European Transport Safety Council

Vehicle Roadworthiness Package Implementation Reports

ETSC Position Paper

September 2020

Background

The EU roadworthiness package was last revised in 2014 and consists of Directive 2014/45/EC on Periodic Roadworthiness tests, Directive 2014/47/EC on technical roadside inspections of commercial vehicles and Directive 2014/46/EC on the requirements for issuing registration certificates with implementation in May 2018. The EC is in the phase of preparing its implementation report, expected to be published in the autumn, and the EP will prepare its own implementation report following this. ETSC has prepared this updated position paper to feed into this process including priorities not taken on board last time and new developments such as eCall and automation.

Both national and European law require motorists to keep their vehicles in a roadworthy condition. However, not all vehicle owners do so, and roadworthiness testing exists so that a vehicle's original design and manufacture are retained in service.

The main objective of the legislation is to enhance road safety and contribute to both the long-term 'vision zero' objective and also to the targets of reducing road deaths and serious injuries by 50% in 2030. According to the European Commission's impact assessment in preparation for the last revision it calculated that 1,200 lives could be saved annually.[1] There is a clear correlation between severity of collisions and vehicle age, mileage and the constant need to tighten up the technical controls of older vehicles.

Since 2014 both cars and in-vehicle safety systems that are electronically controlled have continued to develop rapidly and preparations are well underway for automation. Vehicle examiners need to assure a rigorous testing regime for new in-vehicle technologies mandated under the GSR.

[1] European Commission (2012) Impact Assessment Roadworthiness Package https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/pdf/road_worthiness_package/impact_assessment_study_en.pdf

Main Changes to the Periodic Roadworthiness Directive 2014/45

Frequency of testing

Passenger cars and light commercial vehicles (M1 and N1) will be tested four years after their first registration date, and every two years thereafter.

ETSC Recommendation [2]

- Test passenger cars and light commercial vehicles four years after their first registration date, then two years then every year thereafter.

M1-category vehicles used as taxis or ambulances; buses and coaches (M2, M3); heavier commercial vehicles (N2, N3); and heavy trailers (O3, O4) must be checked one year after their first registration date and subsequently each year.

ETSC Recommendation

- Consider introducing annual checks (or checks after a certain mileage has been reached) for M1 category vehicles other than taxis or ambulances, such as those used by sales representatives, for parcel service delivery or vehicles used for non-scheduled transport services renting a vehicle with a driver, which also have a high mileage.

Tolerance level for frequency of testing. At present it is up to Member States to decide a tolerance limit as to the exact time to do the annual test. In some countries there is up to a 4 month tolerance limit, by which time the annual test has to be undertaken, in others it is strictly 12 months and under.

ETSC Recommendation

- Introduce a harmonised approach also in light of cross border traffic and enforcement.

[2] With the exception of the Auto- und Reiseclub Deutschland (ARCD).

Powered Two Wheelers: Motorcycles and Mopeds[3]

Road deaths of motorcyclists decreased by 14% over the period 2010-2015 (2015 is the latest data available at the EC website).[4] Motorcyclists account for 15% of all road deaths in the EU (2015 data). Moped rider deaths decreased by 36% over the period 2010-2015.[5] Moped riders account for 2.6% of all road deaths in the EU (2015 data[6]).

Technical failures of PTWs can have much more severe consequences than those for cars, and the condition of the vehicle can influence the consequences and the severity of an average occurrence.[7] Even if there is lower mileage an undetected technical failure in a PTW can lead to fatal consequences for an unprotected PTW rider. Out of all the crashes analysed between 2005 and 2009, the Danish Accident Investigation Board has attributed 12% of fatal crashes to technical defects (faulty lights, tyres or brakes). Data from the Finnish Transport Agency show that out of 35 fatal moped crashes (2006-2008), one third involved tampered vehicles. The number could be higher as many such collisions are not reported to the police. These collisions might have been prevented if compulsory technical inspections had been in place.

To date, 18 of 27 EU member states have required motorcycle owners to have their vehicles checked for roadworthiness.[8] ETSC supports the inclusion of all PTWs in the testing regime.

Motorcycles of more than 125 cm^3

Heavy motorcycles (L-vehicles with an engine displacement of more than 125 cm^3) will be tested from 2022. Member states may be exempted from this obligation if they show, on the basis of relevant road safety statistics for the previous five years, that the same road safety results are achieved with other measures, such as campaigns on driving behaviour. Since implementation, only three EU Member States are applying this exemption. In any case, Member States will be free to determine the items, methods and frequency of roadworthiness tests for these categories.

Tampering of Mopeds

In a future revision of the Directive, ETSC would recommend more efforts to counter tampering of mopeds such as well-trained vehicle inspectors focussing on this issue during frequent checks. This

[3]With the exception of Fédération Internationale de Motorcyclisme (FIM)
[4] European Commission, CARE Database 2020
https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/2015_transport_mode_graph.pdf
[5] Ibid
[6] Ibid
[7] ETSC Position on Roadworthiness Package 2013
https://etsc.eu/wpcontent/uploads/2014/03/Roadworthiness-Package_ETSC.pdf
[8] European Commission (2019) Study on the inclusion of light trailers and two- or three-wheel vehicles in the scope of the periodic roadworthiness testing https://op.europa.eu/en/publication-detail/-/publication/366a32b6-34c2-11e9-8d04-01aa75ed71a1 and Annex 1

should be in combination with an increased focus on spot-check roadside inspections of mopeds also to prevent tampering. According to a recent survey in Austria, up to half of mopeds are tuned (47%).[9] As mentioned above, this is also an issue in Denmark, where between 2006 and 2012, 17% of all moped crashes resulting in deaths or serious injuries involved vehicles that had been tampered with – some 800 vehicles.[10]

All Motorcycles

Extension of technical inspections to other motorcycle types was recommended in an EC study published in 2019.[11] ETSC suggests an approach for mopeds and motorcycles which is in line with ETSC's position on inspections of other vehicle types in this legislation. EU Member States can still introduce even more frequent testing regimes than that set in the EU legislation.

ETSC Recommendation

- Extend testing to cover all motorcycles, including mopeds, without exemptions: as a minimum, first inspection after four years, subsequent inspections every two years then every year after that.

Testing

Minimum technical requirements were laid down for testing centres and equipment. New inspectors who carry out tests must have reached a certain skill level. Items checked in roadworthiness tests will include compatibility between parts, such as between wheels and wheel hubs. Defects, which are assessed in accordance with common rules, are classified into three categories: minor, major and dangerous.

Electronic safety components such as ABS, ESC and air-bags are subject to mandatory testing.

Mileage counter readings from the previous tests will be made available to inspectors, which will make it easier to spot tampering. The use of on-board diagnostics to check mileage would reduce or eliminate incorrect recordings by testers at Periodic Technical Inspections. Odometer fraud is to be considered an offence liable to a penalty.

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[9] Hoschopf, H., Tomasch, E., Spitzer, P., Kleewein, F., Pregartner, H., Brandlmayr, G., Zunzer, S., Oberwallner, R.: TUNE-IT? (Mopedtuning - Die Verlockung des Schraubens: Motivation – Möglichkeiten – Auswirkungen). Forschungsarbeiten des Oesterreichischen Verkehrssicherheitsfonds Band 082, Bundesministerium fuer Klimaschutz,Wien,2020 https://www.bmk.gv.at/themen/verkehr/strasse/verkehrssicherheit/vsf/forschungsarbeiten.html

[10] Source: statistikbanken.dk/statbank5a/default.asp?w=1280

[11] European Commission (2019) Study on the inclusion of light trailers and two- or three-wheel vehicles in the scope of the periodic roadworthiness testing https://op.europa.eu/en/publication-detail/-/publication/366a32b6-34c2-11e9-8d04-01aa75ed71a1

New Priorities

eCall

eCall is activated automatically as soon as in-vehicle sensors and/or processors (e.g. an airbag) detect a serious crash. Once activated, the system dials the European emergency number 112, establishes a telephone link to the appropriate emergency call centre and sends details of the collision to the rescue service, including the time of the incident, the accurate position of the crashed vehicle and the direction of travel.[12]

eCall can also be triggered manually by pushing a button in the car, for example by a witness to a serious collision. Since the adoption of the last revision, type approval legislation on the mandatory fitting of 112-based eCall in-vehicle system has been introduced to all new types of M1 and N1 vehicles from 31 March 2018 onward.[13]

In 2018 the EC published a report on how to include eCall in technical inspections.[14] A further study to assess whether it is cost-effective to include eCall within the framework of the periodical inspection scheme of the European Union has been finalised, recommending adding eCall to Annex I and Annex III of Directive 2014/45/EU. In this respect, an expert group is about to be set up by the Commission in order to seek the advice and expertise of Member States and other relevant stakeholders for the preparation of the delegated act.[15]

ETSC Recommendation

- Follow through on recommendations of the EC Study, to include eCall in technical inspections.

New in-vehicle safety technologies

New cars, vans, lorries and buses sold in Europe will be fitted as standard with a range of new vehicle safety features, starting in 2022, according to the updated General Safety Regulation 2019/2144

[12] European Commission eCall Overview of Legislation https://ec.europa.eu/transport/themes/its/road/action_plan/ecall_en
[13] Ibid
[14] European Commission (2018) Study on the inclusion of eCall in the periodic roadworthiness testing of motor vehicles https://op.europa.eu/en/publication-detail/-/publication/c6524bd7-2b54-11e9-8d04-01aa75ed71a1
[15] https://ec.europa.eu/transparency/regdoc/rep/1/2020/EN/COM-2020-77-F1-EN-MAIN-PART-1.PDF

requirements.[16] The checks which are introduced for the new in-vehicle safety technologies could be supplemented in part using on-board diagnostics.

For all vehicle categories:

- intelligent speed assistance (2022);
- alcohol interlock installation facilitation (2022);
- driver drowsiness and attention warning (2022);
- advanced driver distraction warning (2024);
- emergency stop signal (2022);
- reversing detection (2022);
- event data recorder (2022 for cars and vans; 2024 for heavy duty vehicles); and
- tyre pressure monitoring systems (2022);

For cars and vans:

- Advanced emergency braking system:
  - Detection of obstacles and moving vehicles (2022);
  - Detection of pedestrians and cyclists (2024);
- Emergency lane keeping system (2022).

For heavy duty vehicles:

- vulnerable road user detection systems:
  - Blind spot information system (2022);
  - Pedestrian and cyclist collision warning (Moving Off Inhibit System (MOIS); 2022);

ETSC Recommendation

- Introduce new checks to verify whether the new in-vehicle safety systems and their components are still in a condition that allows for their appropriate functioning; e.g. components such as cameras and sensors have not deteriorated and are still properly aligned.
- For Intelligent Speed Assistance systems, a priority life saving device[17], check that speed limit detection capabilities are still satisfactory, for example, by checking that the cameras are still reading speed signs correctly and that digital speed maps are up-to-date.

[16] General Safety Regulation 2019/2144 https://eur-lex.europa.eu/eli/reg/2019/2144/oj
[17] ETSC Briefing on ISA https://etsc.eu/briefing-intelligent-speed-assistance-isa/

(Over-the-air) Software Updates

It is increasingly common for a vehicle's software to be updated when the vehicle is already on the market, including through the use of over-the-air updates. Vehicle manufacturers may include modifications that could improve safety or increase security. The mandatory type-approval of such software updates is already facilitated in the GSR and should be accompanied by a follow up during periodical technical inspections. Moreover, unapproved software modifications may present risks to safety and security.

ETSC Recommendations

- Rules on roadworthiness should ensure that the vehicle is checked to have the latest software update correctly installed.
- The check should furthermore ensure that the software in the vehicle is original as well as type-approved.
- Roadworthiness requirements should account for (over-the-air) software updates, ensuring that all OEMs updates have been correctly implemented. And the software is the original one, not modified. This check has to be considered for all vehicles enabled for over-the-air updates.

Automation

At present there is an urgent need for a new, harmonised regulatory framework for automated driving at EU level, this should include requirements for roadworthiness checks.[18] Setting this up would be an essential precursor to automation.

ETSC Recommendations

- Ensure that automated vehicles are regularly tested to evaluate safety performance, within the framework of regular roadworthiness tests, linked to reporting, some of which could be based on self-diagnosis.[19]

[18] ETSC (2018) EU Strategy for Automated Mobility https://etsc.eu/wp-content/uploads/2018-ETSC-Response-to-EU-Strategy-on-Automated-Mobility.pdf

Main Changes to Technical roadside inspections of commercial vehicles Directive 2014/47/EC

The rules on the roadside inspection of motor vehicles and their trailers used in professional transport were also updated in 2014 and have been implemented in the EU Member States since May 2018. Due to their regular and intensive use mainly for commercial purposes, these vehicles are additionally subject to ad hoc technical roadside inspections.

Target of roadside checks

The new requirements mean that 5% of the total number of vehicles that are registered in the European Union should undergo initial roadside inspections every year. The checks should also inspect vehicles in transit through EU Member States from other countries. The 5% figure is not always reached by all EU Member States. Technical inspection has lost much of its personnel capacity in the past decade EU wide, yet road transport of goods and passengers remains great. To help make use of the remaining resources, checks should target those who are repeat offenders and thus may pose a potential risk. Repeat offenders should also be fined more severely to deter further repetition. Another measure would be to use the 'risk rating profile' system more (see below).

The Truck and Buses Operation Campaign conducted annually since 2016 by ROADPOL is very effective and is supported by ETSC. ETSC recommends that this type of cross border coordinated campaign should take place across EU during the same week, ideally quarterly.

To further gain a better understanding of where the quality of the checks could be improved and promote better co-ordination the EU should adopt Key Performance Indicators covering other topics about the checks themselves.

ETSC Recommendation

- Work to further improve the quality of the checks by for example, setting and collecting KPI data and making use of the 'risk rating profile' system to support EU MSs to better target checks and penalties, especially for repeat offenders.

Risk Profiling System

Article 9 of Directive 2006/22/EC requires Member States to introduce a risk rating system for undertakings based on the number and severity of infringements committed. The aim is to increase checks on undertakings with a poor record concerning the compliance with driving times. This approach obliges Member States to exchange data and launch a European Risk Rating System through which poorly performing companies can be identified and targeted at the EU level. This requires good relationships and cooperation between enforcement organisations across borders. At present, one of the cited reasons as to why this co-operation is being hindered, are the new requirements of the General Data Protection Regulation 2016/679. A way must be found to both respect new data protection requirements and fulfil the legal requirements of using the European Risk Rating System for the benefit of road safety. Strong political will of the Member States is needed to put this into action.

A link to the risk rating system in Directive 2006/22/EC was introduced in the last revision of the 2014/47/EC Directive. Risk profiling would also enable inspectors to spot undertakings presenting a higher risk of defects, so that these undertakings can be checked more closely and more often, if deemed appropriate. The Directive lists criteria that Member States may use for attributing risk profiles to undertakings. However, the use of the risk profiling system relies on the well-functioning of the system which was set up under Directive 2006/22/EC. The existing risk profiling systems and their use need to be harmonised more, the quality raised and data protection issues included so that they can be used across borders. This should also include sharing information about good performance preceding an inspection with dangerous defects. This would pave the way for more 'intelligence' led inspections and relieve the pressure on the stretched resources of the enforcers on the roadside.

Inclusion of Vans

The inclusion of vans of less than 3.5 tonnes would also be welcome as they continue to increase in number and the latest data on collisions involving light goods vehicles show that the number of deaths is on a par with those involving heavy goods vehicles.[20] According to the latest update of the rules governing the driver hours, international transport operators using light commercial vehicles of over 2.5 tonnes would also be subject to EU norms for transport operators and would need to equip

[20] ETSC (2020) How to improve the Safety of Goods Vehicles in the EU ? PIN Flash 37 https://etsc.eu/wp-content/uploads/PIN-FLASH39_FINAL.pdf

the vans with a tachograph[21]. Although inclusion of vans was part of the EC proposal in 2013 it was not included in the final agreement, to ETSC's disappointment. Just as with the other vehicles, if included, vans should be selected for inspection based on the risk profile of the operators and high-risk undertakings will be targeted in order to reduce the burden on such operators that maintain their vehicles in a proper way.

ETSC also supports the inclusion of trailers with a new registration scheme for them.

ETSC Recommendation

- Include vans and their trailers in regular roadside technical inspections.

Cargo Securing

Correct cargo securing is an important measure to improve road safety. Everyday road collisions occur on roads because of cargo that has not been properly stowed or secured. Cargo must be placed on the vehicle so that it can neither endanger persons nor goods and cannot move on or off the vehicle. European Best Practices Guidelines were redrafted and adopted in 2014 to provide technical background information as well as practical securing rules for road transport.[22] They also serve as a common basis for both practical application and enforcement of cargo securing. Yet, according to the 2014 revision of the Directive, the inspection of cargo securing will be optional for Member States. The Directive states that, where checks include cargo securing, staff involved must be appropriately trained. ETSC would favour more harmonised action in this area such as mandatory use of a harmonised training curriculum for inspectors, and minimum harmonised standards for the checks themselves. This would also give legal certainty for drivers and operators of international transport crossing borders and dealing with different interpretation of safe cargo securing.

ETSC Recommendation

- Develop a harmonised training curriculum with requirements for personnel involved in cargo securing.
- Define harmonised minimum requirements for cargo securing.

[21] European Parliament Press Release on Mobility Package Deal (21.01.2020) https://www.europarl.europa.eu/news/en/press-room/20200120IPR70630/mobility-package-transport-committee-backs-deal-with-eu-ministers

[22] European Commission (2014) Best Practice Guidelines Cargo Securing for Road Transport https://op.europa.eu/en/publication-detail/-/publication/30c7c1dc-f26e-44af-bd4c-2434b43edd7e

Annex I PTI schemes for motorcycles in Europe

Country	Motorcycle PTI	PTI frequency in months
Austria	✓	12
Belgium	X	-
Bulgaria	✓	24
Croatia	✓	24 / 12
Cyprus	X	-
Czech Republic	✓	48 / 24
Denmark	X	-
Estonia	✓	36 / 24 / 24 / 24 / 12 / 12 / 12
Finland	X	-
France	X	-
Germany	✓	24
Greece	✓	24
Hungary	✓	48 / 24
Ireland	X	-
Italy	✓	48 / 24
Latvia	✓	24
Lithuania	✓	36 / 24
Luxembourg	✓	48 / 24 / 12
Malta	X	-
Netherlands	X	-
Poland	✓	36 / 24 / 12
Portugal	X	-
Romania	✓	24
Slovakia	✓	48 / 24
Slovenia	✓	48 / 24 / 24 /12
Spain	✓	48 / 24
Sweden	✓	24
United Kingdom	✓	12

Table 3: PTI schemes for motorcycles in Europe. Source: Road Safety Country Overview, European Commission, Directorate General for Transport. See Bibliography references 2016a, 2016b, 2016c, 2016d, 2016e, 2016f, 2016g, 2016h, 2016i, 2016j, 2016k, 2016l, 2016m, 2016n, 2016o, 2016p, 2016q, 2016r, 2016s, 2016t, 2016u, 2016v, 2016w, 2016x, 2016y, 2016z, 2016aa, 2016ab

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