

CITA POSITION PAPER (Year 2013)

INTRODUCTION OF COMPULSORY PTI FOR L-CATEGORY VEHICLES THROUGHOUT THE EU

Background about CITA

CITA is an international association of public and private sector organisations actively practicing compulsory periodic technical inspection of in-service motor vehicles and their trailers (PTI), and also those with responsibility for authorising and supervising inspection organisations.

CITA is

- Dedicated to improving road safety and protecting the environment.
- Developing best practice on compulsory vehicle inspection (both periodic and roadside).
- An international forum for exchanging information, experience and expertise related to PTI.

CITA

- develops best practice recommendations and draft international standards;
- co-ordinates research, studies and investigations;
- organises conferences and seminars;
- works to improve and harmonise:
 - inspection methods, standards and equipment;
 - quality control, quality assurance and accreditation;
 - training for inspectors;
 - information systems used to improve inspection consistency and effectiveness.

The relevance of vehicle roadworthiness

Irrespective of the stage of development of a country, road transport provides immense social and economic benefits throughout the world. However, these social and economic benefits are reduced by the social and economic costs associated with road traffic accidents and also by avoidable harmful environmental impacts from poorly maintained vehicles. As a result, significant improvements to road safety and environmental protection have become key international, and widespread national, priorities. Improving vehicle roadworthiness is globally recognised as being one of the key elements of any effective strategy designed to meet these objectives.

The pathway to ensuring continuous compliance

The overall aim is to achieve a situation where all vehicles being used on our roads are in “continuous compliance’ with roadworthiness standards.

The first step towards achieving this aim is to define standards for the construction of vehicles. In Europe, these construction standards are enforced through the Type Approval and Conformity of Production processes. Vehicle recall campaigns are also important tools used by vehicle manufacturers in supporting continuous compliance. Primary and passive safety in particular is put at risk unless vehicle owners respond positively and promptly to recall action by vehicle manufacturers.

The next step in achieving continuous compliance lies with the owners and users of vehicles once they are in service. Without doubt, it is vehicle owners and users who jointly have the primary responsibility for ensuring that a vehicle is properly maintained and inspected to ensure that it meets applicable roadworthiness standards.

In reality, economic and social pressures can lead to these responsibilities being neglected, putting both driver and passenger safety at risk. Indeed, any failure to maintain a vehicle properly for whatever reason – including through simple lack of awareness of a problem on the part of an owner or user – puts the safety of other road users at serious risk, as well as the wellbeing of the environment.

This is why enforcement of roadworthiness standards is so important and why we need effective strategies for continuing to improve roadworthiness compliance.

Roadside vehicle inspection is one important tool for assessing the roadworthiness state of national vehicle fleets and for reminding vehicle users of the need to keep their vehicles in continuous compliance. However, periodic roadworthiness inspection, or PTI as we commonly know it, is also seen by many countries as being the most effective enforcement tool currently available for raising the roadworthiness of national vehicle fleets, and for moving towards “continuous compliance” in reality.

In addition to meeting road safety and environmental protection objectives, society also demands that vehicle roadworthiness improvement strategies take account of political, social and economic pressures to reduce bureaucracy and to minimise the cost of compliance with legal requirements. However, experience shows that PTI is easily implemented, cost-effective, relatively easy to control, and that it achieves significant and sustainable improvements in roadworthiness.

Motorcycle safety record in the EU

Various publications reveal that two-wheeled vehicles have by far the worst road safety record in the EU (including the Community database on road accidents, CARE). In 2008, for example, the statistics show that two-wheeled vehicles accounted for 14% of all fatalities, yet only 2% of the traffic.

It is certainly crucial to look very carefully at the statistics because there has been a massive rise in the number of two-wheeled vehicles in the EU since 2001 (for example a 40% increase in the number of motorcycles from 16 million at that time). There were more than 33 million two-wheeled vehicles in use in the EU in 2008, and the vehicle manufacturers are expecting this figure to increase to between 35 and 37 million by 2020.

The cost-benefit analysis which supports the EU Commission Roadworthiness Package reports that vehicle defects are implicated in some 8% of motorcycle accidents. The number of fatalities in road accidents in the EU has decreased on average by 6% per year (although there have been years during which this reduction has been even greater (11% in 2010)). However, although the overall number of fatalities in the case of drivers, pedestrians, cyclists and moped riders has decreased since 2001, a similar reduction has not occurred in the case of motorbike riders.

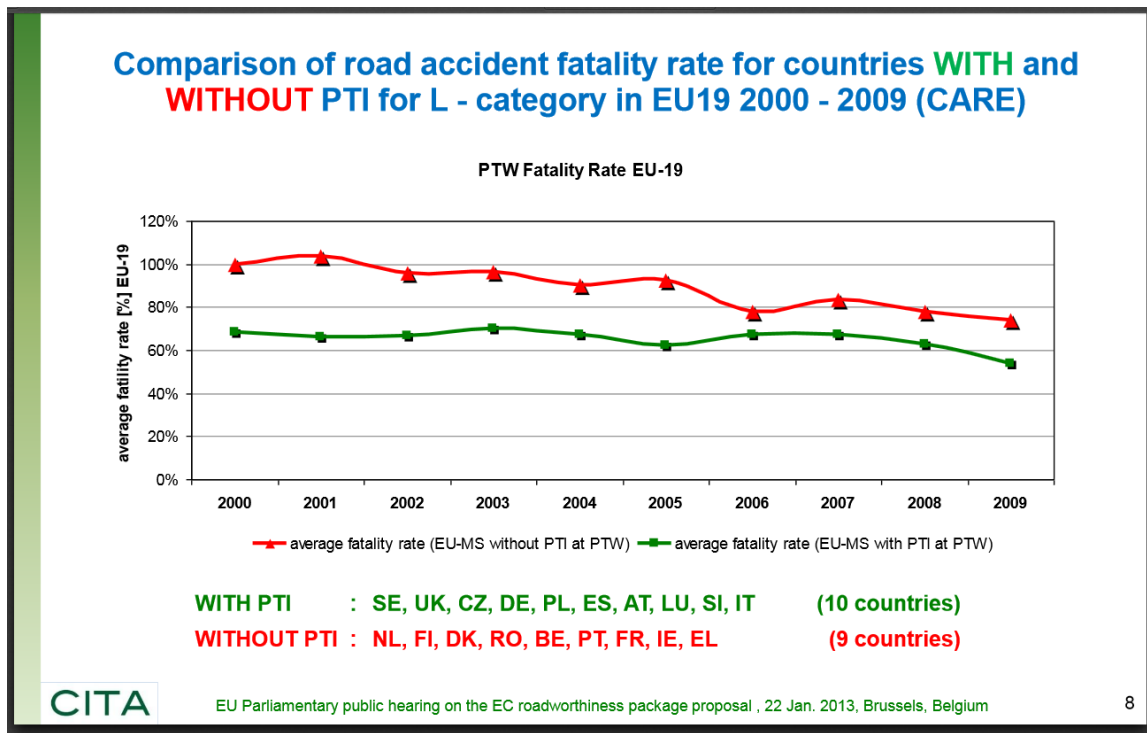
Of course it has to be recognized that there are many factors involved in any accident, including driver behavior. In the case of powered two wheel vehicles, both the behaviour of

the rider of the machine needs to be considered, and also the extent to which the behaviour of other motorists may have contributed to an accident. This is clearly recognized in the general over-arching approach being taken by the EU towards improving safety for users of two-wheeled vehicles – for example in relation to mandatory technical improvements on new vehicles, and in relation to rider education and licensing requirements. However, it is inevitable that the condition of vehicles on the road is also a factor that must logically be taken into consideration, notwithstanding the fact that many two-wheel vehicle riders undoubtedly maintain their machines to a high standard. After all it is inevitable that some vehicles will not be in a fully roadworthy condition at all times, even if their owners had not deliberately neglected essential maintenance. Indeed in some cases defects are not easily detected unless the owner or rider has both expert knowledge and access to essential test equipment.

At any rate, mandatory PTI of two-wheeled vehicles is already applied in a majority of Member States in the EU – and it is only in the minority of States that PTI of two-wheeled vehicles does not take place. A starting point in any analysis must therefore be to look at the accident record across the EU to see whether or not there may be a link between accident rate and whether or not the State in question has a scheme for inspecting vehicles.

Illustrative comparison of fatalities involving two-wheeled vehicles in EU Member States with and without PTI

The CARE database from the European Commission holds information on road accident fatalities for Member States with and without PTI for two-wheeled. In fact these statistics **do** show an important distinction – there is a higher total fatality rate in those States where there is no PTI for two-wheeled vehicles. Over the period 2000-2009 the overall rate was some 20% higher in those States - only 19 States in total were covered by the statistics at that time, as indicated in the table that follows.



Of course this generalised data does not prove that there is a link between PTI and accident rate – there may be other factors involved and there are also inevitable variations between one country and another. There are undoubtedly several possible explanations for this, including the variations between Member States of the increasing number of two-wheeled vehicles on the road; differences between the inspection schemes where mandatory PTI exists; and, the extent to which PTI schemes are enforced.

However, what the data does very strongly suggest is that there is strong prime facie evidence to justify giving serious consideration to the question of whether or not mandatory PTI throughout the EU could be helpful – which is precisely what the EU Commission has done in its proposals under the Roadworthiness Package. The question cannot be dismissed out of hand or with only cursory analysis and emotive consideration.

As a next step it must certainly be helpful to consider the experience of those Member States where PTI is applied to two-wheeled vehicles.

Some revealing facts and figures about example EU Member States which do test two-wheeled vehicles

United Kingdom (GB)

The frequency of PTI:

Two-wheeled vehicles are tested like passenger cars – namely with their first test three years after first registration, and then annually thereafter.

There are about 1 million inspections of two-wheeled vehicles annually – motorbikes and mopeds.

PTI failure rate:

The overall failure rate for two-wheeled vehicles in 2010-11 was 20.8% of vehicles tested. Of this total the main defects were:

- Slight defects = 8.0%*
- Serious defects = 12.8%*

Of the total failures, illustrative main defects were broken down as follows:

- 38.6%, lights
- 17.6%, brakes
- 27.0%, tyres, steering and suspension

[For comparison purposes, the overall failure rate for passenger carrying vehicles with 8 or less passenger seats was 39.8% of vehicles tested.

Of this total the main defects were:

- Slight defects = 9.5%*
- Serious defects = 30.3%*

And the pattern of main defects was broadly similar as for two-wheeled vehicles:

- 18.6% lights
- 10.7% brakes
- 23.1% tyres, steering and suspension

(These PTI statistics are all contained in the annual report from the GB Vehicle and Operator Service's Agency (VOSA) 2010-2011 Effectiveness Report

** In this context 'slight defects' refers to those minor items which could easily be corrected at the PTI centre; 'serious defects' refers to those which could not be so corrected).

Germany

The frequency of PTI:

Motorcycles are first inspected two years after first registration, and once every two years thereafter.

Mopeds are not currently subject to PTI.

There were 1,720,518 motorcycle tests carried out in 2011*

PTI failure rate:

The overall failure rate for two-wheeled vehicles in 2011 was 25.5% of vehicles tested. Of this total the main defects were:

- Slight defects = 16.92%
- Serious defects = 8.58%

Of the total failures, illustrative main defects were broken down as follows**:

- 13.6%, lights
- 4.6%, brakes
- 7.2%, tyres, steering and suspension

(* These figures are taken from statistics published by the KBA, the Federal Motor Transport Authority).

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Spain

The frequency of PTI:

- Mopeds = before the third year after registration, then 3 years, then every two years.
- Motorcycles = before the fourth year after registration, then four years, then every two years.

There are 2,798,043 two-wheeled vehicles in Spain, making up 8.95% of the total vehicle fleet.

PTI failure rate:

The overall failure rate for two-wheeled vehicles in 2011 was 18% of vehicles tested (however, in an earlier study by ISVA* it is reported that up to 60% of vehicles may fail to be presented for compulsory inspection).

Of the total failures, illustrative main defects are broken down as follows**:

- 26.2%, lights
- 7.4%, brakes
- 9%, tyres, steering and suspension

(* This was an in-depth 2012 study by the Research Institute of Vehicle Safety at Madrid University (ISVA) entitled 'Contribution of Periodic Motor Vehicle Inspection (PMVI) to Vehicle Safety 2012').

(** These figures are taken from statistics published by MINETUR, the Spanish Ministry of Industry, Energy and Tourism).

Unsafe vehicles increase accident risk and the severity of accidents

It is a well-established fact that worn tyres result in longer stopping distances. Even if worn tyres do not necessarily cause a particular accident they certainly significantly increase the risk of being involved in an accident under a critical traffic situation – and certainly increase the severity of an accident and possible injuries, even at low impact speeds. And, as an illustration, nearly 20% of PTI failures in Germany in 2008 were associated with tyres and related faults; and, of these failures, nearly 25% were due to worn tyres and 12% to tyres being at the legal wear limit.

Another significant risk factor with two-wheeled is the vehicle drive chain itself. These do result in PTI failures where, for example, the chain tension is incorrect, or where the chain itself is worn. The consequences in either case – if not corrected – is that the chain may drop or break and become entangled with the rear wheel – leading to inevitably catastrophic results. Again, by way of illustration, the numbers involved in GB for 2011/12 were that drive train failures resulted in test failures for 1.4% of machines tested. By itself this may not appear to be alarming, but when translated into an actual number the figure is a staggering 14,453 machines – so the risk throughout the EU is clearly potentially enormous.

It may be that the reason for failures in the drive train is that such failures are primarily exhibited in cases where the owner of the machine does not possess the necessary skills to maintain the machine correctly. After all, such a level of detailed maintenance is not necessarily within the skill level of every machine owner. However, any reasonable analysis would not so easily be able to explain the fact that lighting (and signaling) defects are so high – in fact these are the main reasons for PTI failures, as illustrated in the Member State examples given earlier.

Furthermore, it must also be remembered that more and more “Electronic Controlled Safety Systems” (ECSS) are being introduced nowadays as a result of technical advances – including of course in the case of two-wheeled vehicles. Drivers and riders rely on these systems for their safety, but incorrect functioning can easily lead to more severe accidents, which in turn increases the risk of injury and fatality. This makes the case for compulsory periodical inspection of vehicles stronger – in order to help ensure that such systems remain properly functional.

Another issue which needs to be considered is the question of ‘tampering’ – which is unfortunately a practice some owners do indulge in order to ‘improve’ the performance of their vehicle – though in ways which were never intended by the manufacturer. Of course tampering can easily make the vehicle unsafe or unnecessarily polluting, and these are very serious issues. To put the problem in context, a recent study into motorcycle accidents (MAIDS)* by The Association of European Motorcycle Manufacturers (ACEM) – with the support of the European Commission and other partners – found that tampering had occurred in 17.8% of the moped accidents investigated. Introducing PTI for these vehicles would necessitate that these vehicles should be registered – and that would be a new burden for some EU States which do not at present register or subject such vehicles to PTI. However, the compulsory introduction of PTI for mopeds would have the added benefit of not only checking on vehicle condition – it would also deter tampering.

[* - Motorcycle Accidents In-Depth Study - an extensive in-depth study of 921 motorcycle and moped accidents during the period 1999-2000 in five sampling areas located in France, Germany, Italy, Netherlands and Spain].

The link between roadworthiness and accidents

There is always a great deal of debate about the link between vehicle roadworthiness and road casualties. It is a difficult link to prove conclusively for very many reasons – including,

for example, the fact that post-accident testing of vehicle systems is not always possible. However, we gain insight of the subject by taking into account a number of factors, including PTI failure rates (in countries where two-wheeled vehicles are tested); the condition of vehicles on the road; and, by specific post-accident investigation studies.

We have already seen from the examples given above that, even where two wheel vehicles are subject to mandatory PTI, inspection failure rates are high – and this must mean that, in the absence of PTI inspection, the condition of the vehicle fleet would be likely to be much worse than it would have been had PTI inspections not taken place. This inevitably means that the risk of vehicle defects being implicated in accidents would also be increased in the absence of PTI.

Specific post-accident investigation studies also help to demonstrate the significance of defects in motorcycle accidents. For example, research by DEKRA into accidents between 2002 and 2009 revealed that defects were present in 23.6% of 700 motorcycle accidents investigated – and perhaps more importantly that in 33.9% of cases these defects were of relevance to the accident. Further work by DEKRA in 2010 suggests that the relevance of roadworthiness defects in motorcycle accidents is similar to the level found in cars – around 8% of all accidents.

The MAIDS study concluded that vehicle defects were implicated in a slightly lower percentage of cases than the DEKRA study (in just over 5% of cases as opposed to 8% of cases). However, even at a rate of 5% the case for considering mandatory introduction of PTI for powered two wheel vehicles throughout the EU is very clear – in the context of saving casualties and lives.

The ISVA study shows that, despite an increase in vehicle registrations since 2000, there has nevertheless been a reduction in fatalities due, in part, to PTI. The study estimates that there has been an 86% reduction in the case of mopeds, though only 9% in the case of motorcycles. Although there appears not to be any comprehensive post-accident investigation study, it is reported that severe tyre wear is found in a high proportion of all accidents investigated. Using the cost-effectiveness methodology applied in the EU Commissions Autofore Study, the ISVA study reports that PTI of two wheeled vehicles in Spain in 2011 helped to avoid up to 4080 accidents, 4267 injuries and 65 deaths.

Other indicators of the benefits of PTI

Random and targeted roadside inspections can also help to provide a fuller picture. Drawing again on work done by DEKRA between 2002 and 2009, targeted roadside inspection of 610 two-wheeled vehicles revealed defects in 334 (54%) of cases. In 254 of these (76%), defective lighting was the problem – which is also a main reason for PTI failure, as explained above.

Similar roadside surveys are conducted periodically by other regulatory bodies in the EU from time to time.

CITA's position on PTI for two-wheeled vehicles

CITA strongly supports the proposal to introduce PTI for powered two-wheel vehicles throughout the EU. Riders of such vehicles are vulnerable road users and it is therefore crucially important to take all reasonable steps to help safeguard them from accidents which may either be caused or contributed to by vehicle defects. It is also important to do so in order to help safeguard other road users who may be affected by accidents involving such vehicles.

There has been much debate as to whether or not there is sufficient evidence to justify intervention by expanding the scope of existing EU legislation on mandatory PTI so as to include powered two-wheeled vehicles. Obtaining and demonstrating proof either one way or the other is never very easy in this subject because there are always many complicating issues involved. However, there are some very clear facts which demonstrate that PTI does have a value in those EU States which already subject two-wheeled vehicles to mandatory PTI.

One of the most important facts is that a significant number of two-wheeled vehicles fail PTI in those States which do carry out tests – and this means that the condition of the fleets in those States would inevitably have been worse had PTI inspections not taken place. And there is also evidence that a surprising number of failures are serious, yet are apparently related to things that, on the face of it, should be very obvious to owners and riders of these machines.

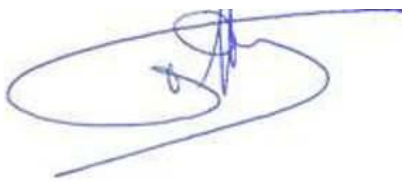
It is open to debate as to the extent to which defects are implicated in accidents involving two-wheeled vehicles. However, the available evidence is both credible and alarming –

defects are indeed implicated in 5-8% of accidents – and this is not something that can be easily ignored. Nor should this evidence be ignored – and if comparisons across the accident record indicates that PTI schemes can help to be reduce accidents – as the available evidence also suggests – then the case for mandatory PTI throughout the EU for powered two-wheeled vehicles is very clear.

It is in any case in the experience of CITA that compulsory PTI schemes do help – significantly – to improve the general roadworthiness of the vehicle fleet. So PTI schemes are an essential step in ‘continuous compliance’ – and an essential tool for helping to reduce road casualties.

This provides the explanation for CITA’s position – which it continues to commend to all stakeholders.

Johan Cobbaut

A handwritten signature in blue ink, consisting of a large, stylized 'J' and 'C' followed by a horizontal line extending to the right.

CITA President