



Health and Safety

Galway Bay Ocean Energy Test Site



Health and Safety Galway Bay Ocean Energy Test Site

Test Site Users (Developers): Developers are responsible for their own safety, that of their staff and the safety of visitors invited by them to the test site. They should comply with the requirements outlined in Appendix 1. They should also have prepared a comprehensive risk assessment and corresponding health and safety statement in advance of commencing operations on the site.. An example of the kind of approach which should be considered can be found in Appendix 2.

Marine Institute Staff: MI Staff must operate according to the requirements of the Marine Institute Safety Statement, particularly the section, Practices and Procedures for Safe Working at Sea, which is included here as Appendix 2. Special care must be taken when transferring between vessels at sea, particularly between workboats and ocean energy devices. This should only be attempted when sea conditions are suitable and a safe boarding system is available. Dry suits should be worn, particularly during the colder seasons. MI staff must be aware that ocean energy test devices are prototypes and may not have been constructed with full regard to the safety of visitors. MI should consider whether they really need to board the experimental device and certainly must not do so, if they are aware of any unusual risk associated with boarding or working on board the device.

I have read understood and accept the recommendations and requirements of this health and safety policy

Signed on behalf of(Developer)

By

Position or Status in Company:

Date:

Appendix 1

Safety Obligations of Developers at the Galway Bay Test Site

Insurance

Developers to have public liability insurance (minimum cover €6,500,000) and employers liability insurance.

Certificates of these are to be presented to MI prior to any works beginning at site.

Deployment and Recovery, Emergency

Deployment and recovery strategies are to be outlined, giving details of vessels employed, means of deployment/recovery and duration and weather requirements for deployment and recovery.

Detailed emergency plan and procedure outlining actions to be taken in case of catastrophic failure, drift or sinking of device to be submitted. A Local contact on standby in case of emergency is to be designated. Location of suitable recovery vessels to be indicated.

Safety

Device:

1. Device is to have an argos/iridium/gsm/other drift alarm installed giving rapid indication and warning of drift of device outside designated area.
2. This system is to be monitored by the developer or by appropriate local contact to facilitate rapid response to alarm. The system should be fitted with an alarm to indicate the loss of system functionality
3. Device to be fitted with a Marine standard yellow flashing light flashing once every 10 seconds at a minimum of 3 metres above the waterline.
4. Radar reflector (compliant with ISO 8729) to be fitted at least 3 meters above waterline
5. Hull to be painted bright orange/yellow or Red
6. Boarding ladder facilitating easy access to be fitted with adequate handrails/ harness clipping eyes and markings to be provided.

7. Towing eyes fitted with towing strops to allow towing/recovery to be provided.
8. All compartments are to be fitted with Bilge alarms and automatic bilge pumps,
9. Sufficient battery capacity must be provided to allow monitoring and operation of device safety systems for extended periods. Batteries to be located where they are least likely to be immersed in the event of flooding
10. There should be full first aid facilities and emergency voice communication system.
11. Any oils used in the device are to be biodegradable

Safe Operations

1. All staff employed by the developer should be suitably qualified and trained
2. Only fully licenced work vessels to be used
3. The developer or his staff must never visit the site alone
4. No attempt should be made to board moored devices when sea conditions are unsuitable. If there is a fully functioning wave measuring device on the site data from this can assist judgements in this regard.
5. A log of site visits and operations must be maintained by the developer and a copy provided to the Marine Institute as required. A blank log with duplicate sheets will be provided by the Institute (see model in Appendix 3)

Appendix 2

Practices and Procedures for Safe Working at Sea (Appendix 11 of Marine Institute Safety Statement)

INTRODUCTION

This code is intended to provide a basis upon which Marine Institute sea users can establish and maintain safe work practices on board vessels. Its implementation should help to minimise the number of accidents, which occur at sea or while carrying out water-based activities. Its provisions should be followed to the fullest extent possible by all those to whom it is addressed.

The code has been drawn up primarily to cover the occupational health and safety of all of those who carry out sea based activity on commercial and chartered fishing vessels as well as research vessels. It also addresses those involved in work on inland waterways.

It is of course recognised that a code of this kind cannot cover every situation. Unexpected things may happen, other equipment and methods of working will come into use that are not dealt with here. It is hoped however that some of the information contained within the code will help sea users to deal with an unexpected situation. It has to be accepted that no human activity is free from some measure of risk, but even so many accidents are caused by taking unnecessary risks and by lack of foresight, often in quite simple operations. Seafarers should make it a habit to look for, and pay heed to possible hazards in every situation, even the most routine.

1. GENERAL GUIDELINES

1.1 TRAINING AND SAFETY DRILLS

Proper training and safety drills will reduce the risk of injury arising from many routine activities. Areas for which such training is available include:

- Sea safety.
- Recovery of persons overboard.
- The operation of boats.
- Fire prevention and fire fighting.
- The operation of electrical fishing apparatus.
- The use of chemicals both on board vessels and inland.

- First aid.

1.2 FAMILIARISATION & INSTRUCTION

On boarding a vessel it is important that all staff familiarise themselves with the layout of the vessel and read any standing instructions or safety manuals which are on board. They should also receive safety instruction from the crew. It is vital that when on board, that the deck officer or crew are consulted in relation to interaction in the work area.

1.3 ALERTNESS

When involved in sea-based activity it is the responsibility of all staff to be alert to their own safety and the safety of others on board. Attention must be paid to both major and minor dangers as both have the potential to develop into something much more serious.

Watch your step when boarding and leaving vessels and during launching as well as when working on deck as water, diesel, oil and fish-oils will make surfaces increasingly slippery. It is important that you hold onto handrails where they have been provided and particularly when using stairs. Take extra care when using the gangway ladder. Use both hands to hold onto the rails and ensure that the ladder itself is in a safe position. Never run while on deck.

1.4 TIREDNESS

It is essential that everyone take proper rest when off-duty in order that work can be carried out safely and efficiently. Long hours without proper rest decrease alertness and increase the risk of accidents.

1.5 TIDINESS

All equipment must be properly secured and stored after use in order to minimise the risk of accidents. Loose tools and equipment should be returned to their proper place and all walkways must remain free of obstructions at all times. If a spillage occurs when on duty it must be cleaned/mopped up and all equipment must be cleaned after use. Decks should be kept clear of equipment not being used in the current operation. Care should be taken to ensure that all doors are shut properly when on board vessels.

1.6 FIRST AID

The purpose of First Aid is to give assistance to the victim of an accident or sudden illness. All staff must:

Familiarise themselves with the location of the First Aid box.

Know who other trained First Aiders on the vessel are and alert them if an injury occurs.

The Merchant Shipping Act 1894 requires the skipper / owner of a vessel to report all accidents however slight. Marine Institute personnel must report all injuries however slight and insure that they are adequately treated.

Record all injuries

1.7 SEASICKNESS

Most people who go to sea will suffer from sea/motion sickness at one time or another resulting in the reduction of alertness and an adverse effect on judgement. Travel sickness tablets are available and some people find that these help, however a number of other practices should be kept in mind if suffering from seasickness:

If sick at sea, lying down on ones back will give relief and the chances of faster recovery will be increased.

Taking fresh air on deck generally helps. Leaning over the side never does and should always be avoided.

Alert a crewmember of your illness, never hide away.

Fatty or oily foods should be avoided, as the stomach will be especially sensitive. Instead, food that is easy to swallow should be eaten. Strong odours from foods and from, for example diesel, should be avoided when suffering from seasickness if at all possible.

It should be remembered that after vomiting one feels immediately better, this may lead to a false sense of well being as further bouts of nausea may occur and one must be aware of this. For this reason food should be taken after being sick and work should be carried out at a less energetic pace to give the body a chance to recover. A lot of water should be consumed to prevent dehydration.

1.8 SMOKING

Vessels as places of work will prohibit smoking anywhere inside the vessels on which you might be working.

1.9 WEATHER CHECK

Always ensure that you have received a forecast of weather conditions in the area before going out to sea. The suitability of weather and sea conditions must be assessed in terms of the most hazardous part of the operation. If staff have any doubts about their ability to work safely in the prevailing conditions they should not go to sea, and if already at sea they should curtail work accordingly. When working under adverse weather conditions extra care should be taken.

1.10 CONCERNS OVER SAFETY

If staff have any concerns about their safety they should voice them to their superiors who will then inform the Marine Institute Safety Co-ordinator. An employee shall not be expected to carry out any work, which he/she believes is contrary to this code, or anything, which he/she believes will endanger the lives of himself, his colleagues, or any other person.

If, when boarding a vessel an individual has ANY reason to believe that the vessel is unsafe he/she should not board.

2. TRAINING

2.1 GENERAL GUIDELINES

- All sea users must complete a mandatory sea survival course before participating in any sea/water-based activities. It is also vital that Personal Protective Equipment can be used safely and effectively.
- Should you spend more than four weeks at sea per annum you will be
- Training in the procedures to be adopted in the event of an emergency must be undertaken and practised regularly by all sea-going members of staff. Such training will include fire prevention and fire fighting, man-overboard and abandon ship procedures.

- All sea users must be familiar with boat handling procedures and should complete basic training in this area. The training provided should include instruction in rope handling. Training must also be provided in relation to the use of radios and flares.
- All personnel involved in diving operations must be suitably qualified and must operate in accordance with Safety in Industry Diving regulations.

2.3 PERSONAL PROTECTIVE EQUIPMENT

- Body heat will be lost very quickly in the sea. A person not wearing the recommended clothing and Personal Protective Equipment is unlikely to survive for more than one hour in the water. If core body heat falls by 2 degrees the victim will contract hypothermia. It is therefore vital that personnel wear the recommended Personal Protective Equipment in order to increase chances of survival if such a situation arises.
- It is the responsibility of every sea user to take care of his/her own Personal Protective Equipment and use it only for the purposes for which it was intended. Any person who knowingly allows his/her Personal Protective Equipment to be damaged will be required to replace the damaged item(s).

The basic equipment for survival in the water includes:

- **Life jacket** - This is the single most important item of Personal Protective Equipment and a suitable lifejacket is to be worn while on deck on board fishing vessels and while walking on piers at night Its importance lies in the fact that it:
 - Keeps you afloat without swimming
 - Keeps your head out of water.
 - Life jackets should be stored in a ventilated locker and gas cylinders should be checked before going to sea
- **Abandonment suits** have been issued to regular sea-goers. Abandonment suits should be kept on standby for an abandon ship scenario. It is an enclosed single piece waterproof garment, to be worn over warm clothing and normal footwear. A recommended lifejacket should be worn over the suit. It is designed to exclude water during immersion at sea. Seals are in place to ensure that no water enters the suit. Gloves and a hood provide insulation. Inspections of suits should be

performed regularly. The Marine Institute is currently reviewing its policy on abandonment suits.

- **Deck Suits** provide floatation and insulation and should be worn when working on deck. The suit will delay hypothermia on immersion and provides thermal protection against cold-water shock. When using the suit in an emergency it is important that you:
 - Do up all the zips.
 - Tighten the belt.
 - Upon falling into the water WAIT for about one minute to allow your breathing to calm.
 - Tighten the suit straps.
 - Put up your hood and turn your back to the waves.
 - Stay as still as possible.

- **Clothing** In the event of an abandon ship situation put on as many layers of warm clothing (preferably wool) as you can find with an anorak or oilskin as an outer layer. It is vital that you should keep your abandonment suit close to you at all times, it is likely to be the difference between life and death.

- If it becomes necessary to abandon ship into the water, extra clothing will reduce the effects of cold shock, which may otherwise prove to be disabling or even fatal. A waterproof layer can prevent such severe loss of body heat. Entering the water slowly rather than very suddenly will also lessen the chances of developing cold shock. Once in the water body heat will be lost very quickly. Methods of conservation of body heat include:
 - Keeping your head out of the water
 - Refraining from swimming unless you are sure you will reach the shore.
 - Refraining from removing any clothing.
 - Even if abandoning the craft into a life raft, extra layers of clothing will conserve body heat until the rescue takes place.

- **Emergency Position Indicating Radio Beacons.** All Fleet Assessment Technicians have been provided with personal EPIRBs and should be trained in their use. They may prove invaluable in the event of a Man Overboard situation.

- **Non-slip boots** have been provided to the Fleet Assessment Technicians and should be worn when working on the open deck, whether at sea or in harbour, in all hatches or elsewhere, wherever there is a risk of water, oil,

diesel or fish-oils on the decks, when working in the vicinity of wires or winches, or when lifting heavy loads.

- **Ear protection** may be required on some vessels if a member of staff feels that the level of noise is uncomfortable.

Extra safety precautions can be taken if it is believed prudent to so, so long as such measures do not increase safety risks in other respects.

3. FIRE SAFETY

3.1 GENERAL INFORMATION

Fire presents one of the most serious dangers for sea users and it is vital that all personnel familiarise themselves with fire prevention procedures.

When boarding a vessel it should be noted where fire-fighting equipment is situated so it may be found quickly in the case of emergency.

Fire drills should be held on a regular basis.

3.2 ELECTRICAL EQUIPMENT

It is essential that all electrical equipment is checked before being brought onto vessels and that faults or suspected faults in electrical equipment are reported and dealt with immediately.

Circuits should not be overloaded as this will cause the appliance to over-heat, leading to a short-circuit which has the potential to start a fire.

Clothing should never be placed over heaters or so close to them that they restrict the flow of air as this may lead to over-heating and the out-break of fire.

3.3 SPECIAL PRECAUTIONS

Engine room :

In order to reduce the risk of fire or injury, only authorised persons should enter the engine room. Care should always be taken due to the risk of burns resulting from close contact with hot surfaces and pipes.

Due to the large quantities of oil and diesel on board vessels and in particular in the engine room it is vital that the risk of fire and explosion, which it poses, is

kept to a minimum. A number of vital steps are involved which will go a considerable way towards achieving this aim:

- Oily rags should be cleared away after use and should be disposed of carefully due to their propensity to spontaneously ignite.
- Once machinery has been used it should be cleaned and/or left in a safe condition.
- Passages should not be obstructed.

Accommodation:

Fires in accommodation must be tackled as quickly as possible. Corridors and cabins fill with smoke very quickly and the task of containing fire in such areas can prove very difficult. All personnel should familiarise themselves with emergency escape routes.

In order to lessen the chances of fire in accommodation spaces certain practices should be observed:

- Personnel must not smoke in accommodation areas.
- No oily rags should be kept in accommodation areas due to flammable qualities.
- Care should be taken not to overload power sockets.
- Staff should familiarise themselves with the fire drill on board the vessel.

When tackling an accommodation fire the following points should be remembered:

- The ventilation system should be closed down, this will deprive the fire of oxygen and therefore prevent it from spreading.
- No cabin doors should be opened before fire equipment is laid out and hose lines charged. If there is a serious fire (which can be identified by heat or smoke coming through the seams of the door), it is better to leave the door closed and to break a panel in the bottom of it. Water should then be directed towards the deck through this opening in an attempt to reduce the temperature.

- If a fire is so serious that it involves a number of cabins, it should be surrounded to prevent it from spreading. Once this has been done the water jet can be used to beat out the flames. However if you feel that the fire is too dangerous and you are unable to fight it, leave via the escape hatch or some other exit.
- Panels and ventilation ducts should be checked to ensure that fire is not smouldering behind them. If necessary panels should be stripped away in order to facilitate this purpose.
- If the space on fire is quickly filling with smoke, evacuation should take place without delay. This should be done by lying flat on the ground and moving yourself along with your hands and feet.

In the event of fire on board visibility is likely to be reduced. In such instances never walk with outstretched arms with the palm of your hands facing outwards while trying to ensure that the area in front of you is clear. If the palm of your hand comes into contact with exposed wires the reflex action will be to clench the wires with serious injury being the probable result. It is therefore essential that the back of the hand be used in such instances.

4. ELECTRICAL SAFETY

To a large extent, electrical safety on board vessels is a matter of following the same work practices as on shore. However additional hazards are faced on vessels and in particular on deck due to the wet conditions and also because the ship is in motion.

When operating electrical equipment always be aware of the position of the nearest fire extinguisher (a water type fire extinguisher should never be used on an electrical fire).

4.1 USE AND STORAGE OF ELECTRICAL EQUIPMENT

Particular care must be taken when handling electrical equipment in wet conditions. After working on deck, hands should be dried thoroughly before using such appliances.

Any electrical equipment or power tools used on deck or where condensation can be encountered should always be adequately protected against ingress of water. Do not attempt to run too much equipment from a single socket outlet as it may overload and cause fire.

Equipment should be switched off and disconnected when not in use. All mains voltage should be earthed by the use of a three-pin plug

Faulty equipment should not be used and any faults should be reported. Repair work should always be left to recognised electricians.

4.2 ELECTRIC SHOCK:

If a crewmember receives an electric shock the first priority is to switch off the current. If live wires are exposed a dry insulated object should be used to switch off the power supply. Do not touch the casualty's flesh with your bare hands. If the casualty is unconscious check his/her breathing/pulse and be prepared to resuscitate if necessary. Cool any burns with cold water and place him/her in the recovery position. Minor burns should be treated with anti-septic cream and a lint compress should then be bandaged in position. The patient should be covered and treated for shock. He/she may seem unharmed. However, he/she may be shocked and should be advised to rest. Observe his/her condition closely and if in doubt call a doctor.

5. CHEMICALS:

The Marine Institute Chemical Policy must be adhered to. Due to space, motion, and lack of specialised medical attention, hazards arising from the use of chemicals at sea must be given special attention. Staff should always be alert to danger when working with chemicals and should never work with chemical substances when tired or after working for a long period without a rest.

Before bringing chemicals on board the containers must be clearly labelled giving information in to relation their dangerous properties. All sea-users should be aware of the toxicity, flammability and any other hazardous properties of any substance, which is to taken to sea.

All chemicals should be stored in minimum quantities and should be kept in small unbreakable containers, this will reduce the risk of splashing, breakage and spillage, and the need for opening and resealing containers. For liquids, absorbent material should be packed around the substances to absorb any leakage. Chemicals should always be stored in secure but accessible places. Always ensure that incompatible chemicals are never stored together.

Emergency procedures should be prepared and made known to all staff. In the case of fire a special hazard arises from materials, which can ignite, explode, or give off toxic fumes when heated. They should therefore be clearly labelled and stored to facilitate easy removal.

Always wash hands after using chemicals and particularly before eating, smoking etc. If chemicals are accidentally ingested medical help should be sought immediately. Always wash spillages of chemicals off the body immediately.

Unused chemicals should be removed from the vessel on disembarking.

Alcohol: is a highly flammable substance with the potential to cause severe eye irritation if not used according to the proper procedures. It is therefore essential that the following procedures be adhered to:

- Wear personal protective equipment e.g. goggles or gloves.
- Store away from oxidising agents.
- Do not ingest.
- No smoking, naked lights or sources of ignition.

Formalin (formaldehyde): is an irritant and a suspected carcinogen. Frequent or prolonged usage can cause hypersensitivity leading to contact dermatitis. It should be stored away from oxidising agents and Hydrochloric Acid. All use of formalin should be carried out on an open deck and contact with the skin should be

avoided by using rubber gloves, rubber boots and a waterproof apron when decanting from a large container. Small quantities are best dispensed from a small stoppered squeeze bottle. Large bottles should be stored on deck, securely held or lashed down, so that any spillage can be hosed off. Formalin should never be stored in boat accommodation, cabin, galleys etc.

6. EQUIPMENT AND CONSTRUCTION:

6.1 Maintenance, repair and construction.

Employees should be fully and properly trained in the safe and effective use of equipment. If it is necessary to use knives at sea care should be taken to avoid injury. Hands should always be kept behind the cutting edge when using cutting tools. If a member of personnel is injured medical attention should be sought immediately. Knives should be stored in a closed container when work is completed.

Use a chain mail glove on the hand holding the fish if appropriate.

Protective gear including footwear, safety helmets and gloves (which should always be worn when handling frozen materials) should be worn as conditions on

deck suggest it prudent to do so. No rings or jewellery, or anything with the potential to get caught on nets (such as buttons) should be worn when working on vessels.

6.2 Lifting and handling equipment (See *Appendix Three*)

Personnel must take care when lifting, pulling or pushing heavy pieces of equipment and should not attempt to lift items beyond their capacity. Heavy items should be moved using a trolley.

It should always be remembered that the back should be kept straight and the knees bent when lifting from a low level. Materials should be stacked and de-stacked carefully in order to avoid injury. Jerky movements should be avoided when lifting. Gloves should always be worn when lifting sharp or uneven objects.

When working on deck care should be taken not to stand in the bight of a rope or to get caught in nets. Extra vigilance is required in this respect from all personnel working on deck. Never wrap ropes around your hand.

6.3 Working at night

Working at night is particularly hazardous and all work areas should be kept well lit at all times. Where it is vital that personnel always work in twos or know where other personnel are at all times, it is particularly important that personnel do not work alone at night. When work is completed leave the deck together. Other crew members should always be informed about where you are working. Reflective strips are attached to life jackets and staff should ensure that they are in view at all times. When working or walking on piers at night staff should carry torches (either manual or ones that are attached to hard hats).

7. First Aid At Sea

INJURY AT SEA

In the event of a crew member being injured while at sea it is vital that you do not panic. Try to keep both yourself and the patient as calm as possible and attempt to regulate the patients breathing.

Bites and stings When handling fish it should be remembered that they can cause injury. Jellyfish, electric ray and sea anemone are examples of creatures that cause injury through the release of venom from stinging cells. Spines from spiky creatures like weever fish and sea urchins may break off and become embedded in the skin.

If stung by a fish pour alcohol or vinegar over the injury. This will prevent the release of venom still contained in the stinging cells, then apply a paste made up of equal parts sodium bicarbonate and water to the wound.

If you receive puncture wounds, for example from a weever fish, put the injured part in the hottest water you can bear for at least thirty minutes making sure that the water is kept as hot as possible for the entire period. Immediately on your return from sea go to a doctor who will remove any spikes which may remain in the skin.

Bleeding The first priority in such instances is to stop the bleeding. Blood loss can be controlled by applying pressure to the wound. This is done most effectively by bandaging tightly or if there are no bandages at hand, by tying cloth around the wound. Raising the injured part will also help to facilitate this important objective. If blood loss is particularly severe it may also be necessary to treat the victim for shock.

In order to prevent the risk of infection it is imperative that bandages are clean. It's always important to bear in mind that germs can be present in body fluids at all times therefore scrupulous attention should be paid to hygiene in order to protect both the casualty and yourself.

Minor bleeding can be treated by rinsing the cut lightly under cold water and cleaning the wound with a clean wipe or tissue. Small cuts should then be covered with a plaster in order to reduce the risk of infection.

Bruising Apply a cold compress to decrease swelling and to reduce pain. Rest the injured part and raise it if possible to reduce the flow of blood to the injury and minimise bleeding.

Burns Minor burns should be held under cold water and dried gently. Anti-septic cream should then be applied and a lint compress should then be lightly bandaged into position. More serious burns should be held under cold water immediately and medical attention sought. If water cannot be found do not remove clothing, as this will have been sterilised by heat. No lotion should be applied. Blisters should not be burst.

Cuts and abrasions Should be treated at once and given first aid treatment as necessary to protect against infection. Small cuts should be gently cleaned using an antiseptic wipe, dried with surgical gauze and a dressing applied. If the cut is large a lint dressing should be applied spread with anti-septic cream and held in place by a bandage.

Chemical burns It is essential that you flood the burned area with water for up to 20 minutes and while doing so remove any clothing that has come into contact with the chemical using protective gloves if they are available. If the burn has affected the eye, run the eye under gently running cold water for at least 10 minutes. If the eye has closed as a result of the chemical burn hold it open and flush it out with water. Cover the eye with a bandage.

Dermatitis Waterproof barrier creams may help to protect exposed skin from dermatitis and will make thorough cleaning easier. They should be applied before commencing work.

Eye injuries The patient should be discouraged from rubbing their eyes. No attempt should be made to remove any foreign bodies if they are on the pupil, embedded in the eyeball or cannot be seen but the eye is red, inflamed or painful. In such instances the patient should be encouraged to lie still on the floor and a soft bandage (preferably cotton wool) should be placed on the eye. Medical attention should be sought as soon as possible.

Fractures If an individual fractures or dislocates a bone the main priority is to prevent movement at the site of injury until the injured part is secured or supported. When providing support to a fractured arm it is important that it is supported with a sling against the trunk. If the leg is injured bandage the sound leg to the injured one. If possible raise the injured limb. If the fracture is open (i.e. it is accompanied by a wound) there is an added objective - the prevention of blood loss. Cover the wound with a clean dressing and apply pressure to control the bleeding. If a bone is protruding build up soft pads of material around the bone until you can bandage over them and follow the same procedures as for a closed fracture.

Hypothermia Hypothermia develops when body temperature falls below 35°C. The priority when someone is suffering from hypothermia is to prevent further heat loss and to improve circulation. Extra warm clothing, waterproofs and jackets should be used (but never place your own safety at risk by removing any of your own Personal Protective Equipment in order to facilitate this aim). It is important that the victim's head is protected from the cold. Insulating material should be placed around the patient (a survival bag should be included in the First Aid kits brought on board), and if he/she is conscious warm sweet drinks should be given. Do not attempt to massage the area affected, never place the casualty's hands or arms near to the body and never give the patient alcohol.

Shock Shock can arise from two main factors:

- When the heart fails to do its job and the pressure of circulating blood is reduced, for example when an individual suffers from a heart attack.

- When the volume of fluid in the body is reduced through, for example, bleeding (internal and external), or loss of other fluid through for example severe vomiting, diarrhoea or burns can have this effect.

Treat any cause of shock, which you can, for example severe bleeding. Lay the casualty down keeping his head low and by raising and supporting his legs. Loosen any tight clothing and insulate the individual from the cold. It is important that you do not let the victim eat, drink or smoke. If he/she is hungry moisten his lips with water. Do not let the individual move unnecessarily.

Appendix 3: (Model Site Visit Log)

Wave Power Test Site, Galway Bay

Site Visit Log

Date:

Departure time:

Return time:

Weather conditions:

1. Wind direction and strength

2. Wave height and direction (data from buoy if available)

Vessel(s) deployed:

Activities on site:

Other remarks/observations: