Emissions reg challenge ex

By AMD Editor
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In its bid to take California's streetbike emission standards nationwide, the United States' Environmental Protection Agency (EPA) has ruffled the feathers of both the aftermarket and the riders rights lobbies.

Its proposed rulemaking to establish new, lower, engine emissions standards for highway motorcycles echoes the off-highway vehicle emissions standards that spelled the demise of certain 2-stroke engines. As such it stands to threaten motorcycling as we know it and is of concern to all those associated with the industry whether manufacturers, distributors, dealers or riders. Indeed, to comply with the new emissions standards being adopted by the federal EPA, motorcycles will have to change, and air cooled v-twins will likely have to change most.

The question is, how much and in what way? For a start, carburetors are likely to give way to fuel injection and exhaust systems will probably be required to incorporate hidden catalytic converters. Some of the bikes sold today already comply with the new proposed regulations. Honda's Goldwing and VFR800 Interceptor, for example, are already certified for the 2008 California standard, which also means they would meet the 2010 federal proposal.

The motorcycles most affected will be venerated classic engine families, and there is real concern regarding air-cooled v-twin engine bikes. Though, in a statement on the company website, Harley-Davidson President Jim McCaslin maintains that air-cooled v-twins will continue to be the mainstay of his company's product line. "We are prepared to meet the new standards through technologies that don't sacrifice the things you love most about your motorcycle."

One thing most American v-twin motorcycle owners also love about their motorcycles, however, is the way in which they are able to personalize and modify their machines courtesy of the aftermarket. Unfortunately, the EPA's proposals pose a threat to the much-relied on aftermarket, as well as the vast cottage industry of other small businesses involved with the v-twin sector, including small-volume bike manufacturers. The EPA does, of course, recognize the tendency for owners to modify their motorcycles to enhance the performance and style of their machines and says it has accounted for this in its legislation. It cites the Clean Air Act section 203(a) as the legal authority that makes it illegal "for any person to remove or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this title…after such sale and delivery to the ultimate purchaser". Actions that are illegal under this Act are referred to, specifically, as "tampering."

The term, and the prohibitions, do not apply to forms of customizing that do not disable emission controls or cause the motorcycle to exceed the emissions standards. But it does, of course, apply to certain changes made to the motor and exhaust

What are the new EPA emissions regulations

The new federal standards are patterned after regulations already scheduled to go into effect in California. The California standards will be implemented in two stages, the first step affecting all motorcycle sold there beginning with the 2004 model year. The second stage takes effect in California with the 2008 model year.
The planned federal regulations would adopt the California standards two years later. This means that the first stage would go into effect nationwide with the 2006 model year, and the second stage following in the 2010 model year.

The new standards reduce the level of hydrocarbons that can be produced by motorcycles from the current 5 grams per kilometer to 1.4 grams in 2006 and 0.8 grams in 2010. Over the next eight years, the allowable level of hydrocarbons will drop more than 85 per cent.

EPA

Model Year	California (C.A.R.B.)*	Federal (E.P.A.)**
2004	1.4g/km HC + NOx 12.0g/km CO	
2006		1.4g/km HC + NOx 12.0g/km CO
2008	0.8g/km HC + NOx 12.0g/km CO	
2010		0.8g/km HC + NOx 12.0g/km CO

* California Air Resources Board
** Environmental Protection Agency

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system – the latter being the single most easily and popularly changed performance-enhancing component on most motorcycles. Some manufacturers may argue that an exhaust system can only serve to control the emissions already output by a motor but the new EPA regulation will still mean understanding and adopting the technology necessary to comply.

Under the EPA's proposals, new 2006 model year motorcycles are required to meet Tier 1 standards (1.4 g/km HC+NOx and 12.0 g/km CO) and new 2010 model year bikes Tier 2 (0.8 g/km HC+NOx and 12.0 g/km CO). To meet Tier 1 standards, the EPA has determined that there are four basic types of existing, non-catalyst-based emission control systems available. To meet Tier 2 standards, however, the EPA acknowledges that manufacturers may have to employ technologies not currently commonly used on many motorcycles. These include computer-controlled secondary pulse-air injection and three-way catalytic converters, as well as adaptive transient fuel control software and heated oxygen sensors in exhaust manifolds.

The American motorcycle industry and community, however, has not just taken the EPA's proposed regulations "lying down" and representative organizations have been opposing what they regard as an attack on small volume manufacturers, the extensive aftermarket business and motorcycling in general. The Motorcycle Industries Council (MIC), while being prepared to accept significant additional emission control requirements for highway motorcycles, is trying to secure certain changes it deems necessary to ensure cost-effective control. The MIC also urged the EPA not to adopt more stringent standards than California to avoid more extensive use of catalysts.

Elsewhere, the American Motorcycle Association (AMA) has been pursing the regulatory aspect of the EPA issues, while the Motorcycle Riders Foundation (MRF) has been tackling both the regulatory and legislative sides. AMA Vice President of Government Relations, Edward Moreland, said the Association "strongly disagrees" with the EPA's view that on-highway motorcycles are "significant contributors" to air pollution. During a public hearing last year he also warned of the potential dangers associated with some emissions control equipment, such as heat generation associated with catalytic converters. On motorcyclists modifying their bikes, he said that the AMA believes the existing tampering provisions are sufficient and urges the EPA to refrain from revising them.

In a presentation prepared by Tom Wyld, Vice President Government Relations, MRF outlined its position on the EPA's proposed measures to further control emissions in that it "imposes needlessly stringent new limit values on highway motorcycles". The MRF also emphasized the importance of motorcycle performance, smooth power delivery and the use of technology that doesn't generate excessive heat while stationary as being paramount to motorcycle safety. As well as reiterating the effects on the aftermarket, he also stated that the result of what the MRF called "this regulatory zeal" could be an increase in fuel consumption, traffic congestion and air pollution through a radical reduction in motorcycling in America.

Motorcycle emissions control in Europe

European legislation aimed at reducing new motorcycle exhaust emissions to the same level as cars by 2006 is to be achieved in two steps. The current step is reducing 60% of the carbon monoxide and hydrocarbons emissions of new four-stroke bikes now produced. The second, coming into effect on 1st January 2006, will apply a further 50% reduction. Limits for nitrogen oxides currently remain the same to allow time for the industry to achieve more drastic NOx measures for 2006. The new requirements are said to be achievable using current technologies, such as fuel injection systems and catalysers.

A parallel dedicated test cycle for motorcycles, the World Motorcycle Test Cycle (WMTC), has the same emission limits as the legislation to ensure a similar environmental performance. Conformity checks and durability requirements are to be introduced from 2006, to control the conformity of original emission output of vehicles and to guarantee the environmental performance during the first 30,000 km travelled. The European Union will also introduce requirements for the measurement of carbon dioxide emissions from all vehicles, including motorcycles.

Fiscal measures are in place to encourage fitting of emission control devices to older bikes and new ones pre-complying with the emission limits set for 2006. Member States can still include a "pollutant factor" in national road traffic taxes and penalise older vehicles.

The European Commission in Brussels is now also considering new 'anti-tamper' regulations that would outlaw any changes that would affect the noise or pollution emissions of a bike; an extension of existing regulations that could indeed, this time round, seriously reduce the freedom to fit aftermarket pipes.