



EFRA 1:8 IC track section Chairman:

Sander de Graaf
Beekmansbos 53
1971 BX IJmuiden
Netherlands

Phone (Priv): +31 255 515720, (Fax): +31 255 515720
Mobile: +31 6 53178658, Email: eight.track@efra.ws

EUROPEAN FEDERATION OF RADIO OPERATED MODEL AUTOMOBILES

Sander de Graaf, Beekmansbos 53, 1971 BX IJmuiden, Netherlands

Open Letter

The future of IC model car racing is now becoming on dangerous grounds, the search for 82 dB's.

IJmuiden, May 17th.

Dear manufacturers,

I guess the majority of you are feeling comfortable with the mufflers you can use at the moment. However I urge you not only to look at the forth coming summer events, i.e. the IFMAR World Champs.

The proposal to skip the 3000 series of mufflers for 1/8th till end of 2010 does not mean we still have time enough to wait and invest only in noisy solutions.

We cannot afford to make the same mistake as with the 3000 series, although there we also had a big time frame (2006, EFRA EC in Sweden we started to talk and had the first meeting).

EFRA need to see samples this year, to be precise; we want samples in action at Lostallo.

Hopefully the weather conditions will be good, so the Sunday will be free to do some major testing with all those samples that you will prepare and bring with you. If we cannot use the Sunday, or part of the Sunday due to the last part of the event the, we do it on Monday, so no excuses will be accepted.

The goal for the 1/8th track level is big, **VERY BIG**, and please do not underestimate this phrase.

You have to come with a solution where you must be under the level of a nowadays 1/10th I.C. car. If you do not find such a solution then, believe me, 1/8th track is over between now and the next 3-6 years. The Electric Industry is already adapting on this situation and has a 1/8th car ready with electric motor and lipo's. We cannot afford to continue like we have done in the past and try to achieve 1 or 2 dB's. **The goal is 82 dB's in any condition.**

For the performance of the engine, I truly believe it is important to keep the general idea of a 2 or 3 chamber muffler as it is now.

Manufacturers must try to find the solution in an extra damper at the tailpipe (suggestion). You can compare it with a pistol with a silencer on it; you must take away the blast of the explosion.

If you do that at the end of the tailpipe without making the "output window" to small it will only cost some power and engine performance will not get severely affected. However the final construction is yours, as long as we achieve results.

Thinner material of the muffler is giving a higher frequency and is nastier for our ears, while thicker material gives a lower frequency. Dark paint coating may help as well.

www.efra.ws

EFRA, General Secretary
Willy Wuyts,
Herentalsesteenweg 20,
2220 Heist op den Berg, Belgium

Fax: +32 15241470
Mobile: +32 477947109
E-mail: secretary@efra.ws

International Bank Account Number
IBAN: SE 21 6000 0000 0000 43 202 799
Handelsbanken, Norrköping, Sweden
Swift-Code: HANDSESS

The difference in dB's can be seen, but is very small, but lower frequencies are better.

There are different factors that make the noise:

- RPM of the engine (see lower noise level at Off-Road due to lower RPM and good air filters); this last mention lead us to consider another area to improve, the INS box.
- Design of the muffler and manifold. Conical manifolds have better performance on the middle parts of the RPM level, so average sound level increases.
- Different engines with other brand of muffler. Each manufacturer has its own muffler, since he tries to find the best performance. But in some cases a certain muffler on motor "A" makes more noise than on motor brand "B".
- Mechanical construction of the car and gears.
- Fitting of the body and tailpipe fitting in regards to body. Keeping the tail pipe inside, pointing to the rear (or ground) can help!

On the photo you can see an adaptation on an existing muffler with an extra unit. This already brings the noise down 1 till 2 dB's (but we need more)

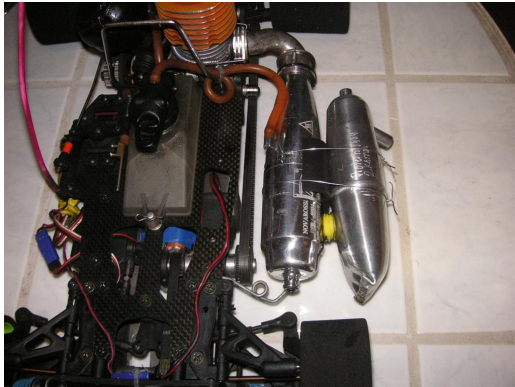


I did some testing on a weekend and took an old 2 chamber muffler, cut away the inlet and closed it. Bored out the pressure nipple and used this on a 9901 muffler the check noise level. I needed to put some silicone between the two to avoid mechanical noise. This construction gave a level of 82-83 db. Power was, I guess, 20 % less, but engine was not adjusted very well.

It means that if you make the right construction as silencer you can gain more noise reduction with probably a slightly better performance.

Another conclusion out of this test is that it may mean that you need volume to bring the blast down.

Of course this construction is too big, but luckily for 1/8th there is room between body and mufflers (approx 20-25mm) and it must be possible to find a solution.



What we need for 1/8th I.C. is a reduction of about 6-7 dB's.
So for 1/8th I.C. that is a major improvement for what we look for.

The ideal situation would be to have a motor max 30.000 RPM, much stronger torque so that we can change gearing and not rev up so high as now.

Another alternative is to design a 4-stroke engine, that has no high revving and good bottom torque.

16% of Nitro will contribute to bring power a little bit down, so as top revs, but only little.

So please manufacturers, START WORKING and make sure you have samples ready for mid August. For those not in Lostallo/Switzerland, please send me the samples, then I will take them with me. We will have there good drivers and fast engines available, so testing possibilities enough.

If we cannot make the necessary steps in noise reduction we might end up with a situation where more and more tracks will close and perhaps EFRA at a certain stage must decide to skip International racing in 1/8th I.C. track. Hopefully it will not come so far but we cannot continue playing/trying/investigating without proper results.

For the future homologation process we are considering to make the homologation time (validation of the muffler) shorter (max. 3 or 4 year) and probably ask you to send in samples every 1 or 2 years. This will give us better control on what you put into the market.

We are also working to find a good rule for OEM mufflers, because we know some of the mufflers are manufactured by one company and sold to different re-sellers under a different name.

We are still trying to improve in a proper system to measure the noise level, noise generator or alternatives, but at the actual stage we are far from our target.

On behalf of the EFRA 1:8th IC track section & EFRA 1/8th Off-road section, 1/10th IC track section.

Regards,

Sander de Graaf

EFRA 1:8 Track Section Chairman and homologation officer.

