

**Measures to reduce risk of
vehicular terrorist attacks**

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Transport Analysis

Address: Torsgatan 30

SE-113 21 Stockholm

Phone: 010 414 42 00

Fax: 010 414 42 10

E-mail: trafikanalys@trafa.se

Webaddress: www.trafa.se

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Summary

In this report, Transport Analysis analyses, as tasked by the government, the use of heavier vehicles in urban environments. One of the background elements for this assignment is the recent vehicular terrorist attacks in which vehicles have been used as weapons, and we have consequently focused on analysing measures to reduce this risk. But the analysed measures are also effective in terms of restricting vehicle use for other reasons, such as achieving a better and more traffic-safe urban environment with less congestion, less noise and lower emissions. It is also important that such measures be able to gain acceptance among the citizenry, and not just offer effective protection against terror.

Best if the vehicle never sets out

We consider the more efficacious and efficient measures to be those that prevent vehicles from falling into the wrong hands. There are three ways for someone seeking to carry out a vehicular terror attack to obtain a vehicle, i.e. to purchase the vehicle, to rent the vehicle or to steal the vehicle. Based on the available experience, the latter two approaches have proven to be the most prevalent.

According to the Swedish Car Rental Act, those engaging in car rental operations are subject to strict requirements, including the performance of checks intended to prevent crime. In view of the current legal requirements, the industry's own incentives to avoid deceit, the means available to the police to furnish rental companies with information, plus ongoing discussions at EU level concerning the ways in which vehicular terror attacks involving rented vehicles could be prevented, we find that efforts to secure stricter requirements in connection with rentals of heavy vehicles are already well in hand in Sweden.

To prevent vehicular hijacking, the simplest measure would be to prevent the hijacker from entering and starting the vehicle. Locking the vehicle and making sure that a key has not been left inside is the most obvious approach, and such routines are generally employed within the haulage industry. Various types of automatic lock devices, optionally supplemented with burglar alarms, can be used for this purpose to facilitate matters for the driver and reduce the risk that the driver will be the object of violence on the part of the hijacker. Measures that prevent the terrorist from accessing a vehicle do not, however, reduce accessibility for shipments or for others who need to move about the area by car.

Stopping or limiting the vehicle's progress by means of physical barriers...

In those cases where the vehicle is already rolling, the best type of measure would be focused on halting or impeding its progress by means of various types of speed bumps and traffic obstacles. Undesirable traffic can be excluded, impeded or forced to reduce speed without the use of overly visible or intrusive elements by providing the street scene with fixed or movable objects such as flower pots, benches and other arrangements for seating. Other more direct examples of traffic obstacles include bars, concrete obstacles and bollards that may or may not be able to be raised or lowered. The noise that arises when a terrorist vehicle collides with such traffic obstacles can also serve as a warning signal to the surrounding area and mitigate the effects of an attack.

The obvious disadvantage of traffic obstacles is, however, that they also reduce accessibility for essential and desirable traffic. Such obstacles, and particularly those of a more permanent

nature, must consequently be supplemented to various extents with solutions that enable goods and people to get through.

... or technical solutions that can monitor and control the vehicle remotely

A third group of measures that have strong potential for being able, at relatively short notice, to impede vehicular progress comprises various types of on-board technical solutions and equipment that make it possible to control the vehicle's speed, progress, etc. The technology already exists to be able to control the speed and progress of a vehicle from outside the vehicle, although numerous issues still remain to be resolved, including how to obtain better position readings, and how the safety of remote steering manoeuvres can be ensured without direct insight into what is happening on site. Technical solutions that control vehicles remotely do not, per se, entail that accessibility is reduced, but as long as there are vehicles in the vicinity that lack the relevant equipment, some form of physical barrier is also necessary if such measures are to achieve the intended effect. In addition, it is essential that the technology not be too easy to bypass.

Alternative transport solutions are needed to ensure accessibility...

The measures that we are emphasising in the report consist primarily of technical solutions and physical traffic obstacles and barriers. Such measures need to be supplemented with alternative transport solutions to ensure that relevant shipments can get through. Various ways of resolving this through using, for example, coordinated shipments and micro-terminals, space and time restrictions or new forms and types of vehicles are presented in the report. We also discuss appropriate policy instruments and incentives to put such alternative transport solutions into place.

... and government initiatives are needed to enable their broader use

A common feature of most of the measures discussed in the report is that they have come a long way in terms of their development and are relatively easy to implement. Many are already in use to some extent in numerous locations in Sweden and abroad, but greater efforts on the part of the state and municipalities will be needed if these measures are to be applied more extensively. Such efforts can involve supplementations or changes to regulations, the clarification of directives and guidelines, or financial subsidies intended to steer technical progress in the desired direction. For example, there is currently no evident basis in law to enable municipalities to make access to certain streets or areas conditional upon the vehicles there having certain types of equipment. Clarifying the authority granted under the Swedish Traffic Ordinance that makes it possible to prescribe, in local traffic regulations, requirements regarding specific vehicle equipment in designated areas or zones would provide municipalities with a more effective policy instrument for averting vehicular terror attacks.

In addition, the state and municipalities could set requirements in their public procurements demanding that shipments must be made subject to safety requirements, such as requirements regarding certain safety equipment. Because these entities are major purchasers, their setting such requirements could contribute to increased demand in the automotive industry as well, which could in turn expedite the development of such technology and its further spread out to the market. The public sector can also take the initiative, via community planning measures, to ensure that longer-term infrastructure solutions are put in place. The state can also contribute to technical progress by subsidising research and demo projects pertaining to technologies that are not yet fully developed or market-ready. Opportunities for EU funding exist as well. For instance, the EU Commission has earmarked monies from the regional fund for innovative safety measures that can reduce the risk of acts of terror within the EU.



Transport Analysis is a Swedish agency for transport policy analysis. We analyse and evaluate proposed and implemented measures within the sphere of transport policy. We are also responsible for official statistics in the transport and communication sectors. Transport Analysis was established in April 2010 with its head office in Stockholm and a branch office in Östersund.