

ADAC position on odometer fraud

Introduction

Across Europe, odometer fraud is a huge problem for consumers. In almost all vehicle models, the mileage counter can easily be manipulated. And not only in the odometer itself but in other control devices as well. Odometer clocking devices are freely available on the market. The cheapest knock-offs sell for less than €200.

Updates continue to be offered for almost all new vehicle models as soon as they are launched. This situation persists in the face of the requirement in EU emissions regulation 2017/1151¹ to “include systematic tamper-protection strategies (...) to protect the integrity of the odometer reading”.

The regulation is a first milestone in the fight against odometer fraud. It mandates a technical solution that will obviate the need for the mandatory introduction of odometer reading databases. However, the detailed Implementing Regulations specifying precisely how such systematic strategies should be implemented and which neutral authority or agency should be put in control has not been published yet.

Investigations by the police have shown that in Germany alone, some two million second-hand car buyers end up being defrauded by criminals each year. The total losses run to approx. six billion euros.

- Usually, the procedure does not take more than 30 seconds.
- Most vehicles can be manipulated by accessing the OBD diagnostic port.
- In most cases, it is not necessary to disassemble the odometer or other control devices.
- The devices are easy enough to operate even for non-experts.
- Generally, it is not technically possible to prove clocking. The only circumstantial evidence may come from
 - non-matching odometer readings,
 - entries
 - in service history booklets,
 - on repair invoices and inspection reports left by the previous owner
 - in the repair history documented by repairers in the manufacturers’ networks (not normally accessible)
 - on oil change tags,
 - on service date stickers,
 - on filling station receipts left in the cabin or in log books.

The legal status quo

In Germany: Section 22b of the German Road Traffic Act (StVG) makes odometer tampering a criminal offence. Nevertheless, odometer “clockers” continue offering their services (notably on the Internet). A ruling of the Federal Constitutional Court of Germany (BvR) dated 9 May 2006 enforced the software providers’ position by stating that:² When an odometer is manipulated for legitimate purposes such as repair, adjustment, conversion and data restoration, the manipulation does not constitute an offence under Section 22b, StVG.

Persons using the devices for the above purposes are therefore not criminal offenders under Section 22b, StVG. This may be service providers repairing actual faults in the instrument cluster, e.g. based on pixel errors, malfunctioning servo motors or similar situations. However, odometer adjustment for legitimate purposes is rarely required.

¹Regulation (EU) No 2017/1151 supplementing Regulation (EC) No 715/2007 of the European Parliament and of the Council on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information and amending Directive 2007/46/EC of the European Parliament and of the Council, Commission Regulation (EC) No 692/2008 and Commission Regulation (EU) No 1230/2012 and repealing Commission Regulation (EC) No 692/2008

² BvR 1589/05 (only in German)

In effect, such devices are being used overwhelmingly for no other intent than tampering with odometer readings, for which they have been optimised. So using the devices does constitute a criminal offence under Section 22b, StVG.

In the European Union: Emissions control legislation has introduced some welcome provisions against clocking. Under these provisions automobile manufacturers are under obligation to implement measures effectively preventing any falsification of the mileage shown by an odometer. At the same time, the type-approval authorities are required to approve procedures ensuring sufficient levels of protection against the illegal use of clocking devices.³ Regrettably, the Implementing Regulations remain yet to be published.

With their type-approval application for a new vehicle, manufacturers must supply a description of the measures undertaken to prevent illegal tampering with or modification of the odometer.⁴ These provisions have been applicable to new vehicle models since 1 September 2017 and to all new first registered vehicles since 1 September 2018.

The provision of technical anti-clocking measures as outlined obviates the implementation of database solutions for recording odometer readings during periodic inspections, garage calls etc. Such a solution would only mean added cost for the motorists without providing more security. Compared to technical solutions for securing odometers against clocking, the database solutions present significant disadvantages, for instance that odometer readings cannot be checked for accuracy before recording them. Furthermore, when most database entries start with the vehicle's first (general) vehicle inspection (vehicle age 3 years), the vehicle may already have been clocked.

ADAC position on recording mileages from connected vehicles for storage in a database

More and more vehicles today are equipped with SIM cards allowing the permanent transmission of data to the manufacturers. This prompted the EU Commission to consider the possibility of transmitting odometer readings to an authority or agency on a regular basis.

Such a solution would be acceptable to ADAC provided that no additional cost accrues to consumers. Other than that, the requirements listed below should be met:

- The vehicle owner should not be able to deny the transmission the way it is possible for instance for fuel consumption data.⁵
- The full protection of all personal data must be ensured.
- The odometer readings must be protected systematically at the source to prevent the transmission of falsified data.
- No additional cost for data transmission must accrue to consumers.
- An EU-wide legal regulation should define who and under what conditions has the right to ask for the disclosure of vehicle odometer readings.

ADAC demands

To effectively prohibit odometer tampering, both legal and technical measures are required:

a) Verification of the technical solutions implemented

On the legal basis of Regulation (EU) No 2017/1151, manufacturers are now required to make odometer fraud so technically challenging that it will no longer be cost-effective in terms of expenditure and prospective gain from the used-car sale. Technical barriers must prevent ordinary people owning the required tools from tampering with odometer readings. To make this possible, manufacturers must use state-of-the-art security technologies. An effective technical measure would be to type-approve only odometers that are effectively secured against rolling back.

³Annex I, Clause 2.3.3., Regulation (EU) No 2017/1151

⁴ Art. 5.3(f) of Regulation (EU) No 2017/1151

⁵ Commission Implementing Regulation (EU) 2021/392 on the monitoring and reporting of data relating to CO₂ emissions from passenger cars and light commercial vehicles pursuant to Regulation (EU) 2019/631 of the European Parliament and of the Council and repealing Commission Implementing Regulations (EU) No 1014/2010, (EU) No 293/2012, (EU) 2017/1152 and (EU) 2017/1153.

In ADAC's view, the next step would consist in defining precisely how the solutions implemented can be verified in the type-approval process. The effectiveness of the technologies can be neutrally verified at any time on the basis of internationally recognised, certified and utilised processes, e.g. Common Criteria (ISO/IEC 15408) and by neutral organisations represented in every country (in Germany, this could be the Federal Office for Information Security, BSI). The Common Criteria could specify the levels of security to be achieved and the details of the test. This would give the type-approval authorities the opportunity to verify independently whether and how the car manufacturers comply with the legal requirements. Self-certification by the automobile industry should not be an option.

In addition, a provision for such a verification would have to be included in Regulation (EU) No 2017/1151. Should it appear that the requirements set by the legislators are not sufficient, the EU Commission could use its verification prerogative to expand the requirements.

b) Expanding the requirements at the UN-ECE level

Since vehicles type-approved outside the EU can be sold in Europe, international regulations are required to guarantee the compliance of car manufacturers world-wide with the requirement of implementing effective technical solutions against clocking. It would be helpful to adopt the rules set forth in the emissions control legislation in UN-ECE Regulation No 39.⁶

c) Adaptations in German legislation

ADAC demands an extension of the scope of Section 22b, StVG: To prevent any loopholes, this section must cover any adjustment – not just illegal clocking. Section 22b (1), StVG, should be amended as follows:

"[A one-year prison sentence or a fine shall be applicable to] any person who

1. changes the reading of a motor vehicle's odometer by manipulating the odometer or its metering process and thus the reading."

This would ensure that any change to the results of an odometer reading is included. Since Section 22b (1) no. 3 covers the creation of odometer adjusting software, this amendment of Section 22b (1) no. 1, StVG, would make any distribution of odometer adjusting tools an offence.

It would also cover the setting of a new odometer replacing a defective device to the actual mileage of the vehicle, as is the practice today. Rather, all new odometers (and all other management systems recording odometer readings) should start counting from zero. A huge security backdoor would be closed if (replacement) odometers were not programmable. To document the actual, higher (!) mileage of a vehicle, an official endorsement to the effect that "odometer/control unit xy was replaced at reading xxxxxxxkm" could be provided elsewhere (for instance on an official document such as the vehicle registration certificate). The process could be set up in analogy to the registration of a retrofit diesel particulate filter (DPF), i.e. certificate issued by the executing workshop, registration at the licensing office.

In addition to a clearly worded ban on tampering we also need stricter enforcement of the ban.

Even if the necessary adaptations in German legislation are implemented, this does not eliminate the problem that the tampering can be transferred across borders. In such cases, the applicability of German criminal law is problematic if only Section 22b, StVG, which does not recognise injured parties, is available to establish the criminal offence. Because the criminal offence is perpetrated outside Germany and Section 3 of the German Criminal Code (StGB) does not apply. In this situation, Section 7 (2), StGB, is available only if national law in the country of perpetration defines tampering as a criminal offence. Legal provisions comparable to Section 22b StVG may not be available in many neighbouring countries.

At this juncture, it would seem necessary for the neighbouring countries to enact the relevant legal provisions if such practices are to be controlled.

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⁶ Regulation No 39 of the Economic Commission for Europe of the United Nations (UN-ECE) — Uniform provisions concerning the approval of vehicles with regard to the speedometer equipment including its installation