

## Periodic technical inspection (PTI) abroad

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### Position paper (mutual) periodic technical inspection PTI (in Dutch: APK) abroad:

For the transport sector, climate improvement and CO<sup>2</sup> reduction are significant challenges to which TRTA wishes to contribute with solutions.

In this position paper, we describe the possibility of carrying out the mandatory annual technical inspection close to the location where trailers are located at the time of the inspection and how that can yield significant environmental gains and cost savings. One of the results is an increased flexibility, which will drastically reduce empty driving and thus fewer trailers, and it will naturally limit CO<sup>2</sup> emissions from transport driving. Under current rules, trailer owners are forced to make many empty kilometres to an inspection site in the country where the trailer is registered and vice versa. This way, 14,551,200 unnecessary road kilometres, equivalent to 6,170,000 kilograms of CO<sup>2</sup>, can be avoided only in the Netherlands on an annual basis. It goes without saying that the economic profit is of equal magnitude. For that reason, it is desirable to allow PTI inspection of Dutch trailers in other European countries and vice versa.

Mutual recognition of EU PTI (APK) and the possibility of this across national borders has TRTA's focus and priority, as we see it as a significant contribution to achieving ambitious reduction-goals of CO<sup>2</sup>.

### Issue:

Trailers must be inspected in the country of registration to comply with the statutory annual inspection. It is almost impossible to organize the logistics in such a way that a trailer is back at the correct time in the country of registration for the inspection. Trailers usually have to be brought back to the country of registration especially for this purpose and this is often done without cargo (freight). This causes many unnecessary kilometres and an unnecessary increase in CO<sub>2</sub> emissions, congestion and costs.

### Objective:

Reducing CO<sup>2</sup> emissions, congestion and costs and continuing to comply with the legal PTI obligation.



## The ideal situation:

The ideal situation is, of course, that all European vehicles can and may be inspected in any country throughout Europe, regardless of the country of registration.

However, the biggest challenge is in the trailers. Because trailers are uncoupled and deployed throughout Europe, they are very frequently located in countries outside the country of registration. Because trailers can only be moved with a tractor, the impact on CO2 emissions, extra costs and extra congestion is significant.

This problem is less serious with tractors, because the tractor and the driver form a fixed combination.

Tractors therefore arrive more regularly in the country of registration, also in view of rules for drivers (EU Mobility Package 2020). The number of empty kilometres to get the tractor to the country of registration in time for the inspection will be much less. Industry and the environment benefit most from a trailer inspection across Europe, regardless of the country of registration. With that end goal in mind, we would like to run a test with the inspection of Dutch registered trailers in other European member states.

This proposal is supported by:

- Technical Road Transport Association (TRTA)
- European Transport Board (ETB)
- DSV
- TIP Trailer Services
- Transport en Logistiek Nederland (TLN)

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## Enclosure

### What is a semi-trailer:

A semi-trailer is a trailer that does not have its own front axle and therefore an important part of the weight rests on the towing vehicle (tractor or truck). A semi-trailer is placed or coupled to the fifth wheel of the tractor by means of a kingpin. This is then referred to as a tractor-trailer combination. A tractor can drive independently, with a driver, but a trailer cannot. Therefore, it is also referred to as towing units (tractors) and towed units (both trailer / semi-trailer, we will further use "trailer" in this text).

A tractor can drive any trailer, so the tractor driver does not have to wait for loading or unloading. Trailers are available in different versions, depending on the purpose of use. A trailer is a very universal and interchangeable vehicle, a large part of the Dutch trailer fleet is used in a combination of national and international transport. A significant part of the fleet moves through Europe and even beyond.

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### Using a trailer:

In road transport, trailers predominate over fixed combinations because of their flexibility. The trailers can be quickly coupled and uncoupled, enabling them to be shunted for loading, unloading and transporting goods by road. There are also trailers that are suitable for the combined transport of goods by road, water and rail. If a tractor fails, another tractor can be placed in front of the trailer, so that the load can remain in the trailer. A trailer is equipped with support legs, so that the tractor can be disconnected from the trailer.

A trailer is equipped with a braking system, driven by the tractor, based on an air pressure system and is supported by an EBS module (Electronic Braking System). The EBS module is a kind of "black box" in which data is stored, such as driving behaviour and the number of kilometres driven.

More than 75% of all goods transported by land (EAMA & Roland Berger) are carried by a trailer.

About 1.8 million semi-trailers and 670,000 trailers are registered in the EU. The annual production of new trailers is approximately 180,000.



## What are the European inspection requirements:

The General Periodic Inspection (APK) is a statutory inspection for vehicles in Europe. The purpose of the inspection is to increase road safety and protect the environment. All countries must comply with the European APK Directive 2014/45/EU. This contains the minimum requirements. Countries are allowed to set higher requirements than that minimum. In addition, some countries may assess / test the minimum requirements differently. Consider, for example, the method of braking and repairing a chassis.

## MOT requirements in the Netherlands:

The Dutch requirements for trailers and semi-trailers are identical. There are inspections and inspections on 11 main points, namely:

- General
- General construction method of the vehicle
- Dimensions and masses
- Fuel systems (only for conditioned vehicles)
- Shafts
- Suspension
- Steering (only for steered vehicles)
- Braking device
- Body
- Lights, light signals and retro reflective features
- Connecting towing motor vehicle and trailer

## Inspection requirements compare different vehicles:

In contrast to the inspection requirements for trailers and trailers, the inspections for motorized vehicles are more extensive. In addition to the 11 inspection requirements for trailers and semi-trailers, the focus for heavy commercial vehicles is mainly on:

- Engine and fuel systems, in which noise and the environment occupy a very important position
- Power transmission
- Miscellaneous, such as audible warning devices

## What is the structure of annual inspections in European countries:

In most Member States, official bodies have been designated to carry out the periodic inspections. In Germany these are DEKRA and TUV, in Belgium this includes GOCA. The Netherlands has a structure whereby companies can carry out APK inspections themselves. These companies and also the APK inspectors must meet very strict requirements. The RDW conducts random checks to maintain the quality of the APK inspections. If serious flaws are found during the sample, this may lead to additional checks on the company and the inspector and, if necessary, the APK permission can be revoked.

## Future of the annual inspections:

Vehicles are becoming increasingly intelligent. The originally single mechanical vehicle evolves into a computer-controlled machine capable of operating itself, controlling itself and communicating with its environment.

This offers many possibilities to monitor the vehicle in the future. Where a vehicle now has to be brought periodically to a workshop for the inspection of certain safety and environmental aspects, the vehicle can in the future communicate its condition itself and continuously to any desired platform. This is also referred to as "Life-time Compliance". This also includes "over the air updates" of software.

These developments are in full swing. They are expected to have a major influence on the periodic inspection.



CO2, congestion and cost impact:

We have viewed and calculated this from 4 angles, being:

- DSV; one of the largest logistics service providers in Europe
- Technical Road Transport Association (TRTA); largest association of trailer users in the Netherlands
- European Transport Board (ETB); group of largest trailer users in Europe
- Based on these studies, a simulation of the impact on all trailers in the Netherlands and Europe

The starting points are:

- The CO2 emissions are 424 grams per ton / kilometre (with an empty weight of 7 tons on average (CO2 emissions in gr / km:  $13.25 * \text{weight (tons)} + 1,325 * \text{power (kW)}$ ). The factor is then multiplied by 0.424 the number of empty kilometres
- If the boat is also used, an extra factor of 77% will be added in connection with the boat's emissions
- For congestion purposes, the occupied space is 40m per combination

DSV has a European trailer fleet of 8,300 units, 33% of which is registered in the Netherlands and the remainder in Denmark and Sweden. The trailer fleet has more than doubled since 2013. In order to ensure that the trailers are inspected in time, DSV must return the trailers to the country of registration. Because the European inspection standards are the same, the differences in the inspection itself, per country, are very small. This has the following consequences for DSV:

- 653,609 road kilometres without freight or cargo, for timely inspection only
- 4,584 extra hours on the boat or ferries
- Extra CO2 impact **490,000kg**
- Extra congestion **129km**

The members of the TRTA collectively have 50,000 trailers and the member survey revealed the following:

- 5,160,000 road kilometres without freight or cargo, for timely inspection only
- Extra CO2 impact **2,200,000kg**
- Extra congestion **600km**

ETB conducted a survey among its members in 2007. This has revealed the following:

- 2,190,000 road kilometres without freight or cargo, for timely inspection only
- Extra CO2 impact **928,000kg**
- Extra congestion **219km**

If we simulate the calculations on the Dutch & European trailer park, the impact is as follows:

- Number of registered trailers in the Netherlands, approximately 141,000
- 14,551,200 road kilometres without freight or cargo, for timely inspection only
- Extra CO2 impact **6.170.000kg**
- Extra congestion **1,692km**

And for Europe (excluding United Kingdom):

- Number of registered trailers in Europe, approximately 1,836,000
- 189,475,200 road kilometres without freight or cargo, for timely inspection only
- Extra CO2 impact **80,330,000kg**
- Extra congestion **22,032km**

