Fifty years of the breathalyser
- where now for drink driving?

A report by
Dr Rob Tunbridge, independent consultant and
Katy Harrison, Policy Officer, PACTS

October 2017
"Having worked with Dr Tunbridge for the past 20 years to achieve drug drive legislation similar to that of drink drive, and supplying the global leader in road side drug driver screening devices DrugWipe, to every police force in England and Wales, we are in a unique position to create the perfect storm against those who choose to drug drive. Let Government along with the many fantastic roads police officers learn from the 50 years of drink drive education and enforcement to make drug driving just as socially unacceptable - and achieve that task in 5 years."

Ean Lewin, Managing Director of D.Tec International

PACTS is grateful to D.Tec International, suppliers of DrugWipe, for their generous support for the publication of this report.
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Parliamentary Advisory Council for Transport Safety

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Fifty years of the breathalyser - where now for drink driving?

Parliamentary Advisory Council for Transport Safety

When Transport Minister Barbara Castle introduced the breathalyser fifty year ago, she was challenged by the BBC interviewer on The World This Weekend: "Minister, this is a rotten idea. You’re spoiling my fun as a motorist…. You’re only a woman, you don’t drive, what do you know about it?"

Barbara Castle stood her ground and thousands of deaths and injuries have been avoided as a result. The number of casualties in Great Britain involving a driver over the legal drink drive limit has reduced by 73% since 1979 (the first year of accurate monitoring). Public attitudes towards drink driving have changed dramatically. The attitudes of BBC interviewers towards women have also moved on. This is a great success and this report assesses the actions that have achieved it.

It may seem that the drink drive problem has gone away. It has not. August 2017 was the twentieth anniversary of the death of Princess Diana, who died in a car driven by a driver with a blood alcohol concentration more than three times the legal limit. In the same month this year, eight people died in a collision on the M1 involving the driver of a lorry who was subsequently charged with causing death by careless driving while over the drink-drive limit. The following month, former England football captain Wayne Rooney pleaded guilty to drink driving. He received a two-year driving ban and other penalties.

We seem to have reached a plateau. The Department for Transport reports that there has been no significant change in the number of drink drive deaths since 2010 whilst the number of serious injuries involving a drink driver increased by 9% in 2015. Drink drive deaths still account for around 11% of all road deaths which also show no significant change since 2010.

Dr Rob Tunbridge, the main author of this report, draws on his many years of experience as a scientist, civil servant and consultant to chart the progress of research, policy, legislation, technical development and road safety interventions in the field of drink driving. He points to the complexity of issues, government departments and agencies that are, or should be, involved. He concludes that after years of good progress, some signs are now worrying and that enforcement by the police is vital. He calls for a comprehensive new strategy that is more joined up and evidence based.

PACTS shares his concerns and endorses his call for a refreshed and reinvigorated approach. There is no single action that will solve the problem but it can and should be tackled more effectively through a range of joined-up measures. If police resources are being pulled in other directions, as they are, a mature conversation is needed about how to fill this void.

I would like to thank the RAC Foundation for helping to initiate this project and for its support in the early stages. I would also like thank Road Safety Support for providing PACTS with a detailed statistical analysis of police digital breath test data and the Institute of Alcohol Studies for collaboration on policy matters. Thanks are also due, once again, to PACTS Special Adviser, Professor Richard Allsop for his expert assistance and use of material from his 2016 European Transport Safety Lecture. I congratulate my colleague Katy Harrison who shaped the drafts, added material and ensured it supported our recent work at Westminster on drink drive policy. Chris Peck stepped in at a late stage and helped with production. Most of all, I wish to thank Rob Tunbridge for undertaking this project, persisting with the report through its many iterations, and for his unstinting and unpaid expert advice to PACTS on drink and drug driving over many years.

David Davies
Executive Director
PACTS
October 2017
Almost a century of research has shown conclusively that consuming alcohol impairs the ability to drive and that drivers who do drink and drive have a higher rate of collisions, particularly fatal collisions, than drivers who have consumed no alcohol. This may seem obvious now but it was not always accepted. It took large-scale studies, notably the 1962 Grand Rapids study, to establish the degree of risk at different levels of blood alcohol concentration.

Over the past fifty years or so, a legal, scientific and administrative framework has been put in place to deter and detect drink driving in the UK. The introduction of the breathalyser on 9th October 1967 is probably the single event that best symbolises this. Much has progressed since then, with additional drink drive offences introduced, notably those taking account of the consequences of drink drive collisions. Enforcement and education campaigns have dramatically changed public attitudes to drink driving. The vast majority of people now think drink driving is unacceptable. “One for the road” has largely (though not entirely) given way to “None for the road”. This is reinforced by one of the most severe drink drive penalty regimes in Europe, with first time offenders receiving an automatic one-year driving ban, penalty points and fines.

As a result of actions to cut drink driving, along with safer roads and safer vehicles, the number of casualties involving drink driving has plummeted. In 1979 (the first year of accurate monitoring) 1,640 people were killed and a further 29,790 were injured in collisions in which a driver or rider was over the drink drive limit; by 2015 this had fallen to 200 people killed and 8,270 injured. This is a success for public policy and demonstrates that death and injury on the roads can be reduced substantially.

But the job is not done. Far too many people are still killed and injured as result of drink driving. Alcohol remains a major contributory factor to collisions, particularly to fatal ones, and progress with casualty reduction has flat-lined since 2010. Drink driving also remains susceptible to changes in wider patterns of alcohol use by society. Levels of roads policing, breath-testing and spending on publicity campaigns have all fallen. In the past, when drivers perceived that enforcement levels had been reduced, drink drive casualty numbers rose.

The UK Government continues a longstanding policy based on enforcement and publicity ‘to make the present regime work better.’ It resists calls for a lower drink drive limit on the grounds that it would have no effect as most serious drink drive collisions involve offenders who are well over the current limit. The Scottish Government has chosen a different path and introduced a lower drink drive limit in Scotland. The Northern Ireland Assembly has passed legislation which goes even further, though implementation is delayed.

The authors believe that a policy refresh is needed. They call for a comprehensive strategy to reduce drink drive deaths. This should include:

- A review of the experience of Scotland and other countries and reconsideration of a 50mg /100ml BAC limit for England and Wales;
- A strategy for roads policing that recognises resource constraints and addresses the implications;
- Collation of all relevant data on alcohol consumption and drink driving;
- Better intelligence to identify and target drink-drive offenders;
- A review of the potential role of alcohol interlocks in the UK;
- Further research into which policing strategies are most effective;
- A review of the availability and uptake of drink drive rehabilitation courses;
- Increased efforts to achieve Home Office Type Approval for mobile evidential breath testing instruments;
- Continued support for THINK! campaigns on drink driving;
- Greater education for drivers on the dangers of drink-driving and on how alcohol units consumed relate to BAC, including the effects of volume consumed in relation to time, gender, body weight and food consumption;
- Greater engagement with the pubs and drinks sector to promote awareness and responsible drinking.

The authors hope that this report will contribute to the debate.
Almost a century of research in the USA, UK and other countries has proved conclusively that consuming alcohol significantly reduces a driver's ability to perform the driving task and increases their rate of involvement in collisions. The effects start at relatively low levels of alcohol in the blood and increase rapidly.

Numerous bodies of work spanning the last seven decades have looked at the relationship between alcohol, driving performance and road collision risk. The evidence collected has shown clearly that alcohol in the blood leads to an increased risk of having a collision on the road.

The vast majority of the progress on alcohol metabolism and consequent blood and breath alcohol measurement originated with the work of Professor Eric Widmark from 1922 onwards. Even today, the Widmark formula is used to estimate a person’s blood or breath alcohol level based on the quantity of alcohol consumed, alcoholic strength, body weight and gender.¹

The British Medical Association played a valuable role in highlighting the dangers of drinking alcohol and driving. In 1935, they published 'Relation of Alcohol to Road Accidents'² followed by 'Recognition of Intoxication'³ in 1954, which provided further evidence of the problem.

Research from the 1940s in the USA showed that a driver with a blood alcohol concentration (BAC) of 150mg of alcohol per 100ml of blood was significantly more likely to be involved in a collision than a non-drinking driver.⁴

In 1950, Professor G.C Drew, using a driving simulator at the UK Road Research Laboratory, showed that the adverse effects of alcohol on the driving task started at a BAC as low as 20mg/100ml.⁵

In 1962, the Borkenstein study, generally referred to as ‘The Grand Rapids Study’ where the research was undertaken, established a relationship between BAC and road collision risk.⁶ Over a 12-month period in Grand Rapids, Michigan, 5,985 drivers involved in collisions, together with 7,590 drivers (controls) not involved in collisions, were interviewed and breath tested. The study clearly showed that the risk of collision increased as blood alcohol levels increased. By 100mg of alcohol per 100ml of blood the collision risk was doubled and increased exponentially as BAC rose. The evidence contained in the Grand Rapids Study helped to debunk the popular assertion that drivers compensated for the effects of alcohol consumption by driving more carefully.

In 1966, Professor Richard Allsop identified the ratio of the collision risk for a drinking driver to the risk that driver would face if they had not been drinking (then called the relative accident risk) as the appropriate measure to use when looking at drink drive risk.⁷ The evidence provided by the Borkenstein study and Professor Allsop eventually led to the British Government introducing the 80mg BAC limit under the Road Safety Act 1967.
In 2002, a case control study was carried out in California and Florida using similar fieldwork methodology to that used in Grand Rapids (4,919 collisions of all severities and 10,066 control drivers). It shows that the chance of being involved in a collision with a BAC limit of 80mg of alcohol per 100 millilitres of blood was 2.7 times the risk in cases with zero alcohol in the blood. At 150mg the risk rose to 22 times that of zero alcohol in the blood.\(^8\)

The risk of involvement in a fatal collision starts to rise at lower BAC levels than that for less severe collisions and rises more steeply. This is demonstrated in Figure 1 by Professor Allsop who combines several studies.\(^9\) The risk of a fatal collision is multiplied by 5 around 50mg and rises more markedly above that level, so many jurisdictions have adopted this as the legal limit.

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2. Drink drive legislation in the UK

The UK has a framework of laws, procedures and penalties for drink driving that date back to the 19th Century. The Road Traffic Act 1962 was the foundation of a more scientific approach to drink drive legislation. A series of subsequent reviews, including those under Blennerhassett and North, sought to expand the scope and effectiveness of the law. Many but not all recommendations were adopted. Scotland has now introduced a lower (50mg) BAC limit and Northern Ireland will follow suit. In England and Wales, where the UK Government sets the limit, it remains at 80mg.

1872-1911

As early as 1872, the Licensing Act made it an offence to be “drunk while in charge on any highway or other public place of any carriage, horse, cattle or steam engine”. This was extended in 1927 to include “any mechanically propelled vehicle”. In 1962, the Road Traffic Act made the first provision for analytical tests on bodily fluids. An analysis or measurement of blood, urine or breath could from that point be treated as supporting evidence.

The Road Safety Act 1967 introduced a BAC limit for the first time. It set the limit at 80mg of alcohol per 100ml blood alcohol for drivers. In the same year Transport Secretary Barbara Castle introduced the “breathalyser”. This enabled police to test drivers for breath alcohol at the roadside. It was a screener, not an evidential test that would necessarily be accepted in court. Legal challenges were subsequently made to the validity of roadside breath testing and provisions were included in the Road Traffic Act 1972 to close loopholes.

In 1974, a committee was set up under Frank Blennerhassett QC in order to “iron out” practical problems with administering the law on drink-driving. The committee’s report was published in 1976 with the main recommendation to target “High Risk Offenders”. The report noted the particular risk posed by those who had been convicted twice for drink driving within a ten year period and those over two and a half times the legal limit, i.e. 200mg alcohol per 100ml of blood. It proposed that, in order to regain their driving licence, High Risk Offenders would need to demonstrate to a court that they did not pose undue danger on the road by supplying evidence showing that three liver enzyme markers were below a specified level. The scheme is still in place today.

In 1979, the Government consulted on proposals to change elements of the drink drive legislation, including evidential breath testing, stricter penalties and the introduction of a High Risk Offenders scheme. These changes were introduced in the Transport Act 1981, with section 25 allowing for an evidential breath test to take place at a police station. Implementation of the Act took place in May 1983 and these measures brought about a sea-change in the enforcement of drink drive law.

In 1985, The Road Traffic Law Review was set up under Dr Peter North (later, Sir Peter North). In 1988, it published a report that looked at the legislation available to prosecute drink drive offenders. Under the legislation of the time, a driver who was over the prescribed alcohol limit (or who was unfit by virtue of driving under the influence of drink or drugs) and whose driving caused a collision in which someone was killed, was often charged only with an alcohol or drugs offence, or with this offence coupled with one of careless driving. The review found the law to be inadequate and that the legislation did not allow for the fact that the driver had been drinking to be sufficient in itself to establish the offence of causing death by reckless driving (under Section 1 of the Road Traffic Act 1988). The review proposed a specific offence of causing death by careless driving whilst under the influence of drink or drugs.

In 1989, the Government published the white paper, The Road User and the Law, highlighting the serious problems caused by drink drivers identified in the review. As a result, the 1988 Act was amended by the Road Traffic Act 1991, creating a new offence of ‘causing death by careless driving whilst affected by drink or drugs’.

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The Deregulation Act 2015

The Government made some minor but useful changes to drink driving legislation in the Deregulation Act 2015. The Act removed the “statutory option” to demand a blood test, which had effectively allowed some offenders the opportunity to ‘sober up’. The Act also tightened up procedures regarding High Risk Offenders.

Blood alcohol concentration limits

England and Wales

In England and Wales, legal BAC limits for drivers have remained the same since 1967. The Road Traffic Act 1968 sets out the limits within Section 11(2) as 80 mg of alcohol per 100 millilitres of blood, 35 mcg per 100 millilitres of breath or 107mg per 100 millilitres of urine. England and Wales share the same legislation on drink driving.

Scotland and Northern Ireland have separate jurisdictions with growing differences in legislation.

Scotland

Powers to alter the drink drive limit were devolved to the Scottish Government under Part II of the Scotland Act 2012. In September 2012, the Scottish Government issued a consultation Reducing the Drink Driving Limit in Scotland. This proposed a reduction in the drink drive limit: three quarters of respondents were supportive. On 18 November 2014 the Scottish Parliament voted unanimously to lower the drink drive limit in Scotland from 80mg to 50mg. This took effect on 5 December 2014.

Northern Ireland

In 2016, The Northern Ireland Assembly Road Traffic (Amendment) Bill was passed. The Act will lower Northern Ireland’s BAC limit to 50mg of alcohol per 100ml of blood, equivalent to 22mcg of alcohol per 100ml of breath or 67 mg of alcohol per 100ml of urine. It will also lower the limit to 20mg of alcohol per 100ml of blood for professional drivers and learner drivers and for novice drivers within two years of passing their test. The Act also provides for a six month minimum driver learning period, effectively raising the minimum full licensing age to 17 years and six months.) The Act permits the Police Service of Northern Ireland to set up – under controlled circumstances – roadside check-points for breath testing. It also introduces differences when it comes to penalties awarded for drink drive offences in Northern Ireland, including a graduated penalty scheme to provide fixed penalties for first offences at lower limits.

Implementation of these changes has been delayed. It may occur in 2018, subject to achieving type approval for equipment that can test for these lower BAC levels.

Figure 2: Legal alcohol limits for driving in England, Wales, Northern Ireland and Scotland.

<table>
<thead>
<tr>
<th>Level of alcohol</th>
<th>England, Wales and Northern Ireland</th>
<th>Scotland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microgrammes per 100 millilitres of breath</td>
<td>35</td>
<td>22</td>
</tr>
<tr>
<td>Milligrammes per 100 millilitres of blood</td>
<td>80</td>
<td>50</td>
</tr>
<tr>
<td>Milligrammes per 100 millilitres of urine</td>
<td>107</td>
<td>67</td>
</tr>
</tbody>
</table>

Source: https://www.gov.uk/drink-drive-limit
Penalties for drink driving

Penalties for drink drive related offences in Great Britain can include prison sentences, fines and driving licence endorsements. The penalties are set by the Westminster Government for all jurisdictions of Great Britain (but not Northern Ireland) and currently remain the same. There is no distinction for the lower BAC limit in Scotland.

The law states that drivers could be imprisoned, banned from driving and/or face a fine if found guilty of driving whilst under the influence of alcohol. The penalties for drink driving offences depend upon the offence committed and can range from a £1,000 fine for refusing to cooperate with a preliminary test, to 14 years in prison and an unlimited fine for causing death by careless driving whilst under the influence of alcohol. The various offences and the range of penalties available are detailed in Figure 3.

Figure 3: Drink driving offences in Great Britain and their penalties.

<table>
<thead>
<tr>
<th>Offence</th>
<th>Section of 1988 Act</th>
<th>Maximum tariff (prison)</th>
<th>Fine</th>
<th>Disqualification</th>
<th>Penalty Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causing death by careless driving while under the influence</td>
<td>3a</td>
<td>14 years</td>
<td>Unlimited</td>
<td>Obligatory (minimum 2 years)</td>
<td>3-11*</td>
</tr>
<tr>
<td>Driving or attempting to drive while unfit</td>
<td>4(1)</td>
<td>6 months</td>
<td>Level 5</td>
<td>Obligatory</td>
<td>3-11*</td>
</tr>
<tr>
<td>In charge while unfit</td>
<td>4(2)</td>
<td>3 months</td>
<td>Level 4</td>
<td>Discretionary</td>
<td>10</td>
</tr>
<tr>
<td>Driving or attempting to drive with excess alcohol</td>
<td>5(1)(a)</td>
<td>6 months</td>
<td>Level 5</td>
<td>Obligatory</td>
<td>3-11*</td>
</tr>
<tr>
<td>In charge with excess alcohol</td>
<td>5(1)(b)</td>
<td>3 months</td>
<td>Level 4</td>
<td>Discretionary</td>
<td>10</td>
</tr>
<tr>
<td>Failing to co-operate with a preliminary test</td>
<td>6(6)</td>
<td></td>
<td>Level 3</td>
<td>Discretionary</td>
<td>4</td>
</tr>
<tr>
<td>Failing or refusing to provide an evidential specimen when ‘driving or attempting to drive’</td>
<td>7(6)</td>
<td>3 months</td>
<td>Level 4</td>
<td>Discretionary</td>
<td>10</td>
</tr>
<tr>
<td>Failure to allow specimen to be subjected to laboratory test when ‘driving or attempting to drive’</td>
<td>7A</td>
<td>6 months</td>
<td>Level 5</td>
<td>Obligatory</td>
<td>3-11*</td>
</tr>
<tr>
<td>Failure to allow specimen to be subjected to laboratory test when not ‘driving or attempting to drive’</td>
<td>7A</td>
<td>3 months</td>
<td>Level 4</td>
<td>Discretionary</td>
<td>10</td>
</tr>
</tbody>
</table>

* No points may be imposed when offender is disqualified
Fines: on the standard scale a Level 3 fine is £1,000, Level 4 is £2,500, and Level 5 is £5,000

Source: House of Commons Library.

When an individual is convicted of an offence for drink driving, there are further penalties available to the Courts in addition to prison or fines.
Driving licence endorsements
Drivers who incur 12 or more endorsements (penalty points) within a period of three years face disqualification from driving. There are separate rules for new drivers who are restricted to six endorsements within two years after passing their test. Depending on the offence, endorsements stay on a driver’s licence for four to 11 years.

Endorsement processes are the same in England, Wales and Scotland. For Northern Ireland there are slight differences though mutual recognition codes operate. If a driver is disqualified from driving in Ireland or the Isle of Man, the disqualification also applies in the UK.

Great Britain is the only jurisdiction outside Victoria, Australia that takes away a driver’s licence for one year on a first offence. France, for example, has a 50mg limit but does not remove a driver’s licence until a BAC limit of 200mg. Other countries, such as the Czech Republic, have a nominal zero limit, but may only fine a driver for a drink driving contravention. This is not an effective deterrent.

Drink driving rehabilitation scheme courses
Magistrates frequently offer drivers found guilty of a drink driving offence the chance to take a drink driving rehabilitation course. A driver may also be offered a rehabilitation course if they are found guilty of failing to provide a specimen to the police. These courses have been shown to reduce reoffending substantially.

Drink driving rehabilitation courses normally take 16 hours, over three days, spread over a period of three weeks. Offenders may have the length of their driving disqualification reduced, typically by a quarter, if they complete the course within a certain time.

Since 2013, offenders must be offered a choice of course provider, as part of a Government scheme to increase competition. (Previously they competed for the contract to be the sole provider at a court.) This is unusual within the justice system. However, providers have stated that information available to offenders in the courts is often inadequate. In addition, the small number of offenders in each court is now spread across a number of providers so courses may not be viable, and offenders have to be transferred to other providers and courses cancelled.
3. Impact of changes in legislation and enforcement

Enforcement and education campaigns have dramatically changed public attitudes to drink driving. The vast majority of people now think drink driving is unacceptable. This is reinforced by one of the most severe drink drive penalty regimes in Europe, with first time offenders receiving an automatic one-year driving ban, penalty points and fines. Experience has shown that drink driving and casualties are responsive to fluctuations in levels of enforcement.

Immediately after the introduction of the 80mg BAC limit in 1967 the effects of the law became evident. The proportion of drivers killed in collisions who had a BAC above the 80mg limit in Great Britain dropped from 32% in 1967 to 20% in 1968.

However, by 1975 the percentage of drivers killed in collisions who were above the 80mg limit had risen, and even exceeded the 1967 level, with 38% of killed drivers being over the 80mg limit. It had become clear that enforcement of the newly introduced breath testing law was spasmodic and not at the levels anticipated by drivers in earlier years.

Following the introduction of evidential breath testing at a police station in 1983, the number of breath tests using breathalysers (roadside screeners) increased rapidly from 100,000 per year in 1967 to 800,000 per year in the early 1990s. This had a profound deterrent effect on the level of drink-driving and the percentage of drivers killed in collisions above the legal limit fell to the immediate post-1967 legislation level, at around 20%.

However, by the early to mid-1990s it became clear that the rate of decline in drink-drive casualties was levelling off and further initiatives were required. The Government became increasingly concerned about drink driving and published a consultation document, Combating Drink Driving: Next Steps.38 In the same year the House of Lords Select Committee on the European Communities addressed the issue of BAC for drivers.39 Both recommended reducing the drink drive limit to 50mg of alcohol per 100ml of blood.

Number of breath tests administered

The Home Office publishes annual figures showing the number of breath tests conducted in England and Wales. This includes tests after collisions and tests administered when no collision has taken place. Separate figures are also produced which summarise the coordinated campaigns on drink driving typically held at the beginning of summer and winter.

Figure 4. Change in roadside screening breath tests and test failures, 2001-2015

Approximately 600,000 breath tests are carried out each year by police forces in England and Wales. This rose to 815,000 in 2009 but by 2015 had fallen to 520,000 – the lowest in the past 15 years - see Figure 4. In 2016, the number of drivers stopped by the police in the summer drink driving campaign more than halved between 2013 and 2016, although the percentage refused/positive increased.40 The difference could be down to budget cuts in the police, a change of focus within England and Wales police forces or could indicate more targeted breath testing is taking place.

The number of breath tests administered in Great Britain annually is far lower than in other European countries such as Sweden, which conducts over three times as many tests for a population over five times smaller. France and Spain conduct eighteen and ten times as many breath tests respectively.41

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39 House of Lords Select Committee on the European Communities; Blood Alcohol Levels for Drivers; The Stationery Office; 1998.
Differences in police force area

There are differences in the number of breath tests carried out across Britain. In 2015 the rate of breath testing in Wales was 20 per 1,000 population, more than twice that of England at 9 per 1,000 population. Breath tests administered ranged from 17 tests per 1,000 of the population in Suffolk to only 3 per 1,000 in Greater Manchester. The number of failed or refused tests ranged from 5% in Dyfed-Powys to 34% in Cambridgeshire.

The variation in the rate of breath testing across England and Wales is likely to reflect the priorities set by local Police and Crime Commissioners. It is not clear that they relate to local levels of drink driving. The variations in levels of testing mean that it is not possible to obtain a representative national figure for the percentage of tests failed.
Prosecutions for drink driving

In 2016,
- 590,260 individuals were convicted of a motoring offence of some type in England and Wales;
- 36,550 drivers were found guilty of driving ‘with alcohol in the blood above the prescribed limit.’ 8,925 were found guilty of ‘offences related to drink or drug driving’;
- 23,875 drivers were fined for drink-driving. 35,045 were directly disqualified from driving or received endorsements.

The numbers of prosecutions for drink driving has fallen in parallel with the overall fall in fatalities attributed to alcohol. The number of convictions for drinking related offences is between 70-80% of the number of failed breath tests.

Breath testing in Scotland

Police Scotland do not record the total number of breath tests that they administer.

Figure 6: Numbers of breath tests and failed or refused breath tests conducted in Scotland during police campaigns 2013-2017.

<table>
<thead>
<tr>
<th>Campaign</th>
<th>Total Tests (Negative+Detected)*</th>
<th>Negative Tests</th>
<th>Detected Drink/Drug Drivers</th>
<th>% positive (detected/total)</th>
<th>Campaign Length</th>
<th>BAC Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer 2013</td>
<td>17220</td>
<td>16816</td>
<td>404</td>
<td>2.35%</td>
<td>4 weeks</td>
<td>80mg</td>
</tr>
<tr>
<td>Festive 2013</td>
<td>20646</td>
<td>20212</td>
<td>434</td>
<td>2.10%</td>
<td>4 weeks</td>
<td>80mg</td>
</tr>
<tr>
<td>Summer 2014</td>
<td>9215</td>
<td>9046</td>
<td>169</td>
<td>1.83%</td>
<td>2 weeks</td>
<td>80mg</td>
</tr>
<tr>
<td>Festive 2014</td>
<td>17855</td>
<td>17504</td>
<td>351</td>
<td>1.97%</td>
<td>4 weeks</td>
<td>50mg</td>
</tr>
<tr>
<td>Summer 2015</td>
<td>7352</td>
<td>7167</td>
<td>185</td>
<td>2.52%</td>
<td>2 weeks</td>
<td>50mg</td>
</tr>
<tr>
<td>Festive 2015</td>
<td>16225</td>
<td>15773</td>
<td>452</td>
<td>2.79%</td>
<td>4 weeks</td>
<td>50mg</td>
</tr>
<tr>
<td>Summer 2016</td>
<td>8297</td>
<td>7998</td>
<td>299</td>
<td>3.6%</td>
<td>2 weeks</td>
<td>50mg</td>
</tr>
<tr>
<td>Festive 2016</td>
<td>18895</td>
<td>18270</td>
<td>625</td>
<td>3.31%</td>
<td>4 weeks</td>
<td>50mg</td>
</tr>
<tr>
<td>May 2017</td>
<td>3668</td>
<td>3547</td>
<td>121</td>
<td>3.3%</td>
<td>1 week</td>
<td>50mg</td>
</tr>
</tbody>
</table>

*Includes those where driver was so impaired they were physically were unable to provide a breath test specimen

They do, however, record the number of breath tests conducted during their specific ‘Festive’ and ‘Summer’ drink drive campaigns. These periods give some insight into the levels and trends in failed or refused tests carried out in Scotland over the 2013-2017 period – see Figure 6.

In the first nine months following the introduction of the new limit, police recorded 12.5% fewer drink drive positive breath tests. However, during Scotland’s annual Festive drink drive enforcement campaign, the number of drivers who were stopped and found to be over the limit rose in 2016/17 (2nd December 2016 to 2nd January 2017), compared with the same period in 2014/15. Of these, 46 drivers were caught between 6-10am – more than double the number in the previous year. Different tactics and strategies in policing are likely to affect the outcomes each year.

47 Scottish Government, ‘Rise in Festive Drinkers’ Jan 2017
4. Casualties involving drink driving

As a result of actions to cut drink driving, along with safer roads and safer vehicles, the number of casualties involving drink driving have plummeted. In 1979 (the first year of accurate monitoring) 1,640 people were killed and a further 29,790 were injured in collisions in which a driver or rider was over the drink drive limit; by 2015 this had fallen to 200 people killed and 8,270 injured. However, the Department for Transport says there has been no significant reduction in deaths since 2010.

Casualty numbers and trends

In 2015, 1,730 road users were killed in Great Britain. Of that number, the final estimate of the number of deaths in drink driving collisions was estimated at 200. Drink driving fatalities made up 11% of all fatalities on Britain’s roads in 2015.

This definition leaves out casualties in collisions where a driver had been drinking but had a BAC below the legal limit. A proportion of these casualties could have been avoided if the drivers concerned had not been drinking – up to about nine tenths for deaths when a driver was just below the limit. No statistics in Great Britain take these avoidable casualties into account.

Drink drive collisions according to this definition accounted for 5% of all reported road collisions in 2015. There were 8,470 casualties (all severities) in these drink drive collisions in 2015.46

Over the last five years the proportion of all deaths attributed to alcohol has changed little in Great Britain, whereas in other European countries, such as Germany, progress has been much more rapid.49

It is possible that, if fatalities above 50mg/100ml BAC but below 80mg/100ml deaths attributable to alcohol were included, the figures for Great Britain would be similar to other European countries with good road safety performance.50

Socio-economic cost of casualties

In 2016, the total value of prevention of reported road collisions was estimated at £16.1 billion. The estimated value of preventing a death in 2015 was £1,783,556 with £2,005,664 per fatal collision.51

The estimated value of prevention of reported road collisions attributed to alcohol in 2015 equates to £701m.

Self-reported drink driving statistics

The Department for Transport also publishes self-reported drink drive statistics from the Office of National Statistics collected as part of the Crime Survey for England and Wales. The survey, conducted since 1981, includes up to 50,000 households across England and Wales.52

As part of the 2014-15 survey, respondents are asked, “In the last 12 months how often, if at all, have you driven when you think you may have been over the legal alcohol limit?” 6.2% of drivers reported to have driven above the legal alcohol limit ‘at least once’ while 93.8% of drivers reported ‘not at all’.53

High risk groups

Age

Young people, particularly young males, are over-represented in the statistics on drink driving casualties.

The proportion of drivers killed over the limit is

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53 Department for Transport, 2017. Reported drinking and driving, RAS1001
considerably higher amongst those aged 20-29. In 2015, 28% of those killed from this age group were found to be over the limit, compared with than 10% for those aged over 40. Figure 8 shows that younger drivers involved in collisions are much more likely than older drivers to be over the limit.

**Figure 8. Drivers aged over 17 involved in collisions who failed breath tests, by age, 2016**

However, young drivers are not the only offenders. All age groups still represent a risk and some older drivers have still not learnt the lesson.

**Gender**
In 2014, men made up 70% of those killed or seriously injured on Great Britain’s roads. 77% of those killed or seriously injured in drink drive incidents are men.

However, recent research suggests that these numbers may change. Drinking among British Women: how much is too much? showed that whilst drink drive convictions as a percentage of full licence holders halved for men between 2003 and 2012, for women there has been little change (0.07% to 0.06% between 2003 and 2012). The report showed that within this period, the number of women convicted of drink driving offences rose significantly and that women are less likely than men to be tested for drink driving by police. As Figure 8 shows, however, young women remain less than twice as likely as men to fail or refuse a breath test following a collision.

**Time of year**
Drink drive collisions and deaths generally show a slight fall in December and the early months of the year. This may be as a result of drink drive campaigns focused around Christmas combined with increased levels of enforcement in this period. In 2015, December was the month when the highest numbers of breath tests were carried out (107,474) making up 21% of all breath tests.

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**Sources of data on drink driving**
There are a number of sources of data on drink-drive in Great Britain. Unfortunately these are not collated on a single site so we have listed the main ones here.

**Department for Transport**
The Department for Transport publishes estimates of the number of collisions and casualties involving a driver or rider over the legal drink drive limit. These are based on reports by police and coroners (Procurators Fiscal in Scotland). See Reported road casualties in Great Britain, estimates involving illegal alcohol levels: 2016.

The Department also publishes data on drink-drive collisions and casualties, breath tests conducted, the number of breath tests failed, collisions by time of day and a number of other figures based on information collected by police.

**Home Office**
The Home Office publishes the number of roadside breath tests administered annually by the police and the number of tests that are failed or refused. These data are also disaggregated geographically by police force. See Criminal Justice Statistics Quarterly (December edition).

**National Police Chiefs Council**
The NPCC publishes a summary of the breath tests carried out by police during their seasonal campaigns. The figures from the Summer 2017 campaign from England and Wales, shows 35,382 breath tests were administered, 10% of which were positive, or where the driver refused to provide a specimen.

**Office for National Statistics**
The Office for National Statistics publishes the Crime Survey for England and Wales. This household survey reveals trends of crime that is not necessarily reported to or detected by the policy, including some drink driving. This reveals the scale of drink driving prevalence, with 6.2% of adults in 2014/15 saying that they drove while over the limit within the previous year.

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Recent policy debate in the UK as largely focused on the drink drive limit. The UK Government continues a longstanding policy based on enforcement and publicity at the 80mg limit. It resists calls for a lower limit on the grounds that it would have no effect as most serious drink drive collisions involve offenders who are well over the 80mg limit. The Scottish Government has chosen a different path and introduced a lower drink drive limit in Scotland. The Northern Ireland Assembly has passed legislation which goes even further, though implementation is delayed.

The North Report

In December 2009 Sir Peter North was commissioned by the then Labour Government to review the UK law on drink and drug driving. In his report, published June 2010, Sir Peter recommended that the legal BAC limit be reduced to 50mg/100ml. The report concluded that lowering the limit could avoid many deaths and serious collisions.\(^59\)

The report highlighted evidence that there was support for a lower limit in the UK and for retaining disqualification as the penalty for drink driving, even if the limit were lowered.

Sir Peter rejected calls to reduce the limit to 20mg, stating that it would be ‘too great a step’ to consider an ‘effectively zero’ limit at that time. He suggested that a 50mg limit ‘struck the right balance’ between penalising drink drivers and allowing for the ‘casual drinker’ within the law.

In late summer 2010, under a new Government, the House of Commons Transport Select Committee conducted an inquiry into the North Report. The Committee endorsed many of the recommendations made but not the one to lower the limit to 50mg. They stated that ‘the Government should aim for an ‘effectively zero’ limit of 20mg/100ml but [we] acknowledge that this is too great a step at this stage.’ The response argued that an ‘interim’ lowered BAC limit of 50mg/100ml would be less effective than focusing on ‘stricter enforcement of the current limit’ and the beginning of ‘a public education campaign to help achieve public acceptance of a 20mg/100ml limit.’\(^60\)

In its response to the North Report and to the Select Committee, the Government committed to a number of measures including the closure of loopholes such as revoking the right of people to opt for a blood test when their evidential breath test result is less than 40% over the limit (in practice, 40-50mcg) – the so-called ‘statutory option.’ With regards to the limit, the Government stated that the ‘priority on drink driving must be to make the present regime work better. We do not propose to lower the prescribed alcohol limit for driving as well.’\(^61\)

The Conservative Governments, post-2015, have remained supportive of tackling drink driving and stated that drink driving ‘remains a priority.’\(^62\) This continues the longstanding policy of UK Governments opposing a reduction in the BAC limit (in England and Wales) and focusing on changing attitudes and deterring drink driving through education and enforcement.

The current Government has placed great importance on the use of education and continues to fund the THINK! drink driving campaign.\(^63\)

The Government has stated that they will monitor and consider the examples of Scotland and elsewhere. In a House of Commons debate in 2016, the Government committed to meeting with the Scottish Government to explore Scotland’s experience\(^64\) of a lower limit.\(^65\) However, no timeframe was given for this commitment.\(^66\)

61 Department for Transport, 2011. Policy paper: The government’s response to the reports by Sir Peter North CBE QC and the Transport Select Committee on drink and drug driving.
63 THINK! Website, 2016.
64 In a study funded by National Institute for Health Research (UK), effects of the change in Scotland over the first two years compared with the preceding two years are being examined. Recorded collision data for Scotland are being compared with corresponding data for England and Wales, effects on alcohol consumption and incidence of effects according to level of deprivation are being investigated, and an economic evaluation of the change is being conducted. The report from the University of Glasgow is expected in the first half of 2018.
In a press report in December 2016, the Transport Secretary again stated that the drink drive limit would not be cut as ministers do not want to penalise motorists for simply having ‘a glass of wine at the pub’.67

In 2016 the House of Commons Transport Select Committee considered drink drive enforcement issues in its Road Traffic Law Enforcement inquiry. Its report recommended that the Government consider:

1) Incorporating whether a driver or rider has been drinking alcohol when they are not over the legal limit into STATS19 police data-collection,

2) Assessing ‘the experiences of other countries that have lowered their drink level, particularly Scotland.’68

In response to the report, the Government stated that the variables for STATS19 collection are reviewed regularly by the Standing Committee for Road Accident Statistics and that the Department would propose the amendment at the next review. The Government also stated that they would monitor and consider the examples of Scotland and elsewhere.69

Parliamentary attempts to reduce the drink drive limit

Parliamentarians of various parties in both Houses have sought over many years to reduce the BAC limit.70 A recent example was Lord Brookes’ private members bill which sought an amendment to the Road Traffic Act 1988 ‘to lower the prescribed limit of alcohol in relation to driving or being in charge of a vehicle; and for connected purposes.’71 Although opposed by the Government, the Bill completed its Third Reading in the Lords on 5 May 2016. However, there was insufficient time for the Bill to move to the Commons before the end of the 2015/16 session. The Bill made no further progress.

67 Daily Mail, 6 December 2016. ‘Drink-drive limit in England will not be cut, Transport Secretary confirms because ministers do not want to penalise motorists having ‘a glass of wine at the pub’
70 HoC Library. Standard Note SN00788 Driving: Alcohol
Fifty years of the breathalyser - where now for drink driving?

Parliamentary Advisory Council for Transport Safety

A number of policy levers are available to make further inroads into the levels of drink drive casualties. Apart from changes to the BAC limit, enhancements could be made to intelligence, policing techniques, better use of technology and improved measures to reduce reoffending. These are reviewed here.

A number of measures have been proposed on how to tackle drink driving more effectively in Britain in the future. Some major options are briefly reviewed below.

### Lowering the limit

There is a direct link between alcohol in the blood and driving performance, even at levels well below the current legal limit. Decades of evidence have shown that alcohol affects driving performance and directly increases road collision risk. Given this proven impairment, on safe system principles alone, drivers should not be permitted to drive with BAC levels as high as 80mg.

Professor Allsop estimated that lowering the limit in England and Wales to 50mg of alcohol per 100ml of blood could potentially avoid 25 deaths and 95 serious injury casualties each year. \(^ {72}\)

Opinion polls have shown public support for lowering the legal drink drive limit. A recent poll showed 77% of people favoured a 50mg limit. \(^ {73}\)

Lowering the BAC limit is the policy most often recommended by campaigners and the most contentious. It might galvanise a new approach to tackling drink driving, as it did in Australia, Switzerland Scotland. However, it would be essential to enhance publicity and enforcement in parallel and to avoid any diminution of current penalties.

### More education and publicity

Increased or improved education and publicity on the dangers of drink-driving and the legal and other consequences for offenders may help persuade or deter drivers from drink driving.

Furthermore, making it clearer what BAC limits mean to an individual driver may contribute to people making more informed choices about drinking alcohol and driving. The levels of alcohol in any one individual’s blood will depend on a number of factors. These include the amount consumed over a given period, food consumption, body weight and gender. Females on average will have up to a 50% greater BAC for the same body weight as a male due to a higher proportion of body fat which absorbs very little of any alcohol consumed.

### Food and BAC

Calculations by Widmark also suggest the importance of food consumption which has been shown to slow absorption and eliminate alcohol in the blood stream. \(^ {75}\) Dr Steven Karch provided evidence on the effects of alcohol on males who consumed a typical two course meal and those who consumed nothing; results showed those who had eaten had around half of the BAC level of those who had not. \(^ {76}\) Better education on the dangers of drink driving as well as the effects of alcohol consumption on the driving task may lower cases of drink driving.

DIY testers may be useful, particularly to those who wish to ensure they are clear of alcohol or under the limit ‘the morning after’. EN16280 is a good benchmark for consumer devices. The quality and accuracy of consumer breathalysers can vary, cheaper units should be avoided and only reputable devices should be used. The breathalyser should be re-calibrated at the manufacturer specified intervals to maintain accuracy.”

Drink driving campaigns have been running for over 50 years. They have used television adverts and more recently have switched to social media. The campaigns target those considered most likely to drink and drive.

In December 2016 the THINK! campaign aimed to deter men aged 17 to 34 from ‘having a second drink’. \(^ {74}\) This was a deliberate strategy by the Department for Transport based on research. However, it

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\(^ {72}\) Professor Richard Allsop, 2015. Saving Lives by Lowering the Legal Drink-Drive Limit, University College London.

\(^ {73}\) Alcohol Health Alliance, 2015. National attitudes and behavior survey.

\(^ {74}\) Department for Transport, 2016. ‘THINK! drink drive campaign targets young men digitally this Christmas’.


undermined the traditional, simple “Don’t drink and drive” message and was seen as unhelpful by the authorities in Scotland where a lower limit applies.

The number of failed or refused breath tests does not directly correspond with the number of tests conducted. The percentages of failed or refused breath tests are lower in June and December than throughout the rest of the year perhaps due to the combination of increased testing and awareness campaigns which might discourage offending and potentially allow less scope for targeting.

**Introduction of mobile evidential breath testing instruments**

The breathalysers used by police at the roadside are screeners which estimate how much alcohol a driver may have consumed. A positive (failed) result without an additional evidential test is likely to be challenged in court by the defence.

A driver who provides a positive roadside breath test device may be arrested and taken to a police station where an evidential test is taken. An evidential test could include breath, blood or urine and is admissible in court as evidence. Normally the police use a breath test machine which will have type approval for this purpose. The National Police Chiefs Council would like to see mobile evidential breath-testing instruments (MEBTI) available for the police in the UK. This would enable police officers to take evidential samples at the roadside. It would be much quicker and more efficient for the police and reduce the chance that a suspect would fall below the BAC limit before an evidential test can be administered. It might also be a greater deterrent as the police would be able to spend more time at the roadside dealing with drink driving offenders. Australia and some other countries use such equipment, combined with random breath testing.

Provision for use of such equipment was made in the Serious and Organised Crime Act 2005. However, the Home Office has not yet been able to give type approval for any such equipment.

**Extending police powers to conduct breath tests**

In Great Britain, breath testing may be used when there is reasonable cause for suspicion that a driver may have been drinking but police do not have powers to conduct random breath testing. The phrase ‘random breath testing’ is sometimes misunderstood.
It normally involves testing carried out at locations selected on the basis of intelligence (not randomly) and every passing driver has the same random probability of being stopped and tested. (It is not an entirely random process in the statistical sense.) Countries such as Australia, New Zealand and a large proportion of Europe have random breath testing and use it to undertake much higher levels of testing. A modified version – mandatory alcohol testing – takes place in Ireland (but not Northern Ireland).

Random breath testing has been suggested as a deterrent measure. Random breath testing is often accompanied by publicity that has the potential to bring the issue of drink driving into the public eye. The UK Government has no plans to introduce random breath testing.

The position of the National Police Chiefs Council is that they have adequate powers to stop and test drivers and that random breath testing or mandatory alcohol testing powers are not required.

Introducing random breath testing in the UK could require an increase in resources for the police and the cost of publicity would need to be considered.

**Alcohol interlocks**

Alcohol interlocks require the driver to take a breath test before the vehicle will start. A report from ETSC shows that they are used in a number of countries on a voluntary or mandatory basis for professional drivers and sometimes for management of drink drive offenders. The introduction of “alcogates” at ports in Sweden has also shown some success. Various studies show they have potential deter and prevent drink driving. The technology is not necessarily expensive and some employers, such as coach operators, use them voluntarily. Their use for management of drink drive offenders is more challenging and the context for each country is quite different.

The European Commission is proposing amendments to the General Safety Directive for vehicles. These include a requirement for all vehicles to be readily capable of accommodating an alcohol interlock device, thus obviating the need for expensive adaption if such a device is deemed necessary.

Greater use of alcohol interlocks could be considered in the UK, both for professional drivers, and for high risk offenders in association with rehabilitation courses.

**More support from the pub and drink industry**

Collaboration with the pub and drinks industry to promote alcohol-free drinks could be a potentially important measure. Named driver campaigns such as Coca Cola’s ‘Designated Driver’ campaign have had some measure of success. No doubt more could be done in this area.

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81 A list of countries with Random Breath Testing is available here: http://apps.who.int/gho/data/view.main.54620
83 ETSC, 2016. Alcohol interlocks and drink driving rehabilitation in the EU – Guidelines for Member States.
85 European Transport Safety Council [ETSC], 2016.
86 See the proceedings of the FACTS/ETSC Safe and Sober conference, held 4 July 2017, Scotland http://www.facts.org.uk/2017/06/safe-and-sober-scotland-event-tuesday-4th-july/
87 Coca Cola Website, 2014. More than one million people drink drive every week.
Great progress has been made in reducing driving over the past 50 years. But the problem remains serious and more needs to be done. There is no single solution and the implication of cuts in roads policing need to be addressed realistically. This report calls for a renewed, ambitious and comprehensive strategy.

Over the past fifty years in the UK, great progress has been made in reducing the level of drink-driving. The UK has developed an excellent scientific, legal, technical and administrative framework to deter and detect drink driving. As a result, public attitudes and behaviour have changed dramatically, and the number of death involving a driver over the legal limit has fallen to the lowest on record.

Over the past five years, there has been something of a plateau and some signs are worrying. Deaths and serious injuries have not fallen significantly and alcohol remains one of the major contributory factors in fatal collisions. The levels of overall roads policing continue to fall and levels of drink drive enforcement are falling too. Enforcement levels vary enormously across the country: in some parts, it is clearly not a priority. There is little prospect that levels of roads policing will be fully restored, at least in the short to medium term. The Government does not appear to have any new policy levers in mind. The level of drink driving is partly a function of alcohol consumption across society. If that rises, it is not clear that the road safety system has the capacity to respond.

The UK Government does not appear to have a detailed, overall strategy to tackle drink driving. A thorough and realistic review of data, operations, resources and policy options is required. This should include:

- A review of the experience of Scotland and other countries and reconsideration of a 50mg /100ml BAC limit for England and Wales;
- A strategy for roads policing that recognises resource constraints and addresses the implications;
- A collation of all relevant data on alcohol consumption and drink driving;
- Better intelligence to identify and target drink drive offenders;
- A review of the potential role of alcohol interlocks in the UK;
- Further research into which policing strategies are most effective;
- A review of the availability and uptake of drink drive rehabilitation courses;
- Increased efforts to achieve Home Office Type Approval for mobile evidential breath testing instruments;
- Continued support for THINK! campaigns on drink driving;
- Greater education for drivers on the dangers of drink driving and on how alcohol units consumed relate to BAC, including the effects of volume consumed in relation to time, gender, body weight and food consumption;
- Greater engagement with the pubs and drinks sector to promote awareness and responsible drinking.

Any successful policy will include a combination of various measures. Improved enforcement, and increased, targeted education may well be the focus for the current Government but all measures should be explored in depth.
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