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How Off-Road Noise Limitations Affect You: Part I
by Robin T. Harrison and Chris Reel

HRCA partner Chris Real of Chemhelp and his business partner Robin T. Harrison are internationally recognized as motorcycle sound experts. Guess who we asked for the straight information on Off-Highway vehicle noise?

If you ride an off-road motorcycle or ATV on public land, or at many organized events, you probably already know both state and federal agencies and sanctioning bodies are enforcing the sound regulations ("96 dB rule") on all public lands, including state off-highway recreation areas, national forests, and BLM lands.

The sound rules require that your off-road motorcycle or ATV be equipped with a properly functioning muffler, and when it is tested, that it emit no more noise than a set level, usually 94-96 dB.

What you might not know is that there have been federal off-road vehicle noise standards in place since 1983. These standards, which are complied with by all the major manufacturers, are very different from the state rule. The purpose of this short article is to explain the different noise rules that affect your off-road motorcycle or ATV. But before we can do this, we need to talk a bit about noise in general, and particularly why it is so important that off-road riders be aware of, and follow, these rules.

Many industry observers believe that noise from off-road motorcycles and ATVs is the biggest problem facing our sport. Many tracks and other riding areas have been closed down because of objections to noise, and more are threatened every day. Many, many more OHV areas have never been opened because of noise objections. Also, non-riding "buffer zones" are placed to keep sound from impacting neighbors and to contain the vehicle sound, and the size of these buffer zones has limited the size of many riding areas.

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The land use agencies and private (state-run) riding areas dedicated to providing off-highway recreation areas. State Rangers realize that in order to provide high-quality recreation close to population centers, they have to be very sensitive to the noise made by off-highway vehicles, and that is why the current 94-96 dB rule exists.

Generally speaking, noise regulations can take one of two forms: they can be limits of the noise during operation of the vehicles, as the State rule is. Or, they can be "EPA certification" regulations; that is, before an off-road vehicle can be sold, it must pass an engineering-type noise test. For both types of tests, the sound the bike or ATV makes must be measured with a sound level meter.

If you look at your off-Highway motorcycle, you will see that somewhere on the bike there is a label that talks about EPA noise emission requirements. Also, there is a similar label stamped into the muffler or some other component of the exhaust system. These regulations do not apply to "competition only" bikes, so you won't find it on closed course/competition-only motocross machines.

The current EPA limit for off-road motorcycles with engine displacements of 170cc or less is 80 dB, and 82 dB for bigger bikes. These numbers are very different from the in-use (96 dB California) rule, for a very good reason. EPA noise measurements are obtained under an engineering test method; wide open throttle acceleration, with the motorcycle running past a microphone 50 feet away in 2nd or 3rd gear. The in-use regulation, established by the Society of Automotive Engineers (SAE) used by certain states is 96 dB. This sound level is measured with a sound meter microphone held 20 inches from the exhaust outlet, with the bike in neutral and running at 50 percent of redline rpm.

So why two different test methods? It would be impossible to run the EPA test under field conditions. The EPA method requires a very large, flat, paved open space, a highly skilled and practiced test rider, expensive and complex instrumentation, and takes several hours to properly set up and perform. Can you imagine trying to do this at the start of an enduro?

The SAE method, on the other hand, is a screening test which has excellent scientific validity and repeatability, and is much quicker and easier to perform. It is a go/no-go test designed specifically for field testing of off-road motorcycles and ATVs. Although it is faster and easier to perform than the EPA test, and requires much less expensive instrumentation, the Ranger or tech inspector using this method must be properly trained, and the instruments properly calibrated, to give valid results.

So, now that we understand something about how noise is measured, we need to look at the noise itself: For starters, noise decibels do not add directly; that is, two 80 dB bikes do not make 160 dB, but only 83 dB. Thus, as a very
rough rule of thumb, reducing the sound of a bike by 3 dB has about the same effect on the "acoustic environment" as cutting the number of off-road motorcycles or ATV present by half!

In summary, the excess noise made by an off-road motorcycle or ATV is bad for our sport. Stock off-road motorcycles and ATVs meet the current rules when they leave the dealer showroom. It is up to the rider to ensure that they continue to "be legal," and that the sound from our vehicles is not excessive. As our sport grows it is important to keep in mind that less sound is more ground, and enjoying the outdoors is truly enjoyable experience.

HRCA Members can always stop by the Chernhelp service center for a complimentary sound check, and get assistance at when they are enjoying off road recreation.

Honda Rider's Club Chapters, dealers and land use agencies wanting to get more information on motorcycle or ATV sound or sound measurement training can contact Chris Real at Chernhelp, (909) 481-0083.

**Riding Red in the Formula 1 Paddock**

During the 2004 Formula 1 Grand Prix auto race held at Magny-Cours, France, Alpinestars staged a mini race within the larger event, one that featured Honda motorcycles inside the F1 paddock. American Honda supplied 15 Honda CRF®-50Fs, and the Alpinestars reps took it from there as they organized 60 riders from within the ranks of Formula 1 stars past and present, as well as a horde of international media types who were itching to get into competition themselves.

The mini moto track, which was situated adjacent to the main grandstands and included sections of dirt and pavement, drew riders like a magnet, including Formula 1 star driver Kimi Raikkonen from the McLaren team and Williams lead driver Juan Pablo Montoya. A host of other drivers were on hand, including David Coulthard, Jarno Trulli, Fernando Alonso, Frank Montagny, Toni Liuzzi, Matthias Lauda, Patrick Freisacher, Yannick Schroeder and Tomas Enge. Former GP great Jacques Laffite and his team pulled out the eventual win, but this contest was obviously about fun, not winning.

Raikkonen and Montoya enjoyed the event so much they each took a CRF50F home with them, loading the little tiddlers aboard their personal jets so they could ride them on the Monday following the race. Yeah, those F1 racers are great guys, regular riding enthusiasts just like us except for being rich and famous—and other little details such as that personal jet!

**GOOD AS GOLD**

In case you didn’t catch the X-Games on TV, you should know that a couple of familiar faces graced millions of television sets across the country by winning gold medals.

Seven-time Supercross Champion, JEREMY MCGRATH, started things off by winning a Gold medal in the Moto X Step-Up competition. It was McGrath’s first-ever Step-Up competition, and the champ showed everyone he can do just about anything on a motorcycle, clearing a height of 33 feet, 6 inches on his CR250R. That was a mere 6-inches ahead of silver medalist, MATT BUYTEN, and a whopping 4 feet, 6-inches higher than the bronze medalist, TOMMY CLOWERS.

Next up was Moto X Supermoto, the first time in X-Game history that Supermoto racing was included. Top riders, 20 in all, from virtually every motorcycle racing discipline were invited to take part in the X-Games Supermoto race. Airing live on ABC Wide World of Sports during prime-time Saturday afternoon programming, the event drew millions of viewers who witnessed BEN BOSTROM take the gold. Ben showed he’s the National Supermoto Champ, beating world supermoto champion EDDY SEEL to the line in a cliff-hanger that saw Bostrom tip over three laps from the end, and then make the winning pass just a few turns from the checkers.

McGrath also entered the Supermoto race, and took home the bronze medal for third. Of the top 14 finishers, nine were mounted on Honda’s mighty CRF450R, including two riders who had never raced Supermoto before: KEVIN WINDHAM, who finished a remarkable fifth, and Honda’s multi-time Baja champion, STEVE HENGEVELD, who finished 12th on a borrowed bike sponsored by the HRCA.