

Part 1

Safety Management System Adventure Activities

Annexure B - Safety Management System

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Introduction

This document contains principles of Safety Management System used for creating Safety Guidelines for adventure activities conducted on land, air, and water.

Purpose of this Document

Broadly:

It is expected that Organizations involved in adventure activities should implement 'Safety Management System', which includes

- Analysis of activities with respect to risk element involved
- Guiding these activities in order to ensure safety and consistency
- Control over these operations

This Document assists Organizations to formulate and implement Safety Management System based on ground realities, severity of outdoor activities and type of participant and capabilities of leaders.

The Document believes that following the suggestions and recommendations mentioned herein will

- Enable organizations and individuals to have better control over their operations
- Achieve individual and organisational goals with adequate safety without compromising in enjoyment in outdoors for participants
- And, ultimately, contribute to continuous improvement of safety in adventure

Specifically:

This Document

1. Clarifies role of management of Organization irrespective of its size and nature
2. Strives to provide conceptual clarity behind guidelines and recommendations. Such clarity will foster a) uniformity in operations and b) empower individuals in responsible roles to take safe decisions.
3. Will help organizations and individuals with training and development of persons involved at all levels.
4. Will help build robust foundations for operations which enable organizations and individuals to take on bigger challenges in a

manner which is responsible toward safety of people and various environments.

5. Aims at generating awareness of members of the public in matters of safety in adventure, which will help them make informed decisions about participation in various adventure based programs.

Note:

The purpose of this document is not to hamper any enjoyment and challenge in any adventure activity, nor does it intend to curb the participation of outdoor enthusiasts either in extent or in numbers.

The document does not intend to curb the freedom or the capacity of individuals – especially those in responsible roles – to exercise judgment or take decisions.

How to use this Document?

The document divided in two basic parts

1. Guidelines for formulation of Safety Management System, which provide assistance with respect to various elements of Safety Management System. This is applicable to all Organizations involved in adventure activities irrespective of its nature (commercial or non- commercial) and size.

The document specifically identifies requirements which are recommended for effective safety management system based on recommendations from expert e.g. formal training in first aid for leaders, formal pre-activity communication with participants and so on.

This section provides guidance for developing or fine tuning SOPs applicable to Organizations. This is important as extent or detailing of SOPs depends upon capability of Operators / Leaders, complexity of operations as well as risk encountered.

2. Sample guidelines for actual field operations.

These are recommended practices in the form of guidelines. An Organization should choose relevant guidelines to influence and better their operations. Such choice will be based on size of Organization, resources at disposal, nature and severity of activities, capability of people. Organizations should follow and incorporate recommended requirements.

However, it is expected that the Organizations use these by revising as appropriate to suit their operations and other specific conditions.

There are three subsections viz. for land, air and water-based activities.

Benefits of using this document

1. To improve performance of people – leaders/instructors, contracted service providers and participants
2. To improve Organizational processes for better efficiency and increased safety
3. To enhance ability to take on bigger challenges
4. To enable handling of emergencies more effectively

Note: Not all the guidelines and recommendations involve financial expenditure and point towards managerial and operational aspects that can be handled internally by an Organization.

Definitions

Note: The main text of this document has all words and terms mentioned under 'Definitions' start with a capital letter for enhancing readability.

1. **Adventure Activity:** an activity that involves greater than normal risk which may include a) travel into a relatively undeveloped area in which communication and vehicle contact is difficult and/or uncertain or b) encounter with natural environmental challenges requiring greater reliance upon personal resources than would normally be required in day-to-day life or c) 'soft adventure' that is organized for people with little or no experience in rural, semi-urban and urban areas. In this Document, 'Adventure Activity' and 'Activity' mean the same thing.
2. **Land-based Adventure Activity:** Adventure Activity which is primarily conducted at various geological features like hills, mountains, rock faces, pinnacles, valleys etc. on the earth's surface.
3. **Air-based Adventure Activity:** An adventure activity which is primarily conducted at various locations and which involves using gear that enables people to stay/fly above ground for extended periods of time
4. **Water-based Adventure Activity:** An adventure activity which is primarily conducted in flowing water or flat water (lake) with the use of various kinds of crafts.
5. **Adventure Program:** An event that has one or more Adventure Activities included with specific objectives in mind.
6. **Service Provider:** An individual or organization which provides service/s to the Adventure Program of a contracting organization or individuals (i.e., it is an outsourced resource).
7. **Service:** Service could be in the form of an activity associated with the adventure part of an Adventure Program or an activity which complements the adventure part (e.g., transport to the adventure site, boarding and lodging, etc.).
8. **Experiential Learning based Program:** a program designed using the methodology of experiential learning which uses a series of activities each one of which is followed by a review session where participants derive learnings through reflection in their experiences

9. **Social Environment:** that part of the environment that comprises of local populations and their cultures.
10. **Historical Environment:** the component of the adventurer's environment that comprises of relics of archaeological structures and monuments
11. **Ecological Environment:** the natural environment of an adventurer
12. **Organization:** individual, group of individuals, commercial entity and non-commercial entity organizing any Adventure Program or Adventure Activity
13. **Management:** Policy-making part of the organization. The responsibility for implications of any action taken by the organization lies with the management.
14. **Hazard:** something that can potentially cause harm; objective hazards are largely natural phenomena, and subjective hazards are largely related to human factors.
15. **Risk Potential:** arises when subjective a hazard comes into contact with an objective hazard
16. **Critical Incident:** Any significant incident that demands medication and/or first aid and/or extended care and/or conflict management and/or evacuation of person and/or is a near miss (near miss: an incident that could have had serious consequences).

Scope and Exclusions

This document includes:

The scope of this Document covers land-based adventure, air-based activities and water-based activities.

This Document is applicable to any adventure based program that is announced by an individual or a group of individuals or an Organization, who conducts Adventure activities for participants or novices with or without commercial considerations. An Organization may be registered as a commercial concern or non-profit organisation.

However, the Document would be useful for other outdoor enthusiasts too. This includes individual adventure lovers, families, and group of friends enjoying adventure activities on their own.

This document does not include:

The scope of the documents excludes Sport Climbing Competitions.

Norms followed for sport climbing competitions in India

The Indian Mountaineering Foundation (IMF) conducts sport climbing competitions (competitive climbing on artificial surfaces) at local, zonal and national levels. All competitions follow guidelines which are aligned with rules of International Federation of Sport Climbing (IFSC).

Management Responsibility

Organization needs to be driven for its sustenance, growth as well as achievement of other desirable objectives. In general terms this driving force is known as 'Management'. Responsibilities of Management of an adventure organization are much more than normal business organizations. This is because inherent nature of its activities where safety plays an important role. In other words, management process includes planning, organizing, monitoring, controlling and reviewing safety management system as Management is overall responsible for safety performance of Organization. Management should ensure communication and implementation of Safety Management System at all levels and sections in Organization. Proper communication and understanding of Safety Guidelines play a critical role in effective implementation of Safety Guidelines. Risk management is one of the important functions of Management which is explicitly described in next section of this document.

1. Scope and Objectives of Organization

It is very essential for Organizations need to determine boundaries and applicability of Safety Management System in order to establish the scope.

Organizations are required to determine 'Safety Objectives' and monitor status of the same at frequent intervals, may be on monthly basis. These Objectives are measurable or track able with target level of performance.

2. Provision of Resources

The prime role of Management is to provide adequate resources to the organization in order to conduct operations and activities in safe manner. The resources include Standard equipment as per requirement, trained and qualified manpower. Though, it is true that this needs financial support, it is a myth that it needs fat budgets. One of the objectives of this document is to help Management to clearly specify Mandatory & recommended requirements in order to carry out activities in a safe manner. It is expected that Management reviews current activities to ensure adequate resources are available as per recommended requirements to enhance safety level in the organization. In case such recommendations are not met currently, the Management should consider providing resources to meet those recommendations in a planned manner over a period. In case any gaps are observed, the Management should put a stop to the activity and restart the same after adequate resources are organized.

3. Training and Development

Trained and qualified manpower is an important resource for safe operations. Thus, Management needs to put efforts for systematic training and development of its employees, members or associates.

The training does not necessarily mean only nominating members or employee to external training programs. However, it is strongly recommended to formulate mechanism to conduct in-house training, where, experienced & trained resources available within the organization are utilized. The mechanism includes identification of training needs, develop training modules, imparting training (Class room and field) and evaluate effectiveness of the training.

It is suggested that the Organization nominates budding members to assist leaders and, in the process, learn leadership skills and gain knowledge. This will also help organizations create second line according to succession plan.

4. Periodic Reviews

It is recommended that the Management conducts periodic reviews with the concerned Leaders and other key persons. Such reviews

- Ensure availability of adequate resources in terms of equipment and manpower and other safety aspects planned
- Take action of feedback and complaints received from leaders and participants
- Ensure of completion of planned tasks in regular operations
- Ensure of compliance of statutory requirements

It is also recommended that records of reviews should include decisions on actions planned, responsibilities and timeframes.

5. Root Cause Analysis and Corrective Actions

It is strongly recommended that Management carries out root cause analysis after occurrence of a 'Critical Incident'. The objective of such reviews is to assess root cause/s of Critical Incidents. After assessing root cause(s), corrective action is determined. This is the action taken to eliminate the root cause.

It is suggested that the details of findings and learnings are communicated to Government authorities for dissemination to other organizations to help them to prevent similar incidents in future.

6. Complaint Handling

It is recommended that Management should ensure effective mechanism for receiving complaints and initiation of actions for logical solutions. After resolution of complaint, it is necessary to carry out detailed root cause analysis and corrective actions.

7. Culture Building

Management should build culture of safety in the organization, where safety refers to

- Safety of people (both physical and psychological)
- Safety of environment

Management's actions towards resource allocation, training and development, discussions on safety and environment exhibits Management's intent towards culture building. Management should ensure creation of safe environment in which one feels safe to express emotions, security and confidence and feel challenged to try something new.

8. Assign Responsibilities

It is essential that Management assign roles and responsibilities very clearly to leaders, members, associates and others. The same need to be communicated to the concerned persons to prevent ambiguity.

9. Compliance to Legal Requirements

Management should ensure that the legal requirements applicable to Organization are identified and complied with. This can be one of the points on the agenda for review meets.

Risk Management

This is the basic exercise where Organizations are expected to identify hazards and risks associated with their activities in a comprehensive manner so that controls can be exercised in order to prevent incidents and accidents. This exercise serves as a basis for formulation of 'Safety Management System'. Safety includes People (Participants, Leaders, Guides, Members, Associates, Service Providers, Locals), Environment and Equipment.

Organization should form a **Risk Management Team** comprising of experienced members to look at all the aspects of risk management.

Since it is very important and critical for the Organization to effectively identify hazards and risks, it is recommended that the Organization should make a note of the following

- Risks are specific to each Adventure Activity and Adventure Program. Hence Risk Management Team should conduct Risk review process for each Adventure Activity and Adventure Program.
- Risk assessment should be done prior to each event.

Recommended steps for Risk Management

1. Risk Identification

- List all sub-activities associated with each program. Consider sequence of sub-activities in order to ensure no sub-activity is missed out
- Identify hazards associated with each sub-activity and enter the same in the format given below.
- Identify Risks associated with Hazards as 'What can go wrong' and enter the same in the respective column in the format below. Ensure all hazards and risks are identified.
- Determine actions being taken or required to be taken to prevent the undesirable situation (To minimize risk). To ensure that these actions are to be included in the concerned Safety Guidelines, indicate reference of applicable Safety Guidelines.
- Determine consequences (who/what gets affected) of undesirable situation occurs and its severity (injury/death etc.)

2. Risk Assessment

Level of risk is assessed by its severity (seriousness) and its probability / Frequency of occurrence. That means, the more severe risk with greater probability is more significant.

The Organizations should assess the level of risk and determine the actions as appropriate. Activities with more significant risk would have more stringent controls.

3. Actions to minimize Risk

While considering 'actions to minimize risk' follow the following hierarchy:

- Elimination: Organizations may choose to stop certain activities having highest level of Risk till adequate controls are put in place.
- Substitution: Consider substitution of resources by competent manpower and adequate equipment
- Controls: Ensure implementation of Safety Management System in order to minimize Risk

4. Emergency Preparedness and Response

It is possible that emergency may arise in spite of implementing Safety Management System. Hence, it is recommended that 'emergency preparedness and response plans' are developed

4.1 Emergency Preparedness and Response Plan (EPRP)

Based on the identified potential emergencies, Risk Management Team should prepare EPRP. The EPRP is documented in order to communicate and understood by all concerned Leaders / Instructors and participants.

EPRP to include

- Communication process, including responsibility for internal and external communications. Determine communication equipment e.g. walkie-talkie sets. specific support persons e.g. Mail Runners, in case of very remote locations for quick communication and reporting to the outside world Contact numbers of nearby Medical centers, Medical professionals, Government authorities (Police stations), Rescue teams / organizations, transporters
- Arrangements for Providing First Aid and or Medical Assistance are in place

- Response Protocol assigning responsibilities and Roles of the qualified individuals such as Rescuers, First Aiders, communicators, supervision etc. and to determine the path of handling the crisis.
- Equipment for Search, Rescue, Evacuation and Communication in the Group.
- Information requirement from participants as well as leaders / instructors (Ref Section x on communication)
- Escape routes
- Emergency-cash' to help in handling emergency situations.
- Rescue and Evacuation Protocols and Procedures clearly defining the steps to be taken in case of a crisis
- Mechanism for Incident Reporting including format and communication (Refer Section 11)

4.2 Correctness and completeness of EPRP

Risk Management Team should review EPRP in order to ensure its completeness and correctness prior to its implementation

4.3 Awareness of EPRP

Organization / Leader should ensure that the participants, Leaders, Instructors and other relevant persons are aware of EPRP including their own roles.

4.4 Periodic testing of EPRP

Organization carries out Mock drill to test the Emergency Preparedness and Response Plan at predetermined intervals. Outcomes of tests are studied and documented in order to improve effectiveness of EPRP

4.5 Review and improvement in EPRP

Based on learning from mock drills or any other test carried out or occurrence of actual emergency situation, Organization to carries out a critical review of EPRP.

Risk Management Matrix:

Sr. No.	Sub Activity	Hazards (Cause)	Risk (What can go wrong)	Consequences (who/what gets affected)	Actions to minimize the Risk (Safety Guidelines Ref)

Names of persons conducting risk assessment:

Date completed

Approved by:

Date:

Operations

The significance of safety in operations cannot be stressed enough. Organizations need to have control over operations to maximize safety and enjoyment of all people involved and ensure achievement of desired outcomes of programs. Challenge that an Organization faces is to be consistent in achieving same level of effectiveness on goals and safe performance irrespective of persons in roles of Leaders and other staff. This is especially crucial in the case of Adventure Programs conducted for recreation where participants usually tend to be novices.

1. Safety Guidelines

The organizations need to prepare and adopt Safety Guidelines for various Adventure Activities they undertake. These Guidelines cover all aspects of specific Adventure Activities including but not limited to description of activity in detail, expectations from Leaders, Leaders' competency & qualifications, Participant to Leader ratio, briefings pre-activity & during activity, equipment requirements, instructions to carry out the activities in safe manner etc.

2. Standard Operating Procedures (SOPs)

The factor that helps Organizations facilitate such control over activities and achieve consistency in their safety performance is Standard Operating Procedures (SOPs). Hence, Organizations need to develop their own set of SOPs for the various adventure activities conducted by them. SOPs are expected to describe an activity as well as instruct the concerned leaders in detail as what exactly the leaders are expected to do or communicate with Participants.

Land-based activities

Safety Guidelines related to Land-based Adventure Activities are included in Annexure C of this Document. Annexure F includes Sample Templates and Formats related to Land-based Adventure Activities. These should help Organizations in formulating Safety Guidelines/ SOPs, which would be specific to their activities. A few sample activities are chosen for writing Guidelines in this Document. These would be useful in formulating guidelines for most of other activities conducted by Organizations.

Air and Water-based activities

Annexure D and Annexure E include safety guidelines of Water and Air-based activities respectively.

3. Organization's Responsibilities towards Safety Guidelines

- a. Organizations should develop Safety Guidelines as per recommended content given in Annexure-2B.
- b. Safety Guidelines should contain all the Activities determined by Organization where it is necessary to minimize as per Risk Matrix

- c. Organizations should develop SOPs wherever it is necessary; such Sops are best written in the language that is easily understood by all who are involved in operations (including locals, if applicable).
- d. All stages of activities are firmly guided also by practices as defined by environment friendly principles.
- e. Leaders/instructors and other members/staff understand all Safety Guidelines / SOPs, understand the importance of documentation and are competent to execute all expectations from them. Concerned Leaders / Instructors should be well-versed with the Safety Guidelines / SOPs. Hence, it is recommended that the Leaders / Instructors get trained on Safety Guidelines/ SOPs. The training may also include 'On the Job / Field' training.

Note: *SOPs are not replacement for training. SOPs support training.*

- f. Approval of Safety Guidelines / SOPs: It will be responsibility of Organization's Risk Management Team to review and approve Safety Guidelines / SOPs prior to their implementation.
- g. Safety Guidelines / SOPs for Service Providers: 'Safety' on the field is the prime concern of Organization. Organization should share concerned Safety Guidelines / SOPs with the Service Providers if a particular activity is outsourced to them and they are expected to perform the same behalf of the Organization.
- h. Periodic Review of Safety Guidelines / SOPs: are to be reviewed by Risk Management Team with a predetermined frequency with an objective of making it more effective.

Note:

- Objective of guidelines is to provide general guidance in order to perform an activity to achieve desired results. There is a provision for taking some decisions based on on-field situations and expertise.
- SOPs are specific instructions to persons concerned to perform a task or sequence of tasks, where there is no scope for any deviation from the specified instructions. In case there is a need for revision of Safety SOPs, the same can be done by Risk Management Team of the Organization.

Communication with stakeholders

Effective and open communication with all stake holders of the Organization is important for smooth and safe execution of any adventure activity.

Organization shall maintain open and direct communication in following stakeholders:

- Within Organization
- With Participants of the Adventure Activity
- With requisite government authorities
- With Service Providers

1. Communication within Organization

- Organizational values, goals and culture shall be clearly communicated to all leaders, members and staff. The organization shall ensure that the same are clearly understood by the individuals.
- Organization should clearly communicate Safety Guidelines to be adopted, the work processes and standard operating procedures of Organization to all leaders, members and staff.
- Organization should communicate expectation in the context of program design, risk assessment, execution strategy, emergency response plans and feedback process for planned Adventure program to its leaders and relevant resources like instructors etc.

2. Communication with Participants

Organization should ensure that proper communication takes place with participants before enrolment and at all the stages of adventure activity.

In case of minor participant, Organization should ensure that relevant communication is done with their parents and proper written consent for participation to be taken from them.

Clear and crisp instructions are reflected in the concerned SOPs for effective and consistent communication with participants.

1. Communication with participants during Registration process

- Program information shall be communicated with participants before registration which should include key parameters like
 - Nature of natural elements

- Grade of difficulty
- Fitness expectations,
- Qualifications of leadership team and organizational information,
- Terrain quality,
- Inherent Risk
- Itinerary, Logistic arrangements etc.
- photos in publicity material should accurately depict the activity
- Collection of information from Participants
It is recommended that Organizations collect information from Participants in a prescribe format prior to beginning of activity. This includes
 - Identification details such as full name, ID
 - Emergency contact details such as name, contact details
 - Participants fitness Certificates & medical history from Registered Medical Practitioners, personal information like blood group, allergies, emergency contact details etc.
 - Any other information
- The organization to clearly communicate with the participants that it will be participant's responsibility to furnish correct information in timely manner. On failure to do so, the organization reserves the right to cancel participant's registration on account of safety norms.

2. Communication with participants during the Adventure Activity

- Leaders should conduct a briefing prior to an activity: activity information, safety rules & norms, role clarity of all persons present along with expectations from participants, instruction along with demonstration (if necessary), idea about possible consequences of not sticking to expectations and safety rules& norms, obtaining acknowledgement of understanding key points of briefing.
- Clear and crisp instructions are reflected in the concerned SOPs for effective and consistent communication with participants.

- Feedback: Leaders should obtain feedback from participants after the event and convey the same to the Management
- Requirements of communication during emergencies are covered in Emergency Response Plan

3. Communication with Government Authorities

The organization should ensure proper communication with Government authorities for legal compliance. e.g. obtaining inner line permits, forest department permissions, etc. for conducting activities in specific areas.

4. Communication in Emergency Situations

Organization should define process of communication within and with external agencies (Police, media, public and government agencies) in Emergency situations. This includes nominating people for communication and mode of communication. This process should be clear to all concerned.

5. Communication with Service Providers

It is important that the Organization communicates its expectations with respect to Quality of Services as well as safety requirements to its Service providers.

In order to ensure safety performance from Service providers.

- Organization should provide their SOPs in order to ensure safe operations.
- Detailed profile of participants with medical information to be provided to Service Provider prior to activity.

Control over Service Providers

In case, the Organization chooses to outsource field activities (part or full) the primary responsibility of safety lies with Organization. The Organization should ensure Service Providers conducts the activity with at most care and safety. Where, safety aspects and quality of their programs are not compromised.

The mechanism includes criteria for selection of Service Providers, Communication regarding Organization's expectations on Safety aspects, including clarity about liabilities.

Selection Criteria for Service Providers

The Organization shall determine criteria for selection of its Service Providers in order to ensure the Service provider has ability and attitude to fulfill Organizations expectations of Safety and Quality.

1. Past experience of handling similar activities with similar participant profile
2. References and past safety performance of Service Provider
3. Service provider has the Leaders / instructors meeting the skills and competency criteria proposed by the Guide lines of Organization.
4. There should be complete clarity regarding the respective roles and responsibilities of the contracting organization and Service provider, especially with regard to first aid, Emergency preparedness and response procedures including emergency communication and evacuation

Ensure

1. The Safety guidelines for the activity outsourced should be explained to, understood by and agreed by the service provider. The detailed briefing / explanation should include best and safe practices, risk evaluation and mitigation, participant instructions, instructor/participant ratio, action plan in case of mishap or a near-miss, communication and evacuation plans etc.

2. Issue of Work Order

It is recommended that the organization should issue written Work Orders to its Service Providers for outsourced Services. The Work Order should clearly specify

- Precise description of activity / location
- Expectations with respect to Safety.

- Expectations with respect to Quality
- General Profile of Participants with special instructions, if any
- Reference of SOP to be followed
- Minimum qualification criteria of Leaders / Instructors
- Details of equipment to be used
- Effects/consequences of non-compliance of SOPs, guidelines, expectation w.r.t. safety and quality

3. Nominate Leaders to supervise activity

In order to ensure control over service providers Organization should nominate 2 – 3 Leaders to supervise the activities conducted by Service Providers

4. Evaluation of Performance of Service Providers

Organization should conduct critical review of field performance with respect to Safety and Quality and give a feedback to the Service Provider. Based on the findings decision may be taken to continue business with the Service provider. It is expected that Organization will provide reports of such evaluation (especially negative evaluation) to Government authorities so that it's available and useful to other Organizations in dealing with a particular service provider.

Skills and Competencies

The Organization is required to clearly define skill sets and competencies required for their leaders for different type of adventure activities carried out by Organization.

The skills and competencies expected by Leaders are further classified in Technical skills and Soft skills.

It will be responsibility of Organization to list the required skill set from the below referred table for a particular adventure activity based on severity (Duration, altitude, grade of difficulty, risks identified) as well as profile of participants. Further, the Organization is expected to nominate the leaders and junior leaders for each adventure program considering nature and risks involved in the program based on the skill sets and competencies demonstrated. The organizations are expected to carry out this exercise of nominating leader prior to finalization of every program.

The expectations listed in below table are recommendations -

A. Land-based Activities

Technical Skills	Soft Skills	Experience and Fitness
<u>Training Courses</u> <ul style="list-style-type: none"> - Basic Mountaineering Course - Rock Climbing Course - First-Aid Course - Advance Mountaineering Course - Search-and-rescue Course <p><i>Organizations to determine demonstrable skills commensurate with contents of training programs. Persons those who have not formally trained can qualify based on demonstrated required skills</i></p>	<u>Formal Training Courses</u> <ul style="list-style-type: none"> - Leadership Development Course 	<u>Specific Field Experience</u> <ul style="list-style-type: none"> - Adequate Experience in Sahyadri of approximately 20 treks - Adequate Experience in Himalayas of at least 5 Himalayan treks reaching altitude of more than 3000 meters
<u>Specific Activity Expertise</u> <ul style="list-style-type: none"> - Knowledge & Technique, including of usage of equipment 	<u>Leadership</u> <ul style="list-style-type: none"> - Ability and experience in leading teams and groups - Presentation skills, especially in the context of briefing for activities and programs - Personal traits like resilience, resourcefulness, assertiveness, communication, approachability, role modeling 	<u>Fitness</u> <ul style="list-style-type: none"> - Adequate Fitness
<u>Mountain Environment</u> <ul style="list-style-type: none"> - Knowledge about geography and geology of Sahyadri, Himalaya, etc. - Knowledge and experience in application of Leave No Trace Principles - Basic understanding of weather in the Sahyadri, Himalaya, etc. 	<u>Teaching/instructing/Communication</u> <ul style="list-style-type: none"> - Knowledge of subject matter and skills of teaching techniques - Knowledge and experience in having worked with different groups e.g. group of children - Attitude towards novices, children and in general participants - Language and communication skills - Presentable 	
<u>Orienteering & Navigation</u> <ul style="list-style-type: none"> - Familiarity with the Sahyadri, Himalaya, etc. terrain - Familiarity with navigation equipment like GPS - Map reading and use of maps 	<u>Organizational and Managerial Skills</u> <ul style="list-style-type: none"> - Ability to plan, organize and implement things - Initiative in taking lead in organizing - Alignment with organizational values, goals and culture 	

Technical Skills	Soft Skills	Experience and Fitness
<u>Operations & Risk Management</u> <ul style="list-style-type: none"> - Preventive approach towards Safety - Knowledge of Safety Guidelines, Standard Operating Procedures and Emergency Response plan - Knowledge of appropriate rescue equipment and other needs for proposed activity or program - Ability to effectively use communication systems for handling emergency situation 	<u>Legal Matters</u> <ul style="list-style-type: none"> - Knowledge of responsibilities and legislations relevant to undertaken activity/project - Knowledge of rights of operations - Knowledge of issues related to insurance - Knowledge of legalities related to rescue operations 	

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UIAA Model Training Standards for Voluntary Leaders and Instructors – gives comprehensive list of skills and competencies required for leaders

For additional details refer UIAA website link. <https://www.theuiaa.org/>

C.Air-based Activities

As defined in respective Guidelines

D.Water-based Activities

As defined in respective Guidelines

Training and Development

Visible gap between required and actual competence levels for an individual is filled with training. It is necessary for the organizations to enhance competence of its leaders, members and staff or hire competent persons for a specific activity or task in order to carry out the adventure activities in safe way.

Training of people is one of the effective ways of acquiring or enhancing necessary competence. Imparting training is generally considered as 'expensive' or 'a cost'. However, it is not always true. It is recommended that Organizations devise mechanism for internal training where expertise available within the Organization is utilized.

The section describes concepts and methodologies of planning and imparting training as well as evaluation of the same.

1. Identification of Training needs

It is recommended that the Organization should determine training needs of the individual member, associate, leader considering the required skills and competencies (Section 8) including technical and soft skills. While determining the training requirements, the following is considered

- Behavior patterns
- Technical short comings while handling activities
- Communication skills
- New activities planned in near future

Training needs identification may be done for a group of members or for a specific person.

2. Organize Training

Based on the training needs identified, Organization should decide whether to nominate the member/s for external training or organize internally.

Recommended steps for internal training,

- Determine objectives of the training clearly
- Determine areas / topics to be covered inpractical training
- Determine duration
- Determine resources such as equipment, pictures / photographs, clippings

- Make a training module with well-organized sessions and coverage
- Identify faculty / ies (within organization and / or outside) and discuss training module and expectations with the faculty

3. Evaluation of effectiveness of training conducted

It is recommended that the Management should evaluate the training organized or imparted in order to assess the extent of objectives fulfilled

Various methods may be considered for training evaluation including practical demonstration of technical skills and communication. The training may be evaluated after certain time period.

Management should initiate actions as appropriate based on evaluation, which may include retraining, change in responsibilities.

Note on Training Organizations in India:

There are many organizations today in India that conduct courses in areas like first aid, outdoor leadership and specific activity skills. These organizations either are private, semi-government, government or branches of international organizations.

Organizations are recommended to identify the most appropriate course and organization for its training requirement.

Administration will maintain a list of such organizations offering courses for training requirements of adventure-based organizations.

Equipment - Storage, Maintenance & Inspection

In the field of adventure safety of equipment is next to only safety of people and environment. Safety of people depends on the quality and usage of equipment. The Organization is required to formulate and document a system / mechanism addressing the following areas. While formulating the consideration to be given to

- Severity of adventure activities
- Conditions of activity such as expected weather conditions and location of use
- Frequency / Usage of Equipment (Usage of Equipment in camps indicates higher frequency)
- Capability of people using the equipment (Use of equipment by novices may result in more damage to equipment)

The relevant areas are:

1. Selection of equipment / criteria for quality purchase

Selection of equipment needs to be done very carefully considering how closely safety is related to quality of equipment. Along with product specifications provided by manufacturer, reference from experts / users may help in proper selection of equipment. Refer to Appendix 1 - [Technical Specification of Equipment](#).

2. Use of equipment and records

It is recommended the following information is maintained for particular equipment

- Unique identification number / symbol
- Date of purchase
- Equipment wise log of its usage
- Discard date (shelf or usage life as per OEM's instructions)

Care to be taken while using equipment may be addressed in the concerned SOP developed for the specific activity.

3. Preventive Maintenance: carried out in order to prevent damage and enhancement of life.

To be done as per instructions stated by Original Equipment Manufacturer (OEM). Equipment wise precise maintenance activities and responsibilities are to be defined and documented

4. Storage Facility and Conditions

To be done as per instructions stated by Original Equipment Manufacturer (OEM). Storage conditions and responsibility are to be clearly defined and documented

5. Frequency and Mechanism for Inspection

To be done as per instructions stated by Original Equipment Manufacturer (OEM)

Have a periodical inspection norm (e.g. annual/after-event/etc.) with method, frequency, responsibility and record keeping are important aspects of the system formulated and documented. Consider usage and weather conditions in which equipment is used for determining frequency of its inspection.

The system needs to include mandatory inspection after critical Incident involving equipment.

6. Replacement Criteria, Method for Repair, Disposal of Outdated and Damaged Equipment

Repairs if needed to be done as per instructions of 'Original Equipment Manufacturer (OEM). Care to be taken while carrying out repairs in order to prevent damage / deterioration.

Organization should determine equipment wise replacement criteria by considering usage and weather conditions in which equipment is used. Methods to be used for disposal of outdated or damaged equipment and responsibilities should be clearly defined and documented.

Information with respect to lost or damaged equipment on activity site to be formally reported to the concerned authorities may be by way of a 'Equipment damage / Lost Report'. The damaged equipment is to be clearly identified by a tag or any other means in order to prevent its use.

Critical Incidents

It is important Organizations should learn from the mistakes, errors, incidents and accidents. In order to extract the learnings, detailed root cause analysis is required. All efforts are to be focused on the actions to eliminate the root cause, which would ensure that the same incident does not recur in future.

Analysis of incidents

Organization should review each critical incident which should include Root Cause Analysis.

Organization shall take appropriate actions in order to prevent the recurrence of the incident.

Document Revision Mechanism

‘Safety Guidelines’ are dynamic in nature and will need periodic revisions on the basis of analysis of field data, developments in the field of adventure and suggestions from the Adventure community. Hence, it is recommended that Organizations refer to the current versions of these documents, which would be available on the Government’s website.

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