

# *Artificial Climbing & Abseiling Structures*

## *Adventure Activity Standards (AAS)*

for  
Organisations, Guides & Leaders  
Conducting Adventurous  
Activities for Participants  
(Commercial or Non-Commercial)

Supported by



Government of South Australia  
Office for Recreation and Sport



**Adventure Activity Standards: Artificial Climbing & Abseiling Structures**  
**November 2006**

**Introduction to AAS**

The South Australian Adventure Activity Standards (AAS) have been developed to assist organisations, guides and leaders to plan and undertake outdoor adventure activities with dependent participants. This document should be used as part of your organisation's risk management program.

Participants undertaking adventure activities may already have a degree of skill and experience in a particular adventure activity, and as such may be less dependent upon the group leader for guidance and instruction. In these situations, the AAS should be adapted to reflect the experience of group members and the particular situation of the adventure activity.

Regardless of the extent to which the AAS is adopted, each organisation, guide and leader has a duty of care to its participants to have completed a risk analysis of the activity, and developed a risk management approach to address potential and unexpected situations.

The AAS have been prepared with the involvement of a wide cross-section of South Australia's and Victoria's outdoor industry, and reflects minimal acceptable standards of behavior expected when planning and undertaking outdoor adventure activities with inexperienced and dependent participants.

**Acknowledgement**

In the development and implementation of AAS in South Australia, Recreation SA acknowledges the work of the Outdoor Recreation Centre Inc. in initiating, coordinating and developing AAS through many outdoor recreation groups within Victoria.

These AAS can now be adapted nationally across a number of outdoor adventure activities, and Recreation SA has reviewed and amended the content, in consultation with South Australian outdoor industry representatives, to reflect South Australia's legal, government, environmental, social, education and industry conditions.

The implementation of the AAS in South Australia is recognition of the State's commitment to national minimum industry standards for outdoor adventure activities.

### **Important disclaimer**

The information contained in this publication has been gathered through widespread industry consultation. All reasonable attempts have been made to ensure that it is accurate, relevant and current at the date of publication. Nevertheless, the Adventure Activity Standards (AAS) are only advisory and general in nature and should not be relied upon to meet individual or specific requirements. They are recommendations for voluntary application to adventure activity providers and participants. They are not binding on any person or organisation and have no legal force.

The AAS will not cover each and every circumstance of an adventure activity. Nor can they, when adhered to, entirely eliminate the risk or possibility of loss or injury. Consequently they should be used as a guide only. Whenever using the information contained in this publication or any AAS, all adventure activity providers should carefully evaluate the specific requirements of the intended adventure activity and the persons participating in it. If necessary, advice should be obtained from a suitably experienced and qualified professional person.

This publication and the information and the AAS it contains are made available on the express condition that the Government of South Australia (Office for Recreation and Sport) and Recreation SA, together with the authors, consultants and advisors who have assisted in compiling and drafting this publication and the AAS are not rendering professional advice to any person or organisation and make no warranties with respect thereto and to the maximum extent permitted by law disclaim all liability and responsibility for any direct or indirect loss, damage or liability which may be suffered or incurred by any person as a consequence of reliance upon anything contained in or omitted from this publication.

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- Vertical Reality Climbing Gym
- University of South Australia
- Department for Environment and Heritage Workplace Services
- Venture Corporate Recharge

**Adventure Activity Standards: why have standards?**

AAS are voluntary guidelines for undertaking adventure activities in a manner designed to promote:

1. **Safety** for both participants and providers
2. **Information** for providers against legal liability claims and criminal penalties
3. **Assistance** in obtaining insurance cover.

These AAS are **not** statutory standards imposed by law.

**Basis of legal liability**

Legal liability for personal injuries or property damage is primarily governed by the law of:

1. Contract
2. Negligence.

Although provisions of statutes such as the *Trade Practices Act 1974 (Cth)* and the *Recreational Services (Limitation of Liability) Act 2002* are also relevant.

**Claims in contract**

For there to be a claim in contract there must be a legally enforceable agreement (i.e. a contract) between the person who has suffered injury or loss and the provider against whom the claim is being made. For example, there is a contract between a provider and a client, where the provider agrees to provide services for payment. The contract can be in writing or oral, or both. The claim in contract can only be made by one party to the contract against the other party, unlike a claim in negligence, which is not so limited.

Apart from the express terms of the contract, the law will usually imply certain terms into a contract that require a service provider to do a number of things when providing that service. Those implied terms might include a requirement to provide competent guides and instruction, safe equipment, and a general requirement to exercise the degree of reasonable skill and care which is to be expected of a competent provider. Some of these terms will be implied by sections of the *Trade Practices Act 1974 (Cth)* and the *Recreational Services (Limitation of Liability) Act 2002*.

If injury or damage occurs because the provider did not exercise reasonable care in the provision of the service, a Court can find there was a breach of the contract entitling a party to claim compensation (damages) for the loss or injury suffered.

**Claims in negligence**

Over recent years the law of negligence has undergone substantial legislative change in South Australia. These changes are set out in the *Civil Liability Act 1936 (SA)*.

The essential elements of a claim in negligence are:

1. a duty of care being owed by the provider to take reasonable measures for the safety of their clients/participants

2. a breach of this duty of care
3. the breach of the duty of care being a cause of the harm suffered by the participant.

A successful claim in negligence against a provider will result in an award of damages against that provider to compensate for the loss or injury thereby suffered.

Although the law does not automatically impose a duty of care, it is likely such a duty will be imposed when one party (the provider) assumes responsibility for another in the provision of adventure activities.

The duty of care is a legal requirement imposed by the courts on a provider to take reasonable care to protect a client or participant from foreseeable harm or loss.

If a claim is made and a court finds that a duty of care is owed, the court must then decide what is the appropriate level or standard of that duty of care, to determine if the provider has acted reasonably or alternatively has breached the duty of care. The standard of care is determined by all the relevant circumstances and the particular facts of each case. A court will have regard to the experience of the providers and the clients, the conditions at the time, and ultimately may seek the guidance from experts in the field. A court will find that the standard of care has not been met, (i.e. there has been a breach of the duty of care) if the evidence, on the balance of probabilities, establishes that the provider has not acted reasonably in the circumstances. If that conduct has caused loss and damage the provider will be liable to pay damages to compensate the party who has been injured or has suffered a loss.

For example, in an outdoor recreation activity some participants could find themselves in a situation suited to more advanced participants. There may be persons in the group who have been lead to believe by the provider that a certain skill level was not required and enrolled to join a group mis-described as being for 'beginners'.

If an accident occurred due to their inexperience, and these 'novice' participants were injured, it is possible that a legal action to recover damages might be based as follows:

- in the law of contract, against the provider, if it can be demonstrated that the provider incorrectly described the group as being for 'beginners'
- in the law of negligence, against the leader and guide, as well as the provider because of a failure to adequately instruct, advise and perhaps supervise the group.

The duty of care of the provider is higher than that placed on the ordinary citizen because the provider has agreed to provide services for a reward or assumed a responsibility of care for others, e.g. by holding him/herself out as experts or specialists who have agreed to take participants into potentially dangerous or remote situations.

Whilst not an exclusive list the following is a guide to the standards that should be addressed by any provider, guide, instructor, teacher or staff member:

- ensure the activity is appropriate for the skills and experience of the intended participants
- ensure the intended activity is appropriate given the known, expected and forecast conditions

- provide adequate staff/leader supervision
- provide competent and appropriately trained staff/leaders
- provide safe and properly functioning and adjusted equipment
- provide reasonable food and safe shelter (if relevant to the activity)
- provide reasonable guidance, instruction and direction to participants
- depending on the activity, have an adequate knowledge of the area in which it is to take place and be able to provide reasonable first aid, emergency backup and rescue.

The law will require the provider to protect participants from known hazards, but also from those risks that could arise (that is, those that the provider, instructor, teacher or staff member guide should reasonably have foreseen) against which reasonable preventative measures could be taken.

In these circumstances, in order to limit potential for legal liability and to minimise the risk of injury, each organisation needs to implement risk and safety management processes, which have identified foreseeable risks and put in place measures to control such hazards. For the same reasons, all providers, leaders or guides ought, as a minimum, to have completed appropriate first aid and activity specific training.

This is particularly so where the activity is a specialised one. In these circumstances, as a participant will be seen as relying on the expertise of the provider, leader or guide, a high duty of care will be imposed because they will be considered as having a responsibility for the control, guidance and protection of the participant.

## **Defences against claims by participants**

### **No Negligence**

The most obvious defence to a claim in negligence is for the operator to establish that he/she acted with all reasonable care in the circumstances: that is, was not negligent.

In attempting to do so the following questions must be considered:

- was the risk of harm foreseeable?
- was the risk not insignificant?
- would a reasonable operator have taken additional precautions that would have prevented the harm?

In determining whether a reasonable operator would have taken additional precautions a court will consider the following (amongst other relevant things):

- the probability that harm would occur if care were not taken
- the likely seriousness of the harm
- the burden of taking precautions to avoid the risk of harm
- the social utility of the activity that creates the risk of harm.

**Voluntary Assumption of Risk**

If it can be proved, on the balance of probabilities, that a participant was fully aware of and freely accepted the risk of suffering injury in an activity then this will be a defence to a claim in negligence. It will not be a defence, however, if the injury was caused by the inexperience or incompetence of the provider, defective equipment, inadequate supervision or instruction as it is highly unlikely that any participant would have consented to accept such risks.

If the risk of harm was an obvious one then there is a rebuttable presumption that the person who suffered the harm was aware of the risk.

**Duty to Warn**

A person who owes a duty of care to another person to give a warning, or other information in respect of a risk, satisfies that duty if reasonable care is taken to give that warning, or other information. This is potentially very important in the context of an Adventure Activity where it may be prudent for the provider to give all participants printed instructions and warnings (where appropriate) and obtain signed acknowledgements.

However, section 38 of the *Civil Liability Act 1936 (SA)* prescribes that there is no duty to warn of an 'obvious risk', or if there is an applicable code of practice in force under the *Recreational Services (Limitation of Liability) Act 2002*. Further to this, the section does not apply if the plaintiff has requested advice or information about the risk from the defendant or if the defendant is required to warn the plaintiff of the risk either by law or pursuant to the code in force under the *Recreational Services (Limitation of Liability) Act 2002*.

**Contributory Negligence**

If the accident was caused or contributed to by lack of reasonable care on the part of the participant then this will be a partial defence, according to the apportionment of responsibility made by the court between the provider and the participant. In cases of extreme acts of negligence by the participant, contributory negligence can be very high (e.g. 80–90%) and sometimes a complete defence.

**Inherent Risks**

A person is not liable in negligence for harm suffered by another person as a result of an inherent risk. An inherent risk is a risk of something occurring that cannot be avoided by the exercise of reasonable care.

**Waiver to Sue/Exclusion of Liability Agreements**

Amendments to the *Recreational Services (Limitation of Liability) Act 2002*, and the *Trade Practices Act 1974 (Cth)* enables providers of 'recreational services' to modify or exclude a duty of care owed to a consumer by the use of a waiver or limitation of liability. This will only apply where there is no registered code in relation to the recreational service. The amendment will only apply until 1 August 2007, after which time the only manner in which liability will be able to be modified with respect to a recreational service will be in accordance with a registered code.

## **Good Samaritans, Volunteers, Apologies**

### **Good Samaritans**

Under the *Civil Liability Act 1936 (SA)* (as amended) an individual who provides assistance, advice or care to another person in an emergency, where there is no expectation of payment by money or other means, will not be able to be sued for any injury or harm he/she causes if acting in good faith without recklessness (provided the good Samaritan's ability was not significantly impaired by alcohol or drugs).

### **Volunteers**

Pursuant to the *Volunteers Protection Act 2001 (SA)* volunteers are protected from liability for injury to another when they are acting in good faith and without recklessness in the course of carrying out community work for a community organisation. This immunity does not operate if the volunteer's ability to carry out the work properly was impaired by drugs or the volunteer was acting outside the scope of activities authorised by the community organisation or contrary to instructions given by the community organisation.

### **Expressions of Regret**

The *Civil Liability Act 1936 (SA)* provides that no admission of liability or fault is to be inferred from the fact that a person expressed regret in respect of the incident relating to the injury.

### **Limitation on claims for personal injury damages**

Pursuant to the *Civil Liability Act 1936* (as amended) an injured person cannot obtain damages for pain and suffering unless the injured person's ability to lead a normal life was significantly impaired by the injury for a period of at least seven days or medical expenses of at least the prescribed minimum have been reasonably incurred in connection with the injury. The assessment of pain and suffering is assigned a scale value on a scale running from zero to sixty, sixty being the most severe form of injury.

The Act also imposes a cap on damages for pain and suffering of a maximum of \$241,500 (indexed annually) together with other limitations in respect of damages for mental harm, and claims for both past and future economic loss.

### **Applying the Adventure Activity Standards**

Having suitable risk management programs and strategies in place, and ensuring the AAS are met, will minimise the likelihood of injury or loss. Evidence of compliance with such programs and the AAS may also assist in the legal defence of claims and in helping to establish that a provider and its leaders have acted reasonably in the circumstances (i.e. were not negligent). It is also likely such programs will assist providers in obtaining more favourable insurance arrangements.

### **Disclaimer**

The above comments on legal liability in Contract and Negligence and defences and limitations thereto, including recent legislative changes, do not purport to be a complete and accurate description of the law on these topics. The State Government of South Australia (Office for Recreation and Sport) and Recreation SA, its servants and agents are not by these comments providing legal advice to any person, company or organisation and make no warranties with respect thereto and to the maximum extent permitted by law disclaim all liability and responsibility for any direct or indirect loss, damage or liability which may be suffered or incurred by any person, company or organisation as a consequence of or in reliance upon anything contained in, implied by, or admitted in this document.

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**Activity description**

AAS for Artificial Climbing and Abseiling Structures (AC&AS) are written specifically for the construction and use of any artificial climbing structures. AAS describe the aspects relating to the safety of both group and individual participants and differ significantly from the AAS for Rock Climbing and Abseiling on Natural Surfaces because the controlled environment of an AC&AS (constant conditions, emergency access, lack of remoteness) significantly alters the inherent risks.

**Bouldering**

Bouldering may take place on natural rock and/or artificial structures. It involves rock climbing within 2 metres of the ground where adequate safety can be implemented by 'spotting' rather than requiring additional systems of harness, belay, ropes, etc.

Bouldering serves many purposes, including warming up, introduction to climbing techniques and advanced skills training. The following are brief bouldering activity standards and are intended to be interpreted in conjunction with the following AAS for AC&AS.

**Location**

Areas with potentially hazardous ground areas (impact zones) must not be used for bouldering activities involving groups of dependant participants. (See 1.4.2 Flooring for designated bouldering areas)

**Procedure**

1. The emergency strategy for bouldering activities must be consistent with that of the relevant climbing standards (natural surfaces and/or AC&AS)
2. Bouldering must not be conducted above 2 metres from the ground unless significant additional measures are undertaken to control a fall.
3. Constant supervision by a competent person must be provided with participants in constant visual contact at all times.
4. The ground surface must be considered adequate to minimise injury resulting from a fall and must have a uniform surface with no gaps (i.e. foam blocks, mattresses, and/or gymnasium pads with a single tarpaulin cover ensuring no spaces, and spotting is strongly recommended).

Where the fourth option is not possible participants must be 'spotted' and appropriate spotting techniques must be demonstrated and practised before participation.

**Top rope climbing**

Top rope climbing may take place on natural rock and/or artificial structures. It involves rock climbing where the participant is safeguarded using systems involving ropes, harness and a belay system. In top rope climbing the climbing rope is always above the climbing participant.

In top rope climbing there is only one pitch to climb and the belay system may be at the top of the pitch (top belay), through a pulley system at the bottom of a pitch (bottom belay) or use a mechanical ascending device (self belay).

Top rope climbing may take place as a distinct climbing activity, for warming up prior to a lead climbing ascent, as an introduction to climbing techniques or for advanced skills training.

### **Single pitch lead climbing**

Single pitch lead climbing may take place on natural rock and/or artificial structures. It involves rock climbing where the participant is safeguarded using systems involving ropes, harness and a belay system.

In single pitch lead climbing there are two levels of participation; as the leader of the climb and as the second. For the leader, the climbing rope is usually below the climbing participant and the leader places intermediate anchors or runners on the climb into which the climbing rope is clipped. For the second, the climbing rope is usually above the climbing participant and is similar to top rope climbing, except that the second must also remove the runners placed on the climb by the leader.

In single pitch lead climbing, there is only one pitch to climb and the belay system will be at the bottom of a pitch while the leader climbs, and at the top of the pitch while the second climbs.

In single pitch lead climbing the climbing party may walk or scramble along an easy route away from the top of the cliff or they may abseil down the cliff using anchor points attached to the cliff.

Single pitch lead climbing may take place as a distinct climbing activity, or for skills training prior to taking part in multi-pitch lead climbing.

### **Single pitch abseiling**

Single pitch abseiling takes place on natural rock and artificial surfaces, including building walls and purpose-built structures. It involves abseiling where the participant is guided using ropes, harness, a belay system and safety systems for abseiling.

The leader establishes a belay anchor system, and checks the safety systems of the participants. The leader will determine which safety systems are appropriate for the type of abseiling pitch, and skill level of the participant. This may involve the participant having the primary responsibility for their own safety on the abseil. The participants progress down the cliff or structure using the abseiling method and safety system determined by the guide.

In single pitch abseiling on natural surfaces the abseiling party may walk or scramble along an easy route away from the bottom of the cliff before walking back to transport away from the activity site.

### **Definition of terms used**

**Organisation:** A group of persons organized for a particular purpose and assuming the role of providing a climbing activity on an AC&AS (Activity Provider) being commercial (for profit) or non-commercial (not for profit/community group).

**Participant:** A person whose welfare is the responsibility of a guide or trip leader or instructor. (NOLRS 'Client')

**Guide, assistant, staff:** A person who assumes the responsibility for a group of participants on an adventure activity—'climbing'—with the intention to offer the experience of the activity and to satisfy the objectives of the session (commercial or not).

**Trip leader/supervisor:** A senior guide who assumes the responsibility of the guide and co-ordinates the entire group, including supervision, to satisfy the objectives of the group session and/or individual participants session (commercial or not).

**Urban:** Urban trips are defined in AAS as any trip which is at no point any more than 2 hours from emergency medical attention.

**Remote:** Remote trips are defined in AAS as any trip which is at any point more than 2 hours from emergency medical attention.

**Emergency medical attention:** Definitive medical attention is that of a medically qualified person: paramedic or doctor. This may be getting definitive medical attention to the injured participant/s or by getting the injured participant/s to definitive medical attention.

**Competency:** The minimum industry agreed standard of skill and knowledge necessary for a specific activity being conducted at a specific level.

**Instructor:** An imparts knowledge and skills to enable the participants to independently participate in the activity. Can work in a controlled site-specific environment or remote areas.

### Summary of abbreviations

AAS	Adventure Activity Standards
DEST	Department of Education, Science and Training
NTIS	National Training Information Service
ITAB	Industry Training Advisory Board
SRTA	Sport and Recreation Training Australia
NOLRS	National Outdoor Leaders Registration Scheme
Cth	Commonwealth

## 1 Planning

The planning section of the activity standards contains the documented administrative aspects of AAS. It is here you will find the requirements that must be completed before undertaking any activity plan and in the case of AC&AS, before using the structure.

### 1.1 Design and construction

The design and construction of an AC&AS are essential to both the enjoyment and the safety of the experience offered. A major advantage of an AC&AS as a climbing environment is the relatively safe and constant environment. It is important that a AC&AS meets certain engineering criteria. A qualified professional engineer experienced in AC&AS should be used to design and certify an AC&AS as safe to use. Although there is no standard within Australia specifying the design and construction of an

AC&AS, the European standard *EN12572: 1998 Artificial Climbing Structures* will help engineers and constructors with guidelines to follow. (This European standard may be used in Australia although there is no code of conduct stating that this must be followed.)

## 1.2 Top rope attachment

As with the design and construction of the AC&AS, it is essential that the attachment systems are specifically designed and tested to sustain the required loadings. The top rope attachment may be on the wall, roof or other structure but should be tested to *AS/NZS 1891.4 fall-arrest systems and devices—Selection, use and maintenance*. In addition, it must be designed in such a way that the intended attachment or anchor is obvious (no confusion with wall fittings, fire extinguishers or other pipes), and that it is not possible to attach the rope inadvertently in a manner in which it would be incapable of sustaining the required loadings.

## 1.3 Engineers' certification

Certification of the AC&AS design and construction, top rope attachment and anchors (where relevant) should be certified by a qualified engineer. The engineer carrying out the assessment should supply this certification and the following specifics must be included:

- for all anchors assessed, a list identifying all individual components in place at time of testing
- where the AC&AS is attached to a building or additional structure, certification must also be included to state that the additional building structure is sound and has the structural integrity to take the loading from the AC&AS
- a certified engineer must provide all certification
- some states have legal requirements for structures that are used for amusement or rides: check with any relevant work place services within in the state of operation to see if any specific licence or permit is required.

## 1.4 Flooring/energy absorption

### 1.4.1 Flooring for designated climbing areas

Much discussion has taken place regarding the specific benefits of energy absorbent flooring for a climbing area. The objectives of absorbent flooring are to minimise the likelihood and severity of injuries resulting from:

- a climber being lowered too rapidly by the belayer
- an uncontrolled climber descent from a low level (start of a climb) where the belayer has not adjusted the slack appropriately.

Flooring for the potential impact zone of any designated climbing areas (at least 2 metres from the wall, overhang, roof anchor, climbing rope, or climbing ladder where provided) should be covered by suitable energy absorbent flooring, which should be in accordance with Australian standard *AS/NZS 4422:1996 Playground surfacing—specifications, requirements and test method*.

In circumstances where it is reasonably impractical for absorbent flooring (overhangs, restricted space, and infrequently used outdoor locations), then extra consideration must be given as a result of a specific risk assessment for that area. Options may include but will not be limited to enhanced supervision, friction pulleys and climber/belayer competency assessments.

#### 1.4.2 Flooring for designated bouldering areas

Areas designated as bouldering areas (permanent or temporary) must have appropriate matting for the height and complexity of the specific area being used. The surface must be considered adequate to minimise injury resulting from a fall and must have a uniform surface with no gaps (i.e. foam blocks, mattresses, and/or gymnasium pads with a single tarpaulin cover ensuring no spaces: this should be in accordance with Australian standard *AS/NZS 4422:1996 Playground surfacing—specifications, requirements and test method*).

#### 1.4.3 Restrictions to participation

Individual restrictions to participation on an AC&AS should apply to participants deemed to be under the influence of alcohol or drugs, including prescription drugs which may affect performance, and to participants who are unable or unwilling to follow instructions or safely operate equipment.

#### 1.4.4 Documentation

Documentation that may be required for any use of an AC&AS includes the following:

- emergency strategy (refer 2.2 First aid): this should be documented to facilitate consistency, ease of access and efficient response speed
- health forms: record awareness of any conditions, which may affect a participant's performance and possible ways of managing the condition.
- acknowledgement of risk: written verbal or visual representation of the assumption of risks associated with the activity and an agreement from the participant of their understanding and willingness to continue with the activity.

## 2 Responsibility of the supervisor

This section includes all aspects of the activity that involve supervision. This section covers the basic requirements and specific competency required of supervisors and staff at an AC&AS.

### 2.1 Competencies

In the absence of any established and recognised national training qualification for all AC&AS activity providers, any supervision or leadership must be provided by a person or persons having satisfied a process of skill acquisition which must be at least equivalent to that described by the following selected units from the Department of Education, Science and Training (DEST).

A statement of attainment for these units is not compulsory. However the inclusion of this section is intended to provide a suitable benchmark describing the skills that a leader

should have as described within the National Outdoor Recreation Industry Training Package.

### Leadership and management skills

These units relate to generic competency (soft skills) expected of any individual in a position of leadership or management in the outdoors.

Code	Unit name
SRXEMR001A	Respond to emergency situations
SRXFAD001A	Provide first aid
SRXGRO001A	Facilitate a group
SRXGRO002A	Deal with conflict
SRXRIK001A	Undertake risk analysis of activities
SRXINU002A	Apply sport and recreation law
SRXOHS001B	Follow defined OHS policy and procedures

### Outdoor recreation skills

Code	Unit name
SROODR002A	Plan outdoor recreation activities
SROODR005A	Guide outdoor recreation sessions
SROOPS002B	Plan for minimal environmental impact

## 2.2 First aid

Decisions on the level of first aid should be based upon the risk assessment and emergency strategy for this adventure activity. Leaders and guides should have the appropriate first aid skills commensurate with the planned activity, the skills of the group and the location of the activity, including remote areas.

For any high rope activity session the supervisor must also hold at least a current Level 2 equivalent certificate or higher should the site remoteness suggest that requirement.

The following provides an overview of equivalent first aid training with St John Ambulance and Australia Red Cross.

**Level 1:** Basic First Aid (Resuscitation) involves basic skills and knowledge in order to recognise and provide immediate first aid for a range of common illnesses and injuries and minimise the severity of injury or sudden illness.

Leaders and guides with Basic First Aid should be able to:

- perform CPR (resuscitation)
- manage breathing emergencies: expired air resuscitation (EAR)
- control bleeding, wounds and bandaging
- manage extremes of heat and cold
- manage injuries to bones, joints and muscles
- manage poisoning, bites and stings

**Level 2:** Intermediate or Senior First Aid involves skills and knowledge to recognise and provide immediate first aid for a range of common illnesses and injuries and minimise the severity of injury or sudden illness.

Leaders and guides with Intermediate or Senior First Aid should be able to:

- define the principles of first aid
- demonstrate knowledge of basic human anatomy
- recognise and manage both a conscious and an unconscious casualty
- perform effective CPR and expired air resuscitation (EAR)
- identify a range of common illnesses and injuries
- control bleeding and care for various types of wounds
- recognise and manage injuries to bone or soft tissue
- recognise and manage medical conditions that may need emergency care, including heart attack, stroke, asthma, diabetes and epilepsy
- use practical first aid skills using prepared and improvised materials
- demonstrate knowledge of first aid management for a range of common illnesses and injuries.

Use of an AC&AS must only be initiated once a thorough emergency strategy has been drafted which must include but is not limited to:

- procedures for dealing with any reasonably foreseeable emergencies such as those requiring emergency evacuation (fire, bomb threat)
- procedures for dealing with any reasonably foreseeable activity related emergencies (Injury, rescue, and medical complications).

All supervising personnel (supervisor, staff, guide) must be adequately trained in these procedures.

### **2.3 Specific responsibilities of the supervisor**

The following are the responsibilities of a supervisor. Individual tasks may be delegated but the responsibility remains with the supervisor.

Whenever participants are using an AC&AS, it is the supervisors' responsibility to ensure that the level of knowledge, ability, skill and equipment of each participant is appropriate for the level of difficulty and complexity of the climbing routes used and to receive acknowledgement from all participants that he or she, as the supervisor, is responsible for the activity. These responsibilities include:

- confirming group experience/capabilities
- ensuring all attendees/participants receive and understand a full clear briefing (See 2.5 Communication and authority)
- ensuring that all equipment is used correctly at all times

- maintaining constant awareness of the physical and psychological condition of the participants
- controlling the pace of the participants and rest if necessary
- maintaining constant surveillance/observation of participants to ensure, to the best of your ability, that all participants avoid situations beyond their known capabilities
- appropriately designating responsibility to support staff and participants
- checking all equipment on return
- ensuring all incidents are reported.

#### **2.4 Assistant to the supervisor**

All designated assistants to the supervisor (climbing gym staff, leaders, guides, participants) must be provided with appropriate induction training and more specific training and assessment in relation to the required competencies for the role they undertake: climber supervision, equipment inspection and maintenance, climber/belayer instruction.

#### **2.5 Communication and authority**

As with all activities involving formal participation, all participants, guides and supervisors must use an agreed and understood system of communication. It is essential that this system be devised before the activity and agreed as a component of the pre-activity briefing.

Every communication system requires a clear, full briefing. This may be delivered differently according to organisational preference and, where relevant, the length and complexity of an activity, but must include and is not limited to each and every element of the following:

- introduction of supervision (staff, guide) and explanation of respective authority
- introduction of the climbing area to be used (and not to be used where relevant)
- explanation of routes or specific areas (route, bouldering area, novice, expert)
- the nature of the activity, inherent risks, emergency strategy, group conduct
- equipment use and fit
- climbing procedures
- explanation of communication requirements
- emergency procedures, i.e. fire evacuation, where to get first aid, etc.

#### **2.6 Supervision ratios**

Obvious variables will affect the supervision ratios. These include the nature of the AC&AS (indoor climbing gym, indoor climbing wall and outdoor climbing wall, use of friction pulleys, type and extent of absorbent flooring) and the participants (individuals, groups, a mix of these and experience, competence, fitness of each participant). There

are clearly situations where your judgement will dictate a requirement that there be a smaller numbers of participants per supervisor.

Essential considerations for allocating appropriate supervision include but will not be limited to:

- sufficient to detect and correct the use of improper procedures
- layout of the facility and number of belay stations available
- number of participants
- ability and experience of participants
- age of participants
- requirements of participants (disabilities)
- experience of supervisors
- nature of activity (climbing as groups, climbing as individuals, bouldering)
- sufficient staff should be available to ensure continuous line of sight supervision
- only the number of participants that can be adequately supervised should be permitted to use the AC&AS at any time and spectators must view participants from a location deemed safe and must not interfere with the activity.

A guide to follow for instructors/guides to participants ratio for AC&AS would be to focus on active rope ratios. The maximum ratio during an instructional session would be one qualified person to four active ropes. Each rope being supervised must be within easy reach of the instructor.

### 3 Equipment

Equipment requirements vary with the objectives of the activity and the environmental conditions likely to be endured. When planning equipment requirements for an AC&AS activity it is important to plan ahead as much as possible for all eventualities taking into account the appropriate information and forecast conditions where relevant.

#### 3.1 Climber attachment method

There are several recognised options available for climber attachment on an AC&AS. The nature of the activity allows for individual preference and provided care is taken to instruct and assess participants, guides, supervisors and assistants it is not the place of AAS to 'dictate' specific details as long as the method of attachment at least complies with harness manufacturer's instructions.

It is however, essential that the method used to attach the climbing harness to the belay rope should not rely on a single point of failure, i.e. a screw gate karabiner. It must be a recognised climbing attachment (documented in training manuals) and it is recommended that it include a back-up connection.

The recommended method is 'clip and tie' utilising both screwgate karabiner and rethreaded figure of eight.

### 3.2 Belay systems and connections

Belay systems and connections are essential to the safe use of an AC&AS. It is important that the components of these systems and connections are clearly visible from the ground and these should be numbered, colour coded or have each component tagged for identification important to maintenance, fault reporting and general condition checks.

Where ground anchors are used, they should be installed and tested by a qualified person. The European standard *EN 12572:1998 Artificial Climbing Structures—Protection Points, stability requirements and test methods* will give an indication on how to test these anchors.

Participants acting as non-anchored belayers must undertake additional assessment and consideration must be given to relative weights (belayer, climber and equipment).

All equipment and components used in a belay system must be specifically designed for use in a belay system, must complement the procedures and systems being used and must be consistent throughout the AC&AS.

### 3.3 Equipment used for an AC&AS

#### 3.3.1 Belay ropes

All climbing ropes used in top rope systems must be certified by the manufacturer as suitable for single rope belay purposes. Appropriate standards include *EN 892 Dynamic mountaineering ropes*, *AS/NZS 4142 Fibre ropes*, and *EN 1891 personal protective equipment for prevention of falls from a height—low stretch kernmantle ropes*.

All climbing ropes in lead climbing systems should be certified by the manufacturer as suitable for this purpose. An appropriate standard is EN 892. Single, twin or half ropes may be used depending on the individual climbing facility's policy and procedures.

#### 3.3.2 Karabiners

**Personal protection system:** If used to connect the climber and belayer to the belay station, karabiners must have a dual opening action (manual locking or automatic locking gate) and be certified for such use by the manufacturer.

**Lead climbing protection points:** Karabiners for use at lead climbing protection points (on the lower ends of quickdraws) may be single opening action (spring-gate).

**Equipment to AC&AS interface:** Any karabiner used to connect equipment to the AC&AS must be a dual action karabiner, a semi permanent connection such as a tube nut connector (e.g. *mallion rapide*) or locked shackle, and must be certified by the manufacturer as suitable for supporting persons.

#### 3.3.3 Harnesses

Only climbing harnesses which comply with European standard *EN 12277 Mountaineering equipment, harnesses, safety requirements and test methods*, UIAA or equivalent, such as *AS/AZS1891.1 Part 1: Safety belts and harnesses*, should be used

Harnesses must also be used, maintained and repaired according to manufacturers' recommendations.

It is recommended that harnesses be used for a maximum of a five-year period. This is standard for harnesses as deterioration may not be visibly identifiable.

### **3.4 Equipment belonging to participants**

Climbing centres, supervisors and guides should be aware that customer or participant supplied equipment may be stored and maintained differently to that of issued equipment. Consideration of this issue is essential.

Climbing centres, supervisors and guides may choose to:

- visually inspect all customer or participant supplied equipment to ensure it is appropriate
- require a customer or participant signature stating that the equipment is appropriate
- implement a policy of no customer or participant equipment use.

All supervisors, guides and assistants must be fully aware of any policy relating to participant supplied equipment and must act appropriately.

### **3.5 Equipment condition, maintenance and storage**

#### **3.5.1 Equipment log**

If an incident is investigated, a certain query will be that of the equipment age, condition and use at the time. To enable such questions to be accurately and easily answered an equipment log should be kept for all equipment used on an AC&AS. This log should contain information sufficient to:

- identify each piece of equipment
- track each piece of equipment (first used, inspection dates and results, any maintenance actions/repairs and when the item should be withdrawn from service).

It is not important how this information is stored but it should be kept for an amount of time deemed reasonable by any relevant business record keeping requirements. (A civil action can still be taken up to seven years after a claimant is injured).

#### **3.5.2 Equipment inspections**

The frequency of inspection, maintenance and repair should be determined by manufacturers' recommendations and your own risk assessment. These checks are likely to include daily, weekly, monthly or even more infrequent checks (every year or two for the AC&AS itself)

To track equipment with more ease, equipment should be easily identifiable (numbered) or isolated (permanently allocated to within one belay system)

Only a competent person can suitably inspect equipment and judgment should err on the safe side. If in doubt remove the item from service until more sound advice is obtained.

#### **3.5.3 Equipment certification**

As already discussed, the AC&AS and the anchors must be assessed to certain standards. It is commonly accepted that these assessments be reassessed by an

independent assessor to the same standards. The time interval for reassessment should vary upon the characteristics of the AC&AS and equipment and the frequency of use. A reassessment strategy should be derived from a risk assessment and should consider:

- frequency of use
- prevailing conditions
- deterioration and wear and tear
- time in service.