

## Use of Laser Pointers in Schools by Students

Health and safety concerns have emerged about the misuse of laser pointers, sometimes for deliberately harmful purposes. In particular, concerns have been raised about the use of laser pointers as weapons against students, other community members and the police, and their capacity to cause serious injury if the light beam is directed into a person's eyes. Another issue of concern is the difference in classification standards between the USA and Australia. This has resulted in the availability of some laser pointers on the market that are more likely to cause eye injury or flash blindness, though this is not reflected in their classification and labelling.

### Definition

Laser pointers are small, pocket-sized, hand-held battery-operated devices which project an intense laser light beam. They are commonly used in presentations to highlight screen information, such as that on a projection screen, blackboard or other visual device, to an audience. Laser pointers may be shaped like pens, credit cards or bullets, and have a key ring attached.

### Background

#### Laser safety

Standards Australia has published a standard on laser safety, AS/NZS 2211.1:1997, which details risk assessment procedures, laser equipment classification and usage requirements. According to the standard:

- Class 1 laser products, including laser pointers, are safe under reasonably foreseeable conditions of operation.
- For Class 2 laser products, including laser pointers, eye protection is normally afforded by aversion responses including the blink reflex. A momentary (0.25 second) exposure, such as would occur in accidental viewing situations, is not considered hazardous, but the laser beam should not be intentionally aimed at people.
- Only Class 1 or 2 laser products, including laser pointers, should be used for demonstration, display or entertainment without supervision. The use of higher classes of laser should be restricted to competent operators.
- Laser pointers shall not exceed Class 2. Some Class 3 laser pointers **are** available to consumers,

indicating that the standard is **not** being followed by some manufacturers.

- For demonstrations or experiments in schools, only Class 1, Class 2 CW or Class 3A CW (visible radiation output only) laser products shall be used.

### Action

#### Key health and safety considerations for schools

In determining whether to allow students to use laser pointers, schools should consider the following:

- In what situations are the laser pointers being used by students (e.g. supervised class presentation does not present the same level of risk as misuse of a laser pointer in the playground)?
- Are the laser pointers Class 1 or Class 2 laser products **only**, as required by AS/NZS — Laser Safety?
- Do the laser pointers have the correct warning and explanatory labels required by AS/NZS — Laser Safety?
- Have the students who are using the laser pointers read and understood the warning and explanatory labels? Are they likely to adhere to the instructions provided?
- Laser pointers can cause temporary flash blindness, which can be dangerous if the exposed person is engaged in a vision-critical activity such as driving. Can schools ensure that laser pointers will not be misused during these types of activities?
- Are schools able to adequately assess and regulate the outcomes of the questions above?

### More information

- Radiation Health (Queensland Health), telephone (07) 3406 8000, 450 Gregory Terrace, Fortitude Valley, Brisbane.
- AS/NZS 2211.1:1997 Laser Safety — Equipment Classification, Requirements and Users' Guide.
- Division of Workplace Health and Safety (Department of Employment, Training and Industrial Relations).
- Consumer Safety Section (Department of Equity and Fair Trading), URL: <http://www.consumer.qld.gov.au/Department of Equity and Fair Trading>
- NHMRC code of practice for the safe use of lasers in schools. National Health and Medical Research Council (NHMRC) (Department of Health and Aged Care, Canberra, ACT), URL: [www.health.gov.au/nhmrc](http://www.health.gov.au/nhmrc)
- Food and Drug Administration (US Department of Health and Human Services) FDA Issues Warning on Misuse of Laser Pointers, URL: <http://www.fda.gov/bbs/topics/NEWS/NEW00609.html>
- CHOICE Magazine October 1997, 'Caution: lasers are not toys'.