



January 9, 2002

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Margaret Borushko  
U.S. Environmental Protection Agency  
National Vehicle and Fuels Emission Laboratory  
2000 Traverwood  
Ann Arbor, Michigan 48105

Re: Comments on 66 FR 51098 - 51272, Docket # A-2000-01

Dear Ms. Borushko:

The Ozone Transport Commission (OTC) appreciates the opportunity to provide comments into docket #A-2000-01 regarding the U.S. Environmental Protection Agency (EPA's) October 5, 2001 proposal entitled "*Control of Emissions From Nonroad Large Spark Ignition Engines and Recreational Engines (Marine and Land-Based); Proposed Rule* (66 FR 51098-51272). OTC is a multi-state organization whose main focus is to develop regional solutions to the ground-level ozone problem in the Northeast and Mid-Atlantic region of the U.S. It is committed to finding innovative approaches that maximize public health and environmental benefits. OTC was created by Congress, and its members include: Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia.

A non-road rule is a necessary component of EPA's integrated mobile source control strategy. A regulation that ensures emission reductions in hydrocarbons (HC), nitrogen oxides (NOx), carbon monoxide (CO), particulates (PM), and air toxics from non-road sources will reduce ambient levels of ground-level ozone and regional haze, as well as address other air quality and public health concerns within the Ozone Transport Region (OTR). Specifically, emission reductions from non-road sources are needed in the OTR to help OTC States attain and maintain the Federal one-hour and eight-hour ozone National Ambient Air Quality Standards (NAAQS). As OTC States are pre-empted from setting their own standards for new non-road engines and vehicles, we rely on EPA for a strong and protective national rule that will maximize emission reductions for this sector.

EPA's proposal is a good first step in addressing non-road emissions. These engines as a whole contribute substantially to total State hydrocarbon (HC) emissions inventories. The categories of engines covered in this proposed rule comprise a significant portion, i.e., 13%, of mobile source hydrocarbon emissions, which are precursors to the formation of ground-level ozone.

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Emissions from non-road mobile sources also contribute to hotspots of toxic emissions. As a category, non-road engines contribute 28% of benzene and 18% of 1-3 butadiene emissions nationally. Both are ambient air toxics of significant health concern. Emissions from non-road engines are more bioavailable than other pollution sources because human exposure is in close proximity to the engine. For example, studies have indicated that the exhaust from large spark ignition engines contains 10,000 to 90,000 parts per million (ppm) of benzene, whereas the federal ambient occupational health standard for benzene is 200 ppm. Clearly, there are significant public health concerns that must be addressed through a protective national rule to ensure these levels of environmental exposure do not occur in the future.

Overall, the rule proposes across the board improvements in non-road engines. Some of the proposed standards would require specific, cleaner technologies in order to be met. OTC strongly supports efforts that encourage the use of four-stroke engines over two-stroke engines, which are generally much more polluting. For these vehicle categories, we believe that significant technological strides have been made that ensure protective standards can be met in a cost-effective and technologically feasible manner. EPA's proposal is very cost effective, particularly for HC and NO<sub>x</sub> emission reductions. These numbers are even more dramatic when considering the associated fuel savings accrued from cleaner technologies; within this context, costs for the program are essentially non-existent.

While OTC is generally supportive of EPA's proposed standards, we believe that some of the standards should be set at even more protective levels; finalizing the proposal as currently written would pass up an important opportunity to reduce emissions and protect public health. We believe that EPA's proposal should be technology forcing and must move towards converting the non-road fleet toward cleaner catalyst-based and four-stroke engine technologies.

Below are OTC's specific recommendations for modifications, further analyses, and future actions.

#### 1. Large Spark Ignition Engines

OTC supports EPA's two-phased approach for achieving emission reductions from large spark ignition engines. This category includes engines that power ground support vehicles and forklifts. The proposed steady-state duty cycles for phase one is a good first step, and we strongly support EPA's phase two plans to develop a transient test, which will be effective in 2007 along with more stringent standards. The proposed standards require a 92% reduction in CO and an 84% reduction in NO<sub>x</sub>+HC. They also require use of three-way catalysts, electronic controls, and more sophisticated controls in 2007.

To the extent that EPA did not propose exhaust gas recirculation (EGR) or designed spark timing for this category, and given the long lead time proposed for the second phase, we believe that the standards could be improved to yield greater emission reductions. For example, EPA's emissions testing program, which tested engines with 3-way catalysts for 5-12,000 hours, indicated low NO<sub>x</sub> + HC emissions levels at half of the most stringent proposed standard.

Any concerns regarding the potential for increased CO emissions with decreases in HC emissions could be addressed with engine optimization.

Instead of offering alternative standards for heavily loaded engines, as per the proposal, OTC believes that EPA should move manufacturers toward improving engine design details in order to meet standards while under heavy load.

OTC would also like EPA to address rebuilt engines in this category. We are concerned that improperly rebuilt or maintained engines that are used beyond their useful life would result in greater emissions. We urge EPA to examine and take steps to ensure that these engines, when rebuilt, are maintained and operated to their fullest potential and efficiencies.

## 2. Recreational Vehicles

a. **Off Road Motorcycles:** The off-road motorcycle standards proposed by EPA are a good first step towards regulating these vehicles. Based on the proposed standards, in 2006, this category would generally shift to four-stroke engines, but would not require the use of catalysts.

Presently, 35% of this category is comprised of two-stroke competition motorcycles, and 55% of this category is comprised of four-stroke recreational bikes. EPA's proposed waiver for non-road motorcycles used in competitive racing applications is, at face value, appropriate. However, given that EPA estimates that approximately 80,000 licensed motorcycle racers replace their motorcycles every other year, there may be 40,000 motorcycles per year that become available on the used motorcycle market, and, with appropriate customization, could be used for on-road purposes. We urge EPA to examine the impacts of this scenario and develop means to close this loophole for the final publication of this rule.

b. **All-Terrain Vehicles:** EPA proposes two phases of standards that become effective in 2006 and 2009. The proposed standards require four-stroke engine technology with electric fuel injection as well as three-way catalysts. However, engine manufacturers could be able to meet the standards without catalysts.

OTC is generally supportive of the proposed standards for all-terrain vehicles, and is pleased with the proposed two-phased approach. These vehicles represent a significant portion of the emissions inventory. However, we believe that EPA could slightly modify the standards to require engine optimization, thus yielding additional emission reductions that are technically and economically feasible.

We support phase two testing requirements that go beyond steady state engine testing, and believe this will ensure that advanced technology is developed and significant reductions from this sector are achieved.

c. **Snowmobiles:** While snowmobiles do not operate during the ozone season, the OTC States still have a responsibility to ensure that public health is protected year-round. In addition, the OTC believes that a strong non-road rule should be fully integrated into the Federal mobile source control strategy. To this end, while the OTC supports the proposed two-phased approach for snowmobiles, we are disappointed with

the proposed standards for this category, as they are the weakest and not technology-forcing. As proposed, engines in this category will remain two-stroke; such engines are highly polluting -- particularly with respect to HC evaporative emissions and fine particulates -- and the riders of these vehicles sit very close to the pollution source. We recommend that EPA set more protective standards that will encourage advance technology vehicles, and push cleaner, commercially available four-stroke technology. We believe that there is ample technology transfer potential from personal watercraft to snowmobile engine and sled design, and urge EPA to assess that potential and develop standards accordingly.

Given the phase-in time allowed for this category, it would be reasonable to expect that manufacturers would be able to address issues such as performance. We urge EPA to re-evaluate the test cycles used for snowmobile emissions testing to ensure that an appropriate transient test cycle is developed.

d. **Labeling Program:** EPA's proposal relies primarily on its existing, voluntary Blue Sky Program for labeling. While the OTC supports the Blue Sky Program, we do not feel its application is sufficient in this context. By relying on a voluntary labeling program, EPA is passing up a critical opportunity to adequately educate consumers and allow them to make informed choices on non-road vehicle purchases. A mandatory labeling program would facilitate and dovetail with incentive programs that States and other jurisdictions may wish to implement, such as differential registration fees (i.e., lower for cleaner vehicles) and restrictions on higher polluting engines in certain parklands. EPA must consider how to ensure informed consumer choice and how to educate the public on non-road vehicle emissions impacts.

### 3. Marine Engines

OTC agrees with EPA's general approach of establishing parity between recreational and commercial marine compression ignition engines. However, we believe that the proposed standards must be even more protective. The proposed standards are based on commercial diesel engine standards, rather than non-road land based engines, which are construction and locomotive sized. Standards that meet non-road diesel (land-based) emissions limits could be met with engine modifications such as changes in timing retard and electric controls. Even greater reductions could be achieved through the use of oxidation catalysts, which would not pose significant technological difficulties to introduce.

We also urge EPA to continue collecting data and performing analyses that will lead to better test cycles that more accurately measure in-use emissions for this category in the future. We believe EPA should consider standards that would require the use of oxidation catalysts or particulate filters.

### 4. Not-to Exceed Standards

We note that, with the exception of marine engines, EPA has not included not-to-exceed standards in the proposal. OTC believes that NTE standards should be established for all categories to ensure real-world operating conditions are considered.

## 5. Averaging, Banking, and Trading

OTC supports EPA's efforts to ensure that an appropriate averaging, banking and trading program is established for this sector. OTC believes that EPA should establish bins for this program.

## 6. Missing Categories

In its December 7, 2000 Advance Notice of Proposed Rulemaking for this rule, EPA proposed standards for marine vessel spark ignited engines, and included standards for highway motorcycles along with the non-road categories. OTC expected proposed standards for these categories, and is disappointed that they were not included in this rulemaking. We understand that EPA intends to address these important mobile source categories in later rulemaking, and urge EPA to take such action in the very near future.

In summary, while OTC supports many of the standards that have been proposed, we believe the EPA must revisit some of the categories -- particularly the marine engine and recreational vehicles categories -- and establish technology forcing standards that would adequately protect public health and move towards cleaner catalyst-based and four-stroke engine technologies. EPA must also develop and establish an effective mandatory labeling program that ensures consumer choice and meshes with other incentive programs to address non-road emissions.

Should you have any questions, or wish to discuss this matter in further detail, do not hesitate to contact me at the OTC office at 202-508-3840. Again, thank you for the opportunity to comment.

Sincerely,



Bruce S. Carhart  
Executive Director

Cc: OTC Members  
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