

Workplace Health and Safety Regulation 2008

On 1 September 2008, the *Workplace Health and Safety Regulation 1997* was repealed and replaced by the *Workplace Health and Safety Regulation 2008*. The new Regulation:

- remakes provisions of the old Regulation
- removes the [rural industry exemption](#) from existing regulatory requirements (except in relation to operator licensing for earthmoving equipment and particular cranes) over the next two years
- changes the numbering.

Workplace Health and Safety Queensland will be undertaking a process to review and update all forms and documents on the departmental website to ensure consistency with the new regulation. Until this process is complete, all forms and documents must be read in conjunction with the information provided in the [comparison table](#) (PDF, 255 KB). The comparison table has been provided to assist with the practical application of the *Workplace Health and Safety Regulation 2008*. It is not intended to provide a determination or comment on compliance or to provide legal interpretation. It is intended as a guide only and is provided as an information source only.

Workplace Health and Safety Amendment of Codes of Practice Amendment Notice (No. 1) 2008

A number of workplace health and safety codes of practice have been amended to bring them into line with the *Workplace Health and Safety Regulation 2008*. Current codes of practice need to be read in conjunction with the information provided in the [Workplace Health and Safety Amendment of Codes of Practice Amendment Notice \(No. 1\) 2008](#) (PDF, 322 KB). However, this document does not include amendments to the following codes of practice:

- Compressed Air Recreational Diving and Snorkelling
- Recreational Technical Diving
- Scaffolding
- Safe Design and Operation of Tractors

Compressed Air Recreational Diving and Recreational Snorkelling Code of Practice

Important information about the *Compressed Air Recreational Diving and Recreational Snorkelling Code of Practice 2005*

1. The code replaces the *Compressed Air Recreational Diving and Recreational Snorkelling Code of Practice 2000*.
2. The code was made on 9 March 2005.
3. The code commenced on 18 March 2005
4. The code was amended on 28 April 2006.
5. The code expires 10 years after in commenced.

What is this code of practice about?

The purpose of the *Compressed Air Recreational Diving and Recreational Snorkelling Code of Practice* is to give practical advice about ways to manage exposure to risks identified as typical when conducting compressed air recreational diving or recreational snorkelling.

Workplace Health and Safety obligations and the *Workplace Health and Safety Act 1995*

The *Workplace Health and Safety Act 1995*, places obligations on certain persons to ensure workplace health and safety. Workplace health and safety is ensured when persons are free from death, injury or illness (and the risk of death, injury or illness) caused by workplaces, relevant workplace areas, work activities or plant or substances for use at a workplace. Ensuring workplace health and safety involves identifying and managing exposure to the risks at your workplace.

Specific obligations of persons conducting a business or undertaking, employers, self employed persons, workers and other persons at a workplace are outlined in the *Workplace Health and Safety Act 1995*.

How can I meet my obligations?

Under the Act, there are three types of instruments to help you meet workplace health and safety obligations – regulations, ministerial notices and codes of practice.

If there is a regulation or ministerial notice about a risk, you **MUST** do what the regulation or notice says.

If there is a code of practice about a risk, you **MUST** either –

- (a) do what the code says; or
- (b) do all of the following –
 - adopt and follow another way that gives the same level of protection against the risk;
 - take reasonable precautions; and
 - exercise proper diligence

If there is no regulation, ministerial notice or code of practice about a risk, you must choose an appropriate way to manage exposure to the risk and take reasonable precautions and exercise proper diligence to ensure that your obligations are met.

NOTE:

There may be additional risks at your workplace, which have not been specifically addressed in this code of practice. You are required under the Act to identify and assess these risks and ensure that control measures are implemented and reviewed to prevent or minimise exposure to these risks.

Further information about recreational diving, snorkelling and other diving work can be found on the Workplace Health and Safety Queensland website:

<http://www.deir.qld.gov.au>

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Part 1 Recreational diving

1.1 What is this part about?

This part of the code offers advice to persons conducting a business or undertaking including employers, self-employed people, and workers in the recreational diving industry, on how they can make recreational diving a healthier and safer activity.

The recreational diving covered in this code is where employers or self-employed person, conducts recreational diving using compressed air as part of his or her undertaking. Recreational diving is any of the following underwater diving for recreation, other than diving in a swimming pool:

- (a) resort diving (see section 1.2 for further explanation); or
- (b) diving by a person undertaking training in diving for recreation whether or not the person is being photographed, filmed or videoed while diving; or
- (c) diving for recreation by a person with a qualification in underwater diving whether or not the person is being photographed, filmed or videoed while diving.

Part 1 also includes guidance from the **Workplace Health and Safety Regulation 1997** in so far as it applies to the control measures outlined in Section 1.3.

1.2 Meaning of some terms used in this part

Appropriate powered tender vessel A vessel suitable to undertake the rescue of a diver or snorkeller. An outline description of an appropriate powered tender vessel is provided at appendix 4.

Bottom time The time between a diver leaving the surface at the start of a dive and starting the final ascent.

Certificated assistant A person who holds a current qualification from a recreational scuba or dive training organisation, designed to qualify the person to assist a scuba/dive instructor.

Confined water Water which offers pool-like conditions, good visibility, and water which is shallow enough so that all divers can stand up with their head well clear of the water.

Dive instructor A person who holds a current qualification from a recreational scuba or dive training organisation, designed to qualify the person as a scuba/dive instructor.

Dive supervisor a person who holds a current qualification in diving operations leadership from a recreational scuba or dive training organisation.

Dive time The time between a diver leaving the surface at the start of a dive and surfacing at the end of the dive.

Diving first aid A current qualification received for training in:

- first aid and emergency oxygen administration to injured divers

- training in dive accident management
- field clinical assessment.

Diving medical practitioner A medical practitioner who has satisfactorily completed a course in diving medicine approved by the Academic Board of the South Pacific Underwater Medicine Society.

Helmet diving Helmet diving is a resort dive, undertaken in a free flow gas supplied helmet, including helmets integral to underwater vessels.

Non-English speaking diver A diver who cannot understand and speak any English, or whose grasp of the English language is such that he or she is not able to readily understand or question any instruction and advice given in English.

Open water Any body of water which is subject to wind, swell, current or waves and which can be used for diving.

Recreational diving Any of the following underwater diving for recreation using compressed air, other than diving in a swimming pool:

- (a) resort diving (see below for definition)
- (b) diving by a person undertaking training in diving for recreation, whether or not the person is being photographed, filmed or videoed while diving
- (c) diving for recreation by a person with a qualification in underwater diving, whether or not the person is being photographed, filmed or videoed while diving

Recreational scuba or dive training organisation An organisation engaged in the certification of recreational divers through documented training procedures which, in principle, comply with sections 2 and 3 of *Australian Standard 4005.1 - 2000 - Training and certification of recreational divers Part 1: Minimum entry level SCUBA diving*.

Repetitive dive group/pressure group Means a letter of the alphabet, given by dive tables, that represents an estimate of the amount of residual nitrogen in a diver's tissues immediately on surfacing at the end of a dive.

Repetitive factor/pressure group at end of surface interval A letter of the alphabet, given by dive tables that represents an estimate of the amount of residual nitrogen in a diver's tissues as determined by the repetitive dive group and the surface interval.

Residual nitrogen Nitrogen in excess of the amount normally present in a person's tissues, that is dissolved in the person's tissues.

Resort diving An introductory dive experience or introductory educational diving program, whether or not the person is being photographed, filmed or videoed while diving.

Surface interval The time a diver spends at the surface between one dive and the next dive.

Time in The time a diver leaves the surface at the start of a dive.

Time out The time a diver surfaces at the end of a dive.

1.3 Health and safety control measures specific to compressed air recreational diving

This section outlines some control measures, which can be used to manage specific risks related to recreational diving. Parts 3 and 4 of this code give further information on control measures and the risk management process.

The person conducting the business or undertaking, including the employer or self-employed person must:

- (a) undertake risk management at their own workplace to ensure the control measures he or she chooses are suitable for their workplace and the tasks being undertaken; and**
- (b) ensure all diving is subject to coordination by a dive supervisor or other person or persons who have been appointed by the employer/self-employed person for that purpose. Diving procedures should be documented along with the responsibilities of lookouts, dive supervisors, dive instructors and other workers with respect to health and safety. It is important that responsibilities are clearly allocated and the diving procedures to be followed are known to all parties.**

1.3.1 Ensuring no persons are left behind

Section 86B of the *Workplace Health and Safety Regulation 1997*, 'Count of all persons on board to be made and recorded', requires that:

A count of all persons on board must be made and recorded when an employer or self-employed person uses a boat to transport persons to, or to the vicinity of, a recreational diving site.

Before the boat departs for the recreational diving site, the employer or self-employed person must ensure a crew member:

- (a) counts all persons on board; and
- (b) makes a written record of the count; and
- (c) verifies the count-
 - (i) by signing the record; or
 - (ii) if the record is made electronically - by entering in the record the name of, and a unique identifier for, the crew member.

Example of a record made electronically-

A record made on a computer

If anyone leaves the boat permanently for alternative transport to shore or another vessel, or if an additional person permanently joins the boat, the employer or self-employed person must ensure a crew member:

- (a) counts the persons leaving the boat as they leave it; and

- (b) counts the persons boarding the boat as they board it; and
- (c) makes a written record of each of the counts; and
- (d) makes a written record of the number of persons currently on board; and
- (e) verifies the information recorded under paragraphs (c) and (d) -
 - (i) by signing the record; or
 - (ii) if the record is made electronically - by entering in the record the name of, and a unique identifier for, the crew member.

Before the boat departs from the recreational diving site or its vicinity, the employer or self-employed person must ensure a crew member:

- (a) counts the persons on board; and
- (b) makes a written record of the count; and
- (c) compares the count with the last count recorded under this section to ensure the counts agree; and
- (d) makes a written record of the comparison; and
- (e) verifies the information recorded under paragraph (b) and the comparison –
 - (i) by signing the record; or
 - (ii) if the record is made electronically - by entering in the record the name of, and a unique identifier for, the crew member.

The employer or self-employed person must keep each record made under this section for a least 1 year.

Two types of systems may be used to carry out the count:

Passive count systems, for example, a head count

These systems require little participation by the people being counted. They tend to be quicker and less obtrusive but are also more susceptible to error. If passive systems are used, the count should be done twice, and independently, by different crew members.

An example of a template for making a count of all persons on board is available at appendix 1.

Active count systems, for example, roll calls, tagging or signing systems

Active count systems require the people being counted to actively participate in the counting process. These systems tend to be slower than passive systems but are less prone to error. The use of an active system is preferred, but for vessels carrying over 50 people, passive systems may be more appropriate.

As with any other system, it is important the adopted process is clearly known to all workers and the responsibility for completing the count is clearly allocated to a person or persons on each day. The employer/self-employed person should ensure all other people on board the vessel are clearly informed of the counting process to be followed.

1.3.2 Medical fitness to dive

1.3.2A Diving workers

Sections 78, 'Risk from certain medical conditions', and 79, 'Contents of certificate of medical fitness to dive', of the *Workplace Health and Safety Regulation 1997*, apply to all underwater diving work, including recreational diving work.

These sections of the regulation require an employer or someone on his or her behalf to view the worker's current certificate of medical fitness to dive. The employer must ensure any work carried out by the worker is within any limits stated in the certificate. An employer/self employed person doing underwater diving work must have a current certificate of medical fitness to dive and any work carried out by the employer/self-employed person must be within any limits stated in the certificate.

A 'certificate of medical fitness to dive' is a certificate that:

- (a) has been issued by a diving medical practitioner
- (b) shows its date of issue
- (c) shows the certificate holder's name
- (d) shows the holder is medically fit to dive in accordance with the fitness criteria specified in *Australian Standard/ New Zealand Standard 2299 (1999) Occupational diving operations – standard operation practice*,
- (e) may show any limits on diving imposed on medical grounds.

The certificate is current if it:

- (a) has not been superseded or revoked
- (b) has not expired
- (c) is not more than 1 year old.

The employer/self-employed person should request that workers advise the employer/self-employed person of any conditions in themselves which are contraindications to diving.

Employers/self employed persons and workers with these conditions should not dive. Examples of contraindicated conditions are colds, hay fever, ear infections and hangovers.

Further information on this issue can be found on the Workplace Health and Safety website:

<http://www.whs.qld.gov.au/subject/diving.htm>

1.3.2B Resort divers

Section 86C of the *Workplace Health and Safety Regulation 1997*, 'Medical conditions of resort divers' requires that:

An employer or self-employed person who intends to conduct resort diving for a person may allow the person to do resort diving only if:

- (a) the person first gives the employer or self employed person a medical declaration in the approved form about his or her medical fitness to dive; and
- (b) the employer or self-employed person or someone on his or her behalf -
 - (i) has read the declaration; and
 - (ii) does not know or suspect that the declaration is false or misleading; and
 - (iii) has assessed the person's fitness to dive, having regard to the declaration; and
 - (iv) decides it is reasonable to allow the person to dive.

Example of the process of assessment:

A declaration discloses a medical condition. The employer then seeks medical advice. In accordance with the medical advice, the employer decides that it is reasonable to allow the person to dive.

Any medical advice received in relation to resort divers should be recorded. If the information on the approved form indicates the prospective diver has consumed alcohol within 8 hours prior to the diving, he or she should not dive.

The employer/self employed person should ensure that persons undertaking resort dives are at least a minimum of 12 years of age. Due regard should be had to the other age requirements in AS 4005.1 – 2000. **A copy of the approved form 26 is outlined below.** If the resort diver is under the age of 18 years, parental or guardian consent is required for that diver to undertake a resort dive. The parent or guardian should sign the medical declaration as witness.

Form 26

Queensland Government
Workplace Health and Safety

MEDICAL DECLARATION FOR RESORT DIVING

TO BE COMPLETED AND SIGNED BY RESORT DIVER

Personal details

Surname Given Names
Address

Phone
Date of birth // Sex: Male Female

Have you suffered, or do you now suffer from, any of the following -

	Yes	No
Asthma or wheezing		
Brain, spinal cord or nervous disorder		
Chest surgery		
Chronic bronchitis or persistent chest complaint		
Chronic sinus conditions		
Collapsed lung (pneumothorax)		
Diabetes mellitus (sugar diabetes)		
Ear surgery		
Epilepsy		
Fainting, seizures or blackouts		
Heart disease of any kind		
Recurrent ear problems when flying		
Tuberculosis or other long-term lung disease		

Are you currently suffering from -

	Yes	No
Breathlessness		
Chronic ear discharge or infection		
High blood pressure		
Other illness or operation within the last month		
Perforated eardrum		

Yes No

Are you currently taking any medicine or drug (excluding oral contraceptives)?

Have you ingested any alcohol within the 8 hours prior to diving?

Are you pregnant?

Do you understand that concealment of any condition incompatible with safe diving might put your life or health at risk?

Signature Date //

Witness Date //

1.3.2C Entry-level certificate divers

The employer/self-employed person should ensure that any person training for an entry-level recreational diving certificate is certified as being medically fit for diving in accordance with Appendices A and B of **Australian Standard 4005.1 - 2000 Training and certification of recreational divers - Part 1: Minimum entry level SCUBA diving**. The 2 appendices, that is A and B, give medical information and show the medical form which should be used for a pre-diving medical examination for prospective recreational divers. The medical certification should be provided in English, preferably by a medical practitioner with experience in diving medicine, within 90 days prior to the commencement of training.

The employer/self employed person should ensure that persons undertaking training for an entry level recreational diving certificate are at least a minimum of 12 years of age. Due regard should be had to the other age requirements in AS 4005.1 – 2000.

If the diver is under the age of 18 years, parental or guardian consent is required for the diver to undertake training for an entry level recreational diving certificate.

Further information on this issue can be found on the Workplace Health and Safety website:

<http://www.whs.qld.gov.au/subject/diving.htm>

1.3.2D Certificated divers

The employer/self employed person should assess the diver's current medical fitness to dive. (Refer to section 1.3.4D)

If the employer/self-employed person has concerns regarding the medical fitness of a potential diver, the employer/self-employed person should not conduct diving for that person, unless:

- the diver seeks medical advice which advises diving can be undertaken; OR,
- a dive instructor/ dive supervisor accompanies the diver on a dive.

The following questions are an example of questions that may be asked of the diver to assess his or her current medical fitness to dive:

- *Since completing your last dive medical assessment, have you suffered any illness or injury that may affect your ability to dive safely?*
- *Are you currently suffering any illness or injury?*
- *Are you currently taking any prescription medication, other than the contraceptive pill?*

1.3.3 Supervision of divers in open water

1.3.3A All divers - dive site supervision

Section 86D of the **Workplace Health and Safety Regulation 1997**, 'Lookout and rescuer', states that:

The employer or self-employed person may allow a person to do recreational diving only if there is at least 1 person acting as lookout for the diving.

The lookout must:

- (a) be positioned out of the water where the lookout can see the whole area where the diving is taking place; and
- (b) be solely engaged in being the lookout; and
- (c) be able to recognise relevant hazards and divers in difficulty; and
- (d) be able to either:
 - (i) rescue a diver; or
 - (ii) direct a person who is immediately available and capable of rescuing a diver to rescue a diver; and
- (e) be able to either:
 - (i) provide first aid including expired air resuscitation, oxygen resuscitation and external cardiac compression; or
 - (ii) direct a person who is immediately available and capable of providing the first aid to provide the first aid.

A lookout is taken to be acting as a lookout while occupied under (d) or (e) of this section (86D) if:

- (a) the employer or self-employed person, or someone on his or her behalf, has conducted a proper assessment of the risk involved in not having another person available to act as lookout while the lookout is occupied under (d) or (e) of this section; and
- (b) it is reasonable having regard to those risks not to have another person available to act as lookout.

An appointed dive supervisor should manage the dive operation and remain at the surface of the dive site while diving is taking place.

The employer or self-employed person should ensure the lookout:

- (a) scans the area under his or her supervision in an effective and efficient manner
- (b) if required, rescues a diver or directs a person who is immediately available and capable of rescuing a diver, to rescue a diver
- (c) has a level of fitness so his or her own health and safety are not compromised if required to carry out or assist in a rescue
- (d) if required, provides first aid including expired air resuscitation, oxygen resuscitation and external cardiac compression or directs a person who is capable of providing the first aid to provide the first aid
- (e) observes divers when they are entering and exiting the water or are on the surface
- (f) has access to binoculars and polarised sunglasses so that visibility across and into the water can be improved
- (g) continually monitors the positions of the divers, looks for hazards or changes which may lead to problems, and identifies problems so that dive operations can be adjusted as required
- (h) wears a brightly coloured shirt, wetsuit or other identifying clothing or equipment so the lookout can be recognised easily by divers

- (i) be part of a communication system which is relevant to the dive site and which allows for necessary communication with divers and any other appropriate personnel so that effective and efficient transfer of information can occur. A communication system may include, for example, ordinary voice communication, a loud hailer, 2-way radios, whistles or signalling.

A dive site risk assessment should be conducted for the environmental conditions at each dive site (refer to section 1.3.14A). The assessment should include:

- (a) currents
- (b) weather
- (c) surface conditions
- (d) visibility
- (e) maximum depths at the site.

The assessment should consider all aspects of the conduct of the diving operation, including, entries and exits, searches for divers, rescues and evacuations. Diving procedures should be modified or cancelled where the assessment shows that normal control measures will not minimise or eliminate the risks faced by divers.

Note: An employer or self employed person may assign roles of lookout, dive supervisor, rescuer, first aid and oxygen provider to one or more competent persons where the performance of these roles is not incompatible. An assessment should be undertaken to determine an appropriate number of person/s for the diving activities being undertaken.

Further information on this issue can be found on the Workplace Health and Safety website:

<http://www.whs.qld.gov.au/subject/diving.htm>

1.3.3B Resort divers – in water supervision

Section 86E of the *Workplace Health and Safety Regulation 1997*, 'Supervision of resort divers', requires that:

The employer or self-employed person ensures that each person doing resort diving is supervised in the water by a dive instructor, or a dive instructor assisted by a certificated assistant.

A dive instructor must not supervise more than 4 resort divers at a time.

A dive instructor assisted by a certificated assistant must not supervise more than 6 resort divers at a time.

In relation to the ratios of diving workers to resort divers, the regulation gives the maximum number of resort divers who can be supervised by a dive instructor or a dive instructor and certificated assistant. In some instances, the number of resort divers being supervised may need to be lowered. For instance, if a risk assessment shows that the abilities, fitness and confidence levels of divers, and the environmental conditions at the dive site put the health and safety of workers or resort divers at an unacceptable level of risk, then the ratios should be reviewed.

When divers are being supervised by a dive instructor only, then the divers should:

- (a) swim closely on each side of the instructor, OR
- (b) swim closely abreast with the instructor close in front of the students, facing them and swimming backwards.

When divers are being supervised by a dive instructor and certificated assistant, the divers should swim in single file or abreast, with an instructor or certificated assistant at the front and rear of the divers.

Other techniques that reduce the likelihood of separation of resort divers from the instructor include:

- (a) holding hands or linking arms
- (b) minimising the distance swum and spending periods of the dive stationary on the sea floor
- (c) remaining in the vicinity of the entry/exit point
- (d) diving with certificated assistants, videographers and photographers.

While in the water, the diver instructor and certificated assistant should always be positioned so they can make immediate physical contact with, and render assistance to, any resort diver. No course should be conducted with 1 instructor only, which allows the students to swim in single file behind or in front of the instructor. Single file swimming with only 1 instructor at the beginning or end of the students has been the cause of divers being lost.

Where mixed groups of divers (resort divers and other divers) are supervised by a dive instructor or a dive instructor and certificated assistant, the total number of divers supervised should not exceed the maximum ratios stated section 86E of the *Workplace Health and Safety Regulation 1997*.

1.3.3C Entry-level certificate divers – in water supervision

This refers to entry-level divers who have completed confined water training.

There should be a maximum of 8 students with 1 dive instructor or a maximum of 10 students with 1 dive instructor and at least 1 certificated assistant.

While in the water, the instructor and certificated assistant should be aware of the location of all students at all times so that any student requiring assistance can be readily helped. Students should dive with a buddy or buddies at all times.

1.3.3D Certificated divers – in water supervision

Following the assessment of the divers (refer to section 1.3.4D), if the dive site assessment (refer to section 1.3.3A) reveals the dive site conditions are outside the qualifications and experience of the diver, then in water supervision by a dive instructor/ dive supervisor should be provided.

1.3.3E Diving workers – in water supervision

The employer or self employed person should ensure that dive workers do not dive alone without appropriate training and equipment.

1.3.4 Appropriate skills and knowledge of workers and divers

1.3.4A Diving workers

The employer/self-employed person should ensure recreational diving workers are trained in the procedures required at any particular dive site and qualified for the recreational diving work they are doing.

A dive instructor should instruct resort divers and divers in training for a recreational scuba diving qualification.

There should be a dive supervisor appointed whenever divers are in the water and this dive supervisor should have appropriate experience for the area supervised.

When required, there should be a certificated assistant to assist a dive instructor.

1.3.4B Resort divers

The employer/self-employed person should ensure the dive instructor assesses the knowledge, skills and abilities of potential divers and provides the necessary information and instruction to minimise the risks to the person's health and safety. Skills taught **underwater** to resort divers who are not helmet diving should include:

- (a) mask clearing
- (b) removing and replacing the regulator.

These skills should be taught in situations where resort divers can easily keep their heads clear of the water. Such situations would include shallow water, or where there is some form of support, such as a bar hanging from the side of the boat for the divers to hold onto, or a platform on which the divers can stand.

Divers should also be instructed and/or informed about:

- (a) equalising their ears
- (b) using appropriate hand signals
- (c) using an emergency ascent procedure, which includes exhaling on ascent, and achieving and maintaining positive buoyancy on the surface.

Consideration should also be given to the following issues during information and instruction sessions:

- (a) environmental conditions and marine life at the dive site, for example, depth, currents, visibility, and behaviour of marine animals likely to be encountered
- (b) health and safety issues relating to the vessel, for example, entry and exit points
- (c) health and safety issues relating to dive site entry such as a beach, jetty, pontoon, river bank
- (d) location and roles of supervisory staff, for example, dive instructors, dive supervisors and lookouts

- (e) any other information required because the assessment shows the prospective diver needs such information to dive safely.

1.3.4C Entry-level certificate divers

Entry-level certificate divers should be trained through documented training procedures which, in principle, comply with ***Australian Standard 4005.1 - 2000 Training and certification of recreational divers Part 1: Minimum entry level scuba diving***. A diver should not be awarded a certificate to dive unless he or she has successfully completed this training with a recreational scuba or dive training organisation.

1.3.4D Certificated divers

(Note: this section should be read in conjunction with sections 1.3.3D and 1.3.2D)

The employer/self-employed person should ensure the dive supervisor assesses the competence of each diver prior to diving.

Factors taken into account should include:

- (a) the recency of the diver's recreational certificate and of the last dive
- (b) the diving experience, including experience in relevant environmental conditions, of the diver since the certificate was gained, for example, as contained in log books
- (c) the diver's current medical fitness to dive.

If there are doubts as to the competence of the diver to complete a particular dive, a dive supervisor or dive instructor should accompany the diver on that dive or assess the diver during an assessment dive.

Certificated divers should be advised of the following:

- (a) boundaries of the dive site
- (b) environmental conditions and marine life at the dive site, for example, depth, terrain, currents, visibility and behaviour of marine animals likely to be encountered
- (c) health and safety issues relating to the vessel, for example entry and exit points
- (d) health and safety issues relating to dive site entry such as a beach, jetty, pontoon, river bank
- (e) location and roles of supervisory staff, for example, dive instructors, dive supervisors, and lookouts
- (f) to regularly monitor air levels in air cylinders and the minimum air content required for safe return to the surface. This advice would need to take into account the depth of the dive and exertion levels, for example, when diving against a current
- (g) to dive in dive buddy teams
- (h) not to dive to depths greater than that to which they have been trained or have experience. (As recreational diving workers should not be required to dive beyond 40 metres, certificated divers should be advised that if they get into difficulty beyond this depth, their rescue may put a recreational diving worker at unacceptable risk)

- (i) their responsibilities as divers to dive safely and comply with the instructions of the employer/self-employed person or persons acting on their behalf
- (j) emergency procedures such as recall, distress and rescue procedures, and use of signalling devices.

Depending on certain factors such as the competency of the divers, environmental conditions and the nature of diving being undertaken, consideration should be given to offering other advice such as:

- (a) the risks to health and safety from a build-up and release of nitrogen in the blood and bodily tissues because of multiple ascents or multiple dives in any 24 hour period; or because of a series of dives over a number of days with inadequate surface intervals to allow the nitrogen to off-gas
- (b) the risk to health and safety from nitrogen narcosis at depth and the need to move to shallower water if this occurs
- (c) the danger of maximum bottom time non-decompression diving
- (d) the risks of decompression diving
- (e) the need for safety stops
- (f) the risks associated with flying or altitude exposure after diving
- (g) the effects of dehydration after diving
- (h) the risks associated with exertion after diving
- (i) the risks associated with diving while ill.

1.3.5 Instruction and advice to non-English speaking divers

1.3.5A Resort and entry-level certificate divers

Information and advice should be given to a non-English speaking diver in a manner that enhances understanding by the diver. This should occur through:

- (a) the information being explained to the diver by an instructor who speaks the same language as the diver; OR
- (b) the use of an interpreter with a sound knowledge of diving and diving terminology to relay the instructor's instructions to the diver, and feedback the responses to the instructor. The interpreter should be able to speak fluently to the instructor and the diver in languages they can readily understand; OR
- (c) the use of instruction sheets written in a language the diver can read and understand, for example the Dive Safety Information Sheets translated into nine languages and distributed to all dive operators. The sheets are available from the Workplace Health and Safety website; and
- (d) testing of the diver by having him or her demonstrate the required knowledge and skills to the instructor.

Diving should not proceed unless the instructor is satisfied the person can dive safely.

1.3.5B Certificated divers

Information and advice should be given to a non-English speaking diver in a manner that enhances understanding by the diver. This should occur through the provision of the necessary information and advice in a language easily understood by the diver. This information and advice can be in verbal or written form. An example of written form is the Dive Safety Information Sheets which are

available in English plus nine other languages. They have been distributed to all dive operators. The sheets are available from the Workplace Health and Safety website as follows: <http://www.whs.qld.gov.au/subject/diving.htm>

1.3.6 Equipment for diving

1.3.6A All divers

The employer/self-employed person should ensure diving equipment supplied to divers is:

- (a) suitable for the type of diving being undertaken and of sufficient quality to ensure it performs effectively for the wearer
- (b) checked before diving starts to ensure it is in safe working condition
- (c) cleaned and kept in good repair
- (d) maintained in accordance with manufacturers' specifications.

Oral/nasal equipment should be disinfected prior to use by another person, that is, it does not need disinfecting if the same person is using the equipment over a period of time.

1.3.6B Resort divers

All resort divers, other than those doing helmet diving, should wear the following equipment:

- (a) fins
- (b) mask
- (c) compressed air cylinder and valve designed specifically for SCUBA
- (d) buoyancy control device fitted with a power inflator device
- (e) regulator fitted with an alternate air source or an alternative air supply
- (f) submersible depth and cylinder pressure indicators
- (g) quick-release weight system
- (h) exposure protection, as appropriate to conditions.

1.3.6C Entry-level certificate divers

All entry-level certificate divers should wear:

- (a) all the equipment in 1.3.6B; plus
- (b) snorkel (attachable or attached to the mask)
- (c) submersible timing device during open water dives
- (d) a knife, dive tool or shears if there is a chance of entanglement

1.3.6D Certificated divers

All certificated divers should wear:

- (a) all the equipment in 1.3.6B; plus
- (b) snorkel (attachable or attached to the mask)
- (c) submersible timing device during open water dives
- (d) a knife, dive tool or shears if there is a chance of entanglement
- (e) emergency signalling equipment, including a high visibility signalling device, for example, a safety sausage; and an audible signalling device, for example, a whistle
- (f) a lighted signalling device, for example, a glow stick, if diving is to take place close to dusk or after dark
- (g) a torch, if night diving is being undertaken.

1.3.6E Diving workers

All diving workers should wear:

- (a) all the equipment in 1.3.6B; plus
- (b) snorkel (attachable or attached to mask)
- (c) submersible timing device
- (d) a knife, dive tool or shears
- (e) emergency signalling equipment, including a high visibility signalling device, for example, a safety sausage; and an audible signalling device, for example, a whistle
- (f) a lighted signalling device, for example, a glow stick, if diving is to take place close to dusk or after dark
- (g) a torch, if night diving is being undertaken
- (h) slate and writing instrument.

1.3.7 Air quality in air cylinders

1.3.7A All divers

The employer/self-employed person should ensure that:

- (a) compressed air cylinders are filled, tested, operated and maintained according to manufacturers' instructions and the **Australian Standard 3848.2 - 1999 Filling of portable gas cylinders - Part 2 Filling of portable cylinders for self-contained underwater breathing apparatus (SCUBA) and non-underwater self-contained breathing apparatus (SCBA) - Safe Procedures**.
- (b) water content in the cylinders is monitored and the cylinders are checked and cleaned at regular intervals to prevent or minimise corrosion of the inner surface and to clean out any residues of corrosion.
- (c) on any day that compressed air cylinders are being used, samples of the air in the cylinders are 'sniff' tested to ensure the air has no objectionable or nauseous odour
- (d) cylinders contain:
 - not more than 5 ppm of carbon monoxide
 - not more than 480 ppm of carbon dioxide or 900 mg/m³
 - not more than 0.3mg/m³ of oil
- (e) cylinders are not filled to a pressure that exceeds the lesser of the working pressure ratings of either the valve, yoke or cylinder.

Compressors used to fill compressed air cylinders should:

- (a) be designed specifically for the purpose of filling compressed air cylinders used by underwater divers
- (b) be tested for air quality, and operated and maintained according to manufacturers' instructions
- (c) be positioned so only clean, uncontaminated air is taken into the compressor. This air should be of the same mixture of oxygen, nitrogen and other gases which naturally surround the earth
- (d) have filters which are in sound working order so they effectively remove contaminants so these cannot enter the cylinders. (Water content of the gas reduces the effectiveness and life of the filters).

1.3.8 Dive Tables

1.3.8A All divers

All dives should be planned conservatively and consistently to 1 set of recognised dive tables. Recognised dive tables are generally taken to be:

- (a) any tables approved by a scuba training organisation
- (b) DCIEM tables
- (c) Buhlemann tables
- (d) any dive computer used in accordance with manufacturers' instructions.

Dive tables and computers should be used as guides only for planning and executing a dive because individual differences of divers, dive profiles and dive site conditions may require a more conservative approach. For example, psychological factors such as anxiety, individual physiological responses to changing pressure levels and physical activity, multiple dives over multiple days and the state of hydration of a diver are associated with decompression illness.

1.3.9 Diving depths

1.3.9A Diving workers

Employers/self-employed persons should ensure recreational diving workers dive within any depth limits stated on their medical certificate, and in any case they should not be required to dive to depths in excess of 40 metres.

1.3.9B Resort divers

Employer/self-employed persons should ensure resort divers do not dive beyond 12 metres.

1.3.9C Entry-level certificate divers

Employer/self-employed persons should ensure entry-level divers in training do not dive beyond 18 metres.

1.3.9D Certificated divers

The employer/self-employed person should advise certificated divers they should not dive in excess of the depth to which they have been trained or have experience to.

These divers should be advised that if they get into difficulty beyond 40 metres, a recreational diving worker may not be able to come to their assistance, that is, dive beyond 40 metres.

1.3.10 Ascent diving

An employer/self-employed person should ensure that a dive instructor does not teach ascent training to more than 1 class (8 students to 1 dive instructor or 10 students to 1 dive instructor and 1 certificated assistant) in any 24 hour period.

1.3.11 Emergency plans

The employer/self-employed person should ensure dive vessels have a written emergency plan to deal with emergency situations. These emergency plans should be made readily available to workers who should be familiar with these plans.

Situations covered by written emergency plans should include:

- (a) first aid
- (b) rescue
- (c) evacuation
- (d) missing persons.

1.3.12 Rescue of a diver

1.3.12A All divers

The employer/self-employed person should ensure effective and efficient rescue and resuscitation procedures have been developed. In the development of these procedures, consideration should be given to the following factors:

- (a) size, type and location of the dive site
- (b) appropriateness of rescue procedures to the dive site
- (c) adequacy of the communication system so that clear messages and information can be relayed to the appropriate personnel, with the minimum of delay
- (d) location of lookouts/rescuers and their skills and fitness levels. Rescuers should have knowledge and skills in diving and in the management of diving related incidents, injuries and illness. They should also have a level of fitness so their own health and safety are not compromised, and be dressed and equipped so they are ready to enter the water quickly
- (e) availability, locality and appropriateness of any rescue equipment such as rescue boards, tenders, flotation devices and ropes. Any rescue vessels or equipment should be maintained in a ready condition and positioned so they can be used to reach a diver in distress with the minimum of delay. An appropriate powered tender vessel should be maintained in a ready condition in the water for the purpose of rescue during diving operations.

1.3.13 First aid and oxygen

An employer/self-employed person should ensure:

- (a) a first aid kit is available at the dive site. The contents of this kit should be sufficient to cater for the injuries that may occur. Consideration also should be given to the number of divers and the nature and type of underwater diving which is being undertaken
- (b) a person on the surface at the dive site should hold current training in diving first aid including emergency oxygen administration (see section 1.2, diving first aid)
- (c) an oxygen system capable of providing a spontaneously breathing person with an inspired oxygen concentration of as near as possible to 100%. The equipment shall also facilitate oxygen enriched artificial ventilation of a non-breathing person. The person/s administering the oxygen should have received training in the correct use of the system
- (d) oxygen equipment and oxygen levels are checked daily by a person who has received training to carry out the checks correctly. Any other maintenance of the oxygen system should be carried out by an authorised service agent
- (e) sufficient oxygen is available to supply the injured person, taking into account the location of the dive site and access to medical facilities.

1.3.14 Dive safety log

1.3.14A All divers

Section 86F of the *Workplace Health and Safety Regulation 1997*, 'Dive safety log', requires that:

If the employer or self-employed person intends to conduct recreational diving a dive safety log must be kept.

The dive safety log must contain the required information about:

- (a) each dive conducted by the employer, or self-employed person; and
- (b) each dive done by the employer, self-employed person, or the employer's workers in conducting the dive.

The following is the required information:

- (a) the diver's name;
- (b) the name of any buddy with whom the dive is conducted;
- (c) the dive supervisor's name;
- (d) the date and location of the dive;
- (e) time in;
- (f) time out;
- (g) maximum depth of the dive;
- (h) any incident, problem, discomfort or injury experienced or suffered by the diver;

- (i) if the dive was done using a dive computer - the dive time;
- (j) if the dive was done using dive tables – the repetitive dive group and either bottom time or dive time;

- (k) if the repetitive dive group and surface interval result in a repetitive factor – the surface interval and repetitive factor.

On completion of a recreational dive, a diver must verify the diver's return from the dive:

- a) by signing the dive safety log entry for the diver; or
- b) if the log is kept electronically - by entering in the log entry the name of, and a unique identifier for, the diver

Example of a log kept electronically-

A record kept by computer

The dive supervisor or someone else authorised by the employer or self-employed person must verify, in either of the following ways, that the dive safety log entry for each diver has been completed and the diver's return from the dive has been verified by the diver:

- a) by signing the log entry;
- b) if the log is kept electronically - by entering in the log entry the name of, and a unique identifier for, the dive supervisor or authorised person.

The master of the boat used in connection with the diving, or a person authorised by the employer or self-employed person, must verify, in either of the following ways, that the dive safety log has been completed, and verified:

- a) by signing the log entry;
- b) if the log is kept electronically - by entering in the log entry the name of, and a unique identifier for, the master or

authorised person.

Each entry and signature in the dive safety log must be made as soon as possible.

For example, the signature of the diver in the dive safety log is an important check on whether a diver has returned to the boat. Accordingly, the signature needs to be made as soon as the diver has removed necessary gear and dried the diver's hands.

The employer or self-employed person must keep the dive safety log for at least 1 year.

The dive safety log should also contain the information on the environmental conditions at the dive site, for example, surface conditions, currents, visibility and maximum depth.

During a dive, the log should be monitored so that missing diver situations are quickly identified. For example, if a 40 minute bottom time dive is planned and an accurate 'time in' is recorded, then a dive supervisor should be organising a response to a missing diver situation if the diver is absent for more than the bottom time, ascent time and stop time, that is 45 minutes.

After each dive, the dive supervisor should assist divers in reviewing decompression calculations and computers so that a safe profile can be planned for the next dive.

An example of a template for a dive safety log is available at appendix 2.

1.3.15 Diver's Log

1.3.15A Entry-level certificate divers

The employer/self-employed person should ensure persons doing an entry-level certificate complete a divers log for their own records. The divers log should include:

- (a) date of dive
- (b) operation number of the dive, that is, sequential numbering of each of the dives for any one day
- (c) location and nature of dive site, for example, boat or shore diving
- (d) environmental conditions at the dive site
- (e) time in
- (f) time out
- (g) maximum depth of the dive
- (h) bottom time
- (i) the decompression tables followed by the diver
- (j) any emergency or incident of special note which occurred during the dive, for example, failure of diving equipment or emergency decompression
- (k) any discomfort or injury suffered by the diver
- (l) depth and duration of safety stop

1.3.15B Diving workers and certificated divers

The employer/self-employed person should advise all diving workers and certificated divers to complete a diver's log for their own records.

1.3.16 Flying after diving

1.3.16A All divers

The longer the period between diving and subsequent flying, the less likely it is that decompression illness will occur.

All divers should be advised, therefore, that after diving, they should wait a minimum of 12 hours before flying in pressurised aircraft. Where divers have had daily multiple dives for several consecutive days or have made dives that require decompression stops, the minimum time before flying after diving should be extended to 24 hours.

1.3.17 Diving and moving vessels

The employer or self employed person should ensure that the risks of divers being injured or killed by moving vessels is minimised or eliminated. In determining control measures, the following systems should be considered:

- (a) Propeller guards for tender vessels operating in the area where diving is taking place and which are under the control of the employer.
- (b) Using buoys or markers to separate diving activity from vessel activity.
- (c) Using appropriately sized and displayed flags (Code A) to indicate diving activity (Note: this control measure is only effective where the flag is displayed where diving is taking place, not just in the vicinity).
- (d) Ensuring lookouts maintain a watch for approaching vessels and are part of a communications system to allow contact to be made with the approaching vessel in a timely manner.
- (e) Ensuring dive workers are familiar with dive sites and able to navigate competently.
- (f) Adopting systems of work to minimise or eliminate the chances of these injuries occurring.

1.3.18 Divers and marine jellyfish stings

This section has application in some Queensland waters and at times of year where divers are at risk from severe marine jellyfish stings, particularly *Chironex Fleckeri* and *Irukandji (Carukia barnesi)* and related species.

The employer or self employed person should ensure that divers are advised of:

- (a) the risks of marine jellyfish,
- (b) where to access first aid, and
- (c) appropriate precautions.

The employer or self employed person should undertake a risk assessment to determine the risk of marine jellyfish stings.

Part 2 Conducting recreational snorkelling

2.1 What is this part about?

This part of the code offers advice to persons conducting a business or undertaking including, employers, self-employed people and workers in the recreational snorkelling industry on how they can make recreational snorkelling a healthier and safer activity.

This code does not cover snorkelling in a swimming pool, but covers other recreational snorkelling where an employer or self-employed person conducts recreational snorkelling as part of his or her undertaking.

This part also includes guidance from the **Workplace Health and Safety Regulation 1997** in so far as it applies to the control measures outlined in Section 2.2.

The meaning of some terms used in this part may be found in section 1.2

2.2 Health and safety control measures specific to recreational snorkelling

This section outlines some control measures, which can be used to manage specific risks related to recreational snorkelling. Parts 3 and 4 of this code give further information on control measures and the risk management process.

The employer/self-employed person should:

- (a) carry out a risk assessment of their own workplace and workplace activities to ensure the control measures they choose are suitable for their workplace and the tasks being undertaken**
- (b) ensure all snorkelling is subject to co-ordination by a person or persons who have been appointed by the employer/self-employed person for that purpose. Snorkelling procedures should be documented along with the responsibilities of lookouts, snorkelling supervisors, snorkelling guides and other workers with respect to health and safety. It is important that responsibilities are clearly allocated and the snorkelling procedures to be followed are known to all parties.**

2.2.1 Ensuring no persons are left behind

Section 86H of the *Workplace Health and Safety Regulation 1997*, 'Count of all persons on board to be made and recorded', requires that:

A count of all persons must be made and recorded when an employer or self-employed person uses a boat to transport persons to, or to the vicinity of, a recreational snorkelling site.

Before the boat departs for the recreational snorkelling site, the employer or self-employed person must ensure a crew member:

- (a) counts all persons on board; and
- (b) makes a written record of the count; and
- (c) verifies the count -
 - (i) by signing the record; or
 - (ii) if the record is made electronically - by entering in the record the name of, and a unique identifier for, the crew member.

Example of a record made electronically-

A record made on a computer

If anyone leaves the boat permanently for alternative transport to shore or another vessel, or if an additional person permanently joins the boat, the employer or self-employed person must ensure a crew member:

- (a) counts the persons leaving the boat as they leave it; and
- (b) counts the persons boarding the boat as they board it; and
- (c) makes a written record of each of the counts; and
- (d) makes a written record of the number of persons currently on board; and
- (e) verifies the information recorded under paragraphs (c) and (d) -
 - (i) by signing the written record; or
 - (ii) if the record is made electronically - by entering in the record the name of, and a unique identifier for, the crew member.

Before the boat departs from the recreational snorkelling site or its vicinity, the employer or self-employed person must ensure a crew member:

- (a) counts the persons on board; and
- (b) makes a written record of the count; and
- (c) compares the count with the last count recorded under this section to ensure the counts agree; and
- (d) makes a written record of the comparison; and
- (e) verifies the information recorded under paragraph (b) and the comparison –
 - (i) by signing the record; or
 - (ii) if the record is made electronically - by entering in the record the name of, and a unique identifier for, the crew member.

The employer or self-employed person must keep each record made under this section for a least 1 year.

Two types of systems may be used to carry out the count:

Passive count systems, for example, a head count

These systems require little participation by the people being counted. They tend to be quicker and less obtrusive but are also more susceptible to error. If passive systems are used, the count should be done twice, and independently, by different crew members.

An example of a template for making a count of all persons on board is available at appendix 1.

Active count systems, for example, roll calls, tagging or signing systems

Active count systems require the people being counted to actively participate in the counting process. These systems tend to be slower than passive systems but are less prone to error.

The use of an active system is preferred, but for vessels carrying over 50 people, passive systems may be more appropriate. As with any other system, it is important the adopted process is clearly known to all workers and the responsibility for completing the count is clearly allocated to a person or persons on each day.

The employer/self-employed person should ensure all other people on board the vessel are clearly informed of the counting process to be followed.

2.2.2 Medical conditions

Section 86I of the *Workplace Health and Safety Regulation 1997*, 'Advice about medical conditions', requires that:

If an employer of self-employed person conducts recreational snorkelling they must ensure that each person who intends to do recreational snorkelling is advised that:

- (a) snorkelling can be a strenuous physical activity and may increase the health and safety risks for persons suffering from:
 - (i) any medical condition that may be made worse by physical exertion, for example, heart disease, asthma and some lung complaints; or
 - (ii) any medical condition that can result in loss of consciousness, for example, some forms of epilepsy and some diabetic conditions; or
 - (iii) asthma that can be brought on by cold water or salt water mist; and
- (b) the person should tell the lookout, snorkelling supervisor or snorkelling guide if the person has any concerns about a medical condition.

Employers and self-employed persons should advise all persons intending to undertake recreational snorkelling that snorkelling can be a strenuous activity, even in calm conditions.

Older persons are more likely to suffer from diagnosed and undiagnosed medical conditions that may be made worse by physical exertion, for example heart disease and stroke. As exact ages of persons intending to snorkel are seldom available, employers and self-employed persons should advise all persons intending to undertake snorkelling that there is an increased risk to older persons.

Employers and self-employed persons need also to be aware that some people may panic while snorkelling, especially if they are not experienced and/or they get into difficulty. Panic or strenuous activity can aggravate some medical conditions and certain medical conditions such as heart disease may result in cardiac arrest and death. Similarly epilepsy may lead to unconsciousness and drowning and some medical conditions are made worse through exposure to cold water or salt water mist.

If the lookout or snorkelling supervisor becomes aware that a person is intending to snorkel despite a medical condition, which may increase his or her risk of injury or death, or the snorkeller is an older person, the snorkeller should be advised that it is recommended they:

- a) snorkel in an area which allows the lookout or snorkelling supervisor to offer closer supervision
- b) wear a flotation device which is able to support the wearer in a relaxed state.
- c) Snorkel in a buddy pair.

An example of a method of providing advice about medical conditions to prospective recreational snorkellers is available at appendix 3. Note that this advice is not limited to older snorkellers as some conditions and medications apply to those in all age groups eg asthma and certain medications such as insulin, tranquillisers and pain killers.

2.2.3 Supervision of snorkellers

Section 86J of the *Workplace Health and Safety Regulation 1997*, 'Lookout, guide and rescuer', requires that:

The employer or self employed person may allow persons to do recreational snorkelling only if:

- (a) there is at least 1 person acting as lookout for the snorkelling; or
- (b) the snorkelling is done with a guide and:
 - (i) the guide is guiding 10 snorkellers or less; and
 - (ii) the guide has conducted a proper assessment of the risks involved in not having a lookout; and
 - (iii) it is reasonable having regard to those risks not to have a lookout.

The lookout must:

- (a) be positioned out of the water where the lookout can see the whole area where the snorkelling is taking place; and
- (b) be solely engaged in being the lookout

The lookout or guide must:

- (a) be able to recognise relevant hazards and snorkellers in difficulty; and
- (b) be able to either
 - (i) rescue a snorkeller; or
 - (ii) direct a person who is immediately available and capable of rescuing a snorkeller to rescue a snorkeller; and
- (c) be able to either:
 - (i) provide first aid including expired air resuscitation, oxygen resuscitation and external cardiac compression; or
 - (ii) direct a person who is immediately available and capable of providing the first aid to provide the first aid.

A lookout is taken to be acting as a lookout and a guide is taken to be acting as a guide while occupied in rescuing or directing a rescue or in providing first aid or directing in the provision of first aid as outlined in this section if:

- (a) the employer or self-employed person, or someone on his or her behalf, has conducted a proper assessment of the risk involved in not having another person available to act as lookout or as guide while the lookout or guide is occupied in relation to the rescue of a snorkeller or in the provision of first aid as outlined in this section (86J); and
- (b) it is reasonable having regard to those risks not to have another person available to act as lookout or as a guide.

2.2.3A Lookout

The employer or self-employed person should ensure the lookout:

- (a) is present for the whole time snorkelling takes place, including the time entry to and exit from the water are occurring
- (b) scans the snorkelling area under his or her supervision in an effective and efficient manner
- (c) observes people who are snorkelling
- (d) aims to keep people within the boundaries of the snorkelling area
- (e) has access to binoculars and polarised sunglasses so that visibility across and into the water can be improved

- (f) wears a brightly coloured shirt, wetsuit or other identifying clothing or equipment so the lookout can be recognised easily by snorkellers
- (g) is part of a communication system which is relevant to the snorkelling site and which allows for necessary communication with snorkellers, snorkelling supervisors, snorkelling guides and any other appropriate personnel so that effective and efficient transfer of information can occur. A communication system may include, for example, ordinary voice communication, a loud hailer, 2-way radios, whistles or signalling
- (h) if required, rescues a snorkeller or directs a person who is immediately available and capable of rescuing a snorkeller, to rescue a snorkeller
- (i) has a level of fitness so his or her own health and safety are not compromised if required to carry out or assist in a rescue
- (j) if required, provides first aid including expired air resuscitation, oxygen resuscitation and external cardiac compression or directs a person who is capable of providing the first aid to provide the first aid
- (k) can work as a team member, and follow the procedures in relation to the co-ordination of supervision and of the rescue and resuscitation of snorkellers
- (l) is aware of which snorkellers intend to breath hold dive and provide them with additional levels of supervision.

2.2.3B Snorkelling supervisors An appointed snorkelling supervisor should manage the snorkelling operation and remain at the site whilst snorkelling takes place.

The employer/self-employed person should ensure the snorkelling supervisor:

- (a) can swim and snorkel
- (b) helps and advises snorkellers as they enter the water
- (c) can effectively instruct snorkellers and other persons so that necessary information is delivered in a manner that enhances understanding and increases the likelihood of directions being followed
- (d) can observe snorkellers, particularly when snorkellers first enter the water
- (e) can scan the snorkelling area under their supervision in an effective and efficient manner and can recognise snorkellers in difficulty
- (f) can recognise changes to risks because of snorkeller abilities and behaviour, for example, the increased risks when a poor swimmer is snorkelling or when some snorkellers are skylarking in a crowded aquatic environment
- (g) can recognise hazards and risks of the marine environment at the snorkelling site which can impact on the safety of snorkellers, for example, tides, currents and marine animals
- (h) can work as a team member, and follow the procedures in relation to the co-ordination of supervision and of the rescue and resuscitation of snorkellers
- (i) works in conjunction with the lookout to enhance supervision of snorkellers, for example, when large numbers of snorkellers are in the water, the lookout/s may oversee the whole snorkelling site, while snorkelling supervisors may have special areas of responsibility with particular groups of snorkellers
- (j) is part of a communication system which is relevant to the snorkelling site and which allows for necessary communication with snorkellers, lookouts, snorkelling guides and any other relevant personnel so that effective and efficient transfer of information can occur. A communication system may include, for example, ordinary voice communication, 2-way radios, whistles or signalling

- (k) has access to polarised sunglasses so that visibility across and into the water can be improved
- (l) wears a brightly coloured shirt or other identifying clothing or equipment so the supervisor can be recognised easily by snorkellers
- (m) is aware of which snorkellers intend to breath hold dive and provide them with additional levels of supervision.

2.2.3C Snorkelling guide A snorkelling guide takes a snorkeller or small group of snorkellers on a guided snorkelling tour. The guide should be either in the water with the snorkellers or in a vessel close enough to the snorkellers so communication between the guide and the snorkellers is easily maintained.

The employer/self-employed person should ensure any snorkelling guide:

- (a) can swim and snorkel
- (b) carries out an assessment of people wanting to do the tour before commencement of any tour. Through discussion with any prospective snorkeller, the guide should assess the health, fitness and snorkelling ability of the person
- (c) does not take a person on a guided tour, if the assessment suggests this person's participation would pose an unacceptable health and safety risk to the person or to other persons
- (d) takes small groups only on any snorkelling tour. In deciding the size of any snorkelling group, the guide should consider the health, fitness and snorkelling ability of the persons and the environmental conditions
- (e) ensures the tour has a discrete beginning and end so that snorkellers know when they are under the supervision of a snorkelling guide
- (f) takes a floatation device on the tour so that a snorkeller can use this as a resting station if required. The resting station should be able to support easily at least 1 person
- (g) takes a head count at the beginning and the end of the tour and regularly during the tour
- (h) divides snorkellers into buddy pairs and requests they look out for one another
- (i) is part of a communication system which allows for necessary communication with snorkellers, lookouts and snorkelling supervisors and any other relevant personnel so that effective and efficient transfer of information can occur. A communication system may include, for example, ordinary voice communication, 2-way radios, whistles or signalling
- (j) if required, rescues a snorkeller or directs a person who is immediately available and capable of rescuing a snorkeller to rescue a snorkeller
- (k) has a level of fitness so his or her health and safety are not compromised if required to carry out or assist in a rescue
- (l) if required, provides first aid including expired air resuscitation, oxygen resuscitation and external cardiac compression or directs a person who is immediately available and capable of providing the first aid to provide the first aid
- (m) can work as a team member, and follow the procedures in relation to the co-ordination of supervision and of the rescue and resuscitation of snorkellers
- (n) is aware of which snorkellers intend to breath hold dive and provide them with additional levels of supervision.

2.2.3D Ratio of lookouts/snorkelling supervisors to snorkellers

The ratio of lookouts/snorkelling supervisors to snorkellers needs to be determined through the risk management process. Parts 3 and 4 give further information on risk management. In determining the number and location of lookouts and snorkelling supervisors for a particular snorkelling site, the following factors should be considered:

- (a) the size, type and location of the snorkelling area and control measures already in place to minimise the risks to snorkellers. For instance, a snorkelling area bounded on most sides with ropes and buoys and with resting stations for snorkellers would normally require less intense supervision than a similar snorkelling site without boundaries and resting stations
- (b) environmental conditions which could impact on the safety of snorkellers, for example, if a strong current is running, the water is deep or snorkellers have to swim some distance to reach a reef, then increased supervision may be necessary
- (c) number of snorkellers in the water
- (d) ability of snorkellers to easily understand instruction and advice given about snorkelling. If communication between lookouts/snorkelling supervisors and snorkellers is difficult, this could increase the likelihood of an incident because of misunderstandings. Increased supervision therefore, might be appropriate
- (e) snorkelling ability, fitness and confidence levels of snorkellers. It is realised a thorough assessment may not be possible, however, lookouts and snorkelling supervisors should be able to gauge a person's snorkelling ability, fitness and confidence levels through discussion with the person and/or observation. For instance, in observing a somewhat anxious, elderly person going snorkelling, it would seem prudent to give closer supervision to that person until the snorkelling supervisor was satisfied that this close supervision was no longer required. The lookout in scanning the snorkelling area may deem it sensible to observe this person a little more closely than other snorkellers who appear to be at lower risk of an accident
- (f) skills and abilities of supervisory staff
- (g) type and effectiveness of equipment at the snorkelling site, for example, rescue equipment and two-way radios.

2.2.4 Snorkelling equipment

The employer/self-employed person should ensure that masks fins and snorkels supplied to snorkellers are:

Supplied in an appropriate size range (including children's sizes) to ensure a good fit

- (a) Maintained in good condition
- (b) Kept clean and sanitised between uses.

2.2.5 Instruction and advice to snorkellers

The health and safety of snorkellers can be at risk if they have inadequate knowledge, skills or experience related to snorkelling. For instance, some people may panic while snorkelling. Panic can contribute to faulty decision making, breathing difficulties and fatigue. Instruction and advice can help the likelihood of snorkelling related panic and accidents. The person giving the information should have knowledge, skills and experience in snorkelling, and the ability to pass on to others this knowledge and skills.

Before snorkelling, snorkellers should be given advice relating to the following:

- selecting and using snorkelling equipment
- the snorkelling environment
- dealing with certain problems

Where appropriate, demonstrations should be used to enhance understanding.

2.2.5A Selecting and using snorkelling equipment

The employer/self-employed person should ensure snorkellers are advised:

- (a) how to adjust and fit masks, snorkels and fins
- (b) how to clear water from the mask and snorkel
- (c) how to use masks, snorkels and fins
- (d) what to do in the case of equipment failure

2.2.5B Snorkelling environment

The employer/self-employed person should ensure advice on the snorkelling environment covers:

- (a) the area where snorkelling is to take place and any relevant environmental conditions, for example, boating channels, marine animals, wind and tide strength and direction
- (b) location of lookout/s and snorkelling supervisors
- (c) location and use of flotation devices such as buoys and rest stations.

2.2.5C Dealing with certain problems

The employer/self-employed person should ensure this advice covers:

- (a) practising snorkelling beside a platform, boat, or in shallow water before venturing further afield
- (b) snorkellers being aware of their own limitations in the water and taking these into account when snorkelling
- (c) the location and availability of life jackets, wetsuits or other flotation devices which can be used by snorkellers
- (d) the communication system and signals between lookouts/snorkelling supervisors and snorkellers, for example, signals a snorkeller can use to indicate he or she requires assistance, or how snorkellers are advised when to return to the vessel
- (e) how to lift and keep the face clear of the water by moving into an upright position
- (f) how to use the buddy system whereby two snorkellers ensure they always are snorkelling within a short distance of each other and they watch out for one another
- (g) if persons have not snorkelled before, cannot swim, or have any concerns about snorkelling they should discuss these with a snorkelling supervisor prior to snorkelling
- (h) abstaining from drinking alcohol prior to snorkelling
- (i) managing the risks of sun exposure or hypothermia (if appropriate) for example, through the use of clothing, sunscreen, wetsuits and covering up from the wind on leaving the water
- (j) if persons intend to breath hold dive:
 - The risk posed to breath hold divers of hypoxic blackout, which if undetected will lead to serious injury, unconsciousness, or death.
 - This risk is increased significantly for breath hold divers who hyperventilate by taking repeated (more than 3 or 4) deep breaths before

descending or who do deep dives. Consequently divers are strongly advised not to hyperventilate in this manner.

- Experienced breath hold divers are at particular risk in that they do longer and deeper dives.
- Breath hold divers should always dive in buddy pairs where one buddy remains on the surface and observes the other buddy whilst they are diving.
- Breath hold divers using weight-belts should be carefully weighted to ensure that they are neutrally or positively buoyant whilst at the surface. The weight belts should have a quick release mechanism and divers should be familiar with its operation.

Further information on this issue can be found on the Workplace Health and Safety website:

<http://www.whs.qld.gov.au/subject/diving.htm>

2.2.6 Instruction and advice to non-English speaking snorkellers

A non-English speaking snorkeller is one who cannot understand and speak any English, or whose grasp of the English language is such that he or she is not able to readily understand or question any instruction or advice given in English.

Before non-English speaking people go snorkelling, the employer/self-employed person should ensure an interpreter explains and instructs the snorkellers in a language in which the snorkellers are fluent. If no interpreter is available, visual aids or instruction sheets should be used to instruct non-English speaking snorkellers. Instruction sheets should be written in a language the snorkellers understand. Dive Safety Information Sheets have been translated into nine languages and have been distributed to dive boat operators. They are also available from the Workplace Health and Safety website as follows: <http://www.whs.qld.gov.au/subject/diving.htm>

If an interpreter or instruction sheet is not available in the required language for a non-English speaking snorkeller, close supervision (by a snorkelling supervisor) should be provided when the snorkeller first enters the water. In this instance, close supervision means having the snorkelling supervisor initially positioned close enough to the snorkeller so that, if necessary, the supervisor can readily give assistance to the snorkeller. Close supervision should be maintained until the supervisor is satisfied that it is no longer necessary.

2.2.7 Emergency plans

The employer/self-employed person should ensure snorkelling vessels have written emergency snorkelling plans to deal with emergency situations. These emergency plans should be made readily available to workers who should be familiar with them.

Situations covered by written emergency plans should include:

- (a) first aid
- (b) rescue
- (c) evacuation
- (d) missing persons.

2.2.8 Rescue of a snorkeller

Procedures, equipment and personnel should be in place so that any rescue of a snorkeller and, if required, delivery of expired air resuscitation and external cardiac compression can begin as soon as possible after a snorkeller in difficulty is sighted. It must be remembered that lack of oxygen for as little as 3 minutes can lead to permanent brain damage.

Effective and efficient rescue and resuscitation procedures should be developed giving consideration to the following factors:

- (a) size, type and location of the snorkelling area
- (b) appropriateness of rescue procedures to the snorkelling site
- (c) adequacy of the communication system so that clear messages and information can be relayed to the appropriate personnel, including emergency service personnel, with the minimum of delay
- (d) location of lookouts/snorkelling supervisors and their skills and fitness levels. Rescuers should have knowledge and skills in snorkelling and in the management of snorkelling related incidents, injuries and illness. They should also have a level of fitness so their own health and safety are not compromised, and be dressed to maximise the likelihood of a successful rescue, for example, by wearing fins and being dressed in clothing that will not hinder a rescue
- (e) availability, locality and appropriateness of any rescue equipment such as rescue boards, tenders, flotation devices and ropes. Any rescue vessels or equipment should be maintained in a ready condition and positioned so they can be used to reach a snorkeller in distress with the minimum of delay. An appropriate powered tender vessel should be maintained, in a ready condition, in the water for the purpose of rescue during snorkelling operations.

2.2.9 First aid and oxygen

Timely and appropriate use of first aid, is an important factor in the treatment of a snorkelling related injury. Oxygen administration may be an important part of resuscitation, or for use with any snorkeller who is breathing but who is in respiratory or cardiac distress.

The employer/self-employed person should ensure:

- (a) a first aid kit is available at the snorkelling site. The contents of this kit should be appropriate to the treatment required for injuries that may occur during snorkelling and to the number of snorkellers
- (b) a qualified person is available to carry out first aid treatment, including expired air resuscitation, cardio-pulmonary resuscitation and oxygen administration. This person should be on the surface at the snorkelling site.
- (c) an oxygen system capable of providing a spontaneously breathing person with an inspired oxygen concentration of as near as possible to 100%. The equipment shall also facilitate oxygen enriched artificial ventilation of a non-breathing person. The person/s administering the oxygen should have received training in the correct use of the system

- (d) oxygen equipment and oxygen levels are checked daily by a person who has been trained to do this correctly. Any other maintenance of the oxygen system should be carried out of an authorised service agent
- (e) sufficient oxygen is available to supply an injured person, taking into account the location of the snorkelling site and access to medical facilities.

2.2.10 Snorkelling and moving vessels

The employer or self employed person should ensure that the risks of snorkellers being injured or killed by moving vessels is minimised or eliminated. In determining control measures, the following systems should be considered:

- (a) propeller guards for vessels under the control of the employer
- (b) using buoys or markers to separate snorkelling activity from vessel activity
- (c) using appropriately sized and displayed flags (Code A) to indicate snorkelling activity (Note: this control measure is only effective where the flag is displayed where snorkelling is taking place, not just in the vicinity)
- (d) ensuring lookouts maintain a watch for approaching vessels and are part of a communications system to allow contact to be made with the approaching vessel in a timely manner
- (e) adopting systems of work to minimise or eliminate the chances of these injuries occurring.

2.2.11 Snorkellers and marine jellyfish stings

This section has application in relevant Queensland waters and at times of year where snorkellers are at risk from severe marine jellyfish stings, particularly *Chironex Fleckeri* and *Irukandji (Carukia barnesi)* and related species.

The employer or self employed person should ensure that snorkellers are advised of:

- (a) the risks of marine jellyfish
- (b) where to access first aid,
- (c) appropriate precautions.

The employer or self employed person should undertake a risk assessment to determine the risk of marine jellyfish stings.

Part 3 General hazard area - diving and snorkelling operations

There are some hazards which are, to greater or lesser degrees, present at all workplaces. This section covers 5 of these general hazards.

In the following general hazard areas of plant, noise, hazardous substances, manual handling and workplace environment **examples only** of control measures are given.

The employer/self-employed person should carry out a risk assessment of their own workplace and workplace activities to ensure that the control measures they choose are suitable for their workplace and the tasks being undertaken.

3.1 Plant

Injuries which can result from the use of or exposure to plant include lacerations, amputations, fractures, crush injuries and bruising.

In the recreational diving and snorkelling industry, plant includes compressors, scuba tanks, life jackets, masks, snorkels, fins, wetsuits, tenders, motors, rubbish bins as well as any machinery and equipment on board vessels, such as kitchen equipment and appliances.

3.1.1 Some control measures to prevent or minimise the risk of injury from plant

The employer/self-employed person should ensure:

- (a) plant is suitable for the work or activity being done, for example, life jackets are available in a range of sizes which ensure comfort for the wearer and in a colour that can be easily seen in the maritime environment
- (b) plant is being used properly and safely
- (c) plant that has been modified has not created risks to people's health and safety
- (d) plant is serviced, maintained and tested according to manufacturer's instructions and appropriate records are kept of this servicing, maintenance and testing
- (e) operators are trained, and where required, hold relevant certificates
- (f) workers and at risk visitors wear appropriate protective equipment if no other protection is possible
- (g) adequate and appropriate guarding is installed to prevent people coming into contact with moving parts, for example, propeller guards are attached to the motors of tenders and rescue vessels (refer to Appendix 4 - appropriate powered tender vessels)
- (h) health and safety information on plant from manufacturer's, importers and suppliers is obtained when the plant is purchased.

Further information related to this issue can be found on the Workplace Health and Safety website:

<http://www.whs.qld.gov.au/subject/diving.htm>

3.2 Noise

Excessive noise can result in hearing loss. It can also create other problems such as stress leading to tiredness, irritability and headache. It can cause dizziness, raise blood pressure and increase heart rate. Noise increases the risk of accidents by disguising sounds of approaching danger or warnings, and affecting balance, concentration and communication among people.

Excessive noise is defined in 2 parts as noise in excess of the exposure standard, namely:

- (a) an 8 hour exposure of 85dB(A) which refers to an average of the total sound energy of 85 decibels received over 8 hours, and

- (b) a peak value of 140dB which represents the upper limit of 140 decibels to which a person may be exposed to at any time. This level of noise can cause immediate hearing damage.

Generally speaking, if it is necessary to raise your voice to be heard by others who are less than a metre away, noise may be a problem at your workplace. On a vessel however, the wind factor and not excessive noise, may make voices hard to hear.

3.2.1 Some control measures to prevent or minimise the risk of exposure to noise

The employer/self-employed person should ensure:

- (a) noise emission data are obtained from suppliers and that suitable plant with the lowest noise level is selected
- (b) devices which will reduce noise, such as mufflers or specially designed mats under motors, are used where appropriate
- (c) noisy equipment is separated from people by enclosing it, for instance, in a sound-proofed area
- (d) regular maintenance on plant is carried out
- (e) work practices are arranged so people spend a limited time in a noisy environment
- (f) personal hearing protectors are provided. These should be supplied to people in the area where noise is excessive and when other measures to reduce the risk of hearing loss are not suitable. The employer/self-employed person should provide training in the use of these protectors. When selecting hearing protectors, the employer/self-employed person should ensure they are appropriate to the wearers, the work environment and to the noise problem in the workplace
- (g) areas where noise is excessive are signposted. These are areas that have noise levels above 85dB(A) over an 8 hour period. These areas should be signposted as 'hearing protection areas' and the boundaries clearly defined. No person should enter a 'hearing protection area' during normal operation, even for brief periods, unless appropriate personal hearing protectors are worn.

3.3 Hazardous substances

Exposure to hazardous substances can lead to skin complaints, loss of feeling to fingers and toes, external or internal burns, respiratory complaints, cancer and death.

Hazardous substances are used widely in industry and employers and self-employed persons need to be very sure before deciding their workplace does not have any.

Hazardous substances include:

- (a) acidic or caustic cleaning products
- (b) chlorine
- (c) anhydrous ammonia (a refrigerant)
- (d) flammable substances such as fuels, oils, gases and lubricants.

3.3.1 Some control measures to prevent or minimise the risk of exposure to hazardous substances

If hazardous substances are used at the workplace, the employer/self-employed person **must**:

- (a) keep a register which contains a list of all hazardous substances used at the workplace and the current Material Safety Data Sheet (MSDS) for each hazardous substance used. MSDSs can be obtained from chemical suppliers. Manufacturers, importers or suppliers of substances must show that the health and safety effects of the substance have been established and they must make this information available
- (b) undertake risk assessment as soon as possible after the substance is first used
- (c) ensure all hazardous substance containers are labelled so the contents can be readily identified and used correctly. A hazardous substance must not be transferred from one container to another unless the new container is properly labelled. A hazardous substance should not be transferred if there is a risk that it will react with the new container or residue in the container
- (d) make relevant information available to all persons who could be exposed to a hazardous substance. A copy of the MSDS must be kept close to where any hazardous substance is being used so a worker who may be exposed can easily refer to the MSDS
- (e) train all workers who may be exposed to a workplace hazardous substance in the safe use of that hazardous substance. The employer/self-employed must keep records of this training.

The employer/self-employed person also should:

- (a) remove the hazardous substance, wherever possible, or replace it with a substance which is less hazardous
- (b) keep the work area well ventilated by opening doors and windows and/or using extraction ventilation systems so vapours and dust are kept to a minimum
- (c) provide proper storage facilities for hazardous substances
- (d) have emergency planning arrangements in case an emergency involving hazardous substances occurs
- (e) apply the precautions for use, and safe handling information from the relevant MSDS.

3.4 Manual handling

Manual handling activities can lead to strains, sprains and serious long-term injuries to various parts of the body including backs, shoulders, arms and hands. Manual handling includes lifting, carrying, lowering, pushing, moving, holding or restraining any object, as well as working in the same position or holding the same posture for long periods, particularly when bending or reaching is involved. Manual handling activities in the diving industry include:

- (a) assisting people out of the water
- (b) rescuing divers in difficulty
- (c) kitchen work/catering
- (d) moving equipment such as oxygen cylinders and scuba tanks
- (e) holding awkward positions, particularly in small spaces.

3.4.1 Some control measures to prevent or minimise the risk of injury from manual handling

The employer/self-employed person should ensure:

- (a) mechanical handling equipment is used where possible

- (b) tasks are varied or, where repetitive tasks are carried out for long periods, rest periods are used to break-up any length of time spent on repetitive activity
- (c) items which are used frequently, are stored or shelved between knee and shoulder height
- (d) the majority of tasks carried out by standing workers are at waist height and within easy reach
- (e) workplace layout is designed so twisting movements are kept to a minimum
- (f) adequate training and supervision are available to workers
- (g) incorporating an in-house work preparation program, such as an exercise program, to suit worker's tasks. The effective use of such a program would require expert advice.

3.5 Workplace environment

Workplace environment is a broad term and includes:

- (a) floor surfaces, building and fixtures, lighting and electrical fittings in your workplace, air quality and temperature, water temperature and surface conditions, and marine animals
- (b) general housekeeping at the workplace, for example, making sure that aisles and exits are not obstructed
- (c) an emergency plan so that people can respond quickly and effectively to any incident that happens in the workplace
- (d) other work environment issues like infectious diseases, violence, sun and wind exposure, working at heights or in confined spaces.

Given the range of risks which can be associated with the work environment, injuries or diseases can differ markedly. For instance, slips, trips and falls can result in sprains or fractures, while extremes of temperature can result in heat stress or hypothermia.

Risk can be controlled by using hierarchy of controls in Step 3 Risk control measures in Part 4.

3.5.1 Some control measures to prevent or minimise the risk of injury from the workplace environment

- (a) elimination/substitution of the hazard, for example, replacing slippery flooring with non-slip flooring
- (b) engineering controls, for example, keeping the hazard and people apart by putting a locked door on a confined space
- (c) administrative controls such as adjusting the time and conditions of a person's exposure to the risk. For example, rotating tasks so people do not spend too long in hot or cold conditions
- (d) providing personal protective equipment when other ways of controlling risks cannot be used, for example, providing snorkelling equipment to snorkellers.

Part 4 Risk Management

Risk management plays an important role in the management of workplace health and safety. It is a logical and systematic approach which can result in a reduction in the incidence of injury and disease. The 4 steps to risk management are:

- Step 1 **Identifying the hazard**
- Step 2 **Assessing the risk**
- Step 3 **Determining the appropriate control measures**
- Step 4 **Putting control measures in place and reviewing and reviewing or monitoring them**

A hazard is something with the potential to cause injury or disease. A risk is the probability of a hazard resulting in an injury or disease. For example, electricity is a hazard but the risk of electrocution may be small unless, for instance, installation and maintenance are not carried out properly, or electrical equipment has not been used properly.

Step 1 Identifying the hazard

Methods to identify hazards include:

- (a) consultation with workers
- (b) observations and inspections of the work site using, for example, a hazard checklist
- (c) incident, accident and injury data
- (d) identifying the work processes
- (e) material safety data sheets and product labels
- (f) consultation with specialist practitioners, industry associations, unions and government bodies.

Step 2 Assessing the risk

Risk assessment is something we do all the time, not just at work. For example, crossing a street has an element of risk. When crossing a street that has little traffic, a person looks both ways, listens for traffic then crosses. If however, the street is very busy, a person might use a pedestrian crossing (a control measure).

In assessing the risks, the employer/self-employed person should consider the following:

- (a) the nature of the hazard, and associated risks
- (b) the hazard severity and health effects
- (c) duration and frequency of exposure to the hazard
- (d) the probability that an event will occur.

Risk can be thought of in everyday terms:

1. There are risks to health and safety that are minor and unlikely to occur. No further action is required other than maintaining the risks at that level.
2. There are risks that are minor but may occur frequently. The outcome may not be serious but someone may be injured. Appropriate corrective action should be taken.
3. There are risks so great that alterations to working arrangements must occur as a matter of priority.

Step 3 Risk control measures

Risk control measures (in order of preference) include:

1. Elimination/Substitution which is a permanent solution and should be attempted in the first instance. The hazard is either eliminated altogether or substituted by one that presents a lower risk. This could involve the elimination of a toxic substance with a less toxic substance.
2. Engineering controls which involve some change to the work environment or work process which places a barrier, or interrupts the transmission path, between the person and the hazard. Examples of engineering controls are propeller guards over propellers or a locked door on an engine room.
3. Administrative controls reduce or eliminate exposure to a hazard by adherence to procedures or instructions. Such controls may include reducing the exposure to a hazard by job rotation, advice and instruction to snorkellers and a person count.
4. Personal protective equipment is worn by people as a barrier between themselves and the hazard. The success of this control is dependent on the protective equipment actually being worn or worn correctly, as well as being chosen correctly. Masks and snorkels are examples of personal protective equipment.

Attempts should be made to select control measures from the top of the hierarchy, for example, if possible choose 1 before 2, or 2 before 3. In some instances, it may be necessary to use a combination of control measures to achieve the desired level of risk control. The environment in which diving and snorkelling take place means, however, a heavy reliance on personal protective equipment.

Step 4 Putting control measures in place and reviewing them

To ensure new risks are not created, the employer/self-employed person should review the control measures before and after they have been put in place. Periodic monitoring and assessment of control measures should be carried out to ensure continued effectiveness.

Further information on this issue can be found in the Risk Management Code of Practice on the Workplace Health and Safety website:

<http://www.whs.qld.gov.au/subject/riskmanage.htm>

Appendix 1A: Example of written record made of count of all persons on board

For vessels transferring persons

DATE:

VESSEL:

Before departure to site	Permanent arrivals/departures	Before departure from site 1	Before departure from site 2
Passengers <input style="width: 40px; height: 20px;" type="text"/> + Crew <input style="width: 40px; height: 20px;" type="text"/> + Others <input style="width: 40px; height: 20px;" type="text"/> = Total number of persons on board <input style="width: 40px; height: 20px;" type="text"/>	Total persons on board <input style="width: 40px; height: 20px;" type="text"/> - Persons leaving <input style="width: 40px; height: 20px;" type="text"/> + Persons boarding <input style="width: 40px; height: 20px;" type="text"/> = New total number of persons on board <input style="width: 40px; height: 20px;" type="text"/>	Passengers <input style="width: 40px; height: 20px;" type="text"/> + Crew <input style="width: 40px; height: 20px;" type="text"/> + Others <input style="width: 40px; height: 20px;" type="text"/> = Total number of persons on board <input style="width: 40px; height: 20px;" type="text"/>	Passengers <input style="width: 40px; height: 20px;" type="text"/> + Crew <input style="width: 40px; height: 20px;" type="text"/> + Others <input style="width: 40px; height: 20px;" type="text"/> = Total number of persons on board <input style="width: 40px; height: 20px;" type="text"/>
Verification of Number Signature: _____	Verification of Number Signature: _____	Verification of Number Signature: _____	Verification of Number Signature: _____

Appendix 1B - Example of written record made of count of all persons on board

For vessels not transferring persons

Before departure to site	Before departure from site 1	Before departure from site 2
Passengers <input style="width: 50px; height: 25px;" type="text"/> + Crew <input style="width: 50px; height: 25px;" type="text"/> + Others <input style="width: 50px; height: 25px;" type="text"/> = Total number of persons on board: <input style="width: 50px; height: 25px;" type="text"/>	Passengers <input style="width: 50px; height: 25px;" type="text"/> + Crew <input style="width: 50px; height: 25px;" type="text"/> + Others <input style="width: 50px; height: 25px;" type="text"/> = Total number of persons on board: <input style="width: 50px; height: 25px;" type="text"/>	Passengers <input style="width: 50px; height: 25px;" type="text"/> + Crew <input style="width: 50px; height: 25px;" type="text"/> + Others <input style="width: 50px; height: 25px;" type="text"/> = Total number of persons on board: <input style="width: 50px; height: 25px;" type="text"/>
Verification of Number Signature: 	Verification of Number Signature: 	Verification of Number Signature:

APPENDIX 2: Example of a Dive Safety Log

DATE:	DIVE 1 LOCATION: Forbes Island						
1/01/2004	DIVE SUPERVISOR: John Begood						
Diver's Name	Buddy	Time In	Time Out	Max. Depth (m)	Bottom Time/Dive Time	Repetitive Dive Group	Signature
1. J.Smith	B.Brown	09:00	09:23	25	23	M	<i>J. Smith</i>
2. B.Brown	J.Smith	09:30	09:53	25	23	M	<i>B. Brown</i>
3.
4.
5.
6.
LOG ENTRY COMPLETED AND SIGNED							
Yes <input checked="" type="checkbox"/>				Yes <input checked="" type="checkbox"/>			
DIVE SUP.SIGN <i>J. Begood</i>				MASTERS SIGN <i>P. Watson</i>			
Incidents etc	Dive 1:		Incidents -	Nil			
			Problems -	Nil			
			Discomfort -	Nil			
			Injury -	Nil			
			Other -	Nil			
Environmental			Surface Conditions -	Calm			

DATE	DIVE 2 LOCATION: Forbes Island								
1/01/2004	DIVE SUPERVISOR: John Begood								
Diver's Name	Surface Interval	Repetitive Factor	Buddy	Time In	Time Out	Max. Depth (m)	Bottom Time/Dive Time	Repetitive Dive Group	Signature
1. J.Smith	2:37	A	B.Brown	12:00	12:23	25	23	P	<i>J. Smith</i>
2. B.Brown	2:37	A	J.Smith	12:30	12:53	25	23	P	<i>B. Brown</i>
3.
4.
5.
6.
LOG ENTRY COMPLETED AND SIGNED									
Yes <input checked="" type="checkbox"/>					Yes <input checked="" type="checkbox"/>				
DIVE SUP.SIGN <i>J. Begood</i>					MASTERS SIGN <i>P. Watson</i>				
Incidents etc	Dive 2:			Incidents -	Nil				
				Problems -	Nil				
				Discomfort -	Nil				
				Injury -	Nil				
				Other -	Nil				
Environmental				Surface Conditions -	Calm				

Conditions	Currents -	0	Conditions	Currents -	0
	Visibility -	10m		Visibility -	10 m
	Maximum depth -	25m		Maximum depth -	25 m
	Other-	Nil		Other-	Nil

Appendix 3

An example of a documented method of providing advice about medical conditions to prospective recreational snorkellers

Reference the Workplace Health and Safety Regulation 1997 Section 86I and the compressed Air Recreational Diving and Recreational Snorkelling Code of Practice 2000 Section 2.2.2

Medical Declaration – recreational snorkellers

I (print name)..... declare that I have been advised snorkelling can be a strenuous physical activity and may increase the health and safety risks to me if I am suffering from:

- A. Any medical conditions that may be made worse by physical exertion.** *For example heart disease, asthma, some lung complaints*
- B. Any medical condition that can result in loss of consciousness.** *For example some forms of epilepsy and some diabetic conditions*
- C. Asthma that can be brought on by cold water or salt water mist**

I have been advised that snorkelling can be a strenuous physical activity even in calm water and that older persons are at an increased risk of death and injury due to a higher incidence of medical conditions made worse by physical exertion, such as heart disease and stroke.

I have been advised to tell the lookout, snorkelling supervisor or snorkelling guide if I have any concerns about a medical condition.

Signature _____ Date _____

Parent's or guardian's signature for minors

Note:

It is recommended persons with a medical condition and older persons intending to snorkel should:

- A. Snorkel in an area which allows the lookout or snorkelling supervisor to offer closer supervision.**
- B. Wear a flotation device that will support the wearer in a relaxed state.**
- C. Snorkel in a buddy pair**

Appendix 4

Appropriate powered tender vessels

The Code of Practice for Compressed Air Recreational Diving and Recreational Snorkelling states in Section 1.3.12A and 2.2.8(e) Rescue of a diver and snorkeller; “an appropriate powered tender vessel should be maintained in a ready condition, in the water for the purpose of rescue during diving or snorkelling operations”.



Plate 1. An example of an appropriate powered tender vessel¹

Availability

If no powered tender is provided, then other ways must be adopted and followed that give the same level of protection against the risk. This can be tested by considering comparable rescue scenarios and establishing whether the system adopted provides a system of rescue that gives the same level of protection as having a powered tender vessel.

An example of this may be when the main diving vessel provides the same speed, availability and effectiveness of rescue as having a separate tender vessel. Typically larger vessels and sailing vessels would not be able to provide the same speed, availability and effectiveness of rescue as having a separate tender vessel.

Appropriateness

Any vessel used for diving and snorkelling rescue purposes must be appropriate for the task. *The Plant Code of Practice 2005*, section 5.4 states:

“You should ensure plant is only used where it is capable of performing safely within the design criteria and manufacturer’s instructions.”

Factors to consider include:

1. Manoeuvrability and speed
2. Draft
3. Entry and Egress (Consideration should be given to potentially unconscious persons, tender crewing levels and stability)
4. Line of sight between master of the tender and persons in the water
5. Ability to safely transport an unconscious person
6. Readiness for use.

Examples of appropriate tender styles include inflatable style vessels. Examples of inappropriate vessels include high-sided vessels and vessels with limited access points.

Propeller guards

The Plant Code of Practice 2005 states in section 5.2 Design and Construction, “Guarding should be used to minimise the risks associated with some hazards”.

It also states in section 5.7 Plant with Moving Parts “Employers should ensure that all risks from injury from moving parts are assessed and controlled”.

¹ Photograph supplied by and approved by Yambay Pty Limited, Cairns, Queensland, 4870



Plate 2. An example of a guarded outboard propeller²

The Code of Practice for Compressed Air Recreational Diving and Recreational Snorkelling states at section 3.1.1 (g) Plant; “adequate and appropriate guarding is installed to prevent people coming into contact with moving parts, for example propeller guards are attached to the motors of tenders and rescue vessels”. Powered vessels used for rescue purposes, and other vessels required to manoeuvre amongst divers and snorkellers should have propeller guards where appropriate.

² Photograph supplied by and approved by Midcoast Marine, Miami Queensland, 4220