MANAGING HEALTH AND SAFETY IN TECHNICAL EDUCATION – A CODE OF PRACTICE

In the secondary school copies of this document should be held by the technical education department, the senior technician, the technical technician(s) and in a central location with suitable access as part of the Master/Subject Safety Files. In the primary school copies of this document should be held by the teacher responsible for technical education and in a central location with suitable access as part of the Master/Subject Safety Files.

It is advised that this document and subsequent amendments are put in a suitably labelled ring binder and kept in a prominent place which is known by, and accessible to, all relevant staff. This document, including appendices, must be reviewed and where changes are made they must be recorded below. Where this occurs, out of date material must be removed and discarded to avoid confusion.

Subsequent changes must be recorded below.

Date	Pages removed	Pages inserted	Signed

1. INTRODUCTION

This code of practice is designed to be as comprehensive as possible and relate directly to the health and safety requirements laid out in The Health and Safety at Work, etc., Act 1974, Regulations, associated Approved Codes of Practice (ACoPs), HSE Guidance Notes and model risk assessments used in technical education establishments.

The content of this document supports existing primary and subordinate health and safety legislation. It should be read in conjunction with relevant Acts, Regulations, ACoPs and Guidance Notes. In addition, the Health and Safety Policies of East Dunbartonshire Council and the Community Directorate should be consulted for further information and guidance where appropriate.

The topics and practices contained herein relate to technical education environments in schools. Where appropriate, best practices and guidance from industrial environments have been incorporated to ensure, so far as is reasonably practicable, that safety is given the highest priority within high-risk areas of the educational sector.

Teachers and technicians must at all times be aware of their responsibility to maintain a safe environment to ensure their own safety and that of others by their acts or omissions.

2. AIMS

The aim of this document is to ensure, so far as is reasonably practicable, that practices and procedures developed for use within technical education are safe and without risk while meeting and exceeding the requirements of current health and safety legislation.

All staff must be aware of and act in accordance with the guidance contained within this document while complying with their responsibilities to the health and safety of themselves and others who may be affected by their acts or omissions.

3. OBJECTIVES

The objectives of this Technical Education Code of Practice are to ensure, so far as is reasonably practicable:

- the health, safety and welfare of all employees of East Dunbartonshire Council involved in the provision of technical education
- the health, safety and welfare of those not in the employ of East Dunbartonshire Council, for example pupils and visitors, who may be affected by its undertaking to provide technical education
- the maintenance of a safe place of work
- the use of safe systems of work
- adopting the principle of the risk assessment process to identify and control the risk(s) associated with the provision of technical education
- the development and use of specific risk assessments to identify and control the risks associated with the use of articles and substances which come under the auspices of the Control of Substances Hazardous to Health (COSHH) Regulations 2002

- to provide the information, instruction, training and supervision necessary to ensure the health, safety and welfare of all involved in the delivery of technical education

- the minimum legislative standards are adopted and exceeded within the provision of technical education

4. DUTY OF CARE

It is the duty of all teachers and technicians working in the delivery of technical education to:

- so far as is reasonably practicable, take care of themselves and others who may be affected by their acts or their omissions

- be familiar with the content of this document by periodic reference to it and follow the procedures contained therein

- report identified deficiencies to ensure continuous review and to communicate any changes to this document to the Technical Support Service within Resources and Curricular Support

- co-operate with other members of staff in the promotion and maintenance of health and safety

5. RESPONSIBILITIES

East Dunbartonshire Council has a duty to ensure, so far as is reasonably practicable, the health, safety and welfare at work of all of their employees, and in particular as regards:

- the provision and maintenance of plant and systems of work that are safe and without risks to health

- arrangements for ensuring safety in connection with the use, handling, storage and transport of articles and substances

- the provision of such information, instruction, training and supervision as necessary to ensure the health and safety at work of his/her employees

- the maintenance of the workplace in a condition that is safe and without risks to health and the provision and maintenance of means of access and egress are safe and without such risks

- the provision and maintenance of a working environment for employees that is safe, without risk to health and adequate as regards facilities and arrangements for their welfare at work

The person with overall responsibility for health and safety within all primary, secondary and special schools is the head teacher.

In the technical education department in secondary schools, this is delegated to the principal teacher of technical education.

The senior technician is responsible for the technical technician(s) and any other technician working in the technical education department with the exception of ICT support technicians.

It should be noted that all members of staff are responsible for their own health, safety and welfare and that of others by their acts or omissions.

6. LEGISLATION

The following Acts, Regulations and Approved Codes of Practice (ACoPs) have been used to inform the contents of this publication:

The Health & Safety at Work, etc., Act 1974
Management of Health and Safety at Work Regulations 1999 (MHSW)
Control of Substances Hazardous to Health Regulations 2002 (COSHH)
Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR)
Electricity at Work Regulations 1989
Noise at Work Regulations 2005
Workplace (Health, Safety and Welfare) Regulations 1992
Provision and Use of Work Equipment Regulations 1998 (PUWER)
Personal Protective Equipment at Work Regulations 1992
Pressure Systems and Transportable Gas Containers Regulations 2002
Gas Safety (Installations and use) Regulations 1996
Health and Safety (First Aid) Regulations 1981
Manual Handling Operations Regulations 1992
Reporting of Injuries, Diseases & Dangerous Occurrence Regulations 1995 (RIDDOR)
Health & Safety (Safety Signs and Signals) Regulations 1996
The Safe Use of Woodworking Machinery Approved Code of Practice.
Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP)
Health and Safety (Display Screen Equipment) Regulations 1992

These Regulations are constantly being updated and only the most up to date publication should be accessed for reference.

Provision and Use of Work Equipment Regulations (PUWER) 1998

The regulations require risks to people's health and safety, from equipment supplied for use at work, to be prevented or controlled. Failure to comply with PUWER constitutes an offence.

Areas of risk for equipment and machinery in the technical department include:

- the use of equipment e.g. hammers, ladders, knives etc
- the use of machinery e.g. circular saws, electrical appliances, computers
- the condition of machinery e.g. maintenance and inspection schedules

To comply with PUWER the following points must be considered:

- equipment must be suitable for use and for the purpose and conditions for which it is intended
- equipment and machinery must be maintained in accordance with a written schedule of examination to ensure its safe condition for use so that people's health and safety is not put at risk

- equipment and machinery must be inspected in accordance with the above written schedule(s) to ensure that it continues to be safe for use. A competent person should carry out any inspection and a written record kept

- risks created by the use of equipment are removed or reduced so far as is reasonably practicable

- staff and pupils using work equipment shall receive suitable information, instruction, training, and supervision for equipment being used

To comply with Regulation 3 of the Management of Health and Safety at Work Regulations 1999, risk assessments must be undertaken, documented, retained, reviewed and the contents briefed or where required relevant staff trained.

East Dunbartonshire Council has prepared risk assessments for the new three phase tools in technical education departments. These should be read carefully by the principal teacher to ensure that all areas have been covered and ensure that staff and/or pupils are made aware of the risk control measures contained therein.

Control of Substances Hazardous to Health (COSHH) Regulations 2002

The Control of Substances Hazardous to Health (COSHH) Regulations 2002 lay down the essential requirements for the control of risks associated with hazardous substances and to protect people exposed to them. Failure to comply with the COSHH Regulations constitutes an offence.

The Regulations require risk assessments to be undertaken before employees and others use or produce substances considered as hazardous to health. This will include:

- substances classified under labelling Regulations (CHIP) as being toxic, very toxic, corrosive, harmful, irritant

- substances assigned an occupational exposure limit (OES) or maximum exposure limit (MEL) including dusts

It is the principal teacher's responsibility to ensure that under the COSHH Regulations:

- all substances deemed to be hazardous are labelled with the correct hazard symbols as defined by the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP) in accordance with UK Regulations and EEC Directives

- separate, suitable and ventilated storage areas are provided for chemicals, flammable liquids and compressed gas

- incompatible hazardous substances should be stored away from each other

- HAZCHEM and other safety notices should be displayed on the outside of the store, usually on the doors

- An up to date inventory of all hazardous substances must be maintained. One copy of this stock list should be kept in the department and one copy should be kept in the Property Six Pack which is located in the site co-ordinator's room.

- the amount of each substance kept on the premises should be as low as possible consistent with purchasing requirements

- inventories should be regularly reviewed and redundant or out of date stocks disposed of in a safe manner in accordance with Scottish Environment Protection Agency (SEPA) guidelines

- arrangements should be made with the senior technician for the uplift of such materials through the Technical Support Centre (See Chemical Uplift section)

All flammable substances must be stored in a suitable metal cabinet. The cabinet should have a sill capable of retaining 110% of the contents of the largest container. The cabinet should be stored away from other combustible material and sources of ignition. The amount of flammable liquid stored in one area must be kept to the absolute minimum required. The room where flammable substances are kept should be labelled with the COSHH warning label 'Flammable' in accordance with Health and Safety (Safety Signs and Signals) Regulations 1996 and EEC Directives. Only the minimum quantity of flammable liquids necessary to complete the task in hand should be introduced into the workshops or technician's room.

Teachers and technicians should attend suitable training and refresher training on COSHH Regulations.

Further Guidance

The Control of Substances Hazardous to Health Regulations 2002	*ISBN 0 11 082087 8*
5 Steps to Risk Assessments	*ISBN 0 7176 1565 0*
Maintenance, Examination and Testing of Local Exhaust Ventilation (LEV)	*ISBN 0 7176 1485 9*
Safe use of work equipment, Provision and Use of Work Equipment Regulations 1998	*ISBN 0 7176 1626 6*
Storage and Use of Highly Flammable Liquids in Educational Establishments.	*HSE Leaflet IAC L15*
SafetyNet, SSERC 2006. SSERC website and school network	
Health and Safety publications and Reference Agencies	*Appendix 1 & 2*

7. RISK ASSESSMENTS

The basis of UK Health and Safety Law is the Health and Safety at Work etc Act 1974. The primary act sets out the general duties that employers have towards employees and members of the public, whilst laying out the health and safety responsibilities employees have both to themselves and to others by their acts and/or omissions.

Employers are legally required under The Management of Health and Safety at Work Regulations 1999 to ensure that risk assessments are developed and implemented. The risk assessments are to be carried out by a suitably trained and competent person. A competent person is someone who has the necessary technical skills, knowledge, expertise, training and experience to carry out the risk assessment.

The aim of this Code of Practice, as far as is reasonably practical, is to prevent staff or other persons becoming injured or ill as a result of work activities. A risk assessment is a critical examination of activities to identify the risk(s) to health and safety arising out of, or in connection with, work or the conduct of their undertaking.

The significant findings of the risk assessment are to be recorded on approved East Dunbartonshire Council documentation (See Appendix 3 for Standard form). This can include risk assessments undertaken in line with different pieces of legislation such as the Provision and Use of Work Equipment Regulations 1998 (PUWER) and the Control of Substances Hazardous to Health Regulations 2002 (COSHH).

An example of this is the use of a circular saw to cut wood. The procedure needs to be risk assessed in terms of the use of high risk machinery under PUWER but because of the hazards associated with wood dust; it also needs to be risk assessed in terms of the COSHH Regulations.

Some examples where PUWER risk assessments are required:

- use of machinery
- use of hand held tools

Some examples where COSHH risk assessments are required:

- generation of wood dust from activities such as cutting, drilling, sanding, planing
- use of solvents, paints and glues

Many activities require risk assessments that involve more than one piece of legislation in that they address hazards from tools and equipment used, hazards from substances used or hazards from substances generated through the use of tools or equipment.

Assistance with other special risks assessments may be obtained in the first instance through East Dunbartonshire Human Resources Health and Safety section.

There are a number of sources of information for risk assessments contained in schools which should always be critically assessed for suitability and validity before use.

Users need to employ caution when considering risk assessments produced to accompany commercial packages. These should be viewed as a starting point only and not as the finished article. It is the responsibility of the principal teacher to ensure that there are up to date risk assessments to accompany procedures carried out within the department.

All risk assessments must be on East Dunbartonshire Council documentation with any relevant externally produced documentation supporting the risk assessment attached, however the following should always be considered prior to their use:

- externally sourced documentation must be looked at critically to ensure that it is suitable and sufficient for the procedure or experiment in question
- they must be relevant to the task
- they must be able to be applied safely

The principal teacher and senior technician should ensure that all staff under their control are instructed to utilise the information contained within the aforementioned documents and undertake a monitoring role to validate their effectiveness and use. In addition, the management of health and safety and risk assessment should be a standing item on the agenda for departmental meetings.

All staff need to be familiar with the methods to be adopted for carrying out procedures; ensure that all risk areas have been addressed and that pupils are made aware of the risk control measures associated with each procedure.

Where there is no documentation to support or guide an experiment or procedure, the principal teacher must ensure that risk assessments are developed by competent persons based on their knowledge and experience to ensure that the risks associated with these experiments or procedures are controlled.

The following steps should be taken to complete a risk assessment:

Step 1 Look for the hazards.

Step 2 Decide who might be harmed and how.

Step 3 Evaluate the risks and decide whether the existing precautions are adequate, or whether more should be done.

Step 4 Record the findings in writing using the agreed standard format.

Step 5 Review the assessment regularly and revise it if necessary.

Control measures to remove or minimize any risks must be made known, through briefing or training, to all staff, pupils and students. All staff are required to exercise control and supervision to ensure that, as far as is reasonably practicable, such preventive and protective measures are always taken. Holders of promoted posts have the responsibility to monitor and, if necessary, review risk assessments and the preventive or protective measures that result from that review.

If a teacher or technician cannot find an appropriate risk assessment for a particular operation involving hazardous substances in these texts or an assessment for a very similar one, a new risk assessment must be undertaken. This must be developed by a competent person, based on their knowledge and experience, to ensure that the risks associated with the procedure is controlled.

Hazard warnings and precautions

Hazard warnings and instructions are to be written into support materials used by teachers, pupils and technicians. These warnings should clearly identify the hazards and highlight precautions.

Training

The Community Directorate in line with East Dunbartonshire Council's Health and Safety Policy and the requirements of the Health and Safety at Work etc., Act 1974 will ensure, so far as is reasonably practicable, that teachers and technicians receive appropriate training that allows them to undertake their duties in a manner which does not affect their health, safety and welfare or expose them to unnecessary risk.

All principal teachers with responsibility for technical education must be trained in risk assessment. In addition it is recommended that all technical education teachers and technicians be trained in risk assessment.

Risk Assessment pro forma *Appendix 3*
Training Record pro forma *Appendix 7*

8. CHEMICAL UPLIFT

The technical support adviser will arrange for the uplift and disposal of chemicals by an approved contractor that are unwanted, out of date, beyond their safe shelf life or hazardous. This will be done in conjunction with technicians, the senior technician and the principal teachers in the school. The cost of the uplift will require to be met by the individual schools. It is in the interest of the school to ensure that the amount of any chemical bought is kept to a minimum allowing for rapid turnover of stock and avoiding unnecessary waste.

9. LOCAL EXHAUST VENTILATION (LEV)

The PUWER and COSHH Regulations require the inspection of LEV equipment annually, but Regulations state every 14 months to allow a 'period of grace'. The insurance company contracted by East Dunbartonshire Council will inspect LEVs in the schools at the agreed frequency and they must be allowed access to carry out the tests. Test certificates must be kept on the premises, in the Statutory Inspection Register (SIR) if available, and be available for staff reference and for inspection by the employer's representative, the Council's Health and Safety Advisors and HM Health & Safety Inspectors. It is the responsibility of the principal teacher and the senior technician to ensure that the above records are maintained and documented to comply with the above.

10. HAZARDS ASSOCIATED WITH WOODWORKING DUST

It should be noted that working or processing wood can have adverse ill health effects. These can range from irritation to cancers depending on the exposure and concentration of wood dust. Further information is contained in HSE Information Sheet, Toxic Woods, Woodworking sheet No 30. This document is not an exhaustive list of toxic woods.

Ref: HSE Information Sheet, Toxic Woods, Woodworking sheet No 30

11. ASBESTOS

Any fibrous material should be assumed to be asbestos unless it has been identified as being non-asbestos through laboratory analysis or property records. It should be recognised that asbestos is not considered hazardous to health when it is not damaged, undisturbed or in a state of deterioration. It is when one or all of the aforementioned conditions occur that the risk(s) to health can be realised.

Asbestos can be found in a number of situations e.g. mixed with adhesive and sprayed onto surfaces to act as fireproofing, thermal or acoustic insulation, loose wrapped round pipes, sandwiched between other materials to form benching or walls, mixed in plaster. As a result,
technicians must not drill into walls, floors or workbenches without first checking with Technical Support who will liaise with East Dunbartonshire Council's Asbestos Co-ordinator to prevent the possible disturbance of asbestos containing material.

Ref: Health, Safety & Welfare Standard No. HR/HS/STD/014 Issue 4 May 2004 the Management of Asbestos Containing Materials

12. SECURITY

Access to workshops, design areas and stores is at all times to be controlled so as to comply with the risk assessments made under the provisions of the Management of Health and Safety at Work Regulations 1999.

13. WORKING ALONE

In order to prevent staff being exposed to the dangers of lone working and the use of high risk machinery or activities they will:

- Inform a member of staff in the adjacent or nearest location of their intention to participate in lone-working or work at high-risk machinery.
- Indicate what operations are to be undertaken and their expected duration.
- Inform the same member of staff when the operations are complete.
- Where possible seek assistance.
- Ensure all staff are aware of the precautions to take when involved in lone working.
- When the completion time has been reached and the member of staff has not been informed that the work has been completed, they should check that the operator is still working safely.

Further Guidance
Working Alone in Safety *ISBN 0 7176 1507 3*
Health and Safety Standard on Lone Working HC/HS/STD/018, East Dunbartonshire Council

14. PERSONAL PROTECTIVE EQUIPMENT (PPE) AT WORK REGULATIONS 1992

Prior to the issue for use of personal protective equipment, a suitable and sufficient assessment of the risks should be made to determine the suitability of the PPE.

Personal protective equipment, including ear protection, must be readily available, properly stored and used as appropriate. Where required, training in its use may need to be given. It is the responsibility of the principal teacher to ensure that this is done for teachers and pupils.

Employees should examine PPE before and after it is worn to ensure that it is in good working order. Before PPE is issued to pupils, the teacher should examine it to ensure it is in good working order.

It is the senior technician's responsibility to ensure that PPE used by the technicians is readily available, properly stored and used as appropriate. The senior technician should arrange for regular laundry of dust coats by external agencies.

Information on the Council's policy on PPE can be found in circular **MSF/34e**

Eye protection

Goggles must be suitable for the task and in the case of technical education departments should be dust and impact resistant. They should be in good condition and able to be adjusted to fit snugly on the face; consideration should be given to buying sets of smaller goggles for use by younger pupils. Goggles with scratched lenses that impair vision, lenses that have become detached from the frame or where the indirect vents are missing must not be used. Suitable eye protection must be provided and used for forging, brazing and welding. Consideration should be given to goggles capable of being worn over prescription glasses.
For further information see Appendix 4

Ear protection

The Noise at Work Regulations, 1989 requires that any persons working in noise levels of between 85 and 90 dBA must be provided with suitable hearing protection. If noise levels are above 90 dBA then hearing protection must be worn. The noise reduction suitability should be checked when purchasing ear protection. Where determined, suitable ear protection zones may be set up, for example, the saw room.

Wood dust

Under the Control of Substances Hazardous to Health Regulations 2002 all reasonable steps must be taken to control wood dust in the technical education department. The best way to control wood dust is at source and to this end East Dunbartonshire Council has a rolling programme of upgrade and improvement to plant and machinery including Local Exhaust Ventilation Systems. However respiratory protective equipment (RPE) suitable for use with wood dust may be needed as an interim measure where controls are being developed, for example the use of lathes; and for short term jobs such as hand sanding, cleaning and maintenance. Users should refer to 'HSE Woodworking Sheet No 14, Selection of respiratory protective equipment suitable for use with wood dust' to check suitability of particular RPE.

Reference: HSE Woodworking Sheet No 14, Selection of respiratory protective equipment suitable for use with wood dust.

15. MAINTENANCE AND INSPECTION

The Provision and Use of Work Equipment Regulations 1998 set out general requirements for ensuring that work equipment is kept in a suitable and safe condition.

It focuses on three terms:

- An efficient state
- In efficient working order
- In good repair

'Efficient' in this instance refers to how the condition of the equipment might affect health and safety and is not concerned with productivity.

To fulfil the Regulation's requirements, employers have to show that they comply with all three. The Regulations also cover maintenance logs.

The Regulations focus on:

- Maintaining work equipment in a suitable condition
- Ensuring that maintenance logs for machinery are kept up to date.

The Regulations require employers to examine the equipment to ensure that they have a written scheme of examination and maintenance, which is comprehensive and minimizes risk.

The correct approach to maintenance can be achieved through:

- Routine maintenance
- Planned preventative maintenance.

Equipment should be maintained to ensure its condition does not deteriorate and put people at risk. The extent and complexity will vary enormously, from simple checks on hand tools to an integrated programme for complex plant.

Equipment should be checked frequently to ensure that safety related features are functioning correctly. The frequency at which equipment needs to be checked is dependent on the equipment itself, the work environment and the risk involved.

Only those who have received adequate information, instructions and training should undertake any maintenance work. In addition, other legislation may set out minimum requirements for maintenance, inspection or test e.g. Local Exhaust Ventilation. However, although minimum requirements may have been set, there is still a need for the equipment to be effectively maintained at all times.

Routine maintenance

This includes periodic lubrication, cleaning, inspection and testing, based on the recommendations of the equipment manufacturer and any specific legal requirements such as for LEVs. While in most cases it would be expected that the combination of the manufacturers' instructions and legal requirements would allow adequate maintenance, in particularly arduous conditions, for example, further measures may be required. Components that have failed or are likely to fail before the next periodic check should be repaired or replaced.

Planned preventative maintenance

When inadequate maintenance could cause the equipment, guards or other protection devices to fail and increase the risk(s) to the user, a formal system of planned preventative maintenance should be developed and implemented. The primary aim of planned preventative maintenance is to prevent failures and reduce the risk to health and safety when the equipment is in use. This is achieved through a system of written instructions, which are used to initiate inspection, testing and planned replacement or refurbishing of components or safety equipment before they reach the end of their useful life.

In accordance with the PUWER Regulations, the Technical Support Centre will organise and co-ordinate a biennial programme of planned preventative maintenance on wood and metal work machines, heat treatment areas and LEVs using external contractors to carry out the work.

Maintenance log

It is recommended that a record of maintenance be kept. A maintenance log should provide information for future planning and inform maintenance personnel and others of previous action taken. The maintenance log must be kept up to date and available for inspection and audit purposes.

Further guidance

Health and Safety Documents	*Appendix 1*
Reference Agencies and Health and Safety resources	*Appendix 2*
Risk assessments pro forma	*Appendix 3*
Maintenance requirements for Technical Departments	*Appendix 5*
Maintenance logs for machinery	*Appendix 6*
Record of H&S training for Teachers and Technicians	*Appendix 7*

16. WORKSHOP TOOLS AND MACHINERY

Under the Provision and Use of Work Equipment Regulations 1998 (PUWER) any saw tables, lathes, pillar drills and other devices such as horizontal or vertical milling machines, require that they be fitted with fixed or moveable or automatic guards or other relevant safety devices appropriate to the degree of risk and the level of intended users. Staff are required visually to inspect machines before use and check the present condition, for safe operation of suitable guard(s), riving knife or drill bit cover. Staff should not use, or permit others to use, such machine tools unless the appropriate preventive and protective devices are in place and effective. See British Standards BS 4163:2007. The HSE Guidance to PUWER contains useful and detailed advice on risk assessment based approaches to workshop machine safety.

Ref: The British Standard, Health and safety for design and technology for schools and similar establishments – Code of practice, BS4163:2007

Prevention of unauthorised use of high risk machinery

Entry to workrooms containing high-risk machinery should at all times be controlled either through restricted entry or supervised appropriately. Where this cannot be achieved machinery should be locked off and the key removed to prevent unauthorised use.

The following recommendations are made to prevent, so far as is reasonably practicable, the risk(s) of serious injury through the unauthorised use of high-risk machinery.

- The door to the saw room should have a functioning lock to prevent unauthorised access.
- Teachers and technicians should take measures to prevent unauthorised access to the saw room.
- Pupils must not be allowed access to the saw room at any time. In particular the saw room must not be used to store pupils' work pieces.
- When the saw room is not in use it should be locked.
- When the saw room is not in use all the woodworking machinery should be isolated and locked off.

- Once the isolator is switched on the key should be removed to a safe place e.g. key safe where only authorised personnel have access.

- The principal teacher and senior technician should monitor the operation and effectiveness of the above recommendations.

- Where a procedure or process changes or where failure occurs, systems and risk assessments should be reviewed and changed to remove or reduce risk(s).

Training, assessment and supervision of pupils

The British Standard, Health and safety for design and technology for schools and similar establishments – Code of practice, BS4163:2007 lays out the training, assessment and level of supervision required for pupils to use tools and machinery in the technical education department. For example pupils may only use band saws when they have been assessed as being competent and under the direct supervision of teaching staff.

Ref: The British Standard, Health and safety for design and technology for schools and similar establishments – Code of practice, BS4163:2007

Safety signs

The Health & Safety (Safety Signs and Signals) Regulations 1996 require that safety signs are used and maintained where there is a significant risk to health and safety that has not been controlled by other means, like engineering controls, and where the use of a sign can help reduce the risk. Safety signs must conform to the above regulations in terms of safety colour coding and design and be purchased from reputable suppliers.

Safety colours are as follows:

Red Prohibition Sign: must be used when prohibiting anything which concerns dangerous conditions or practices e.g. no unauthorised access, do not machine multiples, no unauthorised use; for emergency stop buttons and for fire fighting equipment

Yellow Warning Sign: must be used where there is a need to be careful, take precautions or examine e.g. flammable materials, electrical danger, risk of fire; for marking surfaces to show obstacles or dangerous locations (yellow and black stripes) or traffic routes (yellow lines)

Blue Mandatory Sign: must be used for any mandatory sign requiring a specific behaviour or action e.g. eye protection must be worn, guards must be used

Green Safe Condition: must be used for emergency escape signs and first aid signs

Ref: Introduction to Health and Safety at Work. Phil Hughes, Ed Ferrett

17. EQUIPMENT IN GENERAL

All staff responsible for selecting equipment for purchase, or other acquisition, must check, as far as is practicable, that it will be safe in use and suitable to the intended purpose (Provision and Use of Work Equipment Regulations 1998). Equipment listed by reputable, specialist suppliers or educational equipment suppliers can generally be taken to comply especially where a relevant and appropriate British Standard or European Standard is quoted. Other equipment, such as that purchased from ordinary retail or High Street outlets or, especially, gifts must not be considered. The Technical Support Centre, Heath and Safety Advisers and SSERC can often advise.

As from 1st January 1997 it became necessary that existing equipment also be assessed and its suitability confirmed. Particular attention is to be paid to equipment with moving parts, capable of causing burns or scalds or capable of shock risk voltages on accessible parts. The use of some types of equipment may have to be restricted to those users who have had, or are given, special training.

Any user who discovers a hazardous defect, offering other than the most trivial risks, in any item of equipment must report it to the principal teacher who is in turn responsible for withdrawing the item from service until the defect is rectified or a suitable replacement item is purchased or otherwise provided.

18. MANUAL HANDLING

All operations involving lifting, carrying or accessing items in storage, handling timber or sheet materials in bulk or of awkward dimensions etc. should be assessed to ascertain the risks of injury (Manual Handling Operations Regulations 1992). In particular, 8 x 4 ft sheets of material must not be purchased in future and should be replaced with 4 x 2ft or 4 x 4 ft sheets. Risk assessments should be reviewed at predetermined frequencies to ascertain their continued validity.

19. HAND ARM VIBRATION SYNDROME (HAVS)

Technical technicians may be exposed to HAVS caused by the use of circular saws, band saws, planer/thicknessers and other equipment that generates and transmits vibration to the user. To enable this to be managed effectively, certain actions on behalf of head teachers, principal teachers of technical education and technical technicians require to be undertaken.
These are as follows:

- A programme of health surveillance, initially on an annual basis, will be arranged by Human Resources

- The technicians workload, in association and consultation with teaching staff, be planned to reduce the risk involved in prolonged usage of high risk machinery for long periods

- Arrangements to be made to ensure that material being purchased is of a size that removes or reduces extra manual handling or vibration through the cutting process. For example 8 x 4 ft sheets of material (wood, metal, plastic) must not be purchased in future and should be replaced with 4 x 2ft or 4 x 4 ft sheets

- Examination of the technicians' activities throughout the working day to be undertaken

- Human Resources will arrange for vibration measurements of high risk machinery to be undertaken to determine the frequency and length of time allocated to each machine to reduce overexposure during the working day.

The above actions are to be undertaken as soon as possible to prevent, so far as is reasonable practicable, a deterioration of this condition. It should be noted that a working group has been established to address the issues and monitor the effectiveness of the actions implemented.

20. ELECTRICAL TESTING

To meet, support and exceed the requirements of the Electricity at Work Regulations 1989, East Dunbartonshire Council has in place a formal inspection and testing regime (PAT) that covers all items of portable equipment. Any electrical equipment brought in from home must be tested and included on the school inventory. The technicians, delegated to do so by the senior technician, will carry out portable appliance testing and the results will be electronically logged.

Hard copies of the test results will be kept in the Statutory Inspection Register and be available for staff reference and for inspection by the East Dunbartonshire Council's representative or Her Majesty's Inspectors of Health and Safety (HSE Inspectors). A copy of the data will be held at the Technical Support Centre.

In addition East Dunbartonshire Council officers will carry out fixed installation testing at predetermined frequencies to ensure the integrity of systems. They must be allowed access to carry out the test.

Pupil project work involving mains electricity

In order that East Dunbartonshire Council complies with the provisions of the Health and Safety at Work, etc., Act 1974; the Provision and Use of Work Equipment Regulations 1998 (PUWER) and the Electricity at Work Regulations 1989; it is important that technicians who undertake Portable Appliance Testing on electrical equipment on behalf of the Council check to ensure that equipment being used for work activities on EDC premises is safe for use.

It is not possible for technicians to test lamps or other models involving mains electricity made by pupils in the technical education department. The models in question will be removed from school premises, taken home by pupils, and as such East Dunbartonshire Council would have no control over the conditions or the manner in which the lamps would be used. To this end East Dunbartonshire Council cannot deem the equipment safe for use out with EDC premises without leaving the authority open to legal proceedings in the event of an accident or incident.

As a result, technicians must not undertake Portable Appliance Testing of equipment that will not be kept on East Dunbartonshire Council premises; however this does not preclude the curricular activity of pupils making the lamp to take home as the activity will be undertaken under the supervision of the technical teacher.

Further Guidance

Electrical Safety in Schools:	*ISBN 0 11 883 567 X*
*The Safe Use of Portable Apparatus**:***	*ISBN 0 11 883 563 7*
Memorandum of Guidance on the Electricity at Work Regulations:	*ISBN 0 11 883 963 2*

21. NOISE

In the absence of noise measurement data, a rule of thumb is that if it is usually so noisy at work that you have to shout to carry on a conversation with a person at arms length, you probably have a noise problem.

While secondary school practical areas are not usually so noisy that this always applies, such circumstances can arise when certain kinds of project work are undertaken. Noise from machines can vary from machine to machine, depending on conditions of use, but it is possible that circular saws, planers and high-speed routers might emit noise which exceeds the action levels as laid out in the Noise at Work Regulations 2005, perhaps compounded by working in a confined space. It should be noted that regular effective maintenance of equipment can help control noise levels.

The Noise at Work Regulations 2005 are designed to protect people at work from risk of hearing damage caused by noise, and apply to all at work. Where areas have been designated 'Hearing Protection Zones' or where mandatory signage determines that ear protection is required, ear protection must be worn at all times when work is being undertaken.

It is the responsibility of the employee to wear ear protection when it has been provided and deemed necessary.

Further Guidance

Introducing the Noise at Work Regulations	*HSE leaflet INDG75*
Noise at Woodworking Machines	*HSE leaflet WIS13*
The Personal Protective Equipment at Work Regulations 1992	*ISBN 0 7176 0415 2*

22. LOCAL ARRANGEMENTS AND REQUIREMENTS

The Management of Health and Safety at Work Regulations 1999 and the Control of Substances Hazardous to Health 2002 places a duty on employers to have in place systems that deal effectively with emergencies or conditions of serious or imminent danger. All members of staff have a legal duty to co-operate with the employer in their implementation.

Staff should ensure that they are aware of the procedures and where required ensure that pupils under their control are informed. Where deficiencies are identified they should be reported and effectively controlled.

Emergency procedures

Where appropriate, staff must be familiar with the emergency procedures for the department and the school. This should take account of the location in each work area; the escape route, fire-fighting equipment, the nearest first aid box, water tap, the main gas cock, emergency stop controls, the main electricity switch and personal protective equipment.

First aid

All staff should make themselves aware of the school procedures for dealing with accidents. Information on how to contact first aiders should be posted beside every phone in the department. Every technical education department should hold a first aid box and every room in the department should have clear instructions on the names and

contact numbers of first aiders and the location of the first aid box. Staff should also be aware of when it would be appropriate to call an ambulance immediately.

For example:

- The casualty is unconscious.
- There is a head injury with disorientation, sickness and/or dizziness.
- There is a head injury with fluid oozing from the ear.
- There is an object embedded in, or a penetration wound to, the eye.
- There is a penetration wound to the ear.
- There is a deep penetration wound to the body.
- Prolonged asthmatic attack

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

In the event of an accident or incident occurring in the department, East Dunbartonshire Council's current guidelines on accident reporting must be followed and the completion of a PER (HS1a) form is necessary for every incident.

It is the responsibility of the injured person's line manager/supervisor to ensure that all relevant forms are completed in the event of an accident or incident in the department. It is also the responsibility of the injured person's line manager/supervisor to investigate every incident/accident to determine the basic and/or underlying cause. As a result of the investigation, measures identified to prevent a recurrence should be entered in Section 7 of the reporting form PER (HS1a). In the event of a pupil being injured as the result of an accident it is the responsibility of the class teacher or designated member of office staff to complete the necessary documentation.

Reference
East Dunbartonshire Council Health and Safety Arrangements for the Reporting of Accidents, Injuries, Diseases, and Dangerous Occurrences. Revised June 2004.

Eye wash

Where corrosive or irritant chemicals are splashed in the eye, immediate and prolonged irrigation of the eye is required.

Fire

Every pupil and member of staff must be made aware of the evacuation procedures in the event of a fire or incident. Technical department staff must follow normal school procedures in case of fire. A full emergency/fire drill shall be conducted twice per school term with the day, date and time logged in the Fire Record Book. However, all staff must be made aware of the extra fire hazards that may occur in the department and what remedial measures should be taken in the event of an incident.

For example, staff should know the appropriate control measures for:

- Hot-working
- Operations generating fine dusts
- Use of flammable solvents, varnishes, paints and oils in significant volumes
- Clothing or hair on fire

A copy of the Fire Evacuation Procedure must be displayed in a prominent position in every classroom and workroom in the department.

Further Guidance
Fire Precautions in the Workplace; Information for Employers about the Fire Precautions, Workplace Regulations 1997: *ISBN 0 11341169 3*

Emergency contact telephone numbers

The following list of numbers should be prominently displayed close to every telephone in the Technical Education Department:

FIRST AID CONTACTS IN SCHOOL

Name	Ext No

HEALTH AND SAFETY ADVISER
Tom Brown 0141 574 5531 07768 032421

23. OTHER SAFETY ADVICE AND GOOD PRACTICE

Principal teachers should be aware that other advice exists which is not mandatory unless specifically mentioned by the employer or in UK Regulations. In particular, the British Standard, Health and safety for design and technology for schools and similar establishments – Code of practice, BS4163:2007 aims to protect pupils, and employees across the full range of design and technology teaching areas. Whilst this code of practice is not a legal requirement it provides means of demonstrating that reasonably practicable steps have been taken to minimise the risks from machinery, equipment, processes and materials used.

Reference Agencies *Appendix 2*

24. DEPARTMENT RULES AND CHECKLISTS

The Guidelines for Technical Education Staff are contained in Appendix 10 and 11 and the Rules for Pupils in Appendix 12. East Dunbartonshire Council does not insist that the technical education staff use checklists for monitoring workshops or teaching rooms but instructs that where high-risk machinery is present it should be switched off and isolated to prevent unauthorised use. In addition a control system for keys must be developed and implemented. In addition, other procedures will be needed for checking machine guards, personal protective equipment and main controls/switches in particular.

Further Guidance
Guidelines for All Technical Education Staff *Appendix 10*
Guidelines for Technical Education Teachers *Appendix 11*
Safety Rules for pupils *Appendix 12*

25. COMMUNICATIONS

The principal teacher is responsible for ensuring, as far as is practicable, that this Health and Safety Code of Practice is read, briefed and implemented by the teaching and support staff who may be affected by its contents, and that all staff know where it is kept. The senior technician is responsible for ensuring, as far as is practicable, that this Health and Safety Code of Practice is read, briefed and implemented by technicians who may be affected by its contents, and that all staff know where it is kept.

Safety Rules for Pupils is to be posted on the wall in all workshops and each of the other technical subject rooms.

The principal teacher must draw attention to any amendment(s) made to the Code of Practice by them or by the Council (and, for their own protection, record that this has been done). They are advised to have a procedure whereby hazards etc. of which any staff become aware from other reputable and relevant sources, are brought to the attention of everyone in the department. It is sensible for health and safety to be a regular item on the agenda of departmental meetings and for technicians to attend the section of the meeting when it is discussed.

Everyone in the department must make sure that all delegated responsibilities are carried out and that any damage to equipment, which may produce a hazard, is properly reported. They may have to prevent the use of such items or require that extra precautions be taken until repairs are complete.

Staff development needs should be discussed with the principal teacher, senior technician and other colleagues and the means whereby those needs are to be met. It is the responsibility of the school's Senior Management Team to arrange for relevant and appropriate health and safety training.

26. RECOMMENDED PROCEDURES

General Points

- Ensure that the general work environment is, so far as is reasonably practical, safe and tidy. The area around machinery e.g. circular saws, lathes, band saws must be kept clear of excess or discarded materials and wood dust to prevent slip and trip hazards and their associated risk.

- Floors should be kept clean and in good repair.

- All safety signs must comply with the Health and Safety (Safety Signs and Signals) Regulations 1996.

- Ensure that personal protective equipment (PPE) is readily available, properly stored and used as appropriate. All PPE should conform to relevant British and European Standards.

- Impact resistant goggles are the normal form of eye protection. Eye protection should conform to EN 166 B (BSEN 166 B) or BS2092. It should be noted that persons who normally wear spectacles might find difficulty in wearing goggles over their spectacles; in such circumstances a face shield should be used. MSF/34e.

- All spillages should be cleaned up at once, in accordance with the manufacturers' data sheets and COSHH assessments, whilst wearing appropriate personal protective equipment.

- Keep all passageways and exits clear with safe working distances between workstations.

- Ensure that fire exits are operational, clearly marked, easily opened and unobstructed at all times.

- No sharp objects should project from benches, racks, etc.

- Materials, portable equipment, tools and work pieces should be neatly and safely stacked and/or stored when not in use.

- Long hair must be tied back, ties removed, jewellery removed and any loose clothing suitably secured when using machinery.

- Ensure that a high standard of behaviour is maintained in all technical areas.

- Flammable substances and hazardous chemicals should be used in accordance with the COSHH regulations and assessments.

- Teachers should demonstrate the safe methods of handling materials, tools and equipment and indicate the associated risks.

- Suitable and sufficient information and instruction on safe methods including appropriate controls should be provided. Staff should refer to the CLEAPSS document, Model Risk Assessments for Design and Technology in Secondary Schools and Colleges (2001-2002) or to risk assessments prepared by East Dunbartonshire Council.

- All materials and substances should be stored, handled, used and disposed of in accordance with the manufacturers' instructions and data sheets.

- Hot materials should be placed in a safe area and should be signed 'DANGER HOT'.

- A teacher must always be in the work area and supervise as appropriate when pupils/students are to operate machinery/equipment.

- Work areas should be checked for potential dangers after a class has left.

- Ensure that all accidents/incidents are reported in accordance with the Council's accident reporting procedure.

- It is imperative that teachers are made aware of such medical information concerning pupils as is relevant to the activities being undertaken by them.

- A first aid box should be readily available in the department. MSF/12, SSF/T17 and Health and Safety (First Aid) Regulations 1981.

References

Master Safety File (MSF)	*Strathclyde Regional Council*
Subject Safety File/Technical (SSF/T)	*Strathclyde Regional Council*
General Safety File (GSF)	*Strathclyde Regional Council*

Services

- The main control switches/valves for the electrical/gas supply to a technical education area should be correctly identified, isolated and switched off when not in use.

- Staff should know the location of the main controls and valves to the electrical and gas supply and how to operate them.

- The electrical supply to each individual machine should be switched off at the isolator when the machine is not in use. The isolator key should be removed and locked in the key safe until further required.

- Ensure that supply cables or tubing are not in a position where they are liable to be damaged.

- Cables, conduit and tubing for fixed equipment should be inspected regularly for damage. A record of each inspection should be kept within the department. Any damage should be reported immediately, the equipment disconnected from the supply and clearly labelled as unsafe.

- All emergency stop controls must be inspected regularly to ensure that they are in working order, properly signed, clearly visible and that access to them is unobstructed. Staff and pupils should be aware of the location and proper use of emergency stop controls.

- Residual current devices should be checked using the test button in accordance with the manufacturers' recommendations.

- Ensure connections and tubing for pneumatic equipment is checked before use.

Hand Tools and Power Tools

- Workshop hand and power tools should be inspected regularly and properly maintained. A record of each inspection should be kept within the department. In addition, tools should be visually inspected prior to use, defective equipment withdrawn from use and the defect reported.

- Cutting tools should have their cutting edge maintained sharp.

- Only the most appropriate and correct tool should be used for any specified operation.

- Pupils should be instructed to always keep their hands behind the cutting edge of a tool.

- Pupils should be instructed in the hazards associated with cutting and marking out tools including carrying and storing them.

- Cordless, battery operated power tools should be used if possible. Any new power tools bought must be 110V or preferably cordless. Schools should not be purchasing any 230V portable power tools unless they can guarantee that the tools will be used with residual current devices (RCD) at all times. Where an existing power tool is rated at 230V it may be used if the manufacturer has labelled it as double insulated to BS 2769 and in accordance with the Electricity at Work Regulations 1989.

- The portable transformer provided for the 110V supply should be of a type designed for that use and be of the appropriate output.

- Where an extension cable is required for an 110V tool it should be the 110V cable which is extended. The mains 230V cable should be as short as practical.

- A competent person must formally test all portable electrical appliances at least once a year in accordance with the East Dunbartonshire Council policy on Portable Appliance Testing (PAT). The equipment shall be visually inspected for defects before issue. MSF/10e

- Power tools should be of a single function type.

- Power tools should only be used in dry conditions.

- Power tools should be switched off and disconnected immediately after use.

- Where guards are provided they must be properly maintained and adjusted before use.

- Hand held or portable electrical tools must not be mounted on stands to convert them to fixed tools.

- Hand activated ON/OFF switches should always be used and any mechanical lock 'ON' arrangement should be used with caution. The main reason for this is that any such arrangement will not be linked into the Emergency Stop System and is therefore potentially hazardous.

- Eye protection (BS 2092 1 CDM) should be used at all times with power tools. MSF/ 34e.

- The hazards associated with fixed machinery apply to portable tools. Pupils should be made aware of and instructed in the dangers associated with loose clothing, long hair and jewellery.

Controlled access to high risk machinery

- The doors to the saw room must have prohibitive signage stating 'no unauthorised entry'.

- Under no circumstances should pupils be allowed access to the saw room at any time.

- The saw room must not be used to store pupils' models.

- Teaching and technician staff to take measures to prevent unauthorised access to the saw room.

- When the saw room is not in use the door should be locked.

- When the saw room is not in use all woodworking machinery should be isolated, and locked off.

- The key should be removed from the control panel and housed in a key safe to which only authorised personnel have access.

- Principal Technical Teachers and Senior Technician should monitor the operation and effectiveness of the above recommendations.

- Where a failure occurs systems/risk assessments should be reviewed and changed to remove or reduce risk(s).

Machine Tools

- Ensure that all machinery and equipment is in a safe condition and that all guards are in place and are maintained and properly adjusted.

- Machinery or equipment that is under repair or is out of use for any reason should be clearly labelled as such, electrically isolated and locked off where possible.

- Machinery that has become redundant to the needs of the curriculum should be disposed of through East Dunbartonshire Council's inventory procedures.

- No one should operate machinery or equipment unless instruction in its safe use has been given.

- The setting up, adjustment, preparation, maintenance or cleaning of a machine should not be carried out unless the machine is electrically isolated and locked off.

- All loose tools and materials must be removed before starting a machine.

- Only one person should operate a machine at any one time.

- Machinery should be switched off when the teacher is talking with a pupil.

- Regular inspections should be made of all manually operated stop controls to ensure that they are in working order. A record of each inspection should be kept within the department.

- Access to emergency stop controls must be unobstructed at all times.

- Pupils should be instructed in the proper use of emergency stop controls.

- Appropriate personal protective equipment should be provided and used. Items must conform to the appropriate safety standard.

- Pupils should only use those machine tools identified for their use in BS 4163:2007. For example, pupils must not use a circular saw, planing machine or power router.

- Under no circumstances should a portable router be inverted and fitted to a bench and used as a spindle moulding machine. Ref: BS4163:2007

- Pupils should be instructed on the dangers of long hair, loose clothing and jewellery when operating machinery. Steps must be taken to ensure that hazards associated with these factors are dealt with before a pupil is allowed to operate a machine tool.

Woodworking

The Health and Safety Executive have produced a series of Woodworking Information Sheets that are available to download free of charge from their website, http://www.hse.gov.uk/. They are useful reference documents that can be used to compliment other H&S documents in the technical education department.

- Cramped up work should be stored in a safe manner.

- When using glues, paints, stains, varnish, plastic wood etc. reference should be made to the regulations listed in COSHH/15a. Consideration should be given to working in well-ventilated areas.

- All woodworking machines should conform to and be operated in accordance with the Safe Use of Woodworking Machinery – Approved Code of Practice and Guidance, Provision and Use of Work Equipment Regulations 1998 and BS 4163.

- Machines should be sited where they may be operated safely to their full capacity without danger to the operator or other persons. Only staff specifically trained in the use of the machines should use them.

- Repairs and maintenance should only be carried out by a competent person.

- Repairs and maintenance should not be carried out unless the isolator is in the OFF position and locked OFF.

- Wood refuse must be cleaned from wheels, blades and dust boxes in accordance with manufacturers' instructions to prevent build up and risk of fire.

- Only the appropriate tools/equipment for the operation being performed are to be used.

- All loose tools and materials should be removed before starting a machine.

- The circular saw or planing machine must not be used for cutting any rebate, tenon, mould or groove.

- Rebating must be carried out using a suitable hand plane which has a rebating facility or by using a portable router.

- Circular saws and planing machines should be kept locked off and the keys removed to the key safe unless in actual operation.

- Dust extraction must be used when circular saws and planing machines are in operation.

- Technical preparation areas that normally have woodworking machines such as planer/thicknessers and circular saws with their associated extraction systems must be designated as EAR PROTECTION ZONES and the appropriate safety signs must be displayed. SSF/T10.

- Pupils must not be allowed access to any area designated as an EAR PROTECTION ZONE when the machinery is in operation. SSF/T10.

- Ear protection should be carefully stored and inspected regularly and replaced as required. SSF/T10.

- Personnel involved in working in technical areas should be informed on noise risk and instructed on the availability and suitability of ear protectors. SSF/T10.

- When using the circular saw the following points should be noted:

    - Pupils must not use, or assist a member of staff to use, the circular saw.
    - The riving knife and top guard on circular saws shall be correctly positioned for each cutting operation.
    - Push sticks (or correctly designed push blocks, if required) must be used where and when necessary.
    - Only push sticks conforming to the regulations must be used.
    - Where the machine incorporates a sliding table an under table finger guard must be fitted.
    - A person may not draw off timber from the back of a circular saw unless a 1200mm table is in place.
    - When cross cutting, use should be made of a sliding table, additional manufacturer's fixtures to machines designed to enable cross cutting and an appropriate blade.

- When using the planing and thicknessing machine the following points should be noted:

    - Pupils must not use, or assist a member of staff to use, the planing and thicknessing machine.
    - Push sticks MUST be used where and when necessary.
    - Guards shall be correctly positioned for all cutting operations.

Metalwork

- Working with metal which involves striking cold metal, for example cold chiselling, should be kept to a minimum. Where it is carried out appropriate eye protection should be worn. MSF/34e.

- Hammer faces and shafts should be examined regularly for defects.

- Floor surfaces should be kept free from contamination by oils, coolant and grease. Where appropriate reference should be made to manufacturer's data sheets.

- Tools should be stored at a height suitable for access by pupils.

- The use of acids for 'pickling' metal is not permitted.

- Where enamelling is carried out the COSHH guidance issued to Art Departments on this process should be followed and the guidance on the 'Safe Use of Enamelling Kilns'. COSHH 11 and SSF/A2d.

Abrasive Wheels

- All abrasive wheels and their use shall comply with the PUWER Regulations 1998.

- Abrasive wheels shall only be mounted or dressed by appropriately trained and certificated personnel in accordance with the above regulations.

- Only use abrasive wheels to perform the operations for which they were designed, for example no side grinding or grinding of non-ferrous metals.

- All guards must be in place and be adequate and properly adjusted before use.

- Work rests must be set to optimum working position. BS 4163:2007

- Eye protection must be worn at all times.

- Wheels must be regularly inspected and maintained by appropriately trained/certificated personnel. A record of each inspection should be kept within the department.

- The safe working speed must be marked on the wheel and the maximum spindle speed displayed on the machine.

Hand Operated Guillotines and Notchers

- These should not be used to cut materials thicker than that specified by the manufacturer.

- No multiples should be cut.

- Materials should be adequately supported.

- All moving parts should be maintained regularly and shearing edges kept in good condition.

- When positioning the equipment care should be taken to ensure that the handle does not create a hazard and a clear working area can be maintained around the bench or stand.

- Only one pupil at a time, under supervision, should be allowed to operate the handle.

- Ensure that the material hold down attachment is in place during use.

- When not in use equipment must be immobilized by use of a lock or similar device.

Welding

- Wearers of vital electronic medical equipment (e.g. pacemakers) should consult with their physician before beginning any arc welding, cutting, gouging or spot welding operations. BS 4163:2007

- Floor areas should be fire proof and non-slip.

- No flammable material should be left lying in or near the welding area. Articles that have been welded should be marked as 'DANGER HOT' and placed in a safe area.

- Appropriate eye protection must be worn at all times by operators and observers. MSF/34e.

- Helmets/hand screens must be fitted with the correct undamaged filter, lens and protective cover glass.

- Screens/booths should have non-reflective surfaces and must be positioned to prevent rays affecting others in the class.

- Good general ventilation must be provided to minimize any hazard from fumes. Disposable respirators, where appropriate, should be made available to all persons undertaking welding. COSHH/15b.

- The equipment should be checked by a competent person as required under the Electricity at Work Regulations 1989. A visible inspection should be made of the electrical connections before use.

- Earthing arrangements for the welding circuit must be soundly made and be in good condition.

- All cables should be of the correct types and capacities and fitted with proper connections as specified by BS 638.

- The electrode holder must be undamaged and firmly grip the electrodes. Jaws and connectors must be clean and tight to prevent overheating. Where this is not the case the electrode holder should be removed from service.

- Suitable protective clothing including appropriate goggles or shields, gauntlet gloves, leather apron and substantial footwear should be worn.

- When chipping slag, appropriate eye protection should be worn by the operator and observer(s).

- When hot work is undertaken there should be suitable fire fighting equipment at hand.

- Relevant staff should be trained in the use of fire fighting equipment.

- Welding equipment will be included in a planned preventative maintenance programme organised through the Technical Support Centre.

Moulding and Casting

- Only oil-bonded proprietary sand such as Petro-bond or similar must be used when moulding. COSHH/15a var.21/22.

- All tools and metal moulds must be clean and dry and any metal surfaces that may come into contact with molten metal thoroughly coated with a limestone refractory compound before use. All tools and ingots should be preheated before use and casting carried out in an area remote from a water source.

- Melting must be carried out in graphite or coated metal crucibles and in no circumstances should aluminium alloy be melted in a plain iron pot. Crucibles must be examined for cracks or splits and preheated before use. A log should be kept of the crucible pot use and followed in accordance with the manufacturer's instructions.

- Pyrometers should be available to check the temperature of the melt.

- Only new commercially produced casting alloy ingots should be used in a melt. No alloy should be left in the pot. COSHH/15a var. 21/22.

- When a crucible is to be carried from the heat source to the mould, only teachers and/or technicians must be involved in the carrying and pouring using the proper tongs and handles which must be a good fit. A clear working space must be made available when pouring is in progress.

- Teachers and technicians taking part in the pouring must wear appropriate face shields, gauntlets, leather apron, substantive footwear and protective gaiters. Observers must wear protective goggles and be no nearer than two metres to the pouring operation. MSF 34e.

- Pouring of molten metal must be carried out adjacent to the furnace and moulds must be at floor level on a bed of moulding sand to catch any spilled metal.

- Local Exhaust Ventilation (LEV) to the atmosphere must be used. The amount of smoke and fumes produced can be significantly reduced if the mould is left to cool for a few hours rather than minutes before opening. COSHH/15a var. 21/22.

Forging and Brazing

- Wear suitable protective clothing such as a leather apron for the body, substantial footwear and eye protection. MSF/34e.

- Where heat is supplied from gas/air sources the flexible tubing used must be of a fully protected type and should be inspected and maintained to avoid gas leaks.

- Manufacturers' operating instructions must be followed at all times but particular attention should be made with regards to safety procedures during switching on and off.

- Gas and air lines should be fitted with non-return valves

- Hot metal should be de-scaled before forging commences and should not be carried further than necessary. The correct tongs for the work should be used.

- Where possible the flame should always be directed onto the firebricks or other refractory material. Common brick must not be used in place of firebrick.

- Good general ventilation should be provided. COSHH/15a var. 23/24.

- Quenching facilities should be close to hand. Pupils should be aware of the dangers of quenching metal, especially tube.

- A suitable rack should be provided for storage of the forging tools and after use all tools and tongs should be quenched and returned to the rack.

- The anvil should be on a stable base and maintained in a safe condition.

- Only one person at a time should be permitted to use the hearth.

- Hot materials should be placed in a safe area and should be appropriately signed. The sign 'DANGER HOT' should be used.

- Forging equipment will be included in a planned preventative maintenance programme organised through the Technical Support Centre

- Under no circumstances should the forge be used to preheat work piece or burn off dip coating from work pieces. The pre heating for dip coating should be undertaken using the ovens provided and the dip coating granules placed in close proximity to the oven.

Soldering

- Extra low voltage soldering irons should be used

- Care should be taken to ensure that leads do not come in contact with the hot iron.

- Rosin based flux can cause respiratory sensitisation so non-rosin based fluxes should be used. All soldering should be carried out in a well ventilated room.

- Care should be exercised in the instruction, use and storage of soldering fluxes. Reference should be made to product data sheets.

- Soldering should be carried out in a well-ventilated room.

- Suitable eye protection must be worn to protect the user from splashes of flux or solder.

Hot melt glue guns

- Care should be taken to ensure that leads do not come into contact with the hot surfaces

- Instructions should be given to pupils on the correct use of the glue gun including a warning about the risk of burns from the gun or molten glue

- Suitable eye protection should be worn

Finishing Processes

- All finishing processes should be carried out in a well-ventilated area.
- Suitable eye protection must be worn where appropriate. MSF 34e, COSHH/15a.
- Portable sanding machines should if possible be fitted with an integral dust extraction system.
- All contaminated cloths or rags must be disposed of safely. COSHH/15a.
- Ensure that flammable liquids or materials are clearly marked as such and kept at a safe distance from naked flames or direct sunlight.
- Only water or spirit based paints should be used. COSHH/15a var. 57/58.
- Paint spraying must only be done out of doors or in an adequately ventilated spray booth. COSHH/15a var. 57/58.
- All polishes, paints, thinners, glues and other products used during finishing processes must be stored, used and disposed of according to the manufacturer's instructions.
- Any spillages must be cleared up immediately wearing appropriate personal protective equipment and in accordance with the manufacturer's data sheets.
- Applied finishes should be used according to the manufacturer's recommendations.
- When using plastic wood/brummer stopping, white spirit or methylated spirit protective gloves should be worn or a barrier cream employed if there is a likelihood of skin contact. MSF 34e. Persons who have a history of dermatitis, skin sensitivity or asthma should not work in direct contact with these products. In the event of contact, where appropriate, wash affected area immediately with soap and water. Reference should be made to the product data sheets/instructions.

Plastics

- Work carried out should be within the guidelines specified in COSHH/15a var. 43-54, for example, work that involves the use of glass reinforced plastic or casting resin should not take place in the department.
- Appropriate personal protective equipment should be used at all times. MSF 34e.
- When dip coating metals the following points should be noted:
    - PVC powder should be avoided.
    - Appropriate eye protection and heat resistant gauntlet gloves should be worn.
    - Powdered plastic should be handled carefully to avoid inhalation of dust.
    - Hands must be washed thoroughly after handling the powder.
    - The metal to be coated must be heated in a thermostatically controlled oven with the temperature below 150°C.

- Under no circumstances should the forge be used to preheat the work piece or burn off dip coating from work pieces. The pre heating for dip coating should be undertaken using the ovens provided and the dip coating granules placed in close proximity to the oven.

- When using the hot wire cutter the following points should be noted:

    - Only expanded polystyrene may be cut using this equipment.
    - Small hand held cutters may be used in well-ventilated areas.
    - Large bench mounted cutters may require local exhaust ventilation. COSHH/15a var. 47/48.

- Only vacuum forming machines fitted with a time switch or thermal cut out may be used.

- The heating element on strip heaters should be shielded and fitted with a thermostatic control.

- Heat resistant gauntlet gloves should be worn when using the strip heater. MSF 34e.

- Only electric ovens that are thermostatically controlled should be used for the heating of plastics.

- The oven chamber should be kept clean at all times.

- Heat resistant gauntlet gloves should be worn when using the oven. MSF 34e.

- The oven temperature should be set at the minimum temperature for the process to be carried out in order to avoid the creation of toxic fumes.

- When injection moulding the following points should be noted:

    - Suitable eye protection and heat resistant gauntlet gloves must be worn. MSF 34e.
    - The machine must be fitted with a safety guard around the nozzle.
    - Split moulds must be securely clamped when in use.
    - Plastic materials used in this process should be stored and prepared according to the manufacturer's instructions and data sheets.

- When polishing plastics the following points should be noted:

    - All polishing processes must be carried out in a well-ventilated area.
    - Suitable eye protection and protective gauntlets must be used if a polishing mop is used. MSF 34e.
    - When using any polishing liquid or compound these should be used in accordance with the manufacturer's instructions and data sheets.

- When using acrylic cement the following points should be noted:

    - Only 'Tensol' or equivalent may be used.
    - Application of the cement should be by a commercial syringe type tool or similar and appropriate eye protection and gloves impervious to the cement should be worn. MSF 34e.
    - The area to which the adhesive is applied should not exceed 500cm² in any one school day. COSHH/15a var.5/6.

- Adhesive must be used in a well-ventilated area.

Technological Studies

- Power track and air supplies should be switched off at the end of the period and when not in use.

- All test buttons on Residual Current Circuit Breakers (RCCBs) should be checked at least weekly. Faults in the system and hazards such as faulty sockets must be reported and a record kept.

- Ensure that all staff and pupils are aware of the dangers associated with power supplies and compressed air.

- Ensure that all electrical cables and tubing for compressed air are checked on a regular basis for damage or loose connections.

- The compressor should be used in accordance with the manufacturer's instructions and drained each day or at the end of each period of regular use.

- The compressor should be used at the correct pressure for the equipment being used.

- No unauthorised person should make any adjustments to the compressor, which should be behind a security cage or well-ventilated lockable cupboard.

- Compressors used for air supplies to pneumatics teaching equipment will require periodic inspection under the Pressure Systems and Transportable Gas Containers Regulations 1989.

- East Dunbartonshire Council has arranged a contract with its insurers who must be allowed access to carry out tests to compressors.

- Completed schedules should be kept in the Statutory Inspection Register (SIR) and be available for staff reference and for inspection by the Council's representative or HM Health & Safety Inspectors.

- Appropriate personal protective equipment should be used when working with pneumatics or chemicals for etching. MSF 34e and COSHH/15a var.17/18.

- All chemicals should be stored in a suitably signed lockable cupboard.

- Chemicals should only be used under appropriate supervision and with the required ventilation. COSHH/15a.

- Chemicals should be disposed of following the practice outlined by East Dunbartonshire Council.

- Any soldering should be done in a safe area with the appropriate equipment and ventilation. COSHH/15a.

- Pressure vessels and airlines should be used as follows:

Switching on compressor
1. Close drain
2. Switch on

Connecting air lines to class outlets
1. Ensure airline is switched off
2. Connect airline
3. Turn on tap at outlet

Switching off in class areas
1. Turn off tap at outlet
2. Drain air from flexible airline through equipment in use
3. Disconnect from outlet

At the end of each day, compressors should be drained
1. Switch off compressor
2. Open drain valve

Graphic Communication

- Staff should be aware of the COSHH regulations regarding markers, spray mount and airbrushing. Reference should be made to product data sheets and information contained within COSHH/11a and b.

- Appropriate ventilation should be available and used. Where possible a spray booth should be used for any spray and airbrush work. COSHH/15a var. 57, 58.

- Cutting knives etc. should be in good working order and stored away when not in use.

- Staff should follow the advice detailed in 'The Health and Safety (Display Screen Equipment) Regulations 1992 – Guidance and Procedures for Work with Display Screen Equipment'. MSF/34d, H&S Standard No.HR/HS/STD/002 (EDC).

- Neither staff nor pupils are likely to be classified as 'habitual' users of such equipment according to the strict letter of the Health and Safety (Display Screen Equipment) Regulations 1992. Nonetheless it is departmental policy to follow the spirit of the legislation in order to expose students to accepted good practice.

- It is the responsibility of the principal teacher to assess workstations for levels of risk to health and to arrange for any upgrading or re-siting which may prove necessary from time to time.

APPENDIX

Appendix 1

Health and Safety Documents

In addition to this document and documents available on the internet, the following may be included in the school's Health and Safety reference library:

East Dunbartonshire Council, Community Directorate Health and Safety Policy, November 2002

Health and Safety Bulletin 04/02 Health and Safety Arrangements for the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) Revised May 2004

Statutory Inspection Register

Maintenance Schedules

Maintenance Logs

Risk Assessments

CLEAPSS Design and Technology Publications (risk assessments)

BS4163:2007 Health and Safety for Design and Technology in Schools and Similar Establishments – Code of Practice

HSE Information Sheets

Master Safety File (MSF)	originally published by Strathclyde Regional Council
Subject Safety File/Technical (SSF/T)	originally published by Strathclyde Regional Council
General Safety File (GSF)	originally published by Strathclyde Regional Council
COSHH Safety File (COSHH)	originally published by Strathclyde Regional Council

Appendix 2

Reference Agencies

Human Resources Department, Health and Safety Section
Tom Brown, Health and Safety Adviser
Tel: 0141 574 5531
Mob: 07768 032421
E-mail: tom.brown@eastdunbarton.gov.uk

Education Quality & Development Service
Gordon Smart, Quality Improvement Officer – Technical Education
Tel: 0141 578 8931
E-mail: gordon.smart@eastdunbarton.gov.uk

Technical Support Centre
Eileen Lister, Team Leader - Technician Service
Tel: 0141 578 8727
E-mail: eileen.lister@eastdunbarton.gov.uk

Gerry Speirs, Technician Service Advisor
Tel: 0141 578 8724
E-mail: gerry.speirs@eastdunbarton.gov.uk

Scottish Schools Equipment Research Centre (SSERC)
2 Pitreavie Court
South Pitreavie Business Park
Dunfermline
KY11 8UB
Tel: 01383 626070
Fax: 01383 842793
E-mail: sts@sserc.org.uk
Web: http://www.sserc.org.uk

British Standards Institute (BSI)
British Standards Institute
389 Chiswick High Road
London
W4 4AL

BS4163:2007 Health and safety for design and technology in schools and similar establishments – Code of practice

Consortium of Local Education Authorities for the Provision of Science Equipment (CLEAPSS)
Model Risk Assessments for Design and Technology in Schools and Colleges (2001-2002)

Health and Safety Executive (HSE)
HSE Books
PO Box 1999
Sudbury
Suffolk
CO10 6FS
Tel: 0845 345 0055
Web: http://www.hse.gov.uk

Publications

Workplace (Health, safety and welfare) Regs 1992	ISBN 0 7176 0413 6
Health and Safety at Work etc Act 1974, HMSO	ISBN 0 10 543774 3
Management of health and safety at work regs 1999	ISBN 0 7176 0412 8
Ventilation of the workplace EH (Rev) 1988	ISBN 0 7176 0551 5
Managing health and safety in schools	ISBN 0 7176 0770 4
Safe use of Woodworking Machinery (ACOP)	ISBN 0 7176 1630 4
5 Steps to Risk Assessment	ISBN 0 7176 0904 9
An introduction to local exhaust ventilation	ISBN 0 7176 1001 2
Maintenance, examination and testing of local exhaust ventilation	ISBN 0 7176 1485 9
Managing health and safety: 5 steps to success	INDG275
Buying new machinery	INDG27
Safe handling of combustible dusts	ISBN 0 7176 0725 9
An introduction to health and safety	INDG259 1997
Essentials of health and safety at work	ISBN 0 7176 0716 X
Writing your health and safety policy	ISBN 0 7176 0424 1
COSHH; the brief guide for employers	INDG136 1993
Personal Protective Equipment at Work Regs 1992	ISBN 0 7176 0415 2
Electrical safety and you	INDG199 1995
Working with VDU's	INDG36 1998
Introducing the Noise at Work Regulations 1987	INDG 75
Noise at Woodworking Machinery	WIS 13
Safe Use of Work Equipment, PUWER 1998	ISBN 07176 1626 6
Working Alone in Safety	ISBN 07176 1507 6

HSE Information sheets

National Association of Advisors & Inspectors in Design and Technology (NAAIDT)

NAAIDT
124 Kidmore Road
Caversham
Reading
RG4 7NB
Tel: 01189 47061
Web: http://www.naaidt.org.uk

Publications

Managing Health and Safety in School Workshops	ISBN 0 906457 08 04
Inspecting Design and Technology in Secondary Schools	ISBN 0 906 457 11 4
Developing Plans for Design and Technology	
Promoting an Image of Design and Technology	
Safety Training Courses for Teachers/Technicians	
Modelling: using IT as an aid to D&T	

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East Dunbartonshire Council
www.eastdunbarton.gov.uk

Risk Assessment _____

School: _____ **Department:** _____

Unit assessed	

Significant hazards and risk control measures	**General points:** **Activities:**

Additional information:

The people who are at risk from significant hazards in this unit of work are the pupils, the class teacher and science technicians. Classroom assistants and Support for Learning staff may also be at risk.

The risk assessment information above will be adapted appropriately to account for changes in circumstances.

Risk assessment details for this unit of work have been discussed and agreed at departmental level.

Notes on the recommended controls and agreed adaptations to procedures for significant hazards are transferred to the Teacher's Working Guide.

Class teachers are familiar with Immediate Remedial Measures, fire blanket and fire bucket.

Principal Teacher's Signature:_____ **Date:** _____

Dates reviewed:

Guidance on Eye Protection

- Eye protection should be to the appropriate British Standard or the newer BS EN equivalent.

- Older stocks of eye protection should be made to BS 2029:2 (or 1) C, D and I; they may also carry M (C - chemical, M - molten metals, I - impact and D - dust).

- Newer eye protection should bear BS EN 166

BS EN166 Markings for Safety Eyewear

	Frame	**Lens**
Optical Class		
Refractive tolerance +0.06dio		1
Refractive tolerance +0.12dio		2
Refractive tolerance +0.12/-25dio		3
Mechanical Strength		
Minimum robustness		
General purpose		S
Low energy impact (Grade 2 - 45m/s)	F	F
Medium energy impact (Grade 1 – 120m/s)	B	B
High energy impact (190m/s)	A	A
Field of Use		
Basic		
Liquids (Chemical)	3	
Large dust particles (Dust)	4	
Gas and fine dust particles (Gas)	5	
Short circuit electric arc	6	
Molten metals and hot solids	7	

Maintenance Requirements

Work equipment must be maintained in an efficient state, in efficient working order and in good repair. It is recommended that a record of maintenance be kept and that it is up to date.

Maintenance procedures should be carried out in accordance with any manufacturer's recommendations that relate to the equipment.

For example, maintenance of woodworking machinery should include at least:

- Worktables (upon which a work piece rests or over which it passes) should be smooth and free of any obstruction or damage that is likely to interrupt the continuous feeding of any work piece to the tool
- Mechanical feed systems should track and run smoothly
- Guards should be freely adjustable over the full range of work for which they are designed, and continue to fulfill their safety function
- Protection devices should be in effective working order
- Tools should be sufficiently sharp and not damaged in such a way to increase the likely risk of disintegration/break-up
- Tool holders and work piece clamping systems should move freely and continue to function safely
- Protection appliances such as jigs, holders, push sticks etc. should be stored in a safe place to minimize the risk of damage and be checked to ensure that they are fit for safe use
- Wood refuse must be cleaned from wheels, blades and dust boxes in accordance with manufacturers' instructions to prevent build up and risk of fire

Appendix 6

Maintenance Logs for Machinery

The frequency at which equipment needs to be checked is dependent on the equipment itself, when and how often it is used and the risk involved; it could be each day, every three months, or longer. If machinery is used intermittently, a full safety check should be carried out before each use. The manufacturers' instructions should be consulted on the recommended checks to be carried out.

The Maintenance Log must be kept up to date and sheets should be held in a ring binder and be made available for inspection when required by Council Officers or Health and Safety Inspectors. It should include the following:

List of tools – This is list of all machinery and tools requiring maintenance. The list should include the item description, serial number, model number and manufacturer.

Master Switches/Isolators – Should be checked daily.

Start/Stop Switches – Start/stop buttons, key switches and emergency stops should be checked daily.

High Risk – Prior to operation daily checks should be carried out on high-risk machinery such as circular saws, band saws, vertical drills, planers, wood lathes, metal lathes, shapers, power hacksaws, grinders, polishing machines, milling machines.

Medium Risk – Monthly checks should be carried out on all other machinery such as power hand tools, furnaces, forges and hearths and the LEV system.

Low Risk – Checks should be carried out once per term on air lines, room security, hand tools.

Sample forms are included.

Technical Education Department Maintenance Log

School: _____ Location: _____

Plant: _____ Model:_____ Serial No:_____

Date	Service/Comments	Signed

East Dunbartonshire Council

Technical Education Department Daily Safety Checks

School: _____ **Room:** _____ **Date:** _____

Description	Manufacturer	Model	Start Button	Stop Button	Emerg Stop	Key Switch	Guard	Initial	Comments

East Dunbartonshire Council

Appendix 7

Health and Safety Training Record

School: _____ Name: _____

Course Title	Company	Date
	East Dunbartonshire Council	

Recording and Reporting Procedures

To ensure compliance with legal requirements the following will be in place:

- Risk assessments will be held in a folder and be made available for all to read and be familiar with.

- Any identified new risks or hazards must be reported to the principal teacher, or the head teacher in the primary school, as soon as possible and a new risk assessment undertaken.

- The principal teacher as a competent person in the secondary school and the head teacher in the primary school may undertake the assessment, or as line manager will, from his/her staff nominate a suitably competent person who can undertake the assessment.

- A record of statutory inspections carried out in the technical education department

- A record of all relevant health and safety courses attended by department staff will be maintained.

- Within the department a strict procedure will be maintained which will allow for the health and safety of the pupils to be at a premium.

- All accidents and incidents to pupils in the department must be reported according to East Dunbartonshire Council's Accident/Incident Reporting Procedures.
  Ref: Health and Safety Arrangements for the Reporting of Injuries, Diseases and Dangerous Occurrences Regulation 1995 (RIDDOR) June 2004.

Industrial Visits

Industrial visits must be undertaken in accordance with current East Dunbartonshire Policy.

Guidelines for All Technical Education Staff

1. Teachers and technicians have a general duty to take reasonable care for the health and safety of themselves, of other members of staff and of pupils. They have specific duties: to be familiar with this safety policy, its updates, appendices and the safety texts it refers to. They must observe its requirements and fulfil any special responsibilities it gives them. They must co-operate with colleagues in meeting their own specific safety duties.

2. Staff practice must set a good example to pupils and be consistent with the Safety Rules for Pupils in the Technical Education Department.

3. Staff must be familiar with emergency drills and familiar with the location in each workshop or room of: personal protective equipment, the escape route; fire-fighting equipment; the nearest first-aid box; the eye wash stations; the main gas cock; emergency stop controls on workshop machines and the main electricity switch.

4. The main gas valve, emergency stop controls on workshop machines and the main electricity switch should be in the 'OFF' position and isolated when not in use.

5. Workshops and teaching rooms must be left safe. Special arrangements must be made for any equipment that has to be left running overnight and hazardous equipment that has to be left out. In general, all mains-operated apparatus, and gas controls if any, must be switched off. At the end of each day, wherever practicable the departmental electricity supplies are to be switched off at the main isolating switch/switches.

6. Eating, drinking and smoking should not take place in workshops or teaching rooms.

7. A teacher or technician must think very carefully before conducting any practical operations when alone in the department. Nothing should then be done which could lead to an accident needing a remedial measure.

8. When not in use, workshops and teaching rooms are to be locked by the staff unless so doing hinders a fire escape route. Teachers who are not qualified in technical education should not use for teaching or for class registration technical education workshops. They should be available for teacher-supervised club activities only by special arrangement.

Appendix 11

Guidelines for Technical Education Teachers

1. At the beginning of each school year, teachers must make sure that their classes have copies of the pupil rules and issue them if necessary. They should be secured in an exercise book or binder.

2. Teachers are to enforce the rules, reminding pupils of them often enough for them to remain familiar. With first year pupils, time should be spent explaining them, with appropriate demonstrations.

3. In general, pupils must not be left unsupervised. Staff needing to leave a class briefly must decide whether this is safe, perhaps arranging for temporary supervision by a neighbouring member of staff.

4. Lesson preparation should be adequate and include checking on risk assessments and other safety precautions where necessary. Time should be allowed for consulting more senior colleagues where there is any doubt and to try out unfamiliar procedures, particularly those involving specific hazards. Teachers should explain methods and precautions to pupils as part of their safety education.

5. Projects and open-ended investigations must be so organized that the teacher can assess any risks and lay down precautions before any hazards are met.

6. If, because of class size or indiscipline, safety cannot be maintained during certain procedures, the work must either be modified or abandoned.

7. A teacher is responsible for the safety of any of their classes taken by a student teacher. If the normal class teacher is absent, the principal teacher must give this responsibility to another technical subject teacher.

8. Teachers in charge of courses are responsible for ensuring that technicians are familiar with any hazards and the appropriate precautions that might be encountered in preparing materials or equipment for their lessons and in clearing the equipment away.

Safety Rules for Pupils

1. You must not enter a work area unless a teacher is present.
2. You must follow the instructions of the teacher at all times.
3. You must take reasonable care of the health and safety of yourself and of others who may be affected by your acts or omissions during work.
4. Remove your jacket, coat, school bags etc. and place them where they do not interfere with the safe working or movement of anyone.
5. Enter and leave the department in an orderly manner.
6. You must not run in the corridors or work areas.
7. You must not eat, drink or chew in the work area.
8. You should examine personal protective equipment e.g. eye protection before use and report any obvious damage to your teacher.
9. You must ensure that you carefully store away all personal protective equipment at the end of the period.
10. Work methodically and without undue haste.
11. You must wear eye protection when using machinery or working close to machinery.
12. You must be aware of the dangers due to clothing, long hair and jewellery.
13. Take care of any tools and equipment you use and report any damage to your teacher.
14. Tidy away tools and equipment you have used at the end of the period.
15. Tidy up work area bench tops before you leave at the end of the period.
16. Dispose of waste and surplus material in accordance with the teacher's instructions.
17. You must report all breakages, accidents or incidents, no matter how minor, to the teacher immediately.