Task 1 (P3)
Describe the methods/procedure you will adopt to identify the hazards in your metal working machine shop.
In order to identify hazards I will first consult the HSE guidance “Five steps to risk assessment” (http://www.hse.gov.uk/risk/fivesteps.htm). Also I will consult the guidance provided in the HSE information leaflet: using work equipment safely (INDG 229), where I happen to know there is some good H&S information on engineering machines.

Then following HSE guidance, I will:
• walk around all the areas in the workshop where the fitters work and where visitors walk, noting things that might pose a risk, taking into account the above guidance and the guidance given in the HSE book,

Essentials of health and safety at work
• talk with our H&S representative and shop supervisor concerning any particular problems/hazards they may be aware of, that might pose a risk
• look at our accident book, to see the problems we have had in the past
• write down on our risk assessment form, the people that could be harmed by the hazards and how they might be harmed
• write down on the same form, what is being done to control the hazards and my suggestions where the control measures seemed to be inadequate to meet H&S requirements
• discuss my findings with our supervisor and H&S representative, then after considering their advice and using their help, I would put my findings into practice.
<table>
<thead>
<tr>
<th>What are the hazards?</th>
<th>Who might be harmed and how?</th>
<th>What are we already doing? (Control measures)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Machinery</strong> (Lathes, Pillar drill, Abrasive wheel, Grinding machine, Guillotine)</td>
<td>Fitters and others may suffer serious injury from unguarded moving parts of machinery</td>
<td>All dangerous parts of all machines guarded to manufacturers standards • Machinery guards checked monthly and maintained in good condition • All experienced fitters trained and certified as competent to work on lathes, pillar drill, abrasive grinder and guillotine • All workshop personnel are required to wear safety shoes, protective clothing and eye protection when operating machines • Warning and operating notices posted at machines • All machines fitted with electrical isolation and emergency stop switches • Supervisor trained and experienced with all machines, ensures that all fitters carry out pre-use daily checks, prior to operating machines</td>
</tr>
<tr>
<td><strong>Manual handling</strong></td>
<td>Fitters and others may suffer back injury and cut injuries when handling bar stock and large sheets of metal</td>
<td>• All fitters trained in manual handling • Suitable gauntlets and other lifting aids placed in prominent position</td>
</tr>
<tr>
<td><strong>Electricity</strong></td>
<td>Fitters/maintainers/contractors may suffer shock and burn injuries from faulty electrical supplies to machines and building electrical installations</td>
<td>• Maintainers and contractors and relevant others discuss electrical safety before each job begins to ensure that relevant machinery, circuits etc are isolated and locked-off, during job • Electrical installation and all electrical supplies to machines is inspected and maintained to a planned schedule</td>
</tr>
<tr>
<td><strong>Workshop General</strong></td>
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<tr>
<td><strong>Slips and trips</strong></td>
<td>Fitters, contractors and visitors may suffer injuries if they slip on spillages, or trip over objects and fall</td>
<td>• Procedures for good housekeeping adhered to (eg procedures for oil and coolant spillages etc) • Floors generally in good condition • Walkways clearly marked • Good lighting throughout</td>
</tr>
<tr>
<td><strong>Fire</strong></td>
<td>Any staff, contractors, visitors trapped in workshop could suffer</td>
<td>• Fire risk assessment done as at <a href="http://www.fire.gov.uk/workplace+safety">www.fire.gov.uk/workplace+safety</a> and necessary action</td>
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<tr>
<td>Working at height</td>
<td></td>
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<tr>
<td>fatal injury from smoke inhalation or burns</td>
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<tr>
<td>Maintenance staff and/or contractors may suffer severe injury, if they fall from height (eg when changing light filaments or refurbishing building/fittings)</td>
<td></td>
<td></td>
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<tr>
<td>• All contracting staff and other visiting workers, told of fire and evacuation policy, before work begins</td>
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<tr>
<td>• All maintenance and contracting jobs involved with working at height, discussed with supervisor and other relevant staff and a safe system of work agreed before job begins</td>
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<tr>
<td>• Access equipment (eg ladders, tower scaffold) kept in workshop, checked before use and stored safely after use</td>
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</tbody>
</table>

**Task 4 (M3)**

*Explain in general terms how control measures are used to prevent accidents.*

Control measures in general are designed to consider all workplace hazards and put in place not only immediate actions, but also policies and procedures that reduce or if possible eliminate the risk associated with these hazards developing into safety incidents or accidents.

It is therefore not good enough, for example, just to post a notice warning operators of the need to wear safety glasses when using a grinding machine. There also need to be control measures that provide operator training and general safety awareness, as well as a means of checking that the immediate safety control measures at the machine are complied with.

In my own workshop it can be seen from my risk assessment report that eliminating or minimising the risk at the workface depends on other control measures that have often been introduced remote from the machine or hazard. An example is the control measures introduced for electrical hazards, whereby the building electrical installation and electrical wiring to the machines not only comply with the wiring regulations and have the appropriate circuit isolation devices and warning notices but are also subject to regular inspection, as part of a planned schedule.

Thus the control measures policy and procedures ensure that there is a chain or series of control measures in place, so that if one gets overlooked, although risk may be increased, providing the other control measures in the series are adhered to, an accident or serious incident is unlikely.
Task 5 (D1)
Justify, in writing, the methods used to deal with the hazards in your metalwork shop, in accordance with local policies and legal requirements.

With reference to my risk assessment report I have divided the identified hazards into four areas: machinery, manual handling, electricity and the workshop in general. Under each of these hazard headings, I have given reasons from both a technical and legislative perspective, in an attempt to justify the use of these methods, in our workshop.

**Machinery**
- Guards
- Protective clothing
- Jigs
- Fixtures
- Training
- Eye protection
- Checks
- Maintenance

To ensure safe operation of machines, protection of fitters and others against the ejection of swarf, sparks from grinding machine, movement of work piece and machine parts and entrapment of loose clothing. The use of these methods also ensures that employers and employees follow best safe practice, execute their responsibilities and comply with HSE guidance and H&S legislation, including the Health and Safety at Work Act 1974, Personal Protective Equipment Regulation 1992, Management of Health and Safety at Work Regulations 1999, Provision and Use of Work Equipment Regulations (PUWER) 1998.

**Manual handling**
Use of:
- lifting aids
- gloves
- safety footwear
- other protective clothing
- warning notices

To help prevent lift injuries and cuts from the sheet metal edges and to ensure safe feed of sheet metal through guillotine. The use of these methods also ensures that employees and employers execute their responsibilities and comply with the H&S legislation listed above (under machinery). In addition these control methods also ensure that the company and individuals comply with the Manual Handling Operations Regulations 1992, as well as following best practice as laid down in HSE guidance pamphlets.

**Electricity**
- Isolation switches
- Emergency stop switches
- Circuit breakers
- Isolation procedures
- Regular inspection of electrical installations
- Cabling, shrouds and machine connections/fittings

To help prevent injuries resulting from electric shock and electrical equipment burns. In addition these control methods also ensure that employees and employers execute their responsibilities and comply with the H&S legislation listed above (under machinery), as well as ensuring compliance with the Electricity at Work Regulations 1998.
**Workshop area**
- Good housekeeping procedures
- Fire risk assessment
- Evacuation procedures
- Working at height equipment and procedures

To help prevent injuries to all employees, building maintenance workers and contractors from slips or trips, fire/burn and falls from height. In addition, these control methods ensure that employees, third party contractors and employers execute their responsibilities and comply with H&S legislation listed above (under machinery) as well as ensuring compliance with the Workplace (Health, Safety and Welfare) Regulations 1992 and the Work at Height Regulation 2005.