vehicle sound level for both sides. The reported vehicle sound level shall be the highest of the two averages.

(4) General requirements. (1) Measurements shall be made only when wind gusts are less than 13 mph.

(2) Proper usage of all test instrumentation is essential to obtain valid measurements. Operating manuals or other literature furnished by the instrument manufacturers shall be referred to for both recommended operation of the instrument and precautions to be observed. Additional means to be adequately considered are:

(i) The effects of ambient weather conditions on the performance of the instruments (for example, temperature, humidity, and barometric pressure);

(ii) Proper signal levels, terminated impedances, and cable lengths on multi-channel measurement systems;

(iii) Proper acoustical calibration procedure, to include the influence of extension cables, etc. Field calibration shall be made immediately before and after each test sequence. Internal calibration means is acceptable for field use; provided that external calibration is accomplished immediately before or after field use.

(3) A complete calibration of the instrumentation and external acoustical calibrator, such to meet the frequency ranges of interest shall be performed at least annually and as frequently as necessary to maintain the engine at temperatures within the range of 100 Hz - 10,000 Hz.

(4) Calibration corrections shall be made for barometric or altitude changes according to the recommendation of the instrument manufacturer.

(5) The vehicle shall be brought to a temperature within its normal operating range prior to commencement of testing. During testing proper temperature shall be maintained to maintain the engine at temperatures within the normal operating range.

(6) Alternative procedures. The Administrator may approve applications from manufacturers of buses for exterior noise level test procedures which differ from those contained in this part so long as the alternative procedures have been demonstrated to provide results consistent with the prescribed procedure. To be acceptable, alternative testing procedures shall be such that the Administrator will identify all those test units which would not comply with the noise emission standard prescribed in § 205.104-1 which when tested in accordance with the procedure contained in § 205.104-1, Tests conducted by manufacturers under approved alternative test procedures may be accepted by the Administrator for all purposes including, but not limited to, production verification testing and selection enforcement and testing.

§ 205.104-2 Low speed interior sound emission test procedures.

Interior sound levels shall be measured using the following measurement equipment and test site area, and vehicular operation as described in the procedures for measurement of exterior noise emissions § 205.104-1.

(a) Instrumentation. The following instrumentation shall be used, where applicable:

(i) A sound level system which meets the requirements of ANSI S1.1, Specification for Sound Level Meters, or a sound level system with a magnetic tape reader and an electronic level indicator or indicating meter may be used providing the system meets the requirements of § 205.104-3.

(ii) Windscreen must be employed along with the microphone during all measurements. The windscreen shall not affect the A-weighted sound levels from the vehicle in excess of 2 db.

(iii) A sound calibrator shall be used which shall produce a sound pressure level, at the microphone diaphragm, that is known, within an accuracy of ±0.5 dB. The calibrator shall be checked annually to verify that its output has not changed.

(iv) An engine speed tachometer which is accurate to within ±2 percent of the meter reading.

(v) A thermometer for measurement of ambient temperature accurate within ±1°C.

(b) A barometer for measurement of atmospheric pressure accurate within ±3 percent.

(2) Microphone placement. (1) The test site shall be such that the bus radiates sound into a free field over a reflecting plane. This condition may be considered fulfilled if the test site consists of an open space free from reflecting surfaces, such as parked vehicles, signboards, buildings or hillsides, located within 304 meters (100 feet) of the vehicle path.

(2) For all buses other than those with a front mounted engine, the microphone shall be located next to the passenger seat location closest to the main body of the engine at a height of 1.25 meters (4.1 ft.) from the floor. In addition, the microphone shall be placed at least 0.5 meters (1.6 ft.) from the nearest vehicle wall.

(3) For front mounted engine buses the microphone shall be placed next to the vehicle operator's seat at a height of 1.25 meters (4.1 ft.) from the floor and at least 0.5 meters (1.6 ft.) from the nearest vehicle wall.

(4) The microphone shall be tilted towards the front of the bus at an angle of 20-30 degrees from the vertical.

(5) Engine operation.

(a) Procedure. The bus shall be operated the same manner as prescribed in § 205.104-1. The same idle rates, near rates, along with the same procedure as modified by transmission type shall be utilized.

(b) All windows and doors shall be closed on the bus and all interior fan accessories (including air conditioning fans and, or, heating fans) turned on.

(i) Measurements. (1) The test shall begin and end with A-weighted network.

(2) A meter shall be observed during the period while the bus is accelerating. The applicable reading shall be the highest sound level obtained during the run. The test shall be run if unrelated peaks should occur due to extraneous ambient noise.

(3) The average of the two highest levels within 2 db of each other shall be reported as the interior sound level of the bus.

(4) General requirements. (1) Not less that one person, other than the observer reading the meter and the driver shall be in the bus at the time of measurement.

(2) Not the maximum A-weighted fast rise sound level observed in the test shall be immediately before and after the testing shall be at least 10 dB below the regulatory level.
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§205.104-3 Sound data acquisition system.

(i) Systems employing tape recorders and graphic level recorders may be established as equivalent to a Type I ANSI S1.4-1971 sound level meter for use in determining compliance with this regulation by meeting the requirements of this section (§205.104-3(b)) of this section. This sound data acquisition system qualification procedure is based primarily on ANSI S1.4-1973.

(ii) Performance requirements—

(a) System Frequency Response. The overall steady-state frequency response of the data acquisition system shall be within the tolerances prescribed in Table 205.101 when measured in accordance with §205.101-3. The tolerances in Table 205.101 are applicable to either flat or A-weighted response. (See paragraph (a)(3)(iii) of this section.)

(b) Detector response. The difference between the level indicated for a 1000 Hz sinusoidal signal equivalent to a sound level of 80 dB re rms and the level indicated for an octave band of random noise of equal energy as the sinusoidal signal centered at 1000 Hz shall be no greater than 0.5 dB. A true rms voltmeter shall be used to determine equivalent of this section and the following.

Table 205.101—System response data

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(iii) Indicating meter If an indicating meter is used to obtain sound levels or band pressure levels, it shall meet the requirements of paragraphs (a)(2) and (a)(4) of this section and the following.

(iv) Frequency response qualifier procedure. The following qualification procedure is cited. The qualification procedure is shown in figures 205.102 through 205.104. The qualification procedure described herein is to determine the response of the system when the microphone is replaced by an electronic sine wave oscillator. Cautions should be applied to the input of a sound level meter to ensure the input is not overloaded. (See, §205.104-2(b)(3)).
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Figure 205.102 Data Recording

Microphone

Precision Sound Level Meter

Tape Recorder

Figure 205.103 Data Analysis and Test Analysis

Tape Recorder

Amplifier

Graphic Level Recorder

Meter Readout

Figure 205.104 Test Recording

Oscillator

Precision Sound Level Meter

Tape Recorder

(1) Calibrate the oscillator to be used by measuring it's output relative to the voltage which is equivalent to 80 dB sound level at each of the 27 frequencies listed in Table 205.101 using an electronic voltmeter of known calibration. Record the result in voltage level in dB re voltage corresponding to 86 dB sound level at 1000 Hz. This shall describe the frequency response characteristics of the oscillator.

(2) If a graphic level recorder is to be used, connect it to the oscillator output. If the oscillator and graphic level recorder can be synchronized, slowly sweep the frequency over the range of 31.5 to 12,000 Hz, recording the oscillator output. If they cannot be synchronized, record oscillator output for signals at the 27 frequencies given in Table 205.101. The difference between the combined response thus obtained and the oscillator describe the frequency response of the graphic level recorder.

(3) If visual observation of an indicating meter is to be used for obtaining data, the oscillator shall be connected to the indicating meter input such that the microphone input of a sound level meter and the meter reading observed for a fixed oscillator output voltage setting for signals at the 27 frequencies given in Table 205.101.

(4) To check a tape recorder, connect the instruments as shown in Figure 205.102. Using a 1000 Hz tone, adjust the oscillator output level to obtain a reading 15 dB below maximum record level. If the synchronized oscillator graphic level recorder system is to be used for analysis, record an oscillator sweep over the range of 31.5 to 12,000 Hz, using an appropriate tape recorder input attenuator setting. Alternatively, tape-record frequency tones at the 27 frequencies given in Table 205.101. Record the data on a graphic level recorder or through visual observation of the indicating meter. Subtract the oscillator frequency response in paragraph .(1)2 of this section from the response obtained through the record-playback sequence to obtain the record reproduce frequency response of the system except for the microphone.

(5) To obtain the overall system frequency response, add the manufacturer's microphone calibration data to the response just obtained. This may be the frequency response for the specific microphone to be used, including calibration tolerances. Alternatively, use the manufacturer's "typical" microphone response plus and minus the maximum deviation expected from "typical" including calibration tolerances. Use the microphone response curve which corresponds to the manner in which it is used in the field. It may be required to add a correction to the response curves provided to obtain field response: refer to the manufacturer's manual.

(6) General control. The tape recorders shall be calibrated using the brand and type used for actual data acquisition. Differences in tape can cause an appreciable variation in the recorder reproduce frequency response characteristics of tape recorder.

(7) It shall be ensured that the instrumentation used will perform within specifications and applicable tolerances over the temperature, humidity, and other environmental variation ranges which may be encountered in vehicle noise measurement works.

(8) Qualification test shall be performed using equipment including cables and recording and playback techniques identical to those used while recording vehicle noise. For example, if weighted sound level data are normally recorded use similar weighting and apply the tolerances of Table 205.101 to the weighting curve for comparison with record-playback curves. Frequencies should also be taken to ensure that source and load impedances are approximate to the device being tested. Other data acquisition systems may use any combination of microphones, sound level meters, amplifiers, tape recorders, graphic level recorders, or indicating meters. The same approach to qualifying such a system shall be taken as described in this document for the systems depicted in Figures 205.102, 205.103, and 205.104.

(9) Systems other than those specified in § 205.101-1(a) and § 205.101-3(c) may be used for establishing compliance with these regulations. In each case the system must yield sound levels which are equivalent to those produced by a sound level system Type 1 ANSI S1.4-1071. The manufacturer bears the burden of demonstrating such equivalence. The manufacturer shall notify the Administrator with respect to § 205.101-1(b) and 205.101-3(c) of the use of such a sound data acquisition system.

§ 205.103 Production verification

§ 205.103-1 General requirements.

(a) Every new vehicle manufactured for distribution in commerce in the United States which is subject to the standards prescribed in this subpart and not exempted in accordance with § 205.3

(1) Shall be verified in accordance with the production verification procedures described in this subpart.

(2) Shall be represented in a product verification report, as required by § 205.104.

(3) Shall be labeled in accordance with the requirements of § 205.105-1.

(4) Shall conform to the applicable exterior and interior noise emission standard established in § 205.102 of this regulation.

(b) The requirements of paragraph .(a) of this section dealing with interior noise standards apply to new products at the time they first come to the definition of vehicles in these regula-
PROPOSED RULES

The requirement for complying with the requirements of paragraphs (a), (b), (c), and (d) of this section with the manufacturer of the new product at the time the product first conforms to the definition of vehicle in this regulation.

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The requirements of paragraph (zz) of this section with the manufacturer or the manufacturer to the manufacturer of the new product at the time it first conforms to the definition of vehicle in these regulations.
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§205.105-3 Configuration identification.
(a) Exterior configuration parameters. Each exterior configuration parameter shall be determined by each combination of the following parameters:
(1) Exhaust system configuration:
(a) Single vertical,
(b) Single horizontal,
(c) Dual vertical.
(2) Air induction system configuration:
(a) Natural,
(b) Forced.
(3) Cooling fan type:
(a) Axial,
(b) Radial.
(4) Engine manufacturer's horsepower rating.
(b) Catalog parameters listed in §205.105-2.
(c) Interior configuration parameters.
(1) Accessory with the bus, affecting noise emission:
(a) Type of noise emission:
(b) Type of noise emission:
(c) Design characteristics of the bus body affecting noise transmission:
(i) Thickness and type of acoustic and thermial insulation between the floor and the walls.
(2) Catalog parameters listed in §205.105-2.
(2) Product verification report required data.
(a) Prior to distribution in commerce of any vehicle to which this regulation applies, the manufacturer shall submit to the Administrator, Noise Enforcement Division (EN-281), U.S. Environmental Protection Agency, 401 M Street SW., Washington, D.C. 20470, a manufacturer may choose to submit separate production verification reports for different parts of the product line.
(b) The report shall be signed by an authorized representative of the manufacturer and shall include the following:
(1) The name, location, and description of the manufacturer's noise control test facilities which meet the specifications of §205.101.
(2) Background and general information.
(3) Description of the noise control test procedures used in the test vehicle and which will not be performed on all other production vehicles.
(4) The reason for replacement where a replacement vehicle was necessary, and test results, if any, for replaced vehicles.
(5) The complete description of the sound data collection system observer and methods of operation incorporated into the vehicle specifically for the purpose of noise control.
(b) Manufacturer shall provide for in paragraph (a) of this section, information provided in previous reports need not be resubmitted. Except that information necessary to update or make current previously submitted information must be submitted.
(d) Any change with respect to any information reported pursuant to this subpart shall be reported as soon as the change becomes available.
(2) Product verification report required data.
(a) Test vehicle sample selection.
(1) Test vehicles for a configuration for which production verification testing is required by §205.105-2 shall be a vehicle of the subject configuration which has been assembled using the manufacturer's normal production processes and will be sold or offered for sale in commerce.
(b) In the event a configuration to be tested includes both automatic transmission and standard transmission vehicles, the test vehicle shall be an automatic transmission vehicle unless the manufacturer has reason to believe that the automatic transmission vehicle emits a greater sound level.
(3) Product verification report required data.
(a) Prior to the official test, the test vehicle selected in accordance with §205.105-3 shall not be preformed, tested, modified, adjusted, or maintained in any manner other than such adjustments, prepartions, modifications, or test, other than the manufacture's prescribed manufacturing and testing procedures, and documented in the manufacturer's manual or vehicle assembly and inspection procedures or unless such adjustments, preparation, modifications, or tests are required or permitted under this subpart or are approved in advance by the Administrator. The manufacturer may not perform adjustments, preparations, modification, or tests normally performed at the port of entry by the manufacturer to prepare the vehicle for delivery to a dealer or a customer: Provided, That such adjustments, preparations, modifications, or tests are documented in the production verification report.
(b) Equipment or fixtures necessary to conduct the test may be installed on the vehicle: Provided, That such equipment or fixtures shall have no effect on the noise emissions of the vehicle, as determined by the measurement methodology.
(c) In the event the vehicle malfunction (i.e., fails to start, etc.) the manufacturer may perform the maintenance that is necessary to enable the vehicle to operate in a normal manner: Provided, That such maintenance is documented and reported in the final report and prepared and submitted in accordance with this subpart.

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(d) No quality control, testing, assembly, or selection procedures shall be used on the test vehicle or any portion thereof, including parts and subassembly, which will not normally be used during the production and assembly of all other vehicles of the category which will be distributed in commerce, unless such procedures are required or permitted under this subpart or are approved in advance by the Administrator.

(SEC. 11, Noise Control Act (42 U.S.C. 4904).)

§ 205.105-7 Testing.

1. The manufacturer shall conduct one valid exterior and/or interior test in accordance with the test procedures specified in § 205.104 for each vehicle selected for certification testing.

2. No maintenance will be performed on the test vehicle except as provided for by § 205.105-6. In the event a vehicle is unable to complete either emission test due to the test equipment, the manufacturer may change the vehicle. Any replacement vehicle will be a production vehicle of the same configuration, production date, and configuration and will be subject to all the requirements of this section.

3. Any replacement shall be reported in the production verification report including the reason for the replacement.

4. In the event a vehicle fails to comply with the standards of this subpart when tested in accordance with the procedures specified in paragraph (a) of this section, the manufacturer may proceed in accordance with § 205.105-6.

(SEC. 11, Noise Control Act (42 U.S.C. 4911).)

§ 205.105-8 Addition of, changes to, and deviations from a vehicle constructed during the model year.

(a) Any change in a configuration with respect to any of the parameters stated in § 205.105-3 shall constitute the addition of a new and separate configuration or category to the manufacturer's product line.

(b-1) When a manufacturer introduces a new category or configuration to this product line, he shall proceed in accordance with § 205.105-2.

(b-2) If the configuration to be added can be grouped within a verified category and the new configuration is estimated to have a lower sound pressure level than a previously verified configuration within the same category, the configuration shall not be considered verified. Provided, that the original category remains verified. Provided, that the manufacturer submits a request pursuant to § 205.105-4 with respect to such configuration.

(SEC. 11, Noise Control Act (42 U.S.C. 4912).)

§ 205.105-9 Production verification based on data from previous model year.

(a) Production verification of each configuration will be required at the beginning of each model year except that in certain instances, the Administrator, upon request by the manufacturer, may permit the use of production verification data for specific configurations from previous production verification reports. Considerations relevant to his decision must include but are not limited to:

1. The level of the standard in effect for the model year in question;

2. Performance based on production verification data for previous model years;

3. Performance based on data obtained from selective enforcement testing during previous model years; and

4. The number and type of noise emission design changes incorporated in the new models that affect the noise emission level of that model.

(SEC. 11, Noise Control Act (42 U.S.C. 4912).)

§ 205.105-10 Cessation of distribution.

(a) If a configuration or a category is found to be non-complying with the test requirements by reason of failure to be properly verified, as required by § 205.105-2, the Administrator may require the manufacturer to cease to distribute in commerce vehicles of that category or configuration. However, such an order shall not issued if the manufacturer has made a good faith attempt to properly produce vehicles which comply with the standards of this section.

(b) Any such order shall be issued after notice and opportunity for a hearing.

(SEC. 11, Noise Control Act (42 U.S.C. 4912).)

§ 205.105-11 Labeling (interior/external) for certified vehicles.

(a) The manufacturer who is required to satisfy the production verification requirements of these regulations for the interior and/or exterior standards must satisfy the requirements of this section.

1. The manufacturer of any vehicle subject to the provisions of § 205.102 shall, at the time of manufacture, affix a permanent, legible label, of the type and in the manner described in paragraphs (a)(2), (3), and (4) of this section, containing the information specified in this section, to all vehicles to be distributed in commerce. The labels shall be affixed in such a manner that they cannot be removed without destroying or defacing them, and shall not be affixed to any equipment which is easily detached from such vehicle.

2. A label shall be permanently attached, in a readily visible position in the operator's compartment.

3. The label regarding exterior vehicle noise emissions shall contain the following information lettered in the English language in block letters and numerals, which shall be of a color that contrasts with the background of the label:

1. The label heading:

Vehicle Exterior Noise Emission Information

2. Full corporate name and trademark of manufacturer.

(III) Date of manufacture;

(IV) The statement:

This vehicle conforms to U.S. EPA Regulations for Exterior Noise Emission Applicable to Buses.

(a) The following acts or the causing thereof by any person are prohibited by the Noise Control Act of 1972:

1. The removal or rendering inoperative, other than for purposes of maintenance, repair or replacement, of any noise control device or element of design, on any vehicle or any portion of the vehicle, except as manufactured.

2. The use of this vehicle with any device or element of design which has been removed or rendered inoperative.

(b) Vehicles manufactured solely for use outside the United States shall be clearly labeled "For Export Only".

(c) The label regarding the interior vehicle noise emissions shall contain the following information lettered in the English language in block letters and numerals, which shall be of a color that contrasts with the background of the label:

1. The label heading: Vehicle Interior Noise Emission Control Information

2. Full corporate name and trademark of manufacturer.

3. Date of manufacture;

4. The statement:

This vehicle conforms to U.S. EPA Regulations for Interior Noise Emission Applicable to Buses.

(a) The following acts or the causing thereof by any person are prohibited by the Noise Control Act of 1972:

1. The removal or rendering inoperative other than for purposes of maintenance, repair or replacement, of any noise control device or element of design, on any vehicle or any portion of the vehicle, except as manufactured.

2. The use of this vehicle with any device or element of design which has been removed or rendered inoperative.

(b) Vehicles manufactured solely for use outside the United States shall be clearly labeled "For Export Only".

(c) The label regarding the exterior vehicle noise emissions shall contain the following information lettered in the English language in block letters and numerals, which shall be of a color that contrasts with the background of the label:

1. The label heading:

Vehicle Exterior Noise Emission Information

2. Full corporate name and trademark of manufacturer.

3. Date of manufacture;

4. The statement:

This vehicle conforms to U.S. EPA Regulations for Exterior Noise Emission Applicable to Buses.
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205.107-2 Test vehicle sample selection.

(a) Vehicles comprising the batch sample which are required to be tested pursuant to a test request issued under this section shall be selected in the manner specified in the test request from a sample of the vehicle category or configuration specified in the test request. If the test request specifies that vehicles comprising the batch sample must be selected randomly, the random selection will be achieved by sequentially numbering all of the vehicles in the batch and then using a table of random numbers to select the number of vehicles as specified in paragraph (1) of this section based on the batch size designated by the manufacturer in the test request. An alternative random selection plan may be used by a manufacturer; Provided, That such a plan is approved by the Administrator. If the test request does not specify that test vehicles must be randomly selected, the manufacturer shall select test vehicles consecutively. The provisions of §205.107-1(c) shall also apply to this section.

(b) The Acceptable Quality Level is 10 percent. This standard for nonconformal factors which result in the temporary unavailability of vehicles is based upon the number of vehicles in the batch and upon the number of nonconformal factors which result in the temporary unavailability of vehicles.

(c) The batch sample size will be determined by reference to Tables 1 and 2 of Appendix I to this part. The code letter is obtained from Table I based on the batch size and the number of nonconformal factors which result in the temporary unavailability of vehicles. The batch sample size will be obtained from Table II. The batch sample size will be calculated from the cumulative sample size for the appropriate code letter obtained from Table II and the number of nonconformal factors which result in the temporary unavailability of vehicles. The batch sample size will be the maximum cumulative sample size for the appropriate code letter obtained from Table II and the number of nonconformal factors which result in the temporary unavailability of vehicles. The batch sample size will be calculated from the cumulative sample size for the appropriate code letter obtained from Table II and the number of nonconformal factors which result in the temporary unavailability of vehicles. 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PROPOSED RULES

Sample size will be determined by entering Table 1.

(i) Test vehicles of the category or configuration selected for testing shall have been assembled by the manufacturer for distribution in commerce using the manufacturer's normal production process.

(ii) Unless otherwise indicated in the test request, the manufacturer will select the batch sample from the production batch next scheduled for receipt of the test request, of the category or configuration specified in the test request.

(iii) Unless otherwise indicated in the test request, the manufacturer shall select the vehicles designated in the test request for testing.

(b) At their discretion, EPA Enforcement Officers, rather than the manufacturer, may select the vehicles designated in the test request.

(c) The manufacturer will keep on hand all vehicles in the batch sample until such time as the batch is accepted or rejected in accordance with §205.107-6. Usually, that vehicles actually tested and found to be in conformance with these regulations need not be kept.

(See 13, Noise Control Act (42 U.S.C. 4012))

§ 205.107-3 Test vehicle preparation.

Prior to the official test, the test vehicle selected in accordance with §205.107-2 will be prepared in accordance with §205.109-4.

(See 13, Noise Control Act (42 U.S.C. 4012))

§ 205.107-4 Testing procedures.

(a) The manufacturer shall conduct one valid test in accordance with the test procedures specified in §205.104 for each vehicle selected for testing pursuant to this subpart.

(b) No maintenance will be performed on test vehicles except as provided for by §205.107-2. In the event a vehicle is unusable in the emission test, the manufacturer may replace the vehicle. Any replacement vehicle will be a production vehicle of the same configuration as the replaced vehicle. It will be randomly selected from the batch sample and will be subject to all the provisions of these regulations.

(See 13, Noise Control Act (42 U.S.C. 4012))

§ 205.107-5 Reporting of the test results.

(a) (1) The manufacturer shall submit a copy of the test report for all testings conducted pursuant to §205.107 as the conclusion of each 24-hour period during which testing is done.

(b) For each test conducted, the manufacturer will provide the following information:

(i) Sound Level Degradation Factor (SDLDF)

(ii) Year, make, assembly date, and model of vehicle;

(iii) Vehicle serial number; and

(iv) Test results by serial numbers.

(b) The manufacturer shall, within 5 days after completion of testing of all vehicles in a batch sample, submit a test report in accordance with §205.107-2 to the Administrator. The test report shall be considered final and shall not be subject to challenge or appeal. The report shall be submitted on Forms E0044, Form E0045, or Form E0046, as applicable.

(c) Acceptance or rejection of a batch takes place when the decision that the vehicle is a failure vehicle is made on the last vehicle required to be inspected under paragraph 1(a) of this section.

(See 13, Noise Control Act (42 U.S.C. 4012))

§ 205.107-7 Acceptance and rejection of batch sequences.

(a) The manufacturer will continue to inspect consecutive batches until the batch sequence is accepted or rejected. The batch sequence will be accepted or rejected based on the number of rejected batches. A sufficient number of consecutive batches will be inspected until the cumulative number of rejected batches is less than or equal to the acceptance number or rejection number appropriate for the cumulative number of batches inspected. The acceptance and rejection number listed in Table III of Appendix I to this subpart at the appropriate code letter obtained according to §205.107-2 will be used in determining whether the acceptance or rejection of a batch sequence has occurred.

(b) Acceptance or rejection of a batch sequence takes place when the decision that the vehicle is a failure vehicle is made on the last vehicle required to be inspected under paragraph 1(a) of this section.

(c) If the batch sequence is accepted, the manufacturer will not be required to perform any additional testing on vehicles from subsequent batches pursuant to the batch sequence required by this rule.

(d) The manufacturer may terminate testing earlier than required in paragraph (b) based on a request filed by the manufacturer, accompanied by voluntary emission of distribution in commerce, from all vehicles, of the vehicle category or configuration in question. Provided, That once production is reimbated the manufacturer must file the application in accordance with §205.107-1(a) and (b) prior to distribution in commerce of any vehicle from any plant of the vehicle category or configuration in question.

(See 13, Noise Control Act (42 U.S.C. 4012))
proposed rules

§ 203.107-3 continued testing.

If a batch sequence is rejected in accordance with paragraph (b) of §203.107-7, the administrator may require continued 100 percent testing with respect to all vehicles of that category or configuration produced at that plant.

(p) The administrator will notify the manufacturer in writing of his intent to require any 100 percent testing of vehicles pursuant to paragraph (a) of this section.

(1) Any tested vehicle which demonstrates nonconformance with the applicable standards may be distributed into commerce.

(2) Any knowing distribution into commerce of a vehicle which does not comply with the applicable standards is prohibited.

(Section 12, Noise Control Act (42 U.S.C. 4912).)

§ 203.107-9 prohibition on distribution for unsatisfactory manufacturer's record.

(a) The administrator will permit the cessation of continuous testing under §203.107-7 upon the manufacturer's record has taken the following actions:

(1) Submits a written report to the administrator which demonstrates the reason for the nonconformance of the product, describes the problem, and describes the corrective and recall action taken by the manufacturer to correct the problem or follows the requirements of an engineering change pursuant to §203.108-9; and

(2) Demonstrates that the specified product, category or configuration has passed a test conducted in accordance with §203.197 and the conditions specified in the initial test request.

(b) Any product failing the prescribed noise emission tests conducted pursuant to this Subpart C may not be distributed in commerce until such time as adjustments or repairs have been made and the product passes a test.

(c) No batches of a rejected batch which are still in the hands of the manufacturer may be distributed in commerce unless the manufacturer demonstrates to the satisfaction of the administrator that such products do in fact conform to the regulation. Except that any product that has been tested and does, in fact, conform with this regulation may be distributed in commerce.

(Section 11, 12, Noise Control Act (42 U.S.C. 4910, 4912).)

§ 203.108 in-use requirements.

§ 203.108 in-use requirements.

§ 203.108-1 warranty.

(a) The vehicle manufacturer who is required to production verify the exterior noise emission standard under this part shall include in the owner's manual or in other information supplied to the ultimate purchaser the following statement:

Exterior Noise Emissions Warranty

warranties to the first purchaser of the first motor vehicle covered by this paragraph (a) of this part.

(b) Any other person who purchases this vehicle for purposes other than resale and to each subsequent purchaser that this vehicle was designed, built and equipped to conform at the time of sale to such first purchaser with all applicable U.S. EPA and exterior noise control regulations.

This warranty is not limited to any particular component, part, or system of the vehicle. If the designer, assembly, or in any part, component, or system of the vehicle which, at the time of sale to such first purchaser, caused exterior noise emission levels to exceed Federal standards are covered by this warranty for the actual life of the vehicle.

(c) The manufacturer who is required to production verify the interior noise level standard under this part shall include in the owner's manual or in other information supplied to the ultimate purchaser the following statement:

Interior Noise Emissions Warranty

warranties to the first purchaser of the first motor vehicle covered by this paragraph (a) of this part.

(d) Any other person who purchases this vehicle for purposes other than resale and to each subsequent purchaser that this vehicle was designed, built and equipped to conform at the time of sale to such first purchaser with all applicable U.S. EPA and interior noise control regulations.

This warranty is not limited to any particular component, part, or system of the interior of the vehicle. If the designer, assembly, or in any part, component, or system of the vehicle which, at the time of sale to such first purchaser caused interior noise emission levels to exceed Federal standards are covered by this warranty for the actual life of the vehicle.

(e) Not later than the date of submission of the product verification report required by §203.105-4, the manufacturer shall submit to the administrator the following:

(1) A copy of the written noise emission warranty required by paragraph (b) of this section and two (2) copies of all other information provided to the ultimate purchaser which can reasonably be construed as impacting on the warranty.

(2) Not later than ten (10) days after dissemination of the manufacturer shall submit to the administrator two (2) representative copies of all information of a general nature, or modifications thereof, which is provided to dealers, zone representatives, or other agents of the manufacturer regarding the administration and application of the noise emission warranty. Information regarding noise emission warranty claims which is provided to a dealer or representative in response to a particular warranty claim or dealer inquiry is not considered to be information of a general nature, if such information does not reveal broad discrimination to dealers.

(f) All information required to be forwarded to the administrator pursuant to this section shall be addressed to: Director, Noise Enforcement Division, (ENV), U.S. Environmental Protection Agency, 401 M Street, NW, Washington, D.C. 20460.

(Section 11, 12, Noise Control Act (42 U.S.C. 4910, 4912).)

§ 203.109 tampering.

(a) The following provisions are applicable as appropriate to the manufacturer who is required to conduct production verification for the exterior and/or interior standard:

§ 203.109 tampering.

(a) (1) The provisions of this section are intended to apply to the manufacturer for the purpose of tampering with the vehicle to alter the A-weighted sound level of the vehicle or that the
PROPOSED RULES

vehicle still meets the noise emission standard of § 205.102, such act will not constitute tampering.

The provisions of this section are not intended to preclude any State or local jurisdiction from adopting and enforcing its own prohibitions against the removal or rendering inoperative of noise control systems on vehicles subject to this part.

9. All information required by this section to be furnished to the Administrator shall be sent to the following address:

Director Noise Enforcement Division 3571 U.S. Environmental Protection Agency 401 M Street SW., Washington, DC 20460.

§ 205.108-3 Instructions for maintenance, use and repair.

(a) The manufacturer responsible for the exterior and or the interior noise standards shall provide to the ultimate purchaser of each vehicle covered by this subsection written instructions for the proper maintenance, use and repair of the vehicle and or vehicle body in order to provide reasonable assurance of the elimination or minimization of noise emission degradation throughout the life of the vehicle.

(b) The purpose of the instructions is to inform purchasers and mechanics of such acts necessary to reasonably assure that the degradation of noise emission level is eliminated or minimized during the life of the vehicle. Manufacturers shall prepare the instructions with this purpose in mind. The instructions shall be clear, concise, and written in non-technical language.

(c) The instructions shall not be used to secure an unfair competitive advantage. They shall not restrict replacement equipment to original equipment or service to dealer service unless such manufacturer makes public the performance specifications on such equipment.

(d) For the purpose of encouraging proper maintenance, the manufacturer shall provide a record or log book which shall contain a schedule for the performance of all required noise emission control maintenance. Such schedule shall be provided in this record book so that the purchaser can note what maintenance work was done and when and where.

(e) Not later than the date of submission of the production verification report required by § 205.105-4, the manufacturer shall submit to the Administrator two copies of the maintenance instructions including the record book required by paragraphs (a) and (b) of this section.

§ 205.108-4 Sound level degradation factor (SLDF) and retention of durability data.

(a) Each manufacturer responsible for compliance with the standards specified in § 205.102 shall develop a Sound Level Degradation Factor for each of his vehicles, utilizing the records compiled under paragraph (b) of this section.

(b) The manufacturer shall establish and maintain records which demonstrate the increase in sound level which will occur for each vehicle configuration during the specified AAP.

(c) The records may include, but need not be limited to, the following:

(i) Durability data and actual noise testing on critical sound producing or attenuating components.

(ii) Sound level deterioration curves on the entire vehicle.

(iii) Data from products in actual use.

(d) The SLDF is to be used in all production verification testing and selective enforcement audit testing to determine compliance.

(e) If the manufacturer determines the vehicle sound level will not increase during the AAP when properly used and maintained, the SLDF is zero.

(f) If a manufacturer determines that a vehicle's sound level will not increase, but rather decreases with use, yielding a negative SLDF, he shall use zero as the SLDF in all testing under these regulations, but shall determine and record the actual SLDF.

(g) A separate SLDF shall be developed for both the exterior and the interior standards.


(i) Pursuant to section 11(d)(1) of the Act, the Administrator may issue an order to the manufacturer to recall and repair or modify any vehicles distributed in commerce which are not in compliance with this subpart.

(j) A recall order issued pursuant to this section shall be based upon a determination by the Administrator that vehicles of a specified category or configuration have been distributed in commerce which do not conform to the regulations. Such determination may be based on:

(i) A technical analysis of the noise emission characteristics of the category or configuration in question; or

(ii) Any other relevant information, including test data.

(k) For purposes of this section, noise emissions may be measured by any test prescribed in § 205.104 for testing to prior sale or in any other test which has been demonstrated to correlate with the prescribed test procedure.

(l) Any order to recall shall be issued only after notice and an opportunity for a hearing.

(m) All costs, including labor and parts, associated with the recall and repair or modification of non-complying vehicles under this order shall be borne by the manufacturer.

(n) This section shall not limit the discretion of the Administrator to issue any other actions which are authorized by the Act.

Sec. 11, Noise Control Act (42 U.S.C. 4909).

APPENDIX I

Table I - Sample size code letters

<table>
<thead>
<tr>
<th>Size</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 5</td>
<td>A</td>
</tr>
<tr>
<td>6 to 15</td>
<td>B</td>
</tr>
<tr>
<td>16 to 25</td>
<td>C</td>
</tr>
<tr>
<td>26 and larger</td>
<td>D</td>
</tr>
</tbody>
</table>

Table II - Sampling plan for inspecting batches

<table>
<thead>
<tr>
<th>Sample size code</th>
<th>Sample number</th>
<th>Test sample</th>
<th>Test sample size</th>
<th>Cumulative test sample size</th>
<th>Batch inspection criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>Acceptance No.</td>
</tr>
<tr>
<td>B</td>
<td>200</td>
<td>100</td>
<td>200</td>
<td>300</td>
<td>Rejection No.</td>
</tr>
<tr>
<td>C</td>
<td>100</td>
<td>50</td>
<td>150</td>
<td>250</td>
<td>Rejection No.</td>
</tr>
<tr>
<td>D</td>
<td>50</td>
<td>25</td>
<td>75</td>
<td>100</td>
<td>Rejection No.</td>
</tr>
</tbody>
</table>

Note: Batch acceptance not permitted at this sample size.
### Table III—Batch sequence plans

<table>
<thead>
<tr>
<th>Sample size code letter</th>
<th>Number of batches</th>
<th>Cumulative number of batches</th>
<th>Acceptance No.</th>
<th>Rejection No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>C</td>
<td>4</td>
<td>8</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>8</td>
<td>12</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

- Batch sequence rejection not permitted for this number of batches.
- Batch sequence acceptance not permitted at this number of batches.

### Table IV—Recommended format for vehicle noise data sheet

**Test report No.**

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Test results and location</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIN</td>
<td>Category identification,</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Model No.</td>
</tr>
<tr>
<td>Model year</td>
<td>Serial No.</td>
</tr>
<tr>
<td>Test sample</td>
<td>Number of samples</td>
</tr>
</tbody>
</table>

**Test data:**

<table>
<thead>
<tr>
<th>Approach</th>
<th>Test</th>
<th>Run No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Right</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highest RPM at idle runs</th>
<th>Calculated sound pressure</th>
<th>dB</th>
<th>1</th>
</tr>
</thead>
</table>

**Intake Test**

<table>
<thead>
<tr>
<th>Microphone location</th>
<th>Calculated sound pressure</th>
<th>dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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