

Health and Safety Department

## **Laser Safety Policy**

# Laser Safety Policy

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## **1. University policy**

To ensure the safety of our staff, students and visitors, it is the policy of Loughborough University to have nominated Departmental Laser Safety Officers in all Departments which hold equipment containing class 3B or class 4 lasers. The role of the nominated Laser Safety Officer is to co-ordinate the safe use of lasers within the Department.

The University sees the appointment of competent Departmental Laser Safety Officers as vital in ensuring the health and safety of staff, students and visitors and in enabling the University to discharge its statutory duties.

The main legislation which is relevant to this subject is the Health and Safety at Work etc Act 1974, the Management of Health and Safety at Work Regulations 1999, The Supply of Machinery (Safety) Regulations 2008, and the Provision and Use of Work Equipment Regulations 1998.

Laser systems are not treated as an exceptional case in general safety legislation, they do not generate any unknown or unreasonable hazards. From the experiment/equipment designers and users point of view the equipment must be inherently safe when operated. This means that the maximum normal laser classification of equipment/system containing lasers will be 2M.

The essential health and safety requirements (EHSRs) have to be identified for the Supply of Machinery (Safety) Regulations 2008 and compliance with the Provision and Use of Work Equipment Regulations 1998 must be confirmed. Anyone; designing, supplying, purchasing or using must be familiar with these requirements. The regulations stipulate that the design and construction is such that it can be used, adjusted & maintained throughout ALL phases of its life without personal risk to anyone and without the need for additional personal protective equipment.

Equipment/experiments which are designed, built or used in the University should include safety components. Safety should be primarily ensured through good design and hazards eliminated or controlled at source. In all cases the hierarchy of control should be applied; - Inherent safe design, fixed enclosing guards, interlocked guards, other guards and protection appliances, administrative controls; the provision of information/instructions, supervision & training.

## **2. Procedures/guidance**

### **2.1 Responsibilities of the Dean of the School**

It is a formal requirement of the University that all Departments which have equipment containing class 3B or class 4 lasers have nominated Departmental Laser Safety Officers. It is the responsibility of the Dean to appoint an appropriate person in this capacity. It is recommended that the School/Departmental Safety Officer should be consulted on this appointment. Guidance on the training and competency of a Laser Safety Officer is given in Section 2.3.

Implementation of the University Laser Safety Policy within a particular Department lies with the Dean. The Dean should be satisfied that all relevant staff within their area of responsibility are aware of this policy.

The Dean is responsible for ensuring the implementation of this policy, that staff receive relevant training and that the implementation of this policy is monitored by appropriate means.

The Dean is also responsible for ensuring that the Laser Safety Officer has sufficient time and resources to discharge their role.

## **2.2 Appointment of Laser Safety Officers**

When appointing persons as Laser Safety Officers, serious consideration should be given to the amount of time necessary to adequately carry out the associated duties together with the persons existing duties. Where necessary, some of the persons existing duties, may need to be transferred to another person/post.

The Departmental Laser Safety Officer is an advisory and monitoring role. The responsibility for ensuring that information provided is incorporated into risk assessment, that risk assessments are carried out and complied with rests with the Academic Supervisor (see Section 2.5).

Persons appointed to the role of Laser Safety Officers should be sufficiently competent through experience and/or qualification to carry out the role. Alternatively they should be willing to undertake training (when necessary) in order to reach an acceptable level of competence. They should also be of sufficient seniority and experience to be able to carry out their duties in relation to laser safety with the recognised authority of the Dean.

Deans shall ensure that the University Health, Safety and Risk Manager is kept informed of the current nominated Laser Safety Officer for their department.

A full list of Departmental Laser Safety Officers and their contact details are available at; <http://www.lboro.ac.uk/admin/hse/contacts/index.html>

### **2.3 Training and competence of Laser Safety Officers**

Departmental Laser Safety Officers shall, as a minimum standard, have undertaken the University two day laser safety training course, or hold a formal qualification demonstrating competency in the safety and use of equipment containing class 3B or class 4 lasers.

The appointment of a Laser Safety Officer shall be considered as probationary by the University, until they have completed the basic University two day laser safety course (or the equivalent Public Health England (PHE)/LU laser safety course). This course should normally have been completed within 4 months of appointment.

### **2.4 Duties of Laser Safety Officers**

The primary role/duty of Laser Safety Officers is to ensure the safe use of lasers throughout their designated Department, on behalf of the Dean. The Laser Safety Officer will ensure lasers are used in line with sector safety guidance and relevant British Standards. (See; “Technical references and further reading”). They will act as a source of advice on laser safety to staff and students whose work involves the use of laser equipment. They will liaise between the Department and the University Health and Safety Service on laser safety issues.

The specific duties of Laser Safety Officers shall be determined by the Dean, to suit the particular needs of the area. These shall be clearly documented and formally accepted by the nominated Laser Safety Officer. Typical duties of a Laser Safety Officer are shown in Appendix A.

### **2.5 Responsibilities of Academic Supervisors**

Academic supervisors carry personal responsibility for carrying out risk assessments whenever using lasers as part of their teaching or research duties.

It is the responsibility of individual academic supervisors to provide adequate instruction and supervision of their students (both postgraduate and undergraduate) to ensure they are working in a manner which is safe, and compliant with the risk assessment.

Responsibility for complying with the Laser Safety Policy rests initially with the Academic Supervisor and ultimately with the Dean.

### **2.6 Role of the Laser Safety Advisor**

To ensure there is a source of professional, impartial advice on laser safety, the University Health and Safety Manager will appoint a Laser Safety Advisor. The Laser Safety Advisor will provide advice to the University Health and Safety Service and to Laser Safety Officers on request.

The Laser Safety Advisor will undertake inspections of laser installations and advise on laser operation, practices and procedures etc. as requested by Laser Safety Officers or the University Health and Safety Service.  
The Laser Safety Advisor will provide advice to the Laser Safety Technical Group via the group meetings.

Contact details for the University Laser Safety Advisor are available at:-  
<http://www.lboro.ac.uk/admin/hse/contacts/index.html>

## **2.7 Laser Safety Technical Group**

To ensure consistency in compliance with laser safety requirements and encourage the dissemination of good practice in this field, the University Health and Safety Manager will convene a meeting of the Laser Safety Technical Group on a quarterly basis. For terms of reference for the Laser Safety Technical Group see Appendix B.

## **2.8 University Health and Safety Service**

To liaise with, and adequately support the University Laser Safety Advisor, Laser Safety Officers and the Deans in respect of laser safety matters.

To arrange and facilitate quarterly Laser Safety Technical Group meetings and to report the minutes and details of the meetings to the University Health, Safety and Environment Committee on a regular basis.

Regularly review and amend the University Laser Safety Policy.

To maintain a centrally held register of all equipment containing high powered lasers (class 3B and 4) used in Departments. The University Health and Safety Service is to be updated by Laser Safety Officers whenever new lasers are purchased or where there are changes in location or changes in existing arrangements, which are liable to affect the risk in the use of a laser system.

## **3. Definitions**

Departmental  
Laser Safety Officer

A generic title adopted by the University that refers to the person within a Department who acts as the main focal point for laser safety matters as detailed in this document. Post holders will be members of the Laser Safety Technical Group.

Laser Safety Advisor

A nominated post which has a responsibility to Supply technical guidance or information to the University Health and Safety Service or to Departmental Laser Safety Officer's as required. The post-holder will be a member of the Laser Safety Technical Group.

#### 4. Technical references and further reading

- Safety In Universities: Notes of Guidance, Part 2.1 Lasers, CVCP 1992.
- BS EN 60825-1 2014:- Safety of Laser Products, Equipment classification and requirements.
- BS EN 60825-2 2004 A2 2010:-Safety of Laser Products, Safety of optical fibre communications systems. (OFCS)
- BS EN 60825-4 2006+A2 2011:- Safety of Laser products, Laser guards.  
BS EN 60825-5 2003:- Manufacturers checklist for IEC 60825-1.
- PD IEC/TR 60825-8 2006:- Safety of Laser products; Guidelines for the safe use of Laser beams on humans.
- BS EN 60825-12 2004:- Safety of free space optical communication systems used for transmission of information.
- BS 60825-13 2006:- Safety of Laser products; Measurements for classification of Laser products.
- PD IEC/TR 60825-14 2004:- Safety of Laser products; A users guide.
- The Association of University Radiation Protection Officers (AURPO) Guidance on the safe use of Lasers in education and research (GN 7) 2012.
- HS(G) 95; HSE guidance:- “The radiation safety of Lasers used for display purposes”. (ISBN 978 0 7176 0691 7).

#### **Document management table**

<b>Version</b>	<b>Owner</b>	<b>Revised by</b>	<b>Summary of revision</b>	<b>Date of revision</b>
1	UH&SS	UH&SS	Original draft	2009
2	“	H Weaver	Update references, logo etc	January 2016

## APPENDIX A

### Typical duties of Departmental Laser Safety Officers

Laser Safety Officers are appointed by School Deans to advise and coordinate on matters relating to laser safety. They will:-

- undertake appropriate training to an appropriate level of competence, thus enabling them to discharge their duties;
- be fully familiar with the University's Laser Safety Policy and assist the Dean to develop, implement and periodically review their local rules, procedures and policy;
- be responsible for advising on, or co-ordinating internal laser safety training required by research workers to ensure that adequate safety information, instruction and training is provided to laser users and any other laser area personnel;
- keep an inventory of all equipment containing high powered lasers (class 3B and 4), used in their Department and update the University Health and Safety Service whenever new lasers are purchased or where there are changes in location or changes in existing arrangements, which are liable to affect the risk in the use of a laser system;
- monitor that all laser equipment and processes within their area are maintained in a safe condition and in compliance with appropriate statutory requirements;
- liaise with the University Health and Safety Service and the Laser Safety Adviser to establish risk assessment procedures, safe working practices and to ensure compliance with the University Laser Safety Policy;
- oversee/review risk assessments for laser work areas and establish safe working procedures;
- advise Research Supervisors who use lasers, on risk assessments and engineering and administrative controls;
- monitor that safe working practices based on risk assessment are adopted locally, especially for postgraduate work, (in view of the fact that many postgraduate students generally work without direct supervision);
- participate in audits carried out by the University Health and Safety Service as necessary;
- attend and contribute to the Departmental Health and Safety Committee;
- refer promptly to the Head of Department or University Health and Safety Service, any health and safety problems which cannot be resolved in a timescale appropriate to the risk;
- act with the delegated authority of the Dean in matters of urgency relating to laser safety.



## **APPENDIX B**

### **Terms of Reference of the Laser Safety Technical Group**

Membership of the group shall consist of the Laser Safety Adviser, the University Health and Safety Officer (or nominee), the University Radiation Protection Officer and all Departmental Laser Safety Officer's.

- The technical group will meet 4 times per academic year.
- The technical group will endeavour to ensure that consistent standards are achieved throughout the University and in particular, that compliance with statutory requirements and relevant Codes of Practice and standards are achieved.
- The technical group will provide a forum for technical discussion on safe working with lasers in line with new or proposed legislation or sector guidance.
- The group will provide a forum for the development of consistent standards of working including safe operational procedures and the development of guidelines for approved schemes of work .
- The group will consider the implications of all incidents and injuries caused by exposure to laser radiations and other aspects of laser use.
- The meetings of the technical group will be minuted and details passed to the Health, Safety and Environment Committee.
- The technical group will also consider progress made and where necessary, report to the Health, Safety & Environment Committee, where it appears that policy changes are required.