

Guidance

Undertaking General Risk Assessments

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1. Introduction

1.1 University Policy & Legal Obligations

It is the Health and Safety Policy of the University of Strathclyde to ensure, so far as is reasonably practicable, the health, safety and welfare of all its employees at work, of students while they are engaged in activities under the supervision of the University and of members of the general public who have access to University property.

Furthermore, it is a legal requirement under the Management of Health and Safety at Work Regulations 1999 that the University, as an employer, makes a suitable and sufficient assessment of the risks to the health and safety of employees to which they are exposed whilst they are at work, and the risks to other persons arising out of or in connection with the University's undertaking. Employers must record the findings of this assessment and implement any preventative or protective measures to reduce the risks posed, as low as reasonably practicable.

In pursuance of this duty, a key commitment of the Policy is to ensure that significant risks intrinsic to the University's undertaking are identified and appropriately controlled.

1.2 Aim and Scope of Guidance

This guidance applies to all departments and will be of particular benefit to those who are responsible for general risk assessments. It outlines the roles and responsibilities of various individuals and groups, plus the general principles of risk assessment. It provides advice on how to manage the risk assessment process in a systematic manner, explains the methodologies available and how to use the risk assessment form (S20).

For the purpose of this guidance, general risk assessments are those relating to assessments for which there is no specific legislation, risk assessment methodology or other guidance available. Therefore, how to undertake risk assessments relating to, for example, manual handling operations, work with substances hazardous to health or display screen equipment are excluded from this guidance.

A number of key definitions is given in **Appendix 1**. It should be noted that reading this guidance is not a substitute for suitable training in the principles and practice of risk assessment. Please see Safety Services web pages for available courses.

2. Roles and Responsibilities

2.1 Heads of Departments/Directors of Service

It is a key principle of the Health and Safety Policy that departments which create risks due to their undertakings are best placed to manage those risks, so as to eliminate or minimise the risk of people being harmed or becoming ill, and of property being damaged. This can only be achieved through a process of adequate risk assessment and appropriate follow-up actions.

Heads of Department (hereafter used to include Directors of Service) are legally responsible for the day-to-day management of health and safety within their departments. Their responsibilities are fully explained in the Health and Safety Policy. With particular reference to risk assessment, they are to ensure the following:

- that all staff are adequately trained in the techniques of risk assessment;
- that they monitor that all necessary risk assessments have been carried out;
- that employees are provided with comprehensible and relevant information on the risks to their health and safety identified by risk assessment, along with the preventive and protective measures to ensure their own health and safety and that of others;
- that any external service provider, working in their Department, is provided with comprehensible information on the risks to their health and safety arising out of or in connection with the Department's undertaking, along with the measures taken by the Department (please see Safety Services document 'Guidance for Departments Engaging External Service Providers').

2.2 Departmental Safety Convenors

One of the main duties of Departmental Safety Convenors (DSC), as outlined in the Health and Safety Policy, is to monitor that appropriate risk assessment procedures are being undertaken within the department, including those relating to student project work.

2.3 Departmental Safety Committees

One of the main functions of Departmental Safety Committees is to assist the DSC in carrying out their range of functions, including safety inspections, through which risk assessments should be sampled to monitor that they are in place, appropriate and valid. Committee members and other staff with appropriate competence (see para. 3), may be involved in risk assessment teams for specific areas. Where committees require additional assistance or support, then the Head of Department should resource this need. If necessary, Safety Services may be consulted for advice and assistance.

2.4 Principal Investigators

Principal Investigators must ensure that a risk assessment is carried out for all work under their control, whether carried out personally or by another competent member of the research group. They have a key role in educating their junior colleagues to become proficient in assessing the risks inherent in their own work.

2.5 Employees, students and others

Every employee and every other person under the supervision of a department is required to co-operate with that department to enable it to comply with its statutory duties for health and safety. This includes individuals using any preventive and protective measures referred to in risk assessments, in accordance with instructions and training received.

2.6 Safety Services

Safety Services is committed to promoting a positive health and safety culture throughout the University. It exists to help all departments effectively manage health and safety by providing advice and guidance on a full range of workplace activities, including the process of risk assessment. It offers a number of training courses for those who wish to gain a working knowledge of the assessment process. These relate both to general risk assessments and to those required under specific legislation e.g. manual handling, display screen equipment and the control of substances hazardous to health. Please view a full list of courses on the Safety Services web pages.

3. Competence to Undertake Risk Assessments

Those who undertake risk assessments must have a level of competence commensurate with the significance of the risks they are assessing. Competence means having an appropriate combination of knowledge, skills, experience and attitude. This would usually include the following:

- such training as would ensure acquisition of the necessary knowledge and skills to undertake risk assessments and write safe systems of work;
- the ability to monitor that the precautions referred to in a particular risk assessment and/or safe system of work are effective and being adhered to;
- adequate knowledge of the hazards and failures of equipment for which they are responsible;
- a working knowledge of relevant health and safety legislation, approved codes of practice, other codes of practice, good working practices and current developments in their field of work;
- the ability to communicate effectively with their peers, with staff working under their supervision and with their line managers;
- an appreciation of their own limitations and constraints, whether of knowledge, skill, experience, facilities, resources, etc., and a willingness to point these out to management.

The onus is on each Head of Department to decide whether particular individuals have the required competence for risk assessment duties.

4. Aim of Risk Assessment

The overall aim of risk assessment is to make sure that no one is injured or becomes ill and that property is not damaged, as a result of work activities. The process involves finding out what in a work activity, workplace or work situation could cause harm to people, then deciding if enough has been done to reduce the likelihood and severity of that harm, taking into account existing precautions. The risk assessment process allows departments to make decisions about managing unacceptable risks, in an informed, rational, structured manner and to take action that is proportionate.

Where it is decided that further measures are required in particular circumstances, it should be ensured by departmental management that these are implemented and remain effective. The significant findings of the risk assessment should then be recorded and provided to those who could be affected. An important outcome of risk assessment is the provision of safe systems of work (or standard operating procedure) for more hazardous or complex work activities.

5. Managing Risk Assessment

5.1 Establishing a Risk Assessment Programme

The process of managing risk assessment in a large department can be a daunting prospect. It is therefore important to have a system for defining what is significant and what is not, rather than simply listing hazards. One way is to devise a risk assessment programme based on work activities. This provides a systematic approach for defining the scope of the process, for prioritising areas of high risk and for allocating resources. This is likely to be of benefit where risk assessments within a department have previously been carried out on an adhoc basis, or where an existing system for organising risk assessments is being reviewed.

5.2 Identifying Work Areas

The first stage in a **risk assessment programme** is to consider the department as a whole and determine how it can be divided up into specific areas where work takes place. For example, areas may be identified as teaching laboratories, research laboratories, lecture theatres, stores, plant rooms, roofs, loading bays, workshops, offices, grounds and gardens, kitchens etc.

5.3 Identifying Work Activities

The next stage is to select each of these specific work areas, in turn, and to list all the different kinds of work activities that are carried out by individuals, or groups of individuals who do similar work, within that area. Work activities may include routine work, non-routine work, maintenance work, research work, teaching laboratories and work outside of normal working hours etc.

To be included on the list, a work activity needs to be of significance, that is, not trivial, but one that could cause genuine injury. Here, risk assessors will need to apply reasonable judgement, within the context of their departments' undertakings, to decide what is significant and therefore what should be of concern.

A work activity is considered to be a series of component tasks that require to be carried out in a defined sequence. On the other hand, a work activity may include a series of non-sequential, but related work activities that can be merged into one activity. This approach will help reduce the overall number of written risk assessments required by a department.

Each work activity should be given a succinct title, which best describes what each encompasses. This title, along with an identifying reference number, can then be used on the front cover and subsequent pages of the applicable S20 Form.

By concentrating on the work activities of individuals, or groups of individuals, assessors will gain a better appreciation of the kinds of hazards different people come into contact with. This kind of approach should reveal the following information:

- **Who is involved** – (e.g. staff, students, researchers, trainees, visitors, etc.)
- **When work is carried out** – (e.g. within normal hours or after hours, busy times, slack times etc.)
- **What is used** – (e.g. equipment, materials, substances, processes etc.)
- **Where work takes place** – (e.g. within specific areas or a range of different areas, roofs, etc.)
- **How work is carried out** – (e.g. sequence of operations, practices and procedures used etc.)

In some cases it will be very obvious that whilst a work activity is significant, the risk of harm arising is trivial. If so, then it does not need to be assessed but should remain on the list as evidence that it has been considered.

A full list of departmental work activities will help to define the scope of work and will form the basis of the risk assessment programme. Plans can then be made to undertake risk assessments according to importance. Priority should be given to work activities that involve, for example moving machinery, young persons and large numbers of people.

A similar approach can be taken where there is the necessity to assess risks associated with situations other than actual work activities, for example, prior to the installation of a proposed piece of work equipment to determine and control any additional risks, the organisation and/or hosting of a major event or the use of a new workplace.

6. Methods of Evaluating Risk

Whilst the basic approach to risk assessment should be similar in all cases, the method of evaluating risks may either be **qualitative** or **quantitative**.

Where work activities have inherently low risks, for example, administrative work in offices, or where risks are immediately obvious and can be addressed directly, then it is appropriate to use a simple qualitative approach. Here, the assessor assigns a relative risk to a particular situation e.g. low, medium or high, based on informed judgement with reference to appropriate guidance and relevant good practice.

For all other work activities and especially where the hazards are numerous or complex, for example, work in laboratories, workshops, kitchens, plant rooms etc., it is advised that the more rigorous quantitative method is used. Here, numerical values are assigned to the likelihood and severity of harm, arising from a particular hazard, in order to estimate the magnitude of the risk and determine priority of action.

Both of the above approaches may be used within the University, according to the circumstances. The Health and Safety Executive's (HSE) 'Five steps to risk assessment' (booklet INDG 163 (rev 2)), provides helpful information and readers are advised to familiarise themselves with its contents. The remainder of this guidance expands on a quantitative version of the 5-step approach to enable departments to develop suitable and sufficient risk assessments.

7. Overview of Risk Assessment Form (S20 Form)

The S20 form is divided into 5 sections and has been designed to facilitate a structured approach to recording information necessary to carry out an assessment of risks, to formulate an action plan, to record the significant findings and to record the recipients of the assessment. A blank copy is available at S20 Form. It comprises the following sections:

Section 1: A cover sheet on which to record details of the work activity, a reference number, names of those responsible for managing the work and conducting the assessment, plus relevant dates and a history of reviews.

Section 2: A Table on which to record details of the component tasks comprising the particular work activity, the associated hazards, groups who might be harmed and how, any existing risk control measures and an evaluation of each risk.

Section 3: A Table on which to record details of unacceptable risks, identified in Section 2 of the form, along with recommended risk control measures (or follow-up actions) to reduce those risks to an acceptable level.

This Table also allows actions to be delegated to responsible persons and tracked by recording target and completion dates. New evaluations of risk can then be recorded to demonstrate the effectiveness of the implemented risk control measures.

Section 4: A Form on which to record the significant findings of the risk assessment in a more user-friendly manner than Section 2 allows. Where the work activity is complex or particularly hazardous and therefore requires a safe system of work or a standard operating procedure, then there is opportunity to indicate that one or other is available.

Section 5: A Table on which to record the receipt, by relevant individuals, of the significant finds of the assessment and subsequent revisions.

8. Carrying out a General Risk Assessment

The five steps, mentioned above, along with a number of intermediate steps are shown below:

Step 1 Identify the hazards

- 1.1 Select a work activity and divide it into component tasks
- 1.2 Identify the hazards in each component task

Step 2 Decide who might be harmed and how

Step 3 Evaluate the risks

- 3.1 For each hazard, note existing risk control measures
- 3.2 Determine the likelihood of harm occurring
- 3.3 Determine the severity of harm, if it were to occur
- 3.4 Determine the risk rating
- 3.5 Decide on additional risk control measures and prepare an action plan

Step 4 Record the significant findings

Step 5 Review the assessment and update if necessary

Please refer to **Appendices [2a](#) & [2b](#)** which are Sections 2 & 3 of the S20 Form, annotated with explanatory references to the following steps.

Step 1 - Identify the hazards

Step 1.1 - Select a work activity and divide it into component tasks

In order to appreciate all the hazards present in a selected work activity, it is necessary to divide it, as far as possible, into a series of logically sequenced component tasks and to write these down. If a logical sequence is not possible or appropriate, then all component tasks should still be listed. It is important to obtain the co-operation of the person(s) involved and, if necessary, to observe them carrying out the work activity. Alternatively, they could be asked to provide an accurate written description of the various stages of a work activity.

Step 1.2 - Identify the hazards in each component task

Once component tasks have been listed, the associated hazards can then also be listed. It is important to ignore trivial hazards, that is, those associated with every day living and to concentrate on the significant hazards - those which could result in genuine injury. The Hazards Prompt List in **[Appendix 3](#)** may be of assistance in identifying hazards and other issues that need to be considered. It should be remembered that each component task may have more than one associated hazard.

For each work activity it may be helpful to produce a draft list of the component tasks, plus a list of everything that may reasonably cause harm, along with the harm that may be caused and to circulate it to all relevant people, asking for, and taking into account, their comments and additions. If the assessor is satisfied that there are hazards that do not require further consideration, then these may be eliminated to reduce the amount of work involved.

Hazards that are associated with specific legislation, for example, manual handling or substances hazardous to health etc., may be listed, but the associated risks left unevaluated, since specific assessments will be required. When specific assessments have been undertaken, then, mention may be made of the relevant reference numbers, in the column headed 'existing risk control measures'.

Step 2 - Decide who might be harmed and how

For each hazard identified, decide which individuals or groups of people might be harmed, in what numbers and the type of injury or ill-health that might occur. It should be borne in mind that harm may result in an immediate injury (e.g. cut, burn or fracture) or acute ill-health (e.g. allergic reaction, asphyxiation) or in chronic ill-health (e.g. noise-induced hearing loss, musculoskeletal disorders). Some of the groups of people to consider include:

- New workers, young workers, new or expectant mothers, people with disabilities;
- Cleaners, visitors, contractors, maintenance workers, security personnel etc. who may be affected;
- Members of the public, including students and visiting school parties if there is a likelihood they could be harmed by the activity;
- Others who share the workplace and/or whom staff can identify as potentially being affected;
- Lone workers and those working after normal hours;

Step 3 - Evaluate the risks and decide on additional precautions

Step 3.1 - For each hazard, note existing risk control measures

To assist with the realistic evaluation of risks, it is first necessary to write down any existing risk control measures. These will include any factor that contributes to reducing the likelihood of harm occurring and/or its severity, if harm did occur. Typically measures would include:

- means of enclosing the hazard (e.g. fume cupboard or guarding system);
- systems of work/standard operating procedures being used;
- maintenance regimes in place and followed;
- good supervision, where necessary;
- an appropriate level of competence;
- appropriate information provided;
- personal protective equipment being used correctly;
- restrictions on the numbers of people involved or authorisations required
- etc

When considering an existing risk control measure, the assessor should be satisfied that it is actually being implemented and is effective in the circumstances. Where there is any doubt, then the situation should be treated and noted as having no existing risk control measure and an appropriate additional risk control measure recommended at Step 3.5 below.

Step 3.2 - Determine the likelihood of harm occurring

The **likelihood** of harm occurring from a particular hazard can then be estimated taking account of the robustness of existing risk control measures and using the scoring criteria given in **Appendix 4**.

Step 3.3 - Determine the severity of harm, if it were to occur

When evaluating the **severity** of outcome of a particular hazard, assessors should ask, *'realistically, what is the worst that could happen - a minor injury or ill-health condition, a serious injury or ill-health condition, or worse?'* Again, use the scoring criteria in [Appendix 4](#).

Step 3.4 - Determine the risk rating

A risk rating for each risk can then be determined by multiplying together the values for likelihood and severity.

Once the likelihood and severity of injury have been evaluated for each hazard, the risks can be prioritised. Clearly, the more likely the harm and the greater the potential severity, the greater the need for urgent action.

Step 3.5 - Decide on additional risk control measures and prepare an action plan

Having evaluated the risks, it will be clear which are medium, high or very high. The objective now is to reduce these risks, where it is reasonably practicable to do so. This is achieved by deciding how any existing risk control measures can be improved or new ones implemented, which will have the effect of reducing unacceptable risks, to an acceptable level.

The list below gives the recognised hierarchy of options available for controlling risk. For each risk needing further control, the assessor should start at the top of the list and consider if each option provides a reasonably practicable solution. Only if the option is not reasonably practicable, or if it alone does not reduce the risk to an acceptable level, should the next option on the list be considered. In many cases more than one option may need to be implemented to control a particular risk to an acceptable level.

Hierarchy of options for controlling risks:

- Elimination – e.g. by deciding to prohibit certain activities or use alternative methods, procedures, materials or equipment.
- Substitution with something less hazardous – e.g. using a water-based substance, rather than a solvent-based substance.
- Enclosure – e.g. using a fume cupboard to enclose the hazard.
- Guarding and/or segregation – e.g. guarding dangerous parts of machines or erecting fixed barriers to keep people away from a hazardous area.
- Design of task/workplace layout to fit the capabilities of the worker.
- Written safe systems of work, method statements or standard operating procedures that are known, understood and applied to particularly hazardous work or situations.
- Training that is structured, specific and refreshed at regular intervals.
- Adequate supervision provided by competent people.
- Information and instruction provided to staff and updated as necessary
- Personal protective equipment that is appropriately specified, worn, stored and maintained.

Delegating particular actions, along with setting target dates, provides a useful action plan and means of tracking progress. Section 3 of the S20 Form allows for the hazard reference numbers of unacceptable risks from Section 2 to be recorded along with the other details for the action plan. Once additional risk control measures have been implemented for a particular risk, it will be necessary to re-evaluate the risk and record the revision in Section 3. Taken together, Sections 2 and 3 provide a useful tool for demonstrating and recording how unacceptable risks have been reduced to an acceptable level. If it is decided not to implement a particular recommended risk control measure, then such decisions need to be justified by management. There may be occasions when recommended actions can form part of the Departmental Safety Action Plan.

Step 4 – Record the significant findings

Departments are required by law to record the significant findings of risk assessments and to share them with those most affected. The significant findings should be in writing or recorded by other means and be retrievable for use by management in reviews and for safety representatives or visiting inspectors. They should be documented in a way that is proportionate to the hazards and risks of the work activity or situation under consideration.

Furthermore, employers are required to provide employees with comprehensible and relevant information on the risks to their health and safety identified by any assessment, and of the preventive and protective measures. A risk assessment will help to identify any relevant information that should be provided to employees.

Whilst the recording of applicable data in Sections 2 & 3 of the S20 Form, provides sufficient detail of the assessment process itself, to demonstrate (e.g. to an HSE inspector or safety representative) that a suitable and sufficient assessment (see para. 9 below) has been undertaken, it may not be suitable for handing to employees. It is therefore advised that the assessor presents the significant findings in a user-friendly manner, giving consideration to the level of training, knowledge, experience, language difficulties or disabilities of employees. It is suggested that the significant findings are written in the free-text area of Section 4 of the S20 Form and include the following:

- Details of the identified hazards associated with the work activity;
- Identification of groups of people who may be affected, and any groups identified as especially at risk;
- An evaluation of significant risks from the identified hazards, in terms of likelihood and severity of the possible consequences;
- Details of the control measures, or precautions that are (or should be) in place to control the risks (with comments on their effectiveness), plus any improvements/further actions identified as necessary to control risks but not yet implemented;
- Where appropriate, links to other health and safety records/documents describing procedures and safeguards (e.g. University Local Rules, Guidance, Departmental Safety Regulations, standard operating procedures, Approved Codes of Practice (ACOPs), manuals, manufacturers' instructions etc.)

In the case of a work activity being complex or hazardous, it is advised that a separate **safe system of work** or standard operating procedure is written that incorporates the significant findings and other relevant health and safety information. Please see [Appendix 5](#) for further details.

Step 5 – Review the assessment and update if necessary

Risk assessment should be seen as a continuing process. To ensure that individual assessments are kept up to date, each should be given a review date, depending on the nature of the work activity or situation and how long it is likely to remain valid. Assessments should also be reviewed if there are any significant changes, for example in the following:

- Events that would indicate the risk assessment is no longer valid:
 - Occurrence of an accident or near miss
 - Discovery of defects in equipment
 - Poor results of health surveillance
 - Confirmed case of occupationally-induced disease

- Changes to the nature of the work:
 - Change of equipment
 - Change of location
 - Change of personnel
 - Change of workplace or layout
 - Change of operational sequence
 - Introduction of new work activities into the same area
 - etc.

9. What is a Suitable and Sufficient Risk Assessment?

Departments have a legal duty to undertake risk assessments that are 'suitable and sufficient'. This term is not defined in the Management of Health and Safety at Work Regulations, but the associated ACOP indicates that for a risk assessment to be suitable and sufficient, it will:

- Identify the significant risks from or in connection with work;
- Be proportionate to the level of risk;
- Ignore insignificant risks and risks arising from routine activities associated with life in general, unless the work activity compounds or significantly alters those risks;
- Be based on informed judgement or specialist advice, depending on the size, nature and complexity of the undertaking;
- Consider all those who might be affected by the undertaking;
- Include only what an employer could reasonably be expected to know from appropriate sources of information (e.g. relevant legislation, appropriate guidance, sector good practice, manufacturer's instructions) and competent advice;
- Be appropriate to the nature of the work;
- Identify the period of time for which it is likely to remain valid;
- Concentrate on the broad range of risks that can be foreseen, where the nature of the work changes frequently or the workplace itself changes and develops;

10. Using a Team Approach

A team approach to risk assessment is recommended whenever possible. Pooling knowledge, skills, expertise and experience of a range of people with different perspectives should ensure comprehensive coverage of all hazards. It is particularly important to involve employees who have practical experience of the particular process or activity being considered as they will often have the best knowledge and understanding of any hazards. The risk assessment process should always involve management or those with responsibility for health and safety (and who should be aware of relevant legislation), whether or not other advisers assist in the detail, as they are responsible for ensuring that the process is adequate.

To achieve team working, departments may wish to consider having several people from different disciplines trained in risk assessment, so as to create a pool of competent assessors.

11. References and further reading:

Five steps to risk assessment INDG163 (rev2) HSE Books 2006 ISBN 0 7176 6189 X

Useful Definitions

A **hazard** is anything with the potential to cause harm or ill health to people, or damage to property; this could be a dangerous property of an article or substance, a physical situation or a work practice. Some examples include: hazardous chemicals, electricity, poor lighting, traffic movements, working at height, manually moving heavy objects etc. Hazards may be categorised as follows, but the list is not exhaustive (see Hazards Prompt List in **Appendix 3**):

- Biological
- Chemical
- Electrical
- Ergonomic
- Explosion/Fire
- Mechanical
- Physical
- Psychological
- Radiation
- Working environment
- Working practices
- Etc.

Risk is the likelihood (unlikely, highly likely or somewhere in between) that someone will be harmed by a hazard, coupled with the severity of that harm (e.g. cut finger, broken arm, severe burns etc.), in the circumstances of use.

Risk assessment is simply a careful examination of what, in the workplace, could cause harm to people, so that employers can weigh up whether enough precautions have been taken or whether more action is required to prevent harm. (HSE)

Qualitative Risk Assessment is a method of evaluating risk by assigning a relative value, for example low, medium or high to a particular risk, based on informed judgement with reference to appropriate guidance and relevant good practice.

Quantitative Risk Assessment is a method of evaluating risk by assigning numerical values, from a pre-determined scale, to likelihood and severity of risk, to achieve a risk rating corresponding to low, medium, high or very high risk.

Risk rating is the product of the assigned values for likelihood and severity and provides a useful indicator of the seriousness of a risk and the need for action.

SECTION 2

Work Task Identification and Evaluation of Associated Risks

Note: Please copy this page if there are more tasks than it can accommodate.

Ref No. should be part of a reference system for identifying risk assessments and used consistently on all paperwork relating to a particular work activity.

Ref. No.

Work Task / Situation	Hazards Identified	Hazard Ref No.	Who Might be Harmed and How?	Existing Risk Control Measures (RCM)	Likelihood	Severity	Risk Rating	Risk L, M, H, VH	RCM's Acceptable Y/N
<p>Step 1.1 List component tasks of given work activity.</p>	<p>Step 1.2 List all the significant hazards associated with component tasks i.e. what has the potential to cause harm.</p> <p>Each hazard can be numbered for ease of reference, especially if it is to be transferred to Section 3.</p>		<p>Step 2 Decide who could be harmed and the type of resulting injury or ill health, including immediate and chronic effects. Consider those both directly and indirectly involved.</p>	<p>Step 3.1 List measures or factors that are in place, which contribute to reducing both the likelihood and severity of harm from each hazard at Step 1.2</p> <p>Steps 3.2 & 3.3 Likelihood and Severity – estimate by taking account of existing RCM's and using the criteria for each in Appendix 4.</p> <p>Step 3.4 Risk Rating = Likelihood x Severity</p> <p>Risk determined from risk rating: 17-25 = Very High 10-16 = High 4 - 9 = Medium 1 - 3 = Low</p>					<p>Opportunity to indicate Yes/No as to whether RCM's are acceptable.</p>

SECTION 3

Identified Actions to Improve Control of Unacceptable Risks (as evaluated in Section 2)

Note: Please copy this page if there are more control measures than it can accommodate.

Step 3.5
Section 3 to be used to document and demonstrate follow-up actions to reduce unacceptable risks identified in Section 2.

Ref. No. _____
Page _____

Hazard Ref No.	Risk M, H, VH	Recommended Additional Risk Control Measures	Implemented Y/N	Action By	Target Date	Completion Date	Revised Risk				Revision of Risk Signed Off	
							Likelihood	Severity	Risk Rating	Risk L, M, H		

Step 3.5
Where action is required, transfer Hazard Ref. No. from Section 2.

Step 3.5
Transfer level of Risk associated with transferred Hazard Ref No.

Step 3.5
List recommended measures to reduce Very High and High risks identified in Section 2.

Opportunity to indicate whether recommended RCM is to be implemented or not.

Step 3.5
Insert person, tasked with implementing recommended measure(s), target date and date of completion.

Step 3.5
Once recommended measures have been implemented, revise the risk evaluation.

Initials of delegated person and date residual risks were revised.

A hazards prompt list can help with the identification of hazards at work. The list also includes some examples of consequences and factors that influence the significance of the hazard. For example, the potential harm from a drum of acid varies due to factors such as its quantity, strength and circumstances of use. In using such a prompt list, assessors still need to remain observant and use a questioning approach to help identify hazards that are not on the list. The list is not exhaustive but conversely, many departments will not encounter all the hazards indicated:

Biological hazards

Biological agents, such as bacteria or viruses, where the hazard would be linked to the nature of the pathogen and where the agents could be:

- inhaled;
- transmitted via contact with bodily fluids (including needle-stick injuries);
- ingested (e.g. via contaminated food products).

A specific COSHH assessment would be required for biological agents - see Local Rules on COSHH.

Chemical hazards

Substances hazardous to health or safety due to:

- inhalation (e.g. carbon monoxide (CO), where the hazard would be linked to the amount of CO);
- contact with, or being absorbed through, the body (e.g. acids, where the hazard would be linked to the strength and amount of the acid);
- ingestion (i.e. entering the body via the mouth), such as lead paint;
- stored materials that degrade over time (e.g. oxidizers);

Again, a specific COSHH assessment would be required for such substances - see Local Rules on COSHH.

Electrical hazards

- Equipment, services or work situations that could give rise to direct or indirect contact with un-insulated sources of electrical energy.

Ergonomic hazards

- Poor design of work equipment, task layout or frequently repeated tasks giving rise to bad posture and upper limb disorders.

Explosion/Fire hazards

- Associated with flammable/combustible materials e.g. solvents, unauthorised accumulation of waste paper, sources of ignition, obstructed escape routes, blocked exits.

Mechanical hazards

- Associated with equipment or objects giving rise, for example, to trapping, entanglement, high pressure injection, cutting, shearing, impact, ejection of materials etc.

Physical hazards:

- Work at heights, leading to falls (linked to factors such as the distance of the fall);
- Falls from height of objects such as tools or materials, leading to impacts on passers by;
- Stored energy, which can be released quickly and cause physical harm to the body (linked to the amount of energy);

Psychological hazards:

- Excessive workload, lack of communication or control, workplace physical environment, leading to stress (linked to the magnitude and duration of stressors);
- Physical violence, bullying or intimidation within the workplace, leading to stress;
- Involvement in a major incident, leading to post traumatic stress. The hazard would depend on the nature of the incident.
- Violence to staff, leading to physical harm (linked to the nature of the perpetrators);

Radiation hazards

- Ionising radiation (e.g. x- or gamma-ray machines or radioactive substances);
- Non-ionising (e.g. light, magnetic, radio-waves).

Working environment hazards

- slippery or uneven ground leading to slips/falls on a level;
- inadequate space to work, such as low headroom, leading to head impacts;
- unsuitable thermal environment, which can lead to hypothermia or heat stress;

Working practice hazards

- manual lifting/handling of materials, etc., with the potential for back, hand and foot injuries (linked to factors such as the characteristics of the load); a specific manual handling assessment may be required here – see Local Rules on Manual Handling
- transport hazards, either on the road or on premises/sites, while travelling or as a pedestrian linked to the speed and external features of vehicles and the road environment);

Other Issues

The following issues may need to be considered when identifying hazards; again the list is not exhaustive:

- the location(s) of the work activity (rooms, corridors, labs, workshops etc.)
- access to and egress from the workplace;
- environmental conditions (e.g. heating, lighting, ventilation, noise);
- how the work is physically organised and sequenced;
- the duration and frequency of each component task;
- the materials, hand tools, powered tools, equipment, services, substances etc. that are used;
- the proximity to other work activities or people and scope for hazardous interaction;
- storage, handling and transportation arrangements for articles and substances;
- size, shape, surface character and weight of materials that need to be moved by hand;
- distances and heights that materials need to be moved by hand;
- manufacturer's or supplier's health and safety information on operation and maintenance of plant;
- relevant legislation, good practices, standards, systems of work etc. applicable to the work, or plant and machinery used;
- access to, and adequacy/condition of, emergency equipment, emergency escape routes, emergency communication facilities and external emergency support etc;
- experience of previous accidents/incidents or hazards relating to the work activity, by other departments or outside organisations;
- findings of any existing assessments relating to the work activity;
- levels of competence of those involved;

Appendix 4

Criteria for Determining Risk Rating and Required Action

Likelihood

The likelihood of harm arising from a particular hazard is determined using the following criteria:

		Score
Very Unlikely:	May occur only in exceptional circumstances.	1
Unlikely:	May occur given an unlikely sequence of events and/or multiple failures.	2
Possible:	Foreseeable under normal circumstances – a known past incident may have occurred.	3
Likely:	Easily foreseeable under normal circumstances.	4
Very Likely:	Inevitable under the circumstances – known past incidents may have occurred.	5

Severity

The severity of harm arising from a particular hazard is determined using the following criteria:

		Score
Insignificant:	No injury/pain or minor injury not requiring first aid.	1
Minor:	Minor injuries requiring first aid e.g. cuts and bruises. No lasting effects.	2
Moderate:	Up to 3 days absence, flesh wound, bruising etc.	3
Major:	Requires over 3 days off work or a hospital visit. Reportable to HSE.	4
Fatal:	Single or multiple fatality, long term disability, loss of limb.	5

Risk Rating & Required Action

Having estimated the likelihood and severity of a hazard, multiply the two values together to determine the Risk Rating, or use this matrix. Then, decide on further action, as illustrated by the table below:

Severity	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
	Likelihood					

Risk Rating	Risk	A Guide to Required Action <small>(Note: Assessors may propose more stringent actions depending on the circumstances)</small>
17-25	Very high	Stop work activity immediately and make improvements to risk controls.
10-16	High	Improve risk control measures, within a specified timescale.
4-9	Medium	Plan to improve risk control measures at time of next review, or sooner.
1-3	Low	No further action, but ensure risk control measures remain effective.

There is no statutory definition of a safe system of work. However, it is generally thought of as a planned, formal procedure that brings together personnel, materials and equipment in a specific location and for a specific task, in such a way that the task can be achieved without harm to personnel and property. Written safe systems of work are usually put in place to record procedures to minimise the risk to health and safety when hazards cannot be physically eliminated and there remains a degree of risk. In some University department settings, these may be known as standard operating procedures.

The following checklist is not intended to be exhaustive, but includes the essential elements that risk assessors should include. Not all of the elements will be applicable on each occasion, as this will depend on the nature of the work.

1. A brief description of the work and its location;
2. A brief description of any standards or codes to which the work will be carried out;
3. The significant findings of the assessment of risks to the University community;
4. Any materials, substances, equipment and tools to be used, along with Materials Safety Data Sheets and COSHH assessments, relating to the use of materials, substances and emissions, that could be hazardous to health;
5. Arrangements for safe storage and transporting of materials, substances, equipment and tools etc. within a building or work area, to prevent harm to the University community;
6. Precautions to be taken **before** commencing the work, eg. authorisations required, making the work area safe, preparation of fume cupboard, erection of notices and signs, management of pedestrians etc.;
7. The sequence of operations and safe working methods ¹ (steps which should be taken to make the job safe and the precautions which should be adopted during the actual work, including PPE required to be worn);
8. Arrangements for maintaining a clean, tidy and safe work area and for monitoring of standards;
9. Arrangements for keeping noise levels within limits imposed by current legislation;
10. Arrangements for clearing up work area following completion of work;
11. Arrangements for safe removal of surplus materials, substances, equipment and tools from the area;
12. Arrangements for safe return of materials, substances, equipment and tools etc. to appropriate storage areas, to prevent harm to the University community.

Notes: 1 - A safe working method can be developed using the component tasks of a work activity as a framework, together with the associated existing risk control measures and/or common sense precautions that people need to take and expressed as positive actions.