

HVTT13 - TRUCK PARKING BEHAVIOUR



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Abstract

In West- and Mid-European countries the need for parking places for trucks overrates the capacity. The parking areas alongside motorways are overcrowded. Trucks are badly parked and sometimes unsafe. This could lead to the disturbance of the traffic flow on parking areas and even to dangerous traffic safety situations alongside the motorway. A stakeholders analysis have been done to get a better understanding of the interests and influencing power of the stakeholders involved in truck parking behavior. The analysis shows that it is difficult to get a sense of joint responsibility among stakeholders to solve the truck parking problems. Many stakeholders that do have influencing power, do not have much interest in taking action. Because road authorities are directly confronted with the consequences of wrong and unsafe truck parking they feel the need to act. What are their possibilities?

Keywords: Safety, Transport policy, Road management, Incident Management

1. Introduction

In West- and Mid-European countries the need for parking places for trucks overrates the capacity. The parking areas alongside motorways are overcrowded. Trucks are badly parked and sometimes unsafe. This could lead to the disturbance of the traffic flow on parking areas and even to dangerous traffic safety situations alongside the motorway. Parking areas are part of the infrastructure. When the problems first occurred fifteen years ago, the idea was that providing enough truck parking places was a public task. Besides that the truck parking problems were seen as purely a capacity problem and not also as a behavioral problem. However, in the last two years a shift in thinking took place. Parking areas never were built for long-term parking. Besides that there are strong signs that parking areas are also been used for several logistics purposes. Only a few stakeholders involved in truck parking behavior do have an interest in contributing to solve the truck parking problems. Therefore the central issue of this paper is:

How can road authorities create a sense of joint responsibility among the stakeholders involved to solve the parking problems for trucks alongside motorways?

To answer this question a stakeholders analysis have been made. Next to that a literature study, an inspection during night time on 32 parking areas and interviews with truck drivers have been undertaken. The results can be found in this paper. In this paper, parking behavior refers to the behavior of international truck drivers regarding parking their truck for a rest or when they are waiting for return load. Good parking behavior means a more balanced use of the parking capacity and parking on the places that are meant for it.

In the second section the current situation of truck parking in Europe is explained. In the stakeholders analysis in the third section, the interests and influencing power of stakeholders involved in truck parking behavior are described. The fourth section deals with the possible solutions and the conclusions can be found in the fifth section.

2. Situation

The purpose of public parking areas alongside motorways is to offer road users the opportunity to take a pause during their trip. In the past decades the use of public parking areas in Western European countries changed. On the main freight transport corridors, in border regions and in port areas, parking areas are overflowing by parked trucks. The demand for free truck parking overrates by far the supply of truck parking capacity. The consequence of the overcrowded public parking areas is that trucks are parked outside the parking bays, on the entries and exits of the parking areas and even on the hard shoulders. Several accidents already have happened. On some transport corridors cargo theft is a big issue. And from the perspective of road management there are problems with waste dumping and people feeling unsafe among the camping truck drivers.

The way truck drivers (in fact: the transport sector) are using parking areas, these areas can be seen as a logistics hubs. From several interviews with truck drivers we know that parking areas are used to: wait for return cargo; to stay overnight because the customer wants the driver early in the morning but doesn't allow him to park on his site; united companies on a business park forbid truck parking because of conflicting with the good

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appearances of the park; to exchange vehicle units; to change drivers etc. So for the transport sector parking areas alongside motorways forms infrastructural as well as logistics hubs. The way other road users use parking areas is far more consistent with the original purpose of parking areas in the infrastructural network.

What is the situation like?

During the night of March 25 on 26, all 32 parking areas alongside the motorways nr. E19, E34, E25 en E312 were inspected. These motorways are the most important connections between the ports of Antwerp and Rotterdam and between both ports on Dutch and Belgium territory and the Ruhr Area in Germany. We are talking about one of the most densely populated areas of Europe. Rotterdam is the largest sea port of Europe and the Ruhr Area one of the most important industrial areas.

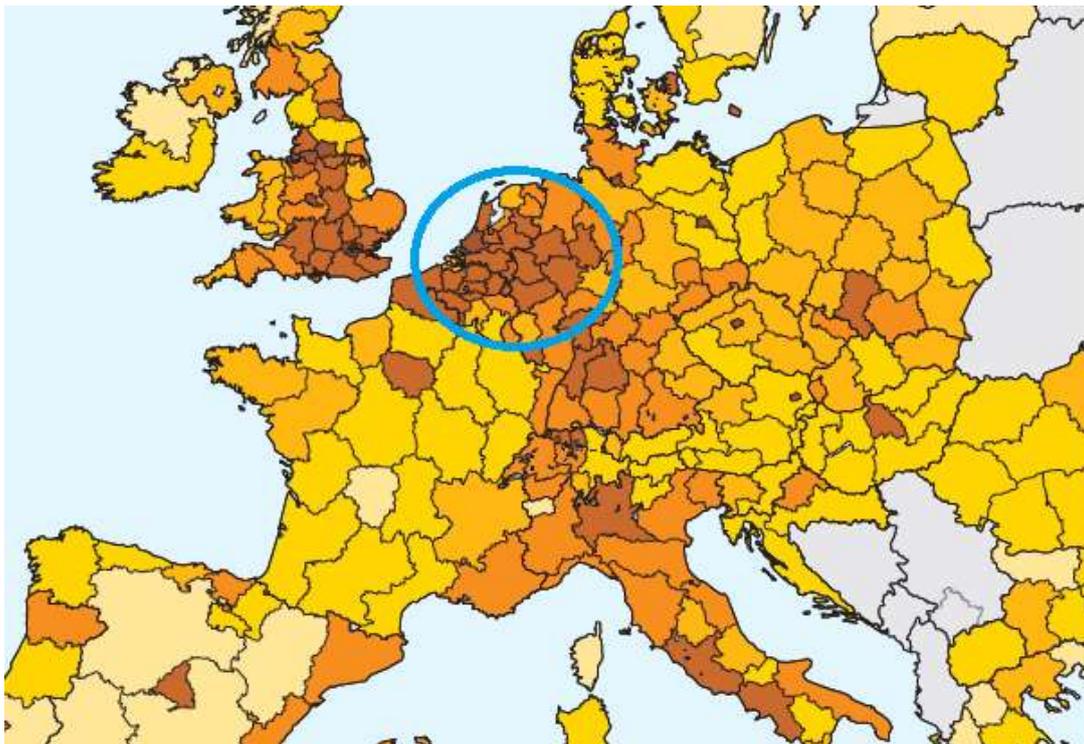


Figure 1: Population density Europe 2008 (Eurostat)

Seventeen of the 32 parking areas were overcrowded. Trucks were parked outside the parking bays, on parking places for cars, on the main roads, at the gas stations, in the roadside and on the entry and exit roads of the parking areas. Because truck drivers parked their truck on the backside of the trucks of his colleagues, parking bays that became free couldn't be used (see figure 2). Also uncoupled trailers and tractors without drivers were found.



Figure 2: Parking area *Hazeldonk-West* on the E19

Twenty-nine of the 32 parking areas are been managed by public authorities and three by private companies. The parking areas under public authority are free of charge. With two of the privately exploited parking areas a fee has to be paid, but in exchange the truck driver gets reduced fare in the restaurant. The third privately owned parking area is secured by cameras and a fence. There is an entrance fee but no other facilities. The last parking area was largely empty, although the neighboring public parking areas up north and south were overcrowded.

The capacity problem mainly manifested itself during the night. Some parking areas near airports and seaports are also overcrowded in the weekends. The truck drivers that are resting or waiting for (return) load are mainly originated from Eastern European countries. The majority of Western as well as Eastern European truck drivers have experiences with criminal activities on parking areas alongside motorways. Everything on and inside a truck represents value. The cargo, the fuel, parts of the truck like mirrors, lights, ... are stolen. Sometimes a truck driver is intoxicated before everything in his cabin is stolen.

Some specific roads struggle also with human trafficking.

What are the causes?

Several developments underlie the current situation: macro-economic developments, transport market mechanisms and EU-regulations. In the late eighties of the past century the level of prosperity rises and with it the flow of (consumer) goods. Trade relations over Europe changed after the fall of the communist regimes in Eastern Europe. Because of the difference in level of incomes, the Eastern European countries became attractive for cheap labor. The first transport companies opened subsidiary companies or so called mailbox companies in for example Poland and Hungary. Due to outsourcing the transport price went down and other transport companies in the same market segments had to follow. In the meantime Poland is market leader in freight transport by

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road in Europe. In international freight transport the majority of truck drivers are from Eastern European countries.

Cabotage, the right of each hauler to transport goods within the borders of another country, is restricted to three rides per week. Whereas Western European truck drivers return home after two or three nights away, certainly before the weekend starts, Eastern European truck drivers are sometimes more than two months en route. They are camping on parking areas waiting for new or return load. They prefer staying at parking areas where there are facilities (toilets and showers), but they do not make use of the restaurants. They cook their meals by themselves to spare money. They also are staying on parking areas where there are no facilities at all, open one's bowels on wherever there is some privacy. Between the trucks there is a penetrating smell of urine.

For safety reasons the drive and rest hours for truck drivers are strictly regulated. These regulations are harmonized for all European countries. However, enforcement is not harmonized. Offenses against the driving and rest hours regulations still can be punished after 28 days, independent of the country of control or the country of offense. In some countries police officers search for offenses in the registration history. The level of the fines is high. Much more higher than for example putting your truck on the hard shoulder to take a pause. On June 17th almost 60 truck drivers were interviewed. 23 of the 45 Eastern European truck drivers said they once and a while see themselves forced to put their truck on the hard shoulder of the motorways to take a pause. On the other hand, all Western European truck drivers saw this as irresponsible for safety reasons.

How is this situation perceived by road authorities?

Mid-2000s, in Europe the leading perspective was that providing enough parking places for trucks is a public task. Parking areas are part of the infrastructural network and giving road users the opportunity to take a rest is of general interest. In Germany therefore, facing the overcrowded parking areas, a massive program started around 2006 for extending the truck parking capacity alongside motorways with 10.000 extra parking bays. The extension is financed by the venues of the Lkw-Maut (truck toll). While the building activities are in progress, Germany puts her effort in research on smart truck parking solutions. In Belgium and The Netherlands extending the truck parking capacity was not an option from the beginning, because the lack of financial resources (no truck toll). To get a better understanding of the scale of the problem and of truck parking behavior, numerous studies have been done like counting surveys, inspections during the night and interviews with truck drivers. In both countries thinking about truck parking behavior evolved from a purely public issue to an issue in which all stakeholders involved have a responsibility and/or the means to contribute to a solution.

3. Stakeholders

In this section the stakeholders involved in truck parking behavior are described and the results of a stakeholders analysis is been shown.

Which stakeholders are involved?

There are a lot of stakeholders involved in truck parking. The extent to which they can influence truck parking behavior and to what extent they have an interest in changing truck parking behavior differs. The stakeholders involved in truck parking can be

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divided in a supply side and a demand side. Stakeholders at the supply side can be divided in landowners and service providers.

Police forces are a remaining category that cannot be assigned to the supply or the demand side. However they play an important role in truck parking behaviour.

The supply side

In Europe there are different types of management of parking areas alongside motorways (for mixed use or exclusively for trucks). In France for example the ASFA (Association des Sociétés Françaises d'Autoroutes), a partnership of all private road operators, exploits a nationwide network of toll roads: the main road transport connections within France. Parking areas are part of this network, among them 11 parking areas exclusively for trucks. Besides that there is a widespread network of privately or publically owned truck parking areas on the secondary road network. In The Netherlands all parking areas directly situated at the motorways are under public governance. Spread out over the country are some small privately owned truckstops on a little distance of the motorways. In Germany there is a large network of public parking areas alongside motorways, but beside that, there are also a sizeable number of so called Autohöfe, privately owned truck parking areas, alongside motorways. Belgium developed a system where parking areas are given in concession for the time of twenty years to fuel vendors (Shell, Texaco, Q8 etc.). The concessionaire has to ensure a certain number of parking lots. The fuel vendor pays the government a fee and in return, the government guarantees that no other parking areas will be located nearby.

There are several stakeholders that provide services to the users of (truck) parking areas: gastronomy, fuel vendors, car wash, repair services, tire services etc. Quite new are apps that leads you to the nearest parking area, the costs and the facilities or even show if there is still a parking bay free.

The next category is somewhat difficult to classify. They could be assigned to the supply side as well as to the demand side too. Port authorities, business parks and local authorities all have a role or an interest in road freight transport. Port authorities receive and send out a lot of freight flows by road. To keep the port area attractive for the (potential) located companies, port authorities perform a strict policy on truck parking. The same is the case with business parks. They generate a lot of road freight flow, but they do not want to accommodate resting or waiting truck drivers. Because they are barred at business parks and port areas, parking areas alongside motorways are overcrowded, truck drivers seek refuge in villages and small towns. Although local authorities profit by business parks on their territory for the local economy, they welcome truck drivers also with parking bans. Truck drivers are associated with noise, marine litter and criminality.

The demand side

On the demand side the stakeholders can be find that make use of (truck) parking areas. The actual users are car and truck drivers. Car drivers are not restricted to drive and rest hours. They make use of parking areas when they are en route for work or private reasons. Truck drivers are restricted to drive and rest hours and make use of parking areas exclusively for professional reasons. Unlike the situation for the majority of car drivers, in the case of truck drivers, parking and overnight staying is part of commercial activities. These activities are carried out by transport companies. So transport

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companies are the indirect users of truck parking areas, as well as transport companies associations are. Another stakeholder that is an indirect user is the insurance company. These companies insure the load for theft and damage.

Stakeholders analysis

In the above sections the situation and the stakeholders involved have been described. It is time to look closer to the interests and the influencing power stakeholders have. In the analysis the current situation is the starting point.

The interest of stakeholders is measured by the following criteria:

1. Business opportunities: opportunities for the stakeholder to make profit or return on investment.
2. Performance of duties: the degree to which the performance of the stakeholder is judged by wrong and unsafe parked trucks.
3. User benefits: the degree to which the user is confronted with the negative consequences of overcrowded parking areas.

The degree of influence is measured by the following criteria:

1. Possession of assets: the degree to which the stakeholder owns buildings and/or land that could be deployed to accommodate truck parking.
2. Positive impetus (by instruction, payment, extra benefits etc.): the degree to which the stakeholder can influence the problem by encourage or discourage truck parking.
3. Legislative or enforcement power: the degree to which the stakeholder has legislative or enforcement power to influence truck parking behaviour.

For all stakeholders the degree of interests and influencing power have been estimated on a scale from 0 to 20. The result of this stakeholder analysis is shown in the matrix below.

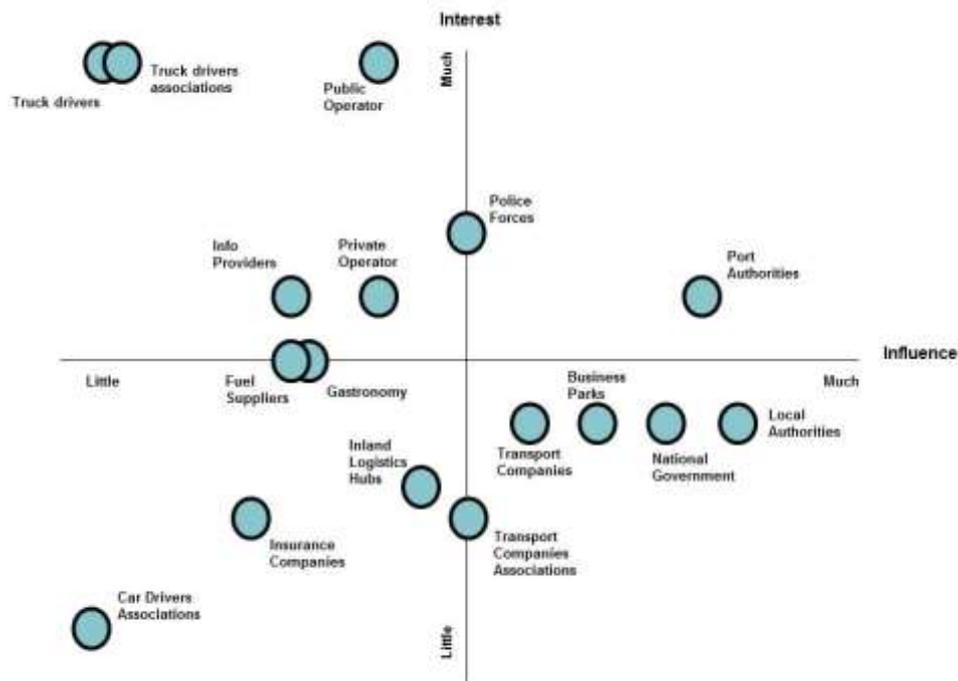


Figure 3: Stakeholders analysis: current situation

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What are the main conclusions?

The main conclusions of the stakeholders analysis are:

1. Those who do have the means to influence truck parking behavior (mainly because they are landowners), do not have much interest in changing it. Therefore they don't feel responsible for contributing to change truck parking behaviour.
2. Those who do have an interest in changing truck parking behavior, do not have enough means to influence truck parking behavior.
3. Truck drivers have the greatest interest in increasing parking capacity and better facilities, but they have no power to adapt their own behavior.
4. Car drivers have no influence and no interest in changing truck parking behavior. The parking areas are overcrowded at night when most of them are sleeping and many parking areas alongside motorways are far away from residential areas. Car drivers do have political power because they represent a large part of the electorate. In political terms the truck parking problem is therefore a non-issue.

4. Influencing Truck Parking Behaviour

From the description of the situation and the stakeholders analysis it became clear that it is difficult to get a sense of joint responsibility among stakeholders to solve the truck parking problems. Many stakeholders that do have influencing power, do not have much interest in taking action. Because road authorities are directly confronted with the consequences of wrong and unsafe truck parking they feel the need to act. What are their possibilities?

Possibilities to influence truck parking behavior for road authorities

Influencing truck parking behavior is long-term policy and only a combination of measures will lead to the wished outcome: correct and safe parking of trucks on parking areas alongside motorways. There are several steps that can be taken to increase the level of interest and influencing power of stakeholders. Stakeholders would move within the matrix graphics. Five examples are given for possible measures:

1. Pay for long-term parking
2. ITS solutions to spread truck parking
3. Cooperation with logistics hubs
4. Cooperation with neighboring countries

4.1 Pay for long-term parking

By putting a price on long-term parking, without offering any other facilities, will discourage truck drivers to park on parking areas alongside motorways. Truck drivers will be more willing to park on privately owned parking areas, where they will get a discount on facilities in return. User surveys learn that asking a fee for long-term parking will only be acceptable for truck drivers if they will get reduced fare at the restaurant or for taking a shower in exchange. Private operators will invest in more truck parking capacity which will increase their influence on the truck parking behavior. Public parking areas are free of charge at this moment. To ask for a fee for long-term parking the law has to be changed. And the law only will be effective if there would be

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regular control by the police. The cost of regulatory parking must be lower than probability of detection multiplied with the penalty.

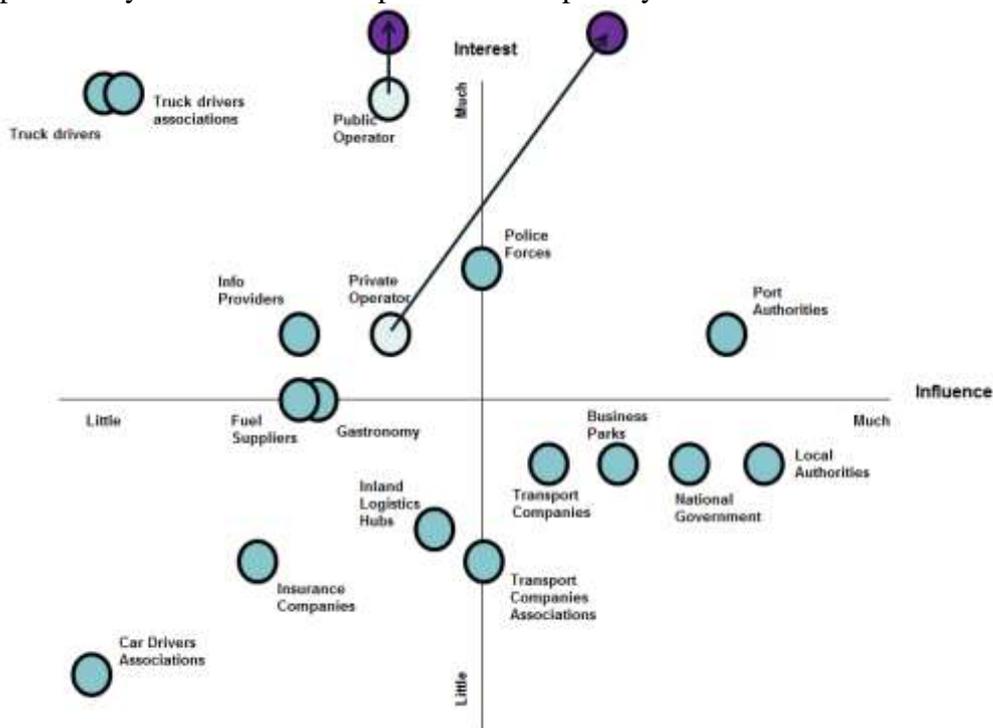


Figure 4: Stakeholders analysis: pay for long-term parking

4.2 ITS solutions to spread truck parking

At several parking areas on the German A5 motorway, the number of free parking bays is been shown on dynamic traffic signs. The occupancy rate can be simply measured by a camera at the entry of the parking area and a camera at the exit. The cameras registers when a truck enters the parking area and when he leaves, by detecting the unique number plate. The number of parking bays is known before. These systems help a better balanced use of the truck parking capacity. More smart systems have sensors per parking bay. An even more advanced system gives the possibility to make reservations. In Europe a directive (2010/40/EU) is prepared that forces parking area authorities to provide static and dynamic data (occupancy rates) on truck parking areas. Intelligent Transport Systems won't help solving the capacity problem, but could lead to a more balanced use of the existing truck parking capacity.

4.3 Cooperation with logistics hubs

Several studies proved that parking areas alongside motorways are been used for logistics purposes. In border regions and near air and seaports, this could be exploited by cooperation between the parking area authority, the local and port authorities involved. The parking area could be extended by common ground acquisitions. Other logistics activities can be combined with truck parking so that the exploitation of the new logistics hub is profitable.

4.4 Cooperation between neighboring countries

The inspection in the border area between The Netherlands and Belgium learned that the capacity on both sides of the border wasn't equally used. Some parking areas were

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almost empty as others were overcrowded. There is no cross-border cooperation at the moment. In other border regions in Europe restrictions on truck driving on Sundays and Holidays and legislation on toll makes the unbalanced use of truck parking capacity on both sides of the border even more worse. Bilateral cooperation could improve a more balanced use of the truck parking capacity.

5. Conclusions

In the current situation none of the stakeholders feels responsible for the with trucks overcrowded parking areas alongside motorways. Truck parking is been seen as a necessary evil, not as part of logistics, but as a public task. Stakeholders are pointing to each other, moving the problems to each other.

From research it has been made clear that truck parking has to be seen as part of logistics. That means that stakeholders in logistics cannot take a blind eye to the problems and only refer to public authorities. But also local and port authorities that take advantage or earn money from logistics need to play a more active role.

Every possible solution requires an action of the government but not necessarily will cost money. Offering truck parking capacity has to become a profitable activity. By the parking activity as such or by providing other services like food, hygiene, entertainment.

And perhaps in the future there will be a less bigger problem due to a relatively new technical evolution. More en more cars and trucks assist the driver in his tasks, or even take over tasks. Lane keeping assistants, adaptive cruise control etc. One day truck drivers aren't necessary for the boring job of driving on the motorway. The regulation on driving and rest hours will be adapted and the need for truck parking areas will decrease. But before this will happen, severe accidents by dangerous parked trucks have to be prevented.