

## The sound issue at Mission Raceway

### Tech tips from Steve Dick with contributions by Allen Beck and the WMRC

As I am sure most of you have heard the **95db sound limit** is being even more **rigidly enforced** this year at our events. As the owners of Mission Raceway Park (MRP) the Custom Car Club is held accountable for all sound complaints, whether the complaints originate from one of their drag race events or from the leased area road race course. Having limited goodwill in the community means: **Too many noise complaints and they will be forced to shut down or severely restrict use of the track.** Considering the issues and their responsibilities it is very generous of them to allow us to rent the road course portion of their facility (note: the WMRC sublets from the Sports Car Club of B.C. which is allowed to lease track space from MRP. -editor). As they certainly do not need our money it is obvious they are allowing us use of MRP out of respect for other forms of motor sports. As respect demands respect it is our responsibility to be good tenants and respect these sound levels.

To clarify: **no machine racing or practicing at a WMRC/Mission event may exceed 95 db at any time.** Sound levels are measured 50 feet from the race surface at an acceleration point. Sound can and will be measured at a number of different location. Weather and other 'outside' influences can affect the sound level readings, causing a machine to read louder (or quieter) throughout the day. Because this variation is unavoidable and no excuse for 'blowing over', the WMRC suggests/**expects** all machines measure **well under 95 db.** This 'cushion' will hopefully preclude the necessity of black flagging or red flagging bikes and events due to changing conditions.

With this problem in mind it dawned on me that there are several noise damping devices, which, while coming stock on our bikes are usually removed in the course of 'race-prepping'. I am no sound engineer but suspect the sound measured is a culmination of all sounds produced. In other words, the mechanical engine, chain, intake, and wind noise all combine with the obvious exhaust note to produce the sound level measured. (This is true, editor)

Sound issue in mind, Allen Beck and myself (Steve Dick 2002 #1 plate holder, Allen Beck 2003 wmrc secretary and track set up chairman. Editor) took it upon ourselves to perform noise-damping modifications to our bikes for the last Test & Tune. The very positive results proved we were right.

The bikes used were Allen's 2002 R6 with a D&D exhaust and my 2003 R6 with a full Akropovic system (amongst other units conducting tests that day were a SV and RS 125 GP bike. The SV failed due to insufficient silencer length while the RS passed the test. editor). Akropovic rates my exhaust at 101 db or about 3db louder than other Akropovic systems, while everyone knows how loud D&D's are (no D&D system has ever passed Mission's sound test before. Editor). Neither bike ran over 94.5 db that day with most passes being in the 92-93 db range. For comparison two similar 2002 R6s were cited for excessive noise necessitating silencer changes before being allowed back on track. The best prove of how well the sound-proofing worked was the 2003 R6 of Jeremy Leduc. His R6 was identical in pipe, bodywork, mileage and gearing to my R6. **Where my R6 registered 92.8 db his consistently read 94.8 db** (too close to the sound limit to be raced without the possibility of being black flagged mid race. Editor)

**Here is a list of sound proofing modifications we did and are planning to do that anyone wishing to practice /race at Mission should do as well.**

1. Allen **repacked his muffler by cramming as much muffler packing in as he could**. Mine was new, but I know there is no way to get it as full as Akrapovic does. They spray the material in the end of the pipe & then pack it with a stick after every couple inches of spraying.
2. Allen **wrapped his complete exhaust** (except the muffler) with Header Wrap available from Lordco or Mopac Auto. Then he sealed it with a silicon spray made by the same manufacturer. This extends its life in the moist & active environment of a motorcycle. Cost \$75.
3. We **both lined our fairings with noise deadening material. Allen also lined the outside of his ram air intake ducts**. I used a product called Breadstick from Visions Stereo, but there are similar products out there. It's actually designed for cars with high-end stereos to dampen out road noise. Cost was \$40 for 5 square feet. I wouldn't use it again on the fairing, as it's tar like backing is impossible to remove for fairing repairs, but it's very effective **behind plastic frame covers, sprocket covers, & such**, that won't be damaged in a crash. Trent (my mechanic) & I have since switched to a product used for insulating heat ducting in houses. It comes in rolls 2" wide by 15' long & rolls 5" wide by 15m long. There are a few types. It has self-adhesive foam backing about 1/8" thick & a foil like top sheet. They are available at Revy, Canadian Tire & Home Depot, to name a few & are \$5 to \$14 a roll. Allen used a different product designed for insulating hot water tanks that has a plastic bubble wrap type backing with a foil top, but I think he's switching to the other, which is less bulky.
4. To help attach these products, you can also buy aluminum tape that looks much like duct tape, but is made out of foil & is designed to fasten the loose ends of the duct insulation to the ducts. One brand is called Nashua Tape.
5. At Mission I used a stock **front sprocket with the sound deadening** plastic molded to it, but I have found that the 85 GSX-R750 used a 14-tooth sprocket with a set of washers & rings to sandwich the sprocket. I'm amazed how much it quiets the chain. Cost \$45 for 4 pieces. Suzuki part numbers 27516-19C00 for 2, & 27517-31300 for 2. They will fit on all R6, R1, GSX-R, & some ZX models. I'm sure other applications can be found. **I also lined the inside of the sprocket cover** with Breadstick.
6. Trent has since **lined the inside of my frame, underside of the gas tank, & outside of the air box with the foam insulation** as well. We are going to **do the inside of the tail too**. The stuff is not flame proof, so I would be careful near the headers. It will burn if a flame is held to it, but stops if the flame is pulled away. So make sure you have your **REQUIRED Fire Extinguisher** with you in your pit area. John Parker was talking to a sound engineer who recommended **insulating all panels, as they work like a speaker to amplify any noise they are exposed to**.
7. We already know problem bikes are the GSX-R's with their exposed ram air tubes & any twins, because of the exhaust note. I would **strongly suggest**

**wrapping all ram air tubes & using header wrap on all twins & singles.** Also make sure to **seal all header joints** with high heat silicone sealer.

8. So, depending on the bike, successful sound modifications can be achieved for about \$100 to \$150 & a day's work. That's pretty cheap & easy really.

**9. Tips from Bernie Ryan and the WMRC**

- a) Chain noise: a properly lubed and adjusted chain is much quieter than an unlubed, worn out one
- b) **Stock mufflers** employ mechanical baffles to quieten the exhaust.  
Aftermarket mufflers use fibre packing to quieten them down. It flows better and is lighter. The fibre blows out, and must be repacked on a regular basis. It should be checked after 3 weekends. And you'd be smart to bring spare packing with you, as well as rivets, or whatever it takes to remove and replace the baffle. If you need a better reason, noise = energy. The louder your bike is, the less power it makes, as it flows less as the turbulence from the air rushing in and out of the unpacked baffle slow down the exhaust gases.
- c) By forcing the volunteers and executive to play noise cops instead of concentrating on organizing and running T&Ts/races, the part of the membership that is being careless with this noise issue is actually 'screwing up' the events.
- d) Steve got his 2003 R6 down to 92db, on a cloudy day. He is the number 1 plate holder, and cuts some of the fastest laps at Mission.
- e) **Constant disregard for the noise limit, and/or harassment of officials can result in a permanent ban from any future WMRC events. Bit of a damper on your career, no?**

I hope this helps everyone. I'm looking forward to a fun, but quiet season at Mission. Please tell friends & family to come out & enjoy the racing too. Clint McBain, as well as a bunch of the Calgary & Edmonton crew told me last Sunday, that they plan to race with us on June 30<sup>th</sup>. I also hear that Alan Schmidt, Matt Zurduchen, & Mike Sullivan plan to come as well, to name a few other fast guys.

I'm confident that the vintage crew & twins can effectively quiet their bikes too, so we can all have some really good races that entertain everyone.

It looks like we are on track to becoming one of the best clubs in Canada again. So let's all pitch in, and have ourselves a really good year.

Sincerely,  
Steve Dick , WMRC #1