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Health and Safety in Golf Course Management and Maintenance

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Foreword

**About this Guide – Peter Dawson,
Chief Executive, The R&A.**

I am very pleased to write this Foreword to the revised Guide, "Health and Safety in Golf Course Management and Maintenance". The R&A, through its support for the Greenkeepers Training Committee, was instrumental in promoting the co-operative venture with the Health and Safety Executive to produce the original edition in 1994.

The success of the original Guide is unquestioned mainly due to its active promotion throughout the industry by the GTC and others.

The increase in the popularity of golf has put pressure on managers and staff to present our golf courses to even higher standards in spite of greatly increased play. Golf clubs are aware of the need to avoid slowing play and putting staff at risk from being injured by golf balls, as well as the ever-present wide range of hazards arising during work activities. It is commendable that many clubs, through their skilled professional staff, have managed to achieve these high standards through appropriate training and by raising the awareness of all involved in managing and using club facilities.

In 2004, The R&A revised the Etiquette section in the Rules of Golf to give greater protection for both golfers and greenkeepers. It is important that golf clubs ensure that their local rules reflect these changes and bring them to the attention of golfers and staff alike.

Foreword by:

**Jane Willis, Strategic Programme Director, Public Service
Agreement Delivery Health and Safety Executive**

The Health and Safety Executive welcomes this guidance, which replaces HSE's well-received publication Health and Safety in Golf Course Management and Maintenance (HSG79) .

Increasingly HSE is working in partnership with others to produce guidance that outlines sensible health and safety precautions. I congratulate the Greenkeepers Training Committee for taking the initiative to update the original guidance on behalf of the golf industry and to tailor it to their particular needs. It includes relevant legislation and guidance introduced since HSE first published HSG79 in 1994 and this updated guidance will help those involved in managing and maintaining golf courses to protect their employees, club members, visitors and others from risks to their health and safety. It is also relevant to others involved in the amenity, sports turf and groundcare sector. Following this practical guidance will help to reduce injuries and ill health caused by work activities.

Acknowledgements

Throughout the project we have received advice and support from many individuals and organisations in our industry.

The project has been co-ordinated by Mr Jon Allbutt whose expertise and that of his colleague Mr John Davis is truly appreciated by the GTC.

We are particularly grateful to Alan Plom, Tony Mitchell (HSE) and Graham Robertson (Aberdeenshire Council) for their patience, their careful reading of the many drafts, and in particular their technical advice on health and safety matters; the members of the GTC Technical Committee and the GTC Board for their support.

We would also like to thank Royal Lytham and St. Annes Golf Club (front cover); the managers and staff at The Grove Hotel; Northwood Golf Club, Pedham Place Golf Club, The Wisley Gardens (RHS); Dale Hill Hotel and Golf Club (illustration page 10) for permitting us to take photographs of working situations; and also New Holland for providing photographs of their equipment.

The project has been funded by the GTC:



David Golding
Education Director, The Greenkeepers Training Committee
November 2007

Golf industry priorities

Golf is unique in sport, in that the greenkeeper remains in the 'field of play' during the game. The traditions of managing a golf course ensure that the greenkeeper carries out essential daily preparation work as early as possible so as not to interfere with play. With the introduction of the Health and Safety at Work Act (HSWA) in 1974 these traditions continued but with a greater awareness of the need to reduce the risks of injury to the greenkeeper – mainly from being hit by golf balls. The golfer must also be protected from risks of injury from maintenance activities – a statutory duty under Section 3 of HSWA. However there will be a number of maintenance, and construction, activities that must continue to be carried out during the working, and golfing, day.

The challenge to maintain high standards on our golf courses, whilst working in an increasingly busy 'field of play', not to interrupt the flow of golf, and protect both greenkeepers and golfers, must be a priority for staff, managers and employers. This guide contains details of how a safety management system can achieve this with input from the Health and Safety Executive and industry experts.

In 2000 the Government set national targets to reduce accidents, ill health and work days lost. These are equally relevant to the golfing industry. Any accident or case of ill health, apart from causing pain and suffering to the individual concerned, affects the running of any business and ultimately its profitability. All those responsible for the running of a golf course would be wise to consider this guide carefully as an integral part of managing their business safely.

Golf has an excellent safety record with few fatal or serious accidents being reported. However in order to maintain high standards we are using increasingly complex machinery, more frequently, on what can be hazardous terrain, sometimes in difficult ground conditions. It is here that the greenkeeper is at greatest risk of serious injury; preventing this must be our highest priority.

We must therefore maintain high levels of training from induction of new employees right throughout their working lives to ensure they acquire and maintain high levels of competency.

Enforcement of health and safety law - What to expect when a health and safety inspector calls

Who enforces health and safety law?

Health and safety law is enforced by inspectors from the Health and Safety Executive (HSE) or by inspectors from your local authority Environmental Health Department. Private members and proprietary golf clubs will be inspected by your local authority; however HSE would inspect those golf courses managed directly by a local authority.

Health and safety inspectors have the right to enter any workplace, at any reasonable time, without giving notice, though notice may be given where the inspector thinks it is appropriate. On a normal

inspection visit an inspector would expect to look at the workplace, the work activities, your management of health and safety, and to check that you are complying with health and safety law. The inspector may offer guidance or advice to help you. He/she may also talk to employees and their representatives, take photographs and samples, serve improvement notices and take action if there is a risk to health and safety which needs to be dealt with immediately.

Your local inspector is more likely to pay more frequent visits to the golf club in response to complaints or where there is evidence of poor health and safety management. This might be reflected by the lack of an up to date Statement of Safety Policy and clearly outlined responsibilities and arrangements for managing health and safety; inadequate or non-existent risk assessments; poor facilities; and in particular if the site has a poor safety record.

Enforcing health and safety law

Inspectors may take enforcement action in several ways to deal with a breach of the law. In most cases these are:

Informal

Where the breach of the law is relatively minor, the inspector may tell the duty holder, for example the employer or contractor, what to do to comply with the law, and explain why. The inspector will usually write to confirm any advice, and will distinguish legal requirements from best practice advice.

Improvement notice

Where the breach of the law is more serious, the inspector may issue an improvement notice to instruct the duty holder to undertake improvements to comply with the law. The inspector will discuss the improvement notice and, if possible, resolve points of difference before serving it. The notice will detail what needs to be done, why, and by when. The time period within which to take the remedial action will be at least 21 days, to allow the duty holder time to appeal to an Industrial Tribunal if they so wish (see 'Appeals'). The inspector can take further legal action if the notice is not complied with within the specified time period.

Prohibition notice

Where an activity involves, or will involve, a risk of serious personal injury, the inspector may serve a prohibition notice prohibiting the activity immediately or after a specified time period, and not allowing it to be resumed until remedial action has been taken. The notice will explain why the action is necessary. The duty holder will be told in writing about the right of appeal to an Industrial Tribunal (see 'Appeals').

Prosecution

In some cases the inspector may consider that it is also necessary to initiate a prosecution. Health and safety law gives the courts

considerable scope for punishing offenders and deterring others. For example, a failure to comply with an improvement or prohibition notice, or a court remedy order, carries a fine of up to £20, 000, or six months' imprisonment, or both. Unlimited fines and in some cases imprisonment may be imposed by higher courts.

Appeals

A duty holder will be told in writing about the right of appeal to an Industrial Tribunal when an improvement or prohibition notice is served. The appeal mechanism is also explained on the reverse of the notice. The duty holder will be told:

- how to appeal, and given a form with which to appeal;
- where and within what period an appeal may be brought; and
- that the remedial action required by an improvement notice is suspended while an appeal is pending.

The work activity that is subject to an improvement notice can normally be permitted to continue during the appeal; however a work activity that is subject to a prohibition notice must cease during the appeal.

Information to employees

The inspector may wish to speak to employees regarding his/her inspection and/or their decision to issue enforcement action. The inspector may also want to ensure that the employer has adequate arrangements for consulting with employees and is able to provide the details of correspondence and/or enforcement notices. This information should be displayed on staff notice boards at the place of work e.g. a notice board in the greenkeepers rest room.

SECTION 1.0 - MANAGING HEALTH AND SAFETY ON A GOLF COURSE

Chapter 1.1 – Identifying the employer – the role of the proprietor, club committee, or board of directors

Achieving a healthy and safe workplace at a golf club is the responsibility of all from directors through a management team down to all the employees including part-time and volunteers. In a golf club there can be differences in ownership and the management structure; it is important that legal duties and responsibilities are clearly identified.

A proprietary golf club should have a clearly identifiable owner/director who is responsible for health and safety; or if it is part of a leisure group there should be a clear structure that shows the 'chain of command' where individuals' roles and responsibilities are defined.

The situation can be less clear in a members golf club where the employer role may be shared between a group of committees each with its own separate members and chairman. The traditional structure of a members golf club could have a general committee where the chairman of each committee sit and act as the 'board of directors'. Typically according to the constitution of a golf club the officers would be elected for a specific term of office at a club annual general meeting. Some members golf clubs have now modernised their structure reducing the number of committees with a Board of Directors elected for a term of office. This modern structure can improve decision making and communication with employees.

Any officer of a golf club who is involved in the preparation of policies and has a role for controlling the direction of the club can be deemed to be an employer/director, and a responsible person, for his or her period of office. Members of a golf club who are considering putting themselves forward for election as officers should receive guidance e.g. based on HSE Free Guide INDG343 'Directors Responsibilities for Health and Safety'. Where this guide uses the term Director, this includes the owner of a proprietary golf club, a committee member, chairman, captain or other officer of the club who has sole or joint responsibility for policies and procedures.



Chapter 1.2 - Roles and responsibilities – committees, members and employees

The Committee, Proprietor – The Employer

A golf club is a business that employs staff to provide a service to golfers. This means that a golf club comes within the Health and Safety at Work etc Act 1974 (HSWA) which places duties on the employer to protect the safety of employees, non employees, including golfers and members of the public who may be affected by work activities on the golf course. In practical terms these duties can be summarised as:-

- To prepare and sign an up to date Statement of Safety Policy (see HSE Guide INDG 259) that has at the front a summary of the club health and safety policy and sets out the structure of the business including the arrangements in place for managing health and safety, and the roles and responsibilities of key positions.
- To ensure there are sufficient local rules, guidance and practical arrangements for the safety of staff and golfers, including disabled persons when on the golf course.
- To ensure there are adequate arrangements for dealing with foreseeable emergencies e.g. fire, storm, fog, flood, sudden illness or accident to include closing the golf course and evacuating of the site.
- To ensure that the business does not put others (contractors, visitors, users of public footpaths, bridleways, or nearby residents) at risk.
- To employ competent persons to fill key management positions and ensure they have the necessary skills for the duties they have to perform.
- To develop a safety culture and high levels of awareness throughout all levels of the employee structure.
- To ensure that health and safety matters are discussed at committee and board level as appropriate.

Depending upon the structure of a golf club business these duties can be delegated to managers (managers can be employed or contracted). Where the management of the business is 'contracted out' it will be necessary to ensure that these arrangements are clearly documented and understood by both parties.

The Management Team (Employees)

The senior manager (Secretary/Manager/General Manager) should ensure that his/her management and supervisory team have sufficient information and training to enable them to carry out their duties as directed by the employer (Committee/ Director). This will involve providing information, training and supervision for those under their command. The managers should either collectively or individually ensure that they consult with their staff on any relevant health and safety matters.

SECTION 1.0 - MANAGING HEALTH AND SAFETY ON A GOLF COURSE

The managers should be responsible for

- Generally managing the safety of the golf course maintenance operation; set the standards and safety culture; be an example of safe work practices; set the safety rules e.g. wearing the PPE provided, seat belts (if fitted); not handling mobile phones, or using CD players, i-Pods etc. when operating work equipment.
- Making regular reports, and where necessary recommendations, to the relevant committee or board of directors.
- The preparation, implementation, review and, where necessary, revision of risk assessments and other documentation to show the effective management of the health and safety of the business.
- Organise and keep records of staff training; inspection, maintenance, and where necessary testing, of work equipment; safety inspections of premises.
- The arrangements for dealing with foreseeable emergencies on the site including the evacuation of premises, closing the golf course, and the provision of first aid personnel. An important part of this is to establish an effective means of communicating across the site (mobile phones, two-way radios) and to have contact details for key personnel e.g. the persons who are trained and competent to take charge in an emergency, duty managers etc.
- Providing safety information for golfers and the public.

The directors of the club will need to satisfy themselves that managers have the skills to perform these tasks and, have taken the necessary steps to enable the managers to be trained and be competent for their duties.

The managers role could also be filled by the proprietor of a privately owned golf club; in this situation the manager could be both the employer and employee.



The Staff Team (Employees)

An employee can be any person who carries out a work related activity whether for payment or not. Golf club volunteers (including artisans) who carry out specific tasks (divoting, gardening) are deemed to be employees and should receive the same treatment, particularly in respect of their training and provision of protective equipment.

Club directors have duties to ensure that their staff teams have received the necessary training and provision of protection to enable them to carry out their duties safely.

The golf club staff have duties to carry out the reasonable requests of the employer – as delegated to the managers. These can include:-

- assist with the preparation and implementation of risk assessments.
- use work equipment strictly in accordance with their training, levels of competence, and the manufacturers Operator Manual.
- not to use anything unless specifically authorised to do so.
- wearing such personal protective equipment (PPE) as is required to safely carry out their duties.
- they must not interfere with, alter or adjust, anything that is provided for them for their protection.
- they must report to their supervisor/manager any incident or other situation that could put their safety, or the safety of others, at risk.
- observe courtesy to golfers where practicable and try not to interfere with play.

Golfers

Amateur golfers are generally outside of the strict control of HSWA as they are not at work. However they do have a general Duty of Care not to put others at risk as a result of their actions. They are also constrained by the Rules of Golf, and probably also local Club Rules, that require them to observe etiquette and courtesy to others.

A golfer should wait until the way is clear before playing a shot. The golf club may also have local rules for priority on the whole or part of the golf course either generally or at particular times of the day.



SECTION 1.0 - MANAGING HEALTH AND SAFETY ON A GOLF COURSE

Chapter 1.3 – Consulting employees

The directors of a golf club have duties (see HSE Guidance INDG 232) to consult with their employees (including part-time) about:-

- Any changes that are planned that may substantially affect their health and safety at work such as changes to work equipment to be used, changes to the design and layout of the golf course, changes to the yard, sheds and welfare facilities.
- Any proposals to change the arrangements for getting a competent person to assist with complying with health and safety laws such as a health and safety advisor.
- The hazards and risks associated with their work as a result of carrying out risk assessments, any changes needed to reduce those risks, and what action they should take if new hazards are discovered such as reporting dangerous incidents or situations that are hazardous to themselves or golfers.
- The planning and preparation of safety training to update their skills or to use new equipment.

Consultation is a two-way process where information is given and received by both employer and employee. The directors of a golf club must choose the most effective method to consult with their employees. The method chosen will depend upon the size and structure of the business activity and could range from a formal health and safety committee (for larger sites) to a more informal arrangement. Health and safety consultation should include any other associated businesses based on the site such as the club professional, food and beverages caterers.

Chapter 1.4 – Dealing with accidents, incidents and injuries: providing a first aid service for employees and golfers

An accident can be described as a sudden unplanned event resulting in one or more persons being injured.

Two greenkeepers were unloading some sand from a trailer towed behind a tractor. The trailer had been tipped half way but the sand would not flow out, one of the greenkeepers went round to the rear of the trailer, climbed onto the back and started to shovel the sand out of the rear. The driver of the tractor could not see his companion and did not know he was on the trailer, he drove forward to 'shake the load' by stopping suddenly. The sudden braking caused the trailer to lurch and topple over, throwing the second greenkeeper to the ground causing injuries to his shoulder and back.

An incident is also a sudden unplanned event but in this case nobody was injured; however it may be that in the view of the persons involved there was a high potential for an accident if the incident were to re-occur.

A greenkeeper slipped down a damp bank when using a ride-on mower. The mower did not roll over and there was no injury, but the greenkeeper realised that he could have been injured by the mower, and/or slipped into the nearby bunker and sustain serious injuries. If this had been an injury accident and had occurred in a remote part of the golf course early in the morning, or at a weekend, the consequences could be even more serious as there was no means of calling for assistance.

Where risks of accidents and incidents are foreseeable and have been identified in a site specific risk assessment there needs to be a plan that will effectively reduce the likelihood that it might occur – see Chapter 1.5 below for details of the risk assessment process.

Accidents at work must be recorded in the Accident Book (Form BL 510). Under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) certain accidents, injuries, ill health and dangerous occurrences, which occur at the workplace whether as a result of work activities or not, may be reportable. (RIDDOR Explained HSE 31 (Rev 1).

In general terms the following should be reported:-

- **A death or major injury** – to employees, a contractor working on your site, a member of the club or visitor, you should notify the enforcing authority as soon as possible.
- **An over three day injury** – if an employee or self employed person is off work (or unable to perform their normal duties) for three working days as a result of an accident at work this should be reported within 10 days.



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- A 'Reportable Disease' – if a doctor informs you that an employee is suffering from a reportable work related disease. Reportable diseases include:
 - certain poisonings;
 - some skin diseases such as occupational dermatitis, skin cancer, chrome ulcer, oil folliculitis/acne; lung diseases including occupational asthma, farmer's lung, pneumoconiosis, asbestosis, mesothelioma;
 - infections such as leptospirosis, hepatitis, tuberculosis, anthrax, legionellosis and tetanus;
 - other conditions such as: occupational cancer, certain musculoskeletal disorders, decompression illness and hand-arm vibration syndrome.

The full list of reportable diseases, and the work activities they are related to, can be found in the detailed guide to the Regulations and in the pad of report forms; or simply ring the HSE Infoline 0845 345 0555 to check.

- A dangerous occurrence - an accident or incident with a high potential to cause death or serious injury that involved lifting equipment, pressure systems (irrigation pipes, air lines), electrical circuits that fail and cause a fire or explosion, escape of a dangerous substances and other situations that are listed in the above HSE Guide.

To report an accident, incident, disease or dangerous occurrence contact:

Incident Contact Centre
Caerphilly Business Park
Caerphilly
CF83 3GG

By Telephone: 0845 300 9923 (8.30 am – 5.00 pm)
By Fax: 0845 300 9924
By internet: riddor@natbrit.com

Investigating Accidents and Incidents

It can often be helpful to look into an accident in more detail in order to see if there is anything that can be done to reduce the risks of it happening again, possibly with more serious results for your staff, members or visitors. The results of carrying out your own internal investigation could trigger a change to a general site specific risk assessment carried out under the Management of Health and Safety at Work Regulations.

Having a system for investigating accidents, incidents and near misses can often provide important information that could prevent a re-occurrence and more serious outcome in the future. Keeping a record of your internal investigation could also be very important to assist an official accident investigation, or complaint, by your local health and safety enforcement officer. The name and contact details of your local

enforcement officer should be on the Health and Safety Information Poster – this could be the local authority Environmental Health Officer or HSE (if the site is owned/managed by the local authority).



Providing a First Aid Service

Golf course employers have duties to provide adequate numbers of first aid personnel and first aid equipment according to the numbers employed and the results of an assessment of the risks to all employees.

There is no statutory duty to provide a first aid service to non employees e.g. golfers and the public. However the HSE encourage employers to consider non employees when considering the number of first aid staff needed on a site and most golf clubs include providing first aid to members and guests in their policies and procedures. Calculating how many first aid staff would be needed is an important part of the risk assessment process; however in general it is good practice to aim to have at least one first aid person on duty at all times when the site is open for business.

Employers:

- have sufficient trained first aid personnel and appropriate first aid equipment who can be available in the event of an accident
- keep a record of all accidents that take place at work
- report all accidents, injuries, incidents and ill health required under RIDDOR
- investigate accidents, and incidents, identify causes and take action to prevent the same thing happening again
- make sure that employees understand that they must report all accidents and incidents and inform their manager of dangerous situations

Employees:

- report all accidents and incidents
- co-operate with your employer in investigating and preventing accidents

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Reference Material:

- Investigating Accidents and Incidents (HSG 245) HSE Books
- A guide to the Reporting of Injuries, Diseases, and Dangerous Occurrences Regulations 1995 (L73) HSE Books
- RIDDOR explained (HSE 31) HSE Books
- RIDDOR Reporting – What the Incident contact centre can do for you (MISC 310) HSE Books

Chapter 1.5 – The Risk Assessment – how to do it

Managing risks on a golf course must involve an organised consideration by all involved of the likely hazards and what risks are foreseeable – this is the core activity of a risk assessment.

Risk assessments now form the basis of most modern legislation and while the contents of a risk assessment can be different, the basic approach to carrying out a risk assessment are the same – see the HSE Guide 5 Steps to Risk Assessment (INDG 163 (rev 2)).

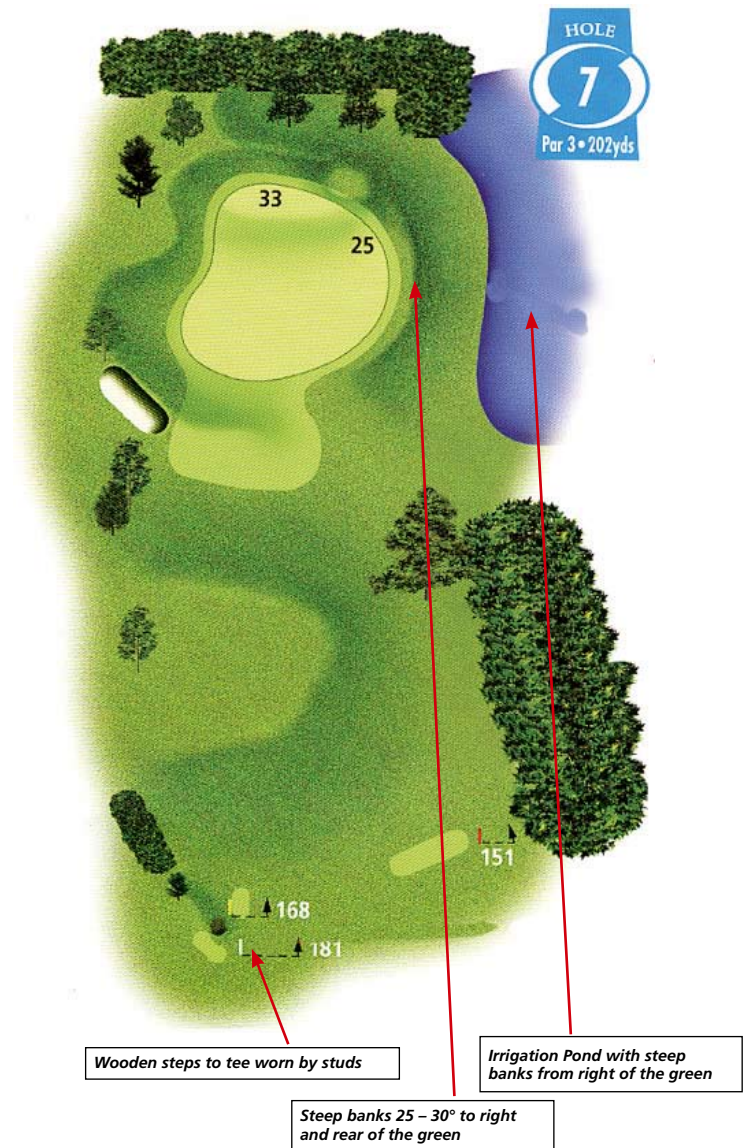


Significant risks should be recorded; this helps induction training of new staff and provides a guide for periodic review. A file of up to date site specific risk assessments is an essential part of your safety policy and safety management system – the following is a suggested format for a risk assessment file :-

- Section 1 – The golf club Statement of Safety Policy and the specific arrangements for managing health and safety, including the structure showing the health and safety roles and responsibilities.
- Section 2 – The General Risk Assessments for the yard, buildings, work equipment and golf course (a specific hole by hole assessment). This is an opportunity to assess the risks for those hazards you have identified that are unique to your workplace and not covered by other specific regulations e.g. slopes on their own but also near hazards such as ditches, bunkers, lakes; crossing the highway; golf ball hazards; crossing holes etc. Where you identify a hazard that is covered by another more specific regulation then refer to that risk assessment to see the details.
- Section 3 – The COSHH Regulations - (see details of these regulations in Section 5.0) this section should consist of an up to date inventory of all hazardous products and substances used by employees; a Material Safety Data Sheet (MSDS) for each item on the inventory together with a risk assessment.

Remember that greenkeepers are at risk of exposure to dust and biological agents such as Tetanus, Weil's and Lyme Disease, Legionella, and some poisonous plants.

- Section 4 – Risk assessments under the Manual Handling Operations Regulations. The emphasis in these regulations is to avoid the need to carry out unnecessary manual handling by good



Above: Dale Hill Hotel and Golf Club – Old Course Hole 7 – Significant Hazards

workplace design and the use of mechanical equipment; this approach is also likely to increase the efficiency of many tasks such as handling fertiliser bags and rolls of turf. Training and follow-up supervision is important to ensure staff have the skills and have made changes to working practices that avoid traditional manual handling.

- Section 5 – Risk assessments for noise and vibration (see also Section 4.0, Chapters 4.0 and 5.0). This section should include data from manufacturers, local monitoring and guidance by HSE and others. This section will also need to contain, or refer elsewhere to, a system for recording and monitoring exposure.
- Section 6 – Risk assessments carried out under the First Aid at Work Regulations and Code of Practice.
- Section 7 – Risk assessments carried out under the Work at Height Regulations

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Chapter 1.6 - Employing and training staff

The process of advertising, interviewing and employing a new member of staff should include clear descriptions of the duties of the position, the qualifications needed and the training that will be made available to develop and enhance existing skills. A Job Description is a very good way of ensuring that you have covered the main duties but make sure that it contains the necessary site specific information, in particular the types of equipment that will be used.

Soon after your new employee commences employment he/she should receive induction training that gives essential health and safety information such as:

- A tour of the workplace where any hazards will be pointed out.
- Information on what work equipment can, and cannot, be used.
- A copy of the General Statement of Safety Policy.
- Details of the arrangements for health and safety on the site.
- Copies of the risk assessments relevant to the work to be undertaken.
- Details of the initial and subsequent training that will be provided. This will be the commencement of the development of a Personal Training Plan that should be updated at each annual appraisal.

Induction training for a new employee is a good opportunity to carry out initial assessment of their levels of skill. This is particularly important where they claim to be competent in certain tasks contained in the Job Description involving the use of work equipment, pesticides and any other complex and/or potentially dangerous work. This could involve a short check test on a typical item of equipment followed by agreement on whether further training is necessary.

Experience shows that carrying out complex tasks using ride-on work equipment, often on undulating golf course terrain in poor ground conditions, by poorly trained employees poses a high risk of injury accidents. Ensuring that your staff are competent to carry out their duties is one of the biggest challenges in effective health and safety management. Training should be an ongoing process and never something that only happens at one point in your employees working life.

Greenkeepers need to be multi-skilled and a great deal of the skills they need will be learned at work. Proven competence is a key factor in reducing risks of accidents at work; it is very important therefore that the person in charge of the on the job training is a competent person who is using a recognised structured system for achieving the appropriate level of skill. The more



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advanced and complex skills may need to be taught by attending courses run by specialist instructors either at work or off-site. You should aim to monitor the competence of your staff, especially as a lack of job knowledge and skills could make them more vulnerable to having accidents. Special attention may need to be given to employees who deputise for others. Their skills are likely to be underdeveloped and they may need more training especially if they are using work equipment and/or working alone.

You should aim to provide your employees with the knowledge that underpins their skills e.g. an approved local college providing NVQ qualifications. This combination of on the job training for skill, together with, attending a college for the underpinning knowledge and relevant additional specific training courses, is generally acknowledged within the industry as the principle route to achieving and demonstrating competence.

Your detailed site and task based risk assessments may also identify individuals or groups who are especially at risk; these may include people who work alone for significant periods, young people, and those employed on a casual basis for short periods each week, e.g. artisans and golf caddies. Your risk assessments may also identify hazardous situations, which may require specific training, examples could include; working on slopes, near ditches, lakes and ponds, and working in confined spaces such as drain pits and irrigation tanks.

Some Definitions

Training: "the process of bringing a person to an agreed standard of proficiency, by instruction and supervised practice by a competent person"

Competence: "having sufficient knowledge, skill, experience and understanding to enable a person to carry out a task to an agreed standard"

Certificates of Competence: "certificates issued by an awarding body following assessment indicating that the candidate has achieved the required standard"

Note: Certificates of Competence may be a "statutory requirement", or specified in an Approved Code of Practice, for example; Certificate of Competence in the Safe Use of Pesticides, Chainsaws and Forklift Trucks. Others may be non-statutory evidence that show a sufficient level of training has been achieved.

Further information and advice on training can be obtained from:

- The Greenkeepers Training Committee (GTC);
- British and International Golf Greenkeepers Association (BIGGA);
- Local Learning and Sector Skills Councils who will be able to provide advice on National Vocational Qualifications. In Scotland,

- Local Enterprise Companies and Scottish Vocational Qualifications;
- Local training providers;
- LANTRA;
- National Proficiency Tests Council (NPTC);
- Colleges of further education.

What you need to do:

- prepare and implement an induction programme for new employees
- provide adequate information and training for all staff
- provide updating training, for example when staff change jobs, when new machinery is introduced, or when legislation changes
- keep training records (the GTC Wallchart and BIGGA Machinery and Work Equipment Training Manual could form part of this process)
- review training needs on a regular basis

References:

- HSE leaflet Train to survive¹, which provides general advice on training.

Chapter 1.7 – Employing volunteers and casual part-time staff

Volunteers can make a valuable contribution to achieving a high standard of presentation on the golf course. A volunteer could be a member of a golf club offering his or her services for a few hours a week, or a member of the Artisans Section of the golf club who in recognition of a reduced membership fee agrees to carry out work activities.

Some golf clubs also employ local persons on a part-time paid basis to assist the staff team at busy periods of the year.

Any person who carries out work for your golf club should be included within the existing health and safety structure for full time employees. This is particularly so of the induction and initial assessment and training process.

Unskilled volunteer and part-time employees will need more supervision and may well be better working alongside and assisting a competent member of the full time employed team.

Risk assessments may need to be adjusted to take account of the employment of volunteers and part-time staff. It may be that separate risk assessments are needed for work set aside for this group.

Chapter 1.8 – Employing children and young persons

Children:

Children are those who have not yet reached the official age at which they may leave school (the minimum school leaving age (MSLA), usually 16 years of age. In addition to health, safety and employment regulations and guidance there will also be local

SECTION 1.0 - MANAGING HEALTH AND SAFETY ON A GOLF COURSE

restrictions on the hours a child can work and also the type of work that can be undertaken. In addition to the guidance for Young Persons below, there may well be additional work to do before employing a child so enquiries should be made of the local authority before a child starts work whether for payment or not.



There may be circumstances where a golf club could have children in the working environment:

- A junior member of the golf club playing golf without parental supervision.
- A child undergoing work experience on the golf course under the supervision of the school and the golf club with parental permission.
- A child employed to work on the golf course on a part time basis.

In these circumstances there can be restrictions on the number of hours worked and the times when a child can be employed.

Before employing a child the following arrangements must already be in place:

- Parental permission must be obtained. As part of this process the golf club will need to provide details of the work that will be carried out and the arrangements for supervision.
- No work can be carried out involving potentially dangerous work equipment or dangerous substances.
- A child must not carry out any heavy physical work such as lifting and carrying heavy objects.
- A child must not be permitted to work alone.

In order that all the above arrangements are in place a competent person must complete a detailed risk assessment that is agreed by all involved with responsibility for the safety of the child.

Young Persons

A young person is regarded as being between the ages of 16-18 Young persons at work are regarded as a vulnerable group of employees due to their lack of physical and mental development.

Accident statistics for the agriculture sector show a number of serious accidents and deaths to young persons involving work equipment; this includes work on golf courses.

Young persons could be employed to work on a golf course as placement students from a local college, they could be still at school and be undergoing works experience, or they could be employed full time by a golf club as apprentices.

The following are key factors in ensuring the safety of young persons at work on a golf course:-

- There must be an agreed programme of work structured to take account of a young persons need to learn at their own pace and their physical and psychological capacity.
- There must be thorough induction training that includes prohibitions for the use of some work equipment, chemicals, work at height and other potentially dangerous tasks.
- Separate risk assessments for key tasks carried out by young persons must be prepared and regularly reviewed as often as is necessary to ensure they are relevant to the work.
- There must be a nominated person who will be a competent supervisor, mentor and role model for young persons at work.
- Supervision of a young person will require a great deal more time working with them 'within sight and sound' until such time as they are signed off as being competent to carry out specific tasks.
- Training in the use of any work equipment will be followed by supervised practice until such time as the young person is 'signed off' as being competent to operate a particular item.

Chapter 1.9 – Employing contractors and managing contracted works

A contractor could be a large business organisation or a single handed self-employed person employed to work on a golf course to carry out a specific task. These can range from large scale building construction works to routine maintenance activities. Golf clubs also employ contractors to work alongside them for a period of time to assist the business activity e.g. franchise caterers, cleaners, golf professionals.



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Where the contractor is a business employing five or more people you will need to establish the following key factors before employing them:

- An up to date Statement of Safety Policy for their employees that includes working on the site of another employer.
- An adequate risk assessment for the specific work that you are considering asking them to carry out.
- Evidence of relevant training and competence for their employees.
- Suitable arrangements for dealing with accidents and emergencies whilst working on site.

Where you are considering employing a single handed self-employed person or a small business with less than five people you will need to consider the following:

- Are they aware of their health and safety duties and responsibilities to themselves and to others?
- Are you in a position to provide them with information on your own arrangements for managing health and safety including the arrangements for non employees working on your site?

Regardless of whether the contractor is a large or small business, a golf club has duties and responsibilities to protect them:-

- Have a formal agreement that states clearly the works to be carried out.
- Have a formal induction/contract start procedure that allows both sides to discuss and understand the works to be carried out, the work areas, aspects of site safety, site contact details and communication procedures.
- Provide information on any hazards that you know to be on the site e.g. location of asbestos, gas and electrical supplies.
- Provide a safe place of work and ensure that your work activities do not put the contractor at risk.
- Provide a safe means of access and egress from the work site including safe arrangements for delivery and storage of plant

and materials that will not present a hazard to staff and golfers. This may require that specific haul routes across the golf course are agreed; possibly involving the need to close some golf holes to protect the contractor from risks of being hit by golf balls.

- Include the contractor in your arrangements for dealing with emergencies.
- Have arrangements for regular meetings to discuss progress and any health and safety problems.

Major Construction Works

It may be that major construction works on the golf course could come within the Construction Design and Management Regulations 2007 (CDM 2007). These Regulations deal specifically with construction works that last more than 30 working days involving more than 500 person days (e.g. 50 people working for over 10 days) Further advice and guidance is in the Approved Code of Practice – “Managing Health and Safety in Construction” (L144) (available from HSE Books).

The key aim of CDM2007 is to integrate health and safety into the management of the project and to encourage everyone involved to work together to:

- Improve the planning and management of projects from the very start;
- Identify hazards early on, so they can be eliminated or reduced at the design or planning stage and the remaining risks can be properly managed;
- Target effort where it can do the most good in terms of health and safety; and
- Discourage unnecessary bureaucracy.

This Approved Code also gives guidance on the health and safety management of a construction project even if the works do not qualify under CDM2007.



SECTION 2.0 - THE GOLF COURSE AS A SPORTING VENUE AND A PLACE OF WORK

Chapter 2.1 – Working in the field of play

The increasing popularity of golf has brought changes to the working environment for greenkeepers and others who have to work on a golf course. To meet an increasing demand, some pay and play courses now offer golf from 'dawn to dusk'. This has resulted in some sites recording a throughput of golfers in excess of sixty thousand rounds per year. This high frequency of play can create problems for managers when organising essential daily maintenance work to reduce the risks of greenkeepers being hit by golf balls, but also avoids interruptions to play. The situation can be less serious for greenkeepers working in a private members golf club where playing frequency is likely to be less and the club should have more control over when play commences each day.



Working on a golf course is unique in sport as the greenkeeper (or contractor) must carry out the work while the golf course is 'in play'. This situation creates potential hazards for both the greenkeeper and golfer:

- You may be working in areas of the golf course, within range of a golf shot but unseen by the golfer e.g. on the blind side of a hill. In this situation the greenkeeper can be vulnerable to being hit by golf balls.
- You may also be working on adjacent golf holes and at risk of being hit by a wayward golf shot.
- Despite being in view of the golfer, you may be vulnerable to being hit due to a lack of understanding of the Rules of Golf, or local rules on priority.
- Some golf courses share paths, bridges and other 'pinch points' between golfers and greenkeepers. In some situations this can create conflict between work (tractors, ride-on mowers) and non-work traffic (golfers with trolleys, golf buggies).
- Despite good work planning you may have to interrupt play that can result in confrontation with golfers.
- You may be at risk of being hit by work equipment whilst playing on the course.
- The golfer may be at risk of contamination by dust or pesticides whilst playing on the course.

- It is usual for a golf course to remain fully or partly open for play during construction works.

To reduce the likelihood (the risk) of accidents to either party, the following are accepted safe practices that you should include in your golf course general risk assessment:-

- Make a local rule that gives priority to greenkeepers for an agreed period, usually in the early morning, or make a local rule that gives priority to greenkeepers at all times, but with an instruction to greenkeepers to 'give way' whenever it is practicable to do so.
- Managers (clubhouse, golf professional and greenkeeper) to keep in regular contact to make sure they know what events are planned for the golf course so that the course can be prepared safely and on time.
- You should plan to start work early to 'get ahead of play'.
- Plan the work to clear the holes most likely to be in play first e.g. the 'front nine', or other holes that may be used to start a competition.
- Identify holes that are potentially dangerous when in play e.g. blind tee shots or blind approach shots to a green. To reduce the risks of accidents these holes to receive priority for maintenance work.
- For important maintenance operations that are potentially disruptive for play e.g. hollow coring followed by top dressing and over seeding, have an agreed period when the course will be closed, or tee off times are suspended, say for 30 minutes. This gives the greenkeepers an opportunity to work safely and efficiently without interruption or risk of injury from golf balls.
- When planning construction works identify haul routes and work areas where there is a need to shorten or close some holes to reduce the risk of accidents.

Chapter 2.2 – The Golf Course Safety Inspection

A golf course is part of our living environment and conditions can change, sometimes at short notice, resulting in an increasing risk of injuries to staff and golfers. An important part of the arrangements for managing health and safety for both employees and golfers should be to have a flexible system for inspecting the golf course as often as is necessary to enable decisions to be made regarding potentially hazardous conditions such as:

- Heavy rain that has created unsafe ground conditions particularly on slopes where work equipment is to be used, or golf trolleys and golf carts will be driven.
- The onset of fog that could restrict the view of golfers when preparing to play.
- A high wind that threatens to bring down trees or damage other structure.
- A violent storm with the risk of staff and golfers being struck by lightning.
- Heavy rain that creates a rise in water levels threatening to cut off parts of the golf course, increasing the risk of drowning.

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- A woodland fire in hot, dry weather that threatens to engulf the golf course.
- A specific feature of the golf course that has become dangerous e.g. a bridge, steps, viewing tower or eroded river bank.

The above situations can be described as foreseeable for most golf courses; you may even think of some more that are unique to your site and are also foreseeable. Your site specific general risk assessments should include these hazards and contain details of the arrangements for reducing the risks of injury. Page 20 contains a format for an inspection checklist for a typical 18 hole golf course with space for you to make additions.



Following the golf course inspection it may be necessary to make urgent decisions about the safety of the site for greenkeepers and/or golfers. This may require closing all, or part, of the site until conditions improve or until remedial works have been carried out and the area made safe. This could include a decision to restrict or prohibit golfers using golf buggies and/or trolleys on the grounds of safety. If such decisions are needed then it is reasonable to state the length of the 'ban', this could be:-

- Until further notice
- Until the next inspection in an hour
- Until repairs are completed – estimated to be in the next xx hours.

The arrangements for managing safety on the golf course (see Section 1.0) should include the ability to communicate across the site quickly and efficiently using whatever practical means are provided. This could be issuing and training in the use of two-way radios combined with ear defenders fitted with microphones to enable hands free operation and minimising noise when working near to golfers. The arrangements should also include a plan for giving rapid access to parts of the golf course by contractors and emergency services via paths and possibly alternative gates giving access from the highway.

Chapter 2.3 – Golf Tournaments and Crowd Control

A golf tournament is an opportunity to gain prestige and valuable publicity for the golf club by attracting spectators, many of whom are likely to be golfers, possibly from other clubs. The event may

be organised by your club, or you may be hosting an event by your County Union or another organisation. Many national and international events are organised and run by professional event organisers who take responsibility for much of the work and also the safety of the site. However the host golf club must ensure that the roles and responsibilities of both parties are clearly understood; for example it could be that the host remains responsible for the work activities to prepare the golf course for the event.



A tournament on the site can change many of the existing arrangements for managing health and safety:

- According to the wishes of the event organisers there may need to be changes to the way the golf course is prepared and presented; this could include additional working in new areas of the golf course using different work equipment. Check your golf course risk assessments to see if there is a need to make changes or add new sections.
- You may need to employ additional staff, and volunteers to deal with the extra work. You will need to ensure all additional staff receive induction training and a skills check, possibly with additional training prior to using work equipment on your site.
- You may need additional temporary welfare facilities to cater for the extra staff.
- There could be others working on the site, possibly erecting grandstands, marquees, television towers – see Section 1.0, Chapter 1.9 Employing contractors and managing contracted works.
- The event may attract large crowds who will want to watch the tournament on the golf course, require car parking, toilets and refreshments. You will need to ensure there are clearly marked viewing areas, crowd lines and access paths with sufficient stewards (volunteers) available to ensure effective crowd control and security.
- Your existing arrangements for first aid, including equipment and emergency response, may be insufficient to cope with the increased numbers, work activities and risks of accidents. You may need to contact the Red Cross, St. John Ambulance or other agencies who can provide the necessary

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short term additional staff and equipment needed.

- If it is to be a large event there may be an impact on local infrastructure, in particular local roads and access points to the golf course. You may need to discuss this with your local authority, local police force and other emergency services. A particular aspect of your discussions will be the safe and efficient management of vehicles on nearby access roads to avoid causing an obstruction.

It is likely that a tournament will require a good deal of forward planning, possibly a year in advance; to ensure it is a success there may need to be a special expert group (depending upon the size of the event this may need to include a 'competent person/safety officer') formed so that there can be a planned and structured approach to the event. Guidance for the planning and management of events is contained in the 'Green Book' (Safety in Sports Grounds 4th Edition – ISBN 0-11-300095-2).

Chapter 2.4 – Access to the golf course – the public, walking golfers, users of trolleys and golf carts (buggies)

Public Access

Public access to golf courses must be considered. In England and Wales access can be by using public footpaths, bridleways and other public rights of way; access may also be because a golf course is on common land.

Public access in Scotland is different due to the Land Reform (Scotland) Act 2003; guidance under this Act is contained in the Scottish Outdoor Access Code (www.snh.org.uk). In Scotland, individuals can exercise access rights to cross golf courses for the purposes of getting from point A to point B, providing they exercise these rights responsibly. Those accessing golf courses must keep off golf greens at all times, must not interfere with any games of golf nor damage any of the playing surfaces.

Regardless of the means of access, all those who intend to cross a golf course will need to be made aware of the potential risks of injury from flying golf balls and work activities. It may not be obvious to a walker that he/she is about to enter a golf course and there may be a need to provide notices giving advice; golfers may also need advice on the location of a public access point, including guidance on priority.

There are also some golf courses where play is adjacent to and even across public highways, usually lanes and small roads. Some of these highways have become busier due to local development, short cuts to main roads avoiding town centres and so on. When preparing a general risk assessment for the golf course you will need to consider these matters and take some form of 'reasonable' action to reduce the risks of injury.

Access by Golfers

Modern golf courses may be designed and constructed with a network of steps and paths to give access for golfers including owners and hirers of golf carts. Many older golf clubs provide access to owners of golf carts and also provide golf carts for hire either directly themselves, or through the club golf professional. The wear to traditional grass paths due to the increase in the number of games played, together with the need to provide improved access for golf carts, is resulting in construction works carried out to improve safe access.



Constructed features such as path and steps should be 'fit for purpose' and have a system of safety inspection and maintenance work that ensures they remain safe to use. This requires that a golf club gives careful consideration to several factors:-

- Constructing a flight of steps to a tee can obstruct the mowing line for ride-on equipment and require additional, potentially more hazardous, use of hand held equipment to cut the grass.
- Is the use of sleepers to construct steps the best material to use when considering the increase in the use of 'soft spikes' on golf shoes? Wood can be unsafe in wet or icy conditions and may need to be covered with a surface material giving better grip. The height and width of steps will need careful consideration; each step must be of even height to avoid risks of tripping.
- A long flight of steps giving access to a tee may need the addition of a rail that provides support to prevent a fall. Safety rails in themselves can be a hazard if they are forward of the teeing off position – a ricochet from a driven golf ball can cause serious injury to bystanders.
- Materials used for path construction should be durable and capable of withstanding 'wash-off' during heavy rain. Uneven paths can become more hazardous than traditional grass.
- Grass paths can be strengthened by the use of sub-surface materials and rootzone supplements such as recycled rubber crumb.
- The width and slope angle of paths will need careful consideration in relation to traffic flow and risks of losing control of heavy trolleys and golf carts.
- Bridges across ditches, streams and other water features should have a design specification capable of sustaining the weight of the

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intended traffic. There are also risks of accidents where bridges that were constructed originally for light traffic only are having their uses extended e.g. tractors and trailers. Providing edge protection is important to arrest a foot, the wheel of a trolley or golf cart from falling over the edge.

- All man made structures on the golf course will need regular inspection and arrangements to efficiently carry out repairs. For more complex structures such as bridges over rivers, it may be necessary to have these inspected by a competent person e.g. a structural engineer at suitable intervals. Adequate inspection arrangements for structures on the golf course may also be required by golf club insurers.

Golf clubs also have a duty to provide reasonable access to a golf course under the Disability Discrimination Act. An important part of the decision making process to provide access for disabled golfers will be the detailed risk assessment of the site – see Code of Practice – Rights of Access etc. (Disability Rights Commission ISBN 0-11-702860-6). Where a risk assessment has identified hazards for users of golf carts, these should be included in an advice note to users; this could also include advice on preferred routes, safe parking areas and other features to reduce the risk of accidents.

Chapter 2.5 – Ensuring adequate provision for staff welfare

The general requirements for the provision of staff welfare facilities are contained in the Workplace (Health Safety and Welfare) Regulations 1992 and the accompanying Approved Code of Practice (available from HSE Books). Many staff welfare facilities are located within a main storage building and the specific requirements below will need careful consideration to ensure your greenkeepers welfare facility is in compliance with these Regulations.

If your employer is planning to carry out improvements to the staff welfare facilities it will be very important to consider the guidance set out below.



In general the basic facilities required by these Regulations are:

Windows for natural light and ventilation

Openable windows, skylights and ventilators should be capable of being opened, closed or adjusted safely and, when open, should not pose any undue risk to anyone. Windows and skylights should be designed so that they may be cleaned safely. Windows fitted to buildings inside a main storage unit may not provide sufficient natural light; furthermore these windows, when open, may in fact draw in fumes from work equipment being run within the main building e.g. as a result of work equipment maintenance work.

Doors and gates

Doors and gates should be suitably constructed and fitted with safety devices if necessary. However they must be capable of being kept open, or be opened quickly in the event of an emergency e.g. a fire. Many exterior doors to golf course storage sheds are of the roll-up steel shutter type. It is very important that these types of doors are maintained in accordance with manufacturers instructions and are regularly inspected for faults. All doors, but in particular fire doors, and escape paths must be kept clear at all times. Having a marked escape path marked on the floor of the storage shed will help to maintain a clear escape path.

Sanitary conveniences and washing facilities

Suitable and sufficient sanitary conveniences and washing facilities should be provided at readily accessible places. They, and the rooms containing them, should be kept clean and be adequately ventilated and lit. Washing facilities should have running hot and cold or warm water, soap and clean towels or other means of cleaning or drying. If required by the type of work, showers should also be provided. Men and women should have separate facilities unless each facility is in a separate room with a lockable door and is for use by only one person at a time. Greenkeepers will be involved in heavy physical work in both hot and cold weather; there is also a likelihood of contamination by dust from mowing, sweeping, top dressing, fertilisers etc.; there is also a risk of exposure to pesticides and other substances that are all potentially harmful to health. Having adequate facilities for washing and decontamination – showers – will be important not only under these Regulations but also to comply with risk assessments required under the Control of Substances Hazardous to Health Regulations (COSHH) (see Section 6.0)

Drinking water

An adequate supply of high-quality drinking water, with an upward drinking jet or suitable cups, should be provided. Water should only be provided in refillable enclosed containers where it cannot be obtained directly from a mains supply. The containers should be refilled at least daily (unless they are chilled water dispensers where the containers are returned to the supplier for refilling). Bottled water/water dispensing systems may still be provided as a secondary source of drinking water. When working physically hard it is very important that you maintain good levels of hydration. Carrying a supply of drinking water in a clean container is very important and will help you to avoid dehydration.

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Accommodation for clothing and facilities for changing

Adequate, suitable and secure space should be provided to store workers' own clothing and special clothing. As far as is reasonably practicable the facilities should allow for drying clothing. Changing facilities should also be provided for workers who change into special work clothing. The facilities should be readily accessible from workrooms and washing and eating facilities, and should ensure the privacy of the user, be of sufficient capacity, and be provided with seating. In addition to changing into work clothing you may need to change your work clothing several times in a working day, for example if you get caught in a heavy shower it is not good for your health to continue working in wet clothes. Having a heated room where your work clothes can dry out overnight ready to put on the next morning is very important, this includes work boots, socks etc. Drying rooms should be correctly ventilated to remove excess moisture and odours.

Facilities for rest and to eat meals

Suitable and sufficient, readily accessible rest facilities should be provided. Seats should be provided for workers to use during breaks. These should be in a place where personal protective equipment need not be worn. Rest areas or rooms should be large enough and have sufficient seats with backrests and tables for the number of workers likely to use them at any one time, including suitable access and seating which is adequate for the number of disabled people at work. Where workers regularly eat meals at work, suitable and sufficient facilities should be provided for the purpose. Such facilities should also be provided where food would otherwise be likely to be contaminated. Work areas can be counted as rest areas and as eating facilities, provided they are adequately clean and there is a suitable surface on which to place food. Where provided, eating facilities should include a facility for preparing or obtaining a hot drink. Where hot food cannot be obtained in or reasonably near to the work place, workers may need to be provided with a means for heating their own food (e.g. microwave oven), they should also be near to sanitary facilities. From 26 March 2006, it has been illegal to smoke in most indoor places in Scotland other than private homes; this also became law in England and Wales in 2007. The law affects most workplaces, including lorries

and vans, and there are few exemptions. Further advice and information is available at: www.clearingtheairscotland.com.

Priority on the Golf Course for Safe Play and Work – an Example of a Course Safety Policy

The Rules of Golf- Section 1 Etiquette; Behaviour on the Course

"Safety: Players should ensure that no one is standing close by or in a position to be hit by the club, the ball or any stones, pebbles, twigs or the like when they make a stroke or practice swing".

"Players should not play until players in front are out of range".

"Players should always alert greenstaff nearby or ahead when they are about to make a stroke that might endanger them".

"If a player plays a ball in a direction where there is a danger of hitting someone, he should immediately shout a warning. The traditional word of warning in such situations is "Fore".

So far as is practicably possible, the maintenance of the courses will be planned to ensure that most operations are completed before the golf course is open for play; however there will also be other operations that will need to be carried out when the golf course is in play.

In general it is the Policy of the Club that staff working on the golf course will have priority until 00.00 am (Club to decide).

Alternative Wording – It is the Policy of the Club that greenstaff have priority on the golf course to ensure their health, safety, and the efficient preparation of the course for play. Players should not play the ball if there are other players, the public, or staff in range, see above extract from the Rules of Golf.

Staff working on the course at other times will give way to play on every occasion where it is reasonable and safe to do so. Staff will give way to golfers by turning to the players acknowledging their presence and standing to one side, especially when raking bunkers or other tasks around tees, greens and other areas where they could obstruct play. Operators of machines e.g. fairway mowers, will stop and wait until the shot has been played. If for operational, or safety, reasons it is not possible to give way, players will wait until the completion of the operation.

Incidents involving staff or machinery being hit (or a near miss) by golf balls will be reported straightaway to the relevant manager e.g. Course Manager, or Deputy.

The incident will be entered in the accident/incident book and an investigation conducted to see if any repetition can be prevented in future. The Club will reserve the right to take action against any player who

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A Golf Course Safety Inspection Checklist – Example

is subsequently found to have played dangerously and in contravention of the Club Rules and the Rules of Golf.

SITE OR FEATURE	NOTES	ACTION REQUIRED	DONE
Sloping Ground: <ul style="list-style-type: none"> • Approach to 1st Green • 3rd Fairway • 12th tee path from yellows • 16th Front of green turning area • 18th green surround on right side above deep bunker 	Main approach is becoming eroded Ground is wet	Use hoops to divert golf traffic Warn staff to avoid turning here	Done verbal today
Bridges and Crossing Points: <ul style="list-style-type: none"> • Golf buggy bridge on 7th fairway. • Pedestrian and trolley bridge in front of 10th green • Multi-use bridge over river at the 15th • Sleepers giving access across the ditch on right of 17th fairway. 	Edge protection is missing on right side Safety rail is loose	Replace edge protection – Urgent Arrange for contract engineer to inspect and repair	
Hedge on Highway by Crossing Point from 12th green to 13th fairway	Visibility is obstructed by hedge growth	Cut hedge back - Urgent	
Sleeper Steps <ul style="list-style-type: none"> • To 4th tees • To 8th tees • Into 11th fairway deep bunker 	All steps are showing wear from spikes	Include replacement of these in winter works programme	
Buggy Paths <ul style="list-style-type: none"> • Through the woods from 5th tee to green • Along right side of 8th fairway close to drainage ditch • Steep path up to 12th green 	Tree roots are protruding and are now a trip hazard Ditch bank is eroding towards the path	Spread more surface dressing Re-enforce ditch bank edge and re-level	
Four Life Belts Around the Edge of the Lake by 15th green	Number 3 belt is missing	Replace asap	

SECTION 3.0 - MACHINERY AND EQUIPMENT

Chapter 3.1 – Introduction to golf course machinery and equipment

Legislation: Provision and Use of Work Equipment Regulations 1998 (PUWER)
Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)

What does it cover: Work equipment is defined as “any machinery, appliance, apparatus, tool or installation used at work”. On a golf course work equipment will include; tractors, work vehicles; (ATV’s, buggies and work trucks), self propelled machinery; (mowers), pedestrian controlled machinery; (mowers and turf maintenance machinery), hand held machinery; (strimmers, chain saws), hand tools, workshop equipment and fixed equipment for example irrigation equipment.

Lifting equipment includes; tractor loaders, fork lift trucks, excavators, work platforms, various pieces of workshop equipment including; machinery lifts, hydraulic jacks, axle stands, engine cranes, lifting slings, climbing and fall arrest equipment.



Injuries caused by machinery

The majority of fatal and serious accidents on golf courses are related to the use of machinery. There are a wide range of mechanical hazards that may affect operators, other staff working in the area, golfers and the general public. Table 1 (opposite) Identifies typical hazards resulting from the use of machinery on the golf course.

Type of Machine/Operation	Relevant Hazards
<ul style="list-style-type: none"> tractors self propelled machinery (mowers, ATV's, Work Vehicles) pedestrian controlled machinery 	Loss of Control, overturning on slopes, into bunkers or ditches Exposure to noise Exposure to Vibration (whole body and hand/arm)
<ul style="list-style-type: none"> attaching machinery to tractors and work vehicles loading machinery onto trailers and vehicles struck by tractors, self propelled machinery and work vehicles trapped when operating pedestrian controlled machinery 	Crushed by machinery
<ul style="list-style-type: none"> any hand held and pedestrian controlled machinery, for example; chainsaws, strimmers, hedge cutters, mowers, turf maintenance machinery, metal and stone grinding and cutting equipment. 	Slips, trips and falls Exposure to noise Exposure to Vibration (hand/arm)
<ul style="list-style-type: none"> chains, belts, power take off (PTO) shafts 	Entanglement in moving machinery parts
<ul style="list-style-type: none"> mower blades 	Cuts from blades and sharp objects
<ul style="list-style-type: none"> hydraulic systems, cooling systems 	Contact with fluids under pressure
<ul style="list-style-type: none"> rotary mowers, strimmers 	Ejected objects (stones, golf balls, fir cones)

The main requirements of the provision and use of work equipment regulation (PUWER) and lifting operations and lifting equipment regulations (LOLER) are outlined in the following paragraphs on the next page.

SECTION 3.0 - MACHINERY AND EQUIPMENT

Safe and suitable equipment

When planning to purchase additional machinery it must be 'CE' marked and be "fit for purpose", particularly if you are purchasing machinery for a specific purpose for example if a self propelled mower is required to operate on 25 – 30° slopes the manufacturer's specification for the machine should state that it is able to operate safely in these conditions. The features of the machine will vary widely but consideration should be given to low centre of gravity, four wheel drive, and suitable tyres. In addition the machine may require roll over protection (ROP's) and seat belts to be fitted and used. (Further information in chapter 3.6).

Maintenance of Machinery and Equipment

Regular maintenance of machinery to the standard specified by the manufacturer is essential. The aim is to ensure the safety of the operator and others who may be affected by the safety of the machine and also to protect the long term condition of the machine.

Maintenance should be carried out at intervals and to standards specified by the manufacturer; records should be kept of the work carried out and parts fitted.

The type of work that is carried out will depend on the staff and facilities available at the golf course, in all cases operators or workshop staff should carry out basic daily maintenance and safety checks on the machine, more complex work should be carried out by trained fitters either employed by the golf club or from specialist contractors.

Many Golf Courses are now using pre use check lists to ensure that operators are carrying out appropriate checks prior to using the machine, an example is given in appendix 5.

Marking Controls

Modern machinery may have complex operator control systems, involving hydraulics, mechanical components, transmissions and steering systems. The controls may be operated by feet and/or hands, some of these controls may be multi functional. It is therefore essential that operators are aware of the function of all controls on machines, information regarding controls may be available in operators' manuals but it is also a requirement that controls are clearly marked on the machine. Also if the machine had to be stopped in an emergency could a person who was not familiar with machine carry out this task? These criteria are usually achieved by the use of standard signs and decals. If these become lost or worn they should be replaced.

Safety Systems

The complex nature of golf course machinery makes it essential



that manufacturers design into the machine safety systems that reduce the likelihood (risk) of operators getting in contact with the moving parts of the machine or losing control of the machine.

This is usually achieved by the use of:

- "operator presence" controls, such as seat switches on ride-on mowers and some other self propelled machinery
- "dead man's handles" on pedestrian controlled machines
- "throttle locks" on hand held machines that require two handed operation

Operators should always check that the safety systems are working correctly before using the machine (pre-use safety checks). Methods of checking safety systems will vary from machine to machine; operators should always be able to check in the operators' instruction book to find the relevant information. Safety systems should never be disconnected or interfered with in any way that may render them inactive.

Operators should not start machinery or use any controls unless they are seated or working in the correct operating position. Machinery should always be left in a safe condition and should not be able to be started by unauthorised people, i.e. the safe stop procedure that includes the removal of the keys.

Further Information

HSE Publications

- Tractor Action
- Using work equipment safely
- In the driving seat
- Buying new machinery – a short guide
- Simple guide to the Provision and use of work equipment regulations 1998
- HSE Website: www.hse.gov.uk/pubns/puwerind.htm
www.hse.gov.uk/pubns/indg290.pdf

Chapter 3.2 – Workshops and Maintenance Facilities

SECTION 3.0 - MACHINERY AND EQUIPMENT

Workshops and maintenance areas are often in open areas within a traditional main storage shed layout. Modern maintenance facilities, if budget and space allows, can be a separate area designed for maintenance work activities only. It is important that access to these areas is restricted to those with responsibility for carrying out the work. Maintenance staff must ensure that floor areas are kept clear to reduce risks of slips, trips and falls and avoid the temptation to use the work areas as additional storage space for work equipment.



Lifting Equipment:

Many golf courses and workshops use various items of lifting equipment these may include:

On the golf course

- tractor front loaders
- fork lift trucks and telescopic handlers and their attachments
- mobile elevated work platforms (MEWP's)
- stops, slings and lifting chains
- winches

In the workshop

- vehicle lifts
- jacks (trolley jacks and "bottle jacks")
- engine cranes and cranes used to lifting cutting units
- pallet trucks
- hydraulic work benches

The main hazards with the use of lifting equipment are:

- incorrect use; overloading
- collapse
- overturning, particularly with mobile equipment like tractors and fork lifts
- operators or others being trapped

What you need to do

All lifting equipment should be inspected by the user in accordance with the manufactures instructions on a regular basis. In addition it should be subjected to a thorough examination by a "competent person" at least annually and in the case of personnel lifts (MEWP's work cage and platforms) this will be at least every six months.

The thorough examination of equipment is usually a requirement of insurers, who may provide the inspection service, it is however the responsibility of the golf course management to ensure that this is carried out and that appropriate records are kept.

Ensure that staff are properly trained to use lifting equipment, this may mean that staff require a certificate of competence to operate the equipment.

Compressed Air

Compressed air is used to inflate vehicle tyres, blowing dust and dirt from machinery and components and to power compressed air hand tools; drills, grinders, and air wrenches.

The main hazards with the use of compressed air and air powered tools are as follows:

- failure of the air receiver (air tank on the compressor) causing an explosion
- failure of tyres due to over inflation or damage
- compressed air penetrating skin
- inhalation of dust
- cold burns from air powered tools exhaust vents
- contact with moving parts of air powered tools



SECTION 3.0 - MACHINERY AND EQUIPMENT

What you need to do

The compressor should be drained weekly to remove water vapour from the pressure vessel, this is usually achieved by switching off the compressor, draining the air from the receiver then opening a small drain tap at the bottom of the air receiver, on some modern compressors this may be done automatically, this function should be manually checked from time to time.

Compressor lubrication should also be checked, refilled and adjusted as required.

The compressor and pressure vessel will need to have an inspection by a competent person at least annually, inspection of equipment is usually a requirement of insurers, who may provide the inspection service, it is however the responsibility of the golf course management to ensure that this is carried out and that appropriate records are kept.

It is also important to check the safe operation of any tools, it is particularly important to check that the air pressure and flow rates and supply hoses are correct for the tools being used.

Ensure that staff are trained and competent to use compressed air equipment.

Contact with Hazardous Substances

Staff will inevitably come into contact with a number of hazardous substances. For example, fuels and lubricants, contaminated waste from machinery that has been in use, fertilisers, pesticides, cleaning materials, paint, wood preservatives, disinfectants, and biological hazards. In some cases exposure to these substances may cause serious injury or ill health, allergic reaction or sensitisation.

Simple steps should be taken to reduce the risk of exposure, these will include:

- carry out appropriate risk assessments (The COSHH Regulations)
- ensure that staff are properly trained and understand the potential of the materials to cause harm
- use safe systems of work when using and handling hazardous substances
- issue appropriate protective clothing (PPE) and ensure that it is being used
- ensure that staff are carrying out personal hygiene routines and have available suitable barrier creams and adequate washing facilities.

Fluids under pressure

There are a number of situations with machinery maintenance where fluids may be released under pressure, these will include:

- leaks from hydraulic systems;
- failure (bursting) of hydraulic pipes and fittings; in some cases leakage of high pressure fluid will be in a very fine stream (almost invisible). If skin or eyes come into contact with this stream it

is likely that hydraulic fluid will puncture the skin and enter the blood stream, this can lead to major injuries or death.

- there may also be situations where mechanisms will move unexpectedly when hydraulic pressure is released, this will include; hydraulic driven mower cutting units, tipping trailers, other machinery with hydraulically activated mechanisms, machines/vehicles with hydraulic braking systems. Always make sure that safety locks or heavy duty supports are in place when dismantling hydraulic systems or when working in areas where trapping or crushing could occur.



Battery Charging and starting vehicles with flat batteries

The main hazard when charging batteries is explosion, due to the ignition of hydrogen gas produced when the battery is being charged, any ignition source (sparks, smoking, naked flames) is likely to cause a serious explosion of the hydrogen gas which could cause the battery casing to disintegrate and release the battery acid, with very serious consequences.

Battery charging should only take place in well ventilated areas, away from all sources of ignition and flammable substances, staff should be properly trained in the use of charging equipment and safe systems of work adopted.

Where large numbers of vehicles are being charged (work vehicles, mowers and golf buggies) specialist charging facilities must be installed.

When a machine has a flat battery the technique of "jump starting" is often used, either using a spare battery or using the battery on another vehicle to provide the power.

It is essential that staff are properly trained to do this as the risk of fire, explosion and or damage to either vehicles electrical system is very likely. Always check in the instruction manual for the correct method of jump starting and identify a safe working procedure.

Some vehicles are now fitted with dedicated electrical sockets for jump starting so that the connection directly onto the battery can be avoided, this costs very little when specifying a new vehicle and can save a lot of time and money.

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Dust and Fumes

Typical sources of dust include:

- sweeping the floor of the workshop
- mixing and spreading soil and compost
- applying fertilisers and servicing distributors
- cleaning dried grass and other debris from machinery
- cutting and grinding



All these situations will produce different types of dust and different quantities.

Exposure to high concentrations of dust may cause damage to the respiratory system and in some cases cause sensitisation and can have serious long term effects on health

Where possible reduce the amount of dust produced, look at how machinery is cleaned, reduce the amount of dust created and consider using dust masks to reduce the amount of dust that is taken into the respiratory system.

Fumes are produced by:

- vehicle exhausts
- welding and cutting
- battery charging (see above)
- paint spraying

All fumes from the above sources are potentially dangerous and activities producing the fumes should only be carried out in well ventilated areas, in some cases it will be necessary to install fume extraction equipment, particularly if the activity is carried out on a regular basis or for a long time.

Grinding Machines

Grinding machines of various types are commonly used in greenkeeping:

- hand held, cutting off machines and angle grinders
- bench or pedestal mounted machines
- machine grinders for sharpening mower cylinders, bottom blades and rotary mower blades



All the above machines are very dangerous if staff are not properly trained to use them, it is a legal requirement (Provision and Use of Work Equipment Regulations (PUWER)) that anyone fitting an abrasive wheel must be trained, competent and an appointed person.

Grinding machines will produce:

- dust
- noise
- vibration
- risk of serious injury if contact is made with the cutting or grinding wheel
- risk of injury (eye damage) from sparks and debris
- risk of fire from hot particles ejected from the machines

Action should be taken to make sure that staff are trained and competent to use the machines and that all guarding is in place.

Chapter 3.3 – Handling and Storage of Fuel and Oil

A wide range of fuels and lubricating oils are used on golf courses. There are potential hazards to users from these hazardous substances and this is covered in more detail in the section on “Occupational Health.”



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The main hazards from the handling and storage of fuel and oil are:

- environmental damage from spillage and leakage
- fire and explosion
- contamination of materials, and turf areas
- occupational health from contact with hazardous substances

The main types of fuel and oil that are used on a golf course are:

- diesel fuel – for tractors, mowers and work vehicles
- petrol – for pedestrian controlled mowers, hand held machinery (strimmers, hedge cutters and chain saws)
- lubricating oils - for engines, transmission and hydraulic systems
- waste oils and filters

Legislation

- Control of Substances Hazardous to Health Regulations 2002 (as amended)(COSHH)
- Oil Storage Regulations 2001 (lubricating oils and diesel fuel) (Enforced by Environment Agency)
- Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR)

The main requirements of the legislation are as follows:

That fuels and oil are handled and stored safely.

Diesel fuel is generally delivered in bulk by road tanker and suitable arrangements for access to the storage tank should be provided by the golf club. The bulk storage of diesel fuel can be achieved by the use of an approved double skinned tank or a bunded tank, sited in a low risk position (away from flammable materials, drains, water courses, possible impact from vehicles and other high risk areas) the fuel hose and nozzle should also be bunded and secure to reduce the risk of theft and vandalism.



Petrol is usually handled in smaller quantities, it is often collected from a local garage by means of a road vehicle using approved containers (jerry cans), it is essential that the construction of the transport vehicle is suitable for the purpose, usually with a bulkhead between the fuel and the drivers cab, ideally the fuel should be transported in a closed metal chest securely fixed to the vehicle, the petrol containers should be securely held in the vehicle. Storage on site should be in a secure metal container (flam bin), this should be sited in a low risk environment with good access. On some large golf courses bulk petrol storage may be in place, this is always done in underground tanks. This is a very expensive and complex undertaking and the detail is beyond the scope of this Guide. A clearly defined re-fuelling area should be identified, close to the fuel storage area. Re-fuelling should not be carried out inside buildings.

Great care should always be taken when re-fuelling machines at the work site. Training in the safe handling of fuel should be a part of new employee induction training with emphasis on using the correct size of container for the task using funnels and/or a pouring spout fixed to the container. Fuel should always be stored away from the work area and machines allowed to cool down before re-fuelling.

Lubricating and hydraulic oil is usually stored in large returnable drums, they should again be stored in a safe location, the Oil Storage Regulations 2001 require that all oil storage containers are stored in a “bunded” area in many cases the drums are stored on bunded pallets.

In all cases arrangements should also be in place for dealing with emergencies (spills, fire, personal contamination), this can be achieved by the use of spill control kits and fire fighting equipment. Staff should also be trained in emergency procedures.

Arrangements should be in place for the safe storage and disposal of waste oil, filters and other waste materials resulting from machinery servicing operations. This is usually achieved by storing oil in drums or bulk tanks and the filters in a secure leak free container, prior to being collected by an approved waste disposal contractor.

Key areas to ensure compliance with legislation are:

- carry out a risk assessment of any work activities involving dangerous substances;
- provide measures to eliminate or reduce risks as far as is reasonably practicable
- provide equipment and procedures to deal with accidents and emergencies;
- provide arrangements for the safe disposal of waste oil and filters
- provide information and training to employees;

Further Information:

www.environment-agency.gov.uk
Safe Use and Handling of Flammable Liquids HSG 140

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Chapter 3.4 – Noise

Legislation: Control of Noise at Work Regulations 2005

What does it cover?

Requires employers to prevent or reduce risks to health and safety from exposure to noise at work.

Significant Hazards: Loss of hearing and possible deafness

The Regulations require the employer to:

- assess the risks to employees from exposure to noise at work;
- take action to reduce the noise exposure that produces those risks;
- provide employees with hearing protection if you cannot reduce the noise exposure enough by using other methods;
- make sure the legal limits on noise exposure are not exceeded;
- provide employees with information, instruction and training;
- carry out health surveillance where there is a risk to health.



Employees should comply with information provided by employers and also information provided by machinery manufacturers in instruction manuals and on machines. Employees should always wear hearing protection when required to. Hearing protection should also be inspected for damage and cleaned regularly.

How is noise measured?

Noise is measured in decibels (dB). An 'A-weighting' written as 'dB(A)', is used to measure average noise levels, and a 'C-weighting' or 'dB(C)', to measure peak, impact or explosive noises.

Hearing loss

Noise at work can cause hearing loss, which can be temporary or permanent. You may often experience temporary deafness after leaving a noisy place. Although hearing recovers within a few hours, this should not be ignored. It is a sign that if you continue to be exposed to the noise your hearing could be permanently damaged. Permanent hearing damage can be caused immediately by sudden, extremely loud, explosive noises, e.g. from guns or cartridge-operated machines.

But hearing loss is usually gradual because of prolonged exposure to noise. It may only be when damage caused by noise over the years combines with hearing loss due to ageing that you realise how deaf you have become. This may mean your family complains about the television being too loud, you cannot keep up with conversations in a group, or you have trouble using the telephone. Eventually everything becomes muffled and you find it difficult to catch sounds like 't', 'd' and 's', so you confuse similar words.

Hearing loss is not the only problem. You may also develop tinnitus (ringing, whistling, buzzing or humming in the ears), a distressing condition that can lead to disturbed sleep.

The Noise at Work Regulations require you to take action at certain noise levels, these relate to:

- the levels of exposure to noise of employees averaged over a working day or week
- maximum noise to which employees are exposed in a working day

The values are:

- lower exposure action value
 - daily or weekly exposure of 80 dB
 - peak sound pressure of 135 dB
- upper exposure action value
 - daily or weekly exposure of 85 dB
 - peak sound pressure of 137 dB

There are also levels of noise exposure that must not be exceeded:

- exposure limit values
 - daily or weekly exposure of 87 dB
 - peak sound pressure of 140 dB



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On the golf course, high risk noise levels are found mainly from the use of machinery, particularly where the operator is using the machine for a long period of time. Typical examples include:

- ride on machinery; mowers, bunker rakes, utility vehicles
- tractors, if tractors are fitted with cabs, the noise levels will generally be below the action levels, however if the tractor is operated with doors or windows open then the noise levels are likely to be much higher, if tractors are used with noisy machinery (leaf blowers and sweepers) then the noise of the attached machine should also be considered
- hand held machinery; strimmers, blowers, hedge cutters, chain saws
- pedestrian controlled machinery; mowers, scarifiers
- static machinery; particularly cylinder grinders

Risk Assessment

You will need to identify where there may be a risk from noise and who is likely to be affected; your risk assessment should:

- contain a reliable estimate of your employees' exposures, and compare the exposure with the exposure action values and limit values;
- identify what you need to do to comply with the law, e.g. whether noise-control measures or hearing protection are needed, and, if so, where and what type;
- identify any employees who need to be provided with health surveillance and whether any are at particular risk.

It is essential that you can show that your estimate of employees' exposure is representative of the work that they do. It needs to take account of:

- the work they do or are likely to do;
- the ways in which they do the work; and
- how it might vary from one day to the next

Your estimate must be based on reliable information, e.g. measurements in your own workplace, information from other workplaces similar to yours, or data from suppliers of machinery.

You must record the findings of your risk assessment. You need to record, in an action plan, anything you identify as being necessary to comply with the law, setting out what you have done and what you are going to do, with a timetable and saying who will be responsible for the work.

Review your risk assessment if circumstances in your workplace change and affect noise exposures. Also review it regularly to make sure that you continue to do all that is reasonably practicable to control the noise risks. Even if it appears that nothing has changed, you should not leave it for more than about two years without checking whether a review is needed.

How can you reduce noise exposure? (in order of preference)

- use of quieter machinery; low noise purchasing policy, electric power for mowers, LPG gas powered engines

- use of engineering controls; cabs with sound proofing on machinery, correct maintenance and adjustment of machinery
- reduce exposure time
- provide hearing protection

Recommended Action:

- consider purchasing equipment with low noise levels
- provide training for staff, identifying high risk activities and what is expected of staff to minimise their personal noise exposure
- identify hearing protection zones, i.e. areas where the use of hearing protection is compulsory, and mark them with signs;
- provide your employees with hearing protection and make sure they use them properly when their noise exposure exceeds the exposure action values;
- provide your employees with training and information on how to use and care for the hearing protectors;
- ensure that the hearing protectors are properly used and maintained;
- provide health surveillance (audiometry)

Further Information:

HSE Website: www.hse.gov.uk/noise/index.htm
www.hse.gov.uk/pubns/noisindx.htm

Chapter 3.5 – Vibration

Legislation: The Vibration at Work Regulations 2005

What does it cover?

Exposure to vibration, this may be hand arm vibration, (HAV), usually associated with the pedestrian controlled and hand held equipment or whole body vibration, (WBV), usually associated with ride on and self propelled machinery.

Significant Hazards:

Hand arm vibration syndrome (HAVS)

Whole Body Vibration (WBV)

Workers, whose hands are regularly exposed to high vibration levels during the use of hand-held, powered machinery may suffer from several kinds of injury to the hands and arms. Collectively, these injuries are known as 'Hand-Arm Vibration Syndrome' (HAVS). The risk of injury from HAVS will depend on the frequency range of the vibration, its magnitude, and importantly, the length of time a person is exposed.

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Hand-Arm Vibration Syndrome (HAVS)



Hand-Arm Vibration Syndrome is a general term used to describe various kinds of adverse health effects including:

- Vascular disorders generally known as ‘vibration-induced white finger’ (VWF) causing impaired blood circulation and blanching of affected fingers and parts of the hand;
- Neurological and muscular damage leading to numbness and tingling in the fingers and hands, reduced grip, strength and dexterity, and reduced sensitivity both of touch and to temperature;
- Other possible kinds of damage leading to pain and stiffness in the hands and joints of the wrist, elbows and shoulders. These forms of damage and the factors contributing to them are less well understood than the vascular and neurological effects.

Symptoms of HAVS

In the first stages of vibration injury, the individual may notice a tingling sensation or ‘pins and needles’ in their fingers, continued exposure could develop into attacks where the fingers become white when exposed to the cold. This progresses to a condition where in cold weather the fingers rapidly become pale and lose feeling, followed by an intense red flush, accompanied by uncomfortable throbbing when the blood returns to the fingers. More severe forms can involve frequent attacks in cold weather, lasting up to an hour, when considerable pain and loss of dexterity is experienced.

Factors affecting the risk of HAVS

There are several factors that affect the risk of a person suffering HAVS. The main factors are:

- The frequency at which a hand-held tool vibrates. Vibration with a frequency of about 2 to 1500 hertz (cycles per second or Hz) is potentially damaging; the most hazardous range is between 5 and 20 Hz.
- The frequency and duration of use. The length of time a person can use a vibrating tool will depend on the level of vibration

(magnitude) the tool produces, it is worth pointing out that it is better to break up periods of exposure than have long continuous periods of use.

- The magnitude of vibration. The greater the level of vibration a powered tool produces; quoted in m/s^2 the greater the risk from HAVS.

Other factors include:

- The grip a person must apply to the handle/s will affect the likelihood of exposure. The tighter the grip, the more vibration energy is transmitted to the hand/s. Also, how much of the hand is exposed to the vibration will have an effect.
- Individual susceptibility. People may suffer naturally from a disorder of the blood vessels, in which exposure to cold causes the small arteries that supply the fingers and toes to contract. This gives rise to symptoms of whitening of the extremities, tingling and pain with exposure to cold, the condition is known as Raynaud’s Disease.
- Factors affecting blood circulation to the fingers such as outside temperature and smoking. Smoking is known to restrict blood circulation and will increase the risk.

Whole Body Vibration (WBV)

This aspect of vibration is mainly caused by the use of self-propelled machinery; golf courses generally use modern machinery, which has relatively low levels of vibration. If older machinery is used this may have much higher levels of vibration and limits on exposure time.

The main causes of whole body vibration are:

- traveling at high speed – particularly on vehicles without suspension
- traveling on rough ground – roads and tracks

On modern machinery there will be a number of solutions to whole body vibration problems, these include:



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- vehicle suspension systems, axle and cab suspension
- low pressure tyres
- air suspension operator seats

Recommended Action:

- when purchasing new machinery, give consideration to the vibration level given by the manufacturer, low levels of vibration should be one of the factors to be considered when selecting machinery
- redesign tasks so that using hand held machinery is reduced or avoided
- for existing machinery identify vibration levels for each machine, this may be done either by having vibration levels measured on site or by using manufacturers data, to be found in the operators manual (ensure that manufacturers data used is representative of vibration levels found in working machines on golf courses)
- using the HSE Vibration Ready Reckoner, calculate "safe exposure times" for each machine
- where several machines are to be used in a single day, calculate individual exposure levels and calculate the total vibration "dose" for the day
- consider reducing vibration exposure by changing activities and job rotation
- make sure that machinery is properly maintained, key areas will be replacing anti vibration mountings on machinery and ensuring that blades are correctly balanced on rotary mowers and strimmers

Further Information:

HSE Website: www.hse.gov.uk/vibration/index.htm
www.hse.gov.uk/pubns/vibindex.htm

Chapter 3.6 – Working on Slopes Using Ride-on, Self Propelled, and Pedestrian Operated Work Equipment

Tractors and self propelled machinery can overturn or lose control, when working on slopes, uneven ground, near ditches or bunkers. Incorrect loading, weight distribution, poor or incorrect maintenance, turning on slopes and unsafe driving practices will increase the risk of an overturn or loss of control accident. Remember there is no such thing as a 'safe' slope. Operating on grass slopes requires particular care as grass is likely to be very slippery especially when wet.



It is essential that a risk assessment is carried out to reduce the likelihood of accidents occurring on slopes, typically the process on a golf course would cover the following:

- identifying areas where steep slopes, uneven ground, ditches, bunkers are likely to cause problems
- identifying aggravating features, poor sight lines on approach to a slope, steep slope that leads to a bunker or water hazard, weather hazards; ice, snow, wet grass
- measuring the angle of the slopes
- identifying "no go" areas for machinery
- identifying which machines may operate safely in specific areas, this will involve reference to manufacturers information for slope limits for individual machines and reference to roll over protection structures (ROP's) and seat belts
- ensuring that machinery is maintained to manufacturers specification
- training staff to operate machinery safely on slopes
- devising safe working practices for each machine and hazardous area
- monitoring staff, operating procedures and any incidents that may occur (see section on accident and incident reporting)

Tractors are required to be fitted with a safety cab; roll frame or roll bar (Reference: Agricultural Tractor Cabs Regulations 1974). These will give the driver some protection in the event of an overturn, however if there is a risk of injury to the operator due to contact with the cab during an overturn then seat belts or other restraining system should be fitted and worn.

Self propelled machinery (mowers, turf maintenance machines, dumpers, excavators and work vehicles) should also be fitted with roll over protection (ROP's) if there is a risk of the machine overturning (Reference: Provision and Use of Work Equipment Regulations 1998). With these machines it is essential that seat belts are also fitted and worn, as in the event of an overturn the operator would be likely to be thrown from the seat and be crushed by the machine or its roll over protection.

The exception to this is the "sit astride" All Terrain Vehicle (ATV's) where it would be impractical to fit roll over protection, the controls used in this example are the requirement for operators to be trained and competent and that they wear head protection.

- a motor cycle crash helmet complying with BS 1384
- or an ATV helmet or other head protection which meets BS EN1384:1997

Using hand held and pedestrian controlled machinery on slopes may also be hazardous. Problem areas will include:

- operators slipping on the slope, this may lead to injuries directly associated with the fall and also from making contact with moving parts on the machine e.g. mower blades, strimmers lines and blades and hedge cutter blades
- increased risk of operator injury due to working on slopes, these will generally affect ankles and knees but may also

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- have an adverse effect on back, necks and shoulders
- the machine sliding or overturning on the slope
- increased risk of objects being ejected from the machine

Operators should be adequately trained, particularly to recognise potentially dangerous situations. The training should emphasise the need for care and concentration when working with tractors and self propelled machinery and, in particular, the importance of paying attention to changes in ground conditions, e.g. potholes, gravel or the turning circle load and speed which may affect the safety of the operation.

Routine checks and maintenance will help to ensure that:

- brakes on tractors and self propelled machinery are correctly adjusted and working efficiently. Independent brakes should be linked whenever braked steering is not required;
- any safety devices or warning systems are operating correctly
- steering is maintained so that there is no excessive free movement and no unnecessary play on the front wheel bearings;
- tyres are inflated to the correct pressure and have adequate tread. They should not be used if they have suffered damage, which could affect their safe use.

Further Information:

HSE Website: www.hse.gov.uk/pubns/indg290.pdf
www.hse.gov.uk/pubns/indg185.pdf
www.hse.gov.uk/pubns/ais37.pdf

Chapter 3.7 – Tractors

Tractors are used as multi purpose power units on golf courses, they can be fitted with a wide range of attachments including:

- trailers, for transport work and trailed machinery
- front and rear linkage mounted equipment, including mowers, fertiliser spreaders, sprayers, turf maintenance machinery
- power take off (PTO) driven equipment
- front loaders with a range of attachments

Due to the wide range of tasks that are undertaken with tractors it is essential that they are maintained in good working order, are used by trained operators, and that attachments and equipment used with the tractor are matched to the power output and lifting capacity of the tractor. The tyres should also be suitable for the tasks and the tyres inflated to the correct working pressures.

It may be necessary to use additional weights to maintain stability, at the front of the tractor when using heavy rear mounted equipment and at the back of the tractor when using a front loader attachment.

Hitching trailers and machines to tractors are potentially dangerous activities, there are many examples of drivers and others being trapped between the tractor and the machine during the attachment process.

A greenkeeper had a serious accident when he lost control of the tractor and trailer he was driving while descending a sloping track. The trailer (rated at 4 tonnes) was loaded with turf; the tractor a 35hp compact, was fitted with turf tyres and there was no trailer braking system. The accident investigations identified that the trailer was too heavy for the tractor and that the ineffective braking system were the main causes of the accident.

The use of pick up hitches on tractors and trailers and automatic coupling devices on tractors and three point linkage mounted equipment will help to reduce the risk of trapping and crushing accidents, however these are not always available and safe working practices are essential when this type of work is being carried out.

Safe working practices will include:

- not allowing anyone into the danger area between the tractor and the trailer or implement when the engine is running
- safe stop procedure always carried out
- make sure that the trailer or implement cannot move or fall over during the attachment process
- when lifting linkage arms or PTO shafts be able to get into a good lifting position, avoid twisting and stooping

A greenkeeper suffered a broken leg, broken ribs and internal injuries when he was trapped between a tractor rear wheel and a sprayer that he was helping to attach onto the rear linkage of the tractor. The driver's foot slipped off the clutch pedal while reversing up to the sprayer, the injured greenkeeper was in the danger area behind the tractor rear wheel, assisting the driver to get the machine onto the tractor by holding the lower link arm in the correct position.

Power Take Off (PTO) Equipment

People are regularly killed or seriously injured in accidents involving power take offs (PTO's) and PTO shafts. Many of these accidents would have been prevented if the PTO and PTO shaft had been correctly fitted and equipped with suitable guards, which were properly used and maintained, and if safe working practices were used, i.e. safe start and stopping procedures. A tractor PTO and the PTO shaft of a machine can be extremely dangerous and require guarding unless safe by position and should never be approached when in motion or use. The guard and the PTO shaft should be inspected and properly maintained. Regular lubrication in accordance with the manufacturer's instructions is also important. If the guard is damaged in any way, the machine should be taken out of service until a new guard is fitted. Further

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information on the guarding of PTO's and PTO shafts is given in the free HSE leaflet Power take-off and power take-off shafts. Many tractors, i.e. the type used for grass maintenance, have front



and mid-mounted PTO drive facility as well as a rear PTO. The PTO drives may be interlocked, i.e. a person must sit on the driving seat before you can drive the machine; if such safety devices are fitted they must work. Particular attention should be given to the safe operation and maintenance of these devices (Ref HSE Guide AS24(rev).

Chapter 3.8 Mowers

A wide range of mowers are used on golf courses and they vary from semi-mounted tractor trailed or gang mowers to specially designed self-propelled equipment. Mowers may be ground driven or powered through the tractor PTO, driven by vee belts or hydraulic motors.

Some self-propelled mowers are fitted with tyres without a tread pattern (slicks) for use on golf greens, because of their lack of grip in certain situations they should be driven very carefully at all times. Mower blades are sharp and can cause accidents. These usually occur when carrying out maintenance or clearing blockages and it is important that staff are trained and competent to carry out the task. Rotary and flail mower blades can detach themselves if not properly fitted and maintained or when not changed at intervals specified by manufacturers. All self-propelled mowers are designed to ensure that the blades cease to rotate when the operator leaves the driving seat. Safety checks for the correct operation of these safety devices should be carried out regularly to ensure that they work correctly. It is important to check that the blades have stopped rotating (rundown time) before any adjustment is carried out on the machine.

In all cases if any adjustment is required to or near the blades the machine should be switched off and, if necessary, the power supply isolated. This also applies to smaller pedestrian-controlled mowers.

Pedestrian-controlled rotary mowers are particularly hazardous if allowed to rotate when the machine is stationary. When buying a new pedestrian-controlled rotary mower ensure that it



is fitted with a blade brake and/or a 'dead man' handle to stop the rotation of the blades when the power is disconnected.

Rotary mowers present a particular hazard if the guards around the blade are removed or damaged. The hover type of mower which is often used to cut steep banks is also dangerous if not used according to the manufacturer's instructions. Steep banks should not be cut with rigid bladed rotary mowers. There have been a number of serious injuries to operators who have slipped when operating on a steep slope. If operators slip it is possible for their feet to slide under the mower and come in contact with the rotating blades. Wearing steel toe capped boots with good grip will help to prevent serious injuries. Greenkeepers will use a range of different types of mower, possibly in the same working day, and it is essential that they are competent to use each type. Having a record of who is trained and competent to use what machine (The Greenkeepers Training Committee Wallchart is an ideal way to show this as a reference point for staff) is essential together with records of the training that was carried out. Induction and on-the-job training are two vital elements in ensuring staff have the skills they need to work safely and efficiently (see also Chapter 1.8 Employing Young Persons).

Chapter 3.9 – Working in, on, or near water

Introduction

- Working on or near deep or fast flowing water creates hazards additional to those normally encountered when working on a golf course, therefore special precautions must be observed.
- The following generic principles and standards must be applied as rigidly as possible, together with any precautions highlighted by site specific risk assessments where the risk of drowning exists.

Potential Hazards

- Drowning
- Falling from banks or off boats due to slipping, over-balancing or over-reaching.
- Over-filling boats, causing capsizing.
- Manual handling, e.g. lifting, twisting, bending or pulling etc.
- Inclement weather.
- Access and egress to the work area.

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- Protection of the public.
- Security of equipment, e.g. do not allow children to play with or ride on any boat, or any other vessel.
- Do not leave any equipment unattended.
- Infections

Major Causes of Drowning

- Unguarded access to water hazard.
- Disregard or misjudgement of the hazard.
- Inability to swim or cope when a problem occurs.
- Lack of supervision.
- Incapacity due to illness or injury etc. that may inhibit self-rescue.
- Absence of life jacket or other life saving equipment.
- Unsuitable boat or craft from which to carry out work.
- Fooling about (horseplay).
- Working on steep slopes near to water without suitable safety lines.
- Driving self propelled work equipment too close to the edge and slipping, possibly overturning, into the water.
- Bad weather conditions.



Locations

This should include the consideration of the following:

- Type of location e.g. river, stream, lake, steep banks, access.
- Nature of the water e.g. fast flowing, deep, clean, polluted, containing debris.
- Type of boat to be used e.g. motorised, man handled, large or small.
- Manpower required to do the job safely.
- Are there 'no go' zones along the edges of banks when using ride-on work equipment.
- Are guard rails or warning signs required to alert other workers, visitors or members of the public.

Risks of Exposure to:

- Hepatitis 'B & C'
- Tetanus
- Toxocariasis
- Dermatitis
- Weils Disease (Leptospirosis)



- Skin cancer (Sunburn)

Pre – Work Precautions

The objective is for the work force, and any other visiting workers, to have a general awareness of the hazard locations and precautions and for appropriate employees to have specific instructions.

- Special precautions must be taken where operatives have to go or work close to the waters edge, or inside fences or guards around the water, or in any situation where they might fall into water. This applies to regular, occasional and one off tasks.
- The best precaution is to provide guards or fences, which would prevent falls into the water. For regular tasks or visits permanent guards should be installed. For occasional or one off tasks, temporary barriers may be more appropriate.
- If fencing or guarding is not reasonable or practicable, the personnel concerned must either wear a safety harness and be roped back to a secure point or wear approved life jackets, or both, as circumstances demand, and adequate rescue equipment must be provided close to hand.
- Persons working alone should wear an approved life jacket irrespective of other precautions in this paragraph.
- In appropriate circumstances, e.g. high banks, a means to assist the member of staff to climb out of the water on their own should be provided.
- Any person going in a boat or working on the inner slope of an embankment must wear a life jacket. Additional precautions may be necessary in the form of safety lines and harness when working afloat.
- Vehicle and pedestrian routes must be kept as far away from the waters edge as is practicable. Routes must be signed or barriers erected where necessary. On narrow tracks one way systems should be used where possible.
- Where water is flowing sufficiently fast to carry a person away the additional safeguard of hanging a chain or rope approx. 50mm

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above the water at a point downstream of the workplace is recommended.

Safety and rescue equipment

- All safety and rescue equipment must be of an approved type, suitable for its purpose and routinely inspected and maintained.

Inspection, Maintenance and Training

- Safety and Rescue equipment should be maintained and serviced at the intervals recommended by the manufacturer.
- More frequent checks on general condition and serviceability will be dictated by the environment in which equipment is used and the working treatment it receives. As a general rule monthly checks will be sufficient unless use is frequent or working conditions rigorous.
- All persons required to use life jackets and/or safety harness shall be instructed in their use, pre-use checks and the cleaning and storage arrangements.

A Life Jacket Can Save Your Life

- Know where you must use one, this will always include work near or over unguarded deep or fast flowing water.
- Know how to wear it.
- Know how to check it.
- Know how to store it.
- Know how it works.
- Your employer should be able to provide further information and training for specific situations where



a risk assessment has identified the need.

- Do read the instructions which come with your life jacket.

References

- Personal Buoyancy Equipment for Use on Inland and Inshore Waters (AIS 1).

Chapter 3.10 – The Use of Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE) is defined as any equipment that is intended to be worn or held by a person at work, which protects against hazards, it will include:

- safety boots
- eye protection (glasses, visors)
- head protection
- hearing protection (ear defenders, ear plugs)
- respiratory protective equipment (RPE)
- safety harnesses
- gloves
- high visibility clothing
- weather protection

Personal Protective Equipment must be used where the risks to health and safety cannot be adequately controlled in other ways. You should make the work as safe as possible and then if all the hazards are not adequately controlled protective clothing should be used.

The regulations require that PPE:

- PPE is properly assessed for suitability
- is inspected and maintained correctly
- stored correctly



- staff are provided with instruction on how to use the equipment
- it is correctly used by employees

Further Information:

HSE Website: www.hse.gov.uk/pubns/ppeindex.htm

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Chapter 3.11 – Electricity and using electrical equipment

The Electricity at Work Regulations 1989

What does it cover?

- the electrical supply; this will include; transformers, overhead and underground supply cables, distribution systems and switch gear,
- the electrical installation within buildings, including; sockets, switches and other fittings,
- power tools and other portable appliances

Significant Hazards

- electrocution
- fire

Overhead lines and underground cables

Electricity can flash over from overhead power lines to nearby objects, for example, ladders, irrigation pipes, trailers and other high reach machinery, the results can be fatal. There is particular danger to anyone working close to an overhead line with:

- ladder
- pole pruner
- irrigation pipes, including rain guns
- a tractor with a front loader
- fork lift trucks
- loading shovels
- tipping trailers and lorries
- or any other equipment working near the line.

If sand, or other bulk material is delivered to the golf course, it is essential that any load is tipped at least 10 metres from any line to avoid the risk of possible contact or flash over.

Care also needs to be taken if digging holes and trenches in case of buried live cables. It is essential that the location of underground cables is identified before using mechanical diggers or trenchers. This can be achieved by the use of maps and site plans, safe digging or using cable finding equipment. If any doubt about cable location exists it is always advisable to contact the regional electricity company before starting any work close to overhead lines or buried cables.

Fixed electrical installations

All fixed electrical installations should be designed, installed, operated and maintained to prevent electrical danger. The Institution of Electrical Engineers (IEE) produces guidance on the construction of fixed installations in buildings and elsewhere. This is now in its sixteenth edition and is called the Regulations for electrical installations.

This is recognised as a British Standard (BS 7671:1992). It should be remembered that despite the title, these are not a legal requirement. The IEE also produces guidance on the inspection and testing of fixed installations.

Portable equipment

Portable equipment will need maintaining to ensure that it is safe for use. All equipment should be checked visually on a regular basis, to ensure that cables are in good condition, plugs are sound and correctly attached and fused and the equipment is in general good repair. These checks should be part of an inspection programme but can also be undertaken by the user before and during use. However, no one should carry out electrical work unless they have sufficient knowledge to prevent danger to themselves or others. It is not necessary to employ an electrician to carry out the visual checks.

Portable Appliance Testing (PAT).

Testing of electrical equipment by a competent person is a legal requirement. The tests cover the general condition of the equipment, cables, plugs, fuses, integrity of the earthing system and insulation tests. Records should be kept of test results for each piece of equipment, so that deterioration of the condition of the equipment can be identified. The frequency of testing equipment depends on the frequency of use of the equipment and the conditions in which it is used, for example; office equipment may be considered low risk and may only need testing every 2 – 3 years, but a hand held grinder used in a workshop may be higher risk and would need to be tested more frequently. Employers should carry out risk assessments to identify frequency of testing. The work may be carried out by a “competent person” but is usually done by an electrical contractor. Hand-held electrical equipment used outdoors, or where there is a lot of earthed metalwork, should where possible be supplied at reduced voltage, i.e. 110 volt centre tapped earth (CTE) system from a safety isolating transformer. If this is not possible the equipment should be connected through a residual current device (RCD), which will cut off the power quickly if there is an earth fault. Such a fault could result in someone receiving an electric shock. The RCD should be checked regularly by pressing the test button.

Recommended Action

- carry out risk assessments on all tools and activities that use electricity or might involve contact with electrical supply cables
- only use approved electrical contractors to carry out electrical work and portable appliance testing
- carry out visual inspection of electrical equipment before use
- use low voltage equipment and/or circuit breakers where appropriate

Further Information

- HSE Guide INDG 236 – Portable Appliance Testing
- HSE Guide INDG 231 - Electrical Safety and You
- HSE Guide INDG 389 – Shock Horror
- HSE website: www.hse.gov.uk/electricity/index.htm

SECTION 4.0 - WORKING AT HEIGHT

Legislation: Work at Height Regulations 2005

The height where the legislation applies is not specified, therefore work at height should be considered as any situation where a person could fall, this will include fall from ladders and equipment as well as falls on slopes and banks and into pits or unguarded excavations. Falls from height have the potential to be a cause of fatal and serious injuries on golf courses. A fall even a fall from less than 2 metres can result in fatal injuries.

Places where falls from height occur on golf courses

Targeting risk assessment at these areas will help reduce the risk of falls from height in the workplace.

- Steps and Stairs – a large number of falls from height accidents involve people falling down stairs or from staircases, often when the stairs are in poor condition, or have materials left on them. Slips, trips and falls on steps e.g. on tees and banks are common due to lack of a view when carrying equipment, poor footwear or due to wet conditions (sleeper steps). There can be flights of stairs (sometimes they are 'home made') inside the storage shed that give access to a loft or mezzanine storage area. They are used to carry materials (sacks, bags and boxes) up and down sometimes where the view is obstructed by the load causing slips, trips and falls over hidden objects of where footing is lost.
- Ladders – In general the use of ladders should be avoided unless there is no other means of providing access. Where temporary access is required, use of ladders and step ladders should be carefully considered, and only used for short term access unless there are no practical alternatives. All ladders should be regularly inspected and any old and/or damaged equipment is disposed of safely.
- Vehicles and trailers, trestles and work platforms - falls from vehicles are also a cause of serious injury, either from delivery vehicles or from machinery and other ride-on vehicles. Greenkeepers who need to cut tall hedges have devised their own systems based on using steps and trestles inside moving trailers attached to tractors. This is an unsafe system of working and needs to be replaced by the use of Mobile Elevated Work Platforms (known as Cherry Pickers or MEWPS); and/or using extended pole pruners.
- Bunkers, ditches, banks, elevated tees, greens and pits, some of the features on



the golf course may present danger to golfers, greenkeepers and others, in many cases these may be unprotected areas. Consideration should be given to the design and maintenance of these features to allow safe access, the equipment to be used and the wearing of the correct type of footwear.

- Racking and shelving in stores - falls from storage racking or shelves are also common, where workers try to retrieve goods stored at high level by climbing up the racking.

Responsibilities

The Regulations require employers to ensure:

- all work at height is properly planned and organised;
- all work at height takes account of weather conditions that could endanger health and safety;
- those involved in work at height are trained and competent;
- the place where work at height is done is safe;
- equipment for work at height is properly inspected at suitable intervals;
- the risks from fragile surfaces are properly controlled; and
- the risks from falling objects are properly controlled.

Planning:

- ensure that no work is done at height if it is safe and reasonably practicable to do it other than at height;
- ensure that the work is properly planned, appropriately supervised, and carried out in as safe a way as is reasonably practicable;
- plan for emergencies and rescue;
- carry out risk assessments and act on the findings.

Staff training

You must ensure that everyone involved in working at height is competent (or, if being trained, is directly supervised by a competent person). This includes involvement in organisation, planning, supervision, and the supply and maintenance of equipment.

When selecting equipment for work at height you must:

- use the most suitable equipment;
- give collective protection measures (e.g. guard rails) priority over personal protection measures (e.g. safety harnesses);

Take account of:

- the working conditions;
- risks to the safety of all those at the place where the work equipment is to be used.

Further Information:

- HSE Guide INDG 401 - Work at Height
- www.hse.gov.uk/falls/index.htm
- www.hse.gov.uk/pubns/indg401.pdf

SECTION 5.0 - MANUAL HANDLING

Legislation: The Manual Handling of Loads Regulations 1992

What does it cover?:

Any operation that involves using bodily force to move an object, this could include; lifting, lowering, pushing, pulling or carrying. Examples on a golf course could include; handling bagged materials, tee mats, turf, machinery, moving machine components (cutting units and groomers), starting machinery, carrying machinery; hedge cutters, strimmers, pushing barrows, raking bunkers, shovelling heavy bulky materials, changing holes, switching greens, loading/unloading trailers.

In the golf course industry, manual handling causes a quarter of all injuries and nearly a third of 'over 3 day' absence injuries reported to HSE under RIDDOR 95. Many injuries are caused by incorrect lifting methods, awkward shape of the load or lack of handles. In addition to acute injuries, chronic injuries to the back, lower limbs and neck can occur from prolonged periods of lifting of heavy loads, over months or years. Incorrect lifting techniques, poor posture, frequency and duration of lifting all contribute to the development of long-term musculoskeletal problems. Injuries can be painful, for example where spinal injury occurs.



Repetitive work

On golf courses, repetitive movements of the shoulder, arm, wrist and hands can cause work-related upper limb disorders (WRULD's), also known as repetitive strain injury (RSI). These disorders are made worse by the need for excessive speed, using force or poor posture.

What the Law says

The Manual Handling Regulations require employers to avoid, so far as is reasonably practicable, manual handling operations that put employees at risk of being injured. Use of mechanical handling equipment should be considered first; this should include:

- use fork lift trucks or other mechanical equipment to handle materials e.g. pallets of turf, fertilizers, boxes, drums and barrels



- use of bulk materials and bulk handling systems rather than bagged or materials

Assessing the risk

The risk from any remaining manual operations should be assessed and, where it is significant, action should be identified to reduce that risk.

Reducing the risk

The actions identified to reduce risk should be implemented, for example using mechanical aids, lower weights of sacks/drums, changes to systems of work etc. Such actions should be included within the golf club's General Statement of Safety Policy and the arrangements for managing health and safety in the workplace. The club may also need to include such changes within its medium term financial planning so that physical changes can be made e.g. yard surfacing, additional storage space, and equipment purchased that will actually reduce the amount of manual handling work.

Training and information

Employees carrying out manual handling operations should be trained in safe manual handling techniques and safe use of mechanical aids, including update and re-training until a permanent change of culture and new techniques are being used. Golf club directors should ensure that the greenkeeping team are given information about the weight of the loads they are required to handle, particularly if the load is heavy or the centre of gravity is offset. This information is available from suppliers of goods but it may be necessary to seek information from suppliers of goods and equipment previously supplied e.g. mower cutter units, sleepers etc.

Reviewing the assessment

The initial risk assessment should be reviewed if there have been significant changes in the manual handling operations it relates to, and you should take any action identified to further reduce risk.

Identifying manual handling tasks

Firstly identify which manual handling activities are causing a significant risk in your workplace. The priorities previously identified

SECTION 5.0 - MANUAL HANDLING

will help you to determine which tasks to focus on. Observe the work being done, discuss with your employees and look at injury history. Particular attention should be paid to moving heavy objects, awkward load shapes, strenuous pushing and pulling and stacking above shoulder height. You should also look at repetitive work (e.g. bunker raking) that could lead to WRULDs.



Elimination

Manual handling and repetitive work identified as presenting a significant risk should be assessed in more detail to see if they can be avoided altogether, or if the task can be changed to reduce the risk. For example, can the task be automated or significantly assisted by mechanical means?

Preventive measures

For tasks that cannot be eliminated or automated, you will need to introduce suitable preventive and protective measures to reduce the risk of injury. If it is too costly to introduce all the measures at once, then they should be phased in as part of an overall risk reduction plan.

Reporting of symptoms

You should encourage your staff team to report any symptoms of injury as soon as they notice them. Early reporting of symptoms enables early diagnosis, proper treatment and rehabilitation. In general, back pain can best be tackled by keeping gently active rather than resting. For WRULDs, the limb is best rested long enough to reduce inflammation. However, medical advice should be sought in all cases of back pain, WRULDs and similar disorders.

Monitoring

Finally, you should check that your preventative measures have made improvements. You can do this by monitoring records of sickness absence and ill health, ensuring there is adequate supervision and monitoring the use of mechanical aids etc.

Supply chain

Handling risks are often inherited from further up the supply chain, for example if you receive heavy materials, sacks or large drums. If customers and suppliers can agree on acceptable sack

weights, drum weights etc, and how products should be handled, purpose-made handling solutions can be used at each stage.

The following table sets out a list of manual handling tasks known to be problematic in the golf industry and ways of avoiding or reducing the risk. You will also need to consider any other manual handling tasks not listed that may occur on your premises. If you find solutions other than those suggested you are free to use them.

TASKS	ACTION TO REDUCE RISKS
Handling bags of fertiliser	Change to pallet handling using a fork lift
Manhandling of implements and cutter units when attaching to tractors etc.	Review training to be sure of using correct technique. Ensure implements are detached correctly, use adjustable stands
Lifting equipment onto work benches and trailers	Use mobile lifting equipment. Review training, consider two man lifting
Using trimmers and hand held rotary mowers on grass banks	Review risk assessment and justify the need to do this work. Use growth retardants. Consider reducing bank angles so that ride-on equipment can be used safely
Raking bunkers	Use mechanical equipment. Review training to ensure correct techniques are used
Handling and laying turf	Use 'big rolls' and mechanical equipment. Use fork lift equipment to reduce unnecessary manual handling
Brushing and sweeping	Use mechanical equipment e.g sweepers and blowers
Changing holes on putting greens	Review training to ensure correct technique is used. Use modern hole changing equipment
Handling old railway sleepers	Review risk assessment and change to using mechanical handling equipment

Further Information:

- HSE Guide: INDG 383 - Manual Handling Assessment Charts
- www.hse.gov.uk/msd/backpain/index.htm

SECTION 6.0 - HAZARDOUS SUBSTANCES

Chapter 6.1 – The control of substances hazardous to health (COSHH) regulations

Legislation: Control of Substances Hazardous to Health Regulations 2002 require that the employer should “not carry on any work which is liable to expose any employees to any substances hazardous to health unless he has made a suitable and sufficient assessment of the risks”.

Hazardous substances can include:

- substances used directly in work activities;
- substances generated during work activities;
- naturally occurring substances;
- biological agents such as bacteria and other micro-organisms.



A greenkeeper can be exposed to a wide range of hazardous substances in the course of your work, these will include:

- fuel, oil and grease
- pesticides
- fertilisers
- cleaning materials and disinfectants
- paint and wood preservatives
- dust
- fumes, from engine exhausts, battery charging and welding
- contact with dead animals
- contact with animal waste
- contact with poisonous plants
- biological hazards examples include tetanus, weills disease, lymes disease airborne fungi and other microscopic biohazards (bioaerosols)

These substances may have an adverse effect on your health rather than affect your general safety.

Examples of the effects of hazardous substances include:

- skin irritation, dermatitis, or skin cancer as a result of skin contact, exposure to the sun;
- asthma as a result of developing allergy to substances used at work or long term exposure to dust and other airborne contaminants (respiratory sensitizers);
- losing consciousness as a result of being overcome by toxic fumes;

- cancer, which may appear long after the exposure to the chemical that caused it or long term exposure to the sun;
- infection from bacteria and other micro-organisms (biological agents).

Proprietary made products containing hazardous substances will be easily identified by hazard warning symbols on the product label and information in the Material Safety Data Sheet (MSDS).

The legislation requires that the employer carries out a COSHH Assessment (Risk Assessment for the hazardous substance). This should identify where and how the substance is used, handled and stored and how the adverse effects of the substance (hazard) may be eliminated or controlled.

The following steps cover the requirements of carrying out a COSHH Assessment:

1. identify hazardous substances and assess the risks to health from the hazardous substances used or created in the work place
2. decide what precautions are needed
3. prevent or control exposure
4. ensure that control measures are used and maintained
5. monitor exposure
6. carry out appropriate health surveillance (only required if control measures do not give complete protection)
7. prepare plans and procedures to deal with accidents and emergencies
8. ensure that employees are properly supervised

Manufacturers Safety Data Sheets (MSDS) provide an essential source of information when preparing COSHH assessments.

Further information:

HSE website: www.hse.gov.uk/coshh/index.htm

Chapter 6.2 – Using plant protection products (pesticides).

Pesticide products are wide ranging and include fungicides, herbicides, insecticides, growth regulators, pest control products, rodenticides and wood preservatives. Their sale, supply, advertisement, storage and use is only permitted if they have been approved under the Control of Pesticides Regulations 1986 (COPR) and the Plant Protection Products Regulations 1993 (PPPR).

Only approved pesticides can be used and the label of approved products should display a MAFF, MAPP, or HSE number. The conditions of use are stated in every individual pesticide approval and are printed on the product label. The conditions of use should always be followed. Anyone working with pesticides is required to be competent and in certain situations you may be required to hold a Certificate of Competence issued by the National Proficiency Tests Council following a successful assessment. You are required to have a Certificate of Competence in the following situations:

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- If you are applying a pesticide as part of a commercial service (as a contractor) on land that is not owned or rented by you, or your employer.
- If you are applying a pesticide on land which you or your employer does not own, rent, or occupy.
- If you were born after 31 December 1964.
- If you are directly supervising someone else who is using a pesticide but does not have a Certificate of Competence.



To ensure you remain competent and maintain your levels of skill and knowledge it will be necessary to keep up to date; the ideal way to do this is by becoming a member of the National Register of Spray Operators (NRoSO www.nroso.org.uk), a voluntary scheme set up under the Voluntary Initiative. Pesticides are approved for a particular "field of use"; agriculture, horticulture (including amenity horticulture), industrial and in or near water. It is essential that only pesticides approved for a particular field of use are used.

The Code of Practice for the Safe Use of Plant Protection Products (www.pesticides.gov.uk) introduced in January 2006 provides further detailed information on the use of pesticides. Spraying equipment must be maintained in good condition and calibrated regularly to establish correct application rates. There is a voluntary sprayer testing scheme, National Sprayer Testing Scheme (NSTS www.nsts.org.uk) available, although not a legal requirement at present, its use would contribute to safe working practices, there is also a general requirement that all "work equipment" is maintained to the standards identified by the manufacturer.

The pesticide product label is the key link between the manufacturer and the user, the product label should always be read and complied with. It is a legal requirement to comply with "Statutory Conditions for Use."

The disposal of pesticide waste should also be considered, this will include; empty containers, washings from machinery and equipment, used and contaminated protective clothing and pesticides in diluted or concentrate form. Further details can be found in the Code of Practice.

All pesticides should be stored in a suitably constructed, secure bin, cabinet, chest or vault capable of resisting fire for at least 30 minutes and robust enough to withstand reasonably foreseeable accidental impact and be secure against theft and vandalism.

The store needs to be fitted with a sump which will retain the total capacity plus 10% of the contents stored, in the event of all containers failing simultaneously (eg in the case of a fire), or constructed with a bund that will contain any spillage of pesticide. It should not be sited near a staff room or office and if kept outside it needs to be waterproof and frost proof. The pesticide store should be identified by a cautionary warning sign and smoking prohibited in the area. For large quantities of pesticides, containers specifically manufactured to comply with the legislative requirements for storage are available on the market. Otherwise a purpose-built pesticide store should be constructed or a suitable building converted. See HSE Guidance Note AIS 16 - Storage of approved pesticides: Guidance for farmers and other professional users.

Further Information:

- Code of practice for the safe use of plant protection products, www.pesticides.gov.uk provides the framework for the use of plant protection products in the UK.
- www.voluntaryinitiative.org.uk provides a wide range of information and links to other key websites.
- Product labels form the link between the manufacturer and the user and should always be available and complied with.
- HSE Guidance Note AIS 16 – Storage of Pesticides

Chapter 6.2 – Managing asbestos

Legislation: Control of Asbestos at Work Regulations 2003
Inhalation of asbestos dust and fibres can lead to asbestos related diseases, mainly cancers of the lungs and chest. Breathing asbestos is only a risk to health if asbestos fibres are released into the air and breathed in. Asbestos related diseases currently kill up to 3000 people a year in Great Britain. This number is expected to go on rising for the next ten years. There is no cure for asbestos related diseases.



SECTION 6.0 - HAZARDOUS SUBSTANCES

Who is at risk?

Anyone who uses your premises, who disturbs asbestos that has deteriorated or been damaged and is releasing fibres, can be at risk. In fact, anyone whose work involves drilling, sawing or cutting into the fabric of premises could potentially be at risk. They may all breathe in asbestos fibres during their day-to-day work. In the case of a golf club this could include:

- Staff
- Contractors, (plumbers, electricians, IT contractors)
- Golfers
- Visitors

To ensure compliance with the current legislation the following steps should be taken:

- find out if there is asbestos in the premises, its type, amount and what condition it is in;
- presume that materials contain asbestos, unless you have strong evidence that they do not;
- make and keep up to date a record of the location and condition of the Asbestos Cement Materials (ACM's);
- assess the risks from the material;
- prepare a plan that sets out in detail how you are going to manage the risk from this material;
- take the steps needed to put your plan into action;

SECTION 7.0 - WORKING IN CONFINED SPACES

- review and monitor your plan and the arrangements made to put it in place; and
- provide information on the location and condition of the material to anyone who is liable to work on or disturb it, this would include contractors carrying out construction, maintenance or repair work at the golf club

Further Information:

- www.hse.gov.uk/asbestos/index.htm

There may be occasions when greenkeepers find themselves working in situations that can be described as confined spaces:

- Drainage and Soakaway chambers
- Irrigation tanks
- Pits in workshops
- Ditches and other water features



When planning to carry out work in these situations make sure you refer to the relevant risk assessment for the task and other risk assessments for manual handling, personal protective equipment, communications and emergency assistance and lone working, as they may also be relevant to carrying out the work safely.

If there is to be major construction work on a golf course e.g. drainage or irrigation work, involving any of the above features, can they be designed in such a way that entry into a confined space by a person is unnecessary, or significantly reduced.

The Approved Code of Practice "Safe Work in Confined Spaces" made under the Confined Spaces Regulations 1997 define a confined space as:

"any place, including any chamber, tank, vat, silo, pit, trench, pipe, sewer, flue, well, or other similar space in which, by virtue of its enclosed nature, there arises a reasonably foreseeable specified risk".

An important aspect of assessing risks in confined spaces is to carefully consider Regulation 4 (1) "No person at work shall enter a confined space to carry out work for any purpose unless it is not reasonably practicable to achieve that purpose without such entry"

In other words – is there another way of carrying out the task without the need for a person to enter the confined space?

When working in a confined space on a golf course 'reasonably foreseeable' risks could be:

- a fall resulting in injury in a remote area with no communications
- becoming stuck in a confined space that is too small to allow free movement, including turning round to exit the area
- loss of oxygen due to lack of ventilation resulting in loss of consciousness
- ingress of toxic fumes resulting in loss of consciousness
- a fall of loose material into a trench or ditch trapping or burying workers
- flooding of the trench or pit resulting in drowning

When planning work in a confined space make sure there is a risk assessment that is directly relevant to the site and the work; a risk assessment will need to include the following controls:

- Ensure all staff who may be carrying out this work have received appropriate training
- If possible ensure the task is carried out by two or more persons, one to remain outside, maintain contact with colleagues, and be ready to assist in an emergency.
- Consider wearing a safety harness that will arrest a fall and make it possible to rapidly extract an injured person from the confined space
- Ensure the work is notified to a competent person who will ensure the site Emergency Plan is put on standby and able to carry out a rescue operation
- If foul air is suspected, carry out a survey and consider if there is a need to wear suitable respiratory protective equipment (RPE)
- Ensure that all pit and trench supports have been correctly specified and inspected by a competent person before commencing work
- On completion of the task the competent person is to be notified and he/she can 'stand down' the raised level of the Emergency Plan

Further information:

- HSE Guide INDG 258 – Safe Work in Confined Spaces

SECTION 8.0 - WORKING ALONE

Legislation: Health and Safety at Work Act 1974
Management of Health and Safety
at Work Regulations 1999

Examples of working alone on a golf course include

- Staff who work alone outside normal hours such as late duties in the evenings or working at weekends.
- Staff who work alone in remote parts of the golf course.

Lone workers should not be at more risk than other employees, and this may require extra risk control measures. Precautions should take account of normal work and foreseeable emergencies, e.g. fire, equipment failure, illness and accidents. Golf club employers should identify situations where people work alone and ask questions such as:

- Does the workplace present a special risk to the lone worker?
- Can all the plant, substances and goods involved in the work be safely handled by one person?
- Is there a risk of violence?
- Are female greenkeepers especially at risk if they work alone?
- Are young workers especially at risk if they work alone?

Typical control measures to be considered are

- Identifying tasks that can only be done when lone working
- Providing appropriate information and training
- Providing communication systems; radios, mobile phones, adopting a "call in" system
- Ensure lone working is actively discussed during induction and other training



Further Information:

- www.hse.gov.uk/pubns/indg73.pdf

