



Briefing Note

Noise Cameras on our Roads

In February 2022 polling found that 71% of those surveyed supported the use of noise cameras in cities, and over two thirds (67%) supported their use in rural areas¹. In April 2022, the Secretary of State for Transport set out to ‘*banish the boy racer*’ from our roads and announced a new initiative to tackle excessive vehicle engine and exhaust noise in areas worst affected. The Department for Transport (DfT) invited MPs to submit applications to trial new noise (acoustic) cameras in areas adversely affected by vehicle noise. The camera technology is in the design phase, and four trial areas across England have been chosen, starting in Bradford and then moving to South Gloucestershire, Great Yarmouth and Birmingham² to check its effectiveness in deterring motorists from revving engines unnecessarily or using illegal exhausts.

Measuring noise from individual exhausts

Since 2019, DfT has been trialling acoustic cameras in the UK. The cameras work by measuring the noise emitted from a vehicle. Should the vehicle noise be above a pre-set threshold, it triggers the camera and automated number plate recognition (ANPR) will log the registration so that a penalty is sent to the driver.

The principle of the system is illustrated in the image.

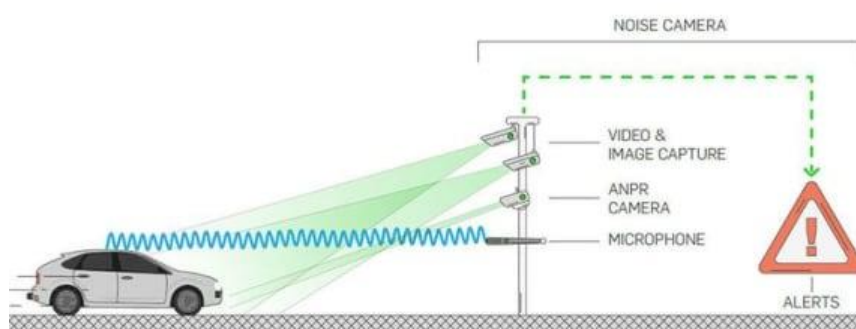
Legal Framework

The *Road Vehicles (Construction and Use) Regulations 1986*³ describes UK legislation used in regarding the permitted noise generated by vehicles but

contain no fixed noise limits in use. *Regulation 54* requires exhausts and silencers be maintained in good working order and not altered to exceed the noise emissions of the type approved exhaust fitted by the manufacturer. *Regulation 97* states “no motor vehicle shall be used on a road in such a manner as to cause any excessive noise which could have been avoided by the exercise of reasonable care on the part of the driver.” It is an offence under section 42 of the *Road Traffic Act 1988* to use on a road a motor vehicle which does not comply.

For many years, new vehicles have needed to meet standards for type approval, including noise, using coast-by and acceleration tests. An exhaust noise test is also done but currently has no approved sound levels to meet.

Since noise emissions from vehicle models varies (in some cases substantially) the noise camera may contain a variety of trigger levels. More research is required to provide a good correlation between the noise level for the camera trigger threshold and the type approval level for that vehicle. Some vehicles have no corresponding type approval drive-by sound emissions limit. In such cases, vehicles could either be exempt or assessed against a different noise level - perhaps



1 <https://choosemycar.com/resources/news/would-noise-cameras-be-a-welcome-addition-to-uk-roads>

2 <https://www.gov.uk/government/news/noise-camera-trials-to-detect-rowdy-drivers-coming-to-bradford-bristol-great-yarmouth-and-birmingham>

3 <https://www.legislation.gov.uk/uksi/1986/1078/contents/made>



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a noise threshold appropriate for a vehicle subcategory. At this stage it may be sensible to set trigger levels with a large margin to avoid incorrect penalties.

In addition, “excessive” noise emissions from the exhaust of vehicles form part of an MOT review, generally based on the subjective judgement of the MOT tester. In addition, a subjective test can also be undertaken by a police officer on the road.

Pilot scheme in the Royal Borough of Kensington and Chelsea

The Royal Borough of Kensington and Chelsea (RBKC) launched a noise camera pilot scheme in the Summer of 2020 following 35 complaints of engines revving in the area.

Pilot noise cameras⁴ went live in September 2020 with RBKC implementing a Public Space Protection Order (PSPO) to protect the public from excessive noise from vehicles.

When a threshold level is exceeded, cameras record the sound level and video footage of the offending vehicle. RBKC has fined offenders (£100) and in extreme cases, on conviction RBKC can apply to the Magistrates Court to seize a vehicle. Although the noise cameras use trigger thresholds, the decision to enforce follows a review of the data collected for each case.

It is understood that classic cars were not targeted as drivers need to be “consciously” breaking noise rules to be penalised with “sensible” motorists unlikely to be fined.

UK Government Research

The Government’s Phase 2 study on acoustic/noise cameras was published in August 2021 (with the results of the Phase 1 study being published in June 2019). The Phase 2 report concluded that it is possible for a noise camera to identify vehicles and for measured noise levels and speeds to be assigned to individual vehicles under certain conditions, theoretically and in practice. Further developments are required to overcome technological and acoustic challenges before use in enforcement including:

- automating post-processing of individual noise camera components so data outputs are linked, taking into account the small-time differences between each component encountering a vehicle as it passes the noise camera;
- identifying vehicles and matching noise levels to them for complex traffic scenarios, such as vehicles passing the noise camera in quick succession or at similar times on opposite carriageways;
- using purpose-built components to improve the identification of vehicles; and
- the development of a portable solution.

The study findings will inform the next phase of trials including potential vehicle noise thresholds for enforcement and determining suitability of acoustic cameras for enforcement.

To find out more: please email: briefings@ioa.org.uk

More information about the institute of Acoustics can be found here: <http://www.ioa.org.uk>

With thanks to principal author Teli Chinelis MIOA, (Finch Consulting), together with Steve Gosling MIOA (Intelligent Instruments Ltd) and Louise Morris, MIOA (Atkins) for preparing this briefing.

⁴ Cameras supplied by Intelligent Instruments Ltd. It should be noted that there are other noise cameras available which are being trialled in other parts of the world that could be suitable for UK roads.