

## Health and Safety Guidance

### Laser Pointer Safety

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#### Legislation

##### Laser Misuse (Vehicles) Act 2018

The above 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/pointers 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' includes not just planes, trains, and cars but bicycles, mobility scooters and horse-drawn carriages.

The Act does not deal with sale of laser pens, which is a separate consumer issue. Anyone purchasing or acquiring low-powered lasers should do so through a reputable supplier.

#### General

Laser pointers (or pens) used in the University should be of Class 1, Class 2 as defined in the British Standards for laser safety. Current standard relating to laser safety are; BSEN 60825-1. Pointers of a class higher than Class 2 should not be used unless they have been measured and advice on their use has been sought from the University's Health and Safety Service (UH&SS).

The misuse of laser pointers (sometimes referred to as laser pens), as reported in the press, has generated public concern over the safety of these devices. The standards for laser safety set out seven classes of laser. These are; Class 1, Class 1M, Class 2, Class 2M, Class 3R, Class 3B and Class 4. The higher the Class number, the greater the power of the laser and the hazard posed by the laser.

The Radiation Protection division of the Public Health England (PHE) considers the professional use of a Class 1 or Class 2 laser pointer as a training aid in the workplace to be justified and regards these Classes of laser product as being generally adequate

for such use. The use of Class 3R laser pointers up to 5 mW may be justified for some applications in the workplace where the user has received adequate training.. PHE has urged Trading Standards authorities to use their powers to remove laser pointers of a higher than Class 2 from the general market. They are however still fairly easy to come by using online retailers and auction sites. Such devices are too powerful for general use as laser pointers and present an unacceptable risk of eye injury in normal reasonably foreseeable use – In 2016 over 157 permanent retinal eye burns have been documented from use of excessive laser pointers.

Schools / Professional Services should purchase laser pointers only from reputable suppliers in the UK who will sell laser pointers only of Class 1 & 2. Laser pointers can also be obtained from teaching Support. Contact; [teachingsupport@lboro.ac.uk](mailto:teachingsupport@lboro.ac.uk). Pointers should be marked clearly with the Class assigned to them under the British Standard. Schools / Professional Services should also review existing laser pointers which are in use to confirm that they are Class 1 & 2 and are marked accordingly.

Individuals using or wishing to use a hand held laser pointer which has not been measured to confirm its suitability for use should liaise with their Departmental Laser Safety Officer (or if the department/school doesn't have one then liaise with the UH&SS tel; – 222181 or email; [hse@lboro.ac.uk](mailto:hse@lboro.ac.uk)) in the first instance to determine if measurement of the pointer is necessary.

Green Laser pointers are visually brighter than red ones for the same optical power. This is because the green wavelength is close to the peak sensitivity of the eye. Some cheap red pointers are comparatively dim and not seen by all students in a well-lit lecture room. Further advice on existing laser pointers and on purchasing new pointers can be obtained from the UH&SS.

#### Misuse of laser pointers / pens

“Recreational” use of laser pens and pointers is strictly prohibited. Misuse of a laser pointer in such a manner that it could cause harm to anyone on or in the vicinity of campus shall be considered as gross misconduct and the appropriate penalty as laid down in the University’s ordinances shall be applied.

#### Document management table

Version	Owner	Revised by	Summary of revision	Date of revision
1	UH&SS	H Weaver	Original draft	Sept 2008
2	“	“	Regular review	May 2013
3	“	University Laser Safety Advisor & H Weaver	Up date logo and formatting references and technical data	Dec 2016
4	UH&SS	“	Update due to safety campaign	May 2017
5	“	University Laser Safety Advisor University H&S Mngr & H Weaver	Update due to introduction of new Regulation	Dec 2018