

SPEEDING ODOMETER DISPLAY (SOD) – A DIFFERENT WAY FOR CONTROLLING SPEED

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What is wrong with conventional speeding control?

The most obvious shortcoming of conventional speeding control is that it is not sufficiently effective. At any given moment, a very large proportion of vehicles in traffic (both urban and inter-urban traffic move at speeds higher than the legal speed limits assigned to roads they travel on.

On most roads, speeding control relies on police enforcement. The underlying assumptions of police- based speed control are well known, but they are paraphrased here in simple language.

- left on their own, drivers will speed, even if it is against the law
- the role of police is to catch them in the act, charge them, and support the legal process that will result in their punishment
- to the extent that drivers do not speed it is because they are afraid of being caught and punished
- it is important to catch and punish each driver who speeds in order to instil the fear in her or his heart
- it is important for police to be seen on the roads by many drivers, in order to raise fear and remind drivers of possible punishment

Unfortunately, each of these assumptions is questionable or impractical. Portraying speeding as a criminal tendency shared by the majority of citizens is a self defeating assumption lacking empirical or public support. Depicting normative speed and other driver behaviours (or the process of acquiring normative habits) as motivated mainly by fear ignores other, perhaps more common, motivating mechanisms based on reason, social learning or imitation.

Police can not be present everywhere, at all times. Conventional speed enforcement, even when supported by photo-radar or similar technology, cannot “catch in the act” all speeding drivers, at all times, on all roads. It is also very expensive. A total of 8% to 10% of police resources in European countries are devoted to direct traffic policing, much of it concerned with speed control. Because current speed enforcement, of necessity, is selective, sporadic and inconsistent, it is often perceived by citizens as unfair and as lacking the marks of distributive justice.

It is not self evident that successful speed enforcement requires police to focus on individual offending drivers or on catching them in the act. This is so only because of

uncritical acceptance of the assumption that driver behaviour is directly motivated by fear of police. It may, but it is not the only or major motivation.

There are many examples of successful preventive measures, including enforcement of laws and regulations, directed at vehicles, machinery, managers, companies or other bodies, rather than at drivers, operators or workers. It is the major approach in occupational safety and in environmental controls. It is not necessary for the police, or for inspectors, to be present exactly at the place and time when an infraction takes place. In the area of speed control, this approach was partially accepted in the case of the tachograph in commercial vehicles.

What is the concept behind SOD?

The proposed approach has four new elements.

- First, compliance with speed is enforced upon the vehicle unit rather than a driver.
- Second, driver (and vehicle owner) receive immediate feedback on the financial consequences of speeding. The consequences are cumulative and unavoidable.
- Third, available technology is used to manage speeds in an adaptive manner, accommodating a variety of speed requirement and alternative speed controlling rules.
- Fourth, a range of non-criminal control mechanisms are activated, drastically reducing the reliance on police control.

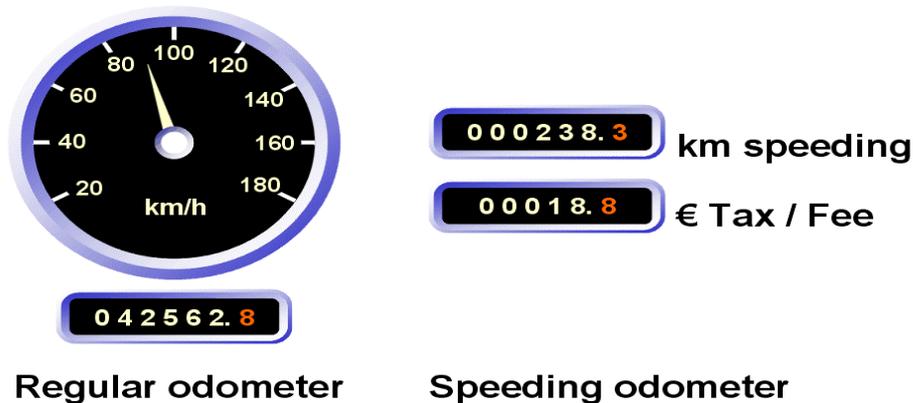
What is a SOD?

SOD is a concept that can be implemented in a very simple manner but it can also be made advanced from the start or progressively evolve from a simple to a more complex system. It has three integrated components:

- An in-vehicle display,
- A logic of operation,
- A set of administrative control mechanisms.

The in- vehicle display is similar to the regular odometer, which is a simple km counter. However, instead of displaying the total km travelled by the vehicle, SOD displays only km travelled while speeding. In addition, SOD may show how much money this speeding is costing the owner of the vehicle.

Speeding Odometer Display



Regular odometer

Speeding odometer

The logic of operation involves the rules determining speeding and the rules determining the consequences.

At the least, simple speeding, km travelled over the highest set limit, could be registered and accumulated in a stand-alone unit in a vehicle, linked only to the regular odometer. The consequences can be in terms of fixed cost associated with each km.

More selective logic could take account of the length of last period or cumulative record of speeding, and have more complex rules for determining the financial consequence.

More advanced models might rely on roadside transponders or vehicle location technology to continuously update the applicable speed limit at any given location. If adaptive speed management is practised, SOD might also display the current speed limit.

The registration unit could be only in the vehicle or data can be transferred to an external processing centre. Issues of reliability, data protection, and privacy concerns will influence the choice among various technical solutions.

Control mechanisms associated with SOD are designed to be ever present and unavoidable. There are, in fact, several layers of control.

- The first layer is that of self-control. Drivers see the display and the record and consequence of speeding, which do not disappear even after speeding is ceased.
- The second layer of control are other users or owners of the same vehicle (members of family, parents, employers) who see the record as well. They can exert formal and informal moral pressure and controls.
- The third layer of control are formal administrative control mechanisms that can be linked to periodic vehicle inspections, or any transfer of ownership. At such times vehicle owners may have to pay the fees indicated. In advanced systems with central processing, charges may be sent by mail to owners or collected automatically at road-toll gates.

- The fourth layer of control, if desired, could be based on police enforcement. Police could check on the integrity of the SOD registration system as well as collect the charges. SOD does not rule out the continuous use of conventional police control of spot speeding.

Advantages of SOD over conventional police enforcement

- Driver and owners have immediate feedback on amount of speeding and its financial consequences
- It is self-enforcing system; owners will take care of routine "enforcement", having immediate feedback from the transparent display.
- It is a preventive approach, supporting general compliance.
- SOD collects speeding data continuously, rather than occasional spot speeds.
- The sanctions can not be avoided; at the annual inspection or earlier all debts must be paid.
- It is a fair system that can allow (if the logic is so designed) small amount of spot speeding, and is applied to all that speed, at all times. It is not a game of hide-and- seek with the police, anymore.
- The approach does not rule out traditional enforcement and sanctioning against drivers.

Potential implementation

A mandatory installation requires political will as well as evidence that this method of speed enforcement is effective. Therefore, it is suggested to test the concept first on specific target groups that can be convinced or induced to use the system. In most cases some incentive, in the form of tax breaks or lowered insurance premiums, may need to be used. Potential candidates could be the following:

- Company fleets with many drivers sharing vehicles;
- Parents of newly licensed drivers;
- Speeding offenders who would have the SOD as a mandatory condition for driving, or as an elective alternative to a more severe punishment;
- Voluntary enrolment of vehicle owners who wish to obtain insurance cut or other benefits.