



Composite Safety Statement

August 2015

Safety Statement Senior Management Sign-off**Head of Operations:****Date:**

Head of Finance:**Date:**

Head of Human Resources:**Date:**

Head of Business Development:**Date:**

Head of Research & Development:**Date:**

Director of ERBD:**Date:**

Director of SERBD:**Date:**

Director of SWRBD:**Date:**

Director of ShRBD:**Date:**

Director of NWRBD:**Date:**

Director of WRBD:**Date:**

Emergency Contacts

General Emergencies: 999 or 112

Local Hospitals:

Local Doctors:

Local Garda Stations:

HSA Information Service: 1890 289 389

Health Protection Surveillance Centre: 01 8765300

Poisons Information Centre Beaumont: 01 8092166

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1.0 Document Control

1.0 DOCUMENT CONTROL

1.1 The Documented System

This Safety Statement refers to the work activities undertaken by Inland Fisheries Ireland (IFI). The identification and recommendation for the provision of specific arrangements and controls to eliminate or minimise the risks to health and safety will be co-ordinated by the Chief Executive Officer in conjunction with the staff, Health & Safety Executive, National Safety Committee and outside experts as appropriate.

This document supersedes Version 1.0 of 2013.

1.2 Implementing the Safety System

The Health & Safety Executive shall hold the master copy of the Safety Statement on behalf of the CEO. Controlled copies of the Safety Statement shall be issued to personnel as specified on the circulation list, staff and others as appropriate.

It is the policy of IFI that all employees shall have access to the safety statement. The relevant parts of the safety statement shall be kept at the place of work.

1.3 Circulation List (Non Exhaustive)

1. Chief Executive Officer
2. Health & Safety Executive
3. Heads of Function
4. Directors of River Basin Districts
5. Safety Representatives
6. All Staff Members

1.4 The CEO is responsible for the issue of new versions and the retrieval and filing of obsolete versions of the safety statement. New versions must be approved by the CEO.

1.5 Document Amendment

To ensure that each copy of the safety statement contains a record of all changes, the CEO will record the change or amendments on an amendment list.

The amendment list along with any revised or new pages will then be circulated to all on the circulation list.

The CEO will maintain on file one copy of all obsolete documentation, which will be stamped "Obsolete"

Name of Document:		IFI Safety Statement			
Author(s):		Michael Cusack			
Authorised Officer:		Dr. Ciarán Byrne, Chief Executive Officer			
Description of Content:		Health & Safety Policy, Hazard Identification, Risk Assessment & Control			
Approved by:		CEO IFI			
Date of Approval:					
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	1	469	0	0	10

VERSION CONTROL TABLE

Version No.	Status	Authors(s)	Reviewed by	Approved by	Date of issue
V1.0	Final	Michael Cusack	National Safety Committee	CEO IFI	August 2015

2.0 Statement of General Policy

2.0 STATEMENT OF GENERAL POLICY

In accordance with the Safety, Health & Welfare at Work Act, 2005 it is the objective of Inland Fisheries Ireland to do all that is reasonably practicable to prevent injury and damage to persons, property and equipment, to protect employees and others from foreseeable work hazards and to enlist the active support of employees in achieving such conditions.

In the safety statement the various hazards are identified and the risk assessed and the necessary arrangements to reduce risks to a minimum are detailed in Section 14.

In recognition of its responsibilities, Inland Fisheries Ireland is committed to promoting standards of health, safety and welfare and compliance with all relevant legislation and approved codes of practice.

Inland Fisheries Ireland will endeavour to provide and maintain a safe and healthy working environment, safe systems and methods of work in order to protect employees and others, in so far as they come into contact with foreseeable work hazards.

Inland Fisheries Ireland will endeavour to provide employees with the information, training instruction and supervision necessary to ensure that work is carried out safely and efficiently and to develop safety awareness among employees.

Inland Fisheries Ireland will define individuals' responsibilities for health and safety matters and encourage full and effective joint consultation on all health and safety matters.

The Chief Executive Officer will include safety matters in the Board report.

Signed: 

**Chief Executive Officer
Inland Fisheries Ireland**

Date: 18/09/15

3.0 Arrangements for Implementing Policy

3.0 ARRANGEMENTS FOR IMPLEMENTING POLICY

3.1 Health and Safety Training

Inland Fisheries Ireland is committed to providing appropriate health and safety training for all employees.

3.1.1 Induction Training

Induction training shall be provided to new employees to ensure they fully understand the hazards of the workplace and what safety precautions and emergency procedures are in place.

3.1.2 Job training

Training will be given to employees involved in those activities where a training need has been identified. Safety training as identified by staff and management will be provided to meet the requirements of legislation, and approved standards. A list is detailed in **Section 10**.

3.2 Safety Consultation

Inland Fisheries Ireland recognises that employee involvement in health and safety in the workplace is an integral part of ensuring that high standards are reached and maintained. The Chief Executive Officer, with the assistance of senior and line management will be responsible for co-ordinating consultation with employees and providing appropriate information on matters pertaining to safety, health and welfare.

The National Safety Committee shall meet to discuss health and safety issues, review inspection records, accident and dangerous occurrence investigation findings and make recommendations for any necessary improvements.

3.3 Accident Investigation/Reports

Inland Fisheries Ireland maintains that no person should be subjected to any preventable injury no matter how slight the consequences may be. All accidents and incidents with the potential for injury must be reported to management and the Health & Safety Executive in a timely fashion.

3.4 Accident Analysis

The Chief Executive Officer will carry out a review of all accident reports annually. The details will be reported to the National Safety Committee for further consideration.

3.5 Safety Inspections

3.5.1 Fire Inspection

Fire extinguishers, smoke & heat detectors, exits and any other installations are inspected as required regularly in all applicable buildings. Inspections are recorded in the Fire Register.

3.5.2 Workplace Inspections

Workplace risk assessments are to be carried out by employees or by the Health & Safety Executive when requested. Risk assessment is critical when working in a new environment or unfamiliar conditions or with new equipment. Persons carrying out checks will in particular look for hazards associated with working in the field:

- Slips, trips and falls;
- Manual Handling;
- Safe use, storage and handling of chemicals;
- Safe use, maintenance & storage of tools, machinery & equipment;
- Loose, frayed or damaged electric cables or equipment;
- Work at heights;
- Unsafe acts and horseplay;
- Poor housekeeping;
- Training Requirements;
- Personal Protective Equipment;

Checklists may be used to assist in the identification of hazards.

3.5.3 Safety Review and Inspections

All employees are responsible for their own safety and equipment and should carry out a visual check of the equipment prior to use. Any unsafe or defective equipment must be removed from service and securely stored so that it is not accessed by others.

Equipment requiring a detailed examination must be examined or serviced as per the manufacturer's recommendations. Outside competent persons may be required to carry out some inspections, examinations and maintenance work. Staff are also responsible for ensuring all equipment is in safe working order and must carry out checks on equipment and maintain records.

The Health & Safety Executive will carry out more detailed inspections of work activities, processes or work practices as appropriate. In addition the Health & Safety Executive will carry out Manual Handling Risk Assessments, Visual Display Unit Assessments and others as requested.

A review of the safety statement will be carried out as required and changes and modifications will be communicated to the employees. In addition, a review will take place of the relevant section when new equipment is introduced or when changes in practices occur.

3.6 Non-Employees

3.6.1 Visitors

All contractors and visitors present at any Inland Fisheries Ireland premises **must**:

Report to a member of staff.

Sign the visitors' logbook if remaining on the IFI premises.

Adhere to safety rules and procedures set by IFI.

Sign out on the visitors log book when leaving.

Employees have a duty to protect the Safety, Health & Welfare of visitors. Visitors should not be permitted to enter any area unless accompanied by an employee. Such visitors must, where necessary, be given the opportunity to view the safety statement.

Visitors & Contractors are dealt with in greater detail in **Section 6**.

3.7 Fires and Emergency Procedures

3.7.1 Introduction

It is the objective of Inland Fisheries Ireland to maintain high standards of fire safety. IFI has devised fire and emergency procedures to assist in this.

The objectives of the fire safety management programme are as follows:

To guard against the outbreak of fire.

To ensure in so far as is reasonably practicable the safety of persons on the premises in the event of an outbreak of fire or in the event of other emergencies.

To ensure the safe evacuation of persons from buildings.

3.7.2 Fire and Emergency Plan

The Fire and Emergency Plan is contained in **Section 9 & Appendix IX**.

This plan includes procedures relating to fire prevention and instructions in the event of a fire or other emergency. It specifies individual's responsibilities as appropriate.

3.7.3 Emergency Evacuation

Emergency evacuation drills will be carried out at regular intervals. Responsibility for ensuring that drills are carried out and appraised rests with the Chief Executive Officer & Senior Management.

3.8 Resources

Inland Fisheries Ireland is committed to providing the resources necessary to ensure that safety, health & welfare standards are maintained. These resources include but are not limited to the provision of:

- Personnel necessary to carry out safety checks, risk assessments and inspections.
- Time necessary to carry out the above.
- Adequate time for the provision of reports.
- Facilities available to staff to enable report writing.
- An adequate budget for health, safety and welfare requirements.
- Access to advice and recommendations from the Health and Safety Executive.
- Planned programmes of work to improve H&S standards.
- Planned programmes of maintenance.
- Adequate safety consultation with employees.
- The employment of outside experts as deemed necessary.

4.0 Organisation Structure, Duties & Responsibilities

4.0 ORGANISATION STRUCTURE, DUTIES & RESPONSIBILITIES

4.1 Chief Executive Officer: Dr. Ciarán Byrne

- Overall responsibility for Safety, Health and Welfare of employees.
- Ensure compliance with all legal requirements and safety precautions in respect of works carried out by Inland Fisheries Ireland.
- Resources in terms of staff, training, finance, equipment, time and materials are provided to implement policy.
- Ensure that all relevant Managers understand their health and safety roles and responsibilities.
- Set a personal example.

4.2 Health & Safety Executive: Mr. Michael Cusack

- Report to the Head of Human Resources.
- Advise management and responsible persons on all matters relating to Safety, Health & Welfare.
- Advise employees on matters affecting their health and safety.
- Monitor all activities affecting health and safety.
- Monitor accident trends to ensure continuous improvement.
- Advise on legislative changes, standards and codes of practice.
- Advise on preparation of safe working practices.
- Promote workplace safety and a positive safety culture.
- Investigate accidents and arrange for specialist advice where necessary.
- Responsibility for formulating, co-ordinating and implementing health and safety policies.
- Set a personal example.

4.3 Duties of Function Heads: Ms. Suzanne Campion, Mr. Pat Doherty, Dr. Cathal Gallagher, Dr. Greg Forde, Mr. Kieran Murphy, Duties of Directors of River Basin Districts: Dr. Patrick Buck, Dr. John Conneely, Dr. Milton Matthews, Ms. Amanda Mooney, Mr. David McInerney & Mr. Brian Beckett

Each Function Head/RBD Director will have responsibility for safety matters within their function or district. The duties are as follows:

- Management of Safety, Health & Welfare within their function or district.
- Providing systems of work that are planned, organised performed, maintained and revised as appropriate so as to be, so far as is reasonably practicable, safe and without risk to health.
- Providing and maintaining facilities and arrangements for the welfare of his or her employees at work.
- Provide information, instruction, training, and supervision necessary to ensure the safety of employees.

- Ensure the safety, health and welfare of temporary employees and persons other than employees who may be at that place of work.
- All incidents whether they result in injury, damage or near misses are reported to the Health & Safety Executive for further investigation.
- Set a personal example.

4.4 Line Management

(Includes any member of staff with other staff reporting to them)

- Inform employees on necessary controls/precautions in place and those to be put in place in the future.
- Aid in the preparation and review of safe operating procedures with consultation from the Health & Safety Executive.
- Ensure staff are provided with appropriate safety training.
- Arrange for supervision and instruction of staff in relation to safety issues.
- All incidents whether they result in injury, damage or near misses are reported to the Health & Safety Executive for further investigation.
- Ensure all employees are provided with all necessary Personal Protective Equipment so that work can be carried out without risk to health, safety or welfare.
- Ensure risk assessments are conducted in the workplace.
- Set a personal example.

4.5 Employee Responsibilities

- Each employee has a responsibility for his/her safety & health, which extends to taking reasonable care of his/her own safety health & welfare at work and that of any other person who may be affected by his/her acts or omissions while at work.
- Ensure that he or she is not under the influence of an intoxicant to the extent that he or she is in such a state as to endanger his or her own safety, health and welfare at work or that of any other person.
- If reasonably required by his or her employer, submit to any appropriate, reasonable and proportionate tests for intoxicants by or under the supervision of, a registered medical practitioner who is a competent person.
- Co-operate with his/her employer and any other such person to an extent that will enable the employer or the other person to comply with any of the relevant statutory provisions.
- Not engage in improper conduct or other behaviour that is likely to endanger his or her own safety, health and welfare or that of any other person.
- Attend such training and, as appropriate, undergo such assessment as may reasonably be required by his or her employer or as may be prescribed relating to safety health and welfare at work or relating to the work carried out by the employee
- Having regard to his or her training and the instructions given by his or her employer, make correct use of any article or substance provided for use by the employee at work, including protective clothing or equipment.

- Report to their employer or line manager as soon as practicable:
 - (i) Any work being carried on or likely to be carried on, in a manner which may endanger the safety health or welfare of the employee or that of any other person,
 - (ii) Any defect in the place of work, the systems of work, any article or substance which might endanger the safety health or welfare at work of the employee or that of any other person, or
 - (iii) Any contravention of the relevant statutory provisions which may endanger the safety, health or welfare at work of the employee or that of any other person, of which he or she is aware.
- Not to intentionally or recklessly interfere with or misuse any appliance, protective clothing, convenience, equipment or other means or things provided in pursuance of any of the relevant statutory provisions or otherwise, for securing the safety, health and welfare of persons arising out of work activities.
- To report to his/her supervisor and the Health & Safety Executive any accident resulting in loss or injury and any near miss that could have resulted in loss or injury to which he/she becomes aware.
- An employee shall not, on entering into a contract of employment, misrepresent himself or herself to an employer with regard to the level of training they have received.
- To conduct risk assessments in the workplace.
- Set a personal example.

4.6 National Safety Committee Responsibilities

- Review and discuss national strategy for risk management.
- Review safety and health reports and risk assessments.
- Seek solutions to safety and health issues which arise.
- Review information relating to accidents, dangerous occurrences and instances of occupational ill-health at the place of work.
- Review the development and implementation of safe systems of work.
- Review communication and employee training procedures relating to safety and health.
- Consider issues presented by safety representatives.
- Consider progress reports on the implementation of risk assessments and the safety statement.
- Review provisions and use of personal protective clothing and equipment.
- Encourage staff to participate in special promotional activities on safety and health at work including general fitness and well-being programmes, stress reduction or 'work positive' initiatives.
- Consider safety and health training needs and reports on safety training courses attended by management and employees.

4.7 RBD Safety Teams

- Raise local safety concerns with the RBD Director.
- Discuss safety concerns and suggest control measures to eliminate or minimise risk.
- Discuss safety training requirements for staff.
- Escalate safety concerns via their national safety representative to the national safety committee where safety concerns have not been resolved locally.

5.0 Safety Organisation, Safety Representatives & Procedure For Consultation

5.0 Safety Organisation, Safety Representatives & Procedure for Consultation

5.1 General

In accordance with the Safety, Health and Welfare at Work Act, 2005 (Sections 25 & 26), Inland Fisheries Ireland management recognises the right of the employees regarding representation and consultation on matters relating to safety, health & welfare at work. The employees will be afforded the opportunity to nominate a colleague as a Safety Representative. The term of office shall be for three years subject to an annual review.

5.2 Employee Procedure:

Each employee is afforded the opportunity to make representation on any topic concerning safety, health and welfare at work to the management in the first instance. Failing a resolution, the matter should be brought to the attention of the Safety Representative.

5.3 Safety Organisation:

The Safety Organisation of Inland Fisheries Ireland consists of:

- (1) Safety Teams;
- (2) The National Safety Committee & Safety Representatives;

5.3.1 Safety Teams:

The safety teams have been created locally to deal with minor safety issues which can be quickly resolved. The safety teams are designed to foster a positive safety culture and allow staff to take ownership of safety management in the workplace. Inland Fisheries Ireland strives to promote attitudes, beliefs, perceptions and values which lead to a safer workplace. Staff are aware of the importance of maintaining high safety standards and shall rectify immediately any defect, which he/she becomes aware of or if the defect is such that he/she is not in a position to rectify it, he/she should then; report it to their line management and/or Health & Safety Executive.

5.3.2 The National Safety Committee & Safety Representatives:

Inland Fisheries Ireland employees shall have safety representation on the National Safety Committee. Any significant safety issues arising within the organisation will be addressed at committee meetings.

Note:

Approved minutes of all meetings will be circulated to all staff.

The appointed National Safety Representative(s):

ERBD	Gerry Conaty
NWRBD	Seamus Bradley
SERBD	Morgan Rowsome
ShRBD	Catherine Hayes
SWRBD	Andrew Quigley
WRBD	Pat Armstrong
IFI Fish Farms	Eamon Gleeson
IFI HQ	John Coyne
Env. Officers	Michael McPartland

Management appointees:

H&S Executive	Michael Cusack
RBD Director	Amanda Mooney
Head of Operations	Greg Forde
Head of Human Resources	Kieran Murphy

5.4 Safety Representatives Rights

The Safety Representative will have full access to any information in the possession of the Inland Fisheries Ireland, which refers to the Safety, Health and Welfare of employees, subject to the exclusion of personal information relating to an individual. The Safety Representative will be given the opportunity to receive training as a Safety Representative. In accordance with Section 25 of the Safety, Health and Welfare at Work Act 2005, the Safety Representative will not suffer any disadvantage or loss of remuneration.

The Safety Representative has the right to:

- Information from the safety statement;
- Be informed of impending Health & Safety Inspections;
- Accompany Health & Safety Authority Inspector on a visit (but not accident investigation or dangerous occurrence unless consented to by the Inspector);
- Accompany Health & Safety Authority Inspector with their consent during interviews where an accident or dangerous occurrence is being investigated.
- Consult with Health & Safety Authority Inspector;
- Make representation through the appropriate responsible person;
- Investigate accidents and dangerous occurrences provided it does not interfere with the performance of statutory obligations;
- Inspect the workplace subject to agreement;
- Have adequate time off, without loss of remuneration, to obtain information and knowledge on matters of Safety and Health.
- Consult with other Safety Representatives.

6.0 Contractors & Visitors

6.0 CONTRACTORS & VISITORS

6.1 Contractor Requirements

In order to safeguard Contractors, Employees and Visitors against accidents on IFI premises/property, the following procedures must be adhered to:

- All Contractors report to the reception desk (or notify a member of staff when not at an office) and sign in/out when entering or leaving the premises.
- To ensure that the safety needs of both parties are anticipated, all contractors and non-employees who engage in work must be made aware of the Inland Fisheries Ireland Safety Statement before commencement of work.
- Contractors and non-employees whose work includes the use of hazardous equipment, materials or substances will provide written safety procedures on the use of such equipment, materials and work method. A Health & Safety Plan shall be produced if required. These procedures must be adhered to while on the Inland Fisheries Ireland sites.
- Contractors must provide copies of employee and public liability insurances prior to commencing work.
- Contractors will provide their own protective clothing and/or any safety equipment, which will be necessary for the safe completion of their work.
- Inland Fisheries Ireland management reserves the right at all times to examine contractors' tools and equipment and contractors insurance must be produced prior to commencement of work.
- Any injury sustained by a contractor or their employees must be reported immediately to Inland Fisheries Ireland management.
- The Contractor shall indemnify and keep indemnified Inland Fisheries Ireland, its agents, employees and any other person who may be affected, for injuries, damage to property or equipment which may be inflicted upon the premises, its agents or employees, by the Contractor by his fault or that of his agents or employees.

6.2 Visitors

Inland Fisheries Ireland employees have a duty to protect the Safety, Health and Welfare of visitors.

Visitors should not be permitted to enter the site unless accompanied by an employee.

6.3 Construction Contractors on IFI Property and controlled sites

For site works, works involving use of heavy machinery or any work which could fall under the construction regulations, Contractors must:

- Submit a copy of their employers and public liability insurance.
- Submit a copy of their safety statement and provide detailed method statements where high-risk activities will be undertaken. An Health & Safety plan shall be produced if required.
- Identify to Inland Fisheries Ireland and any other contractors or persons who could be affected by their activities, particular hazards which will arise due to the nature of their work. Identify persons responsible for health & safety on the site and identify persons in the company with overall responsibility. Identify persons responsible on both IFI and contractors sides in writing.
- Where practicable cordon off any particularly high risk areas, especially where the public could be at risk.
- State that the person responsible or senior management may stop work if they are not satisfied that adequate health & safety measures are being taken.
- Comply with any environmental instructions provided by IFI.
- Carry out all work in accordance with statutory provisions and ensure that all equipment conforms to minimum safety requirements.
- Provide their equipment in safe working order and not request equipment from IFI.
- Accept these procedures in writing.
- Enforce “Permit to work systems” and obtain method statements for any of the following (non exhaustive list):

Entry to confined spaces	Work on gas mains
Work on high voltage or mains electricity	Work requiring isolation of moving equipment
Hot Work	Line breaking (e.g. chemical piping)

The “person responsible” must co-ordinate the information needed from contractors and must maintain records of instructions, and information supplied by the contractors.

7.0 Provisions for Health & Welfare

7.0 PROVISIONS FOR HEALTH & WELFARE

7.1 Health

7.1.1 First Aid

Members of staff shall be trained in occupational first aid.

An 'Occupational First-Aider' is defined as a person who is trained and qualified in occupational first aid.

It is the objective of IFI to ensure that members of staff are trained at least every two years, in compliance with the Safety, Health & Welfare at Work (General Applications) Regulations 2007.

Note: Storage and / or administration of drugs or medication are **not** part of 1st aid provision.

7.1.2 First Aid Box

First aid boxes shall be located in the main offices, stores, laboratories and vehicles. All stock shall be replaced if and when used. Staff must report any shortage in first aid material to management.

Appendix 1 sets out the recommended quantities required in each first aid box based on the number of employees in the workplace.

7.2 Welfare:

- Canteen facilities are provided at all IFI offices.
- Sanitary facilities are provided for employees. The sanitary facilities shall be kept clean at all times and shall be disinfected regularly.
- Waste disposal facilities are provided.
- Having regard to the Safety, Health and Welfare at Work (Pregnant Employees) Regulations, 2000, IFI shall make the necessary arrangements to ensure compliance with the regulations for any employee who is pregnant, post natal or breast feeding. Conditions shall be identified known to affect either a pregnant woman, a breast feeding woman or the developing foetus for example manual handling of loads, extremes of heat or cold, abnormal movements & posture, underwater diving, biological agents, radiation, noise, vibration, lead and working with chemicals. They shall outline ways to manage the health and safety of the pregnant worker and comply with the Safety, Health and Welfare at Work, General Application (Sensitive Risk Groups) Regulations, 2007.

8.0 Procedures for Incidents & Dangerous Occurrences

8.0 PROCEDURES FOR INCIDENTS & DANGEROUS OCCURRENCES

8.1 Incidents

All incidents shall be reported to line management as soon as possible and an accident report form shall be sent to the Health & Safety Executive. The CEO & Head of Human Resources shall be notified by the Health & Safety Executive if an IR1 form is sent to the Health & Safety Authority. The IR1 form is the form of notice of accident for return to the Health & Safety Authority. The Authority must be notified using Form IR1 about:

- a work accident causing the death of any employed or self-employed person.
- a work accident that prevents an employed or self-employed person from working for more than three days (not including the day of the accident but including any days that would not have been working days e.g. weekend).
- an accident caused by a work activity, which causes the death of, or requires medical treatment to, a person not at work: e.g. a passer-by.

8.2 Dangerous Occurrences:

A dangerous occurrence is an incident, which could have led to injury and shall be reported to line management & the Health & Safety Executive. The CEO & Head of Human Resources shall be notified when an IR3 form is sent to the Health and Safety Authority.

8.3 Investigation of Incidents & Dangerous Occurrence:

- All accidents and dangerous occurrences shall be investigated. This shall include obtaining immediate witness's statements, photographs, and first aid reports.
- A copy of the report may be examined by the CEO and may instigate action to correct the situation to avoid the accident or dangerous occurrences reoccurring in the future.
- The Safety Representatives are to be made aware of all accidents and dangerous occurrences.

8.4 Detailed investigation and reporting.

The Health & Safety Executive shall be appointed by the Head of Human Resources to liaise with Health & Safety Authority Inspectors (where applicable) or to carry out a detailed accident investigation and produce a report as required by Inland Fisheries Ireland.

9.0 Fire & Evacuation Procedures

9.0 FIRE & EVACUATION PROCEDURES

9.1 Fire Equipment & Drill:

All fire extinguishing equipment, alarm systems and emergency lighting shall be in good working order. Fire alarm systems and extinguishing equipment shall be regularly tested and serviced by a competent person to comply with fire safety regulations. Alarm systems must be serviced quarterly and fire extinguishers annually. A fire drill shall be carried out periodically and evacuation procedures shall be applied. The outcome of each drill shall be recorded in the Fire Register. Servicing and testing shall also be recorded in the Fire Register.

9.2 In the Event of Fire:

The alarm is to be raised as an informative and precautionary measure when an outbreak of fire is discovered. Another person shall remain at the scene of the fire (if safe to do so) and prevent anyone entering the area. If required Fire wardens shall organise the evacuation and sweep of the building.

Deal with the fire (if safe to do so), attack the fire only if you are familiar with the firefighting equipment provided and the correct techniques have been learned and practiced.

A fire should be attacked (immediately after alerting personnel) with the firefighting equipment, providing there is no personal danger in doing so. An immediate decision must be made, i.e. can you extinguish immediately? For example, a waste paper bin just starting to catch fire may be dealt with (if safe to do so).

Never let the fire come between you and the exit.

All occupants should be familiar with the location of extinguishing equipment.

If attempts to extinguish the fire cannot be continued without danger, or if they are clearly failing to keep the fire in check, the fire fighter(s) should withdraw immediately.

You are not expected to risk your own safety. If you feel that an area has become dangerous to enter – get help – do not go in.

Clear all employees and members of the public away from the surrounding area and get them to a position of safety. Fire assembly points must be located at each IFI premises. Employees should assemble at the fire assembly point if an evacuation takes place and/or the fire alarm sounds.

9.3 Contacting Emergency Services

- Inform the fire brigade – Persons working on site shall immediately ring the fire brigade and the Gardai.

The following information should be known / supplied;

Know the correct phone number: Dial 999 or 112
 Give clear directions to the buildings address
 Notify the services of the likely number of persons in the building and any particular hazards you are aware of e.g. flammable liquids, compressed gas cylinders, radioactive materials etc.
 Confirm with nominated chief fire warden that the fire brigade has been informed and is on the way.

(In the event of a drill the nominated informant should go through the motions of advising the fire brigade).

- Employees shall evacuate the building in a calm, orderly fashion.
- Close windows and doors – building occupants should ensure, as they leave, that windows and doors (especially fire doors) are closed behind them.
- Leave the building – by the designated route and report to the assembly point, others already nominated by the fire warden should assist disabled persons. The Fire Wardens should conduct a building search if safe to do so. Nobody shall re-enter the premises until the fire authority gives permission.

9.4 At the Fire Assembly Point

- The fire warden must ensure that everybody can be accounted for (including visitors/contractors). Reception staff must bring the visitors log book with them when evacuating the building.
- Inform the fire officer of the result of the roll call including last known locations of unaccounted for personnel.
- If the alarm was manually activated then the person who activated it should report to the Fire Officer when the Fire Brigade arrives.
- When the Fire Brigade arrives on site, the situation report should be given, this should include the following:

Where the fire is and type of fire if known
 Number of persons unaccounted for and where they were last seen
 Details of access
 Details of hazardous items stored (compressed gas, flammables, radioactive material etc.)
 Areas locked and availability of keys

- In the event of a false alarm or evacuation drills no one should return to the building until the “all clear” is given by the chief fire warden.

9.5 Evacuation Drills

Emergency drills should be carried out periodically in compliance the Fire Services Act 1981 (section 18) to ensure that:

- Personnel are familiar with the sound of the alarm.
- People know what action to take.
- Any shortcomings may be identified and rectified, under practice rather than in an emergency.
- Persons identified with particular responsibilities may react correctly (even if “going through the motions” style used) in the event of emergency.
- Personnel assemble at designated location and wait for head-count.

All such emergency test evacuation drills should be observed and time recorded in the Fire register. **Details should also be recorded in Appendix IX. Site Details for Fire Safety, Evacuation & First Aid**

10.0 First Aid & AED Defibrillators

10.0 First Aid & AED Defibrillators

Inland Fisheries Ireland workplaces including offices, stores, vehicles and vessels shall contain a first aid kit.

Dependant on the level of risk at the workplace the number of staff trained in first aid may vary.

As of September 1st 2008 first aid training is a FETAC Level 5 standard and includes the use of AED Defibrillators. Refresher training is required every two years. There is three days of Initial training and one day for a refresher.

The first aid kit content is dependent on the number of staff at the work place. Please refer to Appendix I for full details.

Where an AED defibrillator is kept at the place of work the following checks must be routinely completed:

Criteria	Status	Corrective Action
AED Placement visible, unobstructed and near phone		
Verify battery installation		
Check the status/ service indicator light		
Note absence of visual/ audible service alarm		
Inspect exterior components and sockets for cracks		
Supplies Two sets of AED pads in sealed package		
Check expiration date on pad packages		
Pocket mask with one-way valve		
Examination gloves		
Razors		
Absorbent gauze or hand towels		

Table 10.1 AED Checklist

11.0 Training & Records

11.0 TRAINING & RECORDS

Inland Fisheries Ireland is obliged under the Safety, Health & Welfare at Work Act, 2005, (Part II, Section 9, 10) to provide information, instruction, training and supervision to all staff. Training will promote higher standards of health and safety and well-trained staff are less likely to cause or suffer accidents. The level of training depends on the nature and risk of the job.

First Aid ¹	Chainsaw
Manual Handling ²	Pesticide
Safe pass ³	Laboratory Safety
Fire Warden	Fire Arm Proficiency
Safety Representatives	Teleporter
Chemical Handling	Welding
Defensive Driving	Abrasive Wheels
Child Protection Awareness	Boat Handling/Power Boat
Swift Water Rescue	CSCS Training
Coxswain	Quad Bike
Sea Survival	Kayak/Canoe
Personal Water Craft	Conflict Management

Table 11.1 Table of H&S Training

The above list is non-exhaustive and shall be added to as required.

1. First Aid training certification is valid for 2 years at which point refresher training is required.
2. Manual Handling training is valid for 3 years at which point refresher training is required.
3. Safe pass training is valid for 4 years at which point refresher training is required.

The Health & Safety Executive in consultation with the Human Resources shall prepare an annual plan outlining the training to be carried out within the safety function. Training shall be carried out periodically or as required.

A record of personnel attending the courses shall be kept and filed in the site office and/or at the Human Resources Dept. The records shall include the following information:

- The name(s) of the staff member being trained.
- Details of the training completed.
- Date training took place, duration and certification.
- Signature of trainer and employee recording that training took place.

12.0 Safety Signage, Chemicals & Electricity

12.0 SAFETY SIGNAGE, CHEMICALS & ELECTRICITY

12.1 Safety Signs

Safety signs as outlined in the Safety, Health & Welfare at Work General Application (Signs) Regulations 2007, shall be erected and maintained. All signs shall have the appropriate safety colours as outlined below.

Colour	Meaning or Purpose	Instruction & Information
Red	Prohibition Signs Danger alarm Fire Fighting Equipment	Dangerous Behaviour Stop, Shutdown, Evacuate Identification & location
Yellow/Amber	Warning Sign	Be careful, Take precautions Examine
Blue	Mandatory Signs	Specific behaviour or action, Wear Personal Protective Equipment
Green	Emergency Escape First Aid Signs No Danger	Doors, Exits, Routes, Equipment facilities. Return to normal

Table 12.1 Colour Code for Safety Signs

12.2 Chemicals

Management shall ensure that Safety Data Sheets (SDS) obtained from suppliers are made available to employees. Employee exposure to chemical agents must be limited to below the "Occupational Exposure Limit" as stated in the 'Material Safety Data Sheets'. Employees shall ensure the safe handling of chemicals and must wear the necessary Personal Protective Equipment. Staff shall be given the necessary training, information instruction, supervision and consultation as stated under the Safety, Health & Welfare at Work (Chemical Agents) Regulations. Staff purchasing chemicals must request a safety data sheet from the chemical supplier.

12.3 The Use of Electricity

All electrical equipment must be constructed, installed, maintained, protected and used so as to prevent danger. Adequate protection must be given to equipment, which is exposed to adverse conditions such as shock or damp. If a person is electrocuted de-energize the circuit before attempting to separate the person from the energy source. General electrical safety shall comply with Part III of the Safety, Health & Welfare at Work (General Application) Regulations, 2007.

13.0 Hazard Identification, Risk Assessment Methodology

13.0 HAZARD IDENTIFICATION, RISK ASSESSMENT METHODOLOGY

A hazard is defined as any substance, object or work practice, which has the potential to cause injury or loss to employees or another person.

Risk is defined as the likelihood that a person may be harmed or suffers adverse health effects if exposed to a hazard.

Risk = Likelihood of Occurrence x Severity of Consequences

A Safety Inspection is a systematic and critical examination of the workplace for the purpose of identifying hazards, assessing risks and recommending control of the hazard where appropriate.

In this document, risks are graded "High", "Medium" or "Low". This is to help prioritise the allocation of resources and the implementation of controls.

Grade of risk	Designation	Description
High Risk	"H"	Probability of fatality, serious injury, or injury to a number of people or significant material loss
Medium Risk	"M"	Fatality or serious injury unlikely, but probability of injury to one or a number of people or limited material loss
Low Risk	"L"	Injury or material loss unlikely although conceivable

Table 13.1 Risk Assessment Designation

In some instances the designation in the risk assessment may be a combination of H, M, L. This is in recognition of the dynamic nature of the work environment e.g. the rise and fall of the level of a river. So far as is reasonably practicable staff may conduct a dynamic risk assessment while relying on their training, knowledge and experience of the environment. A dynamic risk assessment is the continuous process of identifying hazards, assessing risk and taking action to eliminate or reduce risk in the rapidly changing circumstances in the working environment.

On arrival at the workplace e.g. a river, staff will need to gather information, evaluate the situation and then apply professional judgement to decide the most appropriate course of action.

Hazards must be identified and the risk assessed. It is important to think before you act rather than act before you think.

Risk assessment helps to determine whether it is safe to proceed or not.

The level of risk in a hazard area may be acceptable having completed a risk assessment and by eliminating, or reducing risk by introducing control measures.

Inland Fisheries Ireland will carry out safety inspections and risk assessments in an effort to reduce the level of risk by implementing controls e.g. by altering work practices, guarding machinery or by providing training and protective equipment. Management is committed to the control of risks as far as reasonable practicable so that they are eliminated or reduced to an acceptable level taking account of the general principles of prevention.

There are hazards which have been identified and cannot be eliminated; so far as is reasonably practicable these have been risk assessed and controls implemented. These risk assessments are outlined in Section 14 of this Safety Statement.

Site specific risk assessments must also be conducted at the place of work. A template for managing risk is detailed in this section (see next page). The template may be used to demonstrate ongoing health and safety management of a workplace or workplace activity.

Name: _____ Date: _____ Location: _____

Workplace Activity: _____

What are the Hazards?	What controls are already in place?	Do you need additional controls to manage the risk?	Action is required by whom?	Agreed Completion Date	Completion Date

Fig 13.1 Sample Risk Assessment Template

14.0 Hazard Identification, Risk Assessment & Control

General Hazards

- 14.1 Electricity**
- 14.2 Slips, Trips & Falls**
- 14.3 Noise**
- 14.4 Vibration**
- 14.5 Manual Handling**
- 14.6 Sanitation and Washing Facilities**
- 14.7 Erection of Signage**
- 14.8 Refrigeration and Freezer Units**
- 14.9 Lone Working**

14.1 Electricity

Hazard:	Electricity
Level of Risk:	Low
Controls:	See details outlined below

Only competent and authorised personnel are permitted to work on electrical systems or maintain electrical equipment. Electrical installations should be installed in accordance with approved codes of practice published by the ETCI and IEE regulations for electrical installations. Installations should be thoroughly inspected and tested by a qualified electrician as required. The following precautions must be observed by all employees to minimise the risks associated with electricity:

- Any broken, defective, or damaged electrical equipment, such as loose connections and frayed cables must be reported to the immediate supervisor; they must be removed from use and repaired or replaced.
- Ensure clear access to switchboards and other similar installations, in case isolation is required in an emergency.
- Always assume electrical circuits are live until you have checked and are certain they are not live.
- Ensure electrical risers are identified and access restricted to authorised personnel only.
- Avoid overloading sockets as this can lead to an electrical fire.
- Do not use taped joints to connect cables since they have neither the mechanical strength needed nor sufficient insulation or protection from liquids.
- Damaged cables should be replaced completely but if cables have to be joined, proper connectors should be used.
- Carry out regular visual checks of plugs and leads and get them repaired as necessary.
- Faults to look out for include physical damage to the cable, failure of the cord grip at the plugs and signs of overheating.
- If faults are found the repair should be carried out by someone who has the required competency to complete the task safely.
- Do not ignore obvious tell-tale signs such as faulty switching or intermittent stopping. These may indicate an internal fault such as a loose wire which could cause external metalwork to become live.
- Where practicable do not leave electrical appliances powered on when unattended.
- Switch off equipment before unplugging and before cleaning.

14.2 Slips, Trips and Falls

Hazard:	Poor Housekeeping, inadequate lighting, slippery or rough floor surfaces, unsuitable footwear.
Level of Risk:	Low (Office) Medium (Field)
Controls:	See details outlined below

The easiest way to avoid slips and falls is to pay attention to your surroundings and maintain good standards of housekeeping. To ensure the safety of others the following guidelines should be followed:

In the office/built environment the following controls should be implemented.

- Do not allow trailing leads to create tripping hazards.
- Ensure any spillages are cleaned up immediately.
- Use handrails on stairwells where provided.
- Report any areas where lighting has failed or is inadequate.
- Do not block passageways or corridors.
- Ensure work areas are kept in a clean state.
- Arrange office furnishings in a manner that provides unobstructed areas for movement.
- Keep stairs, steps, flooring, and carpeting well maintained.
- Ensure that glass doors/panels are clearly marked.
- Clearly mark any difference in floor level that could cause an accident.
- Secure throw rugs and mats to prevent slipping hazards.

Refer to Section 14.31 Traversing Lands for control measures in the field.

14.3 Noise

Hazard:	Noise
Level of Risk:	Medium
Controls:	See details outlined below

The Regulations are the Safety Health and Welfare at Work (General Application) Control of Noise at Work Regulations 2007. These Regulations are the minimum health and safety requirements for the protection of employees to the risks arising from exposure to noise.

Exposure to high levels of noise, either continuously or as a loud sudden 'bang' from equipment such as cartridge-operated tools or guns, can have a number of physiological and psychological effects on workers including stress, tinnitus and if exposed to high noise levels over long periods of time, permanent loss of hearing. High noise levels can also interfere with communications in the workplace, leading to an increased risk of accidents. In such cases hearing protection must be worn where other controls will not reduce the noise to a safe level.

14.3.1 Noise Action Values

The Noise Regulations require IFI to take specific action at certain action values. These are the daily noise exposure levels or the peak sound pressure levels which, if exceeded, for an employee, action will need to be taken to reduce the risk.

These values relate to:

- The employees levels of exposure to noise averaged over a working day or week; and
- The maximum noises (peak sound pressure) to which employees are exposed to in a working day. If you perceive that the noise level in your workplace is harmful you must contact the Health & Safety Executive.

IFI shall ensure that:

- Noise experienced at work shall be assessed and, when necessary, measured. Formal records of any assessments must be kept in the format set down in the regulations.
- The records shall be kept for at least 3 years and made available to the employees (or their representatives) and inspectors from the HSA.
- If you wish to have noise monitoring conducted at your workplace you must contact the Health & Safety Executive.
- IFI shall reduce the risks resulting from exposure to noise in the workplace to the lowest level reasonably practicable, taking account

of technical progress and the availability of measures to control the noise in particular, at source.

- Where the exposure to noise is likely to exceed 80dB(A), IFI shall supply sufficient numbers of suitable and adequate personal hearing protectors to the employees, following consultation with the workers concerned regarding suitability and adequacy of the models of hearing protection chosen.
- Where it is not reasonably practicable to reduce the daily personal noise exposure of a worker below 80dB (A), IFI shall make hearing checks available to the worker.
- Health Surveillance must be provided to all employees, if exposure to noise exceeds, 80dB (A).
- If you require PPE contact your line manager or the Health & Safety Executive.

14.3.2 Health Surveillance

Health surveillance shall be made available to employees whose risk assessment revealed a risk to their health.

As with any other hazard the control of noise has a hierarchy of control options: elimination, substitution, PPE etc.

The Noise regulations state that the IFI must supply sufficient numbers of suitable hearing ppe, and consult with the workers regarding suitability and adequacy of the type chosen. Part of the necessary training will be to ensure that workers know exactly how and when to use the hearing protection chosen.

14.4 Vibration

Hazard:	Hand arm vibration & whole body vibration (vibrating tools & machinery, outboard engines and vessels)
Level of Risk:	Low- Medium
Controls:	See details outlined below

Vibration means rapid movement to and fro or oscillating movement. Mechanical vibrations at work can expose workers to hand-arm vibration (HAV) and or whole-body vibration (WBV). HAV is caused by the use of work equipment and work processes that transmit vibration into the hands and arms of employees. Long-term, regular exposure to HAV is known to lead to potentially permanent and debilitating health effects known as hand-arm vibration syndrome, such as vibration white finger and carpal tunnel syndrome. WBV is caused by vibration transmitted through the seat or the feet by workplace machines and vehicles. Regular, long-term exposure to high levels of WBV is linked to lower back pain.

For hand-arm vibration the daily exposure limit value standardised to an eight-hour reference period shall be 5m/s^2 ; the daily exposure action value shall be 2.5m/s^2 .

For whole-body vibration the daily exposure limit value standardised to an eight hour reference period shall be 1.15m/s^2 ; the daily exposure action value shall be 1.15m/s^2 .

Any employee who is aware of equipment which may pose a risk must contact the Health & Safety Executive immediately. Where employees are or are likely to be exposed to risks to their safety or health arising from exposure to mechanical vibration during their work, IFI shall make a suitable and appropriate assessment of the risk arising from such exposure.

IFI shall ensure that appropriate health surveillance is made available to those employees, for whom a risk assessment reveals a risk to their health, including employees exposed to mechanical vibration in excess of an exposure action value.

14.5 Manual Handling

Hazard:	Manual handling incorrectly, heavy, unwieldy objects, awkward postures, poor lighting, pre-existing conditions, unsuitable clothing or footwear.
Level of Risk:	Medium
Controls:	See details outlined below

Due to the nature of our work, manual handling is experienced in most everyday tasks. It cannot be avoided. It is therefore vital to attempt to reduce the risks from such activities. This is attained by:

- Training in manual handling techniques is provided to all employees involved in manual handling tasks. Staff must ensure they receive refresher training at least every three years.
- Staff must not lift objects which are too heavy or pose another hazard.
- Staff must where practicable apply team lifting techniques or use mechanical aids where available.
- Job/task rotation should be implemented to reduce risk to the individual.
- It is essential that where staff perceive a risk of injury due to manual handling they inform their line manager and request a specific risk assessment of the task.
- Where employees require mechanical aids for manual handling tasks they should inform their line manager, safety representative or the Health & Safety Executive.
- Every employee must be familiar with the correct lifting techniques.

These may be summarised as follows:

Maintain a broad stable base with feet approx. shoulder width apart.

Check the load for weight, sharp edges, splinters or nails.

Bend the knees to get close to the load and lift using the large muscles in the legs.

Hold weights close to body at waist height.

Don't jerk, shove or twist body.

Grip load with palms – not fingertips.

Don't let the load obstruct your view.

- Employees are expected to use any lifting equipment available such as trolleys, dollies or hoists/pulleys etc. Any faulty equipment must be reported immediately to their supervisor. Where a need for a manual handling aid is identified by a staff member it must be brought to the attention of management.
- Where practicable team lifting techniques must be used when transporting heavy equipment. One person must co-ordinate team lifting and must organise staff.
- No person will be expected to lift a load that would likely cause him/her injury. Consideration must be given to the load and whether or not help is necessary.
- All additional factors such as frequency of transportation must be taken in to account.
- All employees are expected to assist in the identification of hazardous loads and in practicable suggestions, which could be applied.

14.5.1 Steps to Correct Manual Handling

- Assess the area and the load, remove obstructions before lifting and ensure that there is a safe place where the load has to be set down. Consider the size, shape and weight required to be moved.
- Stand close to the object and with feet hip width apart, (broad stable base), prepare to lift, point feet in the direction of movement. Avoid twisting of the trunk.
- Bend your knees into a crouched position with your back straight (not necessarily vertical). Keep feet flat on the ground.
- Tuck your chin in; avoid dropping your head forward.
- Use palm of hand as well as the roots of the fingers to grip the object rather than the fingertips.
- A good grip is required, preferably one hand around the front of the load and one hand underneath to prevent the load slipping forward and down.
- Pull the object close to the body (to the centre of gravity), which is at or slightly below waist level.
- An even lift is required to complete the exercise.

When storing items the heaviest loads (which are safe to lift) should be stored at heights between knuckle and shoulder height, light objects can be stored above shoulder height or below knuckle height.

The Guideline Weight below can be used to help determine if the load is too heavy. Working outside these guidelines is likely to increase the risk of injury.

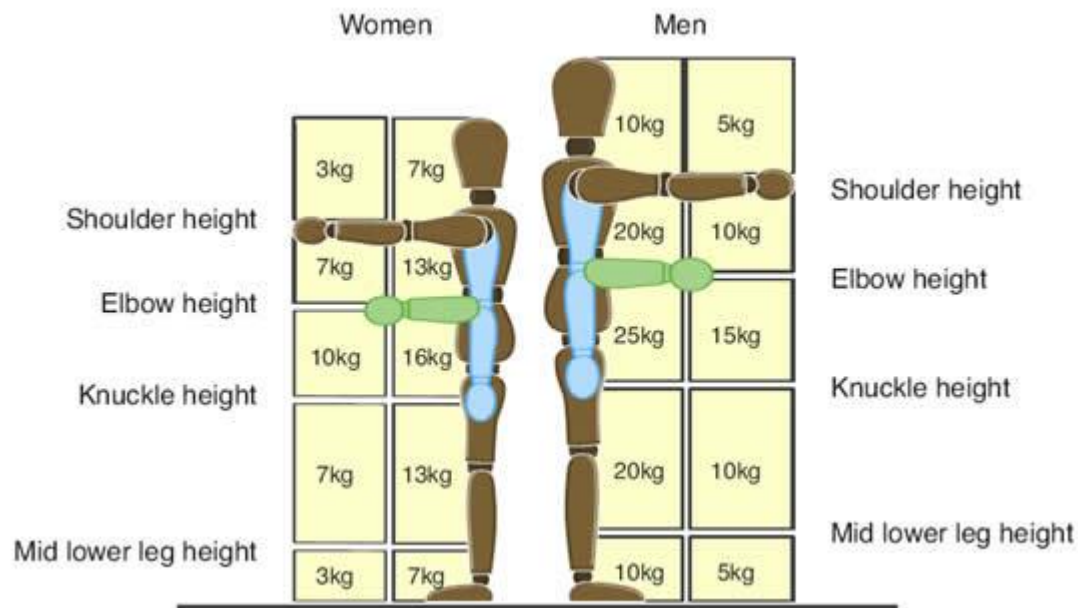


Fig. 14.1 Guideline Weights for Manual Handling

14.5.2 Manual Handling of nets

- The manual handling of nets can be hazardous due to their unwieldy shape and weight. Where practicable mechanical aids are used.
- Where this is not practicable to reduce the risk, staff are trained in manual handling. Where practicable a push/pull position is adopted to retrieve the net with a straight back and working the powerful leg muscles.
- Team lifting is implemented where practicable.
- Job rotation is implemented to reduce individual risk.

14.5.3 Manual Handling of outboard engines

- The manual handling of outboards can be hazardous due to their unwieldy shape and weight.
- To reduce the risk a specially designed outboard trolley should be used. The design is particularly useful for loading into vehicles or trailers. If you require one please contact your line manager and the H&S Executive.
- Where the use of an outboard trolley is not reasonably practicable a team lift.
- Assess the area and the load, remove obstructions before lifting and ensure that there is a safe place where the load has to be set down. Consider the size, shape and weight required to be moved.
- Stand close to the object and with feet hip width apart, (broad stable base), prepare to lift, point feet in the direction of movement. Avoid twisting of the trunk.
- Bend your knees into a crouched position with your back straight (not necessarily vertical). Keep feet flat on the ground.
- Tuck your chin in; avoid dropping your head forward.
- Use palm of hand as well as the roots of the fingers to grip the object rather than the fingertips.
- A good grip is required, preferably one hand around the front of the load and one hand underneath to prevent the load slipping forward and down.

14.6 Sanitation & Washing Facilities

Hazard:	Poor hygiene standards during field work
Level of Risk:	Low - Medium
Controls:	See details outlined below

So far as is reasonably practicable adequate toilets and washing facilities should be available in all places of work.

Disinfectant wipes & gels are available for work carried out in the field.

14.7 Erection of Signage

Hazard:	Fitting Signage/falling objects/work at height
Level of Risk:	Low
Controls:	See details outlined below

- Signage erected by IFI should be in locations which do not block or partially block pedestrian or vehicle routes.
- Signage should be erected at a height which accounts for head clearance for pedestrian movement.
- Signs and posts should be designed to be clearly visible.
- Signs must not have any sharp or pointed edges.
- Signs cannot be erected where they may endanger the safety of road users.
- The erection of signage may require the permission of local authorities.
- Refer also to section 14.49 Work at heights.

14.8 Refrigeration and Freezer Units

Hazard:	Handling frozen material/cold exposure/refrigerant chemicals
Level of Risk:	Low
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Do not connect your appliance to the electricity supply until all packaging and transit protectors have been removed.
- Leave to stand for at least 4 hours before switching on to allow compressor oil to settle if transported horizontally.
- If you are discarding an old refrigerator with a lock or latch fitted to the door disable the lock or latch, ensuring that it is in a safe condition to prevent accidental entrapment.
- The fridge or freezer must only be used for its intended purpose.
- Do not dispose of the appliance in a fire.
- Make sure that sufficient room is provided around the appliance to ensure free air circulation.
- Ensure the appliance is located on a smooth surface to maintain stability.
- Do not use pointed or sharp edged objects such as knives or forks to remove frost.
- Never use electrical devices for defrosting.
- Do not store chemicals in any refrigerator or freezer which is used to store food.

Walk-in Freezers

- Before entering the freezer, CHECK the door latch opens easily from the inside. If working for an extended period, check the door mechanism regularly to ensure that it has not frozen shut.
- Have a contact person and a check-in schedule. Ensure that your contact can access the freezer. Tell someone, your supervisor or another co-worker that you are going to work in the walk-in freezer and when you will return. If you are going to be in the freezer for an extended period, timed checks are advised. Do not forget to report back to that contact person at the agreed upon time(s)!
- Staff using walk in freezers should not allow themselves to be exposed to the cold for too long. Staff should wear warm clothing.
- Any work that requires moving, shelving/retrieval of heavy boxes or ice core must not be done alone.
- Walk in freezers should be maintained by a competent person annually.
- In the event of a walk in freezer leaking gas staff should evacuate to the emergency assembly point.
- Staff handling cold or frozen items must wear protective gloves.

14.9 Lone Working

Hazard:	Lone working, isolated locations, hostile environments
Level of Risk:	Low- Medium -High
Controls:	See details outlined below

Lone workers are those who work by themselves without close or direct supervision. There is nothing specific in general legislation that prohibits a person from working alone.

The level of risk faced by lone workers may vary. For example the relative risk for a staff member working alone in an office environment is low in comparison to a staff member on protection duties in an area which is known to be volatile.

With this in mind lone working procedures have been developed in consultation with the National Safety Committee.

Each employee has been issued with the lone worker and buddy procedure card. Further copies are available from the Health & Safety Executive. The procedures are for use in perceived high risk environments. Lone workers must apply good judgement based on their knowledge, training and experience. The procedures are outlined as follows:

14.9.1 The Lone Worker

- Contact a “buddy” and inform them that you will be working alone.
- Describe your current location, areas you intend visiting and the expected duration.
- Inform your buddy of any changes in your plans.
- Inform your buddy if there are areas of poor mobile phone/radio reception.
- Agree the frequency of contact with your buddy.

14.9.2 The Buddy

- Lone worker makes initial contact and details of location, route, and frequency of check are agreed.
- Buddy acknowledges check in as required.
- If lone worker fails to check in, buddy calls lone worker.
- If there is no response the buddy advises their manager.
- Buddy visits the last known location of the lone worker (if practicable).
- If the lone worker does not respond the manager must report the lone worker to the next of kin and Gardaí.

Office Hazards

- 14.10 Preventing Cuts & Punctures**
- 14.11 Preventing Machine Accidents**
- 14.12 Display Screen Equipment (Computers)**
- 14.13 File Cabinets & Shelves**
- 14.14 Chairs**
- 14.15 Shredders & Guillotines**

14.10 Preventing Cuts and Punctures

Hazard:	Office Equipment, moving parts, sharp edges, pinch points.
Level of Risk:	Low
Controls:	See details outlined below

Cuts and punctures happen when people use everyday office supplies without exercising care. Follow these guidelines to help reduce the chance for cuts and punctures:

- When sealing envelopes, use a liquid dispenser, not your tongue.
- Be careful when using kitchen knives, scissors, staplers, letter openers, and box openers. Any of these items could cause a painful injury.
- Avoid picking up broken glass with your bare hands. Wear gloves and use a broom and a dust pan.
- Place used blades or broken glass in a rigid container, such as a box, before disposing in a wastebasket.

14.11 Preventing Machine Accidents

Hazard:	Office Equipment, moving parts, sharp edges, pinch points electrical cables.
Level of Risk:	Low
Controls:	See details outlined below

Only use machines that you know how to operate. Never attempt to operate an unfamiliar machine without reading the machine instructions or receiving directions from an experienced employee. In addition, follow these guidelines to ensure machine safety:

14.11.1 Installation of Machines

Machines should be positioned in a well-ventilated area away from doorways and no parts protruding in to passageways. The main isolating switch should be accessible at all times. The manufacturer's manual must be available at the location of each machine.

14.11.2 Minor Repairs

Minor repairs, such as removing blockages from the photocopier may be carried out by general staff, where clear instructions exist and the action presents no hazard. While machines are fitted with interlocking systems to prevent electrocution they should still be switched off before gaining access to the interior. Care is needed to avoid any hot surfaces. Under no circumstances should office staff use screwdrivers or any other article to tamper with the inside of machines.

14.11.3 Major Faults

Major faults including any electrical faults, frayed wires etc. must be reported to the immediate supervisor. No attempt may be made by office staff to repair electrical faults. In such cases the machine should be isolated until repaired by a competent person.

14.11.4 Maintenance

Basic maintenance of machines will be carried out by authorised employees. This includes replenishment of toner and must be done in accordance with manufactures instructions. A first-aider will be called in the event of accidental inhalation, swallowing or entry to eyes. Office machinery should be regularly maintained by competent personnel. It is recommended that service contracts be maintained on office machinery.

14.11.5 Light Intensity

Photocopying and laser printers are provided with strong light sources, the intensities of which are such that there should be no hazards to health. However, staff should ensure that covers are in place when copies are made.

14.11.6 Miscellaneous

Secure machines that tend to move during operation. Do not place machines near the edge of a table or desk. Ensure that machines with moving parts are guarded to prevent accidents. Do not remove these guards. Unplug defective machines and have them repaired immediately. Do not use any machine that smokes, sparks, shocks, or appears defective in any way. Close hand-operated paper cutters after each use and activate the guard. Take care when working with copy machines. If you have to open the machine for maintenance, repair, or troubleshooting, remember that some parts may be hot. Always follow the manufacturer's instructions for troubleshooting.

Unplug paper shredders before conducting maintenance, repair, or troubleshooting.

Some items can be very dangerous when worn around machinery with moving parts. Avoid wearing the following items around machines within unguarded moving parts:

- Loose belts
- Jewelry
- Long, loose hair
- Long, loose sleeves or trousers
- Scarves
- Ties

14.12 Display Screen Equipment (Computers)

Hazard:	Poor posture/unsuitable chairs or workstation design, poor lighting, draughts or uncomfortable temperatures.
Level of Risk:	Low
Controls:	See details outlined below

Habitual computer user should arrange an ergonomic assessment with the Health & Safety Executive as required.

Workstation setup must be as follows:

- Ensure that eye level is maintained at the top of the computer screen.
- Eye to monitor distance should be approx. 18-26 inches from the screen.
- Adjust seat height so elbows are at 90 degrees and wrists are straight.
- Adjust depth of seat pan to suit your leg length.
- Tilt the chair and adjust to a comfortable position.
- Ensure that thighs are also parallel to the floor and provide a footrest if required.
- Ensure that the chair back support is in a position to support the lumbar region.
- Provide mouse mats and maintain a neutral mouse posture while using a mouse.
- Remember to take breaks, it is important to avoid prolonged periods at the computer, therefore alternate between tasks and try not to work continuously beyond 20/30 minutes at the computer.

Note Diagram on Appendix IV

14.13 File Cabinets and Shelves

Hazard:	Unsafe storage of files, stationary and equipment, over reaching/manual handling
Level of Risk:	Low
Controls:	See details outlined below

As file cabinets and shelves tend to support heavy loads, treat them with special care.

Follow these safety guidelines for file cabinets:

- Ensure that file cabinet drawers cannot easily be pulled clear of the cabinet.
- Do not block ventilation grates with file cabinets.
- Open one drawer at a time to prevent the cabinet from toppling.
- Close drawers when they are not in use.
- Do not place heavy objects on top of cabinets. Be aware that anything on top of a cabinet may fall off if a drawer is opened suddenly.
- Close drawers slowly using the handle to avoid pinched fingers.
- Keep the bottom drawer full. This will help stabilize the entire cabinet.

In addition, follow these safety guidelines for office shelves:

- Secure shelves by bolting them to the floor or wall where practicable.
- Place heavy objects on the bottom shelves. This will keep the entire structure more stable.
- Ensure that there is at least 18 inches between the top shelf items and the ceiling. This space will allow ceiling sprinklers (if present) to function properly if a fire occurs.
- Do not block ventilation grates with shelves.
- Never climb on shelves (even lower shelves). Use an approved ladder.

14.14 Chairs

Hazard:	Incorrect use of office chairs
Level of Risk:	Low
Controls:	See details outlined below

Safety guidelines for office chairs include the following:

- Office desk chairs for computer work should have a back support which is adjustable in height and tilt and the seat height must also be adjustable. The chair must be stable, comfortable and with a five castor base.
- Take care when sitting in a chair with casters. Make sure it does not roll out from under you when you sit down.
- Repair or report any chair damage that could be hazardous.
- Avoid rolling chairs over electrical cords.
- Never stand on chairs with casters.

14.15 Shredders & Guillotines

Hazard:	Sharp edges, pinch points, moving parts.
Level of Risk:	Low
Controls:	See details outlined below

14.15.1 Guillotine Preliminary Checks

- Read and follow manufacturers operating manual for safe operation and maintenance.
- Ensure fixed guards are in place to prevent hands or other parts of the body from entering the trapping space.
- Guards or safety devices must never be removed or adjusted, except by an authorised person for maintenance purposes.
- Working parts should be well lubricated and free of rust and dirt.
- The area around the machine must be adequately lit and kept free of materials, which might cause slips or trips.
- Be aware of other personnel in the immediate vicinity and ensure the area is clear before using equipment.
- Familiarise yourself with and check all machine operations and controls.
- Ensure cutting table is clear of scrap.
- Faulty equipment must not be used. Immediately report suspect machinery.

14.15.2 Guillotine Operational Safety Checks

- Do not attempt to cut material beyond the capacity of the machine.
- Never attempt to cut rod, strap or wire with this machine.
- Use correct lifting procedures when handling large sheets of material.
- Take extreme care during the initial feeding of the work piece into the machine.
- The work piece should always be held sufficiently far back from the edge being fed into the guillotine.
- Ensure fingers and limbs are clear before actuating the guillotine.
- Hold material firmly to prevent inaccurate cutting due to creep.

14.15.3 Housekeeping

- Remove all off cuts and place them in either in the storage rack or waste bin.
- Leave the work area in a safe, clean and tidy state.

14.15.4 Shredder Safety

- Read and follow manufacturers operating manual for safe operation and maintenance.
- Never put fingers or objects other than paper (like paper clips or staples) into the shredder feed opening.
- Keep jewelry, long hair, ties, lanyards, etc. away from the paper shredder feed opening.
- Feed paper smoothly into the shredder, not forcing the paper in.
- If there is a paper jam, and forward and reverse buttons don't move the paper, disconnect the power source and contact a qualified person to make repairs. Don't overheat or burn out the motor, 10 minutes of continuous use requires 20 minutes of inactivity.
- If the shredder motor overheats, turn off the shredder, allowing the motor to cool before using again.
- Locate the paper shredder and its power cord outside of foot traffic areas.

Occupational Diseases

14.16	Lockjaw/Tetanus
14.17	Toxoplasmosis
14.18	Hepatitis
14.19	Leptospirosis (Weils Disease)
14.20	Lyme disease
14.21	Avian Bird Flu
14.22	Asbestos
14.23	Dermatitis
14.24	Giant Hogweed
14.25	Legionnaires Disease
14.26	Radon

14.16 Lockjaw/Tetanus

Hazard:	Work activities which may lead to contact with soil, rusty objects and rich organic matter. Staff with scratches, cuts and abrasions working outside/ on fieldwork.
Level of Risk:	Low
Controls:	See details outlined below

14.16.1 Description

Lockjaw can occur from tetanus causing organisms (*clostridium tetani*) entering the body. *Clostridium tetani* is a rod-shaped, anaerobic bacterium of the genus *Clostridium*. *C. tetani* is found as spores in soil or as parasites in the gastrointestinal tract of animals. Staff may be at risk if they have open wounds and are working in the field with potential exposure to soil, manure, dust or rust.

14.16.2 Symptoms

The incubation period is 3 to 21 days (average of about 10 days) although it may range from one day to several months, depending on the character, extent and localisation of the wound. Symptoms of tetanus include the acute onset of hypertonia (muscular stiffness) and/or painful muscular contractions (usually of the muscles of the jaw and neck) and generalised muscle spasms without other apparent medical cause.

14.16.3 Treatment

Early recognition and treatment with wound debridement (cleaning), appropriate antibiotics, and tetanus immunoglobulin can be life saving. Where an employee receives a cut, abrasion or puncture wound and has not had the tetanus vaccinations they should be brought to a hospital or medical practitioner to be treated.

14.16.4 Prevention

Tetanus vaccine is given as part of the routine childhood immunisation programme. Vaccination is given at 2, 4 and 6 months of age. Booster vaccine doses are given at 4-5 years of age and again between 11-14 years of age. Each employee should check with their doctor to ensure they have received the vaccinations. Staff who have not received vaccines will be given the opportunity by IFI to get the inoculation. See Appendix VIII Info & Records for Vaccination Provisions for Employees.

14.17 Toxoplasmosis

Hazard:	Handling stored nets, contact with cat faeces
Level of Risk:	Low (High for pregnant employees)
Controls:	See details outlined below

14.17.1 Description

Toxoplasmosis is an infection caused by the parasite *Toxoplasmosis gondii*. It is a single cell organism, invisible to the human eye. It can be found in meat, cat faeces, and in soil where cats defecate. Field staff may be particularly exposed where nets are kept in stores and there are signs of cat activity/faeces.

14.17.2 Symptoms

People who become infected may experience mild flu-like symptoms, prolonged glandular-fever type illness, or may have no symptoms at all.

Healthy individuals do not usually display symptoms. When symptoms do occur, they are usually mild, resembling infectious mononucleosis, and include the following:

- enlarged lymph nodes
- muscle pains
- fever that comes and goes
- general sick feeling

In adults, if the infection continues for an extended period of time, chronic toxoplasmosis can cause an inflammation of the eyes called retinochoroiditis, which can lead to blindness, severe yellowing of the skin and whites of the eyes (jaundice), easy bruising, and convulsions. Pregnant women are especially at risk. Adults with weakened immune systems have a high risk of developing cerebral toxoplasmosis, including inflammation of the brain (encephalitis), one-sided weakness or numbness, mood and personality changes, vision disturbances, muscle spasms, and severe headaches. If untreated, cerebral toxoplasmosis can lead to coma and death. This form of encephalitis is the second most common AIDS-related nervous system infection that takes advantage of a person's weakened immune system (opportunistic infection).

14.17.3 Treatment

Most individuals who contract toxoplasmosis do not require treatment because their immune systems are able to control the disease. Symptoms are not usually present. Mild symptoms may be relieved by taking over-

the-counter medications. Sore throat lozenges and rest may also ease the symptoms.

14.17.4 Prevention

There are no drugs that can eliminate *T. gondii* cysts in animal or human tissues. Humans can reduce their risks of developing toxoplasmosis by practicing the following:

- Freezing (to 10.4°F/-12°C) and cooking foods to an internal temperature of 152°F/67°C will kill the cyst.
- Practicing sanitary kitchen techniques, such as washing utensils and cutting boards that come into contact with raw meat.
- Keeping pregnant women and children away from household cats and cat litter.
- Disposing of cat feces daily, because the oocysts do not become infective until after 24 hours.
- Helping cats to remain free of infection by feeding them dry, canned, or boiled food and by discouraging hunting and scavenging.
- Washing hands after outdoor activities involving soil contact and wearing gloves when handling nets.
- Pregnant employees should avoid handling stored nets particularly if the store is known to be frequented by cats.

14.18 Hepatitis

Hazard:	Contact with pollution and polluted waters
Level of Risk:	Low (for vaccinated staff)
Controls:	See details outlined below

14.18.1 Description

Hepatitis is a term that refers to inflammation of the liver. There are many forms of Hepatitis including Hepatitis A, B & C.

Hepatitis infection can be caused by contaminated food, water, exchange of bodily fluids, contaminated blood or faeces and needle stick injuries. Staff working in the field may be exposed to bodily fluids and faeces in the vicinity of wastewater treatment plants and other watercourses where there are signs of sewage contamination.

14.18.2 Symptoms

Hepatitis A

The most common symptoms are fever, loss of appetite, nausea, fatigue and abdominal pain, followed within a few days by jaundice.

Hepatitis A is an acute self-limiting illness, varying from a relatively mild illness lasting 1-2 weeks to a severely disabling illness lasting months.

Hepatitis B

Some people with acute hepatitis B do not get any symptoms. If you do get symptoms, these can include: fever, nausea, tiredness, swollen tummy, pain, jaundice (yellow skin and eyes), dark urine and a rash.

14.18.3 Treatment

Hepatitis A

There is no specific treatment for hepatitis A. Therapy should be supportive and aimed at maintaining comfort and adequate nutritional balance.

Hepatitis B

The majority of people with hepatitis B don't need specific treatment other than rest and they eventually make a full recovery.

If the infection lasts more than six months (chronic hepatitis infection), a hospital liver specialist may recommend an antiviral drug treatment called alpha interferon. This treatment aims to reduce the risk of permanent liver damage (cirrhosis) and liver cancer.

14.18.4 Prevention

Hepatitis A

Preventive measures for hepatitis A include good personal hygiene, with special emphasis on careful hand-washing after using the toilet and before preparing and eating food and the use of clean water and good sanitation, with sanitary disposal of faeces. Immunisation through the administration of vaccine and/or human normal immunoglobulin (HNIG) in certain situations.

Hepatitis B

There is a safe and effective vaccine against Hepatitis B. The vaccine is usually given in three doses by your doctor - at the first visit, one month later and six months after the first injection. Occasionally doses are given more quickly. Some people may need additional doses of vaccine before they are protected.

Care must be taken by staff working in water ways particularly if they suspect that they are polluted. Cover any cuts or abrasions with waterproof bandages. Good hygiene standards must be practiced. Wash hands thoroughly before eating, drinking or smoking. Antibacterial wipes and gels should be used.

Under the Biological Agents regulations IFI shall make effective vaccines available, when necessary, to those employees exposed or are likely to be exposed, taking account of the fourth schedule classification of biological hazards.

See Appendix VIII Info & Records for Vaccination Provisions for Employees.

14.19 Leptospirosis (Weils Disease)

Hazard:	Field Work on or adjacent to water courses and stagnant waters. Areas of rodent activity.
Level of Risk:	High
Controls:	See details outlined below

14.19.1 Description

Leptospirosis is an infection usually picked up from contact with the urine of rats, although a milder form can be caught from cattle or dogs and other domestic animals.

If you are in contact with infected urine the bacteria which causes leptospirosis can get into your body through cuts and scratches and through the lining of the mouth, throat and eyes. Field staff are at risk during the course of their work on or adjacent to water courses/lakes and when carrying out development or research or environmental work.

14.19.2 Symptoms

The majority of people have a flu-like illness, with a persistent and severe headache. A few people can develop meningitis and occasionally it can develop into the severe form (Weil's disease) with liver and kidney failure. This can be fatal in a small proportion of cases.

14.19.3 Treatment

Leptospirosis treatment is a relatively complicated process comprising of two main components - suppressing the causative agent and fighting possible complications. Antibiotics are used to treat the condition.

14.19.4 Prevention

Care must be taken when working in water, which may be polluted (slow moving rivers, river banks, ditches, ponds, canals, stagnant water and sewers) and inhabited by rodents.

Cover any cuts or abrasions with a waterproof dressing while working in such waters. Shower thoroughly following these activities.

Wash your hands after handling any animal or contaminated clothing or equipment and always before eating, drinking or smoking. Antibacterial wipes or hand wash should be used.

If you get a flu-like illness within a three week period after engaging in any of these activities you should visit your doctor immediately, and tell them of your fears and possible exposure to the disease.

Staff should carry a Weils Disease Advice Card and show it (available from the Health & Safety Executive) to their Doctor at each visit.

14.20 Lyme Disease

Hazard:	Field work activities
Level of Risk:	Low-Medium-High Risk is elevated in areas of primary host activity (deer) such as heathland/woodland.
Controls:	See details outlined below

14.20.1 Description

Lyme disease is caused by the bacterium *Borrelia burgdorferi* which is spread by the bite of a tick. These tiny ticks are frequently found in woodland, moorland and other grassy areas inhabited by deer. They are usually found close to the ground, especially in moist, shaded areas. Field staff are at risk during the course of their work on or adjacent to water courses/lakes and when carrying out development or research or environmental work.

14.20.2 Symptoms

Lyme disease can present flu-like symptoms, headaches muscle ache and pain. Occasionally, the heart, joints or the nervous system can be affected. Often there is a small rash in the area of the bite. This rash can occur within one day to thirty days after being bitten.

One of the main symptoms of Lyme disease is the rash (erythema migrans). It starts as a small red dot at the bite site but may grow larger with time. The centre of the spot often fades creating a characteristic “bull’s-eye” appearance.

If Lyme disease progresses it becomes disseminated and may affect various parts of the body including:

- Brain: - Meningitis, Tingling sensations, difficulties chewing/speaking /swallowing, Bells palsy, Sleep disorders and many more.
- Eyes: - Vision changes, blindness retinal damage, conjunctivitis and many more.
- Skin: - Rash spreads to other sites away from initial tick bite, may be hot or itchy, can lead to lymphocytoma, a benign tumour.
- Heart: - Irregular beat, chest pain, vasculitis.
- Joints: - Pain in joints, arthritic type symptoms.
- Lungs: - Difficulty in breathing, pneumonia.
- Stomach: - Nausea, vomiting.

14.20.3 Treatment

Ticks generally need to be attached to the skin for 24-48 hours before infection takes place. Remove the tick (ideally with tweezers) by gripping it close to the skin. Wash the area after as soon as possible with soap and

water. If any of the mouthparts of the tick are left behind, remove with tweezers when possible. Check the skin over the next few days for a rash. Initial redness and swelling after removing the tick is normal and does not indicate infection (Note infection may occur without the development of a rash). If a rash or other symptoms develop, see your GP and report being bitten. Your GP will make a diagnosis and prescribe treatment.

Lyme disease is diagnosed by medical history and physical examination. Diagnosis can be difficult if there has been no erythema migrans rash. The infection is confirmed by special blood tests. The tests used, look for antibodies to *B. burgdorferi*, which are produced by an infected persons body in response to the infection. Antibodies will take several weeks to develop and may not be present in the early stages of the rash. They will usually be present in the later stages of the infection. More sophisticated tests can be used if the diagnosis is not clear.

Lyme disease can be treated using antibiotics – treatment lasts generally for up to three weeks to ensure that the bacteria have been killed. It is important that the full course of antibiotics is taken to prevent the spread of the bacteria to the joints, heart or nervous system.

14.20.4 Prevention

The likelihood of infection can be reduced by avoiding sitting on logs or leaning against trees. Wearing a hat and tucking in hair if possible.

Reduce possible skin contact by wearing a long sleeved shirt fitted at the wrist, long trousers tucked into socks or boots and avoid wearing open toed footwear.

Consider using an insect repellent and follow the manufacturers' application guidelines.

Where practicable wear light coloured clothing to make ticks more visible and inspect clothes every 3-4 hours.

At the end of your day out, check yourself for ticks. Check both skin and hair, paying particular attention to warm moist areas such as the groin, backs of knees, armpits and neck.

Best practice is to bring the tick to a hospital and ensure they test it for carrying the disease.

14.21 Avian Bird Flu

Hazard:	Handling/contact with dead birds
Level of Risk:	Low
Controls:	See details outlined below

14.21.1 Description

Bird flu is an infectious disease of birds caused by influenza viruses. There are many different strains of bird flu viruses. The H5N1 strain has caused most of the outbreaks since late 2003 and is currently the strain of greatest concern to human health.

14.21.2 Symptoms

Most people infected with bird flu get fever (38°C or higher) followed by flu-like symptoms, including cough, runny nose, sore throat, and shortness of breath. Diarrhoea is often present early on in the illness, but may start up to one week before the flu-like symptoms. People can also have stomach pain or vomiting or headache.

14.21.3 Treatment

Antiviral drugs and seasonal influenza vaccines are available, where appropriate, to anyone who has been in close contact with the infected poultry/wild birds.

14.21.4 Prevention

Avoid touching live poultry or their droppings and don't handle any dead poultry or wild birds.

Wash your hands well with soap and water for about 20 seconds immediately after contact with live poultry, birds or their droppings. Avoid touching your eyes, nose or mouth with your hands. Washing your hands regularly is one of the most important ways to protect yourself against bird flu.

Possible, probable or confirmed cases of Avian Influenza must be communicated to the HSPC 01-8765300.

14.22 Asbestos

Hazard:	Handling asbestos containing materials/exposure to particles from broken or damaged asbestos containing materials
Level of Risk:	High
Controls:	See details outlined below

If you suspect that you are working with asbestos containing materials you must contact the Health & Safety Executive immediately.

14.22.1 Description

Asbestos is a naturally occurring mineral and is found in three forms (blue, brown and white) made up of long thin fibres. These fibres can be dangerous if they are inhaled as dust and are known to contribute to increased risk of lung cancer, asbestosis (scarring of the lung tissue) and mesothelioma (cancer of the lining of the chest and the lining of the abdominal cavity). Asbestos containing materials are commonly found in spray coatings on steel, concrete and ceilings; as insulation lagging on pipe work and for boilers and ducts, pipes and fireplace cement, heat, fire, and acid resistant gaskets, pipe insulation, ceiling insulation, fireproof drywall, flooring, roofing, lawn furniture, and drywall joint compound.

14.22.2 Symptoms

Asbestos exposure becomes a health concern when high concentrations of asbestos fibers are inhaled over a long time period. Asbestosis sufferers have severe dyspnea (shortness of breath) and are at an increased risk regarding several different types of lung cancer. The symptoms of mesothelioma include shortness of breath due to pleural effusion (fluid between the lung and the chest wall) or chest wall pain, and general symptoms such as weight loss.

14.22.3 Treatment

Anyone who believes they have been exposed to asbestos fibres should consult their doctor. There is no curative treatment for asbestosis. Oxygen therapy at home is often necessary to relieve the shortness of breath. Patients who suffer with mesothelioma may undergo surgery.

14.22.4 Prevention

Most asbestos materials were installed between about the 1960s and the mid-1980s. Asbestos cement was in use until 2000. If any works are carried out in a building in which there are suspected asbestos containing materials a full risk assessment must be conducted prior to the commencement of work. Any required preventative measures resulting from the risk assessment must be implemented.

14.22.5 Removal

The HSA must be notified if the removal of asbestos is likely to generate dust. All removal jobs must have a written plan of work and method statement. This method statement, together with the required notification form must be submitted to the HSA 14 days in advance of the work commencing. Where asbestos containing materials are suspected a competent person may be required to carry out air monitoring or removal. A site clearance certificate must be obtained by the competent person when work is complete.

During removal asbestos containing material must be secured in containers/double wrapped in heavy gauge plastic and clearly labeled.

Seek advice from the Local Authorities to ensure safe disposal.

Asbestos removal may not be required when fibres are tightly bound e.g. asbestos cement roof in good condition.

If you are or think you may have been exposed to asbestos consult your doctor and inform senior management.

14.23 Dermatitis

Hazard:	Chemical and compound handling (e.g. nickel, detergents, bleach, fibreglass) Wet Work
Level of Risk:	Low
Controls:	See details outlined below

14.23.1 Description

Dermatitis is an irritation or inflammation of the skin. The skin becomes itchy, red, blistered or crusty. It occurs mostly on the hands. Damage by irritants (acids, alkalis, oils) is caused by chemical concentration, frequency and duration of contact. Damage by sensitizers (chromates, dyes and resins) is by allergic reaction. Other harmful agents include: polishes, nickel, detergents, formaldehydes, fixers, inks, thinners, retarders, degreasers, etchers, cement powder, fresh concrete, tar, diesel, kerosene, coolants, grease, oils, solvents, turpentine, water treatment disinfectants and chemicals.

14.23.2 Symptoms

Dermatitis (eczema) is inflammation of the upper layers of the skin, causing itching, blisters, redness, swelling, and often oozing, scabbing, and scaling. Dermatitis may be a brief reaction to a substance. In such cases it may produce symptoms, such as itching and redness, for just a few hours or for only a day or two. Chronic dermatitis persists over a period of time. The hands and feet are particularly vulnerable to chronic dermatitis, because the hands are in frequent contact with many foreign substances and the feet are in the warm, moist conditions created by socks and shoes that favor fungal growth.

14.23.3 Treatment

Contact dermatitis can be prevented by avoiding contact with the causative substance. If contact does occur, the material should be washed off immediately with soap and water. Treatment is not effective until there is no further contact with the substance causing the problem. Once the substance is removed, the redness usually disappears after a week. Blisters may continue to ooze and form crusts, but they soon dry. Residual scaling, itching, and temporary thickening of the skin may last for days or weeks.

Itching can be relieved with a number of topical drugs or drugs taken by mouth. In addition, small areas of dermatitis can be soothed by applying pieces of gauze or thin cloth dipped in cool water or aluminum acetate several times a day for an hour. Larger areas may be treated with short, cool tub baths with or without colloidal oatmeal. The doctor may drain fluid from a large blister, but the blister is not removed.

14.23.4 Prevention

Where possible avoid any contact with the sensitising agents. Suitable gloves (consult safety data sheet) should be worn when dealing with these agents. Ensure that there are no gaps between gloves and overalls. Hands must be washed thoroughly using warm water cleansers and dried. Barrier creams may also be used.

14.23.5 Wet-work Irritation

Water is a potential irritant, which may penetrate relatively easily through the skin. Frequent exposure to water causes swelling and shrinking of the outermost layer of skin and can lead to hand dermatitis (hand eczema). Staff involved in wet work should wear water-resistant gloves (rubber or plastic) as a form of personal protective equipment. Staff working in cold water in hatcheries or netting should use Sealskinz or similar protective gloves.

14.24 Giant Hogweed

Hazard:	Contact with giant hogweed sap
Level of Risk:	Low
Controls:	See details outlined below

14.24.1 Description

Giant Hogweed is a large flowering perennial. The plant is a public hazard and contact must be avoided. It is similar in appearance to our native cow parsnip, only it is much larger and the hairs on the under surface of the leaf are shorter (about .25 mm long). It reaches a height of 10 to 15 feet when in flower and has hollow stems, 2 to 4 inches in diameter with dark reddish-purple spots and bristles. Coarse white hairs at the base of the leaf stalk are also purplish, and each purple spot surrounds a blister-based hair. See employee safety handbook for pictures.

The deeply incised compound leaves grow up to 5 feet in width. Giant hogweed flowers mid-May through July, with numerous white flowers clustered in an umbrella-shaped head that is up to 2.5 feet in diameter across its flat top. The plant produces flattened, 3/8-inch long, oval dry fruits that have a broadly rounded base, and broad marginal ridges. Hogweed prefers moist soil and can quickly dominate ravines and stream banks. Field staff are at risk during the course of their work on or adjacent to water courses/lakes and when carrying out development or research or environmental work.

14.24.2 Symptoms

A public health hazard, hogweed's clear, watery sap has toxins that cause photo-dermatitis. Skin contact followed by exposure to sunlight produces painful, burning blisters that may develop into purplish or blackened scars. After the burns subside, darkened areas or scars can persist for several years. The affected areas remain sensitive to sunlight so it is important to keep the burned areas away from direct sunlight as much as possible.

14.24.3 Prevention

Contact with Giant Hogweed should be avoided. If the sap comes in contact with your skin, cover immediately to avoid exposure to light. Wash off at the earliest opportunity. Wear long trousers tucked in to boots, wear long sleeved tops, cover your head and neck if working /walking in vicinity of giant hogweed. Do not attempt to cut down giant hogweed.

In order to avoid contact you must be able to identify the plant correctly.

All employees involved in field work must familiarise themselves with giant hogweed, its appearance, locations and hazards. Refer to the employee handbook for identification photos of giant hogweed.

14.24.4 Eradication of Giant Hogweed

Cutting of hogweed will result in an increase of new growth. Where giant hogweed is present, eradication should be carried out by means of spraying with glyphosate (Roundup). This involves a strict four year treatment programme and controls must be provided for use with glyphosate.

14.25 Legionnaires Disease

Hazard:	Exposure to contaminated water
Level of Risk:	Low
Controls:	See details outlined below

14.25.1 Description

Legionnaires' disease is a type of pneumonia caused by the bacteria *Legionella pneumophila* and other *Legionella species*. Pontiac fever is a milder form of the disease with flu-like symptoms and no pneumonia. Patients with Pontiac fever recover within 2-5 days without treatment.

The disease is spread through the air from a water source. People become infected when they breathe in aerosols (tiny droplets of water) which have been contaminated with *Legionella* bacteria. Outbreaks of Legionnaires' disease have occurred when people have breathed in contaminated aerosols from hot and cold water systems, air conditioning cooling systems, whirlpool spas and water fountains.

Legionnaires' disease is not very common. There are less than 10 cases reported each year in Ireland. However, it is thought that many more cases occur that are not diagnosed because Legionnaires' disease is difficult to distinguish from other forms of pneumonia and specific laboratory tests have to be carried out to diagnose it. Staff are at risk if they use a shower which has not been regularly flushed.

14.25.2 Symptoms

The illness usually starts with a flu-like illness including fever, tiredness, headache, and muscle pains. This is followed by a dry cough and breathing difficulties that may progress to a severe pneumonia. Some people also develop diarrhoea or may become confused. Death occurs in 10-15% of otherwise healthy people and may be higher in some groups of patients.

The incubation period is 2-10 days. Symptoms usually appear 5-6 days after infection but may take longer.

If you develop the above symptoms and you are worried that you might have legionnaires' disease please see your doctor.

14.25.3 Prevention

Legionnaires' disease can be prevented by the proper design and maintenance of water systems that limit the growth of the bacteria in the system. Where showers and taps are fitted they should be run at least once a week for a couple of minutes to prevent the build-up of harmful bacteria. A record must be maintained.

14.25.4 Treatment

There are several antibiotics available that are effective in treating the disease.

14.26 Radon

Hazard:	Radon Gas
Level of Risk:	Low-High
Controls:	See details outlined below

The greatest health risk from radiation in Ireland is caused by radon. It accounts for more than half of the total radiation dose received by the Irish population. As a known carcinogen, in the same category as tobacco smoke and asbestos it is a cause of lung cancer.

Certain areas of the country are more likely to have a high number of buildings with excessive levels of radon and these areas are known as High Radon Areas. They can be found on our radon map of Ireland.

Inland Fisheries Ireland is in the process of measuring radon levels in its properties nationwide.

Where levels are found to be unsafe remedial measures will be taken. This may require additional ventilation or an active radon sump.

Equipment/Power tools

14.27	Air Compressors
14.28	Abrasive Wheels (Angle grinders etc.)
14.29	Table Saws
14.30	Welding
14.31	Hand Tools General
14.32	Power Tools General
14.33	Safe use of Knives
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14.35	Winching Operations
14.36	Generators
14.37	Pole-saws
14.38	Chainsaws
14.39	Petrol Strimmer/Brush Cutters
14.40	Use of Mitre Saws
14.41	Use of Metal Worker (Punching & Forming Machine)
14.42	Lawnmowers
14.43	Power washers
14.44	Manual Handling Mechanical Aids

14.27 Air Compressors

Hazard:	Poor housekeeping, moving parts, noise, vibration, dust, heat and pressurisation.
Level of Risk:	Medium
Controls:	See details outlined below

14.27.1.1 Safety Checks

- Read and follow manufacturers operating manual for safe operation and maintenance.
- All compressors should have an inspection carried out by a competent person annually (should be completed as part of engineering insurance cover). Ensure that service records are up to date.
- All pipes, hoses, and fittings must have a rating of the maximum pressure of the compressor visibly marked upon it. Compressed air pipelines should be identified (psi) as to maximum working pressure.
- Safety valves must be fitted on air compressors.
- Pressure gauges must be fitted on air compressors.
- Compressors must be fitted with suitable appliances for draining the receiver.
- Compressors must be provided with a suitable manhole, handhole or other means which will allow the interior to be thoroughly cleaned.
- Air supply shutoff valves should be located (as near as possible) at the point-of-operation.
- Air hoses should be kept free of grease and oil to reduce the possibility of deterioration.

14.27.1.2 Safety in Use

- Hoses should not be strung across floors or aisles where they are liable to cause personnel to trip and fall. When possible, air supply hoses should be suspended overhead, or otherwise located to afford efficient access and protection against damage.
- Hose ends must be secured to prevent whipping if an accidental cut or break occurs.
- Pneumatic impact tools, such as riveting guns, should never be pointed at a person.
- Before a pneumatic tool is disconnected (unless it has quick disconnect plugs), the air supply must be turned off at the control valve and the tool bled.
- Compressed air must not be used under any circumstances to clean dirt and dust from clothing or off a person's skin.
- Static electricity can be generated through the use of pneumatic tools. This type of equipment must be grounded or bonded if it is

used where fuel, flammable vapors or explosive atmospheres are present.

14.27.1.3 Personal Protective Equipment

- Goggles face shields or other eye protection must be worn by personnel using compressed air. Dust masks hearing protection must also be worn.

14.27.1.4 Air Receivers

Operators need to be aware of the following:

- The maximum allowable working pressures of air receivers should never be exceeded.
- The intake and exhaust pipes of small tanks, similar to those used in garages, should be made removable for interior inspections.
- No tank or receiver should be altered or modified by unauthorised persons.
- Air receivers should be fitted with a drain cock that is located at the bottom of the receiver.
- Receivers should be drained frequently to prevent accumulation of liquid inside the unit.
- Air tanks should be located so that the entire outside surfaces can be easily inspected.
- Each air receiver shall be equipped with at least one pressure gauge and a safety valve of the proper design.
- Only qualified personnel should be permitted to repair air tanks, and all work must be done according to manufacturer's standards.

14.27.1.5 Air Distribution Lines:

- Air lines should be made of high quality materials, fitted with secure connections.
- Only standard fittings should be used on air lines.
- Operators should avoid bending or kinking air hoses.
- Air hoses should not be placed where they will create tripping hazards.
- Hoses should be checked to make sure they are properly connected to pipe outlets before use.
- Air lines should be inspected frequently for defects, and any defective equipment repaired or replaced immediately.
- Compressed air lines should be identified as to maximum working pressures (psi), by tagging or marking pipeline outlets.

14.27.1.6 Pressure Regulation Devices

Only qualified personnel should be allowed to repair or adjust pressure regulating equipment.

- Valves, gauges and other regulating devices should be installed on compressor equipment in such a way that cannot be made inoperative.
- Air tank safety valves should be set no less than 15 psi or 10 percent (whichever is greater) above the operating pressure of the compressor but never higher than the maximum allowable working pressure of the air receiver.
- Air lines between the compressor and receiver should usually not be equipped with stop valves. Where stop valves are necessary and authorized, safety valves should be installed between the stop valves and the compressor.
- The safety valves should be set to blow at pressures slightly above those necessary to pop the receiver safety valves.
- Blow off valves should be located on the equipment and shielded so sudden blow offs will not cause personnel injuries or equipment damage.
- If the design of a safety or a relief valve is such that liquid can collect on the discharge side of the disk, the valve should be equipped with a drain at the lowest point where liquid can collect.
- Safety valves exposed to freezing temperatures should be located so water cannot collect in the valves. Frozen valves must be thawed and drained before operating the compressor.

14.27.1.7 Air Compressor Operation

- Air compressor equipment should be operated only by authorized and trained personnel.
- The air intake should be from a clean, outside, fresh air source. Screens or filters can be used to clean the air.
- Air compressors should never be operated at speeds faster than the manufacturer's recommendation.
- Equipment should not become overheated.
- Moving parts, such as compressor flywheels, pulleys, and belts that could be hazardous should be effectively guarded.

14.27.1.8 Compressed Air Equipment Maintenance

- Only authorised and trained personnel should service and maintain air compressor equipment.
- Exposed, non-current carrying, metal parts of compressor should be effectively grounded.
- High flash point lubricants should not be used on compressors because of its high operating temperatures that could cause a fire or explosion.
- Equipment should not be over lubricated.
- Gasoline or diesel fuel powered compressors shall not be used indoors unless local ventilation is employed.

- Equipment placed outside but near buildings should have the exhausts directed away from doors, windows and fresh air intakes.
- Soapy water or lye solutions can be used to clean compressor parts of carbon deposits, but kerosene or other flammable substances should not be used. Frequent cleaning is necessary to keep compressors in good working condition.
- The air systems should be completely purged after each cleaning.
- During maintenance work, the switches of electrically operated compressors should be locked open and tagged to prevent accidental starting.
- Portable electric compressors should be disconnected from the power supply before performing maintenance.

14.27.2 Larger Portable Air Compressors (Trailer Compressor)

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Ensure personal protective equipment (protective footwear, gloves, eyewear, dust masks and hearing protection) is worn.
- Staff towing the vehicle must maintain a safe speed to avoid trailer sway or "fish tailing".
- Staff operating the compressor must have completed safe pass training.
- Ensure the equipment is tested and certified by a competent person at least once in every 26 months.

14.28 Abrasive Wheels (Angle Grinder etc.)

Hazard:	Dust, noise, sharp edges, projectiles, moving parts
Level of Risk:	Medium
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Staff using abrasive wheels must have received formal training in safe operation. Use without training is strictly prohibited.
- Abrasive wheel discs can become brittle or cupped to avoid this discs must be stored per the manufacturers guide. Cutting discs should never be used for grinding.
- Rags and waste must be kept clear of wheels.
- Never use excessive pressure on the work piece. This could burst the wheel.
- Never stop the wheel by applying pressure to it.
- Do not operate the equipment near flammable substances or combustibles.
- Ensure suitable personal protective equipment is worn including gloves, eye, hearing and respiratory protection. Steel toe boots should also be worn. Do not wear loose fitting clothing.
- Work rests should be kept as close as possible to the wheel. As the wheel wears, the work rest should be frequently inspected and adjusted.
- Grinding on the side of straight-sided wheels used for off hand grinding is dangerous, particularly when they are appreciably worn or when sudden pressure is applied.

14.28.1 Checks

- Carry out visual checks on the machine or tool, prior to use.
- Check for loose plug connections or damage to the cable sheath.
- Ensure that the floor around the machine is maintained in good condition.
- When mounting wheels or discs, ensure that the maximum operating speed marked on the wheel cannot be exceeded.
- The wheel guard must be secured in position and properly adjusted before the wheel is run.
- Work rests should be kept as close as possible to the wheel. As the wheel wears, the work rest should be frequently inspected and adjusted.
- Grinding on the side of straight-sided wheels used for off hand grinding is prohibited and is dangerous, particularly when they are appreciably worn or when sudden pressure is applied.

14.29 Table Saws

Hazard:	Dust, noise, electricity, sharp edges, moving parts, projectiles, fire
Level of Risk:	Medium
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Inspect the table saw before use every time. Check the blade for chips or cracks, and make sure it is the correct type of blade for the material that you want to cut and adjusted to the appropriate height. If the blade is chipped or cracked, replace it at once.
- Make sure all guards are in place, in good condition, attached securely, and used at all times.
- Never force a piece of material through the saw, as a "kick-back" of the material could result.
- Keep the saw teeth sharp; dull teeth are more likely to cause a kickback.
- No rags should be used around the table saw since they can easily cause entanglement of the operator.
- Never use both the crosscut guide and the rip fence during the same cutting process.
- If the stock that is being cut is long, then a support should be used for material coming off the saw.
- Always be watchful for blade-pinching situations.
- Always use splitter and anti-kick back fingers when ripping.
- Always hold the work firmly against the miter gauge or fence.
- Always use a push stick for ripping narrow stock.
- Stand to one side, not in line with the saw cut when ripping.
- Move the rip fence out of the way when cross cutting.
- When cutting moldings, never run the stock between the fence and molding cutter head.
- Never use the fence as a cut-off gage when cross cutting.
- Use a push stick for the final 300mm of feed
- Do not remove off-cuts while the blade is running.
- Do not sweep away sawdust or off-cuts by hand.

14.29.1 Personal Protective Equipment

- Safety glasses must be worn.
- A suitable dust mask must be worn.
- Hearing protection must be worn.
- Long sleeves, including loose fitting lab coats, or baggy clothes should never be worn during table saw operation since the fabric hanging down from the arms could be in very close proximity to the blade.
- Ties should not be worn by the table saw operator.
- Long hair should be pulled back in a ponytail and secured up near head and away from the blade.
- No rings should be worn on fingers during operation of the saw.

- No jewelry hanging around the neck should be worn that could be accidentally picked up by the saw blade.

14.29.2 Basic Description of Operation

- The correct process must be identified; either it is a crosscut or a ripping cut.
- The type of cut which is being utilized will determine the next step.
- Cross cut: a cut which runs the board perpendicular to the grain.
- Rip cut: a cut which runs the length of a board parallel to the grain.

14.29.3 Crosscut

- Locate the crosscut guide and install it into the table saws slot.
- Unplug the saw.
- Set the correct angle on the crosscut guide, in reference to the blade.
- Set the correct angle of the blade, in reference to the top of the table saw.
- Set the correct height of the blade, in reference to the material being cut. Correct height of the blade is approximately 1/4" higher than the top surface of the material being cut.
- Make sure the rip fence is off the saw.
- Remove the blade guard only if it will interfere with the board being moved across the saw.
- Plug the saw back in.
- Locate the stock to be cut in the correct position against the crosscut guide, in reference to the blade. This will determine how much material gets cut off.
- Turn on the saw.
- Make the cut.
- Turn off the saw.
- If you are done cutting pieces, then lower the blade below the table surface.
- Wait for the blade to stop spinning before reaching down to pick up the stock.

14.29.4 Ripping

- Remove the crosscut guide from the table saw.
- Unplug the saw.
- Install the rip fence on the saw.
- Set the fence at the correct distance from the blade, to determine width of material being cut.
- Double check the blade distance to the rip fence from two positions to ensure the stock being cut will not become wedged in between the blade and the rip fence.
- Put the blade guard into place. Make sure the stock being cut will not hit the blade guide's arm near the edge of the saw.
- Set the blade to the correct angle and height.
- Set up a support for the stock coming off the saw if it is a long piece.

- Locate a push stick and put it on the table saw just on the other side of the fence, where it can be reached when the material being cut is getting just past the edge of the table top.
- Turn the saw on.
- Guide the wood into blade while keeping the material up against the rip fence.
- Push the material into the saw and when the material gets just past the edge of the table saw, pick up the push stick and use it to push the material on past the blade.
- Push the material past the blade and make sure it is secure.
- Turn the saw off and wait for the blade to stop spinning.
- If you are done cutting, lower the blade below the table surface.
- When finished working with the saw, put scraps away and clean up.

14.30 Welding

Hazard:	Radiant energy, arc eye, fumes & gases, noise, sharps, impact injury, electricity, fire, heat stress, sparks & slag, explosive compressed gas, chemicals, awkward postures.
Level of Risk:	High
Controls:	See details outlined below

14.30.1 MIG Welding

- Read and follow manufacturers operating manual for safe operation and maintenance.
- Equipment is only operated by experienced personnel who are fully aware of all precautions required.
- The gas cylinder must be held in an upright position and secured with a safety chain.
- Ensure all cables fit tightly into connections and are free of burns cuts or abrasions. Replace defective cables.
- The workplace must be kept clean and tidy, free from combustible rubbish.
- Personal protective equipment must be worn. This includes overalls, apron, gloves, safety boots and protective face shield with a suitable lens. If the work area is not well ventilated local fume extractors hood should be used. Respiratory protective equipment may also be required. Hearing protection is required in noisy environments.
- Other employees shall not work in close proximity to the welder unless they also wear personal protective equipment. A welding curtain should also be used to protect nearby staff from UV and infra-red rays.
- When preparing a piece of metal with a wire brush before welding safety goggles must be worn.
- Ensure a suitable fire extinguisher is at hand.
- Ensure argo-shield is turned off after use.

14.30.2 TIG Welding

- Read and follow manufacturers operating manual for safe operation and maintenance.
- Equipment is only operated by experienced personnel who are fully aware of all precautions required.
- The gas cylinder must be held in an upright position and secured with a safety chain.
- Ensure all cables fit tightly into connections and are free of burns cuts or abrasions. Replace defective cables.
- The workplace must be kept clean and tidy, free from combustible rubbish.

- Personal protective equipment must be worn. This includes overalls, apron, gloves, safety boots and protective face shield with a suitable lens. If the work area is not well ventilated local fume extractors hood should be used. Respiratory protective equipment may also be required. Hearing protection is required in noisy environments.
- Other employees shall not work in close proximity to the welder unless they also wear personal protective equipment. A welding curtain should also be used to protect nearby staff from UV and infra-red rays.
- When preparing a piece of metal with a wire brush before welding safety goggles must be worn.
- Ensure a suitable fire extinguisher is at hand.

14.30.3 Oxyacetylene Welding

- Read and follow manufacturers operating manual for safe operation and maintenance.
- Equipment is only operated by experienced personnel who are fully aware of all precautions required.
- The gas cylinders must be held in an upright position and secured with a safety chain.
- The cylinders should be fitted to a mobile trolley to reduce the manual handling risk.
- The cylinder must be kept a safe distance from the working area.
- The workplace must be kept clean and tidy, free from combustible rubbish.
- Personal protective equipment must be worn. This includes overalls, apron, gloves, safety boots and protective face shield with a suitable lens. If the work area is not well ventilated local fume extractors hood should be used. Respiratory protective equipment may also be required. Hearing protection is required in noisy environments.
- Regular checks for leaks are required. A test solution should be used on the hose, regulator, torch and cylinder connections. Replace leaking equipment.
- Never use oil or other lubricants to fit connections. Replace poor fitting connections.
- Always use a flint lighter to light the gas.
- In the event of back fire turn off the torch and check settings and connections. This may occur when there is insufficient acetylene pressure; a tip is placed too close to the weld; overheated or dirty tips, tip is not securely attached or the tip size is too large.
- Ensure tips are kept clean.
- A flash back arrestor should be fitted. Flashback may occur if connections are badly fitted. If this occurs immediately turn off the acetylene at the cylinder. Turn off both gas valves at the torch. Check the settings and connections to make sure they are secure. Allow to cool before relighting. If the flame has reached the regulators and the safety valves have blown the hose must be replace before using again.
- Other employees shall not work in close proximity to the welder unless they also wear personal protective equipment. A welding curtain should also be used to protect nearby staff from UV and infra-red rays.

- When preparing a piece of metal with a wire brush before welding safety goggles must be worn.
- Ensure a suitable fire extinguisher is at hand.

14.30.4 Electric Arc Welding

- Read and follow manufacturers operating manual for safe operation and maintenance.
- Equipment is only operated by experienced personnel who are fully aware of all precautions required.
- Personal protective equipment must be worn. This includes overalls, apron, gloves, safety boots and protective face shield with a suitable lens. If the work area is not well ventilated local fume extractors hood should be used. Respiratory protective equipment may also be required. Hearing protection is required in noisy environments.
- When preparing a piece of metal with a wire brush before welding safety goggles must be worn. Goggles must also be worn when chipping slag.
- Ensure all cables fit tightly into connections and are free of burns cuts or abrasions. Replace defective cables.
- When welding support the cable on the work bench to reduce the load on your hand where possible.

14.31 Hand Tools General

Hazard:	Sharp edges, pointed objects, impacting debris, pinch points
Level of Risk:	Low
Controls:	See details outlined below

14.31.1 General Rules

Hand tools refer to hammers, screwdrivers, knives, shovels, etc., which do not require electrical, hydraulic, pneumatic or other forms of power to operate.

- The proper tool will be selected for the job.
- Tools must be in good condition and used correctly.
- Tools must never be thrown or misused in such a way that anyone could be injured.
- Tools must be placed in a secure position while being sharpened.
- When not in use, all sharp-edged, toothed, and pointed tools must be properly stored in such a manner that points and edges will not be a hazard.
- Make sure the handle or gripping surface of a tool used is free from dirt, grease, oil, and splinters.
- Do not use hammers of any description with cracked, splintered, or badly worn handles.
- Sharp edged and pointed tools become deadly weapons when used in close quarters – guard accordingly.
- Unguarded sharp-edged or pointed tools must not be carried in pockets.
- Defective tools must not be used and will be turned in to supervisors as soon as is practicable.

14.31.2 Chisels

- Eye protection must be worn when using chisels.
- The cutting edge should be sharpened to the correct angle.
- Keep the chisel head trimmed at all times to prevent mushrooming particles from flying.
- Work away from the body when striking a chisel.
- Chisels must not be used as crowbars or wedges, as the brittle steel may break and cause injury.
- Gloves and chisel holders are recommended when using chisels.
- Screwdrivers: must never be used as 'chisels' and should never be hammered. Split handles are dangerous.

14.31.3 Files

- Never use a file without a handle attached to it.
- The correct way to hold a file is to grasp the handle firmly in one hand and use thumb and forefinger of the other hand to guide the point.

- Be extra careful when filing against the cutting edge of item being filed.
- Files must never be used as crowbars, punches, chisels, or similar tools.
- When filing, pay attention to your work; if interrupted, stop filing.
- Employees will not carry unguarded or unsheathed files in pockets.
- Employees should wear gloves when using a file.

14.31.4 Hammers

- Eye protection must be worn when hammering material likely to splinter or shatter.
- Select the proper type of hammer for the job.
- Hammers must be secured to the shafts.
- Avoid the use of split, broken, or loose, worn or chipped heads.
- Hammers with cracked, splintered, or badly worn handles will not be used.

14.31.5 Sledgehammers

- Eye protection must be worn when using a sledgehammer.
- Sledgehammers must have securely wedged handles.
- Never attempt to strike an object with a sledgehammer at or above shoulder height. Use a platform to drive an object at or above shoulder height.
- An employee holding a stake, nail, pin, wedge, etc., to be driven will stand at right angles to the direction of the sledgehammer and use a holding device to grip the driven item. Gloves are recommended.
- Single-bit axes (axes with one sharp end and one flat end on the head) must not be used as a sledgehammer.

14.31.6 Picks

- Eye protection should be worn when using a pick.
- Points on picks, pick mattocks, and pick axes must be kept sharp and properly maintained to prevent the tool from glancing off the work and striking the user.
- When using "Swinging" types of tools, make sure to have sufficient clearance to swing to avoid injury to yourself and others. Spread your legs apart on secure footing and avoid swinging too close to the feet.
- Picks must be hung or laid across a rack when storing.

14.31.7 Crowbars (Pinch Bars, etc.)

- When using crowbars, make sure to have sufficient clearance to avoid injury to yourself and others.

14.31.8 Pitchforks, Hoes, Rakes, Shovels

- Pitchforks, hoes, rakes, and shovels must never be left lying around with teeth or blades in an upright position. Exposed prongs, when stepped on, may cause puncture wounds. Blades or prongs, when

stepped on, may cause the handles to fly up and strike you in the face.

- Long-handled tools such as pitchforks, hoes, rakes, shovels etc., must be placed in an upright position, when not in use on the job, or placed on the ground away from walk areas so that tripping hazards may be avoided.
- When lifting with a long-handled tool, such as pitchfork, shovel, etc., grip one hand close to the load to lessen the strain.

14.31.9 Pliers and Cutters

- Pliers must not be used as a substitute for wrenches, as they do not hold the work securely; injury may result from slipping.
- When using wire cutters, guard against fingers being pinched or crushed.
- When cutting short ends of wire, cut away from the face to avoid exposure to flying particles.
- When cutting wire under tension, grasp the wire close to the cutter and stand so that the other end cannot strike you when the tension is suddenly released.
- Insulated pliers must be used for electrical work.

14.31.10 Saws

- Select the proper type of saw for the job. Use it properly and hang it up when the job is completed.
- Ensure that the saw teeth are kept sharp.
- Wear a suitable dust mask when cutting in enclosed spaces. Dust masks are mandatory when cutting hard woods or medium density fibreboard (MDF).

14.31.11 Hacksaws

- Select a saw blade that is suitable for the materials to be cut.
- Place the blade in the frame so that the teeth point toward the end of the frame and away from the handle.
- Tighten the blade rigidly and make sure the frame is in proper alignment.
- Straight cuts cannot be made with loose blades and crooked frames, which may also cause the blade to bend, buckle, twist, bind, or otherwise break and injure you.
- Too much pressure or twisting when sawing with a hacksaw may cause the blade to break, resulting in an injury.
- Place one hand on the upper portion of the frame and the other hand on the handle; cut away from yourself and cut with long, straight, steady strokes using practically the entire length of the blade.
- To avoid dulling the teeth, ease pressure on the backward stroke.
- When work is held in a vice, make certain that in cutting, your hand will not strike the vice.

14.31.12 Screwdrivers

- Screwdrivers must not be used as substitutes for punches, hammers, wedges, crowbars, chisels, nail pullers, or similar uses.
- Both hands must be used to safely handle a screwdriver; one hand to turn the handle and the other to steady the blade so as to prevent slipping.
- All parts of the body must be kept in the clear in case the screwdriver slips.
- Only screwdrivers with insulated handles will be used for electrical work.
- Screwdrivers with blades or rivets extending through the handle must not be used for electrical work.
- Use the correct size screwdriver to prevent slipping.
- When dressing or reshaping a screwdriver, do so forming a long taper instead of a “chisel-type” blade.
- Employees must avoid carrying unguarded screwdrivers in their pockets.

14.31.13 Sharp and Pointed Objects

- Razor blades and pins must be kept in containers, never loose in desks or thrown in wastebaskets.
- Sharp or pointed articles, such as pens, knives, pencils or envelope openers must never be left on the edge of a desk or any other place where they may puncture or cut someone.
- Never carry an unprotected knife, pencil, pen, or other sharp instrument in your pocket.
- Never toss or throw a sharp or pointed object.

14.31.14 Wrenches

- Use wrenches that are the right type and size for the job.
- A loose wrench will slip and may cause serious injury. A loose wrench also ruins the corners of the cap screw or nut.
- When working in a tight place, take care that the grip you use will not injure your hand in turning.
- Pulling on a wrench is the proper way to use it. It is not advisable to push a wrench as slippage may cause serious injury to your hand, face, or body. If you must push a wrench, do so with a stiff arm, holding your face and body back.
- Do not over strain a small wrench, subject any wrench to a severe side strain, or use a wrench as a hammer.
- Using a pipe or other device “cheater” for extra leverage is not a safe practice; the wrench is not built for that extra strain. Such a practice may result in serious injury to the user. A larger wrench should be used to gain leverage.

14.32 Power Tools General

Hazard:	Moving parts, sharps, dust, noise, poor housekeeping, impacting debris, electrocution, vibration
Level of Risk:	Medium
Controls:	See details outlined below

- Read and follow manufacturers operating manual for safe operation and maintenance.
- Only trained and authorised personnel may use power tools.
- Safety guards must not be interfered with on tools. The trigger mechanism must not be tied down.
- All tools must be inspected before use. Do not use defective power tools, immediately report them to your supervisor for repair or replacement.
- Do not adapt or repair power tools unless you are competent and authorised to do so.
- Ensure Electrical leads and connections/plugs are in safe working order before using the tool.
- Do not strain, twist or damage an electric lead – ensure it is long enough to reach the workplace.
- Use only 110volt Power tools for outdoor and confined space work.
- Do not use petrol-driven tools in an enclosed space and ensure fuel is stored in a safety can.
- In workshops ensure 220v power tools are protected by a circuit breaker.
- The following protective equipment must be worn when working with power tools; goggles, hearing defenders and foot protection.
- Make sure that equipment selected or allocated for tasks is suitable and can do the work efficiently thus reducing the duration of vibration exposure. Equipment that is unsuitable, too small or not powerful enough is likely to take much longer to complete the task. Select the lowest vibration tool that is suitable and can do the work efficiently. Limit the use of high-vibration tools wherever possible.
- Work equipment is replaced over time as it becomes worn out, and it is important that you choose replacements, so far as is reasonably practicable, which are suitable for the work, efficient and of lower vibration.

14.33 Safe Use of Knives

Hazard:	Sharp edges and points
Level of Risk:	Medium
Controls:	See details outlined below

- Always keep your knife sharp. A dull knife is a dangerous instrument as it will often slide when you want it to cut.
- Always keep a knife sheathed or closed when not in use.
- Always hold the knife firmly and by the handle only.
- Never press on the blade when cutting.
- The knife must be closed or sheathed when passing on to others.
- If a knife cannot be closed or sheathed, lay it down to be picked up.
- If you drop your knife let it fall never attempt to catch it.
- Never run with a knife.
- Protective gloves should be worn when knives are regularly used.
- Kevlar protective gloves should be worn when using scalpels.
- Open knives should be carried in a sheath and not in the pocket.
- Never use a knife with a broken or cracked blade.
- When using "Snap-Off" disposable blades, never extend the blade beyond the last notch.
- Knives not having a point a preferable.

14.34 Safe Use of Fire Arms

Hazard:	Noise, barrel obstruction, pitting, recoil, accidental discharge
Level of Risk:	High
Controls:	See details outlined below

14.34.1 Safe Handling of Firearms

- The firearm can only be handled by those named on the firearms license.
- The firearm held by IFI shall only be used by licensed and trained staff.
- The muzzle must not be pointed at anything you don't intend to shoot.
- Extra care must be taken when loading or unloading.
- Always treat every gun as if it were loaded.
- Firearms should only be loaded in the field immediately prior to use.
- Never let a loaded gun out of your sight or out of your hands.
- Unload the gun as soon as you're finished shooting.
- Before handling a firearm, or passing it on to someone else, visually check the chamber, receiver and magazine to be certain it does not contain ammunition. Always keep the gun's action open when not in use.
- Never assume a gun is unloaded.
- Treat every gun as though it can fire at any time -- whether or not there's pressure on the trigger.
- A gun's safety is a mechanical device, and, like any mechanical device, it could fail.
- Don't touch the trigger on a firearm until you're ready to shoot.
- Keep your fingers away from the trigger while loading or unloading.
- Do not pull the trigger with the safety engaged, or positioned anywhere between "safe" and "fire." The gun could go off at any time.

14.34.2 Loading and Blockages

- Before loading your gun, open the action and make sure there's no ammunition in the chamber or magazine.
- Check to see that there's no debris of any kind in the barrel.
- Use a cleaning rod and patch to wipe away any anti-rust compounds or any other residues in the gun.
- Never try to remove an object from the barrel by loading another shell and firing.

14.34.3 Precautions when taking a target

- Do not fire unless you know exactly where your shot is going and what it will strike. Never fire at a sound, a movement or a patch of colour.
- Never shoot without being absolutely sure of what you're shooting at, and what's behind it.

- Before you pull the trigger, be absolutely certain that your shot has a backstop such as a hillside, or dense material like sand.
- Bullets can travel great distances with tremendous velocity you must know how far your shot will go if you miss your target or the bullet ricochets.
- As far as is reasonably practicable areas where the firearm can be safely discharged must be clearly signed to warn employees, contractors and members of the public.

14.34.4 Correct Ammunition

- Using the wrong ammunition, or mixing ammunition, can destroy your firearm and expose you or bystanders to serious personal injury.
- Make sure that the ammunition you use exactly matches the gauge and chamber length of your gun.
- Refer to your owner's manual to find out about the specific requirements of your gun and always read and heed the instructions on ammunition boxes.
- Check all ammunition before you load it to be sure that it matches.
- Firearms are designed, manufactured and proof-tested to standards based on factory-loaded ammunition. Hand-loaded or reloaded ammunition that deviates from load or component recommendations can be very dangerous. Observe all possible safety precautions and practices related to the proper handling of explosives.
- Don't mix or substitute powders or primers, because the firearm could explode.
- Do not use unknown or substandard components.

14.34.5 Gun Failure

- If the ammunition doesn't fire when you pull the trigger, stop.
- Keep the muzzle pointed in a safe direction.
- Keep your face away from the breech, open the action, unload the firearm and dispose of the cartridge safely.
- Remember, any time there is a shell in the chamber, your gun is loaded and ready to use -- even if you've tried to shoot and it does not fire. It could still discharge.

14.34.6 Personal protective Equipment

- Wear shooting glasses to guard against eye injury, as well as falling shot and powder residue.
- Always wear suitable hearing defenders when using a firearm.

14.34.7 Gun modification and Service

- Never alter or modify your firearm in any way.
- Your gun must be maintained and periodically serviced to assure optimum safety and performance.
- Do not allow anyone to service, repair or modify your firearm except a service facility recommended or approved by the gun's manufacturer.

- Proper cleaning and lubrication of all parts of your gun are also critical to gun maintenance, and are necessary to assure accuracy, safety and reliability.
- Clean your gun before and after long-term storage and no less frequently than once a year.
- Clean your gun whenever it has been exposed to adverse conditions, such as dirt, mud, rain, and snow sleet or in saltwater areas.
- Carefully inspect the trigger assembly to be sure it's clean and free of debris and residue build-up.
- Use recommended lubricants on your gun, and take care not to over-lubricate. Excessive use of a non-recommended lubricant could cause serious functional problems that might result in an accidental firing.

14.34.8 Mechanical and Handling Characteristics of the Firearm

- Not all guns are alike. They have different mechanical characteristics that dictate how you should carry and handle them.
- Prior to using a firearm you must first become totally familiar with the type of gun it is and the safe handling requirements for loading, unloading, carrying, shooting and storage.

14.34.9 Use of intoxicant

- Alcohol, drugs and guns are a deadly combination.
- Never consume anything (including medication) that will even mildly impair your judgment or physical coordination when you're using a firearm.

14.34.10 Storage

- The firearm must be stored in the gun safe at all times. A log book must be kept. It shall include the date, time and reason of use of the firearm as well as the signature of the user. The date, time and signature must also be entered when the gun is returned.
- Never store a gun loaded.
- Keep guns and ammunition in separate and secure places so they can't be used without your knowledge.

14.35 Winching operations

Hazard:	Winch overload, cable failure, pinch points, moving parts, damaged cables, electricity, manual handling
Level of Risk:	Medium
Controls:	See details outlined below

14.35.1 Powered Winching Operations

- Read and follow the manufacturer's operating manual for safe operation and maintenance. Only staff who have received suitable information, instruction, supervision and training can participate in winching operations.
- Ensure the winch is fitted by a competent person.
- Ensure the winch is regularly serviced/maintained by a competent person (Inspection and certification is covered under the engineering insurance policy).
- Gloves must always be worn during winching operations.
- The strength of the wire rope should always exceed the maximum stall rating of the winch.
- Cables should be inspected frequently for wear and tear.
- Always stand well clear of wire rope and load during winching operations. Insist that helpers/spectators keep to a safe distance when winching.
- Always use vehicle ground anchors when recovering another vehicle.
- Always be sure that an anchor point intended for use is strong enough to withstand the load applied.
- Always use a choker chain, wire rope made for the purpose or tree trunk protector when connecting the winch wire to an anchor point.
- Always check that when ground or vehicle anchors are used the anchor is firm throughout the duration of the pull.
- Always keep a check on the winch wire anchor point; under heavy load it could fall with disastrous consequences.
- Always inspect and carefully re-wind wire rope after use. Crushed, pinched or frayed areas severely reduce original tensile strength. (For safety's sake, wire rope should be replaced when any form of damage is evident).
- Always stop winching when the hook is at least 3 metres away from the fairlead of the winch.
- Always wear gloves. Do not let wire rope slide through bare hands.
- Always use proper vehicle anchor points. Never hook up to bumpers, spring hangers or axle casings. When recovering an old vehicle be aware of the condition of the vehicle's anchor points.
- Ensure that the rope is correctly spooled onto the winch drum. The spooling (winding-on) of the wire rope can be accidentally reversed by running the rope all the way out and re-spooling in with remote control switch in the 'power-out' mode.
- Never handle wire rope or rigging during winching operations or touch a wire rope or its hook while they are under tension; even when the

winch is not in operation there may still be a considerable load applied to winch and cable.

- Never put a wire winch rope round an anchor and hook it back on itself, as this will damage the wire rope and reduce its tensile strength.
- Never operate a winch with less than 5 wraps of wire rope on the drum. A winch drum with fewer than 5 wraps of the rope remaining may break loose under load conditions.
- Never exceed the capacity of the winch. Use a pulley block to double the line-pull, which will almost halve the load on the winch and the wire rope.
- Never use the winch to tow another vehicle. The braking system on winches is not designed for this sort of abuse and the sudden jerking will eventually cause the wire rope to snap.
- Never stand astride or step over the cable when winching.
- When re-spooling cable, always release the control switch when the hook is a minimum of 1 metre from the fairlead and inch in the remaining cable onto the drum. The procedure is vital to personal safety and to avoid rope damage caused by over-tightening.
- When starting winching, use the control switch intermittently to inch in any slack in the wire rope prior to taking the strain. This will reduce the chance of damage to the winch or wire rope from shock loadings (which could briefly exceed the winch's capacity).

14.35.1.1 Electric Winching

- Read and follow the manufacturer's operating manual for safe operation and maintenance. Only staff who have received suitable information, instruction, supervision and training can participate in winching operations.
- Ensure the winch is fitted and regularly serviced/maintained by a competent person (Inspection and certification should be covered under the engineering insurance policy).
- Before winching with an electric winch, inspect the remote control lead for cracks, pinched wiring, fraying or loose connections. A damaged, shorted lead could cause the winch to operate as soon as it is plugged in.
- Only plug in the remote control lead when you want to use the winch.
- When the remote control lead is plugged in ALWAYS keep it clear of the drum fairlead area, the rope and any rigging.
- Always store the control lead in a clean dry area where it cannot be damaged.
- When using the remote control from inside the vehicle, ALWAYS pass the lead through the window to avoid trapping the lead in the door.
- Never use the winch to tow another vehicle. The braking system on winches is not designed for this sort of abuse and the sudden jerking will eventually cause the wire rope to snap.
- Never stand astride or step over the cable when winching.
- Keep onlookers at a safe distance, well clear of the work at hand.

14.35.2 Hand Winching

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Ensure the winch is regularly serviced/maintained by a competent person (inspection and certification should be covered under the engineering insurance policy).
- Only staff who have received suitable information, instruction, supervision and training can participate in winching operations.
- Gloves must always be worn during winching operations.
- The strength of the wire rope should always exceed the maximum stall rating of the winch.
- Cables should be inspected frequently for wear and tear.
- Ensure staff or onlookers remain a safe distance away in the event of a winch snapping.
- Hand winching can involve a lot physical exertion, where winches are used frequently, replacement with powered winches should be considered. Where this is not possible staff rotation is required.

14.35.3 Use of Winches/Pulley Blocks Gin Wheels

- The operator of a winch must have received adequate training, instruction, information and supervision before operation.
- Gloves must be worn when using a winch.
- The winch shall not be used unless it has been tested and certified by a competent person using the Forms CR4, CR4A and CR4B as follows:
- CR4: Crabs/Winches, Pulley blocks/Gin wheel - Certificate of test & examination.
- A competent person must carry out this test every four years and since any substantial alteration or repair affecting strength or stability.
- CR4A: Lifting Appliances - Report of thorough examination.
- A competent person must carry out this test every 14 months or after substantial alteration or repair.
- CR4B: Lifting appliances/safe load indicators - Weekly Inspection report.
- A weekly inspection of the equipment must be carried out by a competent person.

14.36 Generators

Hazard:	Hot surfaces, fumes, electricity, chemicals, noise, vibration and fire
Level of Risk:	Medium
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Be sure that the total electric load on your generator won't exceed the manufacturer's rating.
- Know how to stop the generator quickly, and understand the operation of all controls. Never permit anyone to operate the generator without proper instruction.
- The generator is a potential source of electric shock if misused. Do not expose the generator to moisture, rain or snow. Do not allow the generator to get wet, and do not operate it with wet hands.
- Petrol is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sources of ignition near the generator or fuel storage area. Refuel in a well ventilated area with the engine switched off and away from sources of ignition.
- The muffler may become very hot during operation and remains hot for some time after stopping the engine. Be careful not to touch the muffler while it is hot. Let the engine cool before storing the generator indoors.
- Exhaust gas contains poisonous carbon monoxide. Avoid inhalation of exhaust fumes. Never run the engine in an enclosed space. Always locate your generator where its exhaust will vent safely.
- Keep cords out of the way so they don't present a tripping hazard -- especially in dimly lit doorways or halls. Never run cords under rugs or carpets where heat might build up or damage to a cord may go unnoticed.
- Extension cords must be properly sized to carry the electric load. Overloaded cords can overheat and cause fires or damage to equipment.

14.37 Pole-Saws

Hazard:	Sharp edge, moving parts, noise, dust, vibration, falling objects, chemicals, fire, uneven surfaces, slippery surfaces, manual handling.
Level of Risk:	High
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Staff must be trained and competent.
- Ensure the following Personal Protective Equipment is worn:
- Eye protection, hearing defenders, footwear which is stable and offer good grip, gloves should be worn when necessary e.g. when assembling the cutting equipment. A combined helmet visor and ear muffs may be worn.
- Clothing should be of a durable material, avoid loose clothing or jewelry which may catch in moving parts. Helmets should be worn when using a pole saw overhead.
- Where provided a harness should be worn to support the machine while in use.
- A guard should be fitted to avoid where practicable objects from being thrown towards the operator.
- Check the spark plug cap and lead are not damaged otherwise you could suffer an electrical shock.
- Do not operate the machine indoors or in poorly ventilated areas as the carbon monoxide emissions are poisonous.
- Always inspect the guard and cutting chain for damage prior to use.
- A damaged cutting attachment should always be replaced.
- Ensure the cutting chain teeth are lubricated and maintained at the proper tension.
- Never refuel the machine while the engine is running, always stop the engine and let it cool for a few minutes before fueling.
- Move the machine 3 meters from the fueling point before starting.
- Avoid all skin contact with fuel. Fuel is a skin irritant.
- Before starting the operation ensure that people and animals cannot affect your control of the machine. Keep a minimum distance of 15 metres from people and animals to avoid accidental contact with the cutting attachment or been struck by loose or falling objects.
- Avoid using the pole saw near overhead power lines.
- Never work on a ladder, stool or any other raised position that is not fully secured.
- Do not operate in bad weather, such as dense fog, heavy rain, strong wind or intense cold. Working in bad weather is tiring and often brings added risks such as unstable ground and unpredictable falling direction.
- Make sure you can move and stand safely. Check the area around you for possible obstacles such as roots rocks and branches and take extra care on sloping ground.

- Switch off the engine before moving to another area. Fit a transport guard before carrying or transporting the equipment any distance.
- Never put the machine down with the engine running unless you have it in clear sight.
- Do not operate the machine alone and always have a first aid kit available.
- Allow the exhaust to cool before transporting or storing.

14.38 Chainsaws

Hazard:	Sharp edge, moving parts, noise, dust, vibration, falling objects, chemicals, fire, uneven surfaces, slippery surfaces, manual handling, kickback
Level of Risk:	High
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.

14.38.1 Training

- Staff who operate chainsaws must have received training and hold a relevant certificate of competence.
- Staff must also receive regular refresher training. The basic training course is completed in 5 days. The course covers maintenance, chain sharpening, crosscutting, snedding and tree/branch felling of a diameter not exceeding 15 inches (the guidebar). The duration of refresher training taking place after three years is three days. The duration of refresher training taking place after five years is five days.
- Additional training is required for felling trees which are greater than 15 inches in diameter and less than 30 inches. This training includes the use of a felling wedge, boring cut technique, snedding and cross cutting under tension and compression.
- Further more advanced course is required for tree felling in excess of 30 inches.
- Specialist training is also required for delimbing windblown trees which are under tension and compression.

14.38.2 Maintenance & Checks & PPE

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- The saw must be maintained in its manufactured condition with all safety devices in efficient working order and all guards in place. It must be serviced by someone who is competent to do the job.
- Operators should report any damage or excessive wear from daily checks on the following:

On-off switch;
 Chain brake;
 Chain catcher;
 Silencer;
 Guide bar, drive sprocket and chain links;
 Side plate, front and rear hand guards;
 Anti-vibration mounts;
 Starting cord for correct tension.

- Protective clothing complying with the following standards should provide a consistent level of resistance to chainsaw cut through. Other clothing worn with the PPE should be close fitting and non-snagging.
- Safety Helmet – to EN 397
- Hearing Protection – to EN 352-1
- Eye Protection – mesh visors to EN 1731 or safety glasses to EN 166
- Upper Body Protection - chainsaw jackets to BS EN 381-11
Chainsaw jackets can provide additional protection where operators are at increased risk (e.g. trainees, unavoidable use of a chainsaw above chest height). However, this needs to be weighted against increased heat stress generated by physical exertion (e.g. working from a rope and harness).
- Gloves – to EN 381-7
- Leg Protection – to EN 381-5 (all round protection is recommended for arborists working in trees and occasional users such as those working in agriculture)
- Chainsaw Boots – to EN 345-2 and bearing a shield depicting a chainsaw to show compliance with EN 381-3. (For occasional users working on even ground where there is little risk of tripping or snagging on undergrowth or brash, protective gaiters conforming to EN 381-9 worn in combination with steel-toe-capped safety boots.)
- Lone working with a chainsaw must be avoided.
- Anyone working with chainsaws needs to understand how to control major bleeding and to deal with crush injuries, so it is recommended that operators hold a first aid certificate.
- When preparing to use a chainsaw, operators should check:
All nuts, screws etc are tight;
The saw chain is correctly tensioned;
The throttle cannot be squeezed unless the throttle lock-out is pressed; and they are wearing the correct PPE.
- When starting a chainsaw with a cold engine, operators should:
Place the saw on level ground.
Secure the saw firmly, e.g. put a foot on the rear-handle base plate and a hand on the front handle.
Set the controls as recommended by the manufacturer.
Pull the starter cord firmly.
- Once the saw has started, operators should rev the throttle to warm up the engine and check.
The saw chain stops moving when the engine revs return to idle;
The chain brake is effective when applied at maximum revs or according to the manufacturer's specification.
The engine continues to run when the saw is turned through 90° in any direction.
The stop switch works correctly.
Lubrication to the guide bar and chain is working properly.

- Make sure the operators use the saw in a way which avoids kickback by:
Not allowing the nose of the guide bar to accidentally come into contact with any obstruction, e.g. branches, logs, stumps.
Not over-reaching.
Keeping the saw below chest height.
Keeping the thumb of the left hand around the back of the front handle.
Using the appropriate chain speed for the material being cut.
- Do not operate in bad weather, such as dense fog, heavy rain, strong wind or intense cold. Working in bad weather is tiring and often brings added risks such as unstable ground and unpredictable falling direction.

14.38.3 Felling Timber

When felling a tree consider factors such as the wind, the natural lean of the tree, location of large limbs, and whether the trunk is sound, hollow or partially rotted. Watch for the presence of dead limbs overhead and for the presence of overhead power lines in the vicinity.

- Plan the work to minimise manual handling.
- Before felling a tree, decide on its direction of fall and select a suitable escape route to the rear and diagonal to the line of fall of a tree. The area directly behind the tree is also a danger zone because the tree may bounce or slide back when it hits the ground. The escape route should always be kept clear of obstructions.
- Felling is a one person operation.
- Ensure that any bystanders are at a safe distance for the tree felling operation. Persons in the vicinity should be at least two tree lengths away from the person operating the chainsaw.
- Clear any undergrowth likely to interfere with the operator and the chainsaw and remove any dead material that could catch fire.
- Make sure your foothold is secure and free from any obstruction. If working on sloping ground work from an uphill position.
- Hold the saw firmly with both hands.
- Make sure you have the necessary equipment close to hand in case it is needed during the felling work. Such equipment would include a breaker bar, alloy or plastic wedges and a sledgehammer.
- If a tree is likely to become hung-up on another tree during felling, you will need to have the competence and the equipment to bring the hung-up tree down safely. Seek expert help if necessary.

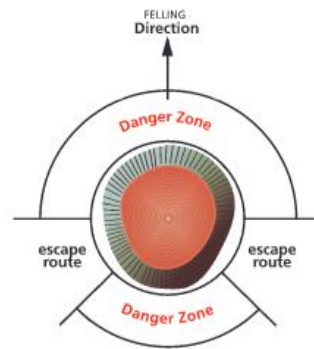


Fig. 14.2.1 Felling Direction

- Lopping branches off trees and working on ditches is extremely dangerous. The Chainsaw operator may be tempted to work in dangerous positions and to use the saw above shoulder height. Therefore this type of work should only be carried out by a skilled and competent operator.

When felling a tree less than the diameter of the guide bar:

- Cut a notch one-third of the diameter of the trunk at a right angle to the fall. The back cut (main felling cut) should be at least 25 mm higher than the notch and leave a hinge of uncut wood to guide the tree and control the rate and direction of fall. The hinge must have the same thickness from end to end to direct the fall at right angles to the notch.
- If there is any chance that the tree might not fall-over in the desired direction or may rock back and bind the saw stop cutting before the back cut is completed and switch off the engine.
- Use a wooden, plastic or aluminium wedges (never hard metal) to open the cut and tilt the tree in the desired direction of fall. Never cut through the hinge.

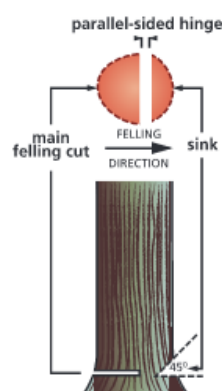


Fig. 14.2.2 Felling Direction

- Once a felling cut has been started on a tree the tree must not be left standing.
- When the tree begins to fall, step back and to the side into the escape route. Look out for falling branches and tops.

- Beware of branches under tension and watch out for them springing back. When a branch is in tension, when cut the timber could spring and cause injury or death.
- When lopping make a preliminary cut underneath the branch and then complete the cut from the top.
- Never stand astride a felled tree when cutting off the branches. If the tree is lying across a slope never stand on the lower side if there is any risk of it rolling.
- When cutting lengths of timber, for example cutting firewood, ensure that the timber is securely supported at about waist height to allow room for the blade to cut.
- When cross cutting make sure no-one comes closer than five metres or within twice the length of the longest piece of timber.

Trees with diameters greater than the diameter of the guide bar should only be felled by persons properly trained in the safe procedures for this type of operation

14.39 Petrol Strimmer/Brush Cutters

Hazard:	Moving parts, noise, vibration, chemicals, fire, slippery/uneven surfaces
Level of Risk:	Low
Controls:	See details outlined below

- Read and follow the manufactures operating manual for safe operation and maintenance.
- Ensure before beginning work that guarding is adequate and not damaged.
- Operators must ensure that there are no other people within 15m of the working area.
- Steel toe boots which also offer good grip and trousers protecting against grass juices and wet vegetation are recommended.
- Operators must wear hearing and face shield protection.
- A harness should be worn to reduce the effects of manual handling if strimming for long periods of time.
- Do not operate in bad weather, such as dense fog, heavy rain, strong wind or intense cold. Working in bad weather is tiring and often brings added risks such as unstable ground and unpredictable falling direction.

14.40 Use of Mitre Saws

Hazard:	Sharp edge, moving parts, noise, dust, vibration, uneven surfaces, slippery surfaces, electricity
Level of Risk:	High
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Ensure personal protective equipment (protective footwear, gloves, eyewear, dust masks and hearing protection) as required.
- Check your blade guard occasionally to make certain it is functioning properly and does not bind when raising or lowering the saw.
- Check to make certain that your saw blade is sharp and is properly fastened to the saw's arbor. A dull or improperly installed saw blade can be extremely dangerous. (When checking or installing your saw blade, always remember to unplug the saw from its power source).
- When cutting stock ensure it always rests firmly against the back fence.
- Long pieces of timber should be supported using a saw horse(s) to prevent the timber falling or kicking back.
- Never raise the saw until it has stopped moving.
- Keep your saw clean as you use it. Little off cuts from previous cuts or an excessive amount of sawdust can interfere with your current cutting operation. Keep a small box or bucket nearby for your small off cuts.

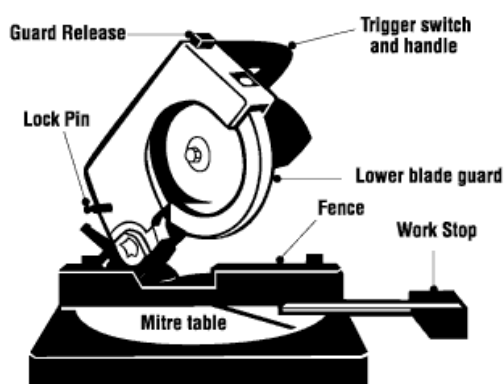


Fig. 14.3 Mitre Saw

- Follow instructions for lubricating and changing accessories.
- Keep the work area and floors clean. Cluttered areas and benches invite accidents.
- Keep the work area well lit.

- Reduce the risk of unintentional startup. Make sure saw switch is in OFF position before plugging in.
- Unplug tools before servicing and when not in use.
- Check for damage. Repair or replace damaged parts.
- Keep motor air slots clean and free of chips.
- Use only the accessories designed for the specific saw and job.
- Do not operate the saw on ground.
- Do not cut pieces smaller than 20 cm (8 in.) in length.
- Do not cut "free hand." The stock should lie solidly on the table against the fence.
- Do not reach around or behind the saw blade.
- Do not take your hand away from the trigger switch and handle until the blade is fully covered by the lower blade guard.
- Do not overreach. Keep proper footing and balance at all times.
- Do not force the saw. The saw cuts better and more safely at the rate for which it was designed.
- Do not leave the saw until it has stopped completely. Turn the power off and unplug the saw.
- Do not use electric tools in damp or wet locations.
- Do not operate electric tools near flammable liquids or in gaseous or explosive atmospheres. Sparks may ignite fumes.

14.41 Use of Metal Worker (Punching & Forming Machine)

Hazard:	Pinch points, moving parts, noise, vibration, falling objects, chemicals, fire, manual handling
Level of Risk:	Medium
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Ensure personal protective equipment is worn which should include protective footwear, gloves, protective eyewear, dust masks (when required) and hearing protection.
- Check guards occasionally to make certain they function properly.
- Don't grasp metal pieces tightly. A light grip will prevent cuts and slices.
- Don't brush scraps of metal into the bin with your hands. Always use a brush or even a piece of stiff cardboard to push them along.
- Keep the work areas and floors clean and tidy.
- Ensure the equipment is inspected by a competent person and serviced annually.

14.42 Lawnmowers

Hazard:	Moving parts, noise, vibration, manual handling, fuel handling.
Level of Risk:	Low
Controls:	See details outlined below

14.42.1 Push Mower

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Check the mowing area for obstacles tools, twigs bottles etc.
- Personal protective equipment must be worn including safety boots hearing protection and gloves.
- Ensure the engine is fuelled prior to use
- Do not refill a running or hot engine; switch off and allow cooling.
- Avoid mowing wet grass.
- Only remove the grass box when the mower is powered off and the blade has stopped rotating.

14.42.2 Powered Mower

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Check the mowing area for obstacles tools, twigs bottles etc.
- Personal protective equipment must be worn including safety boots hearing protection and gloves.
- Ensure the engine is fuelled prior to use
- Do not refill a running or hot engine; switch off and allow cooling.
- Avoid mowing wet grass.

14.42.3 Ride on Mower

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Check the mowing area for obstacles tools, twigs bottles etc.
- Personal protective equipment must be worn including safety boots hearing protection and gloves.
- Ensure the engine is fuelled prior to use.
- Do not refill a running or hot engine; switch off and allow cooling.
- Avoid mowing wet grass.
- Do not mow with a riding mower in reverse unless absolutely necessary.
- Avoid riding a mower on too steep an incline i.e. greater than 10 degrees. Using a riding mower on a slope that is too steep, or where you don't have adequate traction can cause you to lose control or roll over.
- Be sure the all safety devices are in working order and warning labels are in place, these items are installed for your safety.

- Know how to stop the engine and blade quickly in case of an emergency. Understand the use of all controls.
- Do not allow anyone to operate the ride on mower without proper instruction, training and information.
- Do not allow passengers to ride on the mower or any of its attachments as this may cause the mower to tip over.
- Wear protective footwear and ear defenders.
- Dress sensibly; do not wear loose clothing as it may get caught in moving parts.
- Ensure other people are not working in close proximity to the mower when in operation.
- The cutting blade is sharp, and it turns at high speed. Accidental contact can cause serious injury. Keep your hands and feet away from the mower deck and blades when the engine is running.
- Stop the engine, disengage the Power Take Off (P.T.O.) clutch and remove the key before inspection or maintenance of the deck or blade.
- Disconnect the spark plug cap to prevent any possibility of accidental starting.
- Wear heavy gloves to protect your hands from the blade when cleaning out the mower deck or when inspecting or replacing the blade.
- Mow only in daylight or in well-lit areas at night, so that you can see and avoid objects in the grass.
- Before operating the mower, be sure the side discharge guard is down, or the optional grass cutter bags and discharge chute are in place.
- Disengage the P.T.O. lever to stop the blade before crossing a gravel driveway or any other area with loose stones.
- Always inspect the mower for damage after striking an object. Repair or replace any damaged parts before continuing use. Broken pieces thrown from worn or damaged blade can cause serious injury. Always inspect the blade before using the mower.
- Petrol is extremely flammable, and the vapours are explosive, take extreme care when handling.
- Refuel in a well-ventilated area with the engine switched off.
- The accumulation of dry grass and leaves around the engine or exhaust may ignite.
- Exhaust contains poisonous carbon monoxide, a colourless and odourless gas. Breathing exhaust fumes can cause loss of consciousness and may lead to death. If you run the engine in an area that is confined, or even partially enclosed, the air you breathe could contain a dangerous amount of exhaust fumes.
- To prevent exhaust gas from building up, provide adequate ventilation.
- Towing vehicles such as carts, trailers, or other vehicles is not recommended.
- Towing vehicles could cause brake failure, transmission failure or loss of control.
- The riding mower is intended for use on relatively flat terrain.

14.43 Power Washers

Hazard:	Noise, vibration, electrocution, flying debris
Level of Risk:	Low
Controls:	See details outlined below

14.43.1 Safe Operation

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Never point a pressure washer at yourself or others.
- Never attempt to push or move objects with spray from the washer.
- Never use a gasoline powered washer in an enclosed space.
- Do not drive over, pull on, or kink the high pressure hose. Damage to the hose may compromise the wire braiding inside and cause the hose to burst.
- Ensure the power washer is properly connected and grounded. Test the ground fault circuit interrupter (circuit breaker or outlet) before using a pressure washer.
- Always plug a properly grounded pressure washer into a properly grounded receptacle.
- If an extension cord must be used, keep the pressure washer's power cord connection out of any standing water, and use a heavy duty extension cord with components rated for use in wet locations.
- Keep both the power cord and extension cord connections as far away as possible from the item being washed and away from any water runoff.
- Wear rubber soled shoes that provide some insulation when using the pressure washer.
- Never cut or splice the pressure washer's power cord or extension cords.
- Never remove the grounding prong from the pressure washer's power cord plug or the extension cord.
- Always have a qualified electrician check the pressure washer for any presenting electrical problems.
- Wear eye protection to guard against flying debris.
- Hearing protection must be worn.

14.44 Manual Handling Mechanical Aids

Hazard:	Noise, vibration, electrocution, dust, flying debris
Level of Risk:	Low
Controls:	See details outlined below

14.44.1 Trolleys

- Use the correct trolley for the task.
- Ensure that trolley is in good repair.
- Minimise twisting by positioning the trolley in line with bench or shelf.
- Do not overload a trolley.
- Ensure that visibility is not obstructed by load height.
- Ensure a good secure grip.
- Trolleys with larger wheels require less force.

14.44.2 Mobile Scissor Lifts

- Ensure the scissor lift is suitable for the task.
- Do not exceed the safe working limit.
- Ensure the equipment is in good repair.
- Do not raise platform on slope or drive onto slope when elevated.
- Do not raise platform on uneven or soft surfaces.
- Apply the break when the lift is being raised or lowered.

14.44.3 Pallet Trucks

- Ensure the pallet truck is suitable for the task.
- Do not exceed the safe working limit.
- Ensure the equipment is in good repair.
- If possible, avoid moving loads up or down ramps.
- Do not turn the handle too fast. This can cause the load to shift.
- Watch for clearances on both sides of the aisle.
- Do not carry riders on the hand pallet truck.
- Centre the forks evenly under the load to maintain good balance.
- Ensure the stability of the load.
- Operate at controllable speeds. Hand pallet trucks do not have brakes.
- Allow plenty of room to stop.
- Be aware of other people and forklifts in or near your work area.
- Be wary of pinch points to avoid injuries to your hands

14.44.4 Manual Hoists

- Ensure the hoist is suitable for the task.
- Ensure the equipment is in good repair.
- Plan your lifting operations before commencing.
- Check the safe working load of the hoist is suitable for the weight of the load.
- Do not push a loaded hoist at speeds which exceed a slow walking pace
- Do not push the lift over uneven or rough ground, particularly if loaded.
- Do not attempt to push or pull a loaded lift over a floor obstruction which the castors are unable to ride over easily.
- Do not bump the lift down steps, loaded or unloaded.

14.44.5 Powered Jib Cranes

- Ensure the crane is suitable for the task.
- Ensure the equipment is in good repair.
- Plan your lifting operations before commencing.
- Check the safe working load of the hoist is suitable for the weight of the load.
- Where loads are being lifted and lowered at a height a designated loading & unloading point should be clearly demarcated.
- Hard hats should be worn.
- Banks man and operator must use recognised hand signals for communicating when required.
- Ensure suspension points and anchorages are adequate for the full imposed load.
- Check the load chain/wire rope is hanging freely and is not twisted or knotted.
- Position the hook over the centre of gravity of the load.
- Check the operation of the brake before making the lift.
- Ensure the slings are secure and load is free to be lifted.
- Check the travel path is clear.
- Ensure the landing area is properly prepared.
- Never exceed the marked SWL.
- Do not use the load chain/wire rope as a sling.
- Do not shock load the block or other equipment.
- Do not permit the load to swing out of control.
- Do not leave suspended loads unattended.

14.44.6 Outboard Trolleys

- Ensure the trolleys are in good repair and wheels inflated.
- Two staff may be required to stabilise the trolley and fix the outboard to the trolley.
- Do not overload the trolley.
- Once the outboard is fitted it can be pushed by one person.
- To load into a vehicle ensure the top of the trolley rests against the floor of boot.
- Bending the knees grip the lower handle and wheel into place.
- If the load is too heavy a team lift can be applied.

14.44.7 Block & Tackle (chain blocks)

- Know the safe load limit of the hoist. Do not exceed it.
- Ensure the equipment is in good repair.
- Thoroughly inspect chain block for damage or wear before each use.
- Briefly test operation of unloaded chain block before using to lift any load. If chain block is damaged or is malfunctioning do not lift any load until the problem is corrected.
- Keep wire ropes and chains lubricated.
- Hoist from directly over the load. If not centered, the load may swing when lifted.
- Hang hoists solidly in the highest part of the hook area. Rigged this way, the hook support is directly in line with the hook shank.
- Lever operated hoists can be used to pull in any direction, but a straight line pull must be maintained. Side pulling or lifting increases wear and sets up dangerous stress levels on hoist parts. Only one person should pull on hand, chain and lever hoists.
- When loading the lower hook, place the load directly in line with the hook shank. Loaded this way, the load chain makes a straight line from hook shank to hook shank.
- With chain block properly positioned. Make sure the ground is clean and no obstacles are in the work area.
- Attach chain block lifting hook to the sling, chain, or load leveling device (not included) making sure the device is securely attached to the object and is suitably rated to hold the weight.
- Position yourself away from the object to be lifted.
- Be aware of a sliding or swinging motion of the object if it is not directly under the chain block.
- Slowly pull the hand chain with gloved hands until the load chain becomes tight, with the load still on the ground. Recheck the load is securely attached and will not slip, move, or swing when lifted.
- Raise the load slowly and smoothly, fast or sudden movement increases the risk of swinging the load.
- A swinging load can more easily come loose or exert a dynamic load sufficient to exceed the nominated capacity.

- Never leave an object suspended by a chain block – as soon as is practicable the object should be lowered so the load chain is no longer bearing any load.
- NEVER work on an object suspended by and chain block. Never place and part of your body under an object supported by chain block.

Construction, Development & Maintenance Activities

- 14.45 Legal Requirements Concerning Construction Work**
- 14.46 Basic False & Form Work (Shuttering)**
- 14.47 Block Laying**
- 14.48 Work in Excavations**
- 14.49 Work at Heights**
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- 14.57 Control & Management of Traffic on Public Roads**
- 14.58 Working on Roads**

14.45 Legal Requirements Concerning Construction Work

Any construction work carried out which exceeds a duration of 30 days or 500 man/days will require notification to the Health and Safety Authority using an AF1 forms. As a client Inland Fisheries Ireland is legally required to make particular Safety & Health appointments for the construction project. If you are acting as the principal officer for an IFI project you should complete the checklists and templates provided under the Construction Safety Partnership to ensure compliance

Construction work carried out which exceeds a duration of 30 days or 500 man/days, involves particular risk or where there is more than one contractor requires the client to appoint a Project Supervisor Design Phase (PSDP) and Project Supervisor Construction Stage (PSCS).

A safety plan may also be legally required. The health and safety executive should be contacted if clarification is required. All construction work must comply with the regulations. A non-exhaustive of work deemed to fall under the construction regulations is as follows:

Building a structure	Maintenance	Installation of service
Altering a structure	Demolition	Repair of service
Fitting out	Dismantling	Removal of service
Conversions	Excavation	Repair
Commissioning	Renovation	

Staff involved in construction must hold a valid safe pass card.

Staff are required to hold a construction skill certificate scheme ticket to operate the following equipment or engage in the following activities:

180 Degree Excavator	Tractor Dozer
360 Degree Excavator	Site Dumper
Mini Digger	Articulated Dumper
Tower Crane	Slinger Signaller
Self-erect Tower Crane	Scaffolding & Advanced Scaffolding
Mobile Crane	Roofing
Locating underground services	Road signing, lighting & guarding
Crawler Crane	H&S at roads
Telescopic Handler	Shot firing
Confined spaces C1, C2 & C3	Mobile access tower scaffold

Table 14.1 Construction Skill Certification Courses

PPE required may include hi-vis clothing, hard hats, safety goggles, safety boots, respiratory protection, hearing protection and gloves.

14.46 Basic False & Form work (Shuttering)

Hazard:	Material collapse, work at height, chemical handling, manual handling, housekeeping, vehicles, noise, dust
Level of Risk:	High
Controls:	See details outlined below

- Before false work and form work can be erected plans must be drawn up by a competent person covering: details of what is to be supported and what methods are required as well as how long the false work and form work will be in use. A method statement should be used for this work.
- Particular consideration should be given to the following: stability requirements, lateral restraint and wind uplift on untied decking components.
- Designing false work that can be erected, inspected and dismantled safely including how striking will be achieved (it may be craned into position in one piece but could have to be removed piecemeal).
- PPE must be worn and shall include include hi-vis clothing, hard hats, safety goggles, safety boots, respiratory protection, hearing protection and gloves.

14.46.1 Materials

- False work and form work must be constructed, or adapted, so as to be suitable for the purpose for which it is used.
- It should be strong enough and stable in use.
- Damaged components should not be used; and different proprietary components should not be mixed, unless expressly approved by the designer.

14.46.2 Erecting the false work or form work

- Before erection begins a risk assessment should be carried out and a safe system of work developed.
- A method statement, which includes how all the hazards are to be managed, should be prepared.
- This should be read and understood by those doing the work.
- To ensure safety, false work/form work should be stable at all stages of erection and be regularly checked. Only 'Working Drawings' and not 'Preliminary Drawings' should be used.
- Erectors should be competent and have the necessary information training and supervision.
- A competent person must carry out checks and issue permits as required.

14.46.3 Loading

- Once complete, all false work should be inspected and certified as ready for use (a written permit-to-load procedure is strongly recommended).
- The frequency of subsequent inspections will depend on the nature of the temporary works.
- They should be carried out frequently enough to enable any faults to be rectified promptly.

14.46.4 Striking and dismantling

- The competent person should agree the time of striking for each section of the false work.
- During dismantling, ensure that workers can work safely and cannot be injured by falling objects. A sequence for dismantling should be agreed and detailed.

14.47 Block Laying

Hazard:	Work at height, falling objects, dust, noise, chemicals, manual handling
Level of Risk:	Medium
Controls:	See details outlined below

- Staff carrying out block laying must be of good general health.
- Staff involved in construction work must hold a Fas Safe Pass card.
- Manual Handling techniques must be employed when block laying.
- Equipment such as wheel barrows should be used to limit manual handling as much as possible.
- Tidy up loose block straps, broken blocks etc. to avoid slips, trips and falls.
- Beware of broken, cracked blocks when unloading blocks.
- Block layers should be made aware of any other work been carried out near them which may be hazardous.
- Caution must be exercised when using construction equipment such as cement mixers which have moving parts which pose an entanglement hazard.
- When making up concrete avoid handling cement lime or other chemicals, ensure protective gloves are worn.

14.47.1 Personal protective equipment should be worn and include:

- Hard hats
- Gloves
- Hi visibility clothing
- Safety footwear
- Protective eyewear (when cutting blocks etc.)
- Respiratory Protection (where there is exposure to excessive dust)
- Hearing defenders (where there is excessive noise in the working environment)

14.48 Work in Excavations

Hazard:	Burial, falling objects, manual handling, underground services
Level of Risk:	Medium
Controls:	See details outlined below

- Excavations and trenches can cause serious accidents from the collapse of their sides, resulting in the burial or crushing of workers inside the excavation. Where excavations exceed 1.25m one of the following controls must be implemented: batter back, use of trench boxes or shoring.

14.48.1 Batter Back

- Battering back requires the sides of the trench to be sloped back to a safe angle, making the sides of the excavation stable and thereby preventing their collapse.

14.48.2 Trench Box

- A Trench Box is a proprietary support system. These trench supports can be put in place without requiring people to enter the excavation. When in place people can work safely inside the trench box.

14.48.3 Shoring

- Shoring gives temporary support to the wall of a trench by placing sheeting along its walls with sufficient props both vertically and horizontally to support the length of the excavation exposed. Adequate shoring is often completed with sheet piles, and these are particularly used for very deep excavations where space is restricted, e.g. on or close to streets and busy roads.

14.48.4 General Requirements

- Staff must not work within the working radius of an excavator boom. People should be kept at a safe distance from working plant and barriers should be used where possible.
- All underground services must be identified and marked prior to commencing excavation works e.g. water mains and electrical cables.
- Maps of utilities can be obtained from the ESB prior to breaking ground. Send site plan/area and your contact details to dig@esb.ie a map will be sent back to you within 10 working days.

Bord Gais Leaks 1850 20 50 50

Safety Checks: 1850 79 79 79

ESB Emergency 1850 372 999

Safety Checks: 1850 372 757

- The ground area surrounding the excavation should be inspected using the AF3 Form.
- Where applicable ensure that the ground is capable of taking the weight of any load applied, e.g. plant or equipment which may be used.
- Before excavating, the adjacent area should be checked to ensure that the excavation work will not cause other structures to become unstable or collapse. Underpinning and propping may be required to stabilize such structures prior to the commencement of excavation - related works.
- All material removed from the excavation should be stored away from the excavation site to prevent loose materials falling back into the excavation.
- Chocks are required where vehicles may be working close to the excavation. A chock is a block, which prevents a vehicle from approaching too close to the side of an excavation which could cause the sides of the excavation to collapse or the vehicle to roll into the excavation.
- Workers must be able to get in and out of excavations safely. Generally, ladder access is used. All ladders should be secured to prevent slipping/sliding, and must lend themselves to safe access onto and egress off, the ladder.
- Designated pedestrian walkways must be in place to separate site traffic from people entering or leaving tunnels.
- A competent person should inspect excavations at least once a day. The support systems and ground conditions should be examined and any remedial work should take place immediately and a report of the inspection should be recorded on the approved form.
- Suitable barriers should be placed around excavations and be sufficiently strong and high enough to prevent people falling into the excavation. Suitable covers (e.g. metal decking) can be used where necessary to prevent persons from falling into excavations.
- Persons must be given advance warning when approaching excavation work. The warning signs must be suitable and appropriate for the danger it is referring to.
- Pipes and other materials should be stacked in a safe manner using wedges to prevent pipes and other materials from falling or rolling on to people. Large circular sections, e.g. manhole sections, should be stored flat not on their circular sides.
- Propping is any temporary structure used to support a permanent structure while it is not self-supporting. In the case of tunnels, adequate and sufficient propping must be in place to prevent the collapse of the walls and ceiling of the tunnel.
- Where tunnelling is necessary, a supply of fresh air may be required. Competent advice should be sought.
- Sufficient lighting, including emergency lighting, should be installed to allow work to take place safely and to allow safe access and egress.

14.48.5 Personal protective equipment should be worn and include:

- Gloves
- Hard hats
- Hi visibility clothing
- Safety footwear
- Protective eyewear
- Respiratory Protection
- Hearing defenders
- Protective eyewear

14.49 Works at Heights

Hazard:	Work at height, falling objects, chemicals, manual handling, noise, dust, incomplete scaffold.
Level of Risk:	Medium
Controls:	See details outlined below

14.49.1 Roof works

- Adequate investigation of the roof and its stability will be carried out prior to commencement of work.
- Crawling ladders or crawling boards will be used on all roofs that slope.
- If there are no such ladders or boards, the roof batons will provide a safe handhold and foothold provided that all workers are harnessed to a fixed location.
- There will be adequate barriers or other edge protection to stop persons or materials falling from sloping or flat roofs.
- Crawling boards will be provided where people work on fragile materials such as asbestos, cement sheets or glass. Warning notices will be posted.
- Suitable guardrails, covers etc., will be provided where people pass or work near such fragile materials.
- Roof lights will be properly covered or provided with barriers.
- During sheeting operations, precautions will be taken to prevent people falling from the roof.
- Precautions will be taken to prevent debris falling onto others working under the roof works.
- Only employees with suitable experience/training will be assigned to work on roofs involving high risk.

14.49.2 Scaffolding

- Scaffolding shall only be erected by competent persons or under the strict supervision of a competent person (holding the relevant CSCS. Qualification).
- A WH1 form of inspection must be issued by the competent person prior to first use, every 7 days or when the scaffold is modified, damaged or subject to adverse weather conditions.
- Staff working on a scaffold must be made aware of its load capacity.
- Staff must not interfere or misuse any part of a scaffold.
- Staff must promptly report defects to those in control of the scaffold.
- Scaffold must not be erected near overhead power lines.
- Staff must wear protective footwear, Hi-vis clothing and hard hats
- Fall arrest systems should be worn where a fall is or is likely to cause serious injury or death.
- Access must be prevented to areas where falling objects are likely.

- Where scaffolding is incomplete a sign stating that it is dangerous and incomplete must be clearly visible.

14.49.3 Tower Scaffolding

- Tower scaffold shall only be erected by a competent person.
- Where the conditions of use or the wind forces are likely to be different from those covered by manufacturer's instructions or the tower is erected in a location exposed to high winds, the overturning forces should be calculated by a competent person.
- The ground surface should be suitable for the type of tower to be used. Where castors are to be used the surface should be even and holes, ducts, pits or gratings should be securely fenced or covered.
- Where the surface is sloping, the tower should be prevented from slipping. Base plates and sole boards should be used where the ground is soft.
- Castors should be fitted with adequate brakes and they should be securely fixed to each leg of the tower to prevent accidental uncoupling.
- The deck units or boards should be securely fixed to the frame. Toe-boards and guard-rails should be provided.
- The platform should not be over-loaded.
- Access should be provided to the tower by using vertical or integral ladders, inclined internal ladders or stairways erected in accordance with the manufacturers' directions. Ladders should be attached to the shorter side of rectangular towers and within the base area of the tower. External ladders should not be used with aluminium towers.
- Access to the platforms should be through a hatch which is capable of being closed and secured.
- Mobile access towers should not be used adjacent to overhead power lines. Contact the ESB for further advice. Where mobile access towers are being used in the same general area as overhead electricity lines, physical barriers and warning notices should be provided to prevent them coming close to the lines.
- Prefabricated towers such as aluminium alloy towers may only be erected by workers with adequate skills and training. Workers should be provided with adequate and comprehensible instructions both for the erection and checking of the tower. Competent supervision should be provided to ensure that towers are safely erected, checked and used.

14.49.4 Mobile Elevated Work Platforms

Prior to use the following certificates CR7C and CR7D must be obtained from a competent person.

- CR7C Certificate of test and examination for a MEWP to be issued on manufacture/before put into first use or after substantial alteration or repair.

- CR7D Report of the thorough examination of a MEWP every 6 months.
- Required training shall include Safe Pass (where used on construction sites) and formal MEWP operation.
- Mandatory devices shall include a safety harness and it must be used when working from a MEWP.
- Level indicators and alarms should also be fitted.
- Over reaching must be avoided, re-position the MEWP as necessary to prevent this.
- Ensure parts of the MEWP do not protrude onto roads or other transport routes.
- Check work area for localised features e.g. manholes, service ducts, potholes, etc (e.g. a hole 75mm deep can cause an overturn)
- Check any temporary or permanent covers are strong enough to withstand the applied pressure.
- Establish a load bearing capacity (general and point loading) when working inside a building or on a structure.
- Have agreed systems of communication (e.g. between banks-men and MEWP operators during steel erection work).
- The MEWP must be positioned on flat level ground.
- Ensure full emergency procedures are in place and widely known.
- Never allow anyone to ride in the platform while the vehicle is moving.
- When fitted, stabilisers or outriggers must always be positioned before the platform is raised.
- The Safe Working Load of the platform must be clearly marked and observed taking into account tools and equipment.
- Ensure any levelling indicators are clear and in working order and any 'out of level' alarms are functional.
- Do not use the platform when wind speeds exceed the manufacturer's specifications.
- Always keep feet flat on the floor of the platform.
- MEWPs should never be used as cranes.
- All vehicles should be inspected by the driver at the start of the shift.

14.49.5 Ladders

Always use a ladder or stepladder in good condition to reach any item above your extended arm height. Never use a makeshift device, such as a desktop, file cabinet, bookshelf, or box, as a substitute for a ladder. Follow these guidelines when using ladders:

- Ensure footwear is clean and dry to avoid slipping.
- Ensure that every ladder used is in good condition and free from obvious defects such as cracks and loose rungs. A damaged ladder must never be used.
- Ladders should only be used for access, inspection and for light work.
- Set ladder at a slope of four vertical to one horizontal. (4 metres up, 1 metre out).
- Ensure that the ladder projects one metre above the place of landing.
- Do not over reach from a ladder. Dismount and relocate the ladder.
- Ladders which are no longer in use should be removed and should be made inaccessible at the end of each working day.

- Ladders rising above a vertical distance of over 9m must not be used without an intermediate landing place at least every 9m.
- Secure all ladders at the top and ensure it is secured at the bottom, either weighted or footed by another operator or approved patented device.
- Place ladders on slip-free surfaces even if they have slip-resistant feet. Secure the ladder if a slip-free surface is not available.
- Avoid placing ladders in walkways. Keep areas around ladders clean and free of debris.
- Do not use a ladder in front of a door unless the door is locked and barricaded.
- Do not load a ladder above its intended weight capacity.
- Ladders must be clear of overhead power lines.
- Never over-reach from a ladder, or work with your back to a ladder.

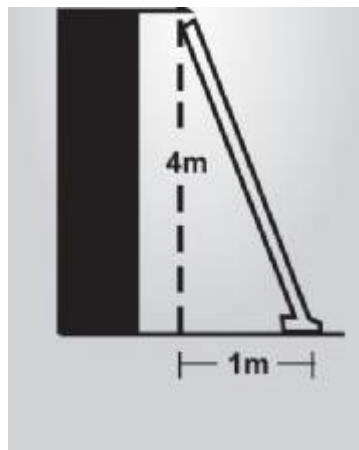


Figure 14.4 Safe Extension Ladder Use

14.50 Work in Confined Spaces

Hazard:	Oxygen depletion/enrichment, chemicals, fire, explosion slips, trips and falls, falls from height, engulfment/drowning, toxic atmospheres, biological agents, manual handling, high temperatures, free flowing solids/liquids, increasing levels of liquids.
Level of Risk:	High
Controls:	See details outlined below

Confined space work is not currently carried out by IFI. If confined space works are carried out in future the following controls along with a site specific risk assessment must be completed.

Confined spaces may occur when cleaning tanks, drains or sewer systems. If you plan to work in a confined space you must contact the health & safety executive well in advance to design a site specific risk assessment and method statement.

Confined Space refers to any place, including any vessel, tank, container, pit, bund, chamber, cellar or any other similar space which, by virtue of its enclosed nature, creates conditions that give rise to a likelihood of an accident, harm or injury of such a nature as to require emergency action due to:

- the presence or reasonable foreseeable presence of:
 - flammable or explosive atmospheres
 - harmful gas, fume or vapor
 - free flowing solid or an increasing level of liquid
 - excess of oxygen
 - excessively high temperature
- the lack or reasonably foreseeable lack of oxygen

The hazards associated confined spaces include:

14.50.1 Toxic Atmosphere

A toxic atmosphere may cause various acute effects, including impairment of judgment, unconsciousness and death. A toxic atmosphere may occur due to the presence or ingress of hazardous substances. These substances may be present in the Confined Space for various reasons such as:

- remaining from previous processing or storage
- arising from the disturbance of sludge and other deposits
- the presence of a fire or flames within the space
- seepage from improperly isolated adjoining plant
- formation during the work processes carried out in the space

- being released from under scale and in brickwork as a result of the work process

14.50.2 Oxygen Deficiency

Oxygen can be lacking in a confined space for the following reasons:

- displacement of air by another gas
- various biological processes or chemical reactions (such as rotting of organic matter, rusting of metals, burning, etc)
- absorption of air onto steel surfaces, especially where these are damp

14.50.3 Oxygen Enrichment

An excess of oxygen, in the presence of combustible materials, results in an increased risk of fire and explosion. Some materials, which do not burn in air, may burn vigorously or even spontaneously in an enriched oxygen atmosphere.

14.50.4 Flammable or Explosive Atmospheres

A flammable atmosphere presents a risk of fire or explosion. Such an atmosphere can arise from the presence in the confined space of flammable liquids or gases or of a suspension of combustible dust in air. If a flammable atmosphere inside a confined space ignites, an explosion may occur, resulting in the expulsion of hot gases and the disintegration of the structure.

14.50.5 Flowing Liquid or Free Flowing Solids

Liquids or solids can flow into the confined space causing drowning, suffocation, burns and other injuries. Solids in powder form may also be disturbed in a confined space resulting in an asphyxiating atmosphere.

14.50.6 Excessive Heat

The enclosed nature of a confined space can increase the risk of heat stroke or collapse from heat stress, if conditions are excessively hot. The risk may be exacerbated by the wearing of personal protective equipment or by lack of ventilation.

14.50.7 Controls

- Where possible entry into confined space must be avoided.
- Where it cannot be avoided staff implement the following controls: They must complete confined space training.
- Staff must not carry out work in confined spaces if it is reasonably practicable to complete the work without entering the space.
- Specific hazard identification and risk assessment must be carried out prior to any confined space work.
- A safe system of work must be created before working in the confined space.
- Staff entering a confined space must be provided with appropriate information, training and instruction, appropriate to the particular characteristics of the proposed work activities.
- Staff shall not enter a confined space unless suitable emergency arrangements have been made which are appropriate to the confined space in question.

When carrying out a risk assessment it is important to ensure that all risks associated with the hazards above are evaluated and controlled. When carrying out a risk assessment the following questions should be asked:

- What could be inside the space that would pose a risk?
 - Contents?
 - Oxygen Deficiency?
 - Previous Contents?
 - Oxygen Enrichment?
 - Residues?
 - Structure and Layout?
 - Contamination?
- What will be created due to the work carried out in the space?
 - Sources of Ignition?
 - Flammable Substances?
- What's outside the space that might pose a risk during the proposed work?
 - Inadequate Isolation?
 - Inadvertent Operation of Plant?
 - Nearby Work Activities?

The key elements to be considered when drawing up a safe system of work are:

- Competence, training, supervision and suitability
- Permit-to-work procedure
- Gas purging and ventilation

- Dangerous residues
- Testing and monitoring of the atmosphere
- Mechanical, electrical and process isolation
- Respiratory protective equipment
- Other personal protective equipment
- Safe use of work equipment
- Communications
- Access and egress
- Flammable or explosive atmospheres
- Combustible materials

14.51 Safe Use of Hydraulics

Hazard:	High pressure oils (injection), hot oils, flailing lines, fire
Level of Risk:	Medium
Controls:	See details outlined below

- Read and follow manufacturers operating manual for safe operation and maintenance.
- Prior to use, always inspect hydraulic hoses and fittings for defects or leaks and to ensure they are securely attached at connection points. Confirm that low-pressure hoses or fittings are not connected to a high-pressure hydraulic system or pump.
- If a hydraulic system fails the pre-use inspection, notify your supervisor and remove the equipment from service. Attach a tag that states "DO NOT USE." Complete tag with appropriate information.
- Before operating the hydraulic equipment, look to see that people and obstructions are clear of the equipment.
- Never walk beneath any implement or component that is supported by hydraulics.
- Always shut off and relieve all hydraulic pressure before disconnecting hydraulic hoses or performing maintenance or repairs.
- Prior to initiating maintenance or repairs, always use supports, jacks, stands, or blocks to prevent movement of hydraulic implements or components.
- When hydraulic systems are operating, hydraulic fluid temperatures range from 74° to 85°C (165° to 185°F) due to the high pressure and represent a potential burn hazard.
- Hydraulic oil is a fire hazard and when ignited can cause severe burns or fatalities. A suitable fire extinguisher must be stored close to the equipment.
- Never search for a pinhole leak by running your hand or finger along a hydraulic hose. Hot hydraulic oil at high pressure can puncture gloves and penetrate several inches into soft tissue. Search for pinhole leaks using a piece of cardboard or wood.
- Always lower hydraulic components to the ground before shutting off the engine and dismounting the equipment.
- Before disconnecting oil lines, relieve all hydraulic pressure and discharge the accumulator (if used).

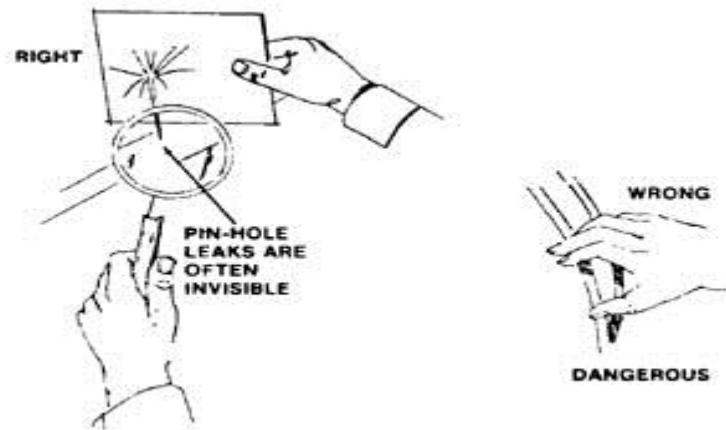


Figure 14.5 Testing Hydraulics for Leaks

- Remember never use your hand to find or stop leaks in a hydraulic hose.

13.52 Painting

Hazard:	Work at height, falling objects, chemicals, manual handling, fumes
Level of Risk:	Low - Medium
Controls:	See details outlined below

- Consult the Material Safety Data Sheet before painting.
- Wear personal protective equipment as specified in the material safety data sheet.
- Ensure paints are used in ventilated areas, where ventilation is insufficient respiratory protective equipment must be worn or forced ventilation fitted.
- Wear overalls when painting. Gloves and goggles should also be worn. Wash hands before eating or drinking. Store paints and solvents away from food.
- Do not smoke when painting. Ensure work areas are well ventilated to minimize inhalation of vapours especially vapours of paint removers. Exclude sources of ignition from work areas.
- Wear goggles and gloves when handling paint removers.
- Do not clean hands with paint solvents or thinners.
- Wear respiratory protective equipment to guard against dust created in surface preparation work or when spraying paints.
- Ensure that steps are taken to provide adequate ventilation in confined spaces.
- Refer to the following controls detailed in 13.45 Work at Heights.

14.53 Maintenance of Fish Counters

Hazard:	Work on or adjacent to water, manual handling, power and hand tools, electricity
Level of Risk:	Low – Medium
Controls:	See details outlined below

- Fish counters can only be maintained during periods of low water.
- Personal flotation devices must be worn.
- Lone working is prohibited when maintaining fish counters.
- Local area forecasts should be obtained prior to commencing work.
- Conduct a visual inspection of the counter.
- Avoid physically moving debris or large obstructions; allow flood waters to wash obstructions downstream.
- Where obstructions must be removed mechanically a specific risk assessment must be completed for the activity.
- The Logie fish counters only require cleaning for camera verification.
- Standing on the white plastic area of a fish counter must be avoided.
- Traversing the Logie fish counter should be done via the concrete edge and not by the plastic board.
- Long handled tools should be used from the downstream side of the Logie counter when cleaning. Deck scrubs and scrapers should be used instead of power washers.
- The use of cabled electric power tools is prohibited.
- Abrasive wheels must only be used by trained staff.
- If staff have to enter on to the electrode area to carry out repairs they must kneel to lower their centre of gravity and avoid slipping. Knees can be provided. A helmet with chinstrap must be worn.
- Where eyebolts are fitted at the counter, a safety rope must be used during maintenance work.
- Where fish counters are bridged, fall arrest systems must be worn.
- Life rings should be fixed at the counter.
- VAKI Counter maintenance is limited to wiping a non-abrasive cloth/mop on the unit. VAKI's must not be removed during periods of high water.
- When maintenance involves construction work and not just cleaning, suitable PPE must be worn. For example using a con-saw will require safety boots, goggles, dust mask and hearing protection.

14.54 Maintenance & Safe Access to Weirs

Hazard:	Work on or adjacent to water, manual handling, power and hand tools, hydraulics
Level of Risk:	Medium
Controls:	See details outlined below

- Maintenance of weirs pose a number of risks to staff including slippery surfaces, fast flowing water, risk of falling into deep/turbulent waters. As the design of individual weirs may differ greatly site specific risk assessments should be conducted. Lone working is prohibited.
- Staff must wear a personal flotation device.
- Where practicable hand railing should be provided.
- Depending on the individual nature and design of the weir security fencing and warning signs should be used.
- Lifebuoys should be available at all weirs.
- The provision of a footbridge is not always possible. An alternative for maintenance personnel is the provision of eyebolts in the abutments, to which a safety harness can be attached.
- The provision of lifting equipment should be provided so far as is reasonably practicable to remove unwieldy and heavy blockages. Where possible allow rising waters of a flood to remove blockages.
- To keep the weir in good conditions vegetation and over hanging trees should be cut back. Silt may need to be removed where it causes an obstruction.
- It is important that inspections are recorded. Inspections should take place at regular intervals e.g. during/after flooding.

14.55 Construction of Angling Stands, Stiles, Bridges & Walkways

Hazard:	Work on or adjacent to water, manual handling, power and hand tools, excavations, heavy machinery, noise dust, vibration, fumes chemical handling, work at height.
Level of Risk:	Low – Medium
Controls:	See details outlined below

- Staff involved in any form of construction or development work must hold a valid Safe Pass card.
- Staff operating machinery must where applicable hold the relevant Construction Skills Certification Scheme (ticket) card.
- Personal protective equipment must be worn. Equipment includes, high visibility clothing, safety boots, gloves, hearing protection, safety glasses, hard hat and respiratory protection. Additionally safety wellingtons or waders may be required.
- For work on or adjacent to water a personal flotation device must be worn.
- Cutting plastic wood or natural wood may generate harmful dust and respiratory protection should be worn.
- The transport and assembly of angling stands, bridges and walkways is physical work. Staff must have completed manual handling training and use mechanical aids where practicable to reduce the risk of back injury.
- Care must be taken when carrying loads and traversing lands. Routes should be planned. Where feasible quad bikes and trailers should be used to transport material off road.
- Machinery, power and hand tools may create a noisy environment in which hearing protection must be worn. Contact the Health & Safety Executive if you wish to have noise monitoring conducted at your work place.
- If chemicals are used safety data sheets must be obtained and safety precautions followed.
- Staff operating HiAb arms for loading/unloading lorries must have completed training in safe use and operation.
- When working on farmland care should be taken to identify any signs warning of hazards such as a bull on the land. Refer also to Section 14.123 Traversing Lands.
- Good hygiene must be practiced wash hands with soap or use disinfectant wipes before eating drinking or smoking.
- Take care to cover any cut, scratches or abrasions. A first aid kit must be readily available.

14.56 Maintenance of River Banks

Hazard:	Work on or adjacent to water, manual handling, power and hand tools, heavy machinery, noise dust, vibration, fumes chemical handling.
Level of Risk:	Low – Medium - High
Controls:	See details outlined below

- Staff involved in any form of development work involving construction must hold a valid Safe Pass card.
- Staff operating machinery must where applicable hold the relevant Construction Skills Certification Scheme (ticket) card.
- Personal protective equipment must be worn. Equipment may include, high visibility clothing, safety boots, safety wellingtons, safety waders, gloves, hearing protection, safety glasses, hard hat and respiratory protection.
- For work on or adjacent to water a personal flotation device must be worn.
- Material handling may include handling fencing, rock, wood etc. Staff must have completed manual handling training and use mechanical aids where practicable to reduce the risk of back injury.
- Machinery, power and hand tools may create a noisy environment in which hearing protection must be worn. Contact the Health & Safety Executive if you wish to have noise monitoring conducted at your work place.
- If chemicals are used safety data sheets must be obtained and safety precautions followed.
- Staff operating HiAb arms for loading/unloading lorries must have completed training in safe use and operation.
- When working on farmland care should be taken to identify any signs warning of hazards such as a bull on the land. Refer also to Section 14.123 Traversing Lands.
- Good hygiene must be practiced wash hands with soap or use disinfectant wipes before eating drinking or smoking.
- Take care to cover any cut, scratches or abrasions. A first aid kit must be readily available.

14.56.1 Fencing

- Check the proposed fence line for underground utilities.
- Wear protective gloves and safety glasses & safety shoes.
- When stake driving do not support the stake by hand – use a stakeholder.
- When using a maul/mallet, ensure that no one is close in line with the swing.
- Where possible use treated timber and check that the preservative is dry.
- Wear chemical resistant-gloves to handle timber still wet with preservative.

- Use dispensers when unrolling line wires to avoid kinking/twisting.
- Ensure that the wire is secured firmly on the dispenser.
- When using ratchets, ensure that the wire always has at least two full turns on the ratchet barrel.
- Ensure wire strainers are securely attached and anchored before tensioning.
- Do not stand on or astride, wire while it is being tensioned.
- Never over tension the wire.
- To avoid recoil, always ensure that the exposed ends of wire are secured.
- Always secure wire on each side of the cutting point before cutting.
- Exercise care to avoid spiking hands on loose ends.
- Always wear protective gloves when handling barbed wire.
- Take care to avoid breakage and recoil.
- When dispensing barbed wire, keep it taut.

14.56.2 Rock Armouring

- Rock armouring is rock used to protect river banks, streams and other shorelines against erosion.
- Staff operating excavators must hold a construction skills card (ticket) for the type used.
- Staff must hold a safe pass card.
- Staff must always work beyond the range of the excavator boom arm.
- Staff must not stand under suspended loads.
- Staff may only approach an excavator when they have signalled the operator to shut down, have received acknowledgement and the machine is shut down.
- Personal protective equipment must be worn. This may include high visibility clothing, gloves, hearing protection, safety boots, goggles and respiratory protection.

14.56.3 Tree Clearance

- Working in water with chainsaws should be avoided. So far as is reasonably practicable hand saws should be used instead.
- Where chainsaws are used in shallow water it must only be carried out where the ground is solid and stable underfoot.
- Full chainsaw PPE must be worn.
- Chainsaws must not be used in fast or deep water.
- See sections 14.36 Pole Saws, 14.37 Chainsaws and 14.38 Petrol Strimmer/Brushcutter for additional controls.
- Protective helmets must be worn. Helmets should have a chin strap.
- Where a block and tackle is being used it must be fixed using a strap which has a safe working load. Chains or ropes are not suitable.
- Any lifting equipment must have a valid inspection record. Inspections must be carried out by the insurance appointed engineer.
- The use of lifting equipment which is overdue a service must be securely stored. The use of such equipment is strictly prohibited.
- Mechanical aids should be used to reduce manual handling where ever practicable.

14.57 Control & Management of Traffic on Public Roads

Hazard:	Fast moving vehicles, noise & dust.
Level of Risk:	Medium - High
Controls:	See details outlined below

- Staff involved in any form of development work involving construction must hold a valid Safe Pass card.
- Staff involved in control and management of traffic on public roads must complete the signing, lighting & guarding (SLG) at road works training course.
- Any construction work which obstructs the roadway or where pedestrians, people with disabilities or cyclists are directed onto the roadway because of construction, there must be at least one person who has been issued with a valid construction skills card relating to signing, lighting and guarding on roads at the site location at all times when road signing, lighting and guarding is being installed, modified or removed.
- When work activity is being carried on and the SLG CSCS card holder (person provided) is not on site, there must be on each site at least one person who has successfully completed the Health and Safety at Road Works Construction Skills Certification Scheme and who possesses a valid and relevant registration card. This course gives a broad overview of road work safety and will raise site awareness on: signing, lighting and guarding, excavation safety, underground services, plant and equipment, handling and storage of materials, and emergency procedures. One of the main roles of this person will be to make minor repairs to the signing, lighting and guarding as necessary.
- The staff involved in such work must implement the guidance for the control and management of traffic at road works document.
- Where there is exposure to high noise levels hearing protection shall be worn.
- Where applicable roads should be dampened to reduce dust. Dust masks may also be provided.

14.58 Working on Roads

Hazard:	Fast moving vehicles, noise & dust.
Level of Risk:	Medium - High
Controls:	See details outlined below

- Staff working on the road side must wear a high visibility vest.
- Where there is exposure to high noise levels hearing protection shall be worn.
- Where applicable roads should be dampened to reduce dust. Dust masks may also be provided.
- Care must be taken when crossing the road and the safe cross code applied.

Hazardous Materials

14.59	General Chemical Safety
14.60	Pesticides
14.61	Flammable Substances
14.62	Petrol
14.63	Diesel
14.64	LPG Cylinders and Gas Cylinders
14.65	Asbestos
14.66	Liquid Nitrogen
14.67	Gravel Analysis (Peat Separation)
14.68	Disinfection Kits & Stations

14.59 General Chemical Safety

Hazard:	Chemical handling, dusts, vapours fumes, gases, flammables, toxins, irritants, sensitizers
Level of Risk:	Low – Medium – High
Controls:	See details outlined below

14.59.1 Chemical handling

- For every chemical used a safety data sheet must be obtained from the supplier. Follow all safety instructions provided and inspect labelling carefully.
- Take note of hazard statements and risk phrases, safety phrases or precautionary statements.
- The PPE recommended in the safety data sheet must be worn.
- Ensure third parties are not exposed when handling the chemical.
- Contact the Health & Safety Executive for guidance on risk assessment.

14.59.2 Chemical Storage

- Avoid storing large quantities of harmful chemical on site. Try to order as required to reduce the quantity stored.
- Flammable chemicals must be store separately to oxidising or corrosive chemicals.
- Chemical should be stored securely with restricted access.
- Liquid chemical stores must be bunded.

14.59.3 Chemical Labelling

- The new chemical classification, labelling and packaging signage is as follows:



Explosive
Self Reactive
Organic Peroxides



Oxidising



Flammables
Self Reactives
Pyrophorics
Self Heating
Emits flammable gas
Organic Peroxides



Irritant
Dermal Sensitiser
Acute Toxicity (harmful)
Narcotic effects
Respiratory Tract infection



Acute Toxicity
(Severe)



Gasses Under Pressure



Carcinogen
Respiratory Sensitiser
Reproductive Toxicity
Mutagenicity
Aspiration Toxicity



Environment Toxicity



Corrosives

14.59.4 Chemical Disposal

- Refer to Section 13 of your Safety Data Sheet to confirm the correct disposal procedure for your chemicals.
- If you are in doubt as to the safety of any chemical disposal procedure, contact the Environmental Protection Agency for further advice.
- Only use a licensed hazardous waste disposal contractor, when one is required

14.60 Pesticides

Hazard:	Work on or adjacent to water, manual handling, dust, fumes chemical handling.
Level of Risk:	Low
Controls:	See details outlined below

Pesticides are wide ranging and include fungicides, herbicides, insecticides, public hygiene pest control products, rodenticides and wood preservatives.

If these products are used the operator must receive training including PA1 and PA6 courses to ensure competence.

If pesticide product labels have become illegible and the content is unknown e.g. faded, the pesticides should be disposed of safely.

Read and follow pesticide manufacturer's instructions and Safety Data Sheet for safe use.

Pesticides should be stored in a suitable chemical storage area, which ensures:

- reduced risk of physical damage.
- prevention of rapid spread of fire or smoke or liquid or molten substances.
- prevent incompatible chemicals being mixed e.g. by spillage, damage to packaging or by wetting during fire fighting.

During the selection of personal protective equipment the following shall be considered as the basic requirements:

- A face shield, complying with EN 166.
- Respiratory protective equipment. For potential dusts/particles a disposable respirator complying with EN149 with P2 filter efficiency or reusable respirator to EN 136 or 140 (or equivalent) fitted with a P2 filter; for potential airborne spray/vapour, a reusable respirator to EN136 or 140 (or equivalent) fitted with a P3 vapour filter suitable for the pesticide been used.
- Protective gloves (minimum 0.5mm thickness,) complying with EN374
- Wellington boots with good grip.

- A coverall selected on the following basis:

Purpose	CEN Type Rating	General Description
Protection against liquid jets	Type 3	Chemical protective clothing with liquid tight connections between different parts of the clothing
Sprays	Type 4	Chemical protective clothing with spray tight connections between different parts of the clothing
Solid particles	Type 5	Reusable and limited use 'particle tight' protective clothing.
Splashes of liquid and solid	Type 6	Reusable and limited-use protective clothing offering limited performance against splashes and aerosols of liquid and solid particulate chemicals.

Table 14.2 PPE Selection Criteria

- Use personal protective equipment appropriate for the pesticide in use.
- Depending on the specific pesticide and how the pesticide is being used, use chemical protective clothing when there is a chance of spilling or splashing liquids or contact with spray.
- Always wear clean protective clothes that are free of holes or other defects.
- Wear loose-fitting protective clothing - a size slightly larger than needed in order to reduce stretching at seams.
- Secure protective pants outside of boots.
- Wear an apron that extends below boot tops when mixing and loading liquid pesticides.
- Wear boots made of appropriate chemical-protective material, not leather.

14.60.1 Personal Protective Equipment

- Choose a suitable respirator according to fit, chemical and amount of likely exposure. Your supplier can advise you.
- Wear waterproof, washable material. Do not use leather or cloth sweatbands.
- Wear chemical goggles and a face shield when mixing or spraying pesticides.
- Wear durable, chemical protective gauntlet gloves which extend up the forearm. Follow the manufacturer's guidelines regarding suitable glove material.
- Do not wear leather, paper or fabric gloves. These materials absorb and hold liquids and dusts and can become a serious source of exposure.

14.60.2 Reducing the likelihood of contamination

- Stand upwind of all spraying operations.
- Follow manufacturer's instructions to prevent getting pesticides on your hands when removing contaminated gloves.
- Wear a light pair of disposable protective gloves under the outer gloves. Discard the disposables after each use.
- Wear relatively loose-fitting outer gloves for easy removal.
- Store contaminated clothing separately from personal clothing.
- Launder professionally or according to manufacturer's recommendations (if not disposable).

14.60.3 What to do if my skin or clothing becomes contaminated?

- Remove all contaminated clothing immediately.
- Follow the safety data sheet (SDS) or label first-aid advice for skin/eye contact.
- Scrub the contaminated area vigorously with soap and water.
- Wash entire body, including hair with water.
- Use a chemical shower where available.
- Rinse with clean water for at least 15 minutes.
- Rinse eyes if pesticide irritates them, use eye-wash station or clean water and obtain medical attention.
- Any co-workers who help you should wear gloves and rubber boots and take precautions to prevent contaminating themselves.
- Contaminated clothing should be bagged and tagged, indicating which pesticide product was used.
- Clean contaminated clothing, or discard if contaminated with a very toxic pesticide, as recommended by the pesticide manufacturer.
- Leather products (e.g. shoes, boots, and belts) cannot be decontaminated and should be discarded in an approved manner as hazardous waste.
- Read the label information and SDS before using the pesticide product to find out if it can be absorbed through intact skin and be able to recognize toxic effects you may experience if you are exposed. Some acute or short-term effects can start right after exposure; other effects can be delayed from several hours to several days.
- Obtain medical attention if you feel unwell, or if recommended in the SDS or in other manufacturer information. Take the SDS or other manufacturer information with you. Medical staff will need the information to treat you correctly.
- Further information can be obtained from **Poison Control 01 8379964 or 01 8092566**

14.60.4 Key factors to remember when using pesticides

14.60.4.1 Safe Handling

- Be trained in the correct use and handling of pest control products - some products can be used by specially trained and certified personnel.
- Become familiar with regulations that apply to pesticide use and follow all regulatory requirements.
- Minimize use of pesticides where possible.
- Choose correct pesticide for the job.
- Wear appropriate personal protective equipment and clothing when handling and spraying pesticide products.
- Keep products in their original labelled packages.
- Follow the precautions that appear on the label.
- Inspect pesticide containers for leaks before handling.
- Learn to recognize the typical signs of poisoning and the correct first aid procedures.
- Stop work and seek medical attention immediately if you feel ill during pesticide use.
- Have washing facilities as close as possible to mixing and loading sites.

14.60.4.2 Mixing

- Mix pesticides using equipment reserved only for that purpose. Mixing and loading areas should be designed to contain any spills and facilitate clean-up.
- Fill mixing tanks one third full with water before adding pesticide concentrate.
- Tap sides of containers to ensure that any remaining wettable powder falls into the spray tank.
- Keep containers below eye level to minimize splashes to the face.
- Use proper tools to open a container. Work in a well-ventilated area.
- Stand upwind of all opening, pouring and mixing operations, if working outdoors.

14.60.4.3 Application

- Ensure that all spraying equipment is in good repair and properly calibrated.
- Use the proper nozzle for the job. Control sprays angle and droplet size. The wider the angle and the smaller the droplets, the greater the potential for drift.
- Stand and apply so that the wind blows the pesticide away from you.
- Rinse empty liquid containers three times and pour contents into spray tanks. Rinse as soon as the container is empty since dried residue is much more difficult to remove. Puncture and crush container for disposal.

14.60.4.4 Post Application Procedures

- Follow environmental guidelines and regulations regarding disposal.
- Familiarise yourself with disposal arrangements.
- Ensure effective storage.
- Wash face and hands thoroughly after completing mixing operation.
- Wash hands before eating, drinking, smoking or using the toilet.
- Shower thoroughly, with special attention to hair and fingernails, after each pesticide application or at the end of the work shift.
- Change clothes daily and more often if any contamination occurs.

14.60.5 What should I not do when working with pesticides?

- Do not work alone when handling pesticides.
- Do not handle containers roughly.
- Do not guess at the amount of pesticide to mix or apply.
- Do not stir pesticides with your hands.
- Do not keep food, beverages, tobacco, cigarettes, cups or cutlery near work areas or in work clothes.
- Do not rub eyes or touch your mouth with hands while working with pesticides.
- Do not use mouth to siphon liquid materials or to blow out a clogged spray nozzle.
- Do not fill tanks completely when spraying hilly areas using spraying equipment pulled by a tractor.
- Do not make sharp turns.
- Do not spray if wind speed is more than 8 km/h (5 mph) or if air temperature is above 30°C (86°F). Consult manufacturer's instructions --ultra-low volume spraying may have different requirements.

14.60.6 Using compressed air sprayers

- Check hoses and connections for leaks.
- Ensure that the material the strap is made from does not absorb chemicals.
- Secure sprayer lid before lifting.
- Place the unit on a waist-high surface before slipping shoulder straps on or off.
- Walk upright to avoid any leakage through filling caps or air-bleed holes.
- Check clothing periodically, especially the back of pants, for pesticide deposit.
- Do not walk backwards while carrying compressed air sprayer.
- Pesticides should be stored in a suitable chemical storage area, which ensures:
 - reduced risk of physical damage
 - prevention of rapid spread of fire or smoke or liquid or molten substances
- Prevent incompatible chemicals being mixed e.g. by spillage, damage to packaging or by wetting during firefighting.

14.61 Flammable Substances

Hazard:	Fumes, vapours, mist, liquid chemical handling, fire.
Level of Risk:	Medium- High
Controls:	See details outlined below

- Refer to the Safety Data Sheet before use.
- So far as is reasonably practicable only hold minimum quantities of flammable liquids required for immediate use. Large quantities of flammable substances must be stored externally in a well-ventilated fuel store.
- Seal containers immediately after use.
- Keep flammable liquids away from open flame or hot surfaces.
- Where possible, work involving the use and release of highly flammable vapours should be carried out in a fume cupboard.
- Recognise flammable liquids by labelling clearly.
- Change clothing that has been in contact with flammable liquid.

14.62 Petrol

Hazard:	Fumes, vapours, mist, liquid chemical handling, fire.
Level of Risk:	Medium- High
Controls:	See details outlined below

14.62.1 Storage of Petrol

- Petroleum stores containing in excess of 60 gallons (273 Litres) of petrol must be licensed (note the Dangerous Substances Act, 1972 and Dangerous Substances Regulations, 1979).
- Petrol must be stored in a suitable leak proof container of adequate strength and construction. The container must be securely closed by means of a suitable stopper preventing leakage.
- Containers must not be filled more than 95% of their capacity.
- Rubber seals/gaskets must be checked regularly and replaced if partially perished.
- Petrol must be stored away from buildings unless all means of separation (including walls, ceiling and doors etc.) are a minimum of one-hour fire resistant. The maximum quantity that may be stored in a building adjoining another is 20 litres not exceeding 10 litres in any one container.
- Storage must have a direct entrance to the open air and adequate ventilation. Ventilation must be at the bottom of the storage area (petrol is denser than air) but it is preferable to have top & bottom ventilation to increase the flow of air.
- Storage of petrol exceeding 20 litres must be detached from the main building. It must be at least 6m from any other storage place containing flammable substances, other buildings, (frequented by persons) timber stack or from any public place.
- Provision must be made in the storage area for the retention of petrol in the event of a leak.
- A suitable fire extinguisher to extinguish burning petrol must be kept in the store or conveniently adjacent.
- All petrol containers must be marked with the words "Petroleum –Spirit, Highly Inflammable" Do not transfer petrol into other containers unless they are clearly labelled.
- No repairs on large fuel tanks may be carried out unless the vessel is thoroughly cleaned and purged. IFI employees should not undertake hot work e.g. welding, on containers.
- A person should not use or expose petrol in the presence of fire or artificial light, which would be liable to ignite petrol vapour. Ex rated lighting is necessary where high levels of petrol are stored. According to the Health & Safety Authority, 60 gallons is below the level at which you must have this lighting.
- Petrol may not be disposed of in drains, sewers or watercourses. Waste petrol must be disposed of through appropriate channels e.g. chemical disposal companies, waste management companies or the local authority facilities.

14.62.2 Transportation of Petrol

- Petrol may be transported in limited quantities in vehicles. The maximum that may be carried is 2 x 10litres.
- Petrol containers must be securely closed by means of a suitable stopper so as not to allow any leakage or evaporation.
- A danger symbol (covering not less than one-tenth of the surface area of label and not less than one square centimetre in extent) comprising a black flame on an orange-yellow background and containing the following words, with the appropriate number of litres included black letters-

"PETROLEUM-SPIRIT Highly Inflammable Capacity 10 Litres" and at least include the following words:

"Keep away from heat",
"Keep away from sources of ignition or smoking",
"Keep container tightly closed".

- Containers should never be filled beyond 95% capacity.
- Petrol being transported should be secured in the trailer/boat.
- Smoking is prohibited near petrol which is being transported.
- All persons should wash any petrol splashes, which land on their body or clothing immediately. Personal Protective equipment should be checked if it receives a splash.
- Petrol should not be used on skin or clothing to remove other substances.

14.63 Diesel

Hazard:	Fumes, vapours, mist, liquid chemical handling, fire.
Level of Risk:	Medium
Controls:	See details outlined below

- Diesel must be stored in approved containers with a secure means of closing.
- Do not fill container beyond 95% of its capacity.
- A maximum of 5 litres of Diesel may be transported without provision of ADR regulations applying.
- Ensure containers are closed when in storage.
- Store diesel away from combustible materials such as nets and ropes.
- Use a funnel when transferring from one container to another.
- Display “No smoking, naked flames or sources of ignition” signs at entrance to store.
- Wipe up spillages immediately.

14.63.1 Diesel Tanks

- Diesel tanks must be bunded to prevent leakage and pollution.
- Install shut off valve at bund outlet to drain rain water periodically.
- Handrails, non-slip catwalks and non-slip stepladders should be provided as appropriate to ensure safe access and egress.

14.64 LPG Cylinders & Gas Cylinders

Hazard:	Fumes, vapours, mist, liquid chemical handling, fire.
Level of Risk:	Low
Controls:	See details outlined below

14.64.1 For all installations

Whether the cylinders are fixed in position or not, there are a number of precautions to take. You should:

- Keep rubbish and anything combustible well away from the cylinders, and keep weeds and grass in the vicinity cut down. Don't use a chlorate-based weed killer, as it can be a fire hazard.
- Not allow any electrical equipment, vehicles, bonfires, barbecues or other sources of ignition near the cylinders.
- Not smoke when changing cylinders.
- Keep people not involved with the installation well away from it.
- Keep vehicles well away from the installation.
- Ensure that the pipe work or flexible hose from the cylinders to the point of use is protected against accidental damage, and is properly supported.
- For underground piping, make sure you know the route it takes, and avoid putting anything in the ground which may damage the pipe work.
- Report any equipment failure or damage to your supplier without delay, and ask LPG supplier for advice about what you should do.

14.64.2 If a fire or leak occurs

In the event of a fire or a leak, take the following action:

- Dial 999 or 112 to call the fire brigade. Tell them LPG cylinders are on the premises.
- Tell everybody to leave the premises and go to a safe place well away from the installation. If you have a fire alarm, activate it.
- If it is safe to do so, turn off all the LPG appliances.
- If an LPG appliance is leaking or is not working properly, ask a competent gas fitter to check it.
- If the leak is indoors, open all the doors and windows.
- Do not switch any lights or electrical equipment on or off, as this may cause a spark.
- A leak in the pipe work can be stopped by closing the valve on the cylinder or on the piping manifold, but only do this if you can approach the cylinders safely.

14.64.3 Fire fighting

- Don't try to put out a fire involving LPG - leave it to the fire brigade. It is safer to evacuate everyone from the area. An overheated cylinder can explode.
- Always call the fire brigade first. If the fire is near the cylinders or pipe work, or if you can't put it out quickly - leave it.

14.64.4 Storage

- Store in a well ventilated area away from direct sunlight
- Restrict quantities stored in buildings. NEVER store in basements.
- Empty cylinders still contain vapours and should be regarded as hazardous as full cylinders.
- Do not site storage area near underground drains.
- Where storage in the open is not practicable, the maximum storage quantities shall be:
 - 12kg (1 cylinder) in building with residential accommodation.
 - 70kg (10 cylinders) in building without residential accommodation.
 - 50kg for demonstration area of shop or office.
- Any gas required in excess of 50kg should be piped into the building from outside. Store cylinders well away from windows doors and drains.
- Store cylinders well away from windows doors and drains.
- Do not store combustible materials near cylinders.
- Do not allow the temperature of the cylinder to exceed 40°C.
- Within the storage area oxygen cylinders should be stored well away from fuel gases e.g. dissolved acetylene, LPG, hydrogen etc.
- Full cylinders should be stored separately from the empties and empty oxygen cylinders should be segregated from empty fuel gas cylinders.
- Other products should not be stored in the gas storage area, particularly oil or corrosive liquids.
- Store all cylinders upright so that they are secured to prevent them falling using a safety chain.
- Acetylene and propane must never be stacked horizontally in storage or in use.
- Your storage arrangement should ensure adequate turnaround of stock.
- Don't let anyone work on the installation unless they are suitably trained and competent to do the work.
- Contact your supplier for further information.

14.64.5 Cylinder Hosing

- Only use approved flexible tubing, nozzles and connections. Propane attacks natural rubber. Special tubing is required.
- Flexible tubing must be clipped to the approved nozzle by a jubilee or similar type clip.
- Examine all hoses frequently. Replace damaged hoses.
- Limit the length of low pressure hose to 2.4m (8ft).

- Do not use tools on cylinder valves; they are designed for hand operation only.
- Do not open the valve on the cylinder connected to an appliance before checking that the taps of the appliances are all closed.
- When lighting up a Bunsen, the match should always be lit before the tap is turned on.

14.64.6 Oxygen Cylinders

- Ensure cylinders are maintained by the supplier regularly.
- If cylinders have to be carried in closed vans or cars, ensure good ventilation at all times. Transport vehicles must be suitably labeled.
- Cylinders must be secured upright so that they cannot move in transit and do not project beyond the side or end of the vehicle.
- Do not carry oxygen cylinders in the same compartment as toxic gas cylinders.
- Never transport cylinders with equipment attached to the valves.
- Unless the cylinder is properly secured and the valve is turned off.
- Never smoke while carrying cylinders.
- Unload the cylinders as soon as possible and move them to a secure well ventilated storage area. Do not use cylinders in a closed vehicle.
- If at any time you suspect a cylinder is leaking, park the vehicle in a safe place, investigate the fault and, if necessary, ring the supplier for advice.
- If you are involved in a road accident and the emergency services are called, advise them that the cylinders are being carried and the gases they contain.
- Carry the relevant gas Material Safety and Data sheet in the vehicle when carrying cylinders.
- Ensure at all times that proper moving and handling techniques are employed.

14.65 Asbestos

Hazard:	Carcinogenic dust fibres
Level of Risk:	High (where ACMs are identified as respirable)
Controls:	See details outlined below

- If you suspect asbestos exposure at your workplace contact the Health & Safety Executive immediately.
- The risk associated with exposure to asbestos relates to the possibility that the fibres within the asbestos containing material (ACM) can become released into the air and are then inhaled. Breathing in air containing asbestos fibres can lead to asbestos-related diseases (mainly cancers of the chest and lungs). These diseases will not occur immediately and can take from 15 – 60 years to develop.
- Where materials are suspected of containing asbestos a third party contractor shall be employed to make a determination and conduct a risk assessment if required.
- Where asbestos is confirmed in the workplace and poses a risk to employees it shall be safely removed.
- Where required staff health surveillance shall be conducted.
- As long as asbestos is in good condition and there is no disturbance or damage to the ACM, it will not pose a risk to health as fibres will not be released.
- Based on a written risk assessment, where the planned asbestos related work activity will expose or could expose workers to a concentration of asbestos fibres in air in excess of the exposure limit value (i.e. 0.1 fibres / cm³), IFI must submit a written notification to the Health and Safety Authority, 14 days before commencing any work. The site specific plan of work (also known as a method statement) for the proposed work must be submitted along with the notification.
- The HSA Practical Guidelines on ACM Management and Abatement are followed as required.

14.66 Liquid Nitrogen

Hazard:	Asphyxiant, extreme cold temperature vapours/liquid
Level of Risk:	High
Controls:	See details outlined below

14.66.1 Properties and Hazards of Nitrogen

14.66.1.1 Properties

- Nitrogen is colourless, odourless and tasteless. It constitutes around 78% of normal, atmospheric air. It is classified as non-toxic and does not support life or combustion.

14.66.1.2 Asphyxiation

- Nitrogen can produce local oxygen-deficient atmospheres, which will cause asphyxia if breathed. This is especially true in confined spaces and areas of little air movement. In this case risk assessment in accordance with the confined spaces regulations will be required.
- Entry into atmospheres with oxygen content of less than 19.5% is not recommended.
- Asphyxia due to oxygen deficiency is often rapid with no prior warning to the victim. Attempts to rescue persons from oxygen deficient atmospheres should only be made by trained persons using breathing apparatus.

14.66.1.3 Cold (cryogenic) burns

- Severe damage to skin may be caused by prolonged contact with liquid or cold gaseous nitrogen. For this reason protective clothing should always be worn.

14.66.1.4 Effect of cold on lungs.

- While transient and short exposure produces discomfort in breathing, prolonged inhalation of vapour or cold gas can produce serious effects on the lungs.

14.66.2 Labelling

- Liquid nitrogen dewars shall be clearly and adequately labelled. A typical label is shown below. A label includes:

Basic safety information
 Transport labelling information
 Gas supplier contacts

- As a minimum the label shall include the statutory labelling requirements to meet the Carriage of Dangerous Goods (Classification, Packaging and Labelling) and basic safety information for users.

The label should include:

Product Designation, i.e. NITROGEN, REFRIDGERATED LIQUID

Product UN number, UN 1977

Product danger sign, i.e. a green diamond with a cylinder symbol and the number two at the bottom.

Danger signs shall have a side length of at least 100mm unless the size and/or shape of the dewar make this impractical. In this it shall be as large as possible.

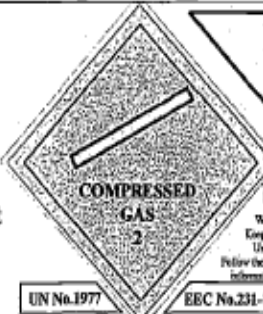
<h1>NITROGEN</h1>	
<p>Gas Supplier</p> <p>Gas Supplier Address</p> <p>Gas supplier contact telephone number</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Nitrogen - N₂ (refrigerated liquid)</p> </div> <p>Asphyxiant in high concentrations. Heavier than air. No odour Do not breathe the gas</p> <p>Extremely cold - may cause frost bite.</p> <p>Wear suitable gloves and eye / face protection. Keep and use container in a well ventilated place. Use only equipment suitable for chlorine gas. Follow the supplier's operating instructions. For further safety information see "Industrial Gases Data and Safety Sheet"</p>
	<p>DEWAR</p> <p>Nominal Capacity</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Litres</p> </div>
<p>UN No.1977 EEC No.231-783-9</p>	
<p>IMPORTANT INFORMATION</p> <p>WARNING</p> <ul style="list-style-type: none"> This vessel contains a cryogenic liquid at -196 deg.C Liquid Nitrogen vaporizes rapidly to nearly 683 times its liquid volume. Spill Nitrogen can result in cold "burns" and a reduction of the Oxygen content of the atmosphere nearby. Only authorized personnel should handle this vessel and its contents. <p>CONTACT 'Gas Company' AT ONCE IF YOU THINK YOU HAVE A PROBLEM</p>	
<p>DO</p> <ul style="list-style-type: none"> Keep the vessel upright and clear from obstructions. Use in a safe area to prevent damage. Ensure adequate ventilation at all times. When a liquid withdrawal device is fitted, check connections for leaks. Use only the manufacturer's recommended methods to move cylinders. When Personnel Personnel Equipment, remove a liquid withdrawal device in fixed, ensure all valves are closed securely when the vessel is not in use. Seek immediate medical assistance in the event of direct contact with cold liquid. 	<p>DO NOT</p> <ul style="list-style-type: none"> Stomper with safety relief devices. Any other any repairs or modifications to any part of the vessel. Use liquid withdrawal devices to vessels which are not marked as suitable for such devices. Expend withdrawal devices above 0.5 bar. Allow oil or grease to come into contact with the vessel or withdrawal device. Insert direct flame or heating devices near the vessel. Transfer liquid into vessels other than those constructed for the purpose. Enter vapor clouds. Use tools.
<p>The use of this vessel and the critical parts of its operation and maintenance should be fully understood by the user.</p> <p>Refer to the manufacturers literature for liquid withdrawal device valves and safety valves information.</p>	
<p>MAINTENANCE -</p> <p>REFILL -</p>	<p>Telephone this number to arrange emergency maintenance. Charges will be made for items which are not the responsibility of 'gas company'.</p> <p>Telephone this number to arrange additional deliveries with 'gas company' outside your pre-arranged schedule supply.</p>
Form No.	

Figure 14.6 Correct Label information for Liquid Nitrogen

14.66.3 Handling

- Keep the vessel upright at all times, except when pouring liquid from dewars specifically designed for that purpose.
- Handle with care at all times as rough handling can cause serious damage to the dewar and spillage. Do not 'walk', roll or drag dewars. Always protect the vessel from severe jolting and impact. Do not

allow the dewar to come into contact with chemicals or other substances which could promote corrosion.

- Be careful to avoid spillage during handling. This could lead to cold burns or oxygen depletion. Even small spillages will damage labelling.
- Do not attempt to lift or move large, heavy vessels without assistance. Trolleys and tipping trolleys should be considered and are recommended for heavy dewars.

14.66.3.1 Protective clothing

- Eye protection: Full face visor provides effective personal protection.
- Hand Protection: Non-absorbent, insulated gloves, made from a suitable material such as leather. The gloves should be loose fit for easy removal.
- Sleeves should cover the ends of the gloves. Gauntlet gloves are not recommended because liquid can drip into them.
- Protective shoes: Safety shoes with reinforced toe protection are recommended.
- Body Protection: Protective cover all clothing should be worn. They should be made preferably without open pockets or turn ups where liquid could collect. Trousers should be worn outside boots for the same reason. Where dewars are being carried over uneven ground or on stairways at chest height, the user should consider additional splash protection. A splash resistant apron may be appropriate.

14.66.3.2 Filling Equipment and location

- In all cases the dewar fill location shall be suitably ventilated to prevent oxygen depletion; ideally this will be a covered external location.
- The supply vessel shall be fitted with appropriate decanting equipment. This shall include a device for venting excess gas before it reaches the dewar.

14.66.3.3 Fill Procedure

- Dewar filling shall be carried out by properly trained personnel wearing appropriate protective clothing. The filling procedure shall include the essential elements listed below.

14.66.3.4 Pre-fill checks

- Check that the supply vessel is in an appropriate location and at the correct operating pressure. If the pressure is too high ensure that someone trained to do so vents the tank.
- Check that the dewar is labelled for liquid nitrogen service. Do not fill a dewar which is labelled for another substance.

- Check that the filling equipment is clean and free from damage. Do not attempt to use blocked or damaged filling equipment.
- Check the dewar is in good condition. Ensure that there is no neck damage or twisting. Ensure that the insulating bung under the protective cap has not detached. If it has, fit a new cap before filling. If the bung has fallen into the dewar then it must be removed. Do not fill a dewar which is damaged or has the bung inside.
- Do not fill the dewar if
 - there is water inside,
 - there is ice inside
 - there is excessive frosting around the neck

14.66.3.5 Filling

- Staff must be trained in procedures to safely fill dewars by the chemical supplier. Any safety procedures directed by the supplier must be strictly followed.
- The procedures below are taken from the British Compressed Gas Association (BCGA) code of practice.
- Purge the hose to clear any excess atmospheric moisture or dust. This can be done by securing the hose and cracking the decant valve slightly for a short period. Close the valve as soon as frosting appears.
- Insert the fill hose into the dewar and ensure it is secure.
- Initiate the fill slowly cracking open the fill-valve. If the dewar has warmed the liquid will boil and turn to gas immediately on contact.
- When the dewar has cooled the fill –valve can be opened to establish a steady flow of liquid. If liquid is spitting back out of dewar then flow should be reduced.
- For dewars with neck tubes, stop the fill when the liquid reaches the bottom of the neck. The “sound” of the fill will change, indicating that it has happened. Do not fill past the bottom of the neck.
- For dewars that do not have neck tubes, stop the fill when the liquid reaches the required level, which shall be a level below that which the insulating bung will reach when placed onto the dewar after filling.
Never overfill a dewar.
- When it is full, replace the protective cap. If it rattles, this is evidence that the dewar is over filled and liquid is boiling at a greater rate than is normal. Leave the dewar in the open air until there is no excessive boiling.
- If fitting a liquid withdrawal device, fit it immediately after the fill, ensuring that the dewar has not been overfilled. (Rapid gas boiling should indicate overfilling.) Check the pressure indicator on the device to ensure the pressure rise has stabilised at 0.1 – 0.2 barg (2-3psig). If the pressure rise rising towards 0.5 barg, open the vent-valve on the device and reduce the pressure. Check the pressure indicator again and repeat the venting cycle as many times as is necessary to obtain a steady pressure reading. Inability to achieve a steady pressure reading is an indication of loss of vacuum from the

insulating jacket. Test that the liquid line is clear of ice blockage by operating the liquid valve momentarily, allowing liquid to issue out.

- Check that the labelling has not been damaged by liquid spills during the fill. Replace as necessary.

14.66.4 Use

14.66.4.1 Outdoor use

- When using dewars outdoors there is an increased risk of ice plugs forming in the neck due to condensation of atmospheric moisture or rain freezing on the neck. It is essential that, except when pouring or handling the storage racks, the cap is kept on the dewar. It is also essential that the cap be in good condition with the insulating bung in place. If possible the dewar should be sited in a sheltered but well ventilated location, e.g. under a canopy.

14.66.4.2 Ice Plugs

- Always wear protective clothing when handling dewars. If ice blocks form they may be ejected at high velocity due to pressure build up. This can result in serious injury. In the worst case, ice plugs can build up sufficient pressure in the dewar to cause catastrophic failure of the dewar, which could lead to serious injuries, even fatalities.

In order to prevent ice plugs forming:

Always ensure that the dewar is fully emptied after use.

Always fit protective caps and ensure the caps are in good condition.

14.66.4.3 Ventilation

- The paragraphs below deal with the general ventilation of rooms containing nitrogen dewars. However, cold nitrogen gas is heavier than air and will accumulate at a low level. Users should therefore take extra precautions in basement rooms, rooms with ventilation at high level and rooms with pits, ducts or trenches in the floor where the nitrogen can be trapped. Consideration shall be given to the use of oxygen monitors where ventilation is poor. Where possible, the use of such rooms should be avoided.
- A room shall be sufficiently ventilated for the two, normal conditions not to cause a reduction in oxygen concentration below 19.5%:

the normal evaporation of all dewars and liquid nitrogen containers within the room

the filling losses from filling the largest dewar from a warm condition.

- Additionally, the complete spillage of the contents of the largest dewars shall not cause the oxygen concentration to fall below 18%.

14.66.4.4 Storage of full or part-full dewars

- Full or part full dewars should be stored in designated areas that meet the same criteria as dewars in use. There shall be adequate ventilation; dewars should be stored in a dry area, sheltered from the rain. The caps shall always be fitted in storage. dewars shall be securely stored to prevent access by unauthorised personnel.
- If storage rooms have forced ventilation an alarm to indicate its failure is recommended. If storage rooms have reduced ventilation when occupied then an alarm to indicate oxygen deficiency is recommended. Alarms should be situated outside the room so that operators are aware of the hazard before entering the room.

14.66.4.5 Storage of Empty Dewars

- Always ensure that a dewar is completely empty before putting it into storage. Dewars shall be emptied in a safe, well-ventilated area. If possible allow the dewar to warm to ambient temperature. Always store the dewar with the dust cap in place. Store dewars in dry areas.
- Handle empty dewars as full. It may be that they still have some residual content.

14.66.5 Transportation of Dewars

- Dewars must always be fitted with caps to prevent the ingress of moisture, whether full or empty. Only caps designed for use with the dewar type shall be used. Caps shall not be secured down unless securing methods are integral to the manufacturer's design of the cap. Some caps may come loose during road transportation. Consideration should be given to the addition of a retaining device if the dewars are to be transported. This device should be a chain or wire which will keep the cap in place but not seal the cap as the dewar must be free to vent.
- Dewars should be checked for damage before transportation. Do not transport a full damaged dewar or a full dewar that has lost vacuum.
- Dewars must be transported separately from the driver or passengers. Flat-back vehicles, vehicles with a separating bulkhead that gas cannot leak through or trailers should be considered. Dewars shall not be transported in cars.
- Dewars shall be adequately secure during transportation to prevent spillage or mechanical damage.
- Dewars shall be checked for adequate labelling before been transported by road.
- Drivers shall be adequately trained in the handling of dewars and the properties of liquid nitrogen.

14.66.6 Spillage

- Evacuate all personnel from the area likely to be affected by the liquid and the evolved nitrogen gas.
- Pay particular attention to pits, basements, cellars and stairwells because the cold gas will collect in those areas. Try to prevent the gas flowing along the ground into such areas by closing doors.
- Take appropriate action to ensure that the ventilation system does not spread the nitrogen to other areas.
- Open exterior doors and windows to encourage evaporation of the liquid and safe dispersal of the nitrogen gas.
- Allow the liquid to evaporate naturally.
- The evolved gas will be very cold and will create clouds of condensed water vapour restricting visibility. Do not allow anyone enter this cloud.
- Do not allow anyone to enter the area until you are sure that the nitrogen gas has all dispersed and that the air is safe to breathe. If in doubt, use an oxygen monitor to check oxygen levels.

14.67 Gravel Analysis (Peat Separation)

Hazard:	Hot surfaces, dust, noise, steam
Level of Risk:	Low
Controls:	See details outlined below

- Hearing protection should be worn when carrying out gravel analysis.
- Ensure signage is visible stating that hearing protection is mandatory.
- If dusts are generated respiratory protection must be worn.

14.67.1 Ashing Furnace

- Ashing furnaces must be labelled warning of hot surfaces.
- Before using the furnace, check to make sure no items were left inside by the previous user that could pose a hazard.
- Load the furnace properly as per manufacturer's recommendations.
- Individual containers must be heat resistant.
- Make sure the furnace door is fully closed and latched.
- Wear heat resistant gloves when operating the furnace door and handling contents.
- If the door must be opened, stand behind the door and be aware of the possibility of steam been released. Be sure to wear eye/face protection.
- Allow the material to cool prior to touching it with ungloved hands.
- Never leave removed contents unattended while still hot.
- At a minimum, when removing items from the furnace, wear a protective apron and heat resistant gloves.
- NEVER put solvents, volatile or corrosive chemicals or other reactive materials in a furnace.

14.68 Disinfection Kits & Stations

Hazard:	Chemical handling, dust, vapours and liquids
Level of Risk:	Low
Controls:	See details outlined below

Disinfection kits are used by staff to treat nets and other equipment to prevent the spread of invasive species. Some disinfection stations are provided to anglers to allow them to treat their equipment before leaving a watercourse.

- Refer to the Virkon aquatic safety data sheet before use. Follow the safety measures detailed.
- Personal protective equipment including gloves, respiratory masks and safety goggles should be worn when making batches of virkon for use in disinfection kits.
- Staff should reduce the quantity of virkon powder into smaller units for use at the disinfection stations. Staff transferring virkon into smaller containers must wear the following Personal Protective Equipment. The containers must be labelled as virkon and include the hazardous symbol for an irritant. Rubber gloves must be worn. Safety glasses must be worn. Dust mask must be worn. The following mask is recommended 3M 9322+ Aura 9300+ Foldable Disposable Dust/Mist Respirators (Valved) - FFP2.
- Staff must wear gauntlet style rubber gloves. Staff must open the small container of virkon under the water to avoid generating a dust. Gloves should be available at the station.
- If angling clubs or third parties are to be involved they must be given the safety data sheet and the relevant protective equipment as outlined above. The same controls apply.
- Care must be taken when opening stations and ensure the lid is secured in the open position.
- Report faulty or unsafe disinfection stations.

Vehicles & Mobile Equipment

- 14.69 Driving for Work**
 - General Vehicle Safety**
 - Vehicle Checks**
 - Road Traffic Accidents**
 - Use of Mobile Phones**
 - Towing Trailers**
 - Pedestrians & Vehicular Movement**
- 14.70 4X4 Off Road Vehicles**
- 14.71 ATVs (Quad Bikes)**
- 14.72 Tractors**
- 14.73 Teleporter (Loadall) & Platforms**
- 14.74 Lorries & Heavy Goods Vehicles**
- 14.75 Forklifts**
- 14.76 360° & 180° Excavators & Mini Diggers**
- 14.77 Use of HIAB Crane**

14.69 Driving for Work

Hazard:	Weather conditions, vehicle road worthiness, vehicle suitability, use of mobile phones, alcohol & substance abuse, driver fitness, driver experience and training.
Level of Risk:	Medium - High
Controls:	See details outlined below

Driving for work includes any person who drives on a road as part of their work (not including to and from work) either in:

- (a) a company vehicle; or
- (b) their own vehicle, receiving an allowance from their employer for miles driven

IFI must manage the risks that may arise when employees drive on roads for their work.

Driving for work involves a risk not only for the driver, but also for their fellow workers and members of the public, such as pedestrians and other road users.

The following must be considered before taking a journey for work:

Driver Attributes - Age, experience, training, fitness and health.

Vehicle Types - Road worthiness, vehicle suitability.

Journey Types - Long or short, speed limits, rest areas, day or night, route familiarity, time allocation.

14.69.1 General Vehicle & Driving Safety

- Seatbelts must be worn at all times.
- Drivers when using or summoned on the mobile telephone must secure a safe parking area before he/she responds and conducts a conversation with the other person involved. Never put your safety or that of other persons at risk.
- All drivers of IFI vehicles must have a valid driving licence and be physically fit to drive.
- Do not attempt to operate a vehicle or mobile equipment unless you have been trained and authorised to do so.
- Do not operate a vehicle which you know to be defective and likely to cause danger to you or others.
- Ensure that you report immediately to your supervisor any defects in any vehicle (e.g. brakes, lights, steering, tires, transmission/hydraulic leaks etc.).
- Mount and dismount using the hand and foot holds provided, and always be conscious of the ground you are stepping onto.

- All vehicles must be operated with due regard for its limitations and the conditions in which you are working. Only use the vehicle for its intended purpose.
- No vehicle should be operated on ground where a collapse could occur or the vehicle could overturn or cause danger to the driver or others.
- When operating vehicles remember to look out for overhead /underground lines and always obey safety-warning signs.
- The maximum number of persons onboard is determined by the number of seatbelts or by the number specified in the vehicle manual.
- All vehicles must carry a first aid kit.
- An appropriate fire extinguisher must be carried.
- Smoking is prohibited in all IFI vehicles.
- It is essential that when a driver becomes tired they switch with a colleague or take a short break. They should consider getting out of the vehicle and stretching and have a caffeinated drink.
- Staff on shift work must ensure that they are suitably rested before starting work.

14.69.2 Vehicle Checks

- Drivers should carry out a visual check on the vehicle daily.
- Any defects should be reported immediately to a member of Logistics staff or line manager and rectified as soon as possible.
- Vehicles must be checked after any impact/accident.
- Vehicles shall not be overloaded i.e. more than their capacity. This information is contained in the vehicle manual.
- A vehicle safety assessment checklist is available at www.hsa.ie

14.69.3 Road Traffic Accidents

- Ensure that anyone who is injured receives medical attention.
- Contact the Gardai.
- Contact the emergency services if required.
- Take note of the registration number of the other vehicles involved and the names of their owners and drivers.
- Take note of the other persons insurance details (you can usually get this information from the windscreen disc on the car).
- Ask for the name and address of anyone who is involved, including witnesses.
- Don't admit responsibility for the accident or sign any statement.
- Don't enter into an argument.
- Do not move your vehicle unless it is a hazard to other traffic users.

14.69.3.1 Complying with the law

If you are involved in an accident in which a person or animal is injured or a vehicle or property is damaged you must do the following:

- Stop!
- Give your name, address, the registration number of your vehicle, and your insurance details to anybody who requires the information.

- If anybody other than you is injured, you must show your insurance certificate to the local Gardai within 24 hours.
- You must also show it to anyone who asks if you have damaged their vehicle or property.
- If you are involved in an accident, you should tell the insurance company as soon as possible and send all correspondence relating to the accident.
- It's a good idea to carry a disposable camera in the glove box of your car. Then, if you are involved in an accident you can take photos of the scene, showing the positions of the vehicle and any damage done. This may also be done using a mobile phone. It is much easier than trying to remember or explain circumstances later. As an alternative make a sketch plan of the accident scene showing the positions of the vehicles, road markings etc.

14.69.4 Use of mobile phones

Hand held use of mobile phones whilst driving a mechanically propelled vehicle is prohibited under the Road Traffic Act 2006. In relation to a mobile phone, "hold" means holding the phone by hand or supporting or cradling it with another part of the body. The use of hands-free, blue tooth and earpiece devices are acceptable.

14.69.5 Towing Trailers:

- Traffic (Licensing of Drivers) regulations 1999 must be complied with. Do not attempt to operate a vehicle with trailer unless you are have the relevant licence and are authorised to do so.
- All trailers must follow these regulations, but there are specific rules for the **driving licence you must have** and the **brakes your trailer must have** depending on trailer type. Trailers are classified by their weight when they are carrying a load, which is called the Design Gross Vehicle Weight (DGVW) or maximum mass.

14.69.5.1 Trailer categories:

- **O1 Trailers** = DGVW less than 0.75 tonnes. This includes small car trailers.
- **O2 Trailers** = DGVW between 0.75 and 3.5 tonnes. This includes larger trailers, horseboxes and most caravans.
- **O3 Trailers** = DGVW between 3.5 and 10 tonnes.
- **O4 Trailers** = DGVW over 10 tonnes. This includes heavy trailers and articulated or semi-trailers.

Note that in all instances the manufacturer's rated towing capacity of your towing vehicle (for trailers both with/without brakes) must not be exceeded. Always check the vehicle manual.

14.69.5.2 Driving Licence requirements

- The licence required will depend on what type of towing vehicle you are driving, i.e., whether you are using a car, a truck or a bus.
- If you have a category B licence, you can:

Drive vehicles having a MAM **not exceeding 3,500kg**, having passenger accommodation for not more than 8 persons in addition to the driver and tow a trailer where:

- the MAM of the trailer is not greater than 750kg (i.e. an O1 trailer)
- the MAM of the trailer is greater than 750kg (i.e. an O2 trailer) provided that the MAM of the trailer does not exceed the un-laden weight of the drawing vehicle and the **combined** MAM of the towing vehicle and trailer does not exceed 3,500 kg
- With an EB licence, a person can:

Tow an O2 trailer, with a vehicle with a MAM of up to 3,500kg and having passenger accommodation for not more than 8 passengers in addition to the driver, provided that the GVW of the trailer (**i.e. the weight of the trailer & its load**) does not exceed the manufacturer's rated towing capacity for the towing vehicle.

 - Note that since 19th January 2013 the Driver Licensing Regulations have been clarified (to align with vehicle type approval requirements) to stipulate that the heaviest trailer that a person can tow with a BE licence is one with a MAM not exceeding 3,500kg. This is obviously subject to the vehicle actually being rated by the manufacturer to tow this weight.
 - Therefore the maximum combination weight for a BE licence holder **cannot in any case exceed 7,000kg**.
- For towing O3 and O4 trailers The licence required will depend on what type of vehicle is being used and the trailer size.

14.69.5.3 Brake requirements

- For O1 Trailers (DGVW not exceeding 0.75 tonnes) O1 trailers with a single axle are not obliged to have brakes provided that their DGVW is less than half the DGVW of the towing vehicle. O1 trailers that have a DGVW greater than half of the DGVW weight of the towing vehicle or that have two or more axles must have brakes fitted.
- For O2 Trailers (DGVW between 0.75 & 3.5 tonnes) All O2 trailers must also have brakes fitted. The braking system must include a parking brake.
If the O2 trailer does not have an automatic breakaway device that activates its brakes should it become detached from the vehicle, then it must be fitted with a secondary coupling consisting of a chain or wire rope.
- O3 & O4 trailers must be licenced for use on the public road, plated and undergo an annual roadworthiness test, fitted with brakes, a secondary or emergency brake and a parking brake, all of which are checked during the roadworthiness test.

14.69.5.4 Reflectors and lighting

- Vehicle and trailer combinations of 12.19m (40') require two triangular reflectors at the rear.
- Side markings are required when the vehicle and trailer exceed 11m in overall length.
- Where a load projects more than one metre beyond the rearmost part of a vehicle or trailer, a warning device shall be carried at the rear of the load during the day time. In this case a warning device means a red flag or cloth at least 300 millimetres square, or a rigid device having a surface of a similar area coloured red or in two colours, one of which is red and the other is lighter than red.
- At night time the Lighting Regulations, stipulate that where a vehicle is used in a public place during lighting-up hours (i.e. in the period from half-hour after sunset on any day and expiring one half-hour before sunrise on the next day) while carrying a load projecting more than a metre to the rear of its rear lamps, such vehicle shall be equipped with a rear projecting load lamp. The load must not projects more than 3 feet and 6 inches beyond the lamp to the rear.
- A projecting load reflector is also required which is rectangular in shape, each side of which shall be not less than 12 inches in length and shall be either red or red and a lighter colour, provided that the portion of the surface having the lighter colour shall not be reflectorised.
- If the load that you are carrying projects more than 16 inches to the side of your trailer; make sure you mark it with a light showing a white light to the front and a red light to the rear if travelling when it is dark.

14.69.5.5 General Trailer Safety

- Do not attempt to tow if you do not have adequate unobstructed vision in both car door / wing mirrors. Fit extension mirrors if necessary.
- All trailers must be visually inspected prior to use and pre use checks completed where appropriate.
- Any defects must be reported to your line manager in a timely manner. if you can rectify a minor defect immediately do so.
- Trailers must be maintained and serviced as per manufacturer's instructions.
- All trailers must be fitted with lights, indicators and brake lights. A trailer board may be used if adequately visible and secured. Hitch balls should be visually inspected periodically.
- The safe working load of the trailer must not be exceeded.
- The maximum legal towing speed is 80km per hour however it may be safer to travel at a lower speed depending on the nature of the load.
- Exercise extreme caution when towing particularly with adverse weather or poor road conditions.
- Where possible request assistance when reversing with trailers.
- Avoid reversing on acute slopes or swampy ground.
- Use jockey wheels where supplied to adjust draw bar height.
- Trailers with heavy weights should have hand holds, these must be used.
- Do not attempt to push laden trailers alone, obtain assistance and use team lifting techniques.
- Avoid placing drawbars on stones, blocks or timber to accommodate hitching.
- Report trailers with defective tail lights and missing reflective warning strips.
- Report defective tailgate and side gates.
- Report missing locking pins.
- Do not ride in moving trailers.
- Keep feet and hands clear when hitching tow bar.
- Ensure parking brake is applied when parked.
- Ensure all equipment in the trailer is securely lashed down.
- Chocks should be used on trailers where applicable.
- Ensure bearings are regularly greased.
- All RIB trailers must be serviced annually and bearings and brake cable replaced.

14.69.6 Pedestrians and Vehicular Movement

- Where pedestrian routes are provided they must be used.
- No running is permitted.
- Parking is not permitted in areas reserved for deliveries.
- Due care must be taken when parking, reversing, loading vehicles & trailers.
- When reversing with a load one employee should direct the driver and should keep pedestrians and onlookers at a safe distance. If necessary use a third person to assist.
- Speed limits must be adhered to.

14.70 4X4 Off Road Vehicles

Hazard:	Weather conditions, vehicle road worthiness, vehicle suitability, use of mobile phones, alcohol & substance abuse, driver fitness, driver experience and training. Off road terrain
Level of Risk:	Medium
Controls:	See details outlined below

- Read and follow the manufactures operating manual for safe operation and maintenance.
- Drivers using four wheel drive vehicles must be initiated in to its use.
- Be aware that the capacity of vehicles driving off road is seriously reduced.
- So far as is reasonably practicable staff operating vehicles off road must be competently trained to do so.
- When driving in unfamiliar terrain it is important to investigate uneven ground on foot.
- Where practicable get assistance if in any doubt about wheel placement or ground clearance.
- 4WD/centre differential lock is normally engaged whenever you leave a hard road – consult the vehicle operator's manual for detailed information.

Speed – As slow as possible, as fast as necessary.

- Generally the higher gear the better – except when descending.
- Hold the steering wheel with both hands and your thumbs outside – or you may injure them (even with power steering). Do not cross your hands.
- Once committed either descending or ascending a hill – Do not change gear.
- Use the engine to brake the vehicle.
- Know the gears for your vehicle – use the correct one and do not use the clutch as a means of slowing too high a gear.
- Except for synchromesh transfer gearboxes, stop for all transfer box changes unless you have learned to do it on the move without any clunks.
- Remember you have twice the traction of a two wheel drive to get you going – you do not have twice the braking.

14.70.1 Driving on hilly terrain

Ascending

- When ascending a hill, approach as square as possible.
- Climb in the highest gear possible.
- Lose momentum on the crest – then stop.

Descending

- Approach as square as possible.
- Avoid braking or clutching – let the engine do the braking.
- On a long slope you may need to accelerate if the wheels slide.
- Do not turn while descending.

The aborted climb (failed climb)

The aborted climb is normally due to either:
 Stalled engine due to lack of power or lack of traction due to wheel slip (or it is obvious the engine will stall soon). If you find yourself in this position – Don't Panic.

Procedure for stalled engine (preferred action for all situations):

- Apply foot brakes and keep them on (you now have time to think and plan)
- Use clutch
- Select reverse gear (low range)
- Release clutch
- Look and check reverse route is clear
- Check direction of front wheels
- Release brakes carefully and check movement – be aware of possible 'bump' starting
- Feet off all pedals
- Turn key to start engine (be aware of initial engine surge with fuel injected engines)
- Keep feet off all pedals
- Hold steering (at top usually) to maintain straight line and allow machine to reverse downhill (be aware of reverse castor effect on steering)
- Be aware of probable need to use throttle to maintain traction/braking.

Procedure for second case (wheel slip):

- Ease off the throttle
- Apply foot brake and clutch together, select reverse gear (low range) as quickly as possible as vehicle halts
- Release clutch and brakes
- Feet off all pedals
- Look and check reverse route is clear and direction of front wheels
- Hold steering wheel (at top usually) to maintain straight line
- Allow machine to reverse downhill
- Keep feet off all pedals
- Be prepared to use throttle to maintain traction/braking

Try again using a different approach, a different gear or more power.

14.70.2 Ruts and ditches, small obstacles

Vehicles without axle differential locks or Limited Slip Differentials (L.S.D.s)

- One wheel only to enter the rut or ditch. The other three must provide the traction to succeed in the manoeuvre.
- Normally first low (depending upon conditions).
- Watch the front bumper on opposite side of the rut.
- Steady throttle to prevent wheel spin.
- Anticipate vehicle sliding sideward and be ready to counter.

Note: Inspect the ditch first: if it is too large you may end up with two wheels in at once (e.g. front nearside and rear offside). When diagonally opposite wheels lift off the ground, traction is normally lost – this is called cross-axle and you will become stuck.

Vehicles with axle differential locks and/or L.S.D.s

- Engage all differential locks in the correct order (refer to vehicle manual).
- Proceed as above, but cross axle situations should not be a problem.
- Obstacles such as tree stumps and rocks are often best approached by running a pair of wheels (e.g. Near Side N/S front and N/S back) directly over them rather than straddling them to avoid contact with the underside of the vehicle.

14.66.3 Ridges and larger ditches

Providing no parts of the vehicle contact the ground, the situation can be treated as a small hill.

- Always approach at right angles (square on) so that both front wheels and then both rear wheels cross together to ensure maximum traction/braking.
- If any part of the vehicle will contact the ground, treat these obstacles as smaller obstacles (previous section) and be aware of cross-axle situations, (where applicable) unless the vehicle is fitted with axle differential locks, LSDs, etc.

14.70.4 Rough Tracks

- Select four wheel drive and differential lock. This is because if there is excessive suspension movement it may induce wheel spin.
- Ensure passengers are told to brace themselves when crossing rough ground.
- Use low range gear if necessary to preserve vehicle, comfort and load.
- It is often best to approach rocks etc. by running a pair of wheels (front and back) directly over them rather than straddling them, thus avoiding contact with the underside of the vehicle.

14.70.5 Rutted Tracks

- If possible, straddle ruts to maintain ground clearance. If it is not possible/practicable then walk route and clear debris.
- Avoid gear changing. Maintain a steady speed.
- Keep steering to a minimum – allow the vehicle a little freedom and permit some self-centring but keep a visual check. There is a tendency to over steer which should be avoided or the vehicle could be thrown out of the ruts once traction is gained.
- You need to be aware of wheel alignment (the vehicle will go straight even on full lock if the ruts are deep or slippery – until it climbs out). To check alignment – either look out of the window and check or full left lock, full right lock counting the number of turns taken, back half the number (the centre point of the two) and the wheels should be correctly aligned.
- Remember the importance of maintaining ground clearance.

14.70.6 V shaped gullies

- Execute extreme caution and very slow speed; it is very easy to tip the vehicle on its side.
- Drive so as to keep vehicle level at all costs. Do not steer up or down slope and correct the vehicle from doing so on its own.
- If necessary, cut 'steps' or wheel tracks in side of gully with a shovel to prevent wheels sliding down the slope.

14.70.7 Traversing (Driving Across a Slope)

This is a difficult manoeuvre to execute safely. If at all possible AVOID especially in the wet. If there is absolutely no choice - take your time;

- Inspect the terrain:
 - Check slope
 - Look for ruts, sheep tracks, etc.
 - Note pot holes, rocks etc.
- Remove passengers
- Check vehicle loading – position and security of load
- Proceed very slowly
- If vehicle starts to roll or become unstable, steer downhill, accelerate and get as square as possible.
- A high level of concentration is needed always consider the effects of the surface, load of vehicle, evenness of slope and weather conditions.
- These will all have an effect on the stability and performance of the vehicles.

14.70.8 Entering Water

- Prepare your vehicle
- Inspect the terrain very carefully

Note the type of water

- Stagnant – likely to have a muddy bottom; wash off to prevent ingress into working parts as soon as practicable afterwards.
- Salt – wash vehicle down as soon as possible afterwards, salt water can severely damage your vehicle.

Note flow rate

- Fast flow normally has a firm bottom (may also have rocks)
 - Slow flow will often have deep mud or silt bottom
 - Check depth of water – Note the position of vehicles air intake
 - Check the condition of the river bed.
 - Check entry and exit points carefully
-
- Enter slowly and build up speed gently.
 - Avoid excessive engine revs.
 - Never attempt a water crossing where the water depth is above the air intake height.
 - Drive at a speed to form a bow wave. This creates a depression in the water behind the wave which coincides with the engine bay and so protects air intakes and electrics. Using a low range second gear at 1500 – 2000 rpm (for most vehicles) creates a bow wave.
 - After exiting the water, dry out brakes by gently applying the footbrakes while driving a short distance. Try your brakes to check they work.
 - Some vehicles have wading plugs to be inserted before entering water (e.g. Land Rover), others may have plugs to remove and drain water after wading (e.g. Nissan Terrano II) remember to re-insert after. Always consult your vehicle manual for specific guidance before entering water.
 - Any crossing at axle depth or deeper necessitates a checking of the diff oil for water to contamination.
 - Checking your diffs for water contamination. Water is heavier than oil and will collect at the lowest point where the drain plug is located.
 - After allowing the engine to cool, loosen the drain bolt and run a small amount of the diff oil into a glass. If the glass contains water the diff oil must be drained.
 - Bar mounted electric winches may seize up if submerged. If is this is the case it is advisable to strip and grease it accordingly.

14.70.9 Sand and Mud (Soft under surface)

- Tyre pressures should be reduced (remember to keep your speed low until you have re-inflated them).
- Ensure you have a pump to re-inflate the tyres as driving on hard ground with deflated tyres may damage the sidewall of the tyres.
- Exercise great care when starting from rest as sudden power will result in wheel spin and cause the vehicle to dig into the sand.
- Steer straight and avoid sharp turns and braking.
- Select as high a gear as is practicable, check 4 WD/centre differential locks engaged. Too low a gear induces wheel spin.
- Attempt to maintain momentum and avoid wheel slip.
- When turning, make the turn as wide as possible to reduce the chance of bogging.
- Examine ground carefully.
- Choose stones, timber, etc. for extra traction.
- If stuck, check carefully and plan your reverse route to a safe point, you may only get one chance.
- If the ground was good enough to get you there – it is generally good enough to get you out – this holds true in many situations, but where possible avoid entering peat bog ground.

14.70.10 Crossing over sand dunes

- Steep sand dunes can be traversed only straight up or down.
- Driving at a slight angle, the weight transfer is to the downhill side wheels.
- If the vehicle starts to slip, the downhill wheels tend to dig in and make the angle of the dune even worse, leading to a potential rollover.
- If you are travelling straight down a steep dune and back end starts to slip sideways it is best to accelerate slightly to try and straighten the vehicle. Never use the brake, as this will cause weight transfer to the front wheels and can increase the back end movement.
- If travelling up a dune and you do not get to the top, reverse down the dune in gear, never coast down the dune and never attempt a U turn.

When you leave sandy terrain, it is important to hose down your vehicle to remove all traces of sand and salt.

Remember to re-inflate tyres if you have reduced the pressure.

14.70.11 Ice and Snow

- If possible avoid driving in severe winter weather.
- If you must drive in snowy conditions, make sure your car is prepared (a shovel, tow rope jump leads and tool kit may be needed), and that you know how to handle road conditions.
- Consult your owner's manual for tips specific to your vehicle.
- When entering snow/ice covered terrain, decrease your speed and leave yourself plenty of room to stop. You should allow at least three times more space than usual between you and the car in front of you.
- Brake gently to avoid skidding. If your wheels start to lock up, ease off the brake.
- Turn on your lights to increase your visibility to other motorists.
- Keep your lights and windshield clean.
- Use low gears to keep traction, especially on hills.
- Don't use cruise control or overdrive on icy roads.
- Be especially careful on bridges, overpasses and infrequently traveled roads, which will freeze first. Even at temperatures above freezing, if the conditions are wet, you might encounter ice in shady areas or on exposed roadways like bridges.
- Don't pass gritting trucks. The drivers have limited visibility, and you're likely to find the road in front of them worse than the road behind.
- Don't assume your vehicle can handle all conditions. Even four-wheel and front-wheel drive vehicles can encounter trouble on winter roads.

14.70.11.1 Rear wheel skidding.

- Take your foot off the accelerator.
- Steer in the direction you want the front wheels to go. If your rear wheels are sliding left, steer left. If they're sliding right, steer right.
- If your rear wheels start sliding the other way as you recover, ease the steering wheel toward that side. You might have to steer left and right a few times to get your vehicle completely under control.
- If you have standard brakes, pump them gently.
- If you have anti-lock brakes (ABS), do not pump the brakes. Apply steady pressure to the brakes. You will feel the brakes pulse — this is normal.

14.70.11.2 Front wheels skidding.

- Take your foot off the gas and shift to neutral, but don't try to steer immediately.
- As the wheels skid sideways, they will slow the vehicle and traction will return. As it does, steer in the direction you want to go. Then put the transmission in "drive" or release the clutch, and accelerate gently.

14.70.11.3 Stuck vehicles

- Do not spin your wheels. This will only dig you in deeper.
- Turn your wheels from side to side a few times to push snow out of the way.
- Use a light touch on the accelerator, to ease your car out.
- Use a shovel to clear snow away from the wheels and the underside of the car.
- Pour sand, gravel or salt in the path of the wheels, to help get traction.

14.71 ATVs (Quad Bikes)

Hazard:	Weather conditions, vehicle road worthiness, vehicle suitability, use of mobile phones, alcohol & substance abuse, driver fitness, driver experience and training, speeding, off road terrain lone working.
Level of Risk:	Medium - High
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance. Implement lone working procedure where applicable.

14.71.1 The following personal protective equipment should be worn:

- Suitable head protection must be worn, e.g. motorcycle helmet which meets BS 6658, or an ATV helmet /other head protection which meets BS EN 1384:1997.
- Eye Protection (a visor or safety glasses to EN 166), against flying insects, dusts or branches.
- Protective boots with good grip and ankle support (complying with EN 345-1), when loading or unloading the ATV.
- Gloves for loading and unloading the ATV.
- Where noise levels exceed 80dB (A) hearing defenders must be made available.
- Where noise levels exceed 85dB (A) hearing defenders must be worn.
- Non-snap outer clothing. The use of high-visibility clothing may also be appropriate.

14.71.2 Pre-start checks:

- Check the brake operation – footbrakes/handbrakes.
- Check the tyre condition, for wear and visible damage.
- Check the tyre pressures, using a pressure gauge capable of reading low pressures accurately (1psi difference can cause control problems).
- Check the steering, for smooth and positive operation.
- Check the throttle, for smooth operation in all steering positions.
- Check the security of the wheel nuts.
- Check the security of the seat, carriers and loads.
- Check all lights including warning lights.
- Check the clutch (if manual), for smooth and positive operation.

14.71.3 Starting and Stopping:

- Do not run the engine for long periods when parked in enclosed spaces.
- Sit astride the ATV when starting the engine.
- Ensure the gearbox is in neutral when starting.
- Always park the ATV in a suitable position with the parking brake applied.

14.71.4 Driving:

- Drive with due care and attention at all times and be aware of other road users.
- Only select and use routes that are within the capabilities of the ATV and the operator.
- Drive with feet resting on the footrests at all times.
- Do not 'ride' the gear change lever as this can put the gearbox into neutral.
- Use speeds appropriate to the terrain and tasks.
- Position the body to increase stability on slopes.
- Avoid changing gear on slopes. Select a suitable low gear before negotiating the slope or obstacle.

Be aware that:

- Front wheel brakes are either omitted on some ATV's, or may have reduced efficiency when rolling back;
- On four wheel drive machines, using any brake will operate both front and rear wheels;
- Some ATV's have hydrostatic drives with no engine braking at zero revs; therefore maintain slight revs on downhill travel.
- On ATVs without differential, the driving technique used should allow for the difference between inside and outside wheel speeds during turns:
 - At slow speeds, shift body weight to the footrest on the outside of the turn while leaning the upper body into the turn;
 - At faster speeds, shift body weight to the inside foot while leaning the upper body into the turn.
 - On paved surfaces, increased grip may prevent wheel slip on inside wheels and reduce turning efficiency – a sudden change in traction may cause a change in direction.
 - Sharp or quick application of the throttle in a low gear may cause the ATV to overturn backwards, especially when travelling up slopes.
 - If travelling behind another ATV/vehicle, ensure adequate separation to permit safe braking and to avoid any dust, spray or stones that may be thrown up.

14.71.5 Driving on difficult terrain:

- Only drive within the limits of visibility.
- Maintain an even throttle while negotiating slopes.
- Avoid side slopes and difficult obstacles by route planning.
- Where side slopes are unavoidable lean and steer slightly uphill.

14.71.5.1 To ascend slopes:

- Select the appropriate low gear at the foot of the slope;
- Keep your weight as far forward as possible (lean over the handlebars);
- Align the ATV directly uphill;
- Be competent in techniques to recover from a failed hill climb.

14.71.5.2 To descend slopes:

- Select the appropriate low gear at the top of the slope and use engine braking (if available);
- Keep your weight as far back on the seat as possible;
- Align the machine directly downhill;
- If needed, use only back brakes (be aware that on four-wheel drive machines, operating the rear brake may also have a braking effect on the front wheels);
- Be aware of the danger of brakes locking and causing a skid;
- Correct skids by releasing the brake and straightening the ATV;
- Very steep slopes need a run-out area at the bottom.

14.71.6 It is not possible to set a maximum safe slope. The ability to negotiate a slope safely will vary with:

- The competence of the operator;
- The type of ATV being used (e.g. two or four wheel drive);
- The load weight and distribution, including mounted or trailed equipment;
- The tyre type, condition and pressure;
- The ground conditions, including soil type, evenness and vegetation;
- The weather conditions – dry, wet, frosty etc.

14.71.7 In wet boggy areas;

- Do not ford water deeper than 250mm;
- Dismount from the upstream side of a stalled ATV;
- Test brakes after driving through water;
- Be competent in de-bogging techniques

14.71.8 Carrying loads

The operator needs to know:

- The manufacturer's recommended carrying limits;
- The maximum front and rear load capacity;
- The maximum ATV load;
- How front and rear loads will affect stability.
- Loads must be properly secured and distributed to allow for difficult terrain.
- Heavy loads on the rear carrier must be counterbalanced using ballast on the front carrier.

14.71.9 Trailed Loads

When selecting trailed equipment look for:

- Overrun brakes;
- A swivel hitch drawbar;
- Bead lock rims on wheels;
- A low centre of gravity and a wide wheel track;
- A long drawbar;
- Attachment points for securing the load.

The operator must know:

- The maximum tow weight (trailer + load);
- The maximum tongue weight (weight on hitch point);
- The maximum combined weight and rear carrier weight.
- Attach all loads only to the towing hitch and no other part of the ATV.

Be aware that:

- It is very difficult to unhitch a loaded trailer on a slope;
- Turning may be restricted when towing a trailer;
- Turning across slopes should be avoided.
- When pushing an ATV/trailer combination no person should stand between the ATV and the trailer.

14.71.10 Transporting ATV's

- Before loading an ATV onto a transport trailer, check the trailer load capacity, lights brakes etc.
- After loading, ensure the ATV is securely restrained. Do not rely on the ATV brakes to prevent movement on the trailer.

14.71.11 Miscellaneous:

- Do not carry passengers on ATVs or in trailers
- The manufacturer's recommendations for operation must be followed at all times.

14.72 Tractors

Hazard:	Weather conditions, vehicle road worthiness, vehicle suitability, use of mobile phones, alcohol & substance abuse, driver fitness, driver experience and training, moving parts, towing large loads, off road use.
Level of Risk:	Low
Controls:	See details outlined below

- Never operate a tractor unless you are trained and know how to use it safely.
- Never operate a tractor unless it is properly maintained.
- Keep away from moving machinery - remember that some machine components will continue to rotate or move even after the engine has stopped.
- Wear footwear with a good grip - safety boots are best.
- Wear clothes which will not snag on machinery - preferably fitted overalls.
- Keep long hair tied back.
- Remove any jewelry which might snag - don't forget watches and rings.
- Find and read the operator's manual - keep it handy.

14.72.1 Safe Access & Egress

- Always use access steps and handholds.
- Use the nearside cab door whenever you can.
- Keep floors, doors, pedals and your boots clean and mud-free.
- Do not keep tools, drawbar pins or top links on the cab floor.
- Before leaving the seat follow SAFE STOP.
 - Make sure the handbrake is fully applied.
 - Make sure all controls and equipment are left safe.
 - Stop the engine.
 - Remove the key.
- Get out facing inwards so that you have a good grip.
- Never get on or off a moving machine.

14.72.2 Seat belts

- Seat belts are a legal requirement on all tractors where there is a risk of overturning and it is reasonably practicable to fit one.
- A seat belt will prevent you being thrown out of the cab in an overturn or road accident.
- Wear a seat belt at all times whether or not on public roads.

14.72.3 Hitching

- Make sure you use the right hitch system.
- Only use controls from the operating position.
- Take extra care when using external controls.
- Never stand between the tractor and other machines or behind them unless the tractor is stationary and the driver is aware of your presence.
- Never stand with your feet under, on or near drawbars.
- Ensure that jacks, skids and other supports are used and maintained.
- Communicate clearly if you need help with hitching.

14.72.4 PTO Shafts

- Ensure guards are in place – check they are properly chained, lubricated and free from defects.
- Report any faults immediately.
- Do not use a machine with a damaged PTO shaft guard.
- Ensure the tractor is chocked or that there is a mechanical connection between the tractor and a stationary PTO-driven machine to ensure the tractor or machine does not move, causing the PTO shaft to separate.

14.72.5 Trailer Brakes

- Using tractors and trailers without an adequate braking system has led to loss of control, jackknifing and tractor-overturning incidents. Inadequate trailer brakes can lead to accidents when manoeuvring on slopes or slippery surfaces, as the tractor may be pushed sideways and slide out of control.
- If trailer brakes are inadequate (i.e. are not doing their share of the braking) the tractor braking system can be subjected to excessive wear. Ensure the system is repaired.
- Safe towing requires the use of a large enough tractor and selecting the most suitable gear to stop the combination within a safe distance.
- Properly maintain and adjust braking systems for tractor-trailer combinations. Testing on the move may be necessary after maintenance.
- Keep hydraulic brake couplings clean and avoid contamination.
- Make sure linkages are properly lubricated and operate freely and keep them maintained.
- After use clean mud and contamination from brakes (including parking brakes). Make sure the cleaning method does not lead to deterioration of the brakes (e.g. rusting caused by pressure washing).

14.73 Teleporter (Loadall) & Platforms

Hazard:	Weather conditions, vehicle road worthiness, vehicle suitability, use of mobile phones, alcohol & substance abuse, driver fitness, driver experience and training. Work at heights, off road use.
Level of Risk:	Medium - High
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Staff operating the teleporter must have completed the teleporter construction skills certificate scheme (CSCS) before operating the machinery. Staff may not operate a mobile phone while driving the JCB.
- Passengers in or on the machine can cause accidents. The JCB Loadall is a one person machine and is not designed to carry passengers.
- Staff must be aware of the load capacity of the teleporter and never exceed it.
- Decal (information labels) safety instructions must be obeyed. Replace illegible or missing decals with new ones before operation.
- Do not operate the loadall in confined spaces where there is flammable material, vapour or dust. Explosions and fire can be caused by sparks from the electrical system or exhaust.

14.73.1 Personal Protective Equipment

- Depending on the nature of the work involving the machinery the following PPE must be worn: hard hat, safety shoes, safety glasses, overalls, protective hearing equipment and gloves.

14.73.2 Lifting Equipment (Boom Operation)

- Operators must be aware of the maximum lift height and never operate the boom near overhead power lines.
- A raised boom can fall or be lowered accidentally. Do not walk under a raised boom which is not fitted with a safety strut.
- Ensure all lifting equipment is in good condition.
- Using the forks alone as a working platform is hazardous. Ensure a safe working platform is used and staff wear a fall arrest system.

14.73.3 Use of Teleporter with Platform

- Work platforms should only be occasionally, where self-propelled work platforms are not available.
- Read and follow manufacturers operating manual for safe operation and maintenance of the loadall.
- The loadall operator must have the relevant CSCS certification before operating the machinery.
- Staff must only be transported vertically in the platform. The platform must never be used to transport passengers.
- The safe working load of the platform must never be exceeded.
- The work at height must be carried out in areas of solid and level ground.
- Ensure the platform is hitched correctly to the loadall before been used.
- All staff must be informed of the work at height operation. The area in which the operation is carried out must have restricted access. When objects shall be dropped from a height; access to this area shall be prohibited and cordoned off.
- The staff member on the platform shall communicate to the loadall operator using two way radios. Ensure both radios are set to the same channel prior to use. Staff must familiarise themselves with the radios before using. The staff member on the platform shall at all times instruct the loadall operator.
- The boom must not be extended unless the handbrake is applied. The boom may only be extended within the green zone of loadall control panel warning system. It must never be operated in the amber or red zones. The driver must monitor the system.
- The employee on the platform must wear a lanyard and body harness. The “D” ring of the harness must be located between the shoulder blades. The fall arrest system must be attached to the “D” ring and the platform rail.
- Harness and lanyard must be visually inspected for wear and damage prior to each use.
- Staff using the fall arrest system must note that the free fall distance of the system before use.
- The fall arrest system should be attached to the rear of the platform away from the work area.
- Fall arrest equipment must be serviced annually and records maintained.
- Only one staff member may use the platform if powered hand held equipment is been used. The staff member must have the relevant competency to use the piece of equipment (e.g. use of chainsaws).
- The relevant personal protective equipment must be worn.
- Powered equipment cannot be operated until the loadall handbrake is applied and the engine is switched off.

14.74 Lorries and Heavy Goods Vehicles

Hazard:	Weather conditions, vehicle road worthiness, vehicle suitability, use of mobile phones, alcohol & substance abuse, driver fitness, driver experience and training.
Level of Risk:	Medium - High
Controls:	See details outlined below

- Staff operating goods vehicles between 3,500kg and 7,500kg must hold a C1 category licence.
- All staff driving company trucks in a professional capacity must complete CPC training. 35 hours of training must be completed over a five year period on an on-going basis.
- Refer also to Section 14.63 Driving for Work.

14.75 Forklifts

Hazard:	Noise, vibration, overloading, vehicle traffic, forklift condition, speeding, pedestrians, awkward postures (strains/sprains)
Level of Risk:	Medium
Controls:	See details outlined below

14.75.1 Training

The forklift operator must have completed a FETAC approved training course. Read and follow the manufacturer's operating manual for safe operation and maintenance.

14.75.2 General Operation

- The forklift must never be operated in areas designated as a pedestrian route.
- Sound the horn at intersections and wherever vision is obstructed.
- Ensure that a seat belt is worn at all times.
- Ensure the tyres are inflated correctly and the brakes operate correctly.
- The forklift should be fitted with a flashing amber beacon.
- The forklift should be fitted with a reversing alarm.
- Operate a forklift only while in the seat or operator's station. Never start it or operate the controls while standing beside the forklift.
- Never allow passengers unless the forklift was designed for a passenger.
- Do not put any part of your body between the uprights of the mast or when traveling, outside of the forklift frame.
- Always look in the direction of travel and keep a clear view of the travel path.
- Travel in reverse if the load blocks your view.
- Always observe posted speed limits at your workplace. A forklift should not be driven faster than a quick walking pace.
- Never allow anyone to walk or stand under the elevated forks – even if the forks are not carrying a load.
- Check that there is adequate clearance under beams, lights, sprinklers, and pipes for the forklift and load to pass.
- Never engage in stunt driving or horseplay.
- The capacity detailed on the forklift decal must never be exceeded.

14.75.3 Lifting loads

- Ensure the load does not exceed the forklift's capacity.
- Move squarely into position in front of the load.
- Position the forks wide apart to keep the load balanced.
- Drive the forks fully under the load.
- Ensure bottom of the load is raised to the proper traveling height.

- Tilt the mast backward slightly to stabilize the load and lift.
- Before backing up, check behind and on both sides for pedestrians or other traffic.
- Never allow anyone to be lifted while standing on the forks or on a pallet lifted by the forks

14.75.4 Charging/Refuelling Fork Lifts

- Do not smoke or allow any open flames or spark /arc generating equipment in the refueling / charging area.
- Make sure there is adequate ventilation to disburse fumes.
- When charging and fueling, set brakes and chock wheels.
- Wear personal protective equipment.
- Make sure there is a fire extinguisher nearby.
- Make sure there is a barrier that protects the pump or charger against vehicle damage.

14.75.4.1 Liquid Petroleum Gas (LPG) forklifts

- LPG gas is very cold. Wear gloves when changing LPG tanks. Apply manual handling techniques.
- Check for leaks before operating.

14.75.4.2 Petrol or diesel forklifts

- Turn the engine "OFF" and apply the hand brake before petrol or diesel refueling.
- Clean up any spilled fuel before restarting the engine.

14.75.4.3 Battery operated forklifts

- When charging batteries, keep the battery vent caps in place to prevent electrolyte spray. (Check that the vent caps are not plugged).
- Keep the battery compartment open to dissipate heat.
- Propane tank used to refill the forklift LPG tank is protected against vehicle damage by heavy posts.
- Keep tools and other metal objects away from the top of the battery to prevent an arc or explosion due to short circuited terminals.
- When adding fluid to the battery, wear safety glasses and a face shield for protection against electrolyte splash or spray.
- Battery charging areas must have a way to flush and neutralize spilled electrolyte.
- Do not attempt to remove a battery from the forklift unless you have been trained and the charging station is equipped with a hoist designed for this purpose.

14.75.5 Safety maintenance

To prevent injury or illness when doing maintenance on a forklift:

- Do not do repairs in an area with a potentially flammable or combustible atmosphere.
- Make sure there is adequate ventilation to prevent accumulation of exhaust or gas fumes.
- Do not use flammable solvent to clean a forklift. Use a non-combustible (flash point above 100° F) solvent.
- Never get under a forklift supported only by a jack or under any part supported only by hydraulic pressure! Install jack stands or other suitable secure support.
- To prevent the forklift from accidentally being started remove and keep control of the key or disconnect the battery while making repairs.
- If the electrical system will be serviced, you must disconnect the battery before starting repairs and chock the wheels.

14.76 360° & 180 Excavators & Mini Diggers

Hazard:	Vehicle suitability, use of mobile phones, alcohol & substance abuse, driver fitness, driver experience and training, overhead and underground utilities, off road terrain, hydraulics, maintenance, load transport
Level of Risk:	Medium - High
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Keep a copy of the manual in the cab of the excavator/mini digger at all times.
- Ensure that drivers remain in the safety cab and wear safety belts in the event of an excavator overturning and that they do not attempt to jump clear.
- Allow only trained / competent (valid CSCS cards) workers to drive excavators.
- Operations should be prohibited near powerlines. Goal posts should be used where required.
- Allow only trained / competent banksmen (valid CSCS card) to give signals to excavator drivers.
- Do not use mobile phones while operating excavators.
- Do not wear loose clothing / jewellery / belts, etc. while operating excavators.
- No unauthorised riding on excavators - one seat, one person.
- Ensure that all excavators adhere to site speed limits and conform to site traffic control plans.
- No bypassing or interfering with safety devices on the excavators or buckets.
- Use hydraulics only within their design limit / as per supplier's instructions.
- Before adjusting / repairing /maintaining / leaving the excavator, always turn off the engine.
- Under no circumstances rely on the hydraulics to maintain raised equipment while working underneath.
- Keep other workers clear of the excavator boom swing area.
- Lower the boom / bucket when not in use.
- Adhere strictly to the SWL on the arm of the excavator.
- Secure excavator buckets to a quick hitch - using a locking pin to prevent the inadvertent dropping of the bucket.
- Secure all excavators when left unattended, to prevent unauthorised use, especially at the end of the working day.
- All 360° excavators must have the following equipment installed by law:
 - Movement alarm and flashing beacon with CCTV or convex mirrors or a combination of both to allow vision from drivers seat (without slewing).

14.77 Use of HIAB Loader Crane

Hazard:	Vehicle suitability, use of mobile phones, alcohol & substance abuse, driver fitness, driver experience and training, overhead and underground utilities, hydraulics
Level of Risk:	Low - Medium
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Staff operating lorry loader cranes such as a HIAB must receive training.
- The safe working load of the loader crane must never be exceeded.
- The use of loader cranes near power lines is prohibited.
- Ensure the crane is regularly inspected by a competent person.
- Never operate if you suspect the loader is damaged.
- Ensure the supporting surface is stable before lifting a load.
- When lifting loads ensure that the location of the center of gravity of the load is known and the crane hook positioned directly above it.
- Has a qualified crane signaller person been assigned and method of communication between the crane operator and signal person established.
- Ensure the lifting and loading areas are clear of obstacles (including power lines, pipelines, and unnecessary personnel).

Personal Flotation Devices & Dry Suits

- 14.78 Personal Flotation Devices**
 - Selecting the correct type for the working environment
 - Donning Instruction
 - Training
 - Inspection & Testing

- 14.79 Use & Maintenance of Dry Suits**

14.78 Personal Flotation Devices

Hazard:	Work on or adjacent to water, boats, and at sea.
Level of Risk:	Low - Medium
Controls:	See details outlined below

14.78.1 Selecting the correct type for the working environment

- Lifejacket selection can be determined by the environment and conditions in which we work.
- It is recommended that the Mullion 375N Seaforce Vest is worn for all RIB patrol operations.
- It is requirement that where staff wear drysuits on inland waters they wear a Mullion Mariner 275N or Crewsaver Seacrewsader 275N with the dry suits.
- Staff working on or adjacent to water other than at sea must so far as is reasonably practicable wear a personal flotation device with a minimum buoyancy of 150N.
- Staff using kayaks, jet skis or PWC's must wear a buoyancy aid.

14.78.2 Donning instructions

- Inflatable personal flotation devices must be worn over all clothing and not underneath. This is to ensure that there is sufficient space for the device to inflate and that the wearer's breathing is not restricted.
- Wear the lifejacket as a waistcoat.
- Close buckles at the front.
- Fasten the waist band to comfortable position.
- The crotch strap is an integral part of the lifejacket. Pass the strap between your legs and clip the buckle.
- Fasten the band to a comfortable position.

14.78.3 Training

- Staff must complete training before using the Mullion 375N Seaforce Vest. Staff are issued with a manual for this device.

14.78.4 Inspection & Testing

- The annual testing of personal flotation devices is a statutory requirement.
- The use of personal flotation devices which are overdue for statutory inspection is prohibited.
- Staff may carry out visual inspection on personal flotation devices. Inspection of red/green indicators should be conducted regularly to ensure the cylinder and firing mechanism are in the correct position. Visual checks for signs of damage can also be carried out on any zips, buckles, fasteners, lining and webbing straps. Note also the inspection schedule.

14.78.5 Storage

- Personal flotation devices should be stored in a well ventilated room not subject to extremes in temperature or extended periods of sunlight. Storage conditions should not be damp or humid.
- Oil and dirt can be removed with a damp cloth and then a dry cloth immediately afterward. Allow to dry naturally.
- Do not expose to chemicals, paint or hydrocarbon fumes, oils grease or concentrated ozone.

14.79 Use & Maintenance of Dry Suits

Hazard:	Work on or adjacent to water/cold water temperatures
Level of Risk:	High
Controls:	See details outlined below

14.79.1 Dry Suit Use

- A dry suit is available to all staff as required e.g. in cold waters (less than 10°C).
- The purpose of the dry suit is to reduce the risk of hypothermia due to immersion in the water and protection from wind chill.
- Bearing in mind the physical nature of many tasks associated with Fisheries work, it is acknowledged by Inland Fisheries Ireland that there are situations where the wearing of a dry suit could contribute to hyperthermia (heat exhaustion). Factors which may affect the need to wear a dry suit include:
 - Nature of work
 - Location of work, sea, lake inshore etc.
 - Water Temperature
 - Weather conditions
 - Number of persons present (available to assist in an immediate rescue situation)
- Dry suits must be worn in the following situations:
 - A dry suit must be worn by all personnel when In a RIB – at sea, in open water and in estuaries.
 - A dry suit must be worn where a staff member is on their own in a boat (however lone working should be avoided).
 - A dry suit must be worn as specified by IFI bearing in mind the nature of the work and the local conditions.
- Where a dry suit is worn it must be fully donned up irrespective of the weather.
- At any stage if an individual wishes to wear their dry suit they may do so.
- Dry suits should be worn when working on waters with low temperatures (less than 10°C).

14.79.2 Maintenance

- When donning a dry suit inspect all seals. Seals are usually the first thing to break (typically due to rips, tears or cracking) on a dry suit. Any zips should also be inspected and dirt or grit should be gently removed. Zips should be regularly waxed to ensure smooth operation. Damaged dry suits should be removed from service until they are repaired.
- Have the suit, valves and zippers on your dry suit inspected annually by a qualified repair technician to ensure proper function.

Activities involving Air Corps

- 14.80** **Cassa (Airplane)**
- 14.81** **Cessna (Airplane)**
- 14.82** **Helicopters**

14.80 Cassa CN – 235 100M (Airplane)

Hazard:	Weather, mechanical failure, safe access/egress, fire
Level of Risk:	Low
Controls:	See details outlined below

The following procedures have been provided by the Air Corps of the Irish Defence Forces.

The purpose of this section is to give you an understanding and knowledge of the layout of the cabin of the CASA CN-235 100M Maritime Patrol Aircraft and the location of all the safety equipment onboard. The operator needs to be able to locate equipment for use as necessary in the event of an emergency and be fully coherent in its uses.

14.80.1 The safety equipment presently carried onboard the CASA MPA are as follows:

- Emergency Fire Axe (x1)
Location: - Cockpit (behind co-pilots seat).
- Fire extinguishers (x6), 3 halon 3 liquid.
Location: 1x Halon and 1x Liquid – Cockpit,
1x Halon & 1x Liquid in cabinet inside forward exit.
1x halon 1x Liquid on side of Radar Console beside Signals workstation.
- First Aid Kits (x2).
Location: 1 In cabinet inside forward entrance/exit
1 In cabinet inside rear entrance/exit.
- Life rafts (x2 6 man)
Location: 1 Behind forward seats in crew rest area.
1 Behind Flare launcher Starboard rear of Acft.
- Smoke Goggles (x6)
Location: In rear pouch behind each crewmembers chair.
- Oxygen (x7)
Location: 1 Mask in Cabinet beside SARO Workstation (main supply).
1 Bottle and 2 Masks on side of console at Signals workstation.
1 Bottle and 2 masks on top of flare stowage rear port of Acft.
1 Mask pilot cockpit, 1 bottle and mask Co-Pilot cockpit.
- Lifejackets
Location: 1 on each crewmembers seat. Spares in the Wardrobe.

- Quick Don Immersion Suits.
Location: Under seats in crew rest area, and in overhead stowage on SARO console.
- Torch (x1)
Location: In Ships Library.

14.80.2 Entrances/ Exits.

Locations:

- Cockpit – Window beside each pilot's seat (pushes out).
- Starboard Forward entrance/exit (pushes out).
- Port rear entrance /exit (pushes out).
- Port emergency exit (front) – between galley and wardrobe (pulls in).
- Starboard emergency exit (rear) – behind flare launcher.
- Bubble Windows Starboard and Port (opens inwards –locks into slot).
- Rear ramp (if Practical) at rear of Aircraft.

Notes: In the event of an emergency the nearest available emergency exit should be used

- Remembering
- (i) Getting any passengers safely out.
 - (ii) Outward opening exits probably will not open underwater.
 - (iii) If the Aircraft settles nose down in water the rear exits should be used.
 - (iv) If the Aircraft fuselage is damaged all or many exits may be difficult to open.

Additional Safety Equipment carried.

Air Droppables.....Rafts and Flares.

14.80.3 Fire Extinguishers

- Halon suitable for fires involving flammable liquids or electrical apparatus.
Should not be used in confined spaces.
- Liquid should be used on most fires except those involving liquids or electrical apparatus.

14.80.4 Fighting a Fire

In the event of a fire:

- Notify all crew members immediately.
- Ensure all electrical equipment is turned off.
- Locate appropriate fire extinguisher.
- Aim extinguisher at base of fire until extinguished (be aware of re-ignition).
- Halon gives off dangerous fumes causing possible damage to lungs therefore it is vital that the area is well ventilated if their use is imminent.

14.80.5 Rafts.

Rafts must be armed (tied down) immediately after take – off, and disarmed as soon as before landing when overland.

Once launched the raft should inflate when it reaches the end of its tether, if not a very sharp tug should do so, once inflated with all aboard the tether should be cut.

14.80.6 Smoke goggles

Before every flight each crewmember should check his seat for smoke goggles.

He/she should adjust goggles for his/her use, should it become necessary.

14.80.7 Oxygen

Used if cabin depressurisation is experienced above 30,000ft approx.
Or may be used if the cabin becomes smoke filled.

- Take mask(s) out of package attached to bottle.
- Remove oxygen outlet cover (by twisting).
- Insert mask attachment into outlet.
- Turn oxygen from the off to the on position by turning clockwise.
- Don mask and breathe as normal.
- Remove portable bottle if necessary by unlocking clips.

14.80.8 Equipment

The following lists equipment used by Maritime Patrol crews in the course of their employment onboard the Maritime Patrol Aircraft. We would recommend that this equipment should be made available by individual agencies to frequent passengers on Maritime Patrols.

The personal safety equipment presently carried by SAROs onboard the CASA MPA are as follows:

- Thermal underwear, flame retardant.
- Immersion Suit. Made by Beaufort, Individually tailored, Waterproof (if serviced regularly) Breathable material, Latex cuff and neck seals, attached socks, Knife holder.
- Personal emergency knife. For attachment to flying suit or immersion suit.
- Flying Suit. Flame retardant (if worn correctly).
- Flying Jacket. Air Spec, for additional warmth.
- Ray Ban Sunglasses. Not a fashion accessory, used when emerging from a dimly lit working environment into a brightly lit environment and when acting as observer for registrations, searches etc.
- Peltor headset. For use in the vicinity of the ramp.
- Hi visibility vests. To be worn in the vicinity of the ramp.

14.80.9 Non personal safety equipment supplied by 101 Squadron

- Lifejacket. Mk 44 Beaufort Contains Mini flares & SARBE (Search & Rescue Beacon Equipment).
- Quick Don Immersion Suit.

14.80.10 The purpose of this section is to make the student aware of possible emergency situations that may be encountered (and actions in the event of) onboard the Maritime Patrol Aircraft.

Among the most likely possible emergencies that may be encountered are:

- Aircraft malfunction.
- Aircraft or object conflict.
- Equipment malfunction.
- Human error.
- Sickness or injury to a crewmember or a passenger.

14.80.11 Aircraft malfunction.

Most likely causes:

- Engine Failure (the aircraft will still fly and be able to land on one engine).
- Damage to or loss of part of the airframe structure.
(If anything unusual observed notify flight crew (pilots) immediately)
- Bird strike (causing damage to the structure of the aircraft).

If the Aircraft malfunction causes a ditching or overland emergency landing the appropriate evacuation drill will be put into place immediately.

If you see, smell, hear or notice anything unusual about the Aircraft (no matter how seemingly trivial) notify the pilots immediately.

14.80.12 Equipment malfunction

The most likely scenario in relation to equipment malfunction in the rear area of the aircraft will be overheating leading to a possible fire, or the actual outbreak of fire in the area of the avionics rack, radar/data link console, or oven area.

If a fire or smoke is detected,

- Notify all crew immediately.
- Ensure all electrical equipment is turned off, and relevant circuit breaker pulled.
- Don smoke goggles if needed.
- Locate appropriate fire extinguisher.
- (Water if the fire is non electrical, Halon if the fire is electrical or flammable liquid).
- Take up a position where access to the fire is unrestricted but where a quick and safe retreat is possible. For example on the side of the fire nearest an exit.
- Crouching will help the operator to keep clear of the smoke and allow a closer approach to a fire.
- Aim extinguisher at the base of the fire until extinguished; be aware of the possibility of re-ignition.
- Be aware of the dangers of inhaling the fumes of the halon or dry powder extinguishers.
- The aircraft crew will be using the radio equipment to issue a mayday or pan pan call.

14.80.13 Sickness or injury to a crew member or passenger.

In the event of a crewmember or passenger becoming ill or injuring him/herself.

- Notify the pilots immediately (so they can divert to nearest airfield if necessary).
- Assess the injury or sickness and treat as appropriate using whatever first aid is available and your first aid training as per SARO course (remember location of first aid boxes on board).

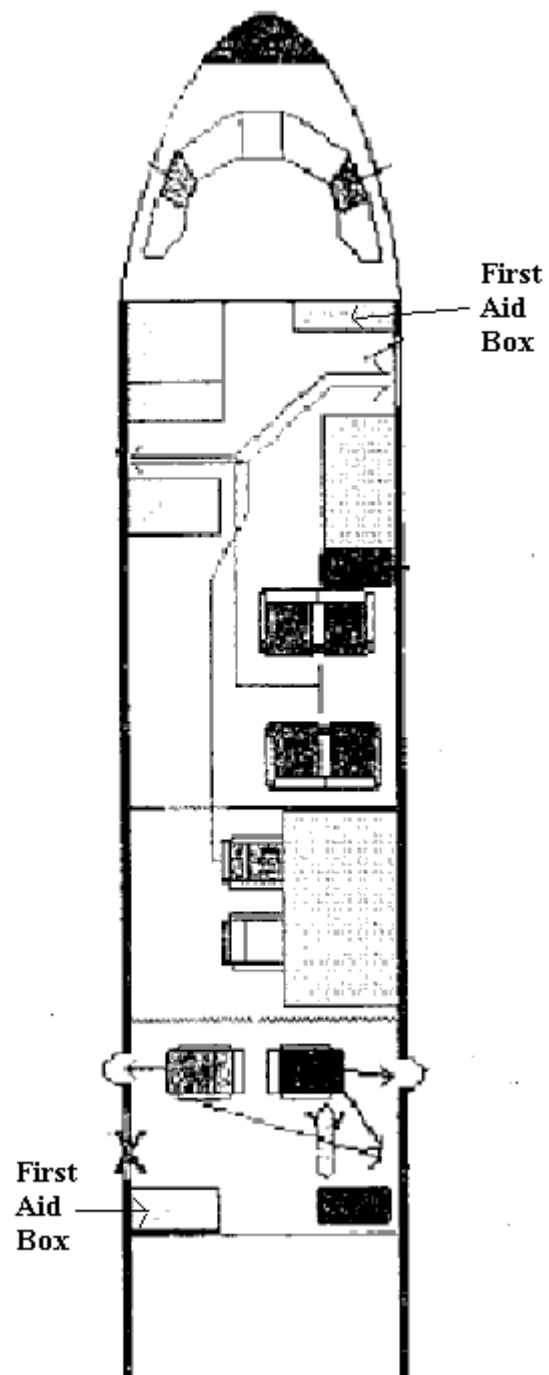


Fig 14.7 Location of first aid kits on the aircraft

14.80.14 Ditching Drills

The purpose of this section is to inform the student of the emergency ditching drill (in water) currently in place on board the Casa Cn 235 as used by Maritime Squadron.

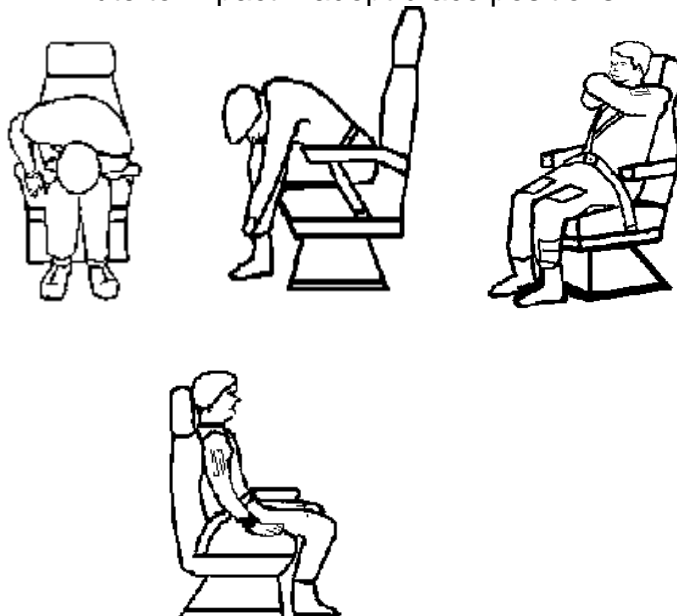
The first and most important thing to do with regard to any emergency drill is to formulate a plan (pre-flight) in the event of an emergency based on the amount of people travelling.

There are a couple of different scenarios with regard to a possible ditching,

- One where notification by the pilots is given as to the Aircraft ditching.
- One where there is insufficient time to give notification.

We will deal with the scenario where notification is given first.

- The pilot notifies the crew that a ditching is inevitable, He will then initiate the “Mayday or Pan Pan “call.
Direct the Signalmen or second SARO to do same.
- Consult P1/P2 re emergency ditching plans.
- Shut down all electrical equipment.
- Secure the Cabin. Stow All items i.e.: papers, cups, bags, spare life vests, baggage etc.
- Fully secure seat harness – seat rearward facing if possible.
- Run thru evacuation plan (verbally i.e.: you go to this exit, ill get the raft etc.).
- 1minute to impact – adopt brace positions.



Forward facing brace position

Rearward facing brace position

Fig. 14.8 Brace position in the event of an emergency landing

Note: In the absence of prior notification the post ditching drill will apply immediately

14.80.15 Post Ditching

- Wait until the Aircraft stops completely.
- Open an unsubmerged exit- ensure the life raft painter is tied to a secure location. If the raft accidentally inflates in the aircraft, puncture immediately several times with a knife.
- Throw out the raft and pull on the painter until the raft inflates.

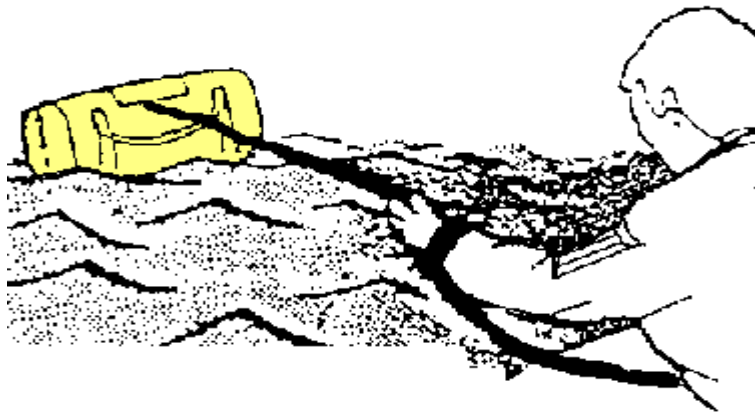


Fig. 14.9 Procedure for launching life raft

- Jump into the sea and inflate life vest, swim to the raft –DO NOT pull the raft to the aircraft. DO NOT inflate the life vest whilst still in the aircraft.

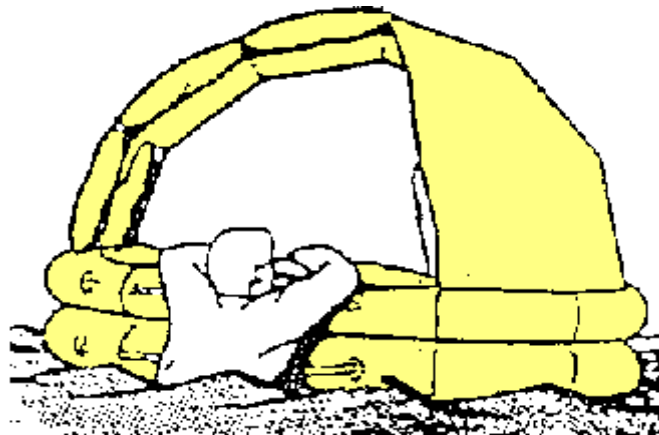


Fig. 14.10 Procedure for launching life raft

- Once inside the life raft and everyone is onboard, cut the painter line to avoid being pulled down with the Aircraft if it submerges.
- Activate the search and rescue beacon equipment (SARBEs) one or two at a time maintain peak signal strength and conserve SARBEs for in the event a long wait for rescue.
- Move away from the Aircraft and prepare for a long wait.

14.80.16 Survival Drills – Once in the Life raft.

- Remove wet clothing (if immersion suit has leaked) – wring out and put on again.
- Take sea-sickness tablets immediately. (should be in the raft)
- Treat any obvious injuries.
- Bale out the raft as necessary.
- Secure all sharp objects.
- Activate 1 SARBE at a time for 1 hr or less.
- Huddle together to conserve heat, and help the stability of the raft.
- The foetal position also conserves heat.
- Observe your companions for any signs of illness or hypothermia and treat accordingly.
- Ration water – If none available collect rainwater (it is recommended to keep eating to a minimum if there is no water available).
- Monitor raft for signs of leakage – patch and re-inflate where necessary (bungs and plugs in raft).
- Set-up a watch for aircraft, or shipping, rotate the watch frequently, pool flares and only set them off when an Aircraft or Ship is near.
- Use SARBEs on voice when an Aircraft or Ship is in sight.

If you end up in the water without a life raft all of the above still applies except a) and d) , Make sure you are all attached using your "buddy line" and splash hoods are used to help avoid exposure to the elements.

Notes:

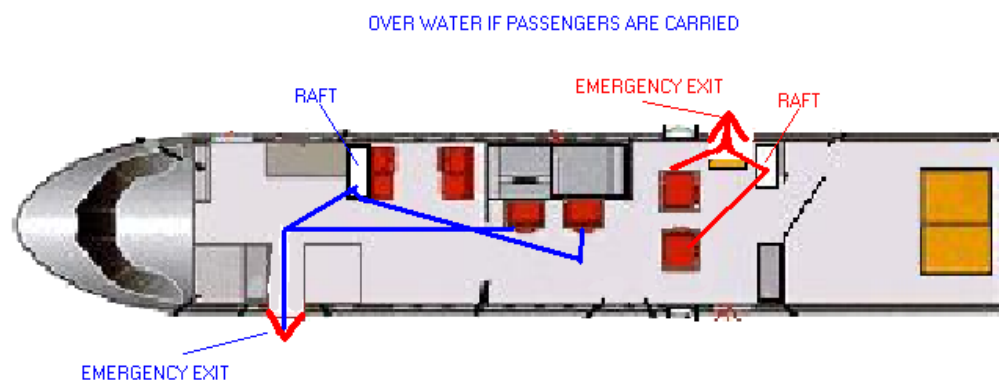


Fig. 14.12 Location of life rafts on the aircraft

14.80.17 Depressurisation Drills.

The purpose of this section is to inform the student of the drills to be carried out in the event of a cabin fire or cabin de-pressurisation on the Casa Cn 235 as used by Maritime Squadron.

If a fire or smoke is detected,

- Notify all crew immediately.
- Ensure all electrical equipment is turned off, and relevant circuit breaker pulled.
- Don smoke goggles if needed.
- Locate appropriate fire extinguisher. (Water if the fire is non electrical, Halon if the fire is electrical or flammable liquid)
- Take up a position where access to the fire is unrestricted but where a quick and safe retreat is possible. For example on the side of the fire nearest an exit.
- Crouching will help the operator to keep clear of the smoke and allow a closer approach to a fire.
- Aim extinguisher at the base of the fire until extinguished; be aware of the possibility of re-ignition.
- Be aware of the dangers of inhaling the fumes of the halon or dry powder extinguishers.

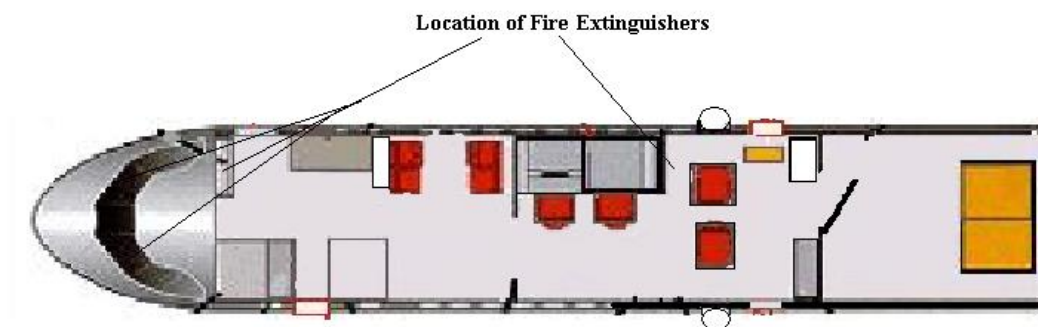


Fig. 14.13 Location of Fire Extinguishers

14.80.18 De-pressurisation drills.

Always ensure when you are not moving about the cabin that your seatbelt is lightly fastened at all time in preparation for an emergency.

In the event of a cabin de-pressurisation

- Put on oxygen mask
- Remove oxygen outlet valve covering.
- Insert mask attachment into Oxygen outlet valve.
- Turn black top on Oxygen bottle to the on position.
- Breathe normally.
- Remove bottle from holder and carry with you as necessary.
- Assist anyone experiencing difficulty.

If using the Mask on the console or in the cockpit,

- Inflate head straps.
- Place mask over your face.
- Breathe normally.

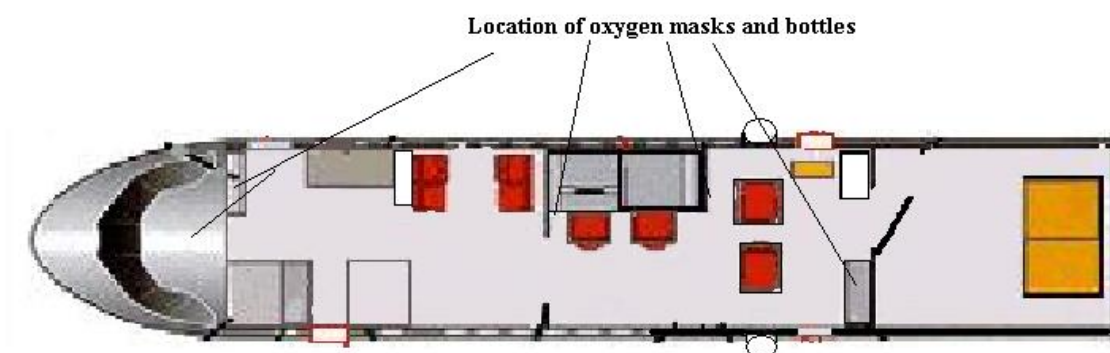


Fig. 14.14 Location of oxygen masks on the aircraft

14.81 Cessna (Airplane)

Hazard:	Weather, mechanical failure, safe access/egress, fire
Level of Risk:	Low
Controls:	See details outlined below

Squadron Flying Orders – Procedures ‘Carriage of Personnel’ Flight Safety Brief – Cessna

14.81.1 Pre Flight Procedures

- Ensure that you have received a lifejacket and headset.
- You should ensure that you are familiar with the proper wearing and securing of the lifejacket. The Pilot in Command (PIC) will assist you if required.
- The PIC will brief you on the following:

The location and use of the ‘SABRE’ Search and Rescue beacon (it is attached to the lifejacket).

The location and use of the Aerial Distress Flare Kit (also attached to the lifejacket. Instructions are printed on side of flare kit).

The location of the inflation handle, and how to inflate the lifejacket.

Other features such as the lifejacket light and hood.

Instruct you not to inflate the lifejacket until you exit the aircraft so as not to restrict your egress in an emergency.

14.81.2 Approaching the aircraft

- The PIC should escort you to and from the aircraft. Exercise caution when walking about the apron. Be alert to the movement of other aircraft or vehicles operating on the apron.
- Do not enter the aircraft unless instructed by the PIC.
- There is a propeller situated on the nose of the aircraft which is 1.93 metres in diameter and rotates at 1,100 rpm at idle.
- **Even when the engine is not running, or the aircraft is unoccupied, the propeller and a 3 metre radius to the front and side of it should be avoided.**
- Never approach an aircraft with a running propeller unless escorted by a member of the flight crew. Always approach the aircraft from behind the wing, i.e. from the rear or side of the main aircraft body.
- All other aircraft parts are non-moving and do not represent any significant personal danger. However, possible exceptions are the control surfaces located on the rear edge of the wings and tail. During pre-flight checks and in some strong wind conditions these may be subject to movement. Injury may be caused to persons standing beneath them.

14.81.3 When on-board the aircraft

- Ensure that you are properly seated in an upright position. The front seat passenger should be located at an appropriate distance from the flight controls so as not to inhibit their free movement. 'Loose articles' on the aircraft floor can fall behind control lines causing them to jam. Therefore any loose articles on your person (such as car keys, coins, wallet, pens etc.) should be secured in a zipped-up lock pocket or bag, and secured to the rear of the seat in baggage area (the PIC will assist you with this).
- Ensure that your lap harness is secured across your upper thighs and is sufficiently tight. The shoulder strap should then be secured across your upper body to the lap harness buckle. It should be tightened to a comfortable level.
- Under no circumstances should you touch or handle any of the flight instruments or controls. Always obey the safety instructions of the PIC.
- In the unlikely event of an engine failure:

Overland: do nothing – the PIC will attempt a restart of the engine. If this is unsuccessful a glide approach into a suitable field will be flown. The PIC is well practised in this procedure, and the Cessna aircraft is suited to glide approaches.

Over water: the PIC will glide the aircraft to touch down on the water's surface. Whilst the aircraft is still flying the front seat passenger may, on the instruction of the PIC:

Unlock the right-side door using the door handle.

Pull the red metal 'D' ring located at the persons right knee thus allowing the door to fall clear of the aircraft.

Once the aircraft has come to a halt the front seat passenger and the PIC will egress first followed by any back seat passengers.

Do not inflate your lifejacket until you are clear of the aircraft.

- In the event of a fire the PIC will land as soon as possible and passengers will vacate the aircraft in the manner already indicated above.

There is a fire extinguisher onboard for use by the PIC.

The extinguisher maybe used by a passenger at the request of the PIC. (Instructions are contained on the side of the extinguisher).

If you feel unwell whilst flying in the aircraft, don't worry or feel embarrassed about it, it is quite common. It can help to look out the window at a distant object to help re-orientate your inner hearing. Tell the PIC of your condition. They will have an air sickness bag available if required.

14.81.3 Post Flight

- Do not vacate the aircraft until it is stationary and the propeller has stopped turning. The PIC will advise when it is safe to do so.
- Vacate the aircraft in a slow and careful manner at all times being mindful of the other hazards previously outlined.

14.82 Helicopters

Hazard:	Weather, mechanical failure, safe access/egress, fire, rotors
Level of Risk:	Low
Controls:	See details outlined below

14.82.1 Safety Precautions for Inland Fisheries Ireland Personnel Operating with Irish Air Corps Helicopters

- General: Personnel scheduled to operate with Irish Air Corps helicopters must be aware of the following precautions prior to engaging in any activity, either internal or external to the aircraft.
- Hazards: There are 5 main hazards of helicopters

Main Rotor: This spins extremely quickly and can be quite close to the ground. Personnel involved in flying in the aircraft must never enter under the rotor disc of the aircraft while the blades are moving unless supervised by qualified Irish Air Corps personnel or a member of the aircraft crew.

Tail Rotor: Found at the rear of the aircraft, this provides a severe risk of injury to unwary personnel. All personnel approaching a running helicopter **MUST** remain in the arc from the 10 O Clock position to the 2 O Clock position as viewed by the pilot until they are escorted to the aircraft as above. **NEVER** approach a helicopter, even a stationary one, from the rear.

Downwash: The air displaced by the helicopter blades in flight can be substantial, lifting debris and dust and throwing it some distance. There should be no unnecessary personnel exposed to this downwash. Personnel required to operate around hovering helicopters must ensure that they have taken precautions to protect their eyes and that they have no articles of loose clothing that may be caught in the airstream and blown into the engine intakes or rotor blades such as hats, scarves etc.

Noise: Helicopters are inherently noisy, both internally and externally. The crew will provide either a headset or hearing defence if you are due to be exposed to this noise. In order to prevent noise induced hearing loss, keep this protective equipment on your ears until the engine has stopped and the crew indicate that it is safe to remove it. Pay attention to the noise danger signs around aircraft manoeuvring areas and minimize your exposure to high levels of noise.

Heat: As with any vehicle, helicopters can produce significant heat, even when stationary. Never touch any part of a helicopter that you

have not been cleared to. If in doubt, check with a member of the crew before touching anything.

- Other Considerations

It is prohibited to smoke inside or within 50 feet of a military helicopter. In addition, at many landing sites, it is prohibited to smoke until you are in a designated zone, such as outside the terminal building of an airport.

Switch off all mobile phones before the engines start and keep them off until they have stopped again.

Once inside the aircraft, buckle your seatbelt immediately and keep it buckled until the aircraft had shut down completely or a crew member indicates that it is safe to undo it.

Once inside the helicopter, do not touch the pilot or any of the controls, or operate any switch, lever or handle without first being briefed on its operation and notifying the crew. This is particularly pertinent for photography, where a door or window may have to be opened in flight.

Where photographs are being taken, ensure that the area around the door is clear of loose articles such as personal bags and that the camera is secured to your person to avoid any item falling from the aircraft.

Follow the crews' instructions at all times.

- Emergencies:

A pre-flight briefing will be conducted to detail the actions to be carried out in the event of an emergency. Familiarise yourself with these procedures, the location of emergency exits and any equipment such as fire extinguishers that you may be required to use. Where you have been issued with a lifejacket, familiarise yourself with its operation. Never inflate the jacket inside the cabin, as to do so will impede your exit from the aircraft.

Where there is a threat of fire outside the aircraft after landing, look out before opening any exit to ensure that you will not be exposed to any danger.

Always wait until all motion has ceased before releasing your seatbelt and bear in mind that other connections such as a helmet or headset cable may also impede your exit. Remember to disconnect these connections before leaving your seat. Evacuate the aircraft towards the upwind direction and remain well clear of the blades.

Do not return to the aircraft under any circumstances until the all clear has been given by rescue personnel.

Diving Operations

- 14.83 General Requirements for Diving**
- 14.84 Diver Requirements**
- 14.85 Diving Supervision & Risk Assessment**
- 14.86 Divers Medical Fitness**
- 14.87 Diving Equipment**
- 14.88 Snorkelling Surveys**

14.83 General Requirements for Diving

Hazard:	Weather, access/egress to boats, boats, entanglement in submerged obstacles, working in water, oxygen partial pressure, carbon dioxide contamination, water pressure, cold water, biological agents, silt, diver fitness.
Level of Risk:	High
Controls:	See details outlined below

If you intend to dive you must contact the Health & Safety Executive in advance to develop a dive plan.

The following procedures are prepared with regard to the Safety in Industry (Diving Operations) Regulations,

- Before diving commences an Health & Safety Diving Plan must be developed and implemented.
- Staff involved in diving operations must familiarise themselves with the Safety in Industry (Diving Operations) Regulations, 1981.
- An adequate number of the Dive team members must be trained in first aid. The risk assessment should identify the first aid equipment and training requirements.
- Each diver should be supplied with breathing gas which is to a recognised International, European or National standard which is adequate in volume and rate of supply for the specific diving operation. An alternative breathing gas source or secondary life support system should be provided for emergency use.
- The risk assessment should take account of the circumstances of the dive and identify whether there is a need for direct voice communication.
- Suitable thermal and safety protection equipment should be provided for all personnel involved in the diving project.
- When diving in polluted waters suitable decontamination/disinfection procedures should be in place before and after the project.
- The diving operations must use a buddy system. The minimum team size comprises of three persons namely the supervisor, diver and "Buddy" diver. In certain diving operations it may be required to use more than three members.
- The acceptability of this number should be established from the risk assessment.

14.84 Diver Requirements

Hazard:	Weather, access/egress to boats, boats, entanglement in submerged obstacles, working in water, oxygen partial pressure, carbon dioxide contamination, water pressure, cold water, biological agents, silt, diver fitness.
Level of Risk:	High
Controls:	See details outlined below

- Persons involved in Diving Operations must be competent and provide a copy of the relevant certification to the Health & Safety Executive.
- Written permission to carry out diving operations must be obtained from the CEO.
- Divers must have completed a medical with a doctor approved by the Health & Safety Authority.
- Permission requests should state the name of the supervisor, the names of the dive team, an outline of the dive objectives and the estimated project timeframe.
- All members of the dive team should be fully trained and familiar with any specialised items of equipment which they use, and if appropriate, hold a certificate of training or competency in the specialist equipment.
- Each diver must maintain a personal diver's log book. The log must record the date, time and depth of dives, duration of dive and a short summary of the dive profile including the prevailing weather conditions and any other items of note.

14.85 Diving Supervision & Risk Assessment

Hazard:	Weather, access/egress to boats, boats, entanglement in submerged obstacles, working in water, oxygen partial pressure, carbonoxide contamination, water pressure, cold water, biological agents, silt, diver fitness.
Level of Risk:	High
Controls:	See details outlined below

- A diving operation supervisor must be appointed. All members of the dive team have a responsibility to co-operate with the supervisor and to follow any reasonable directions and instructions given by the supervisor.
- The diving supervisor must ensure that methods of communication (mobile phone, radio, EPIRB) are readily available and operational (battery power and signal) to alert emergency services in the event of an accident.
- A risk assessment must be carried out by the operation supervisor.

Risk assessment shall include:

- Water conditions, underwater visibility, pollution, depth, temperature.
- Access to and from the shore/boat/platform.
- Breathing gas mixture and the equipment needed.
- Experience and number of personnel (including people who are not at work but may be part of the dive team).
- Emergency procedures, including the location and proximity to emergency facilities, such as compression chambers and medical expertise.
- The methods and equipment used for the operation.

Note the above list is non-exhaustive

- The members of the dive team should also be consulted during the risk assessment process.
- The supervisor should be familiar with the emergency arrangements for obtaining immediate assistance in the event of an incident; for example, it may be necessary to have another pair of hands to help rescue someone from the water or to go for help. Any additional persons must be included as members of the dive team and be under the direct control of the supervisor.
- The supervisor must brief the dive team comprehensively on the project and the related tasks.

- Supervisors may at any time postpone or end diving operations when they consider it to be unsafe.
- Supervisors must be appointed by management.
- The supervisor should have control of all safety aspects of the operation.
- The supervisor need not be medically fit to dive (unless he or she is diving); the supervisor should be competent to perform the role.
- The supervisor must not leave the dive site during an operation.

14.86 Divers Medical Fitness

Hazard:	Weather, access/egress to boats, boats, entanglement in submerged obstacles, working in water, oxygen partial pressure, carbonoxide contamination, water pressure, cold water, biological agents, silt, diver fitness.
Level of Risk:	High
Controls:	See details outlined below

- Every person diving has a responsibility not to dive if by doing so they might present a risk to themselves or others. They must inform the supervisor immediately if there is any medical condition which prevents them from diving safely or rendering assistance to another member of the diving team. Before every dive they must ensure that they know of nothing which makes them unfit to dive including:

Any known medical condition.

Any effects of drugs or alcohol.

Any effect of medication whether prescribed or proprietary.

Any feelings of tiredness or a feeling of being unwell.

- All divers at work must have a valid certificate of medical fitness. The medical examination and assessment looks at the diver's overall fitness to dive. This includes the main systems of the body – cardiovascular system, respiratory system and central nervous system – as well as the ears nose and throat, vision, dentition and the person's capacity for exercise.
- **Inland Fisheries Ireland staff are prohibited from decompression diving.**

14.87 Diving Equipment

Hazard:	Weather, access/egress to boats, boats, entanglement in submerged obstacles, working in water, oxygen partial pressure, carbonoxide contamination, water pressure, cold water, biological agents, silt, diver fitness.
Level of Risk:	High
Controls:	See details outlined below

- All plant and equipment must be checked by a competent person and recorded prior to use. The record should identify the item of equipment, show the date of the check and the signature of the competent person, any limitations as to use and any repairs or modifications carried out.
- Bottles and regulators must have a full service record.

14.88 Snorkelling Surveys

Hazard:	Weather, access/egress to boats, boats, entanglement in submerged obstacles, working in water, contamination, cold water, biological agents, silt, diver fitness.
Level of Risk:	Low
Controls:	See details outlined below

- Staff involved in snorkelling must be competent swimmers and suitably trained.
- Snorkelling alone is strictly prohibited. Snorkelling must be conducted in pairs and shore back up must also be provided at all times.
- Shore back up staff must wear lifejackets and carry a throw rope and a first aid kit.
- Equipment should include a dry suit, mask, snorkel, fins, torches and weights.
- Staff must only conduct surveys in optimum weather conditions.
- Snorkelling staff must take great care to avoid hazards such as rocks in fast currents, and items which may cause entanglement e.g. barb wire or other man made obstacles.
- So far as is reasonably practicable survey sites should be assessed for hazards prior to staff entering the water.
- Where because of the size of the river the snorkel team consists of more than three snorkelers the team leader will designate one of the snorkelers to be the in-water observer. S/he will carry out no survey work but will monitor the activities of the other snorkel team members and be responsible for safe practices and constant communication with the shore backup.

Boating & Netting

- 14.89 Recommended Equipment for Recreational Craft**
- 14.90 Large Patrol Vessels (LPV)**
- 14.91 Naval Patrols**
- 14.92 Launch & Recovery of Boats**
- 14.93 R.I.B.s**
- 14.94 Red Finn**
- 14.95 Cheetah Vessel**
- 14.96 Use of Small Boats**
- 14.97 Use of Canoes**
- 14.98 Use of Kayaks (Sit on Top)**
- 14.99 Personal Watercrafts (PWC) & Jet Skis**
- 14.100 Boat and Net storage**
- 14.101 Netting**
 - Gill Netting**
 - Fyke Netting**
 - Drift Netting**
 - Bongo Netting**
 - Stop Netting**
 - Clam Dredging**
- 14.102 Smolt Traps**
- 14.103 Glass Eel Fishing**
- 14.104 Eel Monitoring, Surveying & Netting**
- 14.105 Fish Farm Aquaculture Inspections**
- 14.106 Salvage Operations**
- 14.107 Hydro-acoustic surveys**
- 14.108 Use of ROV**

14.89 Recommended Equipment for Recreational Craft

Hazard:	Weather, access/egress to boats, boat traffic, working on water, cold water, biological agents, outboard malfunction, rocks & other obstacles
Level of Risk:	Medium
Controls:	See details outlined below

14.89.1 Category F Boats

Category F boats are boats without shelter for occupants generally less than 7 metres in length. Operating locally on rivers and sheltered sections of lakes. The following equipment is recommended in the maritime safety directorate and Irish Coast Guard recreational craft code of practice:

- Personal flotation devices
- Appropriate clothing
- Boat hook
- Orange smoke signal canisters (2)
- Foghorn
- Navigational lights (as required by boat length)
- Manual/Electric Bilge pump capable of pumping from any hull watertight compartment and with all hatches closed.
- Anchor with chain/warp, as appropriate for a vessels size, and operating area ground holding conditions. (folding anchor)
- Boats should have a suitably reinforced deck cleat/Samson post on the foredeck, and means of closing over the bow roller or fairlead used when anchoring.
- An adequate supply of warps and fenders, these should include suitable warps to allow the craft be towed if necessary.
- Waterproof torch
- An appropriate tool kit and spare parts for the type of craft used.
- First Aid kit
- Oars, oarlocks, paddles
- Suitable knife

14.90 Large Patrol Vessels (LPV)

Hazard:	Weather, access/egress to boats, violence, boat traffic, entanglement in net hauler, working in water, cold water, physical fitness. Loading/unloading RIBs.
Level of Risk:	Medium – High
Controls:	See details outlined below

- To be read in conjunction with standing orders.
- The Master of the LPV must be obeyed at all times.
- The Master must be professionally qualified.
- Staff operating on the LPV must have completed a sea survival training course.
- Staff must have successfully completed a seafarers medical.
- Staff must be trained in first aid.
- Staff must be trained in VHF radio operation.
- The Standing Orders for the vessel must be adhered to at all times.
- The LPV must be fit for purpose, seaworthy and in a safe condition before use.
- Staff under the influence of alcohol or other intoxicants are prohibited from carrying out duties at sea or in harbour.
- Personal flotation devices must be worn on deck.
- Personal flotation devices and dry suits must be worn for RIB operations.
- Visitors and staff must be familiar with and obey the Standing Orders produced by the Logistics Section. The Standing Orders are available from Sean Gilligan and aboard the LPV's.

The following equipment is required aboard the LPV by the Merchant Shipping Acts:

- Liferaft
- Crew lifejackets
- Immersion Suits
- Two lifebuoys (one with line)
- Two rocket propelled line throwing appliances
- Four rocket parachute flares
- Four hand held flares
- Two smoke flares
- One EPIRB
- Two way radio: 2 Units + 3 Handheld VHF (One for RIB)
- Charts, sailing directions, nautical almanac, nautical tables, tide tables, marine notices, mariners handbook and tidal stream atlases.
- Navigation lights
- Echo sounder

- Magnetic compass
- Radar
- Direction Finder
- Speed and distance recorder
- Portable extinguishers
- Bucket and rope
- Hand pump

14.91 Naval Patrols

Hazard:	Weather, access/egress to boats, boats, working in water, cold water, physical fitness.
Level of Risk:	Medium – High
Controls:	See details outlined below

- Fishery officers participating in naval patrols are under the command of the captain of the vessel. They shall liaise with the Captain in relation to area of operation, duties etc.
- Fishery officers are subject to the naval service standing orders which include safety statement. Fishery officers must familiarise themselves with these documents.
- Each fishery officer will be given a safety brief and ship familiarisation brief.
- They should familiarise themselves with the ships watch and quarter where they will have a designated life raft station for emergencies.
- On the first day of each naval patrol there are several drills carried out these include:
 1. Abandon Ship Drill
 2. Fire Drill
 3. Damage Control Drill

Familiarity with these drills will allow officers to react correctly in the event of an emergency.

- Each officer will be issued with standard naval service lifejacket, once only suit & respirator. Officers should familiarise themselves with all equipment.

14.92 Launch & Recovery of Boats

Hazard:	Weather, access/egress to boats, boats, working in water, cold water, physical fitness. Loading/unloading RIBs.
Level of Risk:	Medium – High
Controls:	See details outlined below

14.92.1 Launch of boats

- Lone working is prohibited.
- Care must be taken when reversing. Ensure a colleague offers guidance when on the slipway. A recce of the site is required if boats are launched without using a slip.
- The towing vehicle must be rated by the manufacturer to safely tow the boat and trailer. You must check this in the vehicle manual.
- Remove straps and tailboards.
- A guide rope should be tied to the boat and a bollard or mooring ring if available.
- Disconnect the winch lock and slowly release the winch tension. Give the boat a steady push.
- Once the boat is afloat and secured, drive the vehicle back up the ramp and park it at the landing, in the designated parking area.

14.92.2 Recovery of boats

- Lone working is prohibited.
- Care must be taken when reversing. Ensure a colleague offers guidance when on the slipway. A recce of the site is required if boats are launched without using a slip.
- The towing vehicle must be rated by the manufacturer to safely tow the boat and trailer. You must check this in the vehicle manual.
- Any material which may compromise traction should be cleared off the slip, gravel, weed, sea weed debris etc.
- When the boat is in range prepare the winch by extending the strap and then engaging the locking pin.
- If driving the boat on to the trailer approach slowly and account for wind and current drift. Align the boat with the centre of the bunks.
- Once the boat is at rest on the bunks the winch strap should be attached to the bow hook. The engine should be switched off and raised.
- Retract the winch to secure the boat on to the trailer.
- When the trailer has been towed clear of the slip, fit straps and tailboards.

14.92.3 Boat Winch Safety

- Ensure the winch you use has the capacity for the load winched.
- Check the winch before each use. If it is damaged don't use it. Get it repaired.
- Make sure you have secure footing and proper leverage when using manual winches.
- Maintain a firm grip on the winch handle at all times. Never release the handle when the ratchet is in the unlocked position with a load on the winch. The handle will spin violently which could cause serious injury.
- Never apply a load on the winch with the line fully extended. Keep at least three full turns of line on the reel.
- To avoid chafe on the winch line, be sure it doesn't rub against any sharp edges on the winch stand or trailer. If frayed or worn spots appear, replace the winch line immediately with a new rope, strap, or cable of the proper type, size, and strength.
- Never touch the wire rope or other type of spool material while it is under pressure.

14.93 RIBs

Hazard:	RIB towing, obstructed slipways, weather, access/egress to RIBs, boat traffic, working in cold water, flammable liquids, propeller entanglement, physical fitness, loading/unloading RIBs noise, vibration.
Level of Risk:	Medium – High
Controls:	See details outlined below

This section should be read in conjunction with the standard national procedures for rigid inflatable boat patrols at sea

14.93.1 RIB & Trailer Maintenance

- Trailers and RIBs are inspected prior to departing from the base.
- Patrol Log checklists are completed and signed off.
- RIBs and trailers are serviced and maintained annually and as required.

14.93.2 Towing RIBs

- Staff towing RIBs hold an EB category licence.
- The towing vehicle has the capacity to tow the RIB as detailed in the manufacturer's vehicle manual.
- Trailers are fitted with functioning lights. Lights are checked before each journey. Lights include two side lamps, two rear lamps, two rear reflectors, two stop lamps and direction indicators.
- Props are fitted with prop covers during transportation.
- Trailers are fitted with brakes.
- Extension wing mirrors are fitted to the towing vehicle when required.
- The maximum towing speed is 80km/h.
- First aid kit kept in vehicle.

14.93.3 Staff Training, & Role of Coxswain

- Powerboat training must be provided in the use of RIBs to all crew on board. Training may include basic boat operations and advanced offshore powerboat.
- Staff are trained in the use of VHF radio.
- Sea survival and RIB capsize training must be completed by staff.
- Staff must complete an approved medical before going to sea.
- Ongoing training exercises regarding boat handling, man over board procedures, coming alongside etc. must be carried out.
- Prevention of collision at sea regulations must be followed.

- The coxswain must be competent and is in charge of the RIB and must be obeyed.
- The coxswain must fill in the Sea Boat Patrol log checklist prior to departure and must ensure equipment specified is carried. Post patrol report on conditions and performance must also be completed.
- Officers in Command, Coxswains and drivers must sign the relevant parts of the log.

14.93.4 Personal Protective Equipment, Medical Fitness & First Aid

- Staff must wear a dry suit.
- Staff must wear protective helmet with visor.
- Staff should wear a 375N personal flotation device.
- Staff must wear a personal EPIRB.
- Staff should carry a safety knife and radio.
- Staff complete an approved medical before being assigned to RIB Operations.
- Staff are trained in first aid and a Category C first aid kit is kept on board.

14.93.5 RIB Safe Access & Egress

- A step ladder is used when the RIB is mounted on the trailer/in storage.
- When accessing/egressing at the slip at sea the console hand grips and cleats should be used.

14.93.6 RIB Launch & Recovery

- A safe location (e.g. slip) must be identified for the launch and recovery.
- R.I.B.s should only be launched and recovered where there is an adequate level of water to do so.
- A suitable vehicle (e.g. 4WD with required towing capacity) must be used to launch and recover the R.I.B.
- Extra care should be taken on slips covered in seaweed, gravel etc.

14.93.7 Communication & Backup

- When boat patrols are organised, it shall involve two RIBs. One boat on standby at all times and operations as per standing orders.
- Equipment must be safely stowed or lashed down.
- When hauling nets they must be secured.
- Radio contact to be maintained with shore backup (and second RIB during twin RIB patrols) as detailed in the standard national procedures.

14.93.8 Sea going operations

- The RIB is operated by a trained coxswain who has completed navigation theory, boat and passage planning, night passage and advanced powerboat training.
- The RIB is fitted with an EPIRB and self-righting bag.
- The RIB is fitted with marine grade fire extinguishers.
- Twin RIB operations take place in open water.
- Communications are maintained with shore backup.
- RIB operations are prohibited in Force 7 conditions.
- Operations are conducted in daylight hours.
- Coxswain to use navigational aids and knowledge of local waters and currents to avoid grounding.
- International regulations for preventing collisions at sea are implemented.
- Staff to keep on the lookout for obstacles which may cause fouling.

14.93.9 Weather Exposure

- Staff are provided with UVA/UVB high factor sun cream. Fresh water is carried on board to maintain hydration.
- Staff are issued with dry suits which must be fully donned to protect against hypothermia in the event of a man overboard or RIB capsize.
- Coxswain to use navigational aids and knowledge of local waters and currents to avoid grounding.
- International regulations for preventing collisions at sea are implemented.
- Staff to keep on the lookout for obstacles which may cause fouling.

14.93.10 Fire or Electrical Fault & Mechanical Breakdown

- RIB electrical wiring, engines and fuel tanks maintained in good condition.
- Staff are trained in firefighting techniques.
- Marine grade extinguishers maintained and kept on board.
- Backup equipment kept on board as per patrol log.
- Radio and mobile communication to raise alarm with shore back up.
- Flares and smoke canisters kept on board to raise an alarm.

14.93.11 RIB Capsize, Abandonment, Distress or Emergency Situations

- Sea survival and RIB capsize training is completed by staff.
- RIBs are fitted with emergency location indicating beacons EPIRB and self-righting bag. RIBs have a unique MMSI number stored in the DSC function of the radio.
- Staff carry personal location beacons.
- Staff are trained in marine VHF radio use.
- Coast guard can be alerted on Channel 16.
- Staff are trained in first aid.

- Staff have completed an approved medical before participating in sea going operations
- Staff have thermal wear, drysuits and 375N personal flotation devices.

14.93.12 Conflict with other crews

- Staff are trained in conflict resolution techniques.
Staff should avoid serious/imminent dangers and request support from colleagues/Gardaí.

14.93.13 Manual Handling & Handling Seized Nets

- Safe lifting techniques must be deployed.
- Equipment must be safely stowed or lashed down.
- When hauling nets they must be secured.
- The stability of the boat must never be put at risk; the boat should never be overloaded.
- One knife must be at hand on the deck (in the appropriate storage area).
- At least one crew member on the lookout for the approach of hostile vessels and items in water likely to foul propeller.
- Marine grade fire extinguishers must be kept on board every RIB.

14.93.14 Checks and Equipment

- The officer in charge shall obtain the latest sea area forecast and outlook.
- Minimum safety equipment as per Marine Safety Notices and agreed checklists must be carried at all times.
- **The crew must carry out a pre sea check and complete the Sea Patrol Log Book.**
- All personal safety equipment must be regularly checked & serviced.
- Lifejackets, helmets & dry suits must be worn when in RIBs.
- Adequate fuel to be carried for the intended journey with an emergency amount in reserve.
- No smoking on board.
- Ongoing training exercises re boat handling, man over board procedures, coming alongside etc. must be carried out routinely.
- Weather forecast to be obtained prior to sea journey.

RIB Operation Checklist			
RIB Equipment			
Equipment Type	✓	Equipment Type	✓
Marine VHF radio		Baler	
High band VHF radio		Foot pump	
Portable VHF in waterproof container		EPIRB	
One anchor		Emergency food & water	
One sea anchor		Spare lifejacket	
Cat C 1 st aid kit		Four spare cylinders with inflation cartridges	
Deck sheath knife		Six distress flares	
Round ended book hook		Two orange smoke floats	
Two paddles/oars		Search light	
One floating heaving line or rescue quoit and line		Torch	
Radar reflector		Two hypothermia bags	
Two marine grade fire extinguishers		One of twin patrol ribs must have GPS	
Sound signal mechanism		2 litres Spare Oil	
Hand held compass		Spare spark plugs	
Plastic covered charts & table of emergency radio signals		Spare fuses (engines and console)	
Power trim and tilt		Spare fuel lead	
Condition of props		Deadman switch and spare	
Spare prop		Tool kit	
Batteries		Tube Inspection	
Trim tabs		Self-righting bag & cylinder	
Staff Personal Protective Equipment			
Equipment Type	✓	Equipment Type	✓
Thermal Layer		Knife	
Dry suit		Radio	
375N Lifejacket		Personal EPIRB	
Helmet with visor			
Staff Training and Certification			
Training/Cert	✓	Training/Cert	✓
Basic boat ops (64hrs)		Approved medical	
Advanced offshore powerboat (76hrs)		First Aid	

Table 14.3 RIB Operation Checklist

RIB Operation Checklist			
Staff Training and Certification			
Training/Cert	✓	Training/Cert	✓
Basic boat ops		Approved medical	
Advanced offshore powerboat			
Driver EB Licence			
RIB Trailer & Vehicle			
Equipment Type	✓	Equipment Type	✓
Spare Wheel		One tie down strap	
Tail and side lights, reflectors and indicators		Winch (hand strap coupling)	
Coupling hitch and chain		Marine VHF radio	
General Defect inspection		Bearings greased	
Tyre checks			

Table 14.4 RIB Operation Checklist Continued

14.94 Red Finn

Hazard:	Weather, access/egress to boats, boats, working in water, cold water, physical fitness. Loading/unloading RIBs, swamping, poor trim, offset loading
Level of Risk:	Medium - High
Controls:	See details outlined below

- The vessel is category D licensed for a maximum of 6 people.
- The vessel can only be operated on inshore waters i.e. voyages on coastal waters, large lakes, bays or rivers.
- Staff operating the vessel must be competent having received powerboat training. Ongoing training in manoeuvring of boat, man over board procedures, launch and recovery are necessary.
- One person (coxswain) appointed in charge.
- Launch & recovery can only be carried out with the trailer provided with the boat and no other equipment should be used.
- When transporting the boat, equipment must be safely stowed or lashed down.
- When operating in shallow water and estuaries, at least one crew member should lookout for rocks and items submerged.

14.94.1 Recommended Equipment for Red Finn

- Suitable personal flotation devices.
- Appropriate clothing.
- Two hand held distress flares.
- Two orange smoke signal canisters.
- Waterproof handheld radio.
- A radio receiver AM/FM, capable of receiving shipping forecasts, and national/local radio forecasts.
- Fire Blanket if carrying cooking equipment.
- Foghorn, powered or aerosol type
- Manual bilge capable of pumping from any hull watertight compartment and with all hatches closed.
- A bucket of 8-12 litre capacity fixed with a rope lanyard
- Anchor and chain/warp, as appropriate for a vessels size, and operating area ground holding conditions.
- Boats should have a suitably reinforced deck cleat/Samson post on the foredeck, and means of closing over the bow roller or fairlead used when anchoring.
- An adequate supply of warps and fenders, these should include suitable warps to allow the craft be towed if necessary.
- Emergency steering means, i.e. tillers for vessels fitted with wheel steering as their primary means of steering.
- Waterproof torch, capable of being used for signalling.
- An appropriate toolkit and spare parts for the vessel.
- Suitable first aid kit with manual.

14.95 Cheetah Vessel

Hazard:	Weather, access/egress to boats, boats, working in water, cold water, physical fitness. Loading/unloading RIBs, swamping, poor trim, offset loading
Level of Risk:	Medium - High
Controls:	See details outlined below

- The vessel is category D licensed for a maximum of 6 people.
- The vessel can only be operated on inshore waters i.e. voyages on coastal waters, large lakes, bays or rivers.
- Staff operating the vessel must be competent having received powerboat training. Ongoing training in manoeuvring of boat, man over board procedures, launch and recovery are necessary.
- One person (coxswain) appointed in charge.
- Launch & recovery can only be carried out with the trailer provided with the boat and no other equipment should be used.
- When transporting the boat, equipment must be safely stowed or lashed down.
- When operating in shallow water and estuaries, at least one crew member should lookout for rocks and items submerged.

14.95.1 Recommended Equipment for Red Finn

- Suitable personal flotation devices.
- Appropriate clothing.
- Two hand held distress flares.
- Two orange smoke signal canisters.
- Waterproof handheld radio.

14.96 Use of Small Boats

Hazard:	Weather, access/egress other boats on the water, working in water, cold water, physical fitness. Loading/unloading boats, swamping,
Level of Risk:	Medium - High
Controls:	See details outlined below

14.96.1 Training & Safety Equipment

- Staff operating the vessel must be competent having received powerboat training. Ongoing training in manoeuvring of boat, man over board procedures, launch and recovery are necessary.
- Lifejackets must be worn at all times; dry suits must be worn in water temperatures of less than 10°C.

14.96.2 Operation & Checks

- One person appointed in charge.
- A pre-check must be carried out by the crew, including the condition of the sponsons where applicable.
- Engine condition to be checked in advance, including propeller & cooling system.
- Equipment must be safely stowed or lashed down.
- Safe lifting techniques must be deployed.
- At least one crewmember on lookout for rocks, shallow water and items in water.
- One fire extinguisher on board every vessel with an engine.
- All personal safety equipment must be regularly checked & serviced.
- Do not open engine cover when running.
- Adequate fuel to be carried at all times.
- Weather forecast to be obtained prior to journey.
- Fuel tanks used should be specific to engines used and should be marked accordingly.
- Communication must be maintained using radios and or mobile phones.

14.96.3 Outboard Engines

- Ensure clamps or bolts secure the engine to the boat. Additional chain ties may be used for additional security.
- Ensure your fuel is fresh and uncontaminated and that you have enough for your intended trip, plus a generous reserve. Do not overfill.

- Some two-stroke outboards need oil mixed with their fuel. Make sure you use marine two stroke oil (labelled TCW3) and that you mix it in the right ratio (refer to the user manual if unsure of the correct ratio). Other two strokes have a separate oil reservoir. They also require proper marine two stroke oil.
- Four-stroke outboards have an internal sump like a car engine. Check the level with the dip stick, and top up if necessary with engine oil (not two-stroke oil).
- Controls. Turn the steering wheel from lock to lock and the throttle/gear control from ahead to astern to sure that the controls operate correctly.
- Make sure the propeller and drive leg are free of debris such as rope, weed, fishing line or plastic bags.
- Connect the fuel line to the tank and to the engine. Make sure it is in good condition and free of kinks.
- If the outboard is fitted with a water separator/filter, inspect the filter bowl for dirt or water and drain it off if necessary.
- On small engines with integral tanks, make sure the fuel tap is open.
- Ensure tanks vents are open.
- If your engine is connected to the boat's electrical system, make sure all the necessary switches and circuit breakers are switched on.
- If it is fitted with a primer bulb, squeeze the bulb until it is firm.
- The engine must be fitted with a kill cord, connected to the kill switch and clip the other end to your leg, wrist or lifejacket. Ensure that it is regularly tested.
- After starting immediately check that there is a good flow of water from the cooling water tell-tale. If not check that the tell-tale hole is not clogged.

14.96.4 Details of recommended small boat equipment

- A personal flotation device.
- A buoyant heaving line/throw bag.
- Boathook
- Two orange smoke signal canisters
- Foghorn powered or aerosol
- Navigation lights as required by boat length
- Manual/electric bilge pump capable of pumping from any hull watertight compartment and with all hatches closed.
- Folding anchor
- Boats should have a suitably reinforced deck cleat/Samson post on the foredeck, and means of closing over the bow roller or fairlead used when anchoring
- An adequate supply of warps and fenders, these should include suitable warps to allow the craft be towed if necessary.
- Waterproof torch
- An appropriate tool kit, and spare parts for the type of craft being used
- First aid kit
- Set of Oars/Oarlocks/Paddles
- Suitable Knife

14.96.5 Use of small boats without engines

- Ongoing training in use of boats & rowing techniques.
- Lifejackets must be worn at all times.
- One person appointed in charge.
- Equipment must be safely stowed or lashed down.
- Safe lifting techniques must be deployed.
- Stability of the boat to be maintained by positioning of crew.
- Surplus water to be baled out before departing.
- At least one crewmember on lookout for rocks, shallow water and items submerged in the water.
- Ensure oars are in good condition.
- The crew must carry out a pre check.
- All personal safety equipment must be regularly checked & serviced.
- No smoking on board.
- Weather forecast to be obtained prior to journey.
- Mobile phones or a radio must be available for communication purposes.

14.97 Use of Canoes

Hazard:	Weather, access/egress to canoes, other boats on the water , working in water, cold water, physical fitness, obstacles in the water manual handling.
Level of Risk:	Medium - High
Controls:	See details outlined below

- Staff using a Canadian canoe must have level 2 canoe skills of the Irish Canoe Union (ICU) Standard.
- A maximum of two staff members can work from the canoe.
- Staff using a canoe must be competent swimmers.
- Shore backup to maintain radio contact and visual contact at bridges.
- Staff must wear Personal Floatation Devices at all times.
- Canoe buoyancy should be sufficient to keep both the canoe and its occupants afloat in the event of it capsizing.
- Always be on the lookout for obstructions and hazards in the water e.g. rocks, shallows weirs etc.
- A broad spectrum (UVA/UVB) sun cream should be worn in appropriate weather.
- Dry suits must be worn in water temperatures of 10°C or lower.
- Helmet and knee pads must be worn at all times.
- Ensure if carrying additional equipment the canoe is not overloaded.
- Ensure a weather forecast is obtained before entering the water.
- Equipment in the canoe must be safely stowed or lashed down.
- Equipment should include a spare paddle, radio, mobile phone, water and waterproof pouches.
- Manual handling techniques must be deployed when lifting the canoe.
- Ensure the canoe is adequately secured to the vehicle or in a trailer for transportation.

14.98 Kayaks (Sit on top kayaks)

Hazard:	Weather, access/egress to kayaks other boats on the water, working in water, cold water, physical fitness, manual handling swamping.
Level of Risk:	Medium - High
Controls:	See details outlined below

14.98.1 Training and Competency

- Staff participating in Kayak patrols must be competent swimmers.
- Staff participating in Kayak patrols must hold at a Kayaking Skills Award issued by a competent instructor recognised by Canoeing Ireland. It is recommended that RSR certification be renewed at least once every 5 years. Details of qualification and applicable operational waters are as follows:

Training	Scope of Operations
Sit-on- Top Flat Water Skills & RSR 1 (the 1 st training course)	Canals & Lakes (in force 1-2 conditions)
Sit-on-Top River Skills & RSR 2 (the 2 nd training course)	Canals & Lakes (in Force 1-3 conditons) Estuarine waters (in Force 1-2 conditons) Rivers up to Grade II Conditons*

*Grade II is described as **Moderate** - the water is faster and rapids are more frequent; rocks, waves and small stoppers are found but always with an obvious channel.

14.98.2 Personal Protective Equipment

Kayaking staff must be provided with and be in possession of the following equipment:

- CE approved buoyancy aids (minimum of 50N buoyancy). Buoyancy aids should have a quick release mechanism if fitted with webbing/0 ring. Straps should be adjustable and tighten at the waist.
- Suitable dry suit where water temperature is less than 10°C. Otherwise salopettes and kayak jacket may be worn.
- Suitable paddle
- Suitable kayak helmet.
- Whistle
- Pocket first aid kit.

- Mobile Phone
- Radio
- Knife with serrated edge
- Waterproof torch
- Throw Bag* (minimum 10m)
- Water
- Sun cream
- Dry Bag
- Disinfectant wipes or gel
- Closed sling and karabiner

***Accurate and effective use of throw bags requires practice by staff using kayaks and shore back up.**

Shore backup should possess the following equipment:

- First Aid Kit
- Throw bag
- Spare paddle
- Map
- Radio
- Mobile Phone

14.98.3 Prior to Entering the Water

- Staff participating should have completed a first aid course.
- Staff must ensure that they have a buddy and never kayak alone. Ensure you and your buddy has agreed hand/paddle signals if required. Shore back up must maintain radio contact and visual contact where possible. Back up must carry a throw rope.
- Inspect your craft and equipment thoroughly, check for signs of damage.
- Never use a damaged kayak.
- Ensure stability of the kayak at the water's edge before entry.
- If carrying additional equipment ensure the kayak is not overloaded.
- Check the hull is fitted with grab loops. Ensure that you and your buddy have informed colleagues (shore backup) of your departure point, locations and final exit point from the river.
- Ensure the buoyancy aid is tightly fitted and cannot rise up.
- Weather reports must be obtained prior to entering the water.

14.98.4 Safe Kayaking Waters

- Staff must not kayak in waters which are categorised above Grade II rapids.
- Extra care should be taken to obtain local weather reports particularly in spate river systems. Kayaking patrols should be postponed in flooded rivers or if heavy rains are forecast to create flood conditions.
- Staff should be familiar with the waters they are going to enter and know the location of hazards such as strainers, weirs and falls. Kayaks should be removed above weirs and launched below.
- Reversals should be identified and avoided. These are places where the current swings upward and revolves back on itself, forming a treacherous meeting of currents. Also known as stopper waves or keepers.
- Be vigilant, constantly scan the water for hazards and obstacles such as fence posts, trees or nets. Remember that the physical hazards in the water may change regularly.
- As per training never paddle in perceived danger zones. Kayak patrols should only take place in comfort zones and adventure zones where CLAP principles are implemented. CLAP = Communication, Line of Sight, Avoidance & Position.

14.98.5 STIG Rescues & Self Recues

- STIG: Self, Team, Individual & Gear
- Rescue of yourself first, followed by backing up the team and then rescue of the casualty, with gear recovery being last.
- Ensure team is safe, i.e. team is in their comfort zone; in an environment that is unlikely to get them into difficulty or cause them injury, even in the event of a capsized.
- All members of the team should endeavour to maintain line of sight or regain line of sight if it is lost to ensure everyone's safety is known. It is no use being safe if no one knows your safe.
- Team members must stay well within their comfort zone during rescues.
- In a rescue you can talk to the individual and the team simultaneously to ensure both are getting to safety, these are non-contact rescues.
- Be wary of committing to a contact rescue if the team safety isn't in place
- To seek attention, use your whistle and blow once. In an emergency blow the whistle six times to signal distress.
- As per training self-rescue can be conducted using offensive or defensive swimming depending on the conditions.

14.98.6 Transportation of Kayaks

- Kayaks may be transported using trailers or by been secured to kayak roof racks.
- Manual handling issues must be considered.
- Manual handling training must be completed and correct techniques applied.

14.99 Personal Watercrafts (Jet Skis/Seadoo)

Hazard:	Weather, access/egress to jet ski, other boats on the water, working in water, cold water, physical fitness, launch and recovery, submerged obstacles.
Level of Risk:	Medium - High
Controls:	See details outlined below

14.99.1 Pleasure Water Craft

- Staff must complete training with the ISA, RYA or other approved training provider.
- Read and follow manufacturers operating manual for safe operation and maintenance.
- Staff must familiarise themselves with any safe operating procedures developed specifically for PWC operations.
- Staff must be competent in the operation of the Jet Ski prior to participating in patrols.
- Dry suits must be worn at all times at sea. Drysuits must be worn on rivers and lakes when the water temperature is less than 10°C.
- Personal Flotation Devices and helmets must be worn at all times.
- Goggles should be worn for eye protection if the helmet does not have a visor.
- A whistle, neoprene gloves, balaclava headwear, one piece fibre pile suit "Woolly Bear", kidney belt and sun block should be worn. A mobile phone should be carried in a waterproof case
- Kill cords must be attached to the operator and craft.
- A maximum of two people on board at any time.
- Single patrols are prohibited, twin patrols or patrols with RIBS are acceptable
- Shore backup must maintain radio contact.
- Where the stability of a jet ski is compromised by nets the surplus must be cut loose.
- Always be on the lookout for obstructions and hazards in the water e.g. rocks, shallows etc.
- Where practicable a fire extinguisher must be carried.
- Ensure a weather forecast is obtained before entering the water.
- Equipment must be safely stowed or lashed down.
- Equipment should include a radio, mobile phone, water and waterproof pouches.
- Manual handling techniques must be deployed when required.

14.99.2 Recommended equipment for PWC

PWC Content

- Rope (5m x 8mm Nylon) for use in towing and mooring
- A flare pack (1 x pinpoint red and 2 x orange smoke) in a watertight container.
- Folding anchor

- Collapsible paddle
- Basic first aid kit
- Lanyard kill cord
- Knife
- Torch
- Basic tool kit
- Fire extinguisher
- Spare kill cord
- Hand held marine VHF radio
- Hand bearing compass
- Plastic covered chart/s and emergency radio signal table (list of coastal radio stations)
- GPS unit
- Personal EPIRB (attached to coxswains YAK when operating PWC)

Grab Bag Content

- Emergency food and water
- Distress Flares red parachute (6)
- Smoke floats orange (2)
- Torch
- Two Hypothermia Bags
- Hand held fog horn
- Portable VHF Radio in a waterproof container (stored in grab bag)
- Spare Kill Cord

14.99.3 Prior to entering the Water

- Check the weather and sea area forecast.
- Complete radio checks.
- Complete a safety checklist prior to departure (e.g. charts, tides, fuel and oil, hull, engine test run and stops.
- Ensure all engine doors and storages access are correctly secured and sealed.
- Operators should be familiar with and have practiced the procedure for righting a capsized boat. Rolling the craft the wrong way may result in water entering into the engine, causing serious damage to it and rendering the PWC inoperative.

14.99.4 On the water

- Be alert for the wave, wind, cloud changes that may signal weather changes.
 - Travel at slow speed and with great care in shallow waters.
 - Exercise great caution when approaching or overtaking other vessels. Never manoeuvre at speed in close proximity to other PWCs, vessels or swimmers.
 - Always ensure there is sufficient fuel for the planned journey.
-
- Shore backup should make contact with the PWC's every 10 minutes. All transmissions should be brief, concise and accurate.
 - PWC's will not operate in known communication black spots and will not as part of the patrol transit those areas which would lead to a loss of communication contact with their shore back up
 - Avoid beaching the craft.
 - In the event of a fire, only fight it if safe to do so. Otherwise abandon the craft.

14.100 Boat and Net Storage

Hazard:	Manual handling, falls from height, falling objects, biological agents
Level of Risk:	Medium - High
Controls:	See details outlined below

14.100.1 Boat Stores

- Boat storage area must be maintained free from obstruction and items stored safely.
- Boats stored outside should be placed upside down where possible to prevent accumulation of rainwater.
- Rain, weather and wet vegetation will affect wooden boats; care should be taken to prevent vegetation build up around boats. Boats must be checked before use, especially when exposed to the elements.

14.100.2 Net storage

- Nets must be stowed safely and without any trip hazards.
- Where possible nets should be placed in bins or suitable shelving with a stable base.
- Nets should be disinfected as appropriate.

14.101 Netting

Hazard:	Weather, access/egress, other boats on the water, swimmers working in water, cold water, physical fitness, manual handling.
Level of Risk:	Low - Medium - High
Controls:	See details outlined below

14.101.1 Gill Netting

- Condition of boat & oars to be checked in advance.
- Engine condition to be checked in advance, including propeller & cooling system.
- Personal flotation device must be worn at all times.
- Dry suit to be worn in winter or adverse conditions (water temperatures of less than 10°C).
- A minimum of two personnel per boat is required, who between the two should have knowledge of the lake (major lakes) and experience of boat handling and gill netting operations.
- Shore based backup (vehicle with additional person, binoculars and operational radio/ phone) must be provided for large lakes.
- Weather forecast to be obtained in advance. Netting or servicing of nets may not take place if adverse weather is forecast.
- Strict work plan to be agreed in advance, changes may not occur without informing mobile unit. This plan should include locations and duration of work.
- Mobile unit to travel in order to maintain visual contact if entering radio black spots on large lakes.
- On small lakes and in areas of poor radio and phone coverage prior arrangements involving the use of signals may be made.
- Identification of pre-arranged location for visual check in the event of communications breakdown.
- A pre departure equipment check must be carried out.
- Engine must be secured to boat.
- Smoking in boats is strictly prohibited.
- Contact mobile unit in the event of engine failure, if there are additional crews in the vicinity they will be instructed to tow the boat ashore, if no other crews are in area the boat must be rowed ashore. If difficulties are experienced, the emergency services will be called.
- The stability of the boat must be maintained and NEVER overloaded. Ensure loads are evenly distributed particularly when carrying a water tank for transportation of live fish.
- Personal items (e.g. watches/rings etc) should not be worn when gill netting.
- A boat hook may be used to catch nets. If fish cannot be removed with reasonable ease from nets then the mesh should be cut.

- The following equipment should be carried:
 - Spare oar pins
 - First aid box
 - Radio/mobile phone
 - Flares
 - Boat hook-hook to grab nets
 - Gloves if considered necessary
 - Fire extinguisher

14.101.2 Fyke Netting

- Condition of boat & oars to be checked in advance.
- Engine condition to be checked in advance, including propeller & cooling system.
- Personal flotation device must be worn at all times.
- Dry suit to be worn in winter or adverse conditions (water temperatures of less than 10°C).
- A minimum of two personnel per boat is required, who between the two should have knowledge of the lake (major lakes) and experience of boat handling and fyke netting operations.
- Shore based backup (vehicle with additional person, binoculars and operational radio/ phone) must be provided for large lakes.
- Weather forecast to be obtained in advance. Netting or servicing of nets may not take place if adverse weather is forecast.
- Strict work plan to be agreed in advance, changes may not occur without informing mobile unit. This plan should include locations and duration of work.
- Mobile unit to travel in order to maintain visual contact if entering radio black spots on large lakes.
- On small lakes and in areas of poor radio and phone coverage prior arrangements involving the use of signals may be made.
- Identification of pre-arranged location for visual check in the event of communications breakdown.
- A pre departure equipment check must be carried out.
- Engine must be secured to boat.
- Smoking in boats is strictly prohibited.
- Contact mobile unit in the event of engine failure, if there are additional crews in the vicinity they will be instructed to tow the boat ashore, if no other crews are in the area the boat must be rowed ashore. If difficulties are experienced, the emergency services will be called.
- The stability of the boat must be maintained and NEVER overloaded. Ensure loads are evenly distributed particularly when carrying a water tank for transportation of live fish.
- Personal items (e.g. watches/rings etc.) should not be worn when fyke netting.
- A boat hook may be used to catch nets.
- The following equipment should be carried:
 - Spare oar pins
 - First aid box
 - Radio/mobile phone
 - Flares
 - Boat hook-hook to grab nets
 - Gloves if considered necessary
 - Fire extinguisher

14.101.3 Seine Netting

- Condition of boat & oars to be checked in advance.
- Engine condition to be checked in advance, including propeller & cooling system.
- Personal flotation device must be worn at all times.
- If staff are entering the water on foot a buoyancy aid may be appropriate.
- Dry suit to be worn in winter or adverse conditions (water temperatures of less than 10°C).
- A minimum of two personnel per boat is required, who between the two should have knowledge of the lake (major lakes) and experience of boat handling and seine netting operations.
- Shore based backup (vehicle with additional person, binoculars and operational radio/ phone) must be provided for large lakes.
- Weather forecast to be obtained in advance. Netting or servicing of nets may not take place if adverse weather is forecast.
- Strict work plan to be agreed in advance, changes may not occur without informing mobile unit. This plan should include locations and duration of work.
- Mobile unit to travel in order to maintain visual contact if entering radio black spots on large lakes.
- On small lakes and in areas of poor radio and phone coverage prior arrangements involving the use of signals may be made.
- Identification of pre-arranged location for visual check in the event of communications breakdown.
- A pre departure equipment check must be carried out.
- Engine must be secured to boat.
- Smoking in boats is strictly prohibited.
- Contact mobile unit in the event of engine failure, if there are additional crews in the vicinity they will be instructed to tow the boat ashore, if no other crews are in the area the boat must be rowed ashore. If difficulties are experienced, the emergency services will be called.
- The stability of the boat must be maintained and NEVER overloaded. Ensure loads are evenly distributed particularly when carrying a water tank for transportation of live fish.
- Personal items (e.g. watches/rings etc.) should not be worn when seine netting.
- A boat hook may be used to catch nets.
- The following equipment should be carried:
 - Spare oar pins
 - First aid box
 - Radio/mobile phone
 - Flares
 - Boat hook-hook to grab nets
 - Gloves if considered necessary
 - Fire extinguisher

14.101.4 Drift Netting

- Condition of boat & oars to be checked in advance.
- Engine condition to be checked in advance, including propeller & cooling system.
- Personal flotation device must be worn at all times.
- Dry suit to be worn in winter or adverse conditions (water temperatures of less than 10°C).
- A minimum of two personnel per boat is required, who between the two should have knowledge of the lake (major lakes) and experience of boat handling and drift netting operations.
- Shore based backup (vehicle with additional person, binoculars and operational radio/ phone) must be provided for large lakes.
- Weather forecast to be obtained in advance. Netting or servicing of nets may not take place if adverse weather is forecast.
- Strict work plan to be agreed in advance, changes may not occur without informing mobile unit. This plan should include locations and duration of work.
- Mobile unit to travel in order to maintain visual contact if entering radio black spots on large lakes.
- On small lakes and in areas of poor radio and phone coverage prior arrangements involving the use of signals may be made.
- Identification of pre-arranged location for visual check in the event of communications breakdown.
- A pre departure equipment check must be carried out.
- Engine must be secured to boat.
- Smoking in boats is strictly prohibited.
- Contact mobile unit in the event of engine failure, if there are additional crews in the vicinity they will be instructed to tow the boat ashore, if no other crews are in the area the boat must be rowed ashore. If difficulties are experienced, the emergency services will be called.
- The stability of the boat must be maintained and NEVER overloaded. Ensure loads are evenly distributed particularly when carrying a water tank for transportation of live fish.
- Personal items (e.g. watches/rings etc.) should not be worn when gill netting.
- A boat hook may be used to catch nets.
- The following equipment should be carried:
 - Spare oar pins
 - First aid box
 - Radio/mobile phone
 - Flares
 - Boat hook-hook to grab nets
 - Gloves if considered necessary
 - Fire extinguisher

14.101.5 Bongo Netting

- Condition of boat & oars to be checked in advance.
- Engine condition to be checked in advance, including propeller & cooling system.
- Personal flotation device must be worn at all times.
- Dry suit to be worn in winter or adverse conditions (water temperatures of less than 10°C).
- A minimum of two personnel per boat is required, who between the two should have knowledge of the lake (major lakes) and experience of boat handling and bongo netting operations.
- Shore based backup (vehicle with additional person, binoculars and operational radio/ phone) must be provided for large lakes.
- Weather forecast to be obtained in advance. Netting or servicing of nets may not take place if adverse weather is forecast.
- Strict work plan to be agreed in advance, changes may not occur without informing mobile unit. This plan should include locations and duration of work.
- Mobile unit to travel in order to maintain visual contact if entering radio black spots on large lakes.
- On small lakes and in areas of poor radio and phone coverage prior arrangements involving the use of signals may be made.
- Identification of pre-arranged location for visual check in the event of communications breakdown.
- A pre departure equipment check must be carried out.
- Engine must be secured to boat.
- Smoking in boats is strictly prohibited.
- Contact mobile unit in the event of engine failure, if there are additional crews in the vicinity they will be instructed to tow the boat ashore, if no other crews are in the area the boat must be rowed ashore. If difficulties are experienced, the emergency services will be called.
- The following equipment should be carried:
 - Spare oar pins
 - First aid box
 - Radio/mobile phone
 - Flares
 - Boat hook-hook to grab nets
 - Gloves if considered necessary
 - Fire extinguisher

14.101.6 Stop Netting

- A Personal flotation device should be worn at all times.
- Dry suit to be worn in winter or adverse conditions (water temperatures of less than 10°C).
- When driving metal pins into the ground shore or bank care must be taken to avoid underground utilities. A map of underground utilities should first be obtained from the ESB. Details of the proposed stop netting should be sent to dig@esb.ie allow 10 working days to receive drawings.
- Manual handling techniques should be used as required,

14.101.7 Clam Dredging

- Condition of boat & oars to be checked in advance.
- Engine condition to be checked in advance, including propeller & cooling system.
- Personal flotation device must be worn at all times.
- Dry suit to be worn in winter or adverse conditions (water temperatures of less than 10°C).
- A minimum of two personnel per boat is required, who between the two should have knowledge and experience of boat handling and clam dredging operations.
- Weather forecast to be obtained in advance.
- A pre departure equipment check must be carried out.
- Engine must be secured to boat.
- Smoking in boats is strictly prohibited.
- Personal items (e.g. watches/rings etc.) should not be worn when using the dredger.
- Care must be taken when handling the dredger. Manual handling techniques must be deployed.

14.102 Smolt Traps

Hazard:	Weather, access/egress, boats, working in water, cold water, physical fitness, manual handling.
Level of Risk:	Medium
Controls:	See details outlined below

- A site specific risk assessment must be carried out for the purpose of smolt trap operations.
- Smolt Traps should only be placed into the river in spring prior to smolt run thus avoiding unnecessary cleaning and maintenance work.
- Other survey work on rivers using the smolt trap may be carried out at other times however, the trap should only be fished and maintained in low water conditions.
- The supervisor should choose a site that allows for easy access to the smolt trap for staff is suitable for the purpose of catching smolts / survey work.
- Smolt trap should only be cleaned and operated when water levels are safe to do so.
- Weather forecasts should be monitored by supervisors, if heavy rainfall is forecast; the drum of smolt trap should be lifted. This will allow most debris to pass through the smolt trap and when water level return to workable levels there will be little clearing and maintenance work to be carried out by staff.
- If supervisors fear that the flow of the river in high flood conditions may pose a threat to the smolt trap then the trap should be relocated closer to the bank of the river. This work should only be carried out in low flow conditions and prior to the flood.
- Operating the smolt trap require some manual handling tasks.
- All staff must have undergone manual handling training.
- Adhere to the principles of safe lifting.
- All persons must wear an appropriate personal flotation device at all times when working on or close to water where there is a risk of drowning from stumbling or falling into water.
- A lifebuoy must be on the smolt trap when cleaning or operating the smolt trap.
- A dry suit must be worn during operations in winter or adverse conditions (water temperatures of less than 10°C).
- At least one staff member should have completed an occupational First Aid course.
- A fully stocked First Aid box should available.
- No person should operate or enter onto the smolt trap alone.
- A mobile phone must be carried.
- Staff involved must be trained by other staff members who have sufficient knowledge and experience appropriate to the nature of the work to be undertaken.
- The access area to the trap must be assessed and the substrate of the river bed assessed for any trip hazards.

- Staff will be required to wade out to the smolt trap. This should only be done in low water conditions. A wading stick should be used if water levels are above the knee and staff can also use the anchor ropes as a safety rail to the trap.
- Care must be taken when climbing onto the trap.
- The door to the fishing area of the smolt trap must be secured by rope prior to fishing the trap.
- Lifting the drum for cleaning, maintenance work or for expected flood conditions. Staff should use the pulley attached to the trap. Ensure that the drum is securely fastened in place by rope.
- If flood conditions are forecast the smolt trap should be brought closer to the river bank, using the anchor ropes the smolt trap should be floated into shore. Ensure that the trap has stuffiest water under it to avoid excessive manual handling practice.
- Wash hands thoroughly before eating, smoking or putting hands to face.
- Employ good hygiene practice and use disinfectant wipes.
- Ensure any cuts and wounds are covered with a waterproof bandage before commencing smolt trap fishing or maintenance.
- Apply immediate First Aid to any cuts received.
- Personal Protective Equipment shall include:
 - Personal flotation device
 - Waders
 - Protective gloves (heavy duty gloves when cleaning or carrying out maintenance work and latex gloves to be worn when handling or carrying out scientific research on smolts)
 - Dry suit (when required)

14.103 Glass Eel Fishing

Hazard:	Weather, access/egress to boats, other boats on the water, working in water, cold water, physical fitness.
Level of Risk:	Medium
Controls:	See details outlined below

14.103.1 Glass eel fishing from a boat

- Dry suits must be worn at all times.
- Personal flotation devices must be worn at all times.
- Prior training in basic sea survival to have been completed.
- Shore back-up to be appointed. Regular radio contact to be maintained (as per inshore protection operations).
- A minimum of 1 Coxswain and 2 Fishery Officers are required to set and lift nets.
- A minimum of 1 Coxswain and 1 Fishery Officer are required for tending of nets through the night.
- Fishing of Portuguese tela nets requires that the boat be temporarily attached to the apex of the tela net (to permit removal of glass eels by hand netting).
- Provision for 'quick release' of boat from net must be in place, this can be achieved by use of a 'slip-knot' or by carbine 'clips'.
- Prior inspection of fishing sites to be carried out during daylight hours
- Care to be exercised in choice of fishing site to avoid busy navigation lanes / hazardous tidal currents etc.
- Battery operated head-mounted torches to be provided to allow 'hands-free' operation of nets and catch.

14.103.2 Glass eel fishing from shore / river bank

- Suitable sites should be identified previously in daylight hours during low tide.
- Hand netting only to be carried out on flat or gradually sloping bays or river margins.
- Lifejacket to be worn at all times.
- Thigh or chest-waders may be sufficient for shallow bays / river margins. Dry suit to be worn when working along deeper waters.
- A minimum of 2 fishery officers to be present and working in close proximity.
- Head mounted battery operated torches to be provided for hands-free operation of nets.
- Manual Handling techniques to be deployed.

14.104 Eel Monitoring, Surveying & Netting

Hazard:	Weather, access/egress to boats, boats, working in water, cold water, physical fitness.
Level of Risk:	Medium
Controls:	See details outlined below

14.104.1 Fyke Netting

- Condition of boat, oars and engine must be checked prior to setting out.
- Lone working is strictly prohibited.
- Staff must wear a personal flotation device at all times when setting and retrieving fyke nets.
- A minimum of 1 coxswain and 2 fishery officers are required.
- Netting or servicing of nets must be postponed in adverse weather.
- Suitable gloves must be worn.
- Care must be taken when navigating boats in areas of strong current, rocky outcrops and busy boating lanes.
- Dry suits must be worn at sea and in waters less than 10°C.
- Night working is prohibited. Nets should be set and retrieved during daylight hours.
- Shore back up must be appointed and maintain regular contact
- Smoking is prohibited on boats.
- Manual handling techniques must be deployed. When hauling and setting nets job rotation is essential.
- Sun cream, hats and Polaroid glasses should be available when required.
- The following equipment should be carried:
 - Spare oar pins
 - First Aid Box
 - Radio/Mobile Phone
 - Flares
 - Boat hook – hook to grab nets
 - Gloves
 - Fire Extinguisher
 - Spare Rope Approx. 30m

14.104.2 Mobile Elver Traps

- Personal Flotation devices must be worn.
- Lone working is prohibited.
- Care should be taken when setting mobile traps as shallow boulder strewn waters are a trip hazard.

14.104.3 Fixed Elver Traps:

- Personal Flotation devices must be worn.
- Lone working is should be avoided. Where it cannot be avoided the lone working procedure must be followed.
- Staff must have completed manual handling training.
- Staff must practice good hygiene ensuring hands are clean after work and before eating, drinking or smoking.
- Great care must be taking when accessing/egressing from trap locations. Suitable footwear must be worn e.g. wellingtons, boots or waders.

14.105 Fish Farm Aquaculture Inspections

Hazard:	Weather, access/egress to boats and cages, boats, working in water, cold water, physical fitness.
Level of Risk:	Medium
Controls:	See details outlined below

14.105.1 Use of Boats

- Appropriate safety footwear must be worn.
- Appropriate personal flotation device must be worn.
- Dry suit must be worn.
- Basic sea survival course to be undertaken prior to commencing this work.
- Due care to be taken when embarking or disembarking from boat.
- Carry communications – radio / mobile telephone.
- Maximum number of persons on boat not to be exceeded.
- When hauling nets they must be secured.
- Safe lifting techniques must be deployed.
- One crew member on lookout for obstructions when approaching cages.
- All personal safety equipment must be regularly checked & serviced.
- Ongoing training exercises re boat handling, man over board procedures, coming alongside etc must be carried out.
- Weather forecast to be obtained prior to sea journey.
- All equipment to be disinfected prior to departing on inspection.
- Staff must carry proper disinfection equipment.

14.105.2 Sampling of cages

- Care must be taken when using of long bradogue (long handled net), as there is a risk injury on the moving platform.
- Hauling of box net, lifting heavy weight. Deploy manual handling techniques.
- PPE must be worn when chemicals, are handled.
- Staff may not proceed to cages alone.
- Act with extreme caution at all times when on cage.
- Appropriate lifejackets must be worn at all times.
- Dry suit must be worn at all times.
- All personal safety equipment must be regularly checked & serviced.
- Safe manual handling techniques to be deployed, particular care to be taken when transferring equipment from boat to cage.
- Safety data sheets must be consulted before handling chemicals. Chemical resistant goggles must be used where there is a risk of chemical spill/splash.

14.106 Salvage Operations

Hazard:	Weather, access/egress to boats, working in water, cold water, physical fitness, bioagents, needlesticks, manual handling, electricity.
Level of Risk:	Medium
Controls:	See details outlined below

- Staff carrying out salvage operations must have completed manual handling training.
- Staff must also be competent in the use of electrofishing equipment.
- Manual handling techniques must be deployed when loading, unloading and transporting boats. Mechanical aids should be used such as a pulzall.
- Personal flotation devices and dry suits must be worn.
- Good hygiene practices must be employed. Hands should be thoroughly cleaned before eating, smoking or drinking.
- Manual handling techniques should be used when netting and transporting fish. Task rotation should be used to reduce the risk.
- A recce of the site should be carried out to check for discarded syringes.

14.107 Hydro-acoustic Surveys

Hazard:	Weather, access/egress to boats, other boats on the water, working in water, cold water, physical fitness, manual handling.
Level of Risk:	Low
Controls:	See details outlined below

14.107.1 General Safety Measures

- Staff carrying out hydro-acoustic surveys must have completed manual handling training.
- Staff must also be competent in boat handling skills.
- Manual handling techniques must be deployed when using, loading and unloading hydro-acoustic equipment.
- Personal flotation devices must be worn at all times and dry suits must be worn in waters of less than 10°C.

14.107.2 Hydroacoustic Surveys on the Cheetah

- To ensure safe access and egress the boat is fitted with safety rails. Staff are provided with appropriate footwear e.g. wellingtons, waders and boots.
- Lone working is prohibited.
- The boat should not be operating in conditions where there is a risk of lightning. Surveys are not carried out during strong winds on open water. Polaroid glasses should be worn in bright conditions. A UVA/UVB sun cream should be worn in warm/sunny conditions. Foul weather clothing should be worn as appropriate.
- The boat helmsman has completed night navigation training.
- International collision prevention regulations are followed where applicable. The vessel is fitted with navigation lights.
- Hands are washed thoroughly or disinfected before eating/drinking or smoking.
- Dry suits must be worn when operating in waters of less than 10°C.
- Staff are trained in manual handling techniques. Two person lift is carried out when moving GPT boxes.
- Great care is taken when fitting or removing mounts. Staff must work in pairs.
- Where practicable cables are tied back to prevent transducer cables creating a trip hazard.
- Signage is fitted on the net hauler operational buttons and entanglement cautionary signage is fitted. Staff must tie up long hair and avoid wearing loose fitting clothing or jewellery.
- Staff wear gloves when retrieving nets by hand from cold water. Staff are trained in manual handling. Manual handling techniques are deployed as required.

- Staff are trained in manual handling. Manual techniques are deployed for large heavy fish boxes a two person lift is carried out.

14.107.3 Hydro-acoustic Surveys at Night

- The work involves a variety of tasks to avoid monotony. Staff rotate duties to further reduce monotony.
- The work involves a mix of work which requires physical and mental effort. The work is rotated.
- Where practicable the work is planned to finish before 6am.
- Adequate and regular rest breaks are taken.
- Adequate time is provided for sleep, travel and meals. Minimum break of 11 hours uninterrupted.
- Night work is seasonal in nature and infrequent.
- Staff carrying out the work are fit to carry out their duties. Occupational health procedures are followed if and when required e.g. fitness to return to work programmes.

14.108 Use of ROV

Hazard:	Weather, access/egress to boats, other boats, working in water, cold water, physical fitness and manual handling.
Level of Risk:	Medium - High
Controls:	See details outlined below

- Staff carrying out hydro-acoustic surveys must have completed manual handling training. Two people should carry the boxes containing equipment. The boxes are fitted with wheels, theses should be used if one person is pulling a box. Mechanical aids should be used as required. Manual handling techniques must be deployed when using, loading and unloading ROV equipment.
- Staff must also be competent in boat handling skills.
- Personal flotation devices and dry suits must be worn in waters of less than 10°C.

Electro-fishing

- 14.109 Electro-fishing with Backpacks**
- 14.110 Electro-fishing with Bank Generators**
- 14.111 Electro-fishing from Boats**
- 14.112 High Voltage Electro-fishing from Boats**
- 14.113 Boom Boat Electro-fishing**

14.109 Electro-fishing with Backpacks

Hazard:	Weather, access/egress, working in water, cold water, physical fitness, electricity, submerged obstacles bio-hazards.
Level of Risk:	Medium - High
Controls:	See details outlined below

14.109.1 Training & Competency

No person should take part in electrofishing operations unless all the following apply:

- The theory of how electrofishing works has been properly explained.
- A competent and experienced person has given instruction on the appropriate safe working procedures outlined in this safety statement.
- Staff using the equipment have read and followed the manufacturer's operating manual for safe operation and maintenance.
- Proper instruction is given on the use of any new equipment whenever this is acquired.
- Staff are trained in manual handling and apply the relevant techniques.

14.109.2 Personal Protective Equipment

- Durable protective rubber gloves (gauntlet style that reach the elbow) should be worn for additional protection.
- Ensure Wellington boots/waders are worn and in good condition.
- Personal flotation devices and personal protective clothing must be worn at all times. Always check that your personal flotation device is in good condition and check that the cylinder has not been tampered with or removed.
- Personal flotation devices shall be serviced annually and access to records shall be freely available to staff.
- Sun factor should be worn in fair weather. Cover your head/neck where practicable.
- Polaroid glasses where appropriate should be worn by all staff involved in electro-fishing.
- Staff holding the bucket for person fishing should use a wading staff for support.

14.109.3 Unsafe Environment/Conditions

- Electro-fishing equipment shall be removed IMMEDIATELY from water in the following circumstances:
 - Obstructions noted
 - Significant increase in speed of flowing water or quickly rising water levels
 - Presence of animals or people on the banks or in the water

- Person slipping in water
 - Rain/Heavy Mist/Lightening
- In the event of a person slipping into the water, the electrode will be removed immediately or the emergency off switch pressed. The person shall be removed from the water and first aid administered. Medical assistance to be sought where necessary.
 - Minimum of one trained firstaider per team. (Preferably 2).
 - Minimum of two persons to carry out electro-fishing using a back pack.
 - The following equipment should be at hand:
 - First Aid Kit
 - Radio/Mobile Phone
 - Lone working is prohibited.
 - Only persons in good health and free from heart conditions may carry out electro-fishing operations.
 - Electro-fishing from backpacks can be carried out in daylight conditions on clear days.
 - Electro-fishing in the rain is prohibited.
 - Appropriate waterproof footwear/protective clothing must be worn as required.
 - Always check the solidity of the ground in front before entering the water. Care must be taken when moving in the water.
 - On the job training and induction training shall be provided to all new operators by experienced operators.

14.109.4 Safety Standards of Equipment

- Equipment to be in good working order and checked before use, no defective equipment, frayed cables or damaged control boxes may be used. Equipment must be IP rated and CE marked.
- Regular servicing and maintenance of equipment is required. Servicing shall take place annually before the field season commences. Service records must be kept at the RBD office or IFI head office.
- Each piece of equipment should have a scaff tag indicating the service date and the date of next service.
- Faulty equipment should be removed from service until repaired by a competent person.
- Equipment to comply with safety standards and specifications under the low voltage directive.
- Care must be taken to ensure backpack plate does not become snagged.

14.110 Electro-fishing with Bank Generators

Hazard:	Weather, access/egress, working in water, cold water, physical fitness, electricity, submerged obstacles bio-hazards.
Level of Risk:	Medium - High
Controls:	See details outlined below

14.110.1 Training & Competency

No person should take part in electrofishing operations unless all the following apply:

- The theory of how electrofishing works has been properly explained.
- A competent and experienced person has given instruction on the appropriate safe working procedures outlined in this safety statement.
- Staff using the equipment have read and followed the manufacturer's operating manual for safe operation and maintenance.
- Proper instruction is given on the use of any new equipment whenever this is acquired.
- Staff are trained in manual handling and apply the relevant techniques.
- Staff are trained in first aid.

14.110.2 Personal Protective Equipment

- Durable protective rubber gloves (gauntlet style that reach the elbow) may be worn for additional protection.
- Ensure Wellington boots/waders are worn and in good condition.
- Staff working near the generator may require hearing protection.
- Sun factor, head & neck covering to be worn in fair weather conditions where necessary.
- Hearing protection may be required. Contact the Health & Safety Executive for a noise assessment.
- Personal Flotation Devices and personal protective clothing must be worn at all times. Always check that your personal flotation device is in good condition and check that the cylinder has not been tampered with or removed.
- Personal Flotation Devices shall be serviced annually and access to records shall be freely available to staff. Scaff tags are recommended.
- Polaroid glasses where appropriate should be provided to all staff involved in electro-fishing.

14.110.3 Unsafe Environment/Conditions

- Electro-fishing equipment to be removed IMMEDIATELY from water in the following circumstances:
 - Increase in speed of flowing water or rising water levels
 - Obstructions noted
 - Presence of animals or people on the banks or in the water
 - Person slipping in water
 - Rain/Heavy Mist/Lightening
- In the event of a shower passing, equipment must be powered off, protected/covered over. Where heavy rain is anticipated, fishing should cease.
- In the event of a person slipping in, the electrode will be removed immediately, the person removed from the water and first aid administered. Medical assistance to be sought where necessary.
- Lone working is prohibited.
- On the job training and induction training shall be provided to all new operators by experienced operators.
- Only persons in good health and free from heart conditions may carry out electro-fishing operations.
- Team lifting techniques to be deployed.
- All persons must lookout for obstructions, fences, animals etc.
- Electro fishing in fast flowing waters is prohibited.

14.110.4 Safety Standards of Equipment

- Equipment to be in good working order and checked before use, no defective equipment, frayed cables or damaged control boxes may be used. Equipment must be IP rated and CE marked. The use of domestic electrical cables or equipment is prohibited.
- Regular servicing and maintenance of equipment is required. Servicing should take place annually before the field season commences. Service records must be kept at the office.
- Each piece of equipment should have a scaff tag indicating the service date and the date of next service.
- Faulty equipment should be removed from service until repaired by a competent person.
- Equipment to comply with safety standards and specifications of the Low Voltage Directive.
- When laying out equipment cables must be kept clear of the generator exhaust and maintained clear.
- Electro fishing generators may **only** be used for electro fishing operations and must be labelled "For electro fishing only".

- The following equipment should be carried:
 - First aid box
 - Fire extinguisher (dry powder)
 - Radio/Mobile phone
 - Spares for generator
 - Sufficient fuel only for intended duration

14.111 Electro-fishing from Boats

Hazard:	Weather, access/egress to boats, other boats/swimmers in water, cold water, physical fitness, electricity, submerged obstacles bio-hazards.
Level of Risk:	Medium - High
Controls:	See details outlined below

14.111.1 Training & Competency

No person should take part in electrofishing operations unless all the following apply:

- The theory of how electrofishing works has been properly explained.
- A competent and experienced person has given instruction on the appropriate safe working procedures outlined in this safety statement.
- Staff using the equipment have read and followed the manufacturer's operating manual for safe operation and maintenance.
- Proper instruction is given on the use of any new equipment whenever this is acquired.
- Staff are trained in manual handling and apply the relevant techniques.
- Staff must be trained in first aid.

14.111.2 Personal Protective Equipment

- Durable rubber gloves (gauntlet style that reach the elbow) should be worn. The objective is to keep hands and arms as dry as possible. Dry skin is a good insulator.
- Ensure wellington boots/protective clothing/waders are worn and in good condition.
- Personal Flotation Devices must be worn at all times. Always check that your personal flotation device is in good condition and check that the cylinder has not been tampered with or removed.
- Personal Flotation Devices shall be serviced annually and access to records shall be freely available to staff.
- Staff working near the generator must wear the provided **personal hearing protection** when required. Contact the H&S Executive for noise monitoring.
- The use of sun factor, head & neck coverings should be worn in fair weather conditions as appropriate.
- Polaroid glasses where appropriate should be used by all staff involved in electro-fishing.

14.111.3 Unsafe Environment/Conditions

- Electro fishing equipment to be removed IMMEDIATELY from water in circumstances such as the following:
 - Significant increase in speed of flowing water/rising water level
 - Obstructions noted
 - Presence of animals or people on the banks or in the water
 - Person falling overboard
 - Equipment falling overboard
 - Rain/Heavy Mist/Lightening
- The area to be fished must be surveyed in advance of the operation.
- If thunder/lighting is in the vicinity, you should get off the water. Lighting strikes can occur because the boat may be the highest point on the body of water.
- In the event of a person slipping in, the electrode must be removed immediately, the person removed from the water and first aid administered. Medical assistance to be sought where necessary.
- Lone working is prohibited.
- Where practicable the officer in charge of the operation shall visit the stretch of water prior to electro-fishing to identify launch and recovery areas and hazards.
- When working in a number of boats the officer in charge must communicate the launch and recovery points of the boats. Sections of the river to be fished by each boat must be assessed prior to the operation and everyone must be made aware of any hazards on the stretch of water which they may encounter.
- Only persons in good health and free from heart condition may carry out electro fishing operations.
- Team lifting techniques to be deployed.
- All persons on lookout for obstructions, shallow water, fences, animals etc., oars person has particular responsibility.
- Oars must be examined prior to use.
- Particular care must be taken to observe and avoid barbed wire.
- Fast flowing water to be avoided.
- Catches of fish to be removed regularly.
- On the job training and induction training is provided to all new operators by experienced operators.
- Wooden electro-fishing boats must be regularly checked and maintained; boats should be replaced as necessary.
- Minimum of one trained first-aider per operation (Preferably 2). Electro fishing from boats is carried out in teams of three or more.

14.111.4 Safety Standards of Equipment

- Equipment to be in good working order and checked before use, no defective equipment, frayed cables or damaged control boxes may be used. Equipment must be IP rated and CE marked. The use of domestic electrical cables or equipment is prohibited.
- Regular servicing and maintenance of equipment is required. Servicing should take place annually before the field season commences. Service records must be kept at the office.
- Each piece of equipment should have a scaff tag indicating the service date and the date of next service.
- Faulty equipment should be removed from service until repaired by a competent person.
- Equipment to comply with safety standards and specifications of the Low Voltage Directive.
- Generators must be secured/tied down on board; power must be fed from the control box not the generator.
- Where applicable new boats should be tested for electrical continuity of metal surfaces using a multimeter before it is used for electro-fishing operations.
- The following equipment should be carried:

➤ First aid box	➤ Knife
➤ Fire extinguisher (Dry powder)	➤ Rope
➤ Radio/mobile phone	➤ Sufficient fuel for intended duration
➤ Baler	➤ Straps (for securing items)

14.112 High Voltage Electro-fishing from Boats

Hazard:	Weather, access/egress to boats, other boats/swimmers in water, cold water, physical fitness, electricity, submerged obstacles bio-hazards.
Level of Risk:	High
Controls:	See details outlined below

14.112.1 Training & Competency

No person should take part in electrofishing operations unless all the following apply:

- The theory of how electrofishing works has been properly explained.
- A competent and experienced person has given instruction on the appropriate safe working procedures outlined in this safety statement.
- Staff using the equipment have read and followed the manufacturer's operating manual for safe operation and maintenance.
- Proper instruction is given on the use of any new equipment whenever this is acquired.
- Staff are trained in manual handling and apply the relevant techniques.
- Staff must be competent in First Aid.

14.112.2 Personal Protective Equipment

- Durable rubber gloves (gauntlet style that reach the elbow) should be worn.
- Ensure Wellington boots/waders are worn and in good condition.
- Personal Flotation Devices must be worn at all times. Always check that your personal flotation device is in good condition and check that the cylinder has not been tampered with or removed.
- Personal Flotation Devices shall be serviced annually and access to records shall be freely available to staff.
- Staff working near the generator must wear the provided personal hearing protection. Contact the H&S Executive for noise monitoring.
- **If multiple boats are used, hearing defenders with built in radio communication may be used. This is to ensure communication between each boat.**
- The use of sun factor, head & neck coverings should be worn in fair weather conditions.
- Polaroid glasses where appropriate should be used by all staff involved in electro-fishing.

14.112.3 Unsafe Environment/Conditions

- Electro fishing equipment to be removed IMMEDIATELY from water in circumstances such as the following:
 - Significant increase in speed of flowing water/rising water level
 - Obstructions noted
 - Presence of animals or people on the banks or in the water
 - Person falling overboard
 - Equipment falling overboard
 - Rain/Heavy mist/Lightening
- The area to be fished must be surveyed in advance of the operation.
- If thunder/lighting is in the vicinity, you should get off the water. Lighting strikes can occur because the boat may be the highest point on the body of water.
- In the event of a person slipping in, the electrode must be removed immediately, the person removed from the water and first aid administered. Medical assistance to be sought where necessary.
- Lone working is prohibited.
- Where practicable the officer in charge of the operation shall visit the stretch of water prior to electro-fishing to identify launch and recovery areas and hazards.
- When working in a number of boats the officer in charge must communicate the launch and recovery points of the boats. Sections of the river to be fished by each boat must be assessed prior to the operation and everyone must be made aware of any hazards on the stretch of water which they may encounter.
- Only persons in good health and free from heart condition may carry out electro fishing operations.
- Team lifting techniques to be deployed.
- All persons on lookout for obstructions, shallow water, fences, animals etc., oars person has particular responsibility.
- Oars must be examined prior to use.
- Particular care must be taken to observe and avoid barbed wire.
- Fast flowing water to be avoided.
- Catches of fish to be removed regularly.
- On the job training and induction training is provided to all new operators by experienced operators.
- Wooden electro-fishing boats must be regularly checked and maintained; boats should be replaced as necessary.
- Minimum of one trained first-aider per operation (Preferably 2). Electro fishing from boats is carried out in teams of three or more.

14.112.4 Safety Standards of Equipment

- Equipment to be in good working order and checked before use, no defective equipment, frayed cables or damaged control boxes may be used. Equipment must be IP rated and CE marked.
- Regular servicing and maintenance of equipment is required. Servicing should take place annually before the field season commences. Service records must be kept at the office.
- Each piece of equipment shall have a scaff tag indicating the service date and the date of next service.
- Faulty equipment should be removed from service until repaired by a competent person.
- Equipment to comply with safety standards and specifications of the Low Voltage Directive.
- Generators must be secured/tied down on board; power must be fed from the control box not the generator.
- Where applicable new boats should be tested for electrical continuity of metal surfaces using a multimeter before it is used for electro-fishing operations.
- The following equipment should be carried:

➤ First aid box	➤ Spare rope
➤ Fire extinguisher (Dry Powder)	➤ Sufficient fuel for intended duration
➤ Radio/mobile phone	➤ Baler
➤ Knife	➤ Straps (for securing items)

14.113 Boom Boat Electro-fishing

Hazard:	Weather, access/egress to boats, other boats/swimmers in water, cold water, physical fitness, electricity, submerged obstacles bio-hazards.
Level of Risk:	High
Controls:	See details outlined below

14.113.1 Road Transport, Access/Egress, Launch & Recovery

- The trailer is regularly maintained in accordance with the manufactures recommendations. Staff check brakes and lighting before towing. Staff regularly check for play in wheels which may indicate bearing damage.
- Staff towing the trailer must hold an EB category drivers licence.
- Staff are provided with appropriate footwear e.g. wellingtons, waders and boots. Boats are secured with a painter before boarding or disembarking.
- Staff launching, operating and recovering the boat have completed powerboat training. A safe position for launch and recovery must be determined by the operator.
- Where practicable the officer in charge of the operation shall visit the stretch of water prior to electro-fishing to identify launch and recovery areas and hazards.
- Staff operating the boat have completed night navigation training international collision prevention regulations are followed where applicable.

14.113.1 Training & Competency

No person should take part in electrofishing operations unless all the following apply:

- The theory of how electrofishing works has been properly explained.
- A competent and experienced person has given instruction on the appropriate safe working procedures outlined in this safety statement.
- Staff using the equipment have read and followed the manufacturer's operating manual for safe operation and maintenance.
- Proper instruction is given on the use of any new equipment whenever this is acquired.
- Staff are trained in manual handling and apply the relevant techniques.
- Staff must be competent in First Aid.

14.113.2 Personal Protective Equipment

- Durable rubber gloves (gauntlet style that reach the elbow) should be worn.
- Ensure Wellington boots/waders are worn and in good condition.
- Personal Flotation Devices must be worn at all times. Always check that your personal flotation device is in good condition and check that the cylinder has not been tampered with or removed.
- Personal Flotation Devices shall be serviced annually and access to records shall be freely available to staff.
- The use of sun factor, head & neck coverings should be worn in fair weather conditions.
- Dry suits are worn when operations in waters of less than 10°C.
- Polaroid glasses where appropriate should be used by all staff involved in electro-fishing.

14.113.4 Safety Equipment

- The vessel shall carry the following Category F equipment:
 - A boat hook
 - Two orange smoke canisters
 - Foghorn
 - Navigation lights
 - Anchor
 - Deck cleat or Samson post, warps and fenders
 - Waterproof torch
 - First aid kit
 - Oars
 - Suitable knife

14.113.3 Unsafe Environment/Conditions

- Electro fishing equipment to be removed IMMEDIATELY from water in circumstances such as the following:
 - Significant increase in speed of flowing water/rising water level
 - Obstructions noted
 - Presence of animals or people on the banks or in the water
 - Person falling overboard
 - Equipment falling overboard
 - Rain/Heavy mist/Lightening

- The area to be fished must be surveyed in advance of the operation.
- If thunder/lightning is in the vicinity, you should get off the water. Lightning strikes can occur because the boat may be the highest point on the body of water.
- In the event of a person slipping in, power to the electrode must be stopped immediately, the person removed from the water and first aid administered if required. Medical assistance to be sought where necessary.
- Lone working is prohibited.
- When working in a number of boats the officer in charge must communicate the launch and recovery points of the boats. Sections of the river to be fished by each boat must be assessed prior to the operation and everyone must be made aware of any hazards on the stretch of water which they may encounter.
- Only persons in good health and free from heart condition may carry out electro fishing operations.
- Team lifting techniques to be deployed.
- All persons on lookout for obstructions, shallow water, fences, animals etc., oars person has particular responsibility.
- Oars must be examined prior to use.
- Particular care must be taken to observe and avoid barbed wire.
- Fast flowing water to be avoided.
- Catches of fish to be removed regularly.
- On the job training and induction training is provided to all new operators by experienced operators.
- Wooden electro-fishing boats must be regularly checked and maintained; boats should be replaced as necessary.
- Minimum of one trained first-aider per operation (Preferably 2). Electro fishing from boats is carried out in teams of three or more.

14.113.4 Safety Standards of Equipment

- Equipment to be in good working order and checked before use, no defective equipment, frayed cables or damaged control boxes may be used. Equipment must be IP rated and CE marked.
- Regular servicing and maintenance of equipment is required. Servicing should take place annually before the field season commences. Service records must be kept at the office.
- Faulty equipment should be removed from service until repaired by a competent person.
- Equipment to comply with safety standards and specifications of the Low Voltage Directive.

Environmental Monitoring

14.114 Water & Effluent Monitoring

14.115 Sampling Techniques

- Kick Sampling
- Surber Sampling
- Grab Sampling
- Substrate Sampling
- Van Veen Grab Sampling

14.116 Bathymetric Surveys

14.117 Taking Levels (Use of Theodolite)

14.118 Weed Cutting Control Operations

14.119 Bird Bat & Mammal Surveys

14.114 Water & Effluent Monitoring

Hazard:	Weather, access/egress, boats, working in water, cold water, physical fitness, biological agents
Level of Risk:	Low
Controls:	See details outlined below

14.114.1 Personal Protective Equipment & Hygiene

- Wear appropriate protective gloves when taking samples.
- Wear a personal flotation device where there is a risk of stumbling and falling into water.
- Wear eye protection when there is a risk of splashes of effluent.
- Wash hands thoroughly before eating, drinking or smoking or putting your hands to face.
- Wear respiratory protective equipment where there is a risk of exposure to air borne contaminants.
- Employ good hygiene practice and use disinfectant wipes.
- Report any symptoms of infection immediately.
- Ensure any cuts or open wounds are covered with a waterproof bandage before starting work.
- Apply immediate first aid to any cuts received.

14.114.2 Safe operating procedure

- Use appropriate equipment for sampling without carrying excessive weight.
- Do not enter enclosed spaces, manholes or areas which may have harmful gasses in them. Regard all liquid/gaseous effluents as dangerous. Adopt remote sampling techniques when appropriate e.g. use sample containers attached to telescopic poles.
- Clear looking effluents and waters may be highly dangerous. Take adequate precautions. Avoid entering confined spaces where practicable.
- When sampling from pipes and outfalls to rivers, avoid overreaching, always maintain a well-balanced stance.
- Carry out sampling of effluents promptly. Avoid prolonged standing in areas near any discharge to reduce risk of airborne contamination. Respiratory protective equipment may be required depending on the type of pollutant. A risk assessment should be conducted if required.
- Notify water users downstream of a pollution risk if practicable.
- If a fish kill has taken place and the cause is thought to be a chemical or other hazardous material, do not take any undue risks.
- Only use sampling bottles approved by IFI. Note that sample containers for nutrients and metals should be made from propylene plastic containers. All other samples can be taken using a polyethylene container.

- When transporting samples always carry in an upright position. Keep isolated and clearly marked.
- Remote sampling techniques should be used to take samples where possible.
- Thoroughly clean & disinfect equipment after use when required.
- In the event of a spillage from a chemical/fuel container or road transport unit, contact the fire brigade and retreat a safe distance from the spillage. Note any hazard warning labels fitted to the vehicle/container.

14.115 Sampling Techniques

Hazard:	Weather, access/egress to boats, boats, working in water, cold water, physical fitness pinch points and falling objects.
Level of Risk:	Medium
Controls:	See details outlined below

14.115.1 Kick Sampling

- Employees should wear a suitable personal flotation device.
- Employees should wear thick-soled footwear when kick sampling.
- Constantly lookout for obstructions, rocks, etc in the water.
- Feel the ground beneath you and avoid slippery rocks where possible.
- Be aware that sharp objects including needles could be in the water.

14.115.2 Surber Sampling

- Employees should wear a suitable personal flotation device.
- Employees should wear thick-soled footwear.
- Constantly lookout for obstructions, rocks, etc in the water.
- Do not carry out sampling where water depth exceeds one foot.
- Feel the ground beneath you and avoid slippery rocks where possible.
- Wear protective gloves.
- Be aware that sharp objects including needles could be in the water.
- Do not attempt to lift heavy objects, seek assistance or discard sample.
- Employ manual handling techniques.

14.115.3 Grab Sampling

- Sharp knife should be on hand.
- Employees should wear a suitable personal flotation device.
- Sample to be released if pull on boat is excessive.
- Do not attempt to lift heavy objects, seek assistance or discard object.
- Care must be exercised when throwing grab.
- Sharp knife should be available.

14.115.4 Substrate Sampling

- Employees should wear a suitable personal flotation device.
- Do not attempt to lift heavy objects, seek assistance or discard sample.
- Manual handling techniques to be used.
- Employees should wear thick soled footwear.
- Feel the ground beneath you and avoid slippery rocks where possible.
- Wear protective gloves.
- Be aware that sharp objects including needles could be in the water.

14.115.5 Van Veen Grab Sampling

- Ensure great care is taken when using the Van Veen Grab sampler and winch.
- Ensure that the winch is safely secured to the boat.
- Make use of manual handling techniques when loading the boat and operating the sampler.
- Accidents can be prevented by adequate training in the use of the equipment, using a boat with an adequate working area and proper support for the winch (where applicable), working in suitable weather conditions. Protective equipment such as personal flotation devices, hard hats, eye protection and hand protection. Dry suits should be worn in waters of less than 10°C.
- After initial use, the method of operation can be reviewed and further optimized. Ideally, the winch should be anchored within the boat in an elevated position so that when the dredge is retrieved from the lake bed, it can be swung into the boat without lifting manually.
- The winch must be kept and maintained in working order.
- The winch must be tested and certified by a competent person using the Health & Safety Authority Forms CR4, CR4A and CR4B.
- Ensure equipment is set up correctly.
- Attach Van Veen grab to winch cable.
- Open the Van Veen grab using the metal arms.
- **Note: (Do not attempt to open or close using the mouth of the grab)**
- Swing out grab over the boat, turn handle on winch to lower grab.
- Lock swivel controller to prevent winch from rotating in an uncontrolled manner.
- Rock the dredge on the lake bed to ensure it closes and retrieve it.
- Once the grab has reached boat level, rotate winch and convey dredge into position in the plastic tray.
- Open the dredge using the dredge arms only and release the contents.
- Be careful when removing contents from dredge ensuring that hands are kept well away from the mouth of the grab.

Clean and repeat

- All crew wear personal flotation devices.
- Person(s) operating the winch wear a hard hat, gloves and protective eyewear.
- Ensure person(s) operating dredge wear foot protection.
- Do not deploy in unsuitable weather conditions (windy).

14.116 Bathymetric Surveying

Hazard:	Weather, access/egress to boats, boats, working in water, cold water, physical fitness.
Level of Risk:	Medium
Controls:	See details outlined below

- Staff carrying out bathymetric surveys must be familiar with the operation of equipment and have competent boat handling skills.
- A minimum of three staff are required to carry out the survey safely.
- Staff must wear personal flotation devices (PDF's) while working on the water.
- Dry suits should be worn in addition to PDF's in waters of less than 10°C.
- Foul weather clothing should also be readily available.
- The person appointed in charge of the boat must be obeyed at all times.
- The person appointed in charge must ensure that all required equipment is carried on board.
- Ensure all radio and mobile phone contact is tested prior to launch.
- Shore back up at all times to maintain radio contact approximately every 20-25 mins at a minimum.
- Where a boat is not visible to the shore backup radio contact must be more frequent.
- Ensure radios have a plastic cover to protect from moisture.
- Safe lifting techniques must be deployed.
- Where the stability of the boat is at risk due to adverse weather conditions bathymetric surveys must be postponed.
- One crew member shall be on the lookout for items in the water likely to foul the propeller or damage the boat.
- No smoking is permitted on board.
- Weather forecast to be obtained prior to travelling to survey site.
- All personal safety equipment should be regularly inspected by the user. Damaged or faulty equipment should not be used.
- Do not open engine cover when running.
- Fuel tanks used should be specific to engines used and should be marked accordingly.

14.116.1 Manual Handling Considerations

- Ensure staff have received manual handling training and assess the risk from lifting operations.
- Safe lifting techniques must be deployed.
- Ensure that where equipment must be transported to isolated waters, which are inaccessible to board vehicles, alternative arrangements should be made to avoid manual handling issues and reduce the likelihood of slips trips and falls e.g. use of All Terrain Vehicles

(Quads) or Argocats. Identify areas where such arrangements may be required, ordinance survey maps should be reviewed.

14.116.2 Use of Inflatable Boats (Dinghy)

- The maximum load capacities must never be exceeded refer to the manufacturers manual for details.
- The dinghy passenger limit must never be exceeded.
- A dinghy shall not be used in windy conditions as waves may cause the vessel to capsize.
- Where inflatable dinghies are used all surfaces must be inspected for damage. When the vessel is inflated staff must wait 10 minutes to ensure there are no slow punctures prior to launch.
- Where the stability of the boat is at risk due to adverse weather conditions bathymetric surveys must be postponed.

14.117 Taking Levels (Use of Theodolite)

Hazard:	Weather, access/egress to boats, boats, working in water, cold water, physical fitness.
Level of Risk:	Medium
Controls:	See details outlined below

- Persons should not enter fast flowing water to take levels.
- Persons entering water should not exceed waist height, where water levels exceed waist height a boat should be used.
- An approved personal flotation device must be worn at all times.
- A dry suit should be worn in water temperatures of less than 10°C.
- Feel the ground beneath you and avoid slippery rocks where possible.
- If the level is released it will slowly fill with water and sink as it moves downstream, unless it is within reach DO NOT go after it in the water, it may be possible to recover it downstream.
- Care to be taken to avoid uneven ground/trip hazards on land.

14.118 Weed Control Cutting Operations

Hazard:	Weather, access/egress to boats, other boats on the water, working in water, cold water, physical fitness, bio agents, manual handling and pinch points.
Level of Risk:	Medium
Controls:	See details outlined below

14.118.1 Operation of vessels

- All staff operating vessels must have completed the powerboat level two training course.
- Weed cutting machine operators must read and follow the OSMA instruction manual for safe operation and maintenance.
- All vessels must be maintained and serviced as per the manufacturer's specification.
- The weed cutting vessels shall be manned by a single person.
- The 7m aluminium vessel shall be manned by a minimum of three persons.

14.118.2 Weed Cutting

- Weed cutting will be suspended when the wind reaches Force 5 or higher.
- All vessel operators must ensure they have a suitable method of communication prior to commencing weed cutting e.g. hand signals & mobile phones or hand signals and hand held radio communication.
- Operators of the 7 metre aluminium boat shall fix the V blades to the OSMA weed cutter as soon as the vessels have left shallow waters. Fixing the chains with a D-Shackle is hazardous. There is a pinch point and risk of a crush injury to the hand. A rope and or boat hook should be used. One person should hold fast the two boats while another fixes the chains with the D-Shackle.
- When the weed cutting vessel is used to load the aluminium boat at the bow all operators on the vessel shall remain at the aft.
- Once the weed cutting vessel has retreated staff may shift the weed to the centre of the boat using forks.

14.118.3 Training

- Vessel operators must complete a power boat level two course.
- Staff must be trained in first aid.
- Where applicable a staff member must be trained as a diver coxswain.
- All staff must complete manual handling training.

14.118.4 Equipment

- Lifejackets must be worn at all times.
- When the water temperature is 5°C or lower dry suits must be worn.
- A suitable 275N lifejacket must be worn while wearing a drysuit.
- The equipment detailed in the safety checklist must be carried aboard the 7m aluminium vessel.

14.118.5 Statutory Inspections & Checklists

- All chains and lifting equipment will be inspected by a competent engineer annually.
- All checklists must be completed daily and signed off. Where a safety checklist is incomplete or the requirements of the checklist are not met, weed cutting operations will not be carried out.

14.118.6 Exposure to Noise

- Where employees are exposed to noise at 80dB(A) or higher, personal protective equipment shall be provided.
- Where the noise level needs to be established the Health & Safety Executive must be contacted to arrange noise sample monitoring.

14.119 Bird, Bat & Mammal Surveys

Hazard:	Weather, access/egress to sites, biological agents.
Level of Risk:	Low
Controls:	See details outlined below

Staff involved in these surveys must familiarise themselves with the occupational disease section of this safety statement (Section 14.16 - 14.26). They must also note the following additional hazards:

14.119.1 Lymphocytic Choriomeningitis (LCM) Virus

Description

LCM virus is transmitted to humans by inhalation, broken skin or mucous membrane exposure to blood, urine, faeces, and other body secretions from infected mice. There is a special risk of exposure during pregnancy because the fetus can become infected. Again, use of proper PPE, such as disposable gloves and lab coat along with careful hand washing will further reduce the likelihood of exposure.

Symptoms

Some people infected with LCM do not become ill. For infected persons who do become ill, onset of symptoms usually occurs approx. 8-13 days after being exposed to the virus. The initial illness phase, which may last as long as a week, typically begins with any or all of the following symptoms: fever, malaise, lack of appetite, muscle aches, headache, nausea, and vomiting. Other symptoms that appear less frequently include sore throat, cough, joint pain, chest pain, testicular pain, and parotid (salivary gland) pain. Following a few days of recovery, the second phase of the disease occurs, consisting of symptoms of meningitis (for example, fever, headache, and a stiff neck) or characteristics of encephalitis (for example, drowsiness, confusion, sensory disturbances, and/or motor abnormalities, such as paralysis).

Treatment

Aseptic meningitis, encephalitis, or meningoencephalitis requires hospitalization and supportive treatment based on severity.

Prevention

LCM infection can be prevented by avoiding contact with rodents and taking precautions when handling rodents.

Always wear protective gloves when handling the animal employ high standards of hygiene, wash your hands with soap and water (or waterless alcohol-based hand rubs when soap is not available and hands are not visibly soiled) if you are scratched or bitten or exposed to animal fluids you must consult a doctor.

14.119.2 Wild Birds Psittacosis

Description

The bacteria *Chlamydila psittaci* is the cause of psittacosis. Commonly affected birds include pigeons and doves. Chlamydial infections in birds are important as they represent a biological hazard to human health. *C. psittaci* can be transmitted from birds to humans; the resulting infection is also known as psittacosis, ornithosis or parrot fever.

Symptoms

Humans can be infected when coming in contact with the bird's body secretions, or faeces. Psittacosis typically causes influenza-like symptoms, and can lead to severe pneumonia and non-respiratory health problems. It is an acute generalised respiratory disease with an incubation period of between one and four weeks. Clinical presentations may be variable, with fever, headache, myalgia (muscle aches) and upper or lower respiratory tract symptoms. An extensive atypical pneumonia may be demonstrated radiologically. This usually has a characteristic distribution in lung fields which is distinct from other causes of pneumonia. Although human disease may often be mild or moderate, it can be severe especially when untreated in elderly or immunocompromised individuals. Psittacosis can be difficult to diagnose and cases, especially of mild infection, often go unreported.

Treatment

Diagnosis of the disease in humans is confirmed by serological testing in which paired sera (blood samples collected two weeks apart) are tested for chlamydial antibodies. A diagnosis of psittacosis should be considered in patients with appropriate symptoms who have a history of exposure to birds and elevated or increasing antibody titres. The infection is treated with antibiotics.

Prevention

Protective clothing including gloves, eye wear, protective cap and a properly fitted respirator should be worn when entering areas where there is a high risk. Good standards of hygiene must be employed and suitable disinfectants used as required. People with compromised immune systems should not be exposed to birds that might have Psittacosis.

Fisheries Protection Patrol Duties

- 14.120 Lone Working on Protection Duties**
- 14.121 Encountering Poachers & Conflict Resolution**
- 14.122 Use of Body Cameras**
- 14.123 Use of Detection Dogs**
- 14.124 Foot Patrols & Stakeouts**
- 14.125 UTV Bike Patrols (Beaches & Tow Paths)**
- 14.126 Bicycle Patrols**
- 14.127 Vehicle Patrols**

14.120 Lone Working on Protection Duties

Hazard:	Weather, working adjacent to water, hostile members of the public, physical fitness.
Level of Risk:	Low – Medium – High
Controls:	See details outlined below

This section should be read in conjunction with section 14.9.

According to the Health and Safety Authority there is nothing specific in general legislation that prohibits a person from working alone. A risk assessment, shall determine whether or not an employee may work alone.

14.120.1 Hazards that lone workers may encounter include:

- Accidents or emergencies arising out of the work, including inadequate provision of first aid.
- Sudden illnesses.
- Physical violence from members of the public and/or intruders/poachers.

14.120.2 What responsibilities do lone workers have?

- IFI holds the main responsibility for protecting the safety and health of lone workers. Nonetheless, lone workers themselves have a responsibility to help their employer fulfill this duty, and so they must:

Take reasonable care to look after their safety and health.

Safeguard the safety and health of other people affected by their work.

Co-operate with their IFI safety and health procedures.

Use tools and other equipment properly, in accordance with any relevant safety instructions and training they have been given.

Not misuse equipment provided for their safety and health.

Report all accidents, injuries, near-misses and other dangerous occurrences.

14.120.3 What control measures are implemented to minimise the risk to lone workers?

- Each member of staff is issued with a lone worker procedure card, which details the steps to take when working alone.
- Communication is very important, lone workers shall be provided with mobile phone, telephone or radio.
- Controlled periodic checks involving contact from head office or other staff working in the locale ensuring the lone worker is safe.
- Use of Personal Protective Equipment (PPE) such as personal flotation devices, walking aides and suitable clothing.
- Lone workers shall have easy access to first-aid kits and have received first aid training.
- Where applicable lone workers should lock and secure their place of work.
- Lone workers must implement correct incident reporting procedures.
- Employees must be medically fit to work alone.
- Counselling is provided to any member of staff through the Employee Assistance Programme.

14.121 Encountering Poachers & Conflict Resolution

Hazard:	Encountering violent people
Level of Risk:	Medium – High
Controls:	See details outlined below

All fisheries staff on protection duties may encounter poachers/persons fishing illegally. The situation is potentially volatile for example when inspecting licenses, seizing equipment or when apprehending someone. It could result in threats or actual assault. In accordance with Section 11 of the 2005 Act, in the event of serious, imminent and unavoidable danger, IFI management shall enable employees to stop work and immediately leave the place of work and to proceed to a safe place. Management shall ensure that in such circumstances an employee who leaves a place of work is not penalised because of such action. To minimise the potential for assault the following applies.

14.121.1 Training & Preplanning

- Staff are trained in conflict resolution, control and restraint techniques. Staff should be familiar with the Non-Fatal Offences Against the Person Act, 1997 and the European Convention on Human Rights Act, 2003.
- Before a patrol sets out, the officer in charge shall brief staff on the location of the patrol, the distance covered and radio channels used.
- Consider having specific code words in advance, which may be used as the situation, develops.
- Staff must carry a means of communication and maintain regular contact with colleagues.
- Additional equipment may be issued such as personal CCTV cameras, night vision and thermal imaging equipment.
- If you are using personal CCTV be aware that you must caution a person before using the equipment.
- Where medical problems have been identified, which impact on staff safety, cognisance should be taken of this in the deployment of staff.
- Pregnant employees should not be permitted to work alone and shall avoid protection duties.
- Staff should wear IFI work wear when patrolling (unless directed otherwise for covert work by management). This ensures that the public can easily recognize staff and it conveys authority and power in the course of their duties.

14.121.2 Patrolling

- Become familiar with the routes taken, take particular care when close to the water course and take a mental note of hazards such as steep slopes, slippery rocks and fencing.
- Always be aware of your limitations, recognize that there are times when it is safer to retreat from a dangerous situation and return when supported with colleagues and or the Gardaí.

14.121 .3 Potentially Hostile Situations

- If you observe poachers and you believe they may be hostile, contact other staff and the Gardaí requesting support. This decision may be based on previous experiences with the same poachers or where poachers are encountered in areas where there is a history of hostilities.
- Staff should not carry out duties alone in areas where hostilities are anticipated.
- Where poachers are known to be hostile and are present in greater numbers than Fishery Officers confrontation should be avoided.
- It is important to remain calm, - even if you see an incident developing stay calm and collected.
- Remain polite even if provoked (this can help diffuse the situation).
- One fishery officer should be the spokesperson and a second spokesperson agreed in advance.
- The second fishery officer should take over as spokesperson if the situation changes or becomes more volatile.
- Staff should present themselves in a calm, confident and professional manner.
- Keep your voice calm and speak slowly. Explain how the person has breached the law and explain your role as a fishery officer. (Offer to show a warrant where applicable). Explain that as part of your job you have to take their names and that they are obliged to give them.
- If you intend to remove a net or conduct a search, seize equipment etc. explain your powers under Fisheries legislation.
- Do not react to verbal provocations remain detached and professional; avoid being drawn into arguments unnecessarily.
- Never brandish anything which could be interpreted as aggressive behaviour.
- Where possible avoid lunging at poachers or shouting at them as this can provoke an attack.
- At all times ensure you have an escape route in case a volatile situation escalates. Never allow poachers to encircle you, step back and regroup if necessary.
- Apply conflict resolution or self defence techniques only if required.
- Be conscious of your body language and avoid postures, which could be interpreted as aggressive.
- If you perceive that the poachers may be under the influence of drink or illegal substances, avoid confrontation.
- If the situation deteriorates (e.g. threats are made) remain calm, and repeat any instructions in a clear, confident voice.

- If the poachers brandish a weapon retreat and request support.
- If a poacher attempts to injure you, self defence and control and restraint techniques may be required.
- Never initiate physical aggression. Where necessary you may use reasonable force, to restrain a poacher who is threatening your safety. Never use excessive force.
- Where staff become aware of problems which could affect the safety of colleagues (e.g. muggings or assault) they must be notify management. This is so that any specific controls required to protect the safety of the staff can be implemented and communicated.

14.121.1 The following is a defined list of terms used to identify poachers/illegal fishermen's behaviour which determine the response of the fishery officer.

- Compliance: Offender offers no resistance and complies with officer request.
- Verbal Resistance and Gestures: Offender refuses verbally to comply and exhibits body language indicating non-compliance.
- Passive Resistance: Offender sits/stands still and will not move as requested.
- Active Resistance: Offender pulls away from or pushes the officer.
- Aggressive Resistance: Offender fights with officer – kicking, punching, wrestling, biting etc.
- Serious or Aggravated Resistance: Any assault where there exists the possibility of great bodily harm or death or the production of a weapon by an offender.

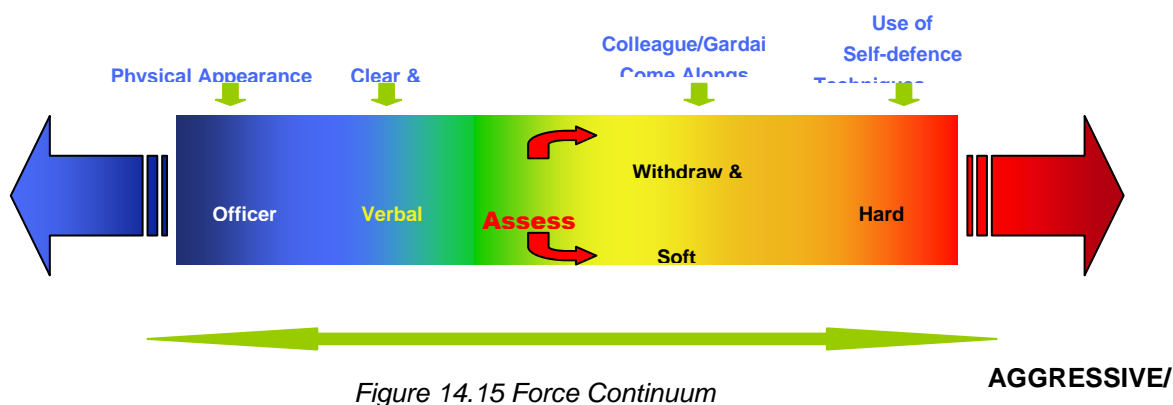


Figure 14.15 Force Continuum

14.122 Use of Body Cameras

Hazard:	Violent or aggressive members of the public
Level of Risk:	Low – Medium – High
Controls:	See details outlined below

- The use of body cameras or personal CCTV can be an effective deterrent to aggressive behaviour by members of the public particularly during the course of protection duties.
- Staff are advised that cameras should be worn in areas which are known for illegal activity and where there is a history of aggression by members of the public.
- Cameras may be handheld, clipped to clothing or worn with body harnesses with a clickfast mount.
- Camera functionality should be tested before going on patrol.
- A green flashing light will indicate that the camera is recording. A flashing red light will indicate that battery is or memory is almost full.
- Switch on the body worn video camera if a situation requires it. Such as

- If you suspect an illegal operation is taking place
- If a person or persons state that they do not have a license / permit
- If person or persons become abusive, threatening or violent
- Taking statement from witnesses
- Recording damage done
- For capturing evidence
- Recording survey work
- Capturing pollution incidents

- As soon as is reasonable practicable you must inform the person or persons that they are being recorded on CCTV

“This conversation is being recorded on CCTV and may be used as evidence and for training purposes”

- If you suspect that they have or are carrying out an illegal act you must caution them immediately stating,

“You are not obliged to say anything but whatever you do say will be taken down in writing and may be given in evidence.”

14.123 Use of Detection Dogs

Hazard:	Aggressive members of the public, detection dog and other dogs, dog fouling.
Level of Risk:	Low
Controls:	See details outlined below

14.123.1 Dog selection and Handling

- Staff handling dogs must be familiar with manual and standard operating procedures.
- Dogs selected for detection must have friendly, filial natures, and are not reactive to a normal range of human movements, actions or sounds. Such qualities shall be readily assessed by a qualified dog behaviourist, and reviewed on an on-going basis by trained IFI dog handling staff.
- Dogs and dog handlers must receive training and refresher training as required.
- Dogs must at all times wear a collar that bears the name and the address of the owner inscribed on it or on a plate, badge or disc.
- Dogs must be maintained on a leash in urban areas and when not on duty in public spaces.
- Dogs should be kept at a distance from members of the public during all off-lead deployment. Where a member of the public approaches the dog, they must be asked to stay away, and the dog recalled to the handler until the person has retreated.
- If detection work must be carried out in close proximity to a member of the public (as will happen during passive detection work), and there is any question that the dog and person might come into contact, the dog should wear a tracking line attached to its tracking harness.
- Dogs will undergo on-going training to maintain obedience and to eliminate faults which may appear, via daily training with the handler, and regular refreshment courses undertaken throughout the year with the Nominated Officer to assess and maintain quality assurance.
- For educational or public engagement work, members of the public should not be allowed to interact with the dog unless by invitation by the IFI dog handler. Members of the public should be instructed on acceptable ways to make contact with the dog (e.g. not shouting at, staring at, pulling at, or otherwise causing undue stress to the dog).
- When transporting dogs use travelling crates or barriers. You should ensure that it has enough room to allow the dog to sit and stand up at full height, turn around easily and lie down in a natural position. You should also ensure that your dog is able to see out of the container and that there is enough ventilation and airflow.
- Dog handlers must remove their pets' waste from public places and dispose of it in a proper manner. This obligation applies to the following places: public roads and footpaths, areas around shopping centres, school/sports grounds, beaches and the immediate area surrounding another person's house.

14.123.2 First Aid

- Dog handlers must carry a first aid kit.
- All IFI detection dog handlers should be trained in First Aid to enable them to offer immediate treatment in the event that their dog does cause injury to a person.

14.124 Foot Patrols & Stakeouts

Hazard:	Traversing rough terrain, night work (poor light),
Level of Risk:	Low – Medium – High
Controls:	See details outlined below

14.124.1 Foot patrols

- This section should be read in conjunction with Section 14.123 Traversing Lands.
- Staff patrolling must take care particularly when on rough terrain such as river banks, rock shores and overgrown areas. Hazardous shortcuts must be avoided for example climbing over walls and barbed fences instead of using gateways. Staff must report any unsafe structure they encounter to their line manager which may cause injury.
- A walking aid should be used as required.
- Staff must carry a radio and or mobile phone while on patrol.
- Staff must take the time to familiarize themselves with a patrol area in daylight hours before carrying out night patrols at the same location.
- A suitable torch or LED Lensor head torch must be carried and used during night patrols. Night vision goggles may also be used.

14.124.2 Stakeouts

- The officer in charge (OIC) shall select a suitable position in advance the stakeout operation.
- The officer in charge of stakeout team should give colleagues a detailed briefing of the tactical plan of operation and inform them of any known hazards in the vicinity and safe access and egress routes.
- Staff involved in stakeouts must wear suitable clothing for the conditions e.g. thermal wear and thermal hats in cold conditions.

14.125 UTV Patrols (Beaches & Tow Paths)

Hazard:	Speeding, unsafe handling, overloading, unsuitable terrain
Level of Risk:	Low – Medium – High
Controls:	See details outlined below*

* For ATVs/Quads see 14.71

14.125.1 General Controls

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Staff operating the UTV must be competent having completed certified training.
- Do not operate the vehicle under the influence of drugs or alcohol.
- Seat belts must be worn by the driver and passenger.
- This vehicle is designed for operation in unpaved surfaces. Operation on paved surfaces should be avoided so far as is reasonably practicable. Turn gradually and go slowly if you must travel on pavement.
- Turning the steering wheel too far or too fast can result in a rollover or loss of control.
- Slow down before entering a turn.
- When making tight turns from a stop or at slow speeds, avoid sudden or hard acceleration. Avoid sideways sliding, skidding or fishtailing.
- Any part of your body (arms, legs or head) outside of the vehicle can be crushed by the cage/frame. If you think or feel that the vehicle may tip or roll, brace your feet on the floorboards, and keep your hands on the handholds.
- Do not try to stop a vehicle tip over using your arm or leg.
- When driving on slippery or rough terrain ensure the 4WD is engaged, slow down and plan your path to avoid making abrupt manoeuvres
- Do not run the engine in poorly ventilated or partially enclosed areas such as barns, garages etc.

14.125.2 Personal Protective Equipment

- Driver and passenger must wear an approved motor cycle helmet. Goggles should be worn if the helmet does not have a visor.

14.125.3 Use of Cargo bed & Towing

- Do not carry passengers in the cargo bed. The maximum load in the cargo bed is 181kg (400lb).
- Secure the cargo so that it will not shift. Keep weight centred and as low and as far forward as possible.

- Do not tow or pull objects from any point other than the trailer hitch bracket. Never load more than 50kg tongue weight on the towing bracket
- Do not tow more than 550kg rolling weight (trailer plus cargo).
- When loaded with cargo or towing a trailer reduce speed and allow more room to stop. Avoid hills and rough terrain. Use extreme caution when towing a load or carrying a load on inclines.

14.125.4 Crossing Water

- Do not operate the vehicle in fast flowing water or water deeper than 33cm. If you must cross shallow, slow-moving water, choose your path carefully to avoid sharp drop offs, large rocks or slippery surfaces. Operating in deep fast flowing water can lead to loss of control or overturn.
- Wet brakes have reduced effectiveness. After leaving the water, test your brakes. If necessary apply the brakes several time to let friction dry out the linings.

14.125.5 Pre-operation Inspections

Item	Routine
Brakes	<ul style="list-style-type: none"> • Check operation, free play, and fluid leakage. • Fill with DOT 4 brake fluid if necessary
Parking Brake	<ul style="list-style-type: none"> • Check for proper operation, condition and free play.
Fuel	<ul style="list-style-type: none"> • Check fuel level. • Fill with fuel necessary
Engine Oil	<ul style="list-style-type: none"> • Check oil level • Fill with oil to proper level if necessary
Coolant Reservoir	<ul style="list-style-type: none"> • Check coolant level • Fill with coolant if necessary
Final Gear Oil/Differential Gear Oil	<ul style="list-style-type: none"> • Check for leakage
Accelerator Pedal	<ul style="list-style-type: none"> • Check for proper accelerator pedal operation.
Seat Belts	<ul style="list-style-type: none"> • Check for operation and belt wear.
Steering	<ul style="list-style-type: none"> • Check for proper operation.
Fittings and Fasteners	<ul style="list-style-type: none"> • Check all fittings and fasteners.
Lights and Switches	<ul style="list-style-type: none"> • Check for proper operation.
Wheels and tires	<ul style="list-style-type: none"> • Check pressure and for wear and damage.
Axle Boots	<ul style="list-style-type: none"> • Check for damage.

Table 14.5 UTV Pre Operational Checks

14.126 Bicycle Patrols

Hazard:	Weather, traffic, entanglement physical fitness, off road trails with natural obstructions.
Level of Risk:	Low – Medium
Controls:	See details outlined below

As a cyclist, you can reduce your risk of death or injury by following some simple advice:

- Keep your bike tuned up to prevent mechanical problems.
- Cycling in the dark is not permitted without adequate lighting – white for front, red for rear.
- On public roads wear luminous clothing such as hi-vis vests, fluorescent armbands and reflective belts so that other road users can see you.
- Wear a helmet. This is a mandatory requirement.
- Make sure you keep to the left. Always look behind and give the proper signal before moving off, changing lanes or making a turn.
- Follow the rules of the road, never run traffic lights or weave unpredictably in and out of traffic.
- Maintain your bike properly – in particular, your brakes should work properly and your tyres should be inflated to the right pressure and be in good condition
- Respect other road users – stop at pedestrian crossings; don't cycle on the footpath.
- Watch your speed, especially when cycling on busy streets and going downhill.
- Steer well clear of left-turning trucks: let them turn before you move ahead.
- Dismount before approaching anglers/members of the public.
- Sun cream should be worn in fair weather.
- Ensure shoe laces are tied to avoid entanglement in the chain set.
- Take extra care when cycling off road. Be vigilant, constantly scan the surface ahead for hazards.
- Always make sure you keep your speed at a level where you can quickly adjust to any obstacles or change in the trail.
- For long distance cycles bike tools, sunglasses/safety glasses and gloves and food and water should be carried.

14.127 Vehicle Patrols

Hazard:	Hostile members of the public
Level of Risk:	Low
Controls:	See details outlined below

- Ensure that the vehicle you intend driving is road worthy and in a safe condition, the driver should carry out pre-patrol checks.
- Where possible, reverse into the intended parking space, always ensure the vehicle is facing the direction in which you intend to travel.
- Unless it must be avoided e.g. covert operations, park in well-lit areas close to other vehicles and people or in areas protected by CCTV.
- Where possible avoid parking in a manner which could prevent all persons accessing the vehicle in a hurry.
- If you believe you are being followed, make contact with your line manager and the Gardai.
- Take note of registration plates where a vehicle is acting suspicious or in a strange location.
- Unmarked vehicles should be used in situations/locations identified by management in consultation with staff for covert operations.

Outdoor Conditions

14.128	Weather
14.129	Hypothermia
14.130	UV Exposure
14.131	Traversing Lands
14.132	Insects
14.133	Needle Stick Injuries
14.134	Wading

14.128 Weather

Hazard:	Extreme weather cold, heat, lightning, heavy rain/snow.
Level of Risk:	Medium
Controls:	See details outlined below

- Foul weather clothing is provided and should be worn in adverse conditions.
- Thermal clothing such as woolly bear should be worn in winter
- In cold conditions staff should carry out warm up exercises prior to undertaking heavy manual work.
- Wear several layers of clothing when in extremely cold conditions as the air pockets between the layers help to retain warmth.
- Never use alcohol to “warm up”. Alcohol causes the blood to cool quickly.
- Avoid smoking as tobacco inhibits circulation to the extremities.
- Sun factor, head and neck coverings should be worn in sunny conditions.
- Employees should not work bare back in the sun.
- In hot conditions, staff should ensure drinking water is brought and that any available shade is used for breaks if required.
- Protective Polaroid sun glasses should be worn in bright conditions particularly when glare becomes a problem when reflected from water or snow.

14.129 Hypothermia

Hazard:	Cold weather, working in, on or adjacent to water, cold water, physical fitness.
Level of Risk:	Medium
Controls:	See details outlined below

- Persons who have been immersed in water could be suffering from cold, shock and or hypothermia. Emergency services or a medical practitioner should be called.
- Remove a casualty horizontally from the water if you suspect they are injured. Once the casualty is removed from the water, remove any wet clothing and provide dry clothing or blankets. Cover the head but not the face.
- If they have been in the water for some time, and they appear dazed or confused they are most likely suffering from hypothermia **(Note that a person who is dazed or confused may be suffering from internal or head trauma. Additional first aid may be required, vital signs should be kept under close observation).**
- In the case of hypothermia it is vital to remove the wet clothing gently with very slow movements. The reason for this is that undressing them still involves muscle movement on their behalf and this could draw warm blood from vital organs causing the individual to lose consciousness.
- Do not vigorously rub the individual, pat them dry.
- Unless there is serious risk of them losing consciousness move them to a warmer environment.
- Where the individual is very cold the buddy warming method can be used. This is where a dry person uses their own body warmth to warm a hypothermic victim. In order to do this the warm person must remove outer garments and in some cases may have to remove more layers. These clothes and/or a space blanket should be placed over the two individuals to retain heat. The warm person should hold the hypothermic victim close to them to enable the warmth to enter the other person.
- Maintain this position until emergency services arrive. If necessary rotate the warm person.
- Do not force liquids in to the person. If they are able to comfortably swallow, give a warm sugary drink.
- Do not try to make them move or walk.
- Do not provide hot drinks if the person is confused/dazed, do not provide alcohol as it increases peripheral heat loss. Do not provide tobacco as it increases the risk of frost bite.

14.130 UV Exposure

Hazard:	Working outdoors in fair weather
Level of Risk:	High
Controls:	See details outlined below

- When working in hot, sunny conditions use a waterproof broad-spectrum sunscreen with a high sun protection factor (SPF) and apply regularly throughout the working day. It is very important to apply the sun block to ears, nose and lips.
- Make sure it is a broad-spectrum sunscreen with UVA and UVB protection as exposure to both forms of ultra violet light can lead to malignant melanoma.
- Put sunscreen on 20 minutes before you go out into the sun and remember to apply sun cream more frequently if you have been sweating or working in water.
- Clothing is a physical sunscreen that doesn't wear off or wash off. The more skin that is covered by clothing, the better the protection.
- Where practicable cover your head with a hat.

14.130.1 Recognising Possible Skin Cancer

- Non-melanoma skin cancer:

A new sore or growth that does not heal within four weeks.

A spot or sore that continues to itch, hurt, crust, scab or bleed or constant skin ulcers that are not explained by any other cause.

Many skin changes will be harmless. But if you notice anything unusual, you should visit your GP.

- Malignant melanoma skin cancer:

Early detection of malignant melanoma can lead to successful treatment.

Watch out for any change in colour, size or shape of a mole or freckle.

Remember your A-B-C-D:

- Asymmetry
- Border irregular
- Colour variety
- Diameter

- Asymmetry means any irregular change in the shape of the mole or freckle. One part of the mole or freckle is unlike the other.
- Border irregular means any change in the edges of a mole or freckle. It may have a rough or unclear border.
- Colour variety means any change in colour or different colours on different parts of the mole or freckle. It can have different shades of tan, brown or black. Or it can be white, red or blue.

- Diameter means any change in size. Most melanomas are larger than 6mm, which is the size of the top of a pencil, and they are increasing in size.

14.131 Traversing Lands

Hazard:	Weather, access/egress to boats, boats, working in water, cold water, physical fitness, livestock and dogs.
Level of Risk:	Low – Medium – High
Controls:	See details outlined below

14.131.1 General Safety

- Standard issue work wear boots must be worn in the field. If staff are involved in construction work safety boots must be worn.
- Exercise caution when moving through areas of heavy vegetation, hold branches to prevent them springing back on to others.
- Employees should take care to avoid nettles and briars and Giant Hogweed where possible.
- See Section 14.24 which deals with exposure to Giant Hogweed.
- Control vegetation growth in well frequented areas by cutting back or by using weed killers where possible. However caution must be applied when using weed killers near aquatic environments.
- River banks, streams, lakeshores, coasts, farms woodland, mountains and bog land are traversed regularly by staff. It is essential that you plan your route. Depending on the circumstances the use of the lone working buddy systems may be required. It is most important that each buddy knows where the other is and that neither divert from their intended route. Follow the lone worker procedure.
- Where possible, notify others of the areas you intend to visit and stick to a pre-planned route. If it is necessary to alter your pre planned route inform your buddy immediately.
- Clean boots before entering a farm yard and when leaving.
- Prior to entering unfamiliar lands, gain as much knowledge where possible from others who may have visited it.
- Pay close attention to your route and constantly scan the route for hazards.
- If a route is regularly used hazards should be eliminated where practicable e.g. cutting back thorn branches which cause an obstruction.
- Avoid entering hazardous areas; e.g. containing slurry pits, machinery in operation etc.
- Report any hazardous routes or damaged structures (e.g. broken stiles) to you line manager.
- Have regard for your own personal safety at all times.
- When walking through vegetation take care to avoid vegetation springing back onto the person behind.
- Avoid taking hazardous shortcuts e.g. climbing barbed fences, climbing up or jumping off high walls. Use gated entrances to land where practicable.

- Walking sticks are useful aid and should be carried. They can be used for:
 - Assessing ground and holes
 - Determining depth of streams
 - Facilitating climbing over obstacles
 - Supporting balance

14.131.2 Electric Fences

- Assume all electric fences are on. Avoid climbing over fences unless it is safe to do so at designated crossing points.
- Where practicable disconnect electric fences prior to crossing or .

14.131.3 Livestock & Dogs

(Refer also to part 2 section 12 of the employee safety handbook)

14.131.3.1 Livestock

- Staff working in the field may encounter livestock from time to time. It is important to remain vigilant when traversing lands with livestock.
- It is always prudent to walk near a hedge or fence line as opposed to in the centre of the field.
- There is a risk of being physically hurt by an animal that is frightened or has been startled. Be aware that cattle and horses have a panoramic field of vision, which means they can see everything around them except what is immediately behind their hindquarters. Therefore, approaching from the side or front can be less startling to these animals than approaching from behind. Horses and mules commonly kick toward their hindquarters, while cattle kick forward and out to the side.
- While sheep are generally a docile, non-aggressive animal, this is not usually the case with rams, especially during the breeding season. Rams can be very aggressive and have been known to cause serious injuries to people. A ram should never be trusted, even if it is friendly or was raised as a pet. It is important to always know where the ram is and to never turn your back on him. Head butting is both a natural and learned behaviour in sheep. Classic head butting among rams is highest during the rutting season which precedes the onset of heat in ewes. To discourage butting, you should avoid petting or scratching a ram on the head. Otherwise, the ram may see this as a challenge or aggressive behaviour. In general, the ram sees you as part of the flock and wants to dominate you. Always keep vigilant when you encounter a flock.
- Animals with new-born also pose a great risk. One should never turn ones back on such animals (cattle, sheep etc.), staff should be particularly cautious during spring time.
- Bulls can pose a particular risk due to their unpredictable nature and aggression. Before entering lands look for signage indicating bulls on these lands.

- Bulls can often be identified by a nose ring which will often be fitted with a chain.
- The demeanour of cattle usually tells of their state of arousal. This can be in the form of the head and tail positions, pawing the ground with its legs, or bellowing.
- Seriously distressed cattle often bellow loudly – a sure sign to be especially careful.
- At the first sign of any of the aggressive behaviours, staff should avoid the animal and exit rapidly. It is prudent to have a predetermined route.

14.131.3.2 Dogs

By law all dogs must be kept under effective control – owners may be held liable for any injury or damage caused if their dog attacks a person. Dangerous dogs should be reported to your local dog warden. A dog's body language will usually indicate its intention prior to an attack. The following is an example of what they may be:

- A raised, stiff tail that appears to be waving, as opposed to wagging
- Hair (hackles) raised on the back of the neck
- A very high pitched growl with bared teeth
- A snap without biting may be a warning of the dogs intention to bite.
- At the first sign of any of the aggressive behaviours, staff should avoid the animal and exit rapidly. It is prudent to have a predetermined route.

14.131.4 Blackthorn Infection

When passing through areas of dense wood e.g. hedgerows and river banks proceed with great care where blackthorn is growing. Where practicable cover any bare skin as the thorns are extremely sharp and brittle and can embed deeply in the skin. The toxins in the blackthorn can cause severe inflammation and joint pain. Stands of blackthorn should be avoided. Blackthorn can be identified as follows. It is a large deciduous shrub or small tree growing to 5 metres (16 ft) tall, with blackish bark and dense, stiff, spiny branches. The leaves are oval, 2–4.5 centimetres (0.79–1.77 in) long and 1.2–2 centimetres (0.47–0.79 in) broad, with a serrated margin. The flowers are 1.5 centimetres (0.59 in) diameter, with five creamy-white petals; they are produced shortly before the leaves in early spring, and are hermaphroditic and insect-pollinated. The fruit, called a "sloe", is a drupe 10–12 millimetres (0.39–0.47 in) in diameter, black with a purple-blue waxy bloom, ripening in autumn.



Fig 14.15 Identification of the Blackthorn

14.132 Insects

Hazard:	Working near hives, nests/insect activity
Level of Risk:	Low
Controls:	See details outlined below

- A minimum of one first aider should be present in each field staff team.
- Persons allergic to stings must inform their colleagues and should provide advice from their doctor on the actions to take in the event of an anaphylactic shock. Where persons are prescribed treatment this should be carried by the individual at all times.
- Prophylactic sprays or creams should only be used by staff that are not sensitive to any of the ingredients.

14.133 Needle Stick Injuries

Hazard:	Working in polluted (illegal dumping)/urban waterways
Level of Risk:	Medium
Controls:	See details outlined below

It is possible that employees could encounter needles along canals, rivers or in the water. These risks are increased close to urban areas.

- Employees should avoid where possible rummaging in river/canal beds where needles or syringes may have been dumped.
- Employees should at all times wear thick-soled footwear when traversing water courses and beds.
- Thick gloves should be worn when sampling.
- If a needle is still lodged in the skin, remove it carefully and place in a safe position (e.g. encase it in a box) and remove the item from the location.
- If a first-aider is immediately available seek their help, but in any event encourage the puncture injury to bleed by applying slight pressure on either side of the wound. **DO NOT SUCK THE WOUND.**
- Wash area with warm running water and soap or wipe area with anti-bacterial wipe.
- Cover the injury with a waterproof dressing.
- Irrigate eye or mouth splashes with copious amounts of clean water.
- Seek medical advice as soon as possible from the casualty unit at your local hospital or your local health centre.
- Inform your line manager of the incident as soon as possible.

14.134 Wading

Hazard:	Weather, strong currents, deep water, entanglement, underwater obstacles, floating objects boats, working in water, cold water, physical fitness.
Level of Risk:	Medium
Controls:	See details outlined below

- Check your waders for damage and ensure the sole provides good grip prior to putting on the waders.
- Always wear a personal flotation device.
- Before entering the water assess the situation, note any unusual water movements, hazardous items in the water e.g. barb wire etc.
- Where practicable use a wading staff, it will provide support and can be used to probe the river bed for deep holes or swampy beds.
- Keep one foot on the ground at all times when you wade, shuffle your feet this prevents you from making rapid or aggressive movements
- Ensure you have up to date weather information as the water level of rivers and streams can rise quickly in bad weather.
- Always ensure your waders are 6-8inches above the water level.
- Make sure you can retrace your steps to ensure a safe return to the shore or bank.
- When wading in a controlled river subject to releases check with the releasing authority (ESB or local authority). This is to ensure a release is not scheduled at a time when you or your colleagues will be wading in the river.

Laboratory Safety

14.135	General Laboratory Practice
14.136	Chemical Handling
14.137	Fume Hoods
14.138	Biological Laboratory
14.139	Bio Lab Associated Work
14.140	Microscopy & Scale Reading
14.141	Laboratory Equipment
14.142	ICP

14.135 General Laboratory Practice

Hazard:	Chemical handling and exposure, corrosives, toxins, irritants flammables, dusts, liquids, vapours gases.
Level of Risk:	Low – Medium
Controls:	See details outlined below

- When working in the laboratory all staff shall wear white laboratory coats.
- Before handling chemicals refer to the safety data and follow all safety precautions.
- When handling chemicals nitrile (or similar) gloves and safety glasses must be worn. Refer to safety data sheets for correct PPE.
- Housekeeping must be of a high standard, with the proper disposal of waste by employees in their area.
- All machines, where feasible, must be switched off when not in use and isolated before any major adjustment, cleaning or maintenance is done.
- Eyewash stations and chemical showers are available for use in the event of an incident involving exposure to hazardous chemicals.
- All spills are cleaned up safely using spill kits provided. Wet floors should be signed 'caution slippery surface'.
- All staff working in the lab shall be trained in laboratory safety.
- Wash your hands regularly, and especially before taking food, smoking or going to the toilet.

14.135.1 Prohibited actions

- Food and drink must not be taken into any laboratory.
- Smoking is prohibited.
- Eating and drinking utensils should only be kept in designated coffee rooms and canteen areas.
- Cosmetics or topical medical preparations must not be applied in a laboratory.
- NEVER inhale, taste, or swallow ANY chemical.
- NEVER pipette liquids by mouth; always use mechanical fillers. Be careful during the fitting process.
- No person may enter the lab wearing sandals or open toed shoes.
- NEVER use any chemicals without understanding their chemical properties consult Material Safety Data Sheets as necessary. You must obtain the material safety data sheets from the supplier for all chemicals used.

14.135.2 Use of glassware

- Glassware must always be handled carefully and inspected before use. Worn or damaged glassware is particularly liable to break and should be removed for disposal or repair.
- Glass pipettes fracture easily and great care should be taken when fitting them into safety pipette fillers or dispensers.
- There are well-established safe laboratory techniques for fitting glass tubing into bungs and stoppers.
- Any glass container presents a physical hazard in its own right, particularly if it becomes broken. For this reason, the secondary containment of all glass contained materials prior to transportation is crucial.
- Broken laboratory glassware should be placed in the sharps containers provided.

14.136 Chemical Handling

Hazard:	Exposure to corrosives, toxins, irritants, harmful, flammables, dusts, liquids, vapours gases.
Level of Risk:	Low - Medium
Controls:	See details outlined below

- Use chemicals only as recommended.
- Always wear the personal protective equipment outlined in section 8 of the material safety data sheets.
- All containers must be properly labelled with their contents.
- Chemical disposal must be in compliance with Waste Management (Hazardous Waste) Regulations S.I.No163 of 1998 / S.I. No. 73 of 2000. .
- Do not mix chemicals together, even during disposal unless you know the result of the mixture is not hazardous.
- All chemicals shall be stored in designated chemical safety lockers, toxic, corrosive and flammables shall be stored separately.

14.136.1 Use of Hydrazinium Sulfate $\text{H}_4\text{N}_2\cdot\text{H}_2\text{SO}_4$

- Hydrazine is now purchased as a readymade reagent known as TON2 to eliminate exposure during the mixing process.
- Any member of staff using Hydrazinium Sulfate (TON 2) in the Chemical Laboratory must carefully study the Safety Data Sheets before use.
- Personal Protective Equipment must be worn including: protective gloves, glasses, lab coat.
- Hydrazinium Sulfate must be handled in the **Fume Hood only**.
- Disposable gloves and materials containing the chemical (e.g. weighing boats and spatulas) must be placed in sealed containers labelled carcinogenic hazardous waste. A competent hazardous waste disposal company must be employed.

14.137 Fume Hoods

Hazard:	Flammables, toxins, corrosives, harmful, gasses, liquids and dust.
Level of Risk:	Low
Controls:	See details outlined below

- New fume hoods must be commissioned by a competent person following installation to ensure optimum performance.
- Fume hoods must be used when using volatile chemicals the flow rate must be maintained at a minimum rate of 0.5m/s and shall be tested daily using a hotwire or vane anemometer or similar standard device. The face of the hood shall be divided into nine sections to ensure testing confirms a uniform flow.
- Fume hoods must not be used to store chemicals. This interferes with the direction of airflow causing turbulence that allows contaminants to be drawn out of the hood.
- Keep all apparatus at least 6 inches (15cm) from the front face of the hood to prevent the escape of contaminants.
- If a power outage occurs, the fume hood will likely be compromised. Avoid using the hood during such periods.
- Maintain the sash at as low a level as possible to maintain optimum air velocity.

14.138 Biological Laboratory

Hazard:	Flammables, biological agents
Level of Risk:	Low
Controls:	See details outlined below

- Laboratory coats must be worn on outer clothing to avoid cross contamination.
- Suitable gloves must also be worn and are considered contaminated after one wearing. Dispose of gloves in Biohazard waste container.
- Dispose of all biological samples into the biohazard waste container.
- At the end of biological work disinfect lab benches, sinks and any equipment used.

14.139 Bio Lab Associated Work

Hazard:	Chemical handling, bio-agents, use of sharps, ergonomics
Level of Risk:	Medium
Controls:	See details outlined below

14.139.1 Sorting and identifying Invertebrates

- Accessories are provided for handling invertebrates and should be used.
- Protective gloves are provided and should be worn.
- Methanol should be handled only in the fume cupboard.
- Chemical goggles are available and should be worn when handling alcohol.
- Alcohol must be stored appropriately and must not be left opened.
- The information contained in the Material Safety Data Sheet must be adhered to.
- Lab chairs are provided and should be used. The user should adjust to a comfortable position.
- Detailed work on invertebrates should not exceed one hour in duration without a postural break.
- Invertebrates should be examined under good lighting conditions.

14.139.2 Scale reading & cleaning of scales.

- Appropriate chemical resistant gloves are provided and should be worn.
- Chemical goggles are available and should be worn when handling sodium peroxide.
- Sodium peroxide is used in a dilute form. Dilution must be carried out in the fume cupboard and as per the information contained in the Safety Data Sheet (SDS).
- Concentrate Sodium peroxide must be stored in accordance with the information in the SDS.
- Lab chairs are provided and should be used and adjusted by the operator to a comfortable position.
- Detailed work on scales should not exceed one hour in duration without a postural break.
- Scales should be examined under good lighting conditions.

14.139.3 Processing and dissecting fish

- Use appropriate PPE consistent with the hazard. This includes, but is not limited to, eye protection and puncture and cut resistant gloves.
- Use caution with knives, saws, scalpels, and forceps and always cut away from your body.
- Care must be taken to place scalpel/knife in visible location and not buried under fish parts.
- Make sure knives, saws, and scalpels are sharp.
- Use caution when handling fish. Use puncture resistance gloves to avoid cuts from fish spines, teeth, and gill plates.
- Proper lifting techniques shall be used. Get help or use equipment if necessary.
- Provide adequate ventilation and use caution when preserving biological samples with chemicals.
- Be aware of slippery floors caused by dissecting and spillage of fish body fluids and tissue.
- Use caution when operating any electrical equipment in wet environments. Ensure that electrical equipment is properly grounded and utilize an RCD source.
- Wash hands with soap or hygiene cleanser upon completion of the task.
- Clean and disinfect equipment after use.
- Disinfect any minor cuts or injuries caused by handling fish.
- Report any injuries at once to your line manager.

14.139.4 Disposal of fish waste

- Care must be taken when disposing of fish waste.
- Waste containers must be labelled.
- Disposal must be in compliance with Waste Management (Hazardous Waste) Regulations S.I.No163 of 1998 / S.I. No. 73 of 2000.

14.140 Microscopy & Scale Reading

Hazard:	Awkward posture, manual handling, handling glass slides, chemical handling, hot bulbs, biological agents.
Level of Risk:	Low
Controls:	See details outlined below

14.140.1 Microscopy

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- After the equipment has been used in an observation of a specimen that is accompanied with a potential of infection, clean the parts coming in contact with the specimen to prevent infection.
- The microscope may become unstable when certain intermediate attachments and/or photography unit are mounted on it. Take the measures so that the microscope does not turn over.
- To avoid electric shock or damage to the instrument, unplug the microscope before replacing the bulb.
- Allow the halogen bulbs to cool before touching.
- Halogen bulbs become extremely hot and may cause burns if touched.
- Use only the prescribed halogen or fluorescent bulb
- Turn off and unplug the microscope before moving.
- Always carry the microscope with both hands. One hand should support the bottom, and the other should have a firm grip on the arm.
- Great care must be taken when handling glass slides and covers, as glass slides could break and cut you.
- Chemicals and specimens on the slides could be harmful. Ensure you have read the material safety data sheet for the chemicals used and adhere to the safety precautions.
- Ensure you have a suitable chair for microscopy work. Request an ergonomic assessment if you are not satisfied with the workstation layout.

14.140.2 Scale Reading

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Ensure you have a suitable chair for scale reading work. Request an ergonomic assessment if you are not satisfied with the workstation layout.

14.141 Laboratory Equipment

Hazard:	Chemical handling, bio-agents, use of sharps, awkward postures, fire, steam, pressurised equipment.
Level of Risk:	Medium
Controls:	See details outlined below

14.141.1 Bunsen Burner

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Place the Bunsen burner away from any overhead shelving, equipment or light fixtures by at least 12 inches.
- Remove all papers, notebooks, combustible materials and excess chemicals from the area.
- Tie-back any long hair, dangling jewellery, or loose clothing.
- Inspect hose for cracks, holes, pinch points or any defect and ensure that the hose fits securely on the gas valve and the burner.
- Replace all hoses found to have a defect before using.
- Notify others in the laboratory that the burner will be in use.
- Utilize a sparker/lighter with extended nozzle to ignite the burner. Never use a match to ignite a burner.
- Have the sparker/lighter available before turning on the gas.
- Adjust the flame by turning the collar to regulate air flow and produce an appropriate flame for the experiment (typically a medium blue flame).
- Do not leave open flames unattended and never leave the laboratory while the burner is on.
- Shut off gas when its use is complete.
- Allow the burner to cool before handling. Ensure that the main gas valve is off before leaving the laboratory.

14.141.2 Centrifuge

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Ensure that centrifuge bowls and tubes are dry.
- Ensure that the spindle is clean.
- Use matched sets of tubes, buckets and other equipment.
- Always use safety centrifuge cups to contain potential spills and prevent aerosols.
- Inspect tubes or containers for cracks or flaws before using them.
- Avoid overfilling tubes or other containers (e.g., in fixed angle rotors, centrifugal force may drive the solution up the side of the tube or container wall).
- Ensure that the rotor is properly seated on the drive shaft.
- Make sure that tubes or containers are properly balanced in the rotor.

- Only check O-rings on the rotor if you are properly trained.
- Apply vacuum grease in accord with the manufacturer's guidelines.
- Do not exceed the rotor's maximum run speed.
- Close the centrifuge lid during operation.
- Make sure that the centrifuge is operating normally before leaving the area.
- Make sure that the rotor has come to a complete stop before opening the lid.
- Ensure the equipment is serviced and inspected at regular intervals.

14.141.3 Autoclave

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Be sure autoclave is OFF and pressure is low before opening doors. Open autoclave doors slowly, keeping the head, face, and hands away from the opening to prevent direct contact with steam.
- Before loading the autoclave, check the inside for items left by previous users.
- Load autoclaves according to the manufacturer's recommendations in order to ensure complete sterilization of items.
- To prevent bottles from shattering during pressurization, the caps of containers with liquids must be loosened before loading.
- Waste should be autoclaved in bags or containers designed to withstand the heat and pressure of the autoclave. Autoclavable biohazard bags should be designed with a steam indicator or tape.
- Steam must be in contact with the material being sterilized to be effective. If a load is contained within a bag or other enclosure, the container must NOT be tightly sealed or it must contain some water to ensure steam production.
- Do not autoclave flammable, reactive, corrosive, toxic or radioactive materials. Never autoclave dried bleach, bleach associated materials, or nitrocellulose as both compounds pose a fire or explosion risk. Lab coats that have been contaminated with chemicals should not be autoclaved but cleaned by an approved laundry service or disposed of as chemical waste.
- Firmly lock autoclave doors prior to operation. Most autoclaves are equipped with an interlock system, which does not allow operation without the door being completely closed. Determine if the autoclave is equipped with an interlock system. If it does not, be sure all users are aware of this feature and advise them to utilize extra caution when operating the autoclave.
- Older autoclaves may not provide efficient heat shielding around the unit. Signs should be in place to warn users or passers-by of the hazards present ("Hot Surfaces, Stay Clear"). Wait at least 30 seconds after opening the door before reaching into the autoclave to remove sterilized items. Remove items slowly.
- Do not store combustible materials near autoclaves.
- Always utilize the appropriate Personal Protective Equipment (PPE) when placing items into, or removing items from an autoclave. PPE should include heat resistant gloves, safety goggles, and, if

handling large amounts of liquid, rubber boots and rubber apron to protect against splash/spill hazards.

- Use a tray with a solid bottom and walls to contain the contents and catch spills, should they occur. Add $\frac{1}{4}$ to $\frac{1}{2}$ inch of water in the bottom of the tray to ensure bottles heat evenly.
- Check plastic materials to ensure they are compatible with the autoclave. Red biohazard bins and bags, and SHARPS containers provided by OEH&S, are not autoclavable plastics!
- For non-liquid loads, allow glassware to cool for at least 15 minutes prior to touching with ungloved hands.
- For liquid loads, allow liquids to stand for at least 1 hour prior to touching with ungloved hands.
- In addition to the above safety precautions, all manufacturer safety recommendation should be in place and effectively enforced.

14.141.1 Hot Plate

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Ensure workers are trained in the safe use of all equipment prior to use.
- Always check equipment prior to use.
- Do not use equipment if cords are worn, frayed, or damaged.
- Do not use if the grounding pin is removed or plug is damaged.
- Do not use if sensor is corroded or damaged.
- Do not use if a spark is observed.
- Do not store volatile flammable materials near hot plate. Do not place paper or other combustible materials near the hot plate.
- Limit use of older hot plate for flammables.
- Ensure the hot plate is set to the proper setting. Do not leave unattended.

14.141.2 Millipore Water Purification (UV Lamp & Replacement)

- The light from the UV lamp is very damaging to eyes and skin. Do not turn on the Water System or attempt to turn on the UV lamp in any way until the UV lamp is inside its stainless steel housing inside the water system.
- The UV lamp contains metallic Mercury. The lamp must be handled with great care. Old lamps must be treated as hazardous waste and disposed of accordingly.

14.142 ICP

Hazard:	Chemical handling, bio-agents, use of sharps, ergonomics, confined space oxygen depletion.
Level of Risk:	Medium
Controls:	See details outlined below

14.142.1 Mounting Otoliths

- Read the material safety data sheet for Epofix hardener and Epofix resin before use.
- Gloves must be worn when curing resin. Prepare in the fumehood.
- Read the material safety data sheet for Crystalbond LT before use.
- Chemical goggles and protective gloves are recommended when handling heated Crystal bond.
- Protective gloves must be worn when using the hotplate.

14.142.2 Precision Saw

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- The precision saw can only be operated when the guard is closed.
- Use with the guard open is strictly prohibited.
- If the sample has to be sanded following sawing a dust mask should be worn.

14.142.3 Laser Ablation & Mass Spectrometry

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Ensure the O₂ monitor is powered on before operating the laser.
- Ensure the remote fixing for the O₂ monitor is also in place.
- The accuracy of G-TECTA™ Cellaguard instruments should be checked periodically with known concentration calibration gas. Failure to check accuracy can lead to inaccurate and potentially dangerous readings. Periodic testing of both sensors may be performed simply by using exhaled breath to generate high CO₂ and low oxygen alarms.
- Exhaled breath contains approximately 4% CO₂ and 16% oxygen, and therefore contains sufficient levels of each gas to cause alarms on the Cellaguard™ monitor. The Oxygen sensor must be replaced every 3 years. The Linde Group also recommends full re-calibration after 3 - 4 years of use. To test the sensor carry out the following:
 - Find a suitable plastic bag
 - Inflate the plastic bag by blowing gently into it
 - Hold the open end of the inflated bag tightly over the sensor(s) and wait until the alarms activate.

- The Cellaguard™ display will show increased levels of CO₂ and decreased levels of oxygen (if fitted). The O₂ alarm (if fitted) will activate instantly and the CO₂ alarm after approximately 25 second.
- The Argon cylinder is supplied externally. The cylinder is kept in a secure cage.
- The Helium cylinder is stored in the ICP room. It is secured upright. A cylinder trolley is provided to reduce manual handling during cylinder replacement.
- Waste water is safely disposed of.
- SDS for Nitric acid is read before use.
- The dry bath is used in the fume hood. Goggles and gloves are worn.

Fish Farms

14.143	Use of Fish Cages
14.144	Chemical Handling
	- General Safety Measures
	- Formaldehyde (30 – 55% W/W)
	- Sodium Percarbonate
	- 17 α Methyltestosterone Hormone
	- Chloramine T
14.145	Fish Grader & Pump
14.146	Oxymat Oxygen Generation
14.147	Aerators
14.148	Vaccinators
14.149	Hatchery Operations
14.150	Water Pumps
14.151	Fish Transfer and Truck Transport
14.152	Netting Trout (Fish Farm Roscrea)
14.153	Pond Bed Scraper
14.154	Weed Cutting in Ponds & Channels
14.155	Vermin Control
14.156	Lone Working
14.157	Conflict Resolution

14.143 Use of Fish Cages

Hazard:	Work on or adjacent to water, fish transport truck, work at height, manual handling.
Level of Risk:	Medium
Controls:	See details outlined below

14.143.1 Fish Transport

- Staff operating the truck have a C licence and completed CPC training.

14.143.2 Fish handling (loading truck)

- Staff are trained in manual handling techniques. A two man lift is conducted. The bins are lifted/gripped by the base and handle. Staff are not under time pressure when transporting the bin to the trailer/truck and only carry loads of fish which they find they can carry comfortably. Job rotation is implemented to reduce the risk of back strain. When transporting into the trailer tank the bin is rested on the ground to allow staff to reposition themselves before emptying into the tank. If the truck is used then the bin is positioned a third time at bed height before being emptied into the tank.

14.143.3 Fish handling (unloading truck)

- Staff are trained in manual handling techniques. Fish are removed from the tanks using a long handled net and placed in a bin. Staff are not under time pressure when transporting the bin to the trailer/truck and only carry loads of fish which they find they can carry comfortably. Job rotation is implemented to reduce the risk of back strain. Bins are handled as described above (transporting fish) but in reverse order.

14.143.4 Access to cages from shore

- Staff travel to the cage aboard a 12' fibreglass boat. Occupancy is restricted to two staff. Staff wear a 150 N lifejacket with crutch strap. In cold water conditions a dry suit is worn. Access is postponed on days when weather conditions are unsuitable e.g. gale coming from open side of the lake. An additional boat is kept at shore for emergency access.

14.143.5 Feeding

- Staff are trained in manual handling. Manual handling techniques are used when carrying fish feed onto the cage. Fish feed is stored in bins on cages. Staff are not under time pressure to feed stock. Care is taken when moving around the cages. Lifejackets are worn.

14.143.6 Netting

- Staff netting fish have completed manual handling training. Care is taken to hold the handle as close to the net as possible to avoid strain. Staff are not under time pressure when netting and only carry loads of fish which they find they can carry comfortably. Job rotation is implemented to reduce the risk of back strain. Care is taken to avoid twisting the back by moving the foot position as required.

13.143.7 Moving Cages

- 3-4 staff are required when moving cages. The cage is tied to a rope which is then pulled toward the shore.

14.144 Chemical Handling

Hazard:	Hormone toxin, Toxins, Oxidisers, Irritant, Flammables, Corrosives etc.
Level of Risk:	Medium
Controls:	See details outlined below

14.144.1 General Safety Measures

- Where practicable avoid work alone when handling chemicals.
- Always consult the safety data sheet (SDS) for the chemical.
- Use required personal protective equipment.
- Label all containers with chemical content.
- Keep your hands and face clean. Wash thoroughly with soap and water after handling any chemical and whenever you leave the lab.
- Avoid direct contact with any chemical.
- Keep chemicals off your hands, face and clothing, including shoes.
- Never smell, intentionally inhale or taste a chemical.
- Smoking, drinking, eating and the application of cosmetics is forbidden in areas where hazardous chemicals are used or stored.
- Always use chemicals with adequate ventilation or in a chemical fume hood where applicable.
- Use hazardous chemicals only as directed and for their intended purpose.
- **Never** use mouth suction to fill a pipette. Use a pipette bulb or other pipette-filling device.
- Electrically ground containers using approved methods before transferring or dispensing a flammable liquid from a large container.
- For specific information regarding chemical handling, contact your supervisor, safety rep or Health & Safety Executive.

14.144.2 Formaldehyde (30 – 55% W/W)

Hazard:	Toxic, Flammable, Corrosive
Level of Risk:	Medium
Controls:	See details outlined below

- Formaldehyde is flammable, toxic and corrosive.
- Staff handling Formaldehyde must receive chemical handling training and consult the material safety data sheet prior to use.
- The number of staff handling formaldehyde must be restricted to the minimum practicable. Handling exposure should be reduced to the absolute minimum.
- The following personal protective equipment must be worn:

Chemical resistant coveralls (e.g. disposable Tyvex suit)

Protective rubber boots must be worn.

A full face respirator meeting the EN141 standard must be worn.

Consult with the health and safety executive if you are unsure about the correct masks or filters or fitting of equipment.

Protective gloves of butyl rubber, nitrile or viton gloves must be worn.

- Formaldehyde must be stored in a bunded area, away from strong acids, sources of ignition or flammable substances.
- Formaldehyde must never be stored beside sodium percarbonate or any other oxidising material.
- Formaldehyde must be stored in a well-ventilated area.
- Manual handling techniques must be employed when handling formaldehyde. Where practical use mechanical aids for transportation (loadall, pallet truck etc).
- Hand pumps should be used to decant barrels. Tipping barrels should be avoided where practicable.

14.144.3 Sodium Percarbonate

Hazard:	Oxidiser and Irritant
Level of Risk:	Medium
Controls:	See details outlined below

- Sodium Percarbonate is an oxidising chemical it is also a harmful chemical and an irritant.
- Staff handling this chemical must receive chemical handling training and consult the material safety data sheet prior to use.
- The number of staff handling sodium percarbonate must be restricted to the minimum practicable. Handling exposure should be reduced to the absolute minimum.
- The following personal protective equipment must be worn:
 - Chemical resistant coveralls (e.g. disposable Tyvex suit)
 - Protective rubber boots must be worn.
 - A dust respirator with a P2 filter must be worn. Consult with the health and safety executive if you are unsure about the correct masks or filters or fitting of equipment.
 - Protective goggles.
 - Protective gloves of pvc, neoprene or rubber must be worn.
- Sodium percarbonate must be stored in isolation, in a dry ventilated area out of direct sunlight.
- Manual handling techniques must be employed when handling the chemical. Where practical use mechanical aids for transportation (loadall, pallet truck etc).
- Avoid dust creation as far as is reasonably practicable and only handle in ventilated areas.

14.144.4 17 α Methyltestosterone Hormone

Hazard:	Suspected carcinogen and reproductive toxin.
Level of Risk:	High
Controls:	See details outlined below

14.144.4.1 Storage

- The hormone is securely stored in the office safe. Access to the hormone is controlled by Jon Cowen.

14.144.4.2 Safe Handling

- Staff are prohibited from handling the hormone without the expressed permission of Jon Cowen. Staff must be trained in the safe handling of the hormone if they are to handle it.
- Staff must wear protective gloves meeting the EN 374 standard. A plastic scoop must be used to reduce the likelihood dermal exposure.
- Staff must read the Material Safety Data Sheet before using 17 α Methyltestosterone.
- Staff must wear respiratory protective equipment. A full face mask must be worn with P2 filters.
- A dated record must be kept of amounts of 17 α Methyltestosterone used and signed off by the handler.

14.144.4.3 Procedure for use

- The hormone is weighed on a balance scale. 6 mg for Brown Trout and 3 mg for Rainbow Trout.
- The hormone is dissolved in ethanol (approx 5ml) in a cuvette. The mix is added to a further 200ml of ethanol.
- The dissolved hormone is sprayed on to 1kg of feed. **The sprayer must be clearly labelled and not used for any purpose.**
- The spraying should be done in the evening in a well-ventilated area. This is to allow the ethanol to evaporate overnight thus reducing the risk of exposure to staff.
- The hormone containing feed is then stored in a freezer before use.
- The container used must be clearly labelled and stored securely when not in use.

14.144.5 Chloroamine T

Hazard:	Corrosive and harmful.
Level of Risk:	Medium
Controls:	See details outlined below

- Chloroamine is corrosive and harmful.
- Staff must read the Material Safety Data Sheet before using Chloroamine T.
- Use only in a well ventilated area. Avoid contact with skin and eyes.
- Respiratory protection meeting the EN 149 standard must be worn.
- Gloves, goggles and proactive coveralls should be worn.
- Keep container tightly closed.
- Store in a cool, dry place. Keep container closed when not in use.
- Avoid storage and use near strong oxidising agents, acids or ammonia.
- Store in a secure chemical locker.

14.145 Fish Grader & Pump

Hazard:	Moving parts,
Level of Risk:	Medium
Controls:	See details outlined below

This section shall be updated following installation.

14.146 Oxymat Oxygen Generation

Hazard:	Oxidisers, high pressure vessels
Level of Risk:	Medium
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Exhaust gas from the oxygen generator contains only 8-12% oxygen. Exhaust gas must be piped out of the room to the outside; the room housing the generator must be well ventilated.
- No smoking or sources of ignition should be present while venting oxygen. Venting oxygen should not come in contact with clothing or hydrocarbon material

14.147 Aerators

Hazard:	Electricity
Level of Risk:	Medium
Controls:	See details outlined below

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Check the warranty and keep all records of purchase.
- Manual handling of aerators requires a two man lift.
- The aerators must be positioned in the pond before connecting to 3 phase power.
- The power must be switched off before connecting cables to the aerator. All electrical power connections and cables must be suitably IP rated. Cables must be protected against complete and continuous submersion.
- All aerators must be regularly inspected and any blockage removed.
- All aerators must be cleaned and maintained at least every 3 months.
- All engines and motors should be maintained as recommended by the manufacturer. Electric motors should be protected from splashing, and all drive shafts should be checked periodically for proper alignment.

For electrical safety:

- Do not drive over live wires.
- Make sure that power is shut off at the control box before any maintenance work is done.
- Use qualified electricians to install wiring.
- Place exposed wiring in conduits to prevent damage to the wiring.
- Switch off aerators before entering the pond.

14.148 Vaccinators

Hazard:	Injection and manual handling
Level of Risk:	Low
Controls:	See details outlined below

The following vaccines are used at the fish farms:

AquaVacTM ERM – Enteric Redmouth Vaccine, Concentrate for dip suspension.

AquaVacTM ERM Oral – Enteric Redmouth Vaccine, Oral Emulsion.

AquaVacTM FNM^{plus} – Non-Mineral Oil Injection Applied Furunculosis Vaccine. Refer to Material Safety Data Sheets for details.

Other vaccines may be used as required.

14.148.1 Accidental injection

- If you have been accidentally injected with fish vaccine, seek the assistance of a doctor immediately, even if the injected amount is small.
- Take the package insert from the vaccine package with you to the doctor.
- If pain persists for more than 12 hours after medical examination you must consult the doctor again.
- Unintentional injection of fish vaccine can lead to severe pain and swelling, especially if the preparation is injected into a limb or finger. In rare cases, the loss of an affected finger may be the result if treatment is not commenced immediately.
- If a dose has been injected, one may see a local reaction with redness and swelling affecting the hand and part of the arm. One may see a red stripe (“blood poisoning”) which extends up the arm.
- Repeated self-injection may result in an allergic reaction to the fish vaccine. If allergic patients inject themselves there is a risk of anaphylactic shock, which can be life threatening without prompt and appropriate treatment.
- Signs of anaphylactic shock start in a matter of a few minutes. The patient becomes unwell, can have itchiness of the skin, eyes and mouth. They can feel warm and develop an urticarial rash and appear anxious and listless.
- The shock phase will present with breathing difficulties and rapid breathing difficulties and rapid heart action. They may have stomach pain, with vomiting and diarrhoea. In very serious cases they may be confused and become unconscious. Urinary or faecal incontinence may occur.

14.148.2 First aid when a person develops shock after injection

- If the patient has breathing difficulties they should lie with their upper body slightly raised.
- The patient must be observed until the doctor arrives. If they vomit place them on their side. The patient must rest. If they have to be moved, they should be carried and not walk themselves.

14.148.3 Information for the Doctor

- The injection of even a small amount of a fish vaccine product can result in ischemic necrosis or even the loss of an affected finger.
- The site of injection must be immediately examined by a surgically competent person, and if necessary, incision and irrigation of the affected area must be performed, especially when ligaments or soft tissue are involved.

Repeated self-injection may reinforce the reaction or result in anaphylactic shock.

14.148.4 Manual Handling

The use of the vaccinator requires staff to load the vaccinator table with fish. The following precautions should be taken:

- Staff using long handled nets must take great care to avoid awkward postures.
- Staff members with a history of back pain are prohibited from participating.
- Manual handling techniques must be deployed.
- To reduce the risk the person lifting the fish must be regularly rotated to eliminate repetitive strain injury.
- All available mechanical aids must be used.
- Staff must be given regular breaks.

14.149 Hatchery Operations

Hazard:	Low temperatures
Level of Risk:	Low
Controls:	See details outlined below

- Staff must wear the warm clothing provided when required e.g. thermals warm coats hats etc.
- Water proof gloves should be worn e.g. Sealskinz
- Anti-fatigue mats are provided where required.

14.150 Water Pumps

Hazard:	Heat, fumes, noise
Level of Risk:	Low
Controls:	See details outlined below

14.150.1 Safe Operation of Generator

- Read and follow the manufacturer's operating manual for safe operation and maintenance.
- Employ manual handling techniques when lifting pumps or connecting pipes.
- For safety, never pump flammable or corrosive liquids such as petrol or acid. Also, to avoid pump corrosion, never pump sea water, muddy water, chemical solutions, or caustic liquids.
- Operate the pump on a level surface. If the engine is tilted, fuel spillage may result.
- To prevent fire hazards and to provide adequate ventilation, keep the pump at least 1 metre (3 feet) away from building walls and other equipment during operation. Do not place flammable objects close to the pump.
- Know how to stop the pump quickly, and understand the operation of all controls. Never permit anyone to operate the pump without proper instruction.
- Petrol is extremely flammable and is explosive under certain conditions
 - Refuel in a well-ventilated area with the engine stopped.
 - Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.
 - Do not overfill the fuel tank there should be no fuel in the filler neck.
 - After refueling, make sure the tank cap is closed properly and securely.
 - Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.
 - Never run the engine in an enclosed or confined area. Exhaust gas contains poisonous carbon monoxide gas; exposure can cause loss of consciousness and may lead to death.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. Let the engine cool before storing the pump indoors.
- Exhaust gas contains poisonous carbon monoxide. Avoid inhalation of exhaust gas. Never run the pump in a closed garage or confined area.

14.150.2 Equipment Safety

- Ensure the pressure safety-valve ring is properly operating.
- Moisture can condense in a unit, so it is extremely important to drain the tank after each day's use. If left in the tank, moisture could cause rust and weaken the tank.

14.150.3 Personal Safety

- Always read the manufacturer's operator manual.
- Carefully follow all safety and operation rules.
- Always wear safety glasses and hearing protection when using a water pump.

14.151 Fish Transfer and Truck Transport

Hazard:	Slippery surfaces, vehicle traffic and movement
Level of Risk:	Low
Controls:	See details outlined below

- A staff member accesses the truck using the fitted ladder.
- The tank lids are opened.
- The staff member using the fitted ladder alights the truck and stands in a safe position away from the vehicles.
- The loadall operator drives the machine toward the truck raising its load over the fish tanks on the truck. The loadall boom must not be extended beyond its safe working load.
- The loadall operator then unloads the fish into the truck tanks.
- The loadall operator then lowers the load all tank to ground level.
- Any remaining fish are removed using a hand net and manually placed into the truck tanks.
- Repeat steps above as required.

14.152 Netting Trout (Roscrea Fish Farm)

Hazard:	Deep water, manual handling
Level of Risk:	Low
Controls:	See details outlined below

- Lifejackets must be worn at all times when hauling nets.
- Correct manual handling techniques must be used at all times.
- When hauling nets of fish an adequate number of staff must be deployed to ensure musculoskeletal injuries are avoided. **The person conducting the manual handling must be rotated regularly. A minimum of four staff are required.**
- Mechanical aids must be used where available.

14.153 Pond Bed Scraper

Hazard:	Tractor Operation, entanglement
Level of Risk:	Low
Controls:	See details outlined below

- The pond bed scraper must be used with the fish farm tractor.
- The operator must have a category W driver's licence.
- Staff must not work in the pond in which the tractor and scraper are operating.
- The PTO must be guarded.

14.154 Weed Cutting in Ponds & Channels

Hazard:	Deep water, sharps
Level of Risk:	Low
Controls:	See details outlined below

- Staff clearing weeds from ponds and channels must wear a personal flotation device.
- Staff using a slash hook or similar tool must wear steel toed waders.

14.155 Vermin Control

Hazard:	Slips, trips and falls, biological agents
Level of Risk:	Low
Controls:	See details outlined below

- Staff setting mink traps must take care when placing trap in a run.
Suitable footwear must be worn.
- Good hygiene practices should be implemented.
- Wash hands before and after handling traps or after handling dispatched vermin.
- PPE should be worn when setting rodenticides.
- For the safe use of fire arms refer to section 14.34.

14.156 Lone Working

Hazard:	Injection
Level of Risk:	Low
Controls:	See details outlined below

- Staff are to follow the lone working procedures detailed in section 14.9.
- Where a lone working device system is operable in the farm this must be used.

14.157 Conflict Resolution

Hazard:	Injection
Level of Risk:	Low
Controls:	See details outlined below

- Refer to Section 14.121.

Business Development

- 14.158 Safety Information for Angling Advisors**
- 14.159 Action to be taken if someone falls into the water**
- 14.160 Getting a Vessel Towed**
- 14.161 Recommended Safety Equipment for angling boats (open without shelter and generally less than 7metres).**
- 14.162 Belly Boat Angling**
- 14.163 Angling excursions involving journalists/groups/organisations**
- 14.164 Important sections of the Safety Statement for Reference**

14.158 Safety Information for Angling Advisors

Hazard:	Fish handling, traversing lands, sharps, food storage
Level of Risk:	Medium
Controls:	See details outlined below

14.158.1 Risk Assessment

- Anglers should be made aware of the hazards they may encounter while fishing with angling advisors. A risk assessment of waters may be useful especially if guiding inexperienced anglers or anglers unfamiliar with local specific hazards.
- Examples of Items in the assessment may include:
 - Eye protection and a hat worn when fly casting.
 - Ensuring your back cast is not going to strike a person in the vicinity.
 - Wearing a suitable personal flotation device or buoyancy jacket.
 - Taking care when fishing from river banks or elevated shores as erosion may cause the ground beneath to subside.

14.158.2 Planning an angling trip

- Always check the weather forecast before you go and be prepared to change your plans or cancel the trip.
- Always inform someone of where you intend fishing and when you expect to return.
- Irish forecasts are available on national radio and television on the internet www.met.ie and broadcasted by the Coast Guard after an initial announcement on VHF channel 16.
- If you are fishing on the sea, it is very important to check the times of high and low water. Tide tables should be consulted.

14.158.3 Wading and footwear

- Adequate footwear is essential and is dependent on your environment.
- Always pay attention to changes in water level. Rising levels can cut off your return route.
- Take care when wading, particularly in low clarity waters.
- A wading staff is useful to maintain balance and probing to establish the depth of the river bed.

- When wading avoid deep fast flowing water, ensure that you can reach the bank safely without having to wade back against the current.
- Waders should avoid taking long strides, short steps or shuffle movements allow for better stability. Never cross your legs when turning in strong currents as you are more likely to be knocked over by the current.
- **Boggy ground:** Always seek advice from colleagues and/or local information regarding dangerous ground. If you are visiting areas which are known to be dangerous do not visit alone.

14.158.4 Tide and Waves

- Wave conditions can change as the tide changes. Ensure you know whether the tide is rising or falling and what direction the tide is flowing. If the wind is against the tide this will generally cause rougher seas.
- Seek local advice and assistance to avoid being cut off by incoming tides. Always enquire as to whether there are any unusual local tide conditions or hazards.
- Spend at least 20 minutes observing the area before you start fishing. Waves and swells tend to have cycles, so allowing a little time ensures you can gauge the conditions that are likely over a full cycle.
- Keep a look out for wash from boats or shipping in the area as these may create larger waves.
- If waves or a swell are threatening your fishing spot, leave immediately before it gets too bad.
- Ensure your vehicle is parked well above the high tide mark.

The Safety on the Water: Angling Safety Guidelines is an excellent reference document. If you do not have a copy please obtain one from the Health & Safety Executive (Michael Cusack).

14.158.5 Stability of small boats

- No more than three persons are allowed aboard a lake boat. Only two anglers and the guide should be present. If you have a larger group make arrangements for the use of additional boats.
- All equipment should be stored safely and kept tidy to avoid trip hazards.
- Exercise caution when casting and standing in the boat. Try to remain low and to the centre of the boat to avoid heeling.
- When getting into a boat always try and step into the centre to avoid losing balance.

14.158.6 Launch and recovery of boats

14.158.6.1 Launch Procedures

- The slipway is the start and finish point of your journey.
- Ensure that the slipway is suitable for your boat.
- Slipway suitability is more than checking that your trailer will fit on the ramp. Many slipways can only be used at certain states of tide so make sure that the tide will be high enough for when you intend to launch (and recover).
- When you get to the slipway, park up out of the way and take a look around, don't be in a rush to get into the water. This will give the trailer wheel bearings a chance to cool down before going in the cold water.
- If you are launching in coastal waters the contraction of the warm air in the bearings will suck salt water deep into the bearings and cause serious long term damage.
- Decide what actions must be taken e.g. finding a suitable parking location, and how will the person parking the car and trailer get onto the boat.
- Walk over to the slipway and have a look around. If someone else is launching, go down and have a look, you may pick up some useful tips. Walk down the slipway to check if its slippery or muddy and you may wish to wade in and check for potholes, rocks, old bikes and trolleys.
- Get everything ready before you get onto the ramp.
- Take off the trailer board and prop bag. Remove safety straps off the boat.
- Take the outboard off the tilt support lever.
- Put all your equipment into the boat.
- The driver should ensure they have a clear view from all windows. Windows should be opened so that the driver can hear any warning while reversing.
- Avoid slipways which are slippery and or too steep to risk taking a car onto. Vehicles, trailers and boats may slide gently down the slipway with all four wheels locked. Cars have been lost in this way.
- Using a roller trailer, it should be possible to roll your boat off the trailer into the water.
- If you are launching into water where there is no current you may control the launch using ropes.
- Launching into a cross current or on a steep ramp may require the use of a trailer winch. In this case, keep the boat attached to the trailer winch and with one person pushing, the other can lower the boat on the winch. Once the boat is in the water, but being held with the winch, one person can get aboard, get the engine going and be ready to go. However, be extremely careful when using the trailer winch. If you lose your grip on the handle and it starts to spin, DO NOT try to catch it. You will not be able to stop it and more likely than not, you will end up with a serious injury. Just let it run.
- If your trailer does not have rollers, but has carpet bunk pads instead, a different technique is required. Get everything ready as before and take off all the trailer straps and either attach a long rope between

boat and trailer or put someone in the boat. Then, starting with the trailer wheels just in the water, smartly reverse the car and trailer until the rear of the car is at the water's edge and hit the brakes. Your boat should glide off the trailer.

14.158.6.2 Recovery Procedures

- To boat should be recovered by shore backup.
- For a roller style trailer, reverse the trailer until the trailer wheels hubs are just above the water and slowly drive the boat up to the trailer and, with the engine ticking over in forward gear, clip the trailer winch strop onto the boat.
- Turn the engine off and winch the boat onto the trailer.
- With a carpet type trailer, put the trailer deeper into the water and drive the boat onto the trailer. As soon as you have got the boat onto the trailer, attach a safety line in case the winch strop breaks. Use a length of chain with a snap shackle.
- Park up away from the ramp and get your boat and trailer ready for the road.
- If you are using a slipway in a river you may have to recover your boat in a cross-current which can make life difficult as your boat will be swept sideways over the trailer.
- If you have to recover in a cross current, the trick is to start your approach upstream of the trailer.
- Drift down towards the trailer with your boat aligned with the trailer and control your approach with the throttle.
- Avoid the temptation to approach the trailer with the boat pointing upstream to counteract the effect of the current.

14.158.7 Sea Sickness

- Seasickness happens when the body, inner hearing, and eyes all send different signals to the brain, resulting in confusion and queasiness. It is a problem generally attributed to disturbance in the balance system of the inner hearing (vestibular) system. Your sensory perception gets out of sync as these nerve fibres attempt to compensate for the unfamiliar motion of the ship moving through water.
- The movement of a boat on a fluid sea creates stress in the portions of the brain responsible for balance. Perhaps that stress causes the brain to start malfunctioning as the land based environment it understands is suddenly not behaving as it should.

14.158.7.1 Avoiding Sea Sickness

- You can often avoid seasickness by staying busy and keeping your mind occupied. Any activity that will keep you above decks and focus your mind on anything other than the swaying environment will help. Staying in fresh air instead of in a stuffy cabin may help.
- Take deep breaths and drink plenty of water. The worst thing that you can do is go below decks with no land or horizon to look at.
- Avoid reading or staring at an object as this will bring on the affects of seasickness. Keep your senses, particularly your eyes, working flat out interpreting the motion of the boat and the waves.
- Your peripheral vision is an important factor, keep it out on the horizon but do not visually lock on to it.
- Let your brain adjust to this unstable environment by allowing the horizon to act as a true point of reference.
- If you can, try and eat lightly and avoid fatty or spicy foods. Try to stay warm, relaxed and comfortable.

14.158.8 Night Fishing

- When intending to fish a location at night, you must familiarise yourself with the location during the day. A risk assessment must be conducted and will determine whether the location is suitable.
- Staff must wear a personal flotation device.
- Staff must not fish alone at night.
- Equipment should include a walking aid and a torch or head lamp.
- Staff must inform someone of when and where they intend fishing and when they shall return.

14.158.9 Use of Lead & Lead Weights

- Lead is a toxic heavy metal. Acute or chronic exposure can lead to symptoms which include pain, numbness or tingling of the extremities, muscular weakness, headache, abdominal pain, memory loss, unsteady gait, pale skin, weight loss, vomiting, irritability, and anaemia.
- Contact with lead should be avoided so far as is reasonably practicable.
- Gloves should be used when handling lead when lead is handled without gloves you should wash your hands immediately. Never handle food or smoke directly after handling lead or containing materials.
- The heating of lead to produce molten metal for shaping weights is strictly prohibited.
- If you are in regular contact with lead or lead containing materials you must contact the Health & Safety Executive. Arrangements will be made for baseline medical surveillance.

14.158.10 Preparing Bait

- When preparing to use bait, exercise caution when handling hooks whether barbless or otherwise.
- If sharp knives are used to prepare bait a protective gloves must be worn, Kevlar and similar material gloves will protect your hands without any loss of dexterity.
- Knives should have a blunt tip and sheathed at all times when not in use.

14.158.11 Handling Fish

- Great care should be taken when handling live fish. The handling of large predatory fish such as sharks should be avoided. Bait and tackle should be removed remotely using a boga grip and suitable pliers
- If the hook cannot be removed safely the wire must be cut.
- Fish should also be handled with care particularly:

Pike – sharp teeth

Perch – sharp spiked dorsal fins

Gurnard Species - Sharp spiked dorsal fins and gill spikes

Wrasse - sharp spike dorsal fins

Dogfish - rough skin can cause serious abrasion to skin

Thornback ray – sharp plates along dorsal

Conger – sharp teeth

Rays & Skates - crushing mouth parts

- The Lesser Weever (fish) is a species to be avoided due to the poisonous spines in its black dorsal fins. Wear protective gloves when handling.
- There may also be poison glands associated with spines on the gills covers.
- The fish is typically found on shallow sandy beaches, and can inflict a painful injury. Seek medical attention.

14.158.12 Food Safety

- Soft, insulated lunch bags or boxes are the best choice for keeping lunches cold. Metal or plastic lunch boxes without insulation don't do as good a job, but they're certainly better than paper lunch bags.
- No matter what sort of lunch bag or box you use, you should definitely place some kind of ice pack in it to keep the food inside cold. Small, frozen gel packs are perfect for this task.
- If you do use paper lunch bags, double bagging creates an additional layer of insulation to help protect the food inside. Remember that

insulated lunch totes and lunch boxes should be washed with hot soapy water after each use.

- Perishable foods include cooked meats such as cold cuts and other lunch meats, as well as pre-made tuna salads, chicken salads and egg salads. All of these foods are potential targets for the bacteria that cause food poisoning, and they must be kept refrigerated.
- Any store-bought, packaged lunch combos containing lunch meats, crackers and cheese need to be kept cold, too.
- Examples of foods that don't need to stay cold include whole fruits, crisps, crackers, mustard, pickles, and unopened cans of meat and fish.

14.159 Action to take if someone falls into the water

Hazard:	Deep water, fast currents, rising waters, working in, adjacent or on water.
Level of Risk:	Medium
Controls:	See details outlined below

14.159.1 From the shore or bank

- If someone gets into trouble in the water, try to summon help. Do not put yourself at risk. If there are breaking waves or fast currents only a trained lifesaver should attempt a rescue.
- A throw rope is recommended for use in an emergency. The brightly coloured floating line is coiled inside a throwing sack. Make sure everyone knows how to use it and remember – achieving a long distance throw with accuracy requires practice.

14.159.2 From a boat

What can the man over board do?

- Remain as calm as possible.
- Raise your arm and use the lifejacket whistle to attract attention.
- The greatest threat to survival is cold. Crossing your legs and holding your arms tightly together will prevent loss of heat.
- In most cases you should not attempt to swim for the boat as this will promote heat loss and exhaustion. Wait until you can grab a line thrown from the boat.

Man Over Board (MOB) Action**Stop**

- The further away you get from the MOB the harder it will be to keep visual contact with them.

Mark

- Throw them the lifebuoy, get a crewmember to point continually at the position of the MOB and if you have GPS push the MOB button.
- A hand smoke flare if readily available during the day or a floating torch at night will aid as a mark.

Raise the Alarm

- It is very easy to lose sight of the MOB especially in rough conditions or in poor visibility.
- If this happens you will want all the help you can get to find them.

- If you do recover the MOB yourself they may need medical attention especially if they have been in cold waters.
- Get help on the way.

Manoeuvre

- There are many different techniques for returning to a MOB under sail or power.
- It can be very difficult. Angling advisors and other relevant staff should undergo training with the ISA (power boat safety training) and practise the skill regularly.

Recovery

- This may be the hardest part of the whole procedure.
- If you have a boarding ladder and the man over board is able to help themselves this may be the safest and most obvious method. Beware that a stem-mounted boarding ladder can be dangerous to use in rough waters. A safer alternative may be to place the ladder on the protected leeward side.
- The man over board may be suffering from shock and hypothermia. Be prepared to administer immediate first aid. Assess whether the man over board needs professional medical attention.
- If the man over board is exhausted or unconscious, a sling may have to be improvised to help roll the man over board up out of the water.

14.160 Getting a Vessel Towed

Hazard:	Weather, access/egress to boats, other boats on the, working in water, cold water.
Level of Risk:	Low
Controls:	See details outlined below

If you need to be towed for any reason:

- Have a plan for securing the tow line to your boat when it is passed by the lifeboat.
- As a lifeboat approaches, the coxswain will inform you of their intentions. Advise them of hazards such as ropes in the water. Follow their instructions they are the experts.
- Do not secure the towline to fittings that are not strong enough for the job. If in doubt, back up the tow line using additional ropes.
- Avoid using knots or loops that cannot be released under load.

14.161 Recommended Safety Equipment for angling boats (open without shelter and generally less than 7metres).

Hazard:	Weather, access/egress to boats, boats, working in water, cold water, physical fitness.
Level of Risk:	Low
Controls:	See details outlined below

- An approved PFD/Lifejacket for each person on board, of at least 150 Newtons.
- Appropriate clothing
- A buoyant heaving line/throw bag
- Boathook (telescopic/fixed long shaft)
- Orange smoke signal canisters (2)
- Foghorn powered or aerosol type
- Navigation lights as required by boat length
- Bilge pump
- Anchor with chain/warp, as appropriate for a vessel size, and operating area ground holding conditions.
- Boats should have a suitably reinforced deck cleat/Samson post on the foredeck, and means of closing over the bow roller or fairlead used when anchoring.
- An adequate supply of warps and fenders, these should include suitable warps to allow the craft to be towed if necessary.
- Waterproof torch.
- An appropriate tool kit and spare parts for the type of craft being used.
- Appropriate first aid kit.
- Set of oars/oarlocks/paddles
- Suitable knife
- Kill cord

14.162 Belly Boat Angling

Hazard:	Weather, access/egress to water, other boats on the water, cold water, physical fitness.
Level of Risk:	Low
Controls:	See details outlined below

- Staff must obtain a weather report prior to using belly boats. The wind conditions must be noted as strong winds may prevent safe access and egress.
- Staff should use multi-chambered boats.
- Staff must use belly boats in pairs. Lone working is prohibited.
- Staff must take great care when walking in flippers.
- Staff involved in belly boating should wear a personal flotation device.
- Protective glasses and a hat should be worn.
- No staff member may use a belly boat without wearing fins for control, bring paddles for additional propulsion.
- Remember to inform someone where you intend fishing and the time at which you expect to return.

14.163 Angling excursions involving journalists/groups/organisations

Hazard:	Weather, access/egress to boats, boats, working in water, cold water, physical fitness, hooks, sharps and bio-agents.
Level of Risk:	Low – Medium – High
Controls:	See details outlined below

14.163.1 Supervisory Role

- All supervisors of an excursion must make themselves known to the group and inform them that they must heed their direction.
- Participants should be informed that they are obliged to inform a supervisor when:
 - They require medication or have a medical condition that may affect their ability to participate in any organised activity.
 - They, or another member of the group of which they are aware, have a disability which may prevent full participation in all activities or could endanger personal safety or group safety.
- Where any participant refuses to wear a personal flotation device in a situation where it is required by law; **IFI staff are prohibited from boarding the same vessel.**
- Where staff are responsible for bringing groups on excursions the site should be examined in advance and a risk assessment carried out.
- During the risk assessment the following should be considered:
 - What are the hazards on site?
 - Who is at risk?
 - What control measures must be implemented?
 - What are the required emergency procedures?
- Copies of the risk assessment must be given to all supervisory staff and other responsible persons. Risk assessments must then be discussed and agreed by all parties.
- Supervisor's roles and tasks must be clearly defined and communicated.
- One supervisor should be appointed with overall responsibility for the group.
- Participants of any excursion should be notified of the following:
 - Details of the dates, duration and location for excursions.
 - Details of activities in which they shall be involved and equipment which may be used.
 - Details of suitable clothing e.g. Wellington boots.
 - Location of first aid kit and identity of first aiders
- Where applicable supervisors should notify relevant persons of the time by which the group is expected to return e.g. (bus drivers, school management etc).
- Supervisors should have a mobile phone for ease of communication.

- Any incident/accident which occurs during an outing must be reported on the official IFI Incident report form.

14.163.2 Instructing children

- Any instruction with groups of children must be conducted in accordance with child protection codes of practice. Staff must be trained in child protection and Garda vetted. For Further information please contact Mary O'Reilly 01 8842663.
- When working with schools e.g. The Something Fishy Programme it is important to liaise with school management and obtain copies of indemnities. The H&S checklist and risk assessments found in Appendix V & VI must be completed.
- When instructing children the ratio of children to the instructor should not exceed 6:1.

14.164 Important sections of the Safety Statement for Reference

Please note that many other sections of the safety statement may be applicable to you; please examine the content page carefully. For example:

- 14.1 Electricity
- 14.2 Slips, Trips & Falls
- 14.5 Manual Handling
- 14.12 Display Screen Equipment
- 14.19 Leptospirosis (Weils Disease)
- 14.24 Hogweed
- 14.128 Weather
- 14.129 Hypothermia
- 14.130 UV Exposure
- 14.131 Traversing Lands
- 14.134 Wading

Education and Outreach

(Something Fishy & FAW)

- 14.165 Field Trips**
- 14.166 Open Days**
- 13.167 Chartered Boats**

14.165 Field Trips

Hazard:	Weather, access/egress, boats, traversing lands.
Level of Risk:	Medium – High
Controls:	See details outlined below

- Where field trips are been organised you must ensure that there is adequate insurance coverage for it. You must establish whether the liability for the trip lies with IFI or a third party. Contact Michael Cusack for insurance details.
- Staff working with children must have completed child protection training and Garda vetting.
- Ensure there is adequate control for the trip. Remember the level of supervision required will be higher where children are involved.
- A risk assessment of the proposed field trip site should be conducted in advance. See appendix V & VI.

14.165.1 Water Safety

- Activities should be avoided so far as is reasonably practicable in areas of deep water, dangerous currents or where there are falls from heights into water e.g. on high walled piers.
- Be aware of any safety signs in the vicinity.
- Avoid water ways which show signs of pollution.
- Do not allow children to play in icy areas.
- When instructing children the ratio of children to the instructor should not exceed 6:1.
- A throw line must be made available at all times.

14.165.2 Typical hazards

- People participating in a field trip must be made aware of biological hazards such as Leptospirosis (Weils Disease), Giant Hogweed, syringes etc.
- Ensure activity locations are assessed to identify slip, trip and fall hazards. Be on the lookout for broken glass, syringes, boat painters etc.
- If a class of children is arriving by bus, as far as is reasonably practicable identify a meeting area which will avoid crossing a busy road.
- Ensure a mobile phone is always carried in case of emergency.

Further safety details are available in the Fisheries Awareness Week and the Something Fishy Programme Risk Assessment Templates. This document must be completed by supervising staff.

14.166 Open Days

Hazard:	Safe access/egress, fire safety.
Level of Risk:	Low
Controls:	See details outlined below

- Where an IFI building is open to the public for an open day or public consultation meeting:
 - Ensure that there is adequate security and supervision.
 - Attendees must sign into and out of the IFI visitors book to ensure a roll call can be used in the event of a fire. A fire warden should be present at any public open days.
 - Staff working with children must have completed child protection training and be garda vetted.
 - Members of the public should be escorted where required.
 - Ensure measures have been taken to ensure the safety of persons with disabilities. A personal emergency egress plan may be required. See Section 153 and contact the health and safety executive for further information.

14.167 Chartered Boats

Hazard:	Weather, access/egress to boats, boats, sharps and hooks, cold water, physical fitness.
Level of Risk:	Low – Medium
Controls:	See details outlined below

- If a chartered boat is been hired for an excursion you must confirm with the operators that they fully comply with current safety regulations and standards layed down by the Maritime Safety Services.
- Furthermore, before commencing the charter trip, you should ask to see relevant insurance and safety documentation which should be prominently displayed on board.
- IFI staff must not hire a chartered boat without a skipper and crew.
- The skipper must provide lifesaving devices for all passengers aboard the vessel.

Protection of Pregnant, Post Natal and Breast feeding Employees

- 14.168 Risk Assessment**
- 14.169 Protective or Preventative Measures**
- 14.170 Night Work**

14.168 Risk Assessment

Hazard:	Bio-agents, chemicals, lead, diving, lone working, manual handling etc.
Level of Risk:	Low – Medium – High
Controls:	See details outlined below

- When an employee informs her employer that she is pregnant, has recently given birth or is breastfeeding, IFI is legally required to conduct a risk assessment. As the earliest stages of pregnancy are the most critical ones for the developing child it is in the employee's best interest to let the H&S Executive know she is pregnant as soon as possible.

Hazards which may affect a pregnant employee include:

- Physical shocks - including direct blows to the abdomen
- Vibration - of whole body, there are guidelines on vibration
- Handling a load - there are guidelines on handling of loads
- Noise – there are guidelines on noise
- Excessive heat or cold
- Diving
- Movement and postures which are abrupt or severe or give rise to excessive fatigue
- Ionising radiation
- Non-ionising radiation
- Biological agents – including viruses, bacteria etc.
- Chemicals – including substances, which cause cancer, mercury, anti-cancer drugs and carbon monoxide.

Hazards Specific to pregnant employees

Unless the risk assessment indicates that there will be no injury to the employee or the developing child, pregnant employees must not work with:

- Pressurisation chambers
- Diving
- Rubella – unless adequately immunised
- Toxoplasma
- Lead and lead substances

Hazards specific to breastfeeding

Unless the risk assessment indicates there will be no injury to the employee or the developing child, employees who are breastfeeding must not work with:

- Lead and lead substances

14.169 Protective or Preventative Measures

Hazard:	Bio-agents, chemicals, lead, diving, lone working, manual handling etc.
Level of Risk:	Low – Medium – High
Controls:	See details outlined below

The Health & Safety Executive shall conduct a risk assessment with any pregnant, post natal or breast feeding employee. Controls shall be implemented where risks are identified.

IFI is legally required to provide an area in which pregnant, post natal and breast feeding employees can lie down and rest in appropriate conditions when required.

14.169.1 Alternative Working Arrangements

If after carrying out a risk assessment, a risk is revealed to the pregnant employee, the unborn or breastfeeding child, and it is not practical to ensure the safety or health of the employee through protective or preventive measures, the IFI will attempt to adjust the working conditions or the hours of work or both.

14.169.2 Health & Safety Leave

If a risk is identified, the employer must remove the risk/adjust the work. If the employer cannot remove the risk, the employee must be provided with suitable alternative employment. If the employer cannot provide suitable alternative employment, the employee must be granted Health and Safety Leave in accordance with Section 18 of the Maternity Protection Act, 1994. During Health and Safety Leave, employers must pay employees their normal wages for the first 3 weeks, after which Health and Safety Benefit will be paid from the Department of Social and Family Affairs,

14.170 Night Work

Hazard:	Cold temperatures, remote location working, trip hazards, bio-agents, chemicals, lead, diving, lone working, manual handling lack of welfare provisions etc.
Level of Risk:	Low – Medium – High
Controls:	See details outlined below

Night work means working between 11.00 p.m. and 6.00 a.m. the next day, where an employee works at least three hours (not necessarily consecutive) in that period, or, where a minimum of 25 per cent of the employee's working hours in a month are worked between those times.

IFI shall:

(a) if a registered medical practitioner certifies that it is necessary for the safety or health of an employee that she should not be required to perform night work during pregnancy or for 14 weeks following childbirth not oblige her to perform night work during that period, and

(b) in a case to which subparagraph (a) relates:

(i) transfer the employee to daytime work, or

(ii) where such a transfer is not technically or objectively feasible on duly substantiated grounds, or both, grant the employee leave or extend the period of maternity leave.

If an employee has a medical certificate stating that for health and safety reasons she is not required to perform night work during the pregnancy or for fourteen weeks afterwards, the employer must remove her from night work by either transferring her to daytime duties, or, if this is not feasible, granting the employee leave. The employee concerned may have an entitlement to health and safety leave under the maternity protection legislation in these circumstances.

International Business Travel

- 14.171 International Business Travel**
- 14.172 Long Haul Flights: Deep Vein Thrombosis (DVT)**

14.171 International Business Travel

Hazard:	Tropical Diseases, Security
Level of Risk:	Low – Medium – High
Controls:	See details outlined below

- Staff who must travel internationally on business must insure that they have adequate health insurance coverage for the duration of their trip.
- Staff travelling to countries which may have specific health & safety risks (e.g. tropical diseases) should discuss their precautionary measures with the Health & Safety Executive.
- Staff should seek travel advice from the Department of Foreign Affairs as required.

14.172 Long Haul Flights: Deep Vein Thrombosis (DVT)

Hazard:	Long distance flights
Level of Risk:	Low – Medium – High
Controls:	See details outlined below

14.172.1 What is DVT?

Deep vein thrombosis (DVT) is a condition in which a blood clot forms in one of your deep veins, usually in your leg. DVT can cause pain and swelling and may lead to complications such as pulmonary embolism.

14.172.2 What causes DVT?

The risk is mainly the result of sitting down for long periods of time, which can happen during any form of long-distance travel, whether by car, bus, train or air.

It's difficult to say whether the travelling itself directly causes DVT, or whether people who get DVT after travelling are at risk for other reasons. Generally, your risk of developing DVT when travelling is very small unless you have at least one of the other risk factors mentioned below (such as a history of DVT or cancer). **If this is the case, you should talk to your GP before you travel on long distance flights.**

You are more likely to get a DVT if you:

- Are over 40
- Are immobile, for example, if you have had an operation (especially on a hip or knee) or are travelling for long distances - and so are not able to move your legs
- Have had a blood clot in a vein before
- Have a family history of blood clots in veins
- Have a condition causing your blood to clot more easily (this is called thrombophilia)
- Are very overweight (obese)
- Have cancer or have had cancer treatment
- Have heart disease or circulation problems
- Are a woman taking a contraception pill that contains oestrogen, or hormone replacement therapy (HRT)
- Are pregnant or have recently had a baby

14.172.3 Signs and symptoms

In most cases, there are no symptoms. However signs and symptoms may include a swollen, red and tender calf or thigh. The affected leg may be warmer than the unaffected leg.

14.172.4 Prevention

- Discuss this topic with your doctor before the trip; they will be able to advise you accordingly.
- Prophylactic (preventative) use of anticoagulants for patients undergoing certain surgical procedures.
- Avoid prolonged immobilization
- Wear gradient elastic support stockings if you are at risk of DVT to prevent venous stasis.
- Do not sit with your ankles crossed for prolonged intervals.
- Avoid dehydration.

Occupational Health

- 14.173 Work Related Stress**
- 14.174 Vaccination against Biological Agents**

14.173 Work Related Stress

Hazard:	Poor coping skills, poor personal health, organisational change, emotional well-being, poor organisational communication.
Level of Risk:	Low – Medium
Controls:	See details outlined below

What is Stress?

Stress means a negative reaction to pressure, accompanied by fear of not coping, loss of control and lack of support. It is a physical and emotional experience and involves increases in blood pressure, hormone activity, and digestive disturbance and affects sleep patterns. Thoughts are also affected and mood and behaviour changes considerably. Stressed people often don't realise they are stressed, but those around them probably do.

How do I know if I am stressed?

Stress is a reaction to pressure and involves feelings, thoughts and behaviors as well as physical symptoms. It is a state of being and not an illness in itself. We all suffer from stress at certain times and know the feeling – it can be compared to panic, feelings of being overburdened to the extent that you cannot cope, feelings of disaster just around the corner. It involves behaviours that range from being irritable, cranky, angry, aggressive and hostile or certain people become withdrawn, fatigued, demoralised and depressed, depending on your personality type.

I feel stressed – what should I do?

If you are feeling this way, then you may be stressed and should consider the many possible causes before jumping to any conclusions. Life events, which are extremely stressful, include good things as well as bad. It is the change, which can be stressful, even if the change is something you want. Bereavement is stressful, moving house is stressful and having money worries is stressful.

How do I know if it is work-related stress?

Work Related Stress (WRS) is stress caused or made worse by work. It simply refers to when a person perceives the work environment in such a way that his or her reaction involves feelings of an inability to cope. It may be caused by perceived/real pressures/deadlines/threats/anxieties within the working environment.

If you have the symptoms of stress outlined above and are unsure why you are feeling this way, you need to reflect on your life and maybe for the first time try to diagnose where the stress or the pressure is coming from. Ask yourself the following questions and try to be honest with yourself

- Is this feeling coming from the environment at home?
- Is it coming from relationships?
- Is it coming from within yourself, or from memories which you find upsetting?
- Is it a recent event, which has caused this reaction in you?
- Have you felt this way before or is this a new feeling/experience for you?
- What else has changed in your life at the same time as the stress feelings began?
- Is it associated with work? If so, is it the job you do or some social aspect of the workplace itself?

If I think the stress is coming from a number of things, what can I do?

You have done the right thing so far in that you have stopped, taken a step back and tried to identify where the stress is coming from. You have recognised that it is not a pleasant experience and decided that it is one you wish to control. That is all positive and part of good stress management. Now, take those aspects of life, which you have identified and see if any or all of them can be changed. Can you alter the relationship? Can you change the thing that you feel is causing you stress? If you can, go about it systematically and look for many ways around the problem, good stress management is about good problem solving. If you cannot alter the stressor, then can you alter your reaction to it? Can you do things differently in order to get a different outcome? Can you equip yourself with new and better skills and would that help? If it is work related, do you need training? Do you need support? Do you need to re-engineer some aspect of your job, and if so, can you discuss this with a manager/employer?

What is IFI's responsibility for work-related stress?

IFI has a general duty of care to all employees within the organisation in so far as is reasonable. That means that we must have a reasonable system of work, so that working would not damage. Damage means physically or mentally injured or harmed. For stress, IFI is entitled to expect that employees who take on jobs are equipped to perform the general duties of that job. IFI is entitled to expect employees to handle pressure and master the work environment, once it is reasonable and 'the norm' for that category of work. IFI must abide by legislation and various regulations in terms of working time and office equipment and space as well as health and safety legislation in order to protect employee's safety and well-being.

I feel totally overcome by stress and cannot eat or sleep – what should I do?

If the situation has gone on for some time and you feel overcome, you need to take immediate and effective action as you may be at risk for stress-related illness. You should visit your GP if you are feeling so overcome that your functioning has totally disintegrated. There are various treatments for stress.

Medication, short term or over the longer term can be very effective.

Therapy – cognitive, behavioural, or other forms of counselling related to the type of stress you are experiencing, and also lifestyle changes to include a more physically and mentally healthy way of living. Your GP may refer you to specialist psychological treatment, or you could contact the Irish representative bodies for counseling and therapy directly. IFI have introduced an employee assistance program (EAP) whereby staff can avail of professional support free of charge. The program includes special information services and professional counseling. You can contact the EAP on **1800 995 955** 24 hours a day any day of the year or email **eap@vhics.ie**

What aspects of jobs are usually thought to be stressful?

There are no specifically 'stressful jobs'. What is stressful for one person may not be for another; it is the interaction of the person and the job, which must be looked at. These aspects of work have been found through research mainly since the 60's, to be stressful for most people. Relations within the workplace, the role or roles a person has, supports or lack of them, the structures you work within, the culture of the organisation and the complexity of the tasks you do. As you will note, some of these are social in origin, although workplace-based and others are task-specific and to do with the type of work you do.

What does IFI do about Stress?

HR can give information and advice to individuals and to groups on the topic. Employees can be helped to put in place a system for addressing and controlling stress. Work Positive is one tool which is used by IFI to manage work related stress. Work Positive is a comprehensive risk management process that incorporates a risk assessment covering the major causal factors associated with workplace stress.

IFI also offer staff support through the Employee Assistance Program (EAP). The EAP can provide staff with information, professional support and counseling.

How can I manage stress?

Manage your time

Identify your best time of day (you may be a morning person or an evening person) and do the important tasks that need the most energy and concentration at that time.

Make a list of things you have to do. Arrange them in order of importance, and try to do the most urgent ones first.

Try to vary your tasks in a day. Vary dull jobs with interesting ones, tiring jobs with easier ones.

Try not to do too many things at once. You could try to start something else if you have to wait for the next stage in a previous task, but if you have too many things going on at the same time, you will start to make mistakes.

Act positively

Once you've finished a task, take a few moments to pause and relax.

Maybe have a healthy snack or try a relaxation exercise.

Have a change of scene. A short walk can make a big difference to how you feel, even if it's a simple walk round the block. Try to focus on what is happening around you, rather than thinking about your worries.

At the end of each day, sit back and reflect on what you've achieved, rather than spending time worrying about what still needs to be done.

Try to get away every so often, if you can, even if it's only for a day out.

How can I learn to relax?

Develop an absorbing hobby or interest – an activity that uses your brain in a completely different way from your everyday work can be a great release. It can also be a great way to make new friends. This is sometimes easier when you are focussing on a shared activity with others, and not on yourself.

Make time for your friends. Talking to them about your day and the things you find difficult can help you keep things in perspective – and you can do the same for them. Smiling and laughing with them will also produce hormones which help you to relax.

Practise being straightforward and assertive in communicating with others. If other people are making unrealistic or unreasonable demands on you, be prepared to tell them how you feel and to say no.

If you find yourself in conflict with another person, try to find solutions which are positive for them as well as for you. Try to find the real cause of the problem and deal with it.

Try to accept things you can't change

It isn't always possible to change the things you don't like or find difficult, but you can try and change your own attitude to them so that you don't build up feelings of resentment or start taking your feelings out on others.

You can contact the EAP on **1800 995 955** 24 hours a day any day of the year of email **eap@vhics.ie**

14.174 Vaccination against Biological Agents

Hazard:	Polluted waters
Level of Risk:	Medium
Controls:	See details outlined below

Under the Biological Agents regulations IFI shall make effective vaccines available, when necessary e.g. Hepatitis A & B, to those employees exposed or are likely to be exposed, taking account of the fourth schedule classification of biological hazards.

With regard to tetanus most people will have completed an immunisation programme during childhood. Note that individual immunity may wane over time. You should consult with your doctor regarding immunity.

The following wounds are considered tetanus-prone:

- Wounds contaminated with soil, faeces, saliva or foreign bodies
- Puncture wounds, avulsions, burns or crush injuries
- Wounds or burns requiring surgical treatment which has been delayed for more than 6 hours
- Compound fractures.

In any of these situations a tetanus shot may be required.

See also Appendix VIII Info & Records for Vaccination Provisions for Employees.

Personal Emergency Egress Plans (PEEP)

14.175 PEEP Template

14.175 PEEP Template

Why you should fill in the form?

Inland Fisheries Ireland has a legal responsibility to protect you from fire risks and ensure your health and safety at work. To do this properly we need to know:

- a) if you require information about our emergency egress procedures;
- b) if you need assistance during an emergency.

It shouldn't take you more than a few minutes to complete the form.

What will happen when you have completed the form?

We will be able to provide you with information you need about the emergency egress procedures in the building(s) in which you occupy.

If you need assistance, we will be able to work out a "Personal Emergency Egress Plan" for you. To do this, we will discuss the best ways of getting you out quickly and comfortably. We will involve you, your manager (where applicable) and the person(s) in charge of the building(s). But don't worry - we do not see you as the problem – you are not a safety risk. The problem belongs to us and the building in which you are currently present. If you are a visitor and not an employee of IFI please answers the questions which are relevant.

NAME:-

JOB TITLE:-

DEPARTMENT:-

BRIEF DESCRIPTION OF DUTIES:-

LOCATION

1. Where are you based for most of the time? Please name: the building, the floor and the room number

Building:- Floor:- Room:-

2. Will your job take you to more than 1 location in the building in which you are based?

YES ☐ NO ☐

3. Will your job take you to different buildings?

YES ☐ NO ☐

AWARENESS OF EMERGENCY EGRESS PROCEDURES

4. Are you aware of the emergency egress procedures that operate in the building(s) in which you work?

YES ☐ NO ☐

5. Do you require written emergency egress procedures?

YES ☐ NO ☐

5a. Do you require written emergency egress procedures to be supported by ISL interpretation?

YES ☐ NO ☐

5b. Do you require emergency egress procedures to be in Braille?

YES ☐ NO ☐

5c. Do you require emergency egress procedures to be on tape?

YES

☐

NO

☐

5d. Do you require emergency egress procedures to be in large print?

YES

☐

NO

☐

6. Are the signs which mark the emergency exits and the routes to the exits clear enough?

Yes

☐

No

☐

EMERGENCY ALARMS

7. Can you hear the fire alarm(s) provided in your place(s) of work?

Yes

☐

No

☐

Don't know

☐

8. Could you raise the alarm if you discovered a fire?

Yes

☐

No

☐

Don't know

☐

ASSISTANCE

9. Do you need assistance to get out of your place of work in an emergency?

Yes

☐

No

☐

Don't know

☐

If NO, please go to question 13

10. Is anyone designated to assist you to get out in an emergency?

Yes

☐

No

☐

Don't know

☐

If NO, please go to question 12. IF YES, give name(s) and location(s)

11. Is the arrangement with your assistant(s) formal (that is, is the arrangement written into their job description)

Yes ☐ No ☐ Don't know ☐

11a. Are you always in easy contact with those designated to help you?

Yes ☐ No ☐ Don't know ☐

12. In an emergency, could you contact the person(s) in charge of evacuating the building(s) in which you work and tell them where you are located?

Yes ☐ No ☐ Don't know ☐

GETTING OUT

13. Can you move quickly in the event of a fire?

Yes ☐ No ☐ Don't know ☐

14. Do you find stairs difficult to use?

Yes ☐ No ☐ Don't know ☐

15. Are you a wheelchair user?

Yes ☐ No ☐ Don't know ☐

Thank you for completing this questionnaire. The information you have given us will help us to meet any needs for information or assistance you may have.

Remember, we do not see you as the problem – you are not a safety risk. The problem belongs to us and the building in which you work.

Please return completed form to:-

PERSONAL EMERGENCY EGRESS PLAN

NAME: -

DATE:-

POSITION:-

DESIGNATED ASSISTANCE:

ASSISTANCE METHODS/TECHNIQUES:

EQUIPMENT PROVIDED:

EMERGENCY EVACUATION PROCEDURE(S): (a step-by-step guide, from alarm to safety, of the evacuation procedures from different floors and buildings)

EVACUATION ROUTE(S): (preferably with diagrams)

Grievance Procedures

14.176 Grievance Procedures

14.176 Grievance Procedures

Staff with grievances relating to safety, health or welfare at work may seek to have their issues addressed through the Respect and Dignity at Work Policy. Section 27 of the 2005 Act protects employees generally from penalisation for any safety and health issues.

Night Work & Shift Work

14.177 Night Work & Shift Work

14.177 Night Work & Shift Work

Hazard:	Driving while fatigued, effects on circadian rhythms, sleep disorder
Level of Risk:	Low
Controls:	See details outlined below

A night worker is defined as one who works at least 3 hours of his or her working time between midnight and 7am and the number of hours worked by whom during night time, in each year equals or exceeds 50% of the total number of hours worked during that year.

If you are a night worker as defined above you must inform the Health & Safety Executive so that risk assessments and health assessments can be conducted.

The following controls may be implemented for night work and shift work to reduce the overall level of risk.

- Planning an appropriate workload that accords with the length of the shift.
- So far as is reasonably practicable demanding work is scheduled for periods when workers are most alert and less likely to be fatigued.
- Where possible demanding, dangerous and safety critical work shall be avoided at night time, in the early hours of the morning or at the end of long shifts.
- Where possible, a variety of tasks will be scheduled into the shift and if practicable, allow workers some choice regarding their order of completion.
- Permanent night shifts are avoided.
- Adequate time at shift handover is ensured so that a new shift team is fully aware of any issues in the previous shift.
- Workers have a minimum rest period of 11 hours in each 24 hours and one period of 24 hours rest per week preceded by a daily rest period.
- Shifts are rotated every two to three days where possible
- 12 hour night shifts are limited to 2 to 3 consecutive nights where possible.
- Under the 1997 Act workers are entitled to a 15 minute break after 4.5 hours and 30 minutes after 6 hours.
- Workers may be given some control over the length and regularity of breaks to help reduce fatigue where work is self-paced.
- Workers are encouraged to report any shift related problems.
- Young persons and pregnant employees will be assessed as required.

14.177.1 Driving

- Fatigue increases the risk of having a vehicle accident, especially after a long shift or night work or before commencing an early shift. Therefore you should consider measures to remove or reduce this risk:

Get a lift, or use public transport or a taxi if possible

Share lifts

Drive carefully and do not speed

Do not drive if overtired

Stop for a quick rest if you feel sleepy while driving

14.177.2 Maintaining your health and wellbeing

In order to ensure your health as night or shift worker you should inform your GP of your working arrangements. Take note of the following factors to ensure health and wellbeing.

14.177.2.1 Sleep pattern

- Try to develop a regular sleep pattern including at least seven to eight hours sleep. If you cannot sleep make sure you are at least resting. Find out the best time for you to sleep and stick to this pattern.
- Find out if you sleep better by going to bed soon after returning home from work or waiting up and going to sleep before the next shift.
- Have a short sleep before your first night shift.
- Have a short sleep after coming off night shifts and go to bed early that night.

14.177.2.2. Sleep environment

- Creating the right environment will help you to sleep and rest. Daytime cues make it more difficult to sleep and therefore should be minimised.
- Use your bedroom for sleep and not as an entertainment room (e.g. no television).
- Avoid falling asleep in the living room.
- Choose a quiet room as your bedroom, where there is least disturbance from outside and internal noise and sounds.
- Blackout the bedroom as much as possible to keep out daylight, this will help you sleep and encourage melatonin production, vital for the suppression of tumours.
- Consider using heavy curtains or blinds, which can help in blacking out the room
- Put your mobile on silent and landline ringing volume on low.
- Ask your family to keep the noise levels down from voice, radio, television and not to disturb you.
- If necessary let your neighbours know your schedule and request them to avoid use of noisy machines such as grass mowers and power tools when you should be sleeping.
- Use ear muffs and eye shields if necessary.
- Maintain a cool temperature: not too warm in the bedroom.

14.177.2.3 Promoting sleep

- Do some gentle exercise such as a short walk (but don't over exercise as it stimulates the body and raises temperature).
- Get relaxed by reading or listening to music or watching a television programme.
- Have a shower or bath.
- Avoid drinking caffeine or other stimulants a few hours before going to sleep.
- Drink very little alcohol as it reduces the quality of sleep.
- If you are hungry eat a light meal; don't go to bed hungry or overfed.

14.177.2.4 Diet

- Digestive problems are common with shift workers both because of the timing of meals and the quality of food. Plan your meals so that they help keep you alert at work and sleep and rest during your rest period.
- Eat regular light meals as heavy meals can cause drowsiness.
- Avoid fatty foods as they are more difficult to digest.
- Choose foods that are easily digestible such as pasta, rice, bread, fruit and vegetables.
- Avoid sugary foods, which do provide a short energy boost, but then cause a dip in energy levels.
- Eat plenty of fruit and vegetables, which are a good option as their sugar is converted slowly into energy and they also provide vital vitamins, minerals and fibre.
- Drink plenty of water to avoid dehydration which affects both physical and mental performance.
- However, don't drink too much before sleeping as it will result in you waking up early to relieve your bladder.

14.177.2.5 Stimulants and sedatives

- Caffeine and cigarettes are stimulants which can keep you alert while alcohol and sleeping pills are sedatives which make you drowsy and sleepy. However, they should be avoided as regular use reduces these effects and can lead to dependence and associated health problems.
- Caffeine is a mild stimulant found in coffee, tea, cola, energy drinks and in tablet form. It can improve reaction time and feelings of alertness for short periods. Occasional use of caffeine is fine, but it should not be used to keep you awake. You also need to be aware of what might happen when its effects wear off.
- Alcohol can promote the onset of sleep. However, it is associated with waking up early, disrupted sleep and poorer sleep quality. Excessive use can result in dependency and addiction and lead to long-term damage to your physical and mental health, work performance and family and social relations.
- Regular use of sleeping pills can lead to dependency and addiction.

14.177.2.6 Physical activity

- Regular exercise keeps you fit, burns off calories and helps you sleep.
- Regular exercise promotes a healthy heart and keeps weight down, thereby reducing the risk of diabetes.
- At least 30 minutes daily exercise is recommended and this can be split into two if necessary. Exercise can be as simple and inexpensive as a walk, jog, cycle, or exercising at home. Bringing the family dog on a daily walk is both beneficial to you and the dog.
- Joining a sports club or gym should be considered. It does not take long to play a game of squash, tennis, badminton or volleyball where the physical activity levels are high. Swimming is good as you use most of the muscle groups.
- If possible it is recommended that physical activity is carried out with a friend or colleague as it leads to social interaction, which is beneficial not only for physical but also mental health.

14.177.2.7 Social Support

- Let family and friends know your shift schedule well in advance. This means that social and family activities can be planned around your shift schedule.
- Get involved as much as possible with family activities such as meals, household chores, sport and going out together.
- Plan your domestic chores and duties so that they do not disrupt your rest and sleep schedule.
- Try to carry out some social activities with work colleagues who share similar shift schedules to you as they may be available when family and friends are not.

Security & Access Equipment

- 14.178 Lifts & Chair Lifts**
- 14.179 Automatic Gates**

14.178 Lifts & Chair Lifts

Hazard:	Lift malfunction (trapping), Crushing, Fire
Level of Risk:	Low
Controls:	See details outlined below

14.178.1 Lifts

- Lifts must never be used in the event of a fire.
- The maximum weight/number of people detailed in the lift must never be exceeded.
- Lifts are inspected and thoroughly examined by a competent person. Inspections are completed under maintenance contract and independently under the Engineering Insurance Policy.
- The lifts are fitted with a sensor to prevent the door closing on a person or object.
- In the event of person becoming trapped in a lift they should follow the alarm procedure. E.G. Press and hold the alarm button for 5 seconds to be put a call through to the manufacturers rescue centre. Follow the instructions given and try to remain calm and wait for assistance.

14.178.2 Chair Lifts

- Lifts must never be used in the event of a fire.
- The maximum weight for the stair lift must never be exceeded.
- Lifts are inspected and thoroughly examined by a competent person. Inspections are completed under maintenance contract and independently under the Engineering Insurance Policy.
- Before using the lift ensure that any obstructions in your path are removed.
- Where provided seat belts must be worn.
- Any malfunction of the lift should be reported to your line manager and maintenance and repairs arranged.

14.179 Automatic Gates

Hazard:	Entrapment/Crushing Point/Impact
Level of Risk:	Low
Controls:	See details outlined below

- Access via automatic gates are restricted for vehicle access only.
- The gates are fitted with beam detection. Should a person or other object be detected it will cause the gate to stop closing and reopen in order to prevent damage or injury.
- Automatic gates must be inspected annually by a competent person and preventative maintenance completed.
- Any staff member who identifies a problem with the gates must report it to a member of the logistics department.

Appendix I.

Required Content of First Aid Kit

TABLE 1
RECOMMENDED CONTENTS OF FIRST-AID BOXES AND KITS

(1) MATERIALS	(2) FIRST-AID TRAVEL KIT CONTENTS	(3)	(4)	(5)
		1 - 5 Persons	6-25 Persons	26-50 (a) Persons
Adhesive Plasters	12	12	20	40
Sterile Eye Pads [Bandage attached]			2	4
Individually Wrapped Triangulour Bandages	2	2	6	6
Safety Pins	2	2	6	6
Medium Individually Wrapped Sterile Unmedicated Wound Dressings [approx. 10 x 8 cms]			6	8
Large Individually Wrapped Sterile Unmedicated Wound Dressings [approx. 13 x 9 cms]	1	1	2	4
Extra Large Individually Wrapped Sterile Unmedicated Wound Dressings [approx. 28 x 17.5 cms]			3	4
Individually Wrapped Wipes	8	8	8	10
Paramedic Shears	1	1	1	1
Pairs of Latex Gloves	1	1	2	2
Additionally, where there is no clear running water, Sterile Eye Wash (b)	1	1	2	2

NOTES

(a) Where more than 50 persons are employed pro rata provision should be made.

@I Where mains tap water is not readily available for eye irrigation, sterile water or sterile normal saline (0.9%0) in sealed disposable containers should be provided. Each container should hold at least 300 ml and should not be re-used once the sterile seal is broken. At least 900 ml should be provided. Eye bath / eye cups / refillable containers should not be used for eye irrigation.

Appendix II.

Statutory Examination Intervals of Lifting and other Equipment (Non-Exhaustive)

If you have equipment that required statutory examinations please contact the H&S Executive Michael Cusack 01 8842664.

Table of Statutory Examinations	
Equipment	Statutory Frequency (Months)
Passenger Lifts/Hoists etc.	6
Service Lifts	12
Chains, Ropes, Slings and shackles	6
Tail Gates (goods vehicles)	6
Forklift	12
Cranes	12
Teleporters	12
Mobile Elevated Work Platform	6
Air Receivers, Steam Receivers	26
Fire Extinguishers	12
Personal Flotation Devices	12
Safety Harness & Lanyards	12
MEWP (Cherry Picker)	6
Safety Lines	12
Wheelchair Lifts	6
Steam boilers (Boiler House)	14
Steam Calorifiers (boiler/plant rooms)	26
Steam Jacketed Pans	26
Steam Cafe Boilers	14
Autoclaves	14
Sterilisers	26

Appendix III.

List of Forms Required by the Health & Safety Authority

Category	Form
HSA Accident Report	IR1 (For 3+ Days Absence Only)
Asbestos	Notification form to be used for any work involving asbestos
Biological Agents	Form of Notification for First Time Use of a Group 2/3 or 4 Biological Agent
Construction	Approved Form (AF 1) Particulars to be notified by the Client to the Health and Safety Authority before the design process begins
	Approved Form (AF 2) Particulars to be notified by Project Supervisor for the Construction Stage to the Health and Safety Authority before the construction work begins
	Approved Form (AF3) Thorough Examination of: (a) Excavations, Shafts, Earthworks, Underground Works or Tunnels; (b) Cofferdams or Caissons
	Approved Form (AF4) Results of Inspection & Thorough Examination of Personal Flotation Devices
	Approved Form (AF5) Client seeking exemption from appointing a Project Supervisor Design Process for a further 12 month period
Dangerous Occurrences	IR 3 Form. Notification to HSA of Dangerous Occurrence
Lifting Equipment	Report of Thorough Examination (Form GA1)
	Report of Weekly Examination (Form GA2)
Work at Height	Inspection of Work Equipment for Work at Height (Form GA3)
Diving	Diving Notification

Appendix IV.

Display Screen Equipment Safety

Good Working Positions

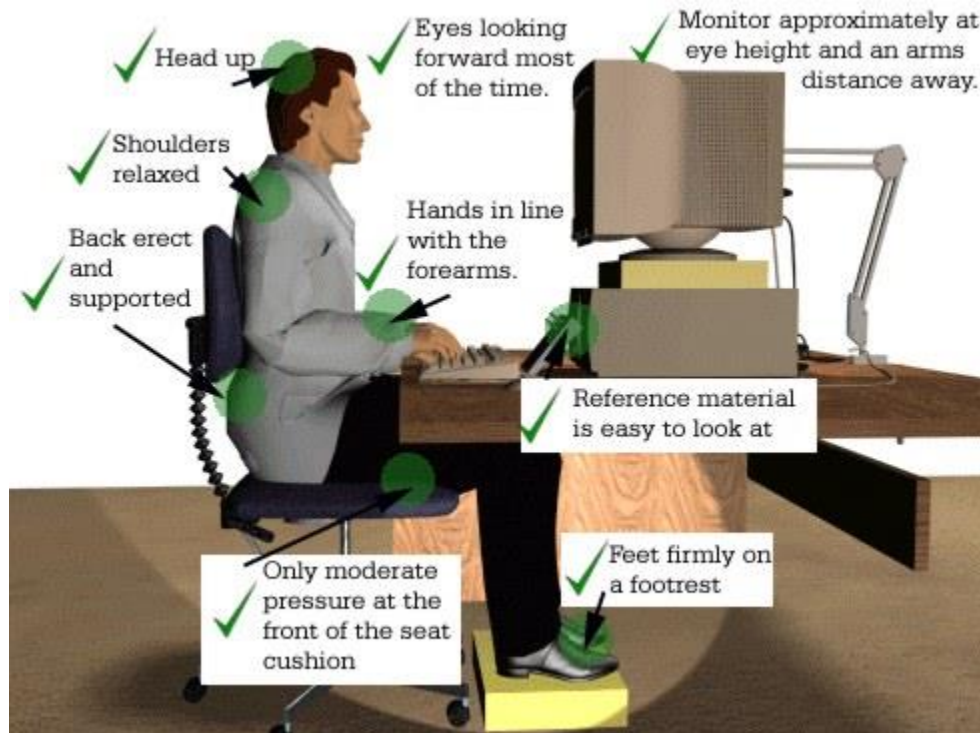


Fig. I Good Working Posture

Working Duration

Micro break: Short breaks which should be taken during heavy typing or mouse use e.g. check your voicemail. Employees are advised to break up continuous keyboard/mouse activities.

Regular PC Breaks: PC activity should STOP during this time. Non-PC related work or do an activity that takes you away from your desk e.g. photocopy, phone calls or coffee break. A minimum 5 minutes every thirty minutes and 15 minutes every two hours.

Appendix V.

Something Fishy Checklist

Something Fishy School Health & Safety Checklist

Name of School: _____

Date: _____

Yes

No

Has the school board of management approved the excursion?

☐☐

Has the school insurance to cover excursions?

☐☐Has the school indicated the number of children participating and
the required ratio for supervision?☐☐

Have the teachers accompanying the children first aid training?

☐☐

Have emergency school contact telephone numbers been obtained?

☐☐Do any of the children have any disabilities, special needs, health
problems or communication difficulties?☐☐

Signed: _____

Date: _____

Appendix VI

Fisheries Awareness Week Risk Assessment

For Details Contact: Michael Cusack H&S Executive

Tel: 087 7870180

Email: michael.cusack@fisheriesireland.ie

Appendix VII

Incident Report Form

IFI INCIDENT REPORT FORM

The purpose of this report is to find the cause of the accident or dangerous occurrence (near miss) and determine what action is required to prevent a similar occurrence. This form is to be completed by the person involved in the incident and line manager. A copy must be sent to the Health & Safety Executive in IFI Swords.

1. Person Involved in the incident/dangerous occurrence

Full Name: _____
 Job Title: _____
 Location: _____
 Start Date: _____

Where applicable please state if the person(s) involved is a visitor/contractor and reason for their presence.

2. The Incident

Exact location: _____
 Date of Incident: _____ Time: _____
 Date Reported: _____
 Were there any witnesses: _____ State Name(s): _____

(Please Ensure Witness Statement Form is completed)

3. Describe the Incident (including events leading up to the incident)

4. Injury

Did the incident result in any injury? _____

If yes please describe the nature of the injuries _____

Date injury was detected (if different from incident date): _____

Action taken:

1. Was first aid administered? _____ Date: _____
2. If so by whom? _____
3. Taken to Hospital? _____ Date: _____
4. Name Hospital _____
5. Name of Doctor _____

5. Description of Area/Equipment

(i) If machines or equipment are used state:

Type: _____ Model: _____ Was it defective? : _____

Who examined it: _____ Was it correctly operated? _____ Was it powered on, at the time of the incident? _____ Where parts moving? _____

Was the machine guarded? _____ Was there any hazard warning signs? _____

(ii) If a job/task was performed:

Was it part of normal duties: _____ Length of time on job? _____

Was the task carried out in the correct manner? _____ Are these actions normal practice? _____

Was proper training, instruction and supervision given? _____

(ii) If the occurrence involved a slip, trip or fall:

What caused it? _____

Was floor/area inspected? _____ If yes by whom? _____

Was floor/area: Even Uneven Dirty Wet Slippery (circle as appropriate)

(iv) Protective Clothing Equipment

Is it required? _____ Was it been worn at the time of the incident? _____

If the equipment was not used what was the reason given? _____

Has the employee previously been warned about failing to use protective equipment? _____

If yes by whom? _____

(v) If manual lifting was involved state:

Weight of item lifted: _____ Was the injured party working alone? _____

Was correct method of lifting used? _____

Was injured party trained in proper lifting techniques?

If yes, by whom _____ when _____

6. Did the employee cease work?

If yes date ceased? _____ Date returned (if returned)? _____

Has the HSA* been informed? _____

Note* If the person is absent from work for three consecutive days excluding the day of the accident but including any days not normally worked (e.g. weekend) the accident must be reported to the Health & Safety Authority using the IR 1 form.

7. Suggestion to avoid reoccurrence:

8. Any other comments

9. Signatures:**Manager:** _____ **Date:** _____**Employee:** _____ **Date:** _____**Health & Safety Executive** _____ **Date:** _____**For Office Use Only:**

Has the Health & Safety Authority been informed?

☐☐

Has Medical Report been submitted?

☐☐

Yes

No

WITNESS STATEMENT FORM

WITNESS NAME:

DATE & TIME OF ACCIDENT:

LOCATION OF ACCIDENT:

.....

DID YOU CLEARLY SEE THE ACCIDENT?

WHERE WERE YOU AT THE TIME OF ACCIDENT?

.....

PLEASE GIVE A FULL ACCOUNT OF THE OCCURRENCE

.....

.....

.....

.....

IN YOUR OPINION WHAT WAS THE CAUSE OF THE ACCIDENT?

.....

.....

.....

.....

SIGNATURE: DATE.... /.... /....

ADDRESS

COMPLETED ACTIONS IMPLEMENTED TO REDUCE RISK OF REOCCURRENCE

DETAILS OF CONTROLS IMPLEMENTED:

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

LINE MANAGER SIGNATURE: DATE.... /.... /....

Appendix VIII

Information & Record of Vaccination Provisions for Employees

Tetanus Information & Record of Vaccination Provisions for Employees

Immunisation against Tetanus is recommended for field staff who are likely to come in contact with soil, dust or manure and various equipment in the field. Staff who suffer an open wound in the field could be prone to tetanus infection. Tetanus (Lockjaw) is a serious disease that causes muscle spasms it can lead to fits and difficulty in breathing. It can be fatal.

The full course of the tetanus vaccine consists of five doses. The primary course consists of three injections, which provide protection against the infection for a number of years. The fourth and fifth doses are booster doses, which help maintain protection.

After the fifth dose, immunity remains for life and further boosters are not usually required, unless there is doubt about a person's vaccination history or you are travelling to a remote area of the world where treatment for a tetanus infection may not be readily available.

This vaccine has been available for all children born in Ireland and the UK since 1960s. You should check your vaccination history with your GP before participating in a vaccine programme.

In some cases after getting the vaccine, you may have discomfort, redness or swelling around the area where the injection was given. You may be irritable and have a fever.

Recovery from these minor side effects is typically within a day or two. Serious side effects are very rare.

Indications: (reason to get immunized)

To produce active immunisation against tetanus.

Contraindications: (Do not take the vaccine if one or more of these conditions exist)

1. Moderate to severe acute illness
2. History of allergy to component of vaccine
3. Significant allergic or neurologic reaction to previous immunization with this vaccine
4. Pregnancy

Adverse reactions:

1. Soreness at injection site
2. Redness and/or swelling around injection site
3. Fever (uncommon)
4. Rash and lymphadenopathy (occasionally occur)

If you are unsure whether or not you should get the vaccine you can seek advice from the company physician in your area.

CONSENT TO TETANUS TOXOID VACCINATION

I have read the information about tetanus and the tetanus toxoid vaccine.

I have had an opportunity to ask questions of a qualified physician and understand the benefits and risks of tetanus toxoid vaccination. However, as with all medical treatment, there is no guarantee that I will become immune or that I will not experience side effects from the vaccine.

Signature of Employee

Date Signed

DECLINE OF TETANUS TOXOID VACCINATION

I UNDERSTAND that due to my occupational exposure, I may be at risk of acquiring tetanus infection. I have been given the opportunity to be vaccinated with tetanus, at no charge to myself. However, I decline Tetanus vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring tetanus, a serious disease. If in the future I continue to have occupational exposure and I want to be vaccinated, I can consult the appointed physician and receive the vaccination series at no charge to me.

☐ **Check here if you are declining vaccination because you previously received the Tetanus vaccination series.**

Signature of Employee

Date Signed

Hepatitis A & B Information & Record of Vaccination Provisions for Employees

Immunisation (Vaccination) against hepatitis A & B is recommended for those who may be exposed to human blood/blood stained body fluids in the course of their work. For example field staff may have a risk of exposure when working on or near polluted waters containing faeces or sewage. Hepatitis is a serious disease it can cause chronic liver disease, cirrhosis, and cancer. It can be fatal.

Vaccination schedules should ensure that the full course of injections is completed. A full course of hepatitis A & B vaccine consists of 3 injections at intervals of 0, 1 and 6 months. A single booster maybe required if at continued risk after 5 years.

A blood test is required after the third dose of vaccine to ensure good immunity has been achieved.

Indications: (reason to get immunized)

To produce active immunization against Hepatitis A & B.

Hepatitis A & B vaccine & pregnancy: If you are pregnant consult with the physician before taking part in the vaccination programme.

Before you receive your vaccination:

This vaccine may cause side-effects.

You should inform the physician if you have any allergies, or are feeling unwell or feverish.

Side-effects: Local effects at the site of injection such as redness, soreness may occur after vaccination. Fever, rash, malaise and influenza-like symptoms are less common reactions.

If you are unsure whether or not you should get the vaccine you can seek advice from the company physician in your area.

CONSENT TO HEPATITIS A & B VACCINATION

I have read the information about Hepatitis A & B and the Hepatitis A & B vaccine. I have had an opportunity to ask questions of a qualified physician and understand the benefits and risks of Hepatitis A & B vaccination. I understand that I must have 3 doses of the vaccine to obtain immunity.

However, as with all medical treatment, there is no guarantee that I will become immune or that I will not experience side effects from the vaccine.

Signature of Employee

Date Signed

DECLINE OF HEPATITIS A & B VACCINATION

I UNDERSTAND that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis A & B infection. I have been given the opportunity to be vaccinated with hepatitis A & B vaccine, at no charge to myself. However, I decline Hepatitis A & B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis A & B, serious diseases. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis A & B vaccine, I can contact the physician and receive the vaccination series at no charge to me.

☐ **Check here if you are declining vaccination because you previously received the Hepatitis A & B vaccination series.**

Signature of Employee

Date Signed

Appendix IX

Site Details for Fire Safety, Evacuation & First Aid

Names of First Aid Trained Staff on Site

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

Names of Fire Warden Trained Staff on Site

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

Location of Fire Assembly Point

Location of Fire Hydrants Where Applicable

Location of Hazardous Chemicals & Compressed Gas Where Applicable

Date of Fire Drills & Sign Off

No.	Date	Signature
1.		
2.		
3.		
4.		
5.		

Appendix X

Staff Sign Off

I have been made aware of the content of the IFI Safety Statement. I recognise my duty to familiarise myself with the sections relevant to the responsibilities of my role.

[illegible]

I have been made aware of the content of the IFI Safety Statement. I recognise my duty to familiarise myself with the sections relevant to the responsibilities of my role.

[illegible]

I have been made aware of the content of the IFI Safety Statement. I recognise my duty to familiarise myself with the sections relevant to the responsibilities of my role.

[illegible]

I have been made aware of the content of the IFI Safety Statement. I recognise my duty to familiarise myself with the sections relevant to the responsibilities of my role.

[illegible]

I have been made aware of the content of the IFI Safety Statement. I recognise my duty to familiarise myself with the sections relevant to the responsibilities of my role.

[illegible]

I have been made aware of the content of the IFI Safety Statement. I recognise my duty to familiarise myself with the sections relevant to the responsibilities of my role.

[illegible]

I have been made aware of the content of the IFI Safety Statement. I recognise my duty to familiarise myself with the sections relevant to the responsibilities of my role.

[illegible]

Notes