TACKLING DRINK DRIVING IN EUROPE



CASE STUDY: Alco Gates in Sweden

Drink driving is one of the three main killers on European roads and accounts for 25% of all road deaths. Up to 2% of the kilometres driven in the EU are associated with an illegally high Blood Alcohol Concentration (BAC).

Sweden has long been a forerunner in the fight against drink driving. In 1999 the country was one of the first EU member states to introduce alcohol interlocks as part of rehabilitation programmes for drink drivers. In 2013, Sweden went a step further and ran a pilot project to introduce a fast-moving automated 'Alco Gate' at the Port of Gothenburg. This briefing explores the background to the project and its results, which could have positive future implications for drink driving policy in Sweden and across Europe.

Background: Drink Driving in Sweden

Sweden is the safest European country for road safety, with just 27 road deaths per million inhabitants in 2013[1].

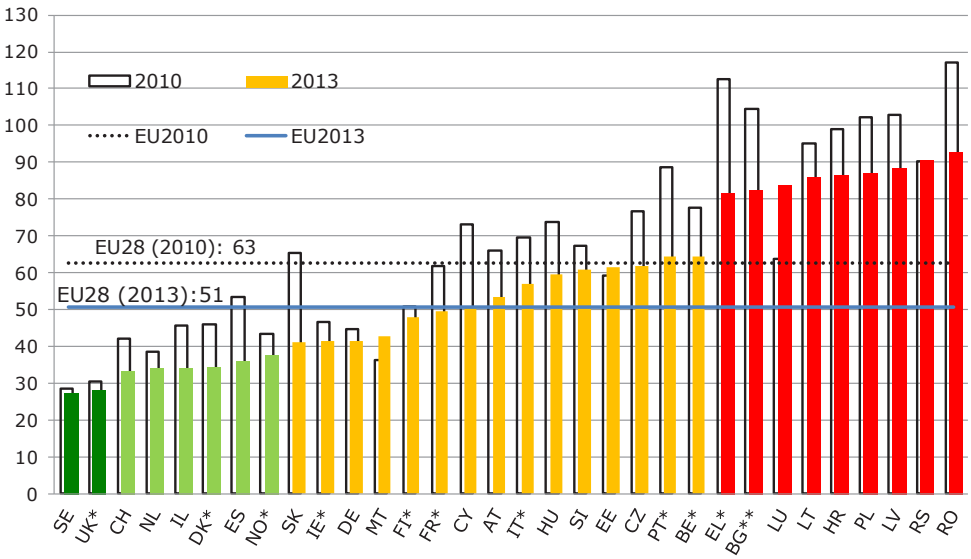

Fig. 1: Road deaths per million inhabitants in 2013 (with road deaths per million inhabitants in 2010 for comparison).

But despite the impressively low overall number of deaths, drink driving remains one of the main road safety priorities. Estimates from the Swedish Transport Administration show that 24% of drivers killed on Swedish roads in 2012 were involved in an alcohol-related crash. Between 2009 and 2011 there were 56 people killed because of a drunk driver every year, on average. That led the Swedish Parliament to the adoption of a very ambitious road safety target that the number of road deaths by 2020 should be not higher than 220 annually. The Swedish Transport Administration has also set a target on drinking and driving for 2020 that 99.9% of drivers should be sober. In 2009 the proportion was estimated to be 99.7%[2].

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[1] ETSC (2014) 8th PIN Report - Ranking EU Progress on Road Safety
[2] http://publikationswebbutik.vv.se/upload/6816/2012_162_review_of_interim_targets_and_indicators_for_road_safety_in_2010_2020.pdf

Enforcement

Consistent and visible enforcement is a powerful deterrent to drink driving. With 287 alcohol checks per 1,000 inhabitants, Sweden is one of the most active in this area (see table 1 below)[3]. Despite this, the chance of a driver being breath tested during any given year is less than 1 in 5.

Table 1: Number of roadside alcohol breath tests (per 1,000 inhabitants) and percentage of those tested found to be above the legal BAC limit.

	2010		2009		2008		2007	
	Roadside police tests per 1,000 population	% above legal limit	Roadside police tests per 1,000 population	% above legal limit	Roadside police tests per 1,000 population	% above legal limit	Roadside police tests per 1,000 population	% above legal limit
FI	429	0,9	421	1,0	385	1,3%	318	1,6
NO	367	0,2		0,3	336	0,3%		0,2
SE	287	0,6	293	0,7	256	0,8%	283	0,7
CY	217	5,3	196	6,2	182	5,9%	149	6,8
SI	198	4,7	212	4,7	202	5,8%	191	7,3
FR	173	3,4	181	3,3	189	3,3%	182	3,3
EL	161	2,1	147	2,8	135	3,1%	143	2,9
IE	126	1,9	119	2,6	128	3,2%	113	4,1
AT	122	3,7	102	4,8		5,8%	77	7,0
IL	122	1,0	83	1,7	67	2,0%	24	3,7
HU	120	3,6	127	3,3	130	3,1%	143	3,2
ES	114	1,8	128	1,8	112	1,8%	96	2,2
PT	106	3,8	81	4,3	63	5,9%	57	5,6
EE	105	0,7	98	0,8	95	1,1%	68	1,0
PL	88	4,9		7,5	47	9,5%		
IT	27	2,5	27	2,9	23	3,4%	13	6,0
LT					40	1,7%	34	1,6
DK					36	5,7%		
GB			14	11,6	12	12,9%	10	16,3

24% of drivers killed on Swedish roads in 2012 were involved in an alcohol-related crash.

Alcohol Interlocks in Sweden

Sweden has been a leader in the uptake and use of alcohol interlock technology[4], a highly effective countermeasure. Since their introduction in Sweden in 1999, alcohol interlocks have been mainly used as a complementary measure within rehabilitation programmes for first time high level and recidivist offenders as well as for quality assurance in private companies in commercial transport.

A law on rehabilitation programmes came into force in January 2012 which applies to all drink driving offenders. First time high level and recidivist offenders are submitted to a 2-year rehabilitation programme which includes the mandatory fitment of an interlock while others have a 1-year programme where the interlock is voluntary. The devices are also widely employed within commercial transport on a voluntary basis. The Swedish Government committed to have 75% of governmental vehicles equipped with the technology by 2012. So far around 80,000 alcohol interlocks are installed in Sweden on commercial vehicles. In addition, since the end of 2012, all vehicles used for school transport must also be fitted with alcohol interlocks.

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[3] ETSC (2012) Drink Driving: Towards Zero Tolerance

[4] Alcohol Interlocks are connected to the vehicle ignition system and require the driver to take a breath test in order to drive. If the driver is found with alcohol above the legal BAC limit the engine will not start.
Source: ETSC (2012) Drink Driving: Towards Zero Tolerance.

The Port Problem

Ports have long been considered by the Swedish police, customs authorities and the coastguard as environments at high risk for drink driving. In 2012, more than 3 million vehicles arrived in Swedish ports from across a maritime border. Government figures suggest that the drink driving rate around ports is three times the national estimated proportion of drink drivers. However there has not historically been any comprehensive research into the specific risks. Consequently, a pilot project involving alco gates was given the green light in 2013.

The Alco Gate Trial

The alco gate pilot project was carried out between August and December 2013 in the port of Gothenburg. The trial involved five different stakeholders: the Swedish Abstaining Motorists Association (MHF), the Coast Guard, the National Police Board, Swedish Customs[5] and the Swedish Transport Administration. The alco gates exploit similar technology to alcohol interlocks in the installation of checkpoints for all trucks and buses entering Sweden via ferry. The purpose was to enforce drink driving controls along the maritime borders of the country and make sure that no driver coming to or from Sweden was under the influence of alcohol.

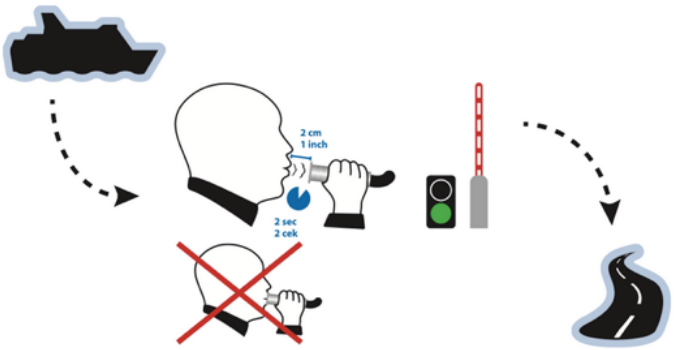
The alco gate appears to be an effective and direct measure to tackle drink driving among professional drivers. In the context of limited resources for police enforcement, alco gates offer a complementary tool to achieve a high level of drink driving enforcement at high risk sites. Drivers entering the country via ferries are required to blow into a breathalyser linked to a gate before being able to enter the country. The automated-control process takes only a few seconds for each driver and checks have no impact on the traffic flow. The main objective of the trial in the short term was to prevent all drivers coming from the port of Kiel in Germany and leaving the ferry at the Gothenburg port from driving under the influence of alcohol on Swedish roads. The objective of the trial in the long run would be to provide a test environment for the future roll out of permanent alco gates in all Swedish ports.

How Does an Alco Gate Work?

Watch the explanatory video at: http://ow.ly/yK4kc.

Visit the website: www.nykterhetskontroll.nu

A large facility with two automatic checkpoints was installed in the port of Gothenburg for the project. The facility is adjustable so drivers of both trucks and cars can be tested. A new, and potentially, breakthrough technology was implemented during the trial enabling the check to be carried out without any physical contact between the driver's mouth and the device itself (see diagram below)[6].



[5] Swedish governmental body dealing with monitoring and control of traffic to and from other countries. http://www.tullverket.se/2.6e3d73401151cda416380001786.html

[6] Source: http://www.nykterhetskontroll.nu/

During the initial period, only heavy goods vehicles were checked from ferries coming from Kiel in Germany. This was then extended to all categories of motor vehicles. The checks are simple to perform on drivers of all vehicles, requiring no specific technical or language skills from the driver. The measurement is instantaneous, causing no traffic delay and no record is kept of the test except when alcohol is detected.

A management centre, located 200 km away from Gothenburg, was in place in order to give remote support to drivers.

The checkpoint gave instructions in seven different languages: Swedish, English, German, French, Polish, Russian and Lithuanian. The instructions were activated when a driver pushed a help button marked with a flag representing one of the languages.

The facility was also equipped with an automatic alarm that was activated depending on the circumstances, e.g. a breath test with high alcohol content or a driver waiting for more than 20 seconds at the checkpoint without taking a test. The checks were monitored by the staff of the management centre by means of six cameras.

Staff were also present at the automatic checkpoint in the port when vehicles came out of the ferries. The national police was also on the spot in order to proceed with further checks in case a driver was tested over the legal limit.

If this was the case, the barrier of the gate would remain shut and the vehicle would be directed to a check centre in a building close to the port to make a full report.

In order to increase the number of tests, the system was changed to also include passenger cars during daytime when there were not that many trucks on board the ferry. Moreover, the checkpoints were sometimes kept running all day in order to be able to check drivers picking up or leaving goods in the port.

Concerning the time needed to pass the Alco Gate checks, this takes approximately 20 seconds. The checkpoint has two lanes, it can let one vehicle through every 10 seconds. For passenger cars, the test takes approximately 10–15 seconds per vehicle. The possibility to also check drivers of passenger cars gave a good basis for planning how many lanes and checkpoints will be needed in order to avoid congestion for passenger cars when the checkpoints are made permanent.

In the future we could see a lot of new ways to use alco gates. Faster, more efficient checks could also be made on roads and police would only need to intervene when a test showed positive. Arne Winderdal, CEO, MHF

Results: Before and After

Before the pilot project started, all alcohol checks were conducted by the national police, Swedish customs and the coast guard. During these checks, the usual screening instruments were used and normal procedures were followed.

Before the installation of the alco gate in the port, the results of the checks were as follows:

- During January–June 2013, Swedish Customs checked 1,900 drivers;
- The number of drivers found driving under the influence of alcohol was 20;

This means that 1 out of 95 drivers checked was driving under the influence of alcohol.

Outcomes

From August to December 2013 in the port of Gothenburg a total of 8,745 drivers were checked at the alco gate, 10 of whom were reported for suspicion of drunk driving or aggravated drunk driving. More detailed figures collected by MHF in their final report show the following:

- The number of truck drivers checked: 6,451.
- The number of truck drivers driving under the influence of alcohol: 3.

This means that only 1 out of 2,150 truck drivers checked was driving under the influence of alcohol. These drivers had received clear information in advance, both on board the ferry and in the booking terminal in Gothenburg.

- The number of drivers of passenger cars who were checked: 2,294;
- The number of drivers of passenger cars driving under the influence of alcohol: 7;

This means that 1 out of 327 drivers of passenger cars who were checked was driving under the influence of alcohol. This group had not received any information about the alco gate beforehand.

Driver Feedback

A preliminary survey was carried out in order to collect feedback from drivers during the alco gate trial. Surveys were distributed in paper form in seven languages in the lounge of the terminal in Gothenburg. The main findings were as follows:

- The largest proportion of respondents were professional drivers;
- The alco gate installation was found to be good and useful for the vast majority of drivers;
- 96% of drivers had indicated that it was "very easy" or "easy" to interact with the technology. This was also confirmed by the staff in the port and in the management centre.

- Drivers rarely had problems making the breath test and passing the checkpoint;
- 86% of the drivers who responded to the survey believed it is very important to check whether drivers were driving sober to reduce the number of road deaths due to alcohol;

Conclusions

The alco gate trial in the port of Gothenburg was considered as a success by the five stakeholders that carried out the pilot project. The final evaluation showed that this new technology could be an effective complementary measure for drink driving enforcement in Sweden. The benefits and positive outcomes can be summarised as follows:

- Clear information was provided to drivers travelling on ferries on the alco gate installation in the port. They therefore avoided drinking in order to pass the alco gate checks. In other words there was a deterrent effect.
- No negative impact on the traffic flow was recorded. It takes only seconds to carry out the test detect the BAC level of the driver.
- The technology used for the trial (that does not require the driver to touch the device with their mouth) is innovative and potentially expands the potential for interlock technology;
- According to the participating organisations, public opinion in Sweden responded positively to the trial. A dramatic collision ten years ago at the port of Gothenburg has also stuck in the public consciousness: a Hungarian lorry driver who was found with a BAC limit of 1.7g/l killed five people.
- At the end of August 2014 a 6-lane alco gate will be launched at the Port of Stockholm which will check all vehicles coming to Sweden from Russia and the Baltic states via ferries
- Following the successful Gothenburg trial, all the participating organisations have called on the government to introduce alco gates permanently in all Swedish harbours, there have also been supportive calls for this in the Swedish parliament.
- The alco gate technology could also inspire other European countries to introduce automated alcohol testing at their borders.

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