

**NOTICE OF PROPOSED RULEMAKING (NPRM) REDUCING GREENHOUSE GASES AND
FUEL CONSUMPTION OF HEAVY DUTY VEHICLES
EPA/NHTSA Public Hearing – Chicago, Ill. (11/15/2010)**

***Statement on Behalf of the Aluminum Association's Aluminum Transportation Group
Submitted by Brian Tucker, Business Development Manager, Alcoa***

Good Morning (Afternoon). My name is Brian Tucker and I am Business Development Manager for Alcoa. I'm here today representing the Aluminum Transportation Group (ATG) of the Aluminum Association.

First, let me congratulate the agencies on their first-ever attempt to regulate the fuel economy of heavy duty vehicles—and ahead of schedule. The ATG believes that you have done a great job of categorizing these vehicles and developing an appropriate regulatory approach for each category—Class 7 and 8 trucks, heavy duty pickups and vans, and vocational vehicles. Today, I'd like to offer a few preliminary comments on the NPRM and then provide a brief summary of a study the ATG commissioned to examine the fuel efficiency impact of down weighting Class 8 trucks.

With regard to Class 7 and 8 Trucks, while we are pleased to see that weight reduction has been taken into account, we believe that weight reduction opportunities should not be limited to tires and wheels. There are a number of other opportunities for manufacturers to substitute lighter weight materials in these vehicles such as cab structures, frame rails, cross-members, and fifth wheels, to name a few. We believe that manufacturers should be given credit for any and all weight reduction. OEMs not only could certify to the baseline weight included in the GEM simulation data, but also reduce weight further using aluminum or other light weight materials substitution, and should receive credit for the difference. We will discuss our thoughts on further opportunities for weight reduction in more detail in our comments to the docket.

We applaud the agency's approach to regulating heavy duty pickups and vans and the way manufacturers are given credit for weight reduction. We believe this approach is a good one for this particular vehicle class and that it will help avoid efforts to "game" the regulatory system.

As for vocational vehicles, we believe down weighting has been underrepresented in the agency's approach to this vehicle class. We believe, and indeed our studies have shown, that for anything that moves, weight reduction is an advantage. Accordingly, we believe NHTSA is missing an opportunity by

restricting weight reduction opportunities. For example, bumpers and cross-members are two components that could provide additional weight reduction. Again, we will provide more details about why we believe credit should be given for additional down weighting and how this might be done in our December comments to the docket.

Now, I'd like to briefly summarize a report done for the ATG by Ricardo, Inc. on how appropriate use of lightweight materials such as aluminum in Class 8 trucks and trailer can eliminate 3,300 pounds from the vehicle weight. Based on the study's findings, this mass reduction with materials like aluminum could yield annual savings of as much as 1,612 gallons of fuel and nearly 18 tons of CO₂. And, when those savings are multiplied to consider the entire U.S. fleet, we are talking about literally a billion gallons of fuel and 10 million tons of CO₂ each year.

The study simulated different configurations of vehicles and payload conditions, such as unloaded, gross vehicle weight (GVW) and half-GVW load, for the major drive cycles that represent commercial transportation in this country. In addition to the impact of weight savings alone, the study also analyzed the combination of weight savings and aerodynamic drag reduction.

Here are the study's key findings:

- Transporters using trucks that are downweighted may be able to carry 6.5 percent more payload per trip, equating to fewer trips and an effective fuel and emissions savings of 6.5 percent. It is this payload enhancement that produces the 1,612 gallon and 17.9 ton CO₂ savings.
- When this weight reduction potential is combined with an eight percent improvement in aerodynamic drag, the overall fuel economy improvement for an aluminum-intense vehicle relative to the conventional vehicle was as high as 8.2 percent.
- The average Class 8 truck today uses more than 1,000 pounds of aluminum, making up about four percent of total tractor weight. Substituting high strength, low weight material such as aluminum can eliminate 3,300 pounds from the vehicle's weight. To give you some specific examples of savings in individual components, substituting aluminum for roof cabs saves 60 pounds, cab floors save 56 pounds, frame rails save 435 pounds, cab rear walls saves 49 pounds, and cab cross-members saves 38 pounds.



Source: *Impact of Vehicle Weight Reduction on a Class 8 Truck for Fuel Economy Benefits (Ricardo, Inc.)*

Based on related studies and data on the benefits of aluminum and other low-weight materials, we were able to calculate life cycle CO₂ emissions and other improvements and benefits. For example:

- While it is true that aluminum is a relatively energy intensive material to produce, on a full life cycle analysis basis, aluminum saves CO₂. Ninety-five percent of the CO₂ footprint of a truck occurs during the use phase of the vehicle where aluminum generates the large savings. Including the CO₂ generated in production, every pound of aluminum replacing heavier steel saves a net 15 pounds of CO₂ over the life cycle of the truck.
- The aluminum industry has worked successfully to reduce its greenhouse gas emissions through voluntary initiatives and continuous technological advances. In the past ten years, CO₂ emissions have been reduced by 10 percent and PFC emission, when compared to 1990 levels, have been reduced by more than 80 percent.

Reducing commercial vehicle weight also benefits truck operators. Here's how:

- Reducing vehicle weight increases fuel economy leading to reduced operating costs. Moreover, down weighting with aluminum is one of the fastest ways to improve fuel economy since it takes years for a new powertrain program to be brought to market. For example, a new powertrain program would likely take up to five years, whereas aluminum frame rails could be added in less than 12 months.
- Using aluminum components allows trucks to carry larger cargo loads without violating weight restrictions on roadways and bridges.

- Increased payload capacity through downweighting equals fewer trips and fewer miles on the truck, saving maintenance costs associated with wear and tear on brakes and tires.
- Durability is increased since aluminum components are corrosion-resistant, reducing the need for rust repair and increasing the life of the truck.
- Commercial vehicles with aluminum components maintain their value, resulting in a higher residual value.

In summary, we believe that weight reduction using high-strength, low-weight materials such as aluminum offers real fuel economy and emissions benefits for the trucking industry, for shippers and for the nation as a whole. The NPRM represents a good start in recognizing those benefits and we urge EPA and NHTSA to go even further to reap even greater savings in the final rule to be issued next year. The ATG stands ready to assist you to take advantage of the significant return on investment offered by advanced aluminum solutions.