**Interactive whiteboard projectors**

**Member Factsheet**

Use of interactive whiteboards with projectors is increasingly common in colleges and universities, and has the potential to cause discomfort and damage to the eyes. Certain precautions should be taken to avoid discomfort and possible damage to the eye.

HSE advice used to be that projector beams can also damage peripheral vision. Victims usually do not realise they have been affected until it is too late. There is a possibility that a viewer’s peripheral retina could be overexposed even when they are not actually staring directly at the projector’s light beam. A person would not look away because there would be no realisation that damage was being done and no protective ‘aversion response’.

When purchasing or using projectors where there is likely to be a person in front of the beam, consideration should be given to the use of a close-coupled projector which sits very close to the screen and effectively eliminates the problem of light beams damaging the eyes. However, these are much more expensive that standard projectors, and for that reason many employers won’t provide them.

When using a data projector it is important to ensure that all staff and students are aware of the potential danger of allowing the projector’s beam to remain in their field of vision. Users should be trained to keep their back to the beam and avoid standing with the beam in view while facing towards the class. On standard projectors there should be a method of controlling light intensity such as a neutral density filter or brightness adjustment facility.

In a light room, rather than increasing the brightness of the projector, blinds should be used.

The old BECTA - British Educational Communications and Technology Agency - guidelines (BECTA was abolished as part of the government’s “bonfire of quangos” in 2011) were that a maximum of 1500 ANSI lumens is adequate for projection equipment in most classroom environments, except in the most extreme ambient lighting conditions, where it is advised that window blinds are used rather than increasing the brightness of the projector. BECTA’s webpages are now part of the National Archives – but they aren’t easy to search if you go there [**http://webarchive.nationalarchives.gov.uk/20101102103654/http:/www.becta.org.uk**](http://webarchive.nationalarchives.gov.uk/20101102103654/http:/www.becta.org.uk)

Ceiling mounted projectors should be professionally fitted and properly secured. It is worth checking that this is so, especially where there are suspended ceilings which are lightweight aluminium structures not strong enough to bear the weight of a projector. UCU has been told of a ceiling-mounted projector falling. They should be correctly adjusted, so that the ‘keystone correction’ provides a correct ‘rectangular’ image onto the screen. All power and data cabling should be contained in protective trunking.

It is very important to follow the manufacturer’s instructions. Warning notices should be displayed prominently on the equipment and by the board. Risk assessment should inform good practice within every school. Training in the correct use of the equipment is essential, and should include all health and safety issues.

HSE Guidance is at [**http://www.hse.gov.uk/radiation/nonionising/whiteboards.htm**](http://www.hse.gov.uk/radiation/nonionising/whiteboards.htm) but the links provided don’t work (at 29.9.2011). This link to the NUT document does work, and the guidance on projectors is on pages 9-10 [**http://www.teachers.org.uk/files/computer-safety.doc**](https://owa.ucu.org.uk/owa/redir.aspx?C=a49585688d6240428bf4c40ea8a1163a&URL=http%3a%2f%2fwww.teachers.org.uk%2ffiles%2fcomputer-safety.doc)

Apart from the general duty on employers to ensure the H&S of employees and others, and employ safe systems of work, these projectors come under the Provision and Use of Work Equipment Regulations 1998 (PUWER) The PUWER Regulations require that equipment provided for use at work is:

* suitable for the intended use;
* safe for use, maintained in a safe condition and inspected to ensure this remains the case;
* used only by people who have received adequate information, instruction and training, and
* accompanied by suitable safety measures, e.g. protective devices, markings and warnings.

In FE, the AoC has produced guidance for employers. It’s in their closed website, but ask your employer for a copy – it is information within their knowledge they must give you – here’s the location [**http://www.aoc.co.uk/Members/health\_safety/briefings04/health\_safety\_15\_04/view**](http://www.aoc.co.uk/Members/health_safety/briefings04/health_safety_15_04/view) There are a number of college assessments and guidance in there – search their publications at [www.aoc.co.uk](http://www.aoc.co.uk) using search term “interactive whiteboards” in the “Free text” field, and select Health and safety in the ‘publication type’ field. Not more than the HSE guidance really.

Get a copy of PUWER from [**http://www.hse.gov.uk/pubns/books/l22.htm**](https://owa.ucu.org.uk/owa/redir.aspx?C=a49585688d6240428bf4c40ea8a1163a&URL=http%3a%2f%2fwww.hse.gov.uk%2fpubns%2fbooks%2fl22.htm)

Checklist:

All projectors have the potential to cause eye injury; so here’s a simple checklist that should be followed:

* Ensure suitable and sufficient risk assessments have been undertaken and that hazard controls are suitable and effective
* No one should stare directly into the beam of the projector
* When entering the beam, users should not look towards the audience for more than a few seconds
* Users should keep their backs to the projector beam when standing in it
* The use of a stick or laser pointer is recommended to avoid the need for the user to enter the beam
* Students should be supervised at all times when a projector is being used and in particular if they are asked to point out something on the screen
* Control light in the room by using blinds which diffuse rather than remove ambient lighting thus reducing the need to increase the beam intensity
* Retaining some ambient light enables eye to eye contact to be maintained and there is some evidence that students work more ably when exposed to natural light. Restore natural daylight promptly on conclusion of interactive whiteboard sessions
* Use the brightness reduction facility on the projection when a presenter is standing in front of the projector
* A maximum of 1500 ANSI lumens should be more than adequate for most classroom environments
* Projectors should be installed as far forward as possible to avoid the projector beam entering the user’s field of vision. This is best achieved by ceiling-mounting, rather than floor— or table-mounting, the projector. There are also some all-in-one interactive whiteboards emerging which remove any potential danger of getting the light beam in the eye of the user and almost eliminates the area of shadow from the user
* Try to avoid people sitting directly under the projector in case it falls
* Board positioning should be determined following an appropriate risk assessment
* Electrical standards and regulations apply in relation to all interactive whiteboards aspects
* Mechanical fixings of boards and projectors are secure and safe
* Guidelines and warnings should be displayed, as a reminder of the training received, next to interactive boards