Safety and the Whittle Laboratory

October 7, 2016

Safety is everyone's responsibility. There is an official chain of command, with responsibility starting with the Head of Department, through the Department's Safety Officer, the Head of Division and finally the local Whittle Laboratory Safety Officer. However, safety actually relies on everyone from staff members (teaching, research, administration and workshop), students (research and undergraduate) and all visitors taking personal responsibility for theirs and others safety.

Information about the Departmental Safety Office can be found at:

`http://www.eng.cam.ac.uk/safety`

If you have any concerns or suggestions about safety please raise them with your Supervisor, the Local Safety Officer (Dr Nick Atkins) or the Chief Technician (Mr John Saunders).

Access to the Whittle Laboratory

Normal working hours are from 8:00 am to 5:00 pm Monday to Friday (excluding holiday closure). These are the hours when technicians are usually present and the majority of experimental testing should be undertaken during these times. Where possible experimental testing should start before 9:00 am. All experiments should be undertaken between 8:00 am and 10:00 pm Monday to Sunday. 4th year students are limited to testing in normal working hours (8:00 am and 5 pm Monday to Friday).

Working within the Whittle Laboratory

Everyone working within the Whittle Laboratory must at all times ensure the safety of both themselves and other people working in close proximity. They must be aware of the exit routes out of the building, how to isolate the electricity supply and they must wear suitable footwear and clothing. This responsibility does not end when they leave the working area. Equipment must not be left in a manner where it could present a danger to others (for example aisles must not be blocked, dangerous equipment should not be left unguarded or loose, and especially wires should not be left on the floor). Unless authorised by the Chief Technician, only technicians may use the workshop machinery.

Whittle Laboratory Safety Philosophy

There are two key aspects to ensuring a safe working environment:

1. All activities must be carried out in a safe professional manner. Careful thought should be put into planning and carrying out an experiment. For any activity, the following steps must be followed:

   - Before any experiment/work activity is undertaken a Risk Assessment Form must be completed (blank forms are available from the Chief Technician) or

     http://safety.eng.cam.ac.uk/procedures/riskassessment

   - New experiments, or changes to existing experiments need to have had a Design Review. If you use the Dept. Design Engineer (Neil Hougthon) then it is likely that this will happen as part of the process. If you use an outside company, then a Design Review will likely form part of the project, but it is up to you to make sure. If you do the design work yourself then you can ask for a Whittle Lab. Design Review at any time - please don't hesitate to ask at any point in the process. Please contact the Local Safety Officer (Dr Nick Atkins) or the Chief Technician (Mr John Saunders).
   - The completed form must be taken to your supervisor. The Supervisor should come to the rig/activity and spend a sufficient amount of time understanding the risk involved. You and your supervisor are the key people who must have properly understood the risk.
   - The completed form must be passed to the Chief Technician, who will note its submission and forward the form to the Engineering Department Safety Officer.
   - The Engineering Department Safety Officer, within a couple of days, will return the form to the Chief Technician with comments. The Chief Technician will file a copy of the form for future reference.
   - Once the Risk Assessment Form has been received back in the Whittle Laboratory testing may commence.
   - It is good practice to keep the Risk Assessment along with a copy of the Safe Operating Procedure in a (usually blue) folder near the activity.
   - New users need to read the Risk Assessment and sign the Additional Users sheet.
   - The Risk Assessment should be refreshed each year.

   One form can be used to asses a whole range of experimental measurements but if, for example, another experimental technique is then found to be necessary the new item must be added to the form and it must be resubmitted.

2. Should a problem arise there must be the necessary equipment on hand to minimise its effect. This means that aisles and fire exits must not be obstructed and other people must be on hand to assist. For these reasons particular rules must be observed concerning the use of

the experimental facilities and equipment. These rules depend on the user, equipment and the times of use:

- Whenever a rig is being run there should be another person in the immediate working area to take the necessary action, should a problem arise. The immediate working area is taken to mean that the other person should be in frequent visual contact with the operator of the facility. If the experiment is taking place in the Low-Speed Laboratory then the other person must be in the same part of the Low-Speed Laboratory. Similarly, if the experiment is taking place in the High-Speed or High-Speed Lab Extension then there must be someone in that lab.
- During normal working hours, when there are numerous other people working throughout the laboratory, maintaining frequent visual contact should not present any great difficulties. However, special arrangements must be made when working in any enclosed area such as the mezzanine, turbine rooms or basement where it is much harder to maintain frequent visual contact in normal working hours.

Laser Safety, Compressed Gases and Cryogens and Lifting Equipment

Lasers, compressed gases and lifting equipment is subject to specific legislation.

You must not use any Laser equipment above Class 3 unless you have been on the University Laser Safety course, also your Risk Assessment and setup must be checked by the Dept. Laser Safety Officer.

Similarly you should not use any compressed gases or cryogens unless you've been on the appropriate University course.

Lifting equipment and gas regulators have a schedule of inspections and certain items are now time-limited by law. As such, please make sure that all lifting equipment and regulators are ordered through the Chief Technician.

Links below, (up to date 10/7/2016):

Pressurised Gas and Cryogens - http://www.training.cam.ac.uk/ohss/course/ohss-safety12

Laser Safety - http://www.training.cam.ac.uk/ohss/course/ohss-safety9

Late Working In the Whittle Laboratory

Outside normal working hours (8:00 am to 5:00 pm Monday to Friday) rigs may only be operated by staff or PhD students. 4th year students may not operate rigs outside normal working hours. The continual visual contact rule must continue to be observed outside working hours. This means

that the researcher who wishes to operate a rig must arrange for someone else, a *buddy*, to be working in the immediate vicinity. During a long run it may be necessary for the person undertaking the experiment to temporarily leave the immediate working vicinity to visit the lavatory. The *buddy* must be aware of the temporary absence and must be prepared to take over responsibility for the rigs operation. The absence must be kept to an absolute minimum - certainty no more than a few minutes. Under no circumstances must rigs be left running unattended; they must be shut down. The *buddy* must have read and signed the risk assessment for the specific rig so that they know how to shut it down in case of an emergency.

In special cases experimental facilities can be operated after 10:00 pm but the reason must be justified on the Risk Assessment Form, the Supervisor must sign for each occasion and the Chief Technician must be told beforehand so a log can be maintained.

Nick Atkins, John Saunders