Proceedings of the Institute of Acoustics

CODE OF PRACTICE FOR THE CONTROL OF NOISE FROM OVAL MOTOR RACING CIRCUITS

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1. INTRODUCTION

Oval motor racing started in this country in 1954. Originally the cars were large pre-war American saloon, or stock, cars and to this day the sport is known colloquially as Stock Car Racing. That early spirit of racing saloon cars lives on but these days it is called Banger racing. Stock car racing has developed considerably over the years and there are now many different formulae throughout the country.

There is also a wide variation in the venues at which stock car racing takes place, ranging from established stadia with grandstands, seating and restaurants to 'club' events taking place at tracks which are little more than a dirt track in a field or a disused greyhound stadium.

The meetings are usually run over 6 to 15 races, each race being 10 to 30 laps and containing 10 to 30 cars, but sometimes in excess of 40. Meeting will usually have races for more than one formula with, say, F2 cars racing whilst F1 cars are prepared for their next race, and vice versa.

2. IS THERE REALLY A NEED FOR THIS CODE?

The sport was traditionally that of the working class man (and the occasional woman) and at the time it originally came to the fore transport to and from the track was not always readily accessible. Consequently it came to be that the tracks were near to centres of population at venues perhaps designed for, and best suited to, more traditional working class sports such as dog racing. The format was popular and whilst technological developments have rendered the cars very different in so many ways, the basic format remains. The older formulae such as F1 and F2 even race in the same direction, anticlockwise, because in the days of the big American saloon cars, with left hand drive, this was the safest direction to race in. So it was that cars racing on ad-hoc oval dirt tracks came to be the oval motor racing which takes place today.

Since the tracks were in urban areas there was a significant likelihood that noise problems would occur but 'in the old days' this wasn't a major concern. Since then two things have happened; competition has driven competitors to strive for more powerful vehicles and the public has become more sensitive noise.

The latter is a subject for another discussion which I do not intend to address here. An increased professionalism and the introduction of 'big money' sponsorship amongst some drivers has, in the last few years, brought on a range of engines with power outputs that rival, and in some cases even exceed, those of multi-million dollar Grand Prix cars. It should go without saying that racing such cars in a noise sensitive area is not conducive to a quiet life and the answer to my original question has to be "yes, there is a pressing need for this Code"

3. THE BACKGROUND TO THE CODE

Before going any further I want to offer a credit to my co-author and fellow Environmental Health Officer Allan Watson. I don't think either of us would have completed the Code if hadn't been for the other. In the following text any reference to "we" should be construed as meaning Allan and I.

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A number of years ago at a Stock Car meeting on a particularly cold and inclement night in Scunthorpe (Monaco this ain't!), we were incensed to read in the programme that "the green welly brigade" had been doing noise measurements with a "decimeter". "It's our sport" the programme said "and we'll do whatever we want. We won't keep the noise down, it's all part of the spectacle".

As self respecting Environmental Health Officers we were not going to let this blasphemy go unpunished and we wrote to the leading Stock Car magazine expressing an alternative point of view. Two years and a lot of correspondence later we found ourselves engaged by the sport to write a silencer policy and enforce it.

4. THE ETHOS OF THE CODE

It was round about this time that the NSCA asked us to put our experiences to good use and write a Code of Practice for them, and we agreed willingly. From the outset we had made it clear to the sport's governing body (BriSCA) that it was in their best long term interest to have the environment uppermost in their minds or risk receiving an Environmental Protection Act section 80 notice. Regardless of the consequences we were not going to compromise our professional integrity and we would not allow ourselves to be used by BriSCA as environmental window dressing. It was on this understanding that we embarked on the greening of the sport and the writing of this Code.

The Code contains many of the lessons we learned during this period and since we were actually putting them into practice we knew that the Code was going to be enforceable. This is perhaps the most important point of this paper; **the Code of Practice for the Control of Noise from Oval Motor Racing Circuits can be enforced in practice.** We know it can because we've done it already. We've rolled round in the mud, burned our fingers, suffered the wrath of drivers who've been excluded from racing and faced out promoters who wanted us to bend the rules a little to let crowd pulling drivers (even the world champion) race even if they were too noisy.

Throughout the time that we were implementing BriSCA's noise policy (which we wrote remember) we did not lose sight of our principal role as Environmental Health Officers, and a major consideration in all that we did was whether or not it would be practicable for the District EHO, perhaps with little knowledge of the sport, to get to grips with any problems and to present him/her with a workable solution, even if those problems arose at the planning stage.

5. PROVISIONS OF THE CODE

A lot of this paper has been spent explaining the background to the Code, because it is important that the reader understands that this is not just another dictate handed down from on high by people who don't have to actually go out into the field and enforce it, but rather that the writers really do understand the problems from both sides of the safety fence.

One of the guiding principals of the Code was that it should be easy to follow, practical and enforceable, and in that context it is, I hope, largely self explanatory. However, I want to pick out some of the major provisions and some which might perhaps seem a little loosely worded or even poorly thought through.

The first section of the Code is the introduction, and section 2 covers the legal provisions which cover the sport, including planning controls, noise, entertainment and others. I don't intend to repeat the code here but I would like to point out that the consultation process highlighted a number of areas where the drafts were deficient and I am confident that just about everything relevant is now covered; the Department of the Environment (as it was at the time) were particularly helpful here, especially on planning matters.

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Section 3 is the core of the Code dealing with sources of noise and how to deal with them. The opening sentence is one of those which should be obvious but has to be said anyway; "the best way to minimise disturbance is to cut down noise at source". This sets the tone for what follows as throughout the Code the easiest and most practical steps are given first. It doesn't recommend building costly barriers if cheap silencers on the cars will do the job.

The construction regulations for the majority of formulae specify a standard engine and in these circumstances the regulations should also specify a standard silencer; there are some examples in annex 2 but the list is not exhaustive as there are new formulae being developed all the time. It would be very useful to the enforcing authority to get a copy of the racing / construction regulations from the race organisers.

The exception to the standard silencer as a means of control is the formula with perhaps the greatest potential for creating a disturbance, Formula 1. In this formula the drivers have an almost unlimited choice of engine. There are some minor limitations in connection with forced induction but these are insignificant in the real world. Not only is there no restriction on engine choice but there is no restriction on what the drivers can do to the engine.

At the bottom end of the range there are budget racers who buy second-hand low powered cars. These often have large American V8 engines in a standard state of tune. Traditionally these engines are slow revving low power and in practice don't make a great deal of noise, even without a silencer.

At the top end of the sport are a handful of heavily sponsored drivers who buy expensive engines and then do expensive things to them. Unsilenced, these behemoths would probably cause a noise nuisance just ticking over.

In between there is an almost infinite variation of engines with a similarly wide variation in silencing needs. Clearly a high specification standard silencer would be an option but these would necessarily be expensive, prohibitively so for the budget racer who doesn't really need them anyway.

For this reason a noise level has been set. The level was based on the then current 103dB(A) in use by the RAC. This was chosen because it carried some credibility and authority. The stock car promoters saw adoption of this level as a defence but as Environmental Health Officers we could see that it could equally be used as an enforcement tool.

It would be unusual if Environmental Health Officers became involved in carrying out noise tests other than to check that the sport's own noise officials were doing their job properly, but the Code goes on to describe the procedure for carrying out the tests in some detail.

In brief the test should be carried out with the engine running at ¾ of it's maximum speed, with the microphone 2m from the side of the car and the sound level meter set measure SPL on 'slow' response. This may seem to be contrary to current noise measurement practice which increasingly is moving towards L_{aeq} fast response. There is no elaborate theory behind the use of a slow SPL; we tried just about everything else but this is the one that worked and was highly repeatable.

To ensure that any regime of noise control there needs to be someone to enforce it, and the Code gives guidance to race organisers on the type and number of officials to appoint. In general scrutineers will need to be employed to check the state of standard silencers and there may need to be extra scrutineers at busy meetings as they will almost certainly have other duties as well. At an F1 meeting the promoter must employ specialist noise inspectors with proper qualifications. The noise inspectors will have to have other less quantifiable qualifications too; from first hand experience we know that a driver hyped up on adrenaline who is being excluded from a race is not a pleasant person to be with. For this reason the

noise inspectors must be able to depend on the support of the race promoter who will himself be subject to conflicting influences, such as the need to please spectators; banning a star driver will be unpopular with the crowd.

There are other simple and practical measures which the Code advocates and there are sections giving more detailed advice on:

- Times and duration of events - try to dovetail stock car racing with other uses of the stadium, limit the number of events per year, stick to the published times, don't allow competitors to arrive too early or stop late.
- Public address systems - use a lot of small low power speakers, point them away from houses, turn them down
- Barriers - mostly relevant to new sites, if earthworks are needed elsewhere use the waste to build barriers, double up their use as viewing slopes, put them near to the noisiest parts of the stadium.

The code concludes with a section on public relations. It is often the case that the best way to control noise problems is by public relations and public information so a few notes on what to tell to who are given. These are aimed principally at race promoters but should provided a framework upon which both sides can agree the desired level of publicity.

6. SUMMARY

There are Codes and Standards which seem to have been written by people who have a fervent desire to do good work but who never have to put that work into practice. This Code is perhaps unusual in that the authors put it into practice before they wrote it, and based it on real world experiences. We believe it is a practical Code which should be of use to those officers who have stadium based circuits within their areas.

7. REFERENCES

National Society for Clean Air and Environmental Protection, Code of Practice for the Control of Noise from Oval Motor Racing Circuits, 1996