



**BRIEFING PAPER**

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# Laser Misuse (Vehicles) Act 2018

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## Summary

This paper provides an overview of the [Laser Misuse \(Vehicles\) Act 2018](#). The Act provides for new offences of shining or directing a laser beam towards a vehicle or air traffic facility, for which the maximum penalty would be imprisonment up to 5 years, an unlimited fine, or both.

It is a response to concerns expressed over the years, particularly in the aviation industry and by the British Airline Pilots Association (BALPA), about laser pens being shone in the direction of aircraft, threatening the safety of the craft and the eyesight of pilots and other personnel.

It creates offences, to:

- direct or shine a laser beam towards a vehicle in such a way as to dazzle or distract, or be likely to dazzle or distract, the person driving, piloting, navigating or otherwise in control of that vehicle when it is moving or is ready to move; and
- direct or shine a laser beam towards an air traffic facility, **or** to direct or shine a laser beam towards a person providing air traffic services, in both cases in such a way as to dazzle or distract, or be likely to dazzle or distract a person providing air traffic services.

The definition of 'vehicle' is widely drawn and includes not just planes, trains, ships and cars but bicycles, mobility scooters and horse-drawn carriages.

**Paper does not deal with sale of laser pens**, which is a separate consumer issue and not covered in this Bill. For more information on this issue see the [2017 Call for Evidence](#) and the Government's [statement on 8 January](#).

Information on other transport issues can be found on the [House of Commons Library website](#).

# 1. Extent of the problem

For several years now there have been increasing concerns about what are generally referred to as 'laser attacks', particularly those targeting aircraft pilots.

For attacks affecting **aviation**, the aviation regulator, the Civil Aviation Authority (CAA), has figures for 2009-17. These show that in 2017 there were 989 laser incidents affecting UK aviation, a decrease from a peak of 1,912 in 2011 but an increase on the 746 reported in 2009:<sup>1</sup>

## Laser Incidents Reported to the CAA

Year	Number of incidents
2009	746
2010	1500
2011	1912
2012	1571
2013	1394
2014	1442
2015	1439
2016	1258
2017	989

Heathrow Airport experiences by far the most attacks of any individual airport.

Aviation is not the only sector affected. The British Transport Police (BTP) report that between April 2011 and November 2017, a total of 578 laser incidents were recorded on the **railways**. This equates to approximately 96 incidents per year.<sup>2</sup>

<sup>1</sup> CAA, [Laser incidents](#) [accessed 30 May 2018]

<sup>2</sup> DfT press notice, "[Government to clamp down on unsafe lasers](#)", 8 January 2018

## 2. Risks

The risks associated with laser attacks are well documented. The Secretary of State for Transport, Chris Grayling, has said: "Shining a laser pointer at pilots or drivers is incredibly dangerous and could have fatal consequences".<sup>3</sup> In its 2017 Call for Evidence the DfT stated that:

For transport, the most serious risk from the malicious use of laser pointers is an aviation, road, rail or maritime related accident. A single accident as a result of exposure to a laser beam could lead to an accident with significant loss of life and economic consequences. This risk increases as more powerful devices become available.<sup>4</sup>

As indicated above, this type of attack is overwhelmingly targeted at aviation. BAE Systems describes how the attacks generally happen:

Most reported attacks took place during take-off and landing, or on hovering police helicopters, and are carried out using cheap, high-powered handheld devices that are readily available on the internet. The attacks can distract pilots and flight crew, obscure instruments and dials, and cause short-lived 'flash' blindness or even permanent eye damage.<sup>5</sup>

The British Airline Pilots Association (BALPA) provides further information on the risks from this sort of attack:

As a pilot, the major concerns surrounding a laser illumination are those of startle and distraction but it is also very likely that an event may result in temporary vision interference in the form of:

**(1) Flash blindness (a visual interference that persists after the source of illumination has been removed)**

**(2) After-image (a transient image left in the visual field after exposure to a bright light)**

**(3) Glare (obscuration of an object in a person's field of vision due to a bright light source located near the same line of sight).**

Laser effects on pilots occur in four stages of increasing seriousness – distraction, disruption, disorientation, and incapacitation. Given the many incidents of cockpit illuminations by lasers, the potential for an accident definitely exists but the fact that there have been no laser-related accidents to date indicates that the hazard has, up until now, been successfully managed. With the increase in sales of lasers, and the rapid increase in power, managing the hazard will undoubtedly become more of a challenge unless something is done about it. Technologies are available to mitigate the effects of lasers, but are cumbersome, do not provide full-spectrum protection, and are unlikely to be installed on airline flight decks in the foreseeable future. Systems that detect where a laser is being fired from are also being

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<sup>3</sup> DfT press notice, "[New powers to crack down on laser attacks](#)", 5 February 2017

<sup>4</sup> DfT, "[Call for evidence: Laser pointers](#)", 12 August 2017, p12

<sup>5</sup> BAE Systems press notice, "[Our engineers develop novel technology to protect pilots from laser attacks](#)", 12 September 2017

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developed but, again, these are some way off and won't stop the strike in the first place.<sup>6</sup>

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<sup>6</sup> " [Lasers - consultation, advice and action](#) ", Steve Landells – *BALPA blog*, 22 September 2017 [emphasis in original]

## 3. The 2018 Act

### 3.1 Background

In February 2017 the Government announced its intention to make shining lasers at any transport operator an offence. It argued that the police do not have the powers to effectively tackle and investigate the inappropriate use of laser devices against aircraft, trains, buses and other forms of transport.<sup>7</sup>

Powers to create this offence were set out in clause 22 of the [Vehicle Technology and Aviation Bill](#), which progressed to the end of its Commons Committee stage before the Prime Minister called a General Election on 18 April 2017. The 2015 Parliament was subsequently dissolved on 3 May and the Bill fell.<sup>8</sup>

All of the documentation relating to the Act when it was going through Parliament is available on the [Bill page](#).

#### Sale of lasers

In the 2015-16 session of Parliament the Conservative MP Rehman Chishti put forward a [Private Members Bill](#) to “make the sale, ownership and use of portable laser emitting devices with output power of more than 1 milliwatt unlawful in certain circumstances; and for connected purposes”. The Bill did not progress.

For more information on this issue see the [2017 Call for Evidence](#) and the Government’s [statement on 8 January](#).

In the June 2017 Queen’s Speech the Government announced that many of the issues that would have been legislated for in the VTA Bill would be brought forward in separate bills, but lasers were not mentioned.<sup>9</sup> However, in December 2017 the Government published the *Laser Misuse (Vehicles) Bill*, intending to widen the powers it had previously sought to take in the VTA Bill.<sup>10</sup>

### 3.2 Section 1: offence of shining or directing a laser beam towards a vehicle

Section 1 makes it an offence to direct or shine a laser beam towards a vehicle in such a way as to dazzle or distract, or be likely to dazzle or distract, the person driving, piloting, navigating or otherwise in control of that vehicle when it is moving or is ready to move.

The phrase “moving or ready to move” was inserted by the Government at Report stage in the Lords, replacing the phrase “on a journey”. The minister, Baroness Sugg, explained:

Our intention in the Bill has always been to capture when a vehicle is in motion and also when it is stationary but about to travel, as there is still a safety risk if the person in control were to be dazzled or distracted at this stage. This includes journeys of any length and journeys that begin and end in the same place, such as training flights. It also includes taxiing in the case of aircraft, as well as temporary stops, such as at a train stations, bus stops,

<sup>7</sup> Op cit., “[New powers to crack down on laser attacks](#)”

<sup>8</sup> During the ‘wash up’ process, see: UK Parliament, [Wash up](#) [accessed 30 May 2018]

<sup>9</sup> HMG, [Queen’s Speech 2017: background briefing notes](#), 21 June 2017

<sup>10</sup> DfT press notice, “[Tough new penalties for misuse of lasers](#)”, 20 December 2017

traffic lights or when waiting to take off. To clarify this, the Government have laid the amendment to remove the references to “journey” and refer instead to when a vehicle is “moving or ready to move”. This wording is wider than “journey” and removes the ambiguity of what actually constitutes a “journey”.

To strengthen this further we have, in Amendment 3, defined that when a mechanically propelled vehicle’s engine or motor is running, it should be treated as being ready to move. It is important that we include all safety-critical points, for example when an aircraft is at a stand, as this could have safety implications for persons on the ground in the immediate vicinity.<sup>11</sup>

The Government also supported an amendment from the Cross-Bench peer Lord Craig of Radley to widen the offence so as to cover both the pilot of an aircraft and other flight deck or crew members whose contribution to the control responsibilities of the pilot are critical to the safe operation of that aircraft.<sup>12</sup>

Subsection (2) provides that it would be a defence for a person charged with the offence to show:

... either that they had a reasonable excuse for shining or directing a laser beam towards a vehicle, or did not intend to shine or direct a laser beam towards a vehicle, and that they exercised all due diligence and took all reasonable precautions to avoid shining or directing the laser beam towards a vehicle.<sup>13</sup>

The Explanatory Notes indicate that this defence is intended as something which could be relied on:

... by persons who, for example, when in distress shine or direct a laser beam at a rescue vehicle to obtain its attention, or who accidentally shine or direct a laser beam towards a vehicle when using a laser for a legitimate reason.<sup>14</sup>

The offence would be ‘triable either way’, meaning that it may be tried either as an indictable offence or a summary offence. *Oxford Reference* explains:

When an offence is triable either way, the magistrates’ court must decide, on hearing the initial facts of the case, if it should be tried on indictment rather than summarily (for example, because it appears to be a serious case).<sup>15</sup>

The maximum penalties, set out in subsection (4) are:

- on **summary conviction in England and Wales**, imprisonment for a term not exceeding 12 months, a fine or both;
- on **summary conviction in Scotland**, imprisonment for a term not exceeding 12 months, a fine not exceeding the statutory maximum or both;
- on **summary conviction in Northern Ireland**, imprisonment for a term not exceeding six months, a fine not exceeding the statutory maximum or both; and

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<sup>11</sup> [HL Deb 27 February 2018, c601](#)

<sup>12</sup> *Ibid.*, c605

<sup>13</sup> [Explanatory Notes to Bill 177 of 2017-19](#), 7 March 2018

<sup>14</sup> *Ibid.*

<sup>15</sup> Oxford Reference, [Offence triable either way](#) [accessed 30 May 2018]

- on **conviction on indictment**, imprisonment for a term not exceeding five years, a fine or both.

In the Lords there was some concern about the use of the phrase “likely to dazzle or distract” used in the offence.<sup>16</sup> Baroness Sugg explained that as this would be a ‘strict liability’ offence:

Such an offence requires no proof of intention or knowledge of wrongdoing and therefore should be kept within appropriate bounds. There is no need to prove intent to harm, or to dazzle or distract. When the police try and prosecute more serious cases under the offence of endangering an aircraft, they are required to prove recklessness or negligence, which can make prosecutions difficult. Under the new offence, it will no longer be necessary to prove that the accused was reckless or negligent. It is therefore the Government’s opinion that the offence as it is now drafted will make it easier to prosecute without going further and criminalising behaviour that does not present a risk to the public.<sup>17</sup>

At Lords Committee stage there was a debate about the use of the term ‘laser beam’, with some Lords concerned that it might inadvertently exclude from the offence devices which omit fire bursts or pulses of light.<sup>18</sup> In her response the minister, Baroness Sugg, sought to reassure their Lordships:

I can assure noble Lords that the Bill is not limited to any particular type of laser and that all variants of laser should be captured by this ... I sought further expert clarification on the definition of a laser, including from the Department for Transport’s chief scientific adviser. All types of lasers emit focused beams. Therefore, despite the varying properties that different types of lasers will have, all will still produce a beam, and it is this beam that will dazzle or distract the person in control of the vehicle.

The term “laser” would cover the pulse and burst laser products that the noble and gallant Lord referred to. These products still emit a laser beam, just of a shorter duration [...] The term “laser” is generally used to refer to the machine or equipment used to produce a particular form of light—in other words, to the device itself.<sup>19</sup>

### 3.3 Section 2: offences relating to air traffic services

Section 2 was not originally part of the Bill which was introduced in the House of Lords. It was introduced by the Government at Report stage following representations from a number of Members of the House of Lords concerned that as initially drafted air traffic facilities would not be properly protected from laser attacks.<sup>20</sup>

The section creates two offences: making it an offence either to direct or shine a laser beam towards **an air traffic facility**, or to direct or

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<sup>16</sup> See, e.g. Baroness Randerson and Lord Tunnicliffe, [HL Deb 27 February 2018, cc602-3](#)

<sup>17</sup> Ibid., c604

<sup>18</sup> See, e.g. Lord Craig of Radley, [HL Deb 23 January 2018, c954GC](#)

<sup>19</sup> Ibid., c956GC

<sup>20</sup> See, e.g. Baroness Randerson and Lord Tunnicliffe, *ibid.*, cc957-9GC; and [HL Deb 27 February 2018, cc608-9](#)

shine a laser beam towards **a person providing air traffic services**, in both cases in such a way as to dazzle or distract, or be likely to dazzle or distract a person providing air traffic services.

Subsection (2) provides a defence for a person charged with one of the offences; it is identical to that set out in section 1 (above).

The available penalties are the same as for the offence set out in section 1 (above).

### 3.4 Remaining provisions

Section 3 **interprets** some of the key terms used in the Act. It makes it clear that the offence can be committed against any 'vehicle', which "would apply to all forms of vehicles, including aircraft, road vehicles, trains, trams, ships, hovercrafts, invalid carriages, and cycles".<sup>21</sup>

Section 3 was not originally part of the Bill which was introduced in the House of Lords. It was introduced by the Government at Report stage as it became clear that the definition of 'vehicle' in the original Bill was not comprehensive enough. It means that, following repeated representations from Lord Craig the definition includes horse-drawn vehicles.<sup>22</sup>

Section 4 provides for **extent**. The Act extends to England and Wales, Scotland and Northern Ireland.

The Explanatory Notes make it clear that:

Insofar as the Bill relates to vehicles in Northern Ireland other than aircraft, vessels, hovercraft and submarines, a legislative consent motion would be needed from the Northern Ireland Assembly in relation to such forms of transport in Northern Ireland. A legislative consent motion would also be needed from the Scottish Parliament for vehicles in relation to which regulation is devolved in Scotland, including vehicles which are off-road, animal drawn vehicles and pleasure vessels.<sup>23</sup>

It also states that the **new offences under sections 1 and 2 come into effect two months after Royal Assent, i.e. on 10 July 2018.**

When the Bill was given Royal Assent on 10 May Brian Strutton, General Secretary of the British Airline Pilots' Association (BALPA) said that:

Pilots have been pushing for tougher punishments and greater police powers around lasers for many years.

We are very pleased the government has taken up this important issue and has now passed this new legislation which we hope will have a meaningful effect on the number of laser attacks on aircraft and other modes of transport.<sup>24</sup>

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<sup>21</sup> [Explanatory Notes to Bill 177 of 2017-19](#), 7 March 2018

<sup>22</sup> [HL Deb 27 February 2018, cc606-7](#)

<sup>23</sup> [Explanatory Notes to Bill 177 of 2017-19](#), 7 March 2018

<sup>24</sup> DfT press notice, "[New measures to tackle the misuse of lasers gain Royal Assent](#)", 10 May 2018

## 4. Other legislation

The use of laser pens from the ground to attack or disrupt aircraft can be charged as an offence under the *Air Navigation Order (ANO) 2016* ([SI 2016/765](#)).

Under Article 225 a person “ must not in the United Kingdom direct or shine any light at any aircraft in flight so as to dazzle or distract the pilot of the aircraft ” and, more seriously, under Article 240 a person “ must not recklessly or negligently act in a manner likely to endanger an aircraft, or any person in an aircraft ”.

Under Article 265 and Schedule 13 to the ANO the maximum penalty for an offence under Article 225 is a fine not exceeding £2,500. For an offence under Article 240, the maximum penalty on summary conviction is a fine in England and Wales or a fine (not exceeding the statutory maximum) in Scotland and Northern Ireland, or on conviction on indictment a fine or imprisonment for a term not exceeding five years, or both.

The DfT stated in its 2017 Call for Evidence that:

This legislation [Article 240] is not an effective tool for the police because in practice, it is very difficult to prove endangerment of an aircraft. This means the powers and penalties this offence comes with are not able to be used.

Across other modes of transport, there is legislation that can be used to prosecute people shining lasers at vehicles. However, these are not laser specific and do not have similar penalties.<sup>25</sup>

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<sup>25</sup> Op cit., [Call for evidence: Laser pointers](#), p15

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