

HOW IT WORKS BY MARJORIE KLEIMAN

THE EPA REGS & YOU

What the EPA's Control of Emissions from Highway Motorcycles means to you

Will 2010 EPA regs have you wearing aluminized Nomex/Kevlar heat-resistant overalls to protect you from the heat of your bike's catalytic converter? Maybe not, as catalytic converters (cats) are already in use on all Victory motorcycles sold in California. (Photo courtesy of Stanco Manufacturing Inc., Atlanta, Texas)

■ IMAGINE CRUISING DOWN LAZELLE STREET ON YOUR 2010 Road King during the 70th annual Sturgis Rally as the mercury hovers around the 100-degree mark. Your engine temperature climbs above the boiling point of water and your exhaust system glows a dull red. For protection from the extreme heat generated by your bike's catalytic converter, you're wearing your aluminized Nomex/Kevlar heat-resistant overalls, the latest (albeit necessary) fashion statement in riding gear.

Does that sound like something out of a science fiction novel? With the enactment of the recent Environmental Protection Agency (EPA) rule, this scenario might not be as far-fetched as it seems. The EPA, on December 23, 2003, passed the Control of Emissions from Highway Motorcycles, significantly tightening emission standards for new motorcycles beginning with the 2006 model year.

A BIT OF HISTORY

In November 2000, the EPA published a regulatory announcement concerning new emission standards for new non-road engines and highway motorcycles. The announcement stated the EPA's intention to adopt the California Air Resources Board (CARB) motorcycle emission standards — the strictest in the United States — and apply them to all motorcycles nationwide. Why did the EPA propose revisions to the current standards? The Clean Air Act of 1990 dictates that the EPA “consider the need to achieve equivalency of emission reductions between motorcycles and other vehicles to the maximum extent practicable.”

The EPA statistics show that motorcycles emit up to 21 times more hydrocarbons (HC) per mile than automobiles, and even emit more HC than SUVs. As the EPA explained to *AIM*, “The emission standards for cars are a fraction of what they are even for the new motorcycle standards. As a result, the cars have to do that much more to control their emissions. Cars are required to have incredibly elaborate emission control systems. If you took a typical car and

just put straight pipes on it, the emissions would be similar to a motorcycle. Even though motorcycles' engines are smaller, and motorcycles are lighter, that doesn't come into play.”

The EPA statistics also state that highway motorcycles are significant contributors to mobile-source air pollution, currently accounting for 0.6 percent of mobile-source HC emissions, 0.1 percent of mobile-source oxides of nitrogen (NOx) emissions, and less than 0.1 percent of mobile-source particulate matter (PM) emissions. Without further regulations, highway motorcycles would account for 2.2 percent of mobile source HC, 0.3 percent of mobile source NOx, and 0.1 percent of mobile source PM.

What is not as highly publicized is the comparison between motorcycle emissions and all emission sources. Motorcycles currently account for only 0.3 percent of HC emissions from all, not just mobile, sources, with a projected rise to 0.6 percent by 2020. Both NOx and PM motorcycle emissions are currently 0.0 percent of all emission sources, with a 2020 projection of 0.1 percent and 0.0 percent respectively. As Kirk “Hardtail” Willard, vice-president of the Motorcycle Riders Foundation (MRF) succinctly states, “We're not that big a population. We're about a quarter-inch on a 100-yard football field.”

In early 2001, the MRF released a Riders' Alert that stated, in part, “The move follows two years of technical talks between the EPA and industry. In those talks, however, the topic never strayed from bikes in the woods to bikes on the highway. According to several industry sources close to the off-road technical talks with the EPA, street bikes were added as a bargaining chip. The Sierra Club had filed suit against the EPA, seeking new restrictions on off-road vehicle emissions sooner rather than later. Having exceeded the deadline for action set in the legal wrangling, the EPA returned to the negotiating table to seek more time to achieve new off-road emission standards.



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The Sierra Club acquiesced to the agency's bid for more time when the hope of tighter controls on highway motorcycles was tossed in to sweeten the deal."

PUBLIC COMMENTS

Comments were requested by the EPA on the technological feasibility, cost, and appropriateness of implementing more stringent emission standards for highway motorcycles. Objections, questions, and suggestions were received from the motorcycle industry, motorcycle user groups, government agencies, environmental groups, and the public. For instance, Imre Szauter, the American Motorcyclist Association (AMA) Legislative Specialist, stated that the AMA voiced strong concerns regarding safety, cost, performance, consumer modifications, small volume manufacturers, and sub-50cc motorcycles.

During the comment period, Harley-Davidson argued that the EPA should follow California's lead in regulating engine manufacturers, and that these manufacturers, who build thousands of engines, shouldn't be exempt simply because they don't assemble many motorcycles. The EPA responded that it understood Harley-Davidson's concern, and the issue would be addressed in a 2006 technology review.

Former US Representative James Barcia from Michigan introduced the Motorcycle and Motorcycling Small Business Protection Act into Congress in September 2002. The bill aimed to exclude motorcycles from the emission controls dictated by the Clean Air Act. Although he had the backing of a number of powerful Congressmen, Barcia was not able to get a hearing for the bill, and it was dropped when he didn't seek reelection the next term. Barcia tells us, "I wanted to indicate to the EPA that Congress has a concern with the direction the EPA was going in, rather than seeing motorcycles as a viable means of transportation. They are not looking at the benefits — motorcycles

use less fuel, are more economical, and create less pollution. I don't understand how they came up with their statistics."

According to our sources, ABATE of Illinois, in a legislative update distributed to its members in February 2004, revealed that Congressman Barcia admitted that a "member" of Harley-Davidson and AMA had asked him to pull his bill. ABATE of Illinois also stated that the EPA admitted that H-D had come to the agency asking for a new rule to control motorcycle emissions. *American Iron Magazine* was unable to substantiate these statements in



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our discussions with the EPA and other sources.

The MRF commissioned economist Garrett A. Vaughn to prepare an economical analysis of the proposed emission standards. The study pointed out that the EPA underestimated implementation costs, ignored the issue of rider safety, ignored the possible impact of the proposed standards on future motorcycle sales, ignored the adverse impact to motorcycle registrations once the CARB standards went into effect, and did not meet its obligations to consider a less stringent alternative to the proposed emission standards.

To the EPA's credit, it appears that numerous questions, comments, and objec-

tions from the motorcycle community were documented and duly responded to, even though a number of manufacturers, independent shops, and motorcyclists' rights organizations may not have agreed with those responses.

FINAL RULE DESCRIPTION

The Final Rule provides for the "harmonization" of Federal motorcycle emission standards with those of California. Exhaust emission standards for previously unregulated motorcycles with engines less than 50cc are required in 2006. In addition, the EPA will implement standards that will require the use of low permeability fuel tanks and fuel hoses on all motorcycles in 2008 (2010 for small manufacturers). The portion of the rule that is expected to have the biggest impact on the industry, however, is the mandated reduction of allowable amounts of hydrocarbon (HC) and nitrous oxide (NOx) emissions from new motorcycles.

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With the EPA's estimate that nearly 90 percent of highway motorcycles use metal fuel tanks, the low permeability requirement is not considered by the EPA to be a significant issue for American street motorcycles. Most fuel tanks installed on American street motorcycles are metal, which is considered impermeable. The exception, however, is Harley's V-Rod and the Buell Blast, both of which sport plastic gas tanks. The EPA rule discusses low-permeation polymers that might be used to mold plastic tanks.

Fuel hoses and fittings need to meet the permeability requirements as well. The EPA suggests that either a thermoplastic layer could be used in the highly permeable rubber hoses generally installed on motorcycles, or that plastic tubing made of fluoropolymers could be used. Although the plastic tubing will achieve lower permeation, it is relatively inflexible and most manufacturers and builders consider it unsuitable for motorcycles. Under certain testing conditions, fuel hoses meeting the SAE J30 R11-A or R12 requirements, as well as those meeting the SAE J2260 Category 1 requirements, could be design-certified to meet the standard.

Do the V-Rod and Buell Blast comply with the permeability requirements that will be needed for the 2008 models? It is unclear whether current versions of these models are in compliance. Paul James, Harley-Davidson's communications manager, states, "As a policy, Harley-Davidson will not comment on future policies, plans, or products. However, we have made the commitment that we will comply with the EPA standards."

Patterned after California's tiered approach, the Tier 1 Federal standards will take effect with motorcycles produced in 2006, and Tier 2 Federal standards will be implemented in 2010. Small motorcycle manufacturers, defined by the EPA as those producing less than 3,000 units per year in the US and having less than 500 employees, will not have to comply with Tier 1 Federal standards until 2008, and are exempt from the Tier 2 standards. There are 42 manufacturers that certified motorcycles in 2003, and of those, 30 manufacturers are considered "small" by the Small Business Administration definition. The certifica-



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tion data shows that all of these manufacturers are currently meeting the Tier 1 exhaust emission standard.

Before the EPA rule was finalized, Harley-Davidson approached the EPA with the perception that the 3,000 per year sales limit could provide benefits to some non-US manufacturers who have large annual global sales, but less than 3,000 annual US sales. To resolve this, Harley suggested that the 3,000-unit annual sales limit should be based on global sales rather than national sales. However, this could have a negative impact on US manufacturers who achieve less than 3,000 sales of units in the US, but greater than 3,000 annual sales globally. H-D clearly falls under neither category as both its US and global sales far exceed 3,000 units per year.

HARDSHIPS, EXEMPTIONS & INCENTIVES

There are two types of hardship provisions. A small volume motorcycle manufacturer can petition for up to three years additional lead time if it has demonstrated that it has taken all possible steps to comply, but the standards would have a significant impact on the company's solvency. And, for all manufacturers, if cir-

cumstances outside the company's control cause a failure to comply, then the resulting failure to sell the noncompliant product would have to cause a major effect on the company's solvency.

There is a one-time exception from the rule for individual owners who build custom bikes or kit bikes. A consumer can build one motorcycle for his own use that will be exempt from emission standards. This exception applies if the consumer purchased the kit and built it or had someone build it for him. The exception does not apply if a shop buys or builds a custom bike or kit bike, and then offers it for sale. Also, there are limitations, such as the motorcycle can't be modified and it can't be sold for five years.

Another exemption is that a bike builder (i.e., an independent shop) may construct and sell up to 24 motorcycles per year for "show and display" that are exempt from emission standards. Use on public roads is limited to travel to and from the show based on the EPA's belief that these "show and display" bikes are purchased by collectors and rarely ridden on the street. If the motorcycle is sold or leased, the EPA must be notified before the sale. The manufacturer must keep sales records of exempted bikes sold or leased; the motorcycles must be labeled as exempted, and the buyer/lessee must agree to comply with the terms of exemption.

A concern of many is whether the new rule will affect what can be modified on a bike you currently own. The "tampering" prohibition, added to the Clean Air Act over 20 years ago, remains unchanged. Parts manufacturers can still create parts, dealers can sell and install parts, and own-

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ers can customize their motorcycles in any way, as long as they do not disable emission controls or cause the motorcycle to exceed the emission standards. However, that's exactly what happens when an owner installs performance-enhancing modifications to his engine, such as changing the exhaust pipes.

So how does the government regulate modifications to individual motorcycles? As per AMA's Szauter, motorcycle emission testing currently takes place only in two counties in Arizona, Pima and Maricopa. Furthermore, the Arizona Department of Environmental Quality (ADEQ) must determine whether the motorcycle testing emission program has been cost effective. If ADEQ's report cannot prove the effectiveness of the program by the end of 2004, Arizona is required by law to petition the EPA to exempt motorcycles from vehicle emission testing. And while this doesn't seem to be an issue right now, the big question is, What will happen in the future? Will the EPA require all states to start a motorcycle emissions test program, as it has with cars?

California provides an incentive program to encourage the introduction of Tier 2 motorcycles before the 2008 model year. The program allows the accumula-

tion of credits that manufacturers can use to meet the 2008 standards. The same type of incentive program will be available under Federal regulations for all classes of motorcycles. After 2010, the "early credits" program will be converted to an averaging program, meaning that a manufacturer can produce and sell vehicles that exceed standards as long as they are offset by production of vehicles emitting levels below the standards. In the future, manufacturers may be able to buy and sell credits (trade) between and among themselves.

DETAILED DESCRIPTION OF EMISSION CONTROLS

The 1978 EPA rule separates highway motorcycles into three categories, or classes (I, II, and III). As of 1980, all three classes had a standard of 5.0 grams per kilometer (g/km) HC and 12.0 g/km CO, which resulted in the phase-out of two-stroke engines in highway (road) motorcycles below 50cc displacement. However, the EPA states that significant reductions in emissions were realized. The December 2003 rule slightly modified the class structure to accommodate the inclusion of above 50cc motorcycles. CO emission standards have not changed from the 1978 rule. However, NOx emissions, which were not regulated in 1978, are now included in the EPA standards.

In California, Class I and II standards have been in effect since 1982. Here are the

California Standards for Class III motorcycles adopted in 1999. Effective 2004-07, Tier 1 emission standards for motorcycles 280cc and larger are 1.4 g/km HC + NOx and 12.0 g/km CO. Starting in 2008, the Tier 2 standards for the same size motorcycles drops to 0.8 g/km HC + NOx and 12.0 g/km CO.

The new Federal EPA rule mandates the reduction of hydrocarbon (HC) from the 1978 standard of 5.0 to 1.0 g/km for the new Tier 1 standards for Class I and II motorcycles. Most significant will be the new Tier 1 standards for Class III motorcycles, which reduces the combined hydrocarbon (HC) and nitrous oxide (NOx) emissions to 1.4 g/km for model years 2006 through 2009, with a final (Tier 2) reduction to 0.8 g/km in 2010. The Federal standard of 12.0 g/km for carbon monoxide (CO) remains unchanged (see chart).

According to the Motorcycle Industry Council (MIC), 2002 annual sales of street motorcycles were 614,000. Class I-A (smaller than 50-169cc) motorcycles accounted for 1 percent of these sales. Class II (170-279cc) made up 6 percent, and Class III (greater than 279cc) accounted for 92 percent of the motorcycles sold in 2002. Clearly, the Class III rules will have the biggest impact on the industry. Six motorcycle manufacturers, Harley-Davidson, Honda, Kawasaki, Suzuki, Yamaha, and BMW, make up over 90 percent of total sales of street motorcycles in the US.

To meet the 2010 Tier 2 standard, all motorcycle manufacturers, including Harley-Davidson, will most likely need to use more advanced engine modifications, such as water-cooling and/or secondary air injection. The EPA maintains that a major cause of harmful emissions is the inexact air/fuel ratio from a carburetor, which allows some amount of unburned fuel to make its way into the exhaust system. Fuel injection provides for a more precise air/fuel ratio, thereby reducing the amount of unburned fuel reaching the exhaust. The EPA has not mandated the use of fuel injection, and suggests that engine modifications combined with improved carburetor technology could be a solution for compliance. However, some industry insiders feel that by 2010, carburetors on motorcycles will go the way of the Edsel. Will Harley-Davidson eventually eliminate carbureted motorcycles from its offerings? Will it have to go to all water-cooled engines, such as the one currently in the V-Rod? Again, H-D will not comment on future plans. However, you

The 20-year-old Clean Air Act states that owners cannot disable emission controls or cause their motorcycle to exceed emission standards. And though bikes are not currently tested, the Feds could easily mandate testing in the future, just as they do for cars.



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may have noticed that fuel injection was introduced as an option to the Dyna line for the first time in 2004 and, of course, there's the new V-Rod line.

The entire Victory motorcycle line uses fuel injection for its motorcycles in all 50 states. Catalytic converters (cats) are already in use on all Victory motorcycles produced for sale in California. Additionally, Victories in California are also equipped with evaporative emissions control systems, which is a charcoal canister-type filtration system to control emissions from the gas tank. Gary Laskin, product manager for Victory Motorcycles, comments that it will be easier to accommodate the 2010 standards with this type of technology already incorporated into the design of the motorcycle.

According to the EPA, approximately 20 percent of 2002 and 2003 motorcycles use cats to achieve current emission standards, and it is the EPA's expectation that approximately 50 percent of the motorcycles produced for highway use in 2010 will need to use cats to meet the new standard. The EPA informed us that "some manufacturers are telling us they feel they can meet our standards without putting a cat on because they will have such sophisticated fuel injection systems that they'll be able to control the emissions coming out of the engine without a cat."

CAT CONCERNS

Several safety concerns have been raised regarding the use of cats on motorcycles, some of which are reflected in the EPA document Summary and Analysis of Comments: Control of Emissions from Highway Motorcycles. Among the concerns most voiced was the issue of potential fires from cat-equipped motorcycles parked over combustible materials such as leaves; burns to the rider or passenger due to coming into contact with the hotter surface of a catalytic converter; and the possibility of heat stroke from the increased temperatures of the exhaust system area closest to the cat.

We spoke with EPA staffers Roberts French, Linc Wehrly, Joe Somers, and Harvey Michaels, all of who played a part in the research and development of the new EPA rule. On the catalytic converter issue, they responded, "There have been cats on motorcycles for years; virtually



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every manufacturer has at least one model if not in the US, then in Europe. They have done an excellent job of packaging the cat in such a way that it's insulated and really minimizes the exhaust pipe surface temperature so there's really no difference between where the cat is located and the normal exhaust flow."

Harley-Davidson has stated that early on there were safety issues with cats, but the issues were resolved for California motorcycles. In fact, H-D has produced 45,000 catalytic-equipped motorcycles since 1995.

Victory's Laskin informs us, "We have not found any additional safety concerns with catalytic converters. The cat is contained within the muffler, which is situated behind where the rider and passenger sit. We've got adequate heat shielding where it is, and there is really no difference in surface temperatures. The exhaust doesn't get any hotter, but it does stay hotter longer. That said, our bike really does not need a lot of catalytic after-treatment to meet the 2006 regulations. There are other bikes out there that will need much larger catalysts because they are not as clean to begin with."

On the other hand, Kevin Berger, president of SuperTrapp, an aftermarket exhaust system manufacturer, asserts, "There are a lot of design challenges related to catalytic converters. Some of the OEMs are imbedding cats into the muffler, some are using a separate unit, but they have the ability to hide things up

underneath in the frame. Cats get very hot. Looking at the aftermarket, especially street bikes where most people want chrome, there's a real challenge with controlling the heat from the cat so you don't distort the chrome.

"Rider safety is also an issue. Cats are very hot and require positional heat shielding. If you can achieve enough heat shielding to keep the chrome intact, it'll also keep it in a rider-friendly arena. You're talking significant increases in temperatures because what's happening in the catalytic converter is that the precious metals in there create a chemical reaction with the exhaust gases to break them down into friendlier components. Those reactions don't take place until you get to very elevated temperatures. I'm going to say off the top of my head somewhere around 1,000 degrees. Chrome starts to discolor around 700 degrees, so the goal is to stay underneath that. You can achieve that by heat shielding, and it'll be cooler on the outside. You also have potential fire hazards when you have anything that hot, although if the cat is designed and shielded properly, and the bike is maintained in a normal manner, you shouldn't have a problem."

Another issue concerns motor oils used in motorcycles. Motorcycle oils can contain zinc and phosphorus to provide anti-wear properties. However, some automotive motor oils today do not contain these elements. According to the International CBX Owners Association web site, "The absence of zinc and phosphorus from automobile oils is for the preservation of catalytic converters. These are both extreme pressure additives that are a necessary part of motorcycle oils." Similarly, in a motor oil Q&A forum on Bel-Ray's web site, it is stated that automotive oils are "formulated to lubricate a water-cooled, low rpm and catalytic converted engine" and "Auto oils don't have the same anti-wear properties like zinc, for example, because it clogs the catalytic converter." This would lead us to believe that many motor oils will have to be reformulated to accommodate catalytic converters on motorcycles.

COST ISSUES

The EPA estimates a cost of \$30 for Class III motorcycles to meet the Tier 1 standards, and an additional \$45 to meet the Tier 2 standards. Victory's Laskin responds, "I would say the EPA's estimate

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of \$75 is within the ballpark, but \$75 is an enormous cost increase for a motorcycle.”

If we use Harley-Davidson’s pricing as a guideline, the cost of meeting the new standards could be significantly higher. For 2004 models, where fuel injection is not already standard, H-D adds \$600 to the MSRP for this option. An extra \$265-\$290 (depending on the model) is tacked onto the MSRP for emission controls on carbureted bikes manufactured for sale in California. For those California models where fuel injection is a standard feature, an additional \$100 is added to the MSRP. However, as H-D’s James points out, “All California bikes will meet the 2006 EPA standards, but that does not necessarily mean that the California technology now in place will be propagated to the rest of the country.”

CALIFORNIA EFFECTS

What effects has the motorcycle industry experienced due to California’s implementation of the CARB rule? For one thing, motorcycle registration has dropped in California while it has increased in other states. The EPA attributes this not to pollution controls, but to helmet laws, the economy, age demographic changes, saturation of the motorcycle market, requirements for off-road registration, and tariffs on imported motorcycles.

In the fall of 2000, CARB eliminated its small manufacturer exemption that protected companies building less than 200 motorcycles a year from being subjected to CARB’s pre-production testing. Wild Boar Motorcycle Manufacturing was one of the 13 or so motorcycle companies that dissolved operations in 2000. While this rule exemption was in place, small manufacturers did not have to pass a full emission inspection. However, following the elimination of this exemption, Wild Boar owner Steve Williams said his company was required to submit one complete motorcycle, along with a \$60,000 fee, to CARB to gain approval. He considered these requirements extremely cost prohibitive, especially for manufacturers that make only 12 or 15 bikes per year, and stated that the require-

ments put him out of business. The EPA stated that its testing requirements and fees for the Federal rule are not nearly that onerous, and should not be a hardship for small manufacturers.

WHAT’S NEXT?

CARB plans a technology review in 2006 to “evaluate the success, cost, and consumer acceptance of engine modifications employed to meet Tier 1 ... and to ... review and discuss manufacturers’ efforts to meet Tier 2.” The EPA will participate in this review and make adjustments to the Federal program if necessary. A future engine manufacturer program may be part of the 2006 review, which the EPA characterizes as benefit-

FUTURE EPA REGULATIONS

Final EPA Exhaust Emission Standards For Class I And II

Class/Size	HC	CO
I-A (0-49 cc)	1.0 g/km	12.0 g/km
I-B (50-169)	1.0 g/km	12.0 g/km
II (170-279)	1.0 g/km	12.0 g/km

Final EPA Exhaust Emission Standards For Class III (280cc-Greater)

Year In Effect	HC+NOx	CO
2006-2009 (Tier 1)	1.4 g/km	12.0 g/km
2010 and later (Tier 2)	0.8 g/km	12.0 g/km ■

ing small manufacturers who do not build engines. The burden of certifying engines would be eliminated when purchasing a certified engine. What about the potential impact on the engine manufacturers themselves? Our understanding is that several engine manufacturers already have engines that would qualify to be certified under Tier 1 standards.

The European Union and countries in other parts of the world have also established their own emission control standards and it is entirely possible that sometime in the future, the EPA would attempt to “harmonize” the US standards with the rest of the world.

The MRF and the AMA will continue to work with the EPA while looking out for the interests of small business, as well as individual motorcycle riders. And organizations like ABATE will maintain their vigilance and continue the fight for riders’ freedoms. The MRF’s Willard emphasizes, “Our main focus will be to try to get broader exemptions, and to help with the technical and legal corrections for things that were missed in the EPA rule. For instance, what happens if your one custom bike gets stolen or crashes?

Are you allowed to build another one? Who’s going to track all this stuff?”

FREEDOM

Senator Ben “Nighthorse” Campbell from Colorado, who is a long-time motorcycle rider and avid motorcyclists’ rights crusader, wrote a letter to the EPA prior to the release of the final EPA rule. The letter urged Christie Whitman, EPA administrator at that time, to include a flexible implementation schedule for small businesses. His concern was that these small manufacturers be allowed more time to adjust to the rule so that they could comply with the requirements without going out of business. Campbell opines, “The EPA did put in some concessions, but I’m not sure it goes far enough. It is unclear to me how businesses like S&S Cycle and small manufacturers will eventually be impacted.”

Campbell goes on to verbalize the thoughts of many opponents to the EPA rule. “I don’t trust the numbers we get from some Federal agencies. They come up with an idea for a rule they want to enact, then they come up with statistics to justify it. I just can’t understand how motorcycles with two cylinders emit more pollutants than a car with eight cylinders.

And they are comparing apples and oranges. I suppose the next thing they’ll do is compare electric hybrid cars with gasoline-powered cars, mandating that we now have to force everyone to go to electric hybrid cars because they pollute less.”

He warms up to the discussion. “I think there’s a little guy chained to a wall in the basement that never sees the light of day. He sits around making up new laws to take away our freedoms. I notice a pattern; pretty soon we won’t be able to change our tires or our engines without a government permit. This goes against the grain of basic American freedom, especially for free-spirited motorcyclists.”

Editor’s Note: We welcome letters and information from qualified experts in this field. In anyone wishes to add to this discussion on the EPA motorcycle regulations and their impact on how our motorcycles will be powered in the near future, as well as how much we will be able to customize them, please send your comments to me at *American Iron Magazine*, The EPA Regs, 1010 Summer Street, Stamford, CT 06905, Attn: Chris Maida. **AIM**