



**Australian Parachute Federation Ltd**

# **Organisational SAFETY MANAGEMENT SYSTEM (SMS) MANUAL**

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**STATUS: MANDATORY**

This document is offered free to APF Members.

**Warning**

***Parachuting and flying in parachuting aircraft can be dangerous.***

**IMPORTANT: Version Control**

It is important that members refer to the current version of this document. This Manual is a mandatory publication and is used in conjunction with APF Rules and Regulations. This booklet is current only at the time of printing by the APF Office, with the initial release date shown on the cover page. The date and/or version number is incorporated into the header or footer on each page.

The current version can be found on the APF website.

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## Document Control

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### Revision History

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v.1.0	S. Bostock S. Smalley	11 Oct 2015	Initial Release - Draft
v.2.0	S. Smalley	7 May 2016	Draft for Directors – significant changes to organisation structure – remove superfluous information.
v.3.0	S. Smalley	10 June 2016	Added detail to support policy statements following consultation and advice.
v4.0	R. McCooey	27 June 2016	Various improvements. Added changes from CEO
v4.1	J. Meara	25 July 2016	Safety Policy sign-off
v5.0	S. Smalley	18 August 2017	Document rewrite to emphasise policy over explanation

### Approvals

NAME	POSITION	DATE
Brad Turner	CEO	18 August 2017

### References

- CASA SMS Resource Kit <https://www.casa.gov.au/education/standard-page/sms-resource-kit - 15 Sep2015>
- APF Operational Regulations and Regulatory Schedules
- APF Misconduct Policy and Procedures Manual

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## Definitions

TERM	DEFINITION / INTERPRETATION
As low as reasonably practical (ALARP)	A risk is low enough that attempting to make it lower, or the cost of assessing the improvement gained in an attempted risk reduction, would actually be more costly than any cost likely to come from the risk itself.
Change management	A systematic approach to controlling changes to any aspect of processes, procedures, products or services, both from the perspective of an organisation and of individuals. Its objective is to ensure that safety risks resulting from change are reduced to as low as reasonably practicable
Club (Op Regs)	Any club, organisation, centre, corporation, company or other institution, association or community, in whatever legal form, meeting the criteria set by the APF for Club membership from time to time and which is admitted to the APF as a Club, defined under rule 9 of the APF Constitution.
Club Safety manager (CSM)	Person responsible for managing all aspects of a club's safety management system.
Fatigue Risk Management System (FRMS)	A data-driven means of continuously monitoring and maintaining <a href="#">fatigue</a> related safety risks, based upon scientific principles and knowledge as well as operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness.
Hazard	A source of potential harm.
Human factors (HF)	The minimisation of human error and its consequences by optimising the relationships between people, activities, equipment and systems.
Incident  <i>[This detailed definition is from taken RS 55.]</i>	Any event which may or may not result in injury, illness, property damage or a near miss. This includes: <ul style="list-style-type: none"> <li>(i) any breach of the regulations;</li> <li>(ii) any happening which, in the course of operations, causes injury to any person or damage to property;</li> <li>(iii) any unusual occurrence which it is reasonable to conclude might have caused injury to any person, or damage to property, or significantly increased the risk of a descent; and</li> <li>(iv) any off drop zone landing by a student parachutist, a tree or water landing, any equipment malfunction and the activation of a reserve parachute or an AAD.</li> </ul>
Just culture	An organisational perspective that discourages blaming the individual for an honest mistake that has contributed to an accident or incident. Sanctions are only applied when there is evidence of a conscious violation, or intentional, reckless, or negligent behaviour.
Likelihood	A general description of probability or frequency that can be expressed qualitatively or quantitatively
Management	Planning, organising, resourcing, leading or directing, and controlling an organisation (a group of one or more people or entities) or effort for the purpose of accomplishing a goal.
Risk	The chance of something happening that will have an impact on objectives. Risk can have a positive or negative impact and is measured as a combination of likelihood of occurrence and consequence.
Risk assessment	The overall process of risk identification, risk analysis and risk evaluation.
Risk identification	The process of determining what, where, when, why and how something could happen.
Risk management	The culture, processes and structures directed towards realising potential opportunities whilst managing adverse effects.
Safety culture	An enduring set of beliefs, norms, attitudes, and practices within an organisation concerned with minimising exposure of the workforce and the general public to dangerous or hazardous conditions. A positive safety culture is one which promotes concern for, commitment to, and accountability for, safety.

TERM	DEFINITION / INTERPRETATION
Safety Management System (SMS)	A systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures.
Safety	The state in which the probability of harm to persons or property is reduced to, and maintained at, a level which is as low as reasonably practicable through a continuing process of hazard identification and risk management.
Serious injury	<p>Any serious injury or illness that results in:</p> <ul style="list-style-type: none"> <li>(i) immediate hospital treatment as an in-patient</li> <li>(ii) immediate treatment for serious injuries (for example amputation, scalping, a spinal injury, loss of a bodily function or a serious laceration, burn, head injury or eye injury), or</li> <li>(iii) medical treatment within 48 hours of exposure to a substance.</li> </ul>

# Part A: General

# 1. SMS Overview

## 1.1 Manual Design

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The first version of the Organisational SMS assumed a low level of understanding of SMS principles and its focus was on explanation. Since then, a number of initiatives and actions have been taken to increase awareness of the SMS to the extent that the Federation is satisfied that, if not yet at a mature stage of understanding, most member clubs are aware of their obligations and are taking steps to comply with safety systems and processes. The initiatives include:

- Meetings conducted by APF staff in all major centres and attended by Chief Instructors or delegates where the SMS was explained in detail.
- The issuing to all clubs of draft club SMS templates which could be changed to reflect local conditions.
- Presentations to delegates at the National conference in May 2016 and May 2017, including assistance to individual Chief Instructors.
- Detailed briefings to Safety and Training Officers who conduct yearly audits with member clubs.
- Inclusion of SMS related audit questions in the club audit documents.
- Introduction of continuing improvement modules issued every three to six months raising matters particular to club SMSs.
- Inclusion of SMS content into instructor training syllabus and assessments

The focus improvements to this version of the Organisational SMS is on policy rather than explanation. The manual has been reduced in size, reflecting that change. Members interested in more detail on an SMS are referred to the excellent CASA SMS Resource Kit available on-line or as hard-copy available by order from CASA.

## 1.2 Authority

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The APF SMS sources its authority from:

- ICAO which requires all member states to introduce safety management systems into their operating systems and lays down a framework for this to occur.
- The CASA/APF Deed of Agreement which requires the APF to have an operating SMS.
- The APF Operational Regulations which requires all Chief Instructors to ensure an adequate and appropriate SMS is documented and implemented and all parachutists operate within the guidelines expressed in that SMS.

## 1.3 Essential SMS Components

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APF's safety management system, including all related processes, procedures and practices, have been organised under five component headings in accordance with CASA guidelines. These reflect the specific needs of the parachuting community within the broader aviation industry.

The five components of the SMS are:

1. SMS Component One: Safety Policy, Objectives and Responsibilities
2. SMS Component Two: Safety Risk Management
3. SMS Component Three: Safety Assurance
4. SMS Component Four: Safety Promotion
5. SMS Component Five: Human Factors.

## 1.4 Caution Notice

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The intent of this SMS, and the template issued to clubs, is to identify hazards and risks associated with parachute operations and to eliminate or mitigate them to a standard which is as low as reasonably practical. Despite considerable ongoing efforts, parachuting activities are inherently dangerous and participants are cautioned that the risk of injury or fatality remains present.



# **Part B:**

# **SMS Components**

## 2. SMS Component One: Safety Policy, Objectives and Responsibilities

### 2.1 Safety Policy

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The APF Board of Directors on behalf of the APF is committed to developing, implementing and improving appropriate strategies, management systems and processes to ensure that all parachuting activities support the highest level of safety performance, meeting and exceeding national and international standards – safety being the first priority in all activities.

The Board is committed to administering APF Member Organisations (Clubs) and their members, in a highly professional manner and seeks to achieve a high level of safety in the delivery of all practices.

APF CEO and management are committed to:

1. Developing, embedding and practicing a positive safety culture, one that recognises the importance and value of effective safety management and acknowledges, at all times, that safety is paramount;
2. Incorporating human factors into all areas of the SMS;
3. Defining clearly for all safety managers their roles and responsibilities for the development and delivery of safe practices and procedures, strategy and performance;
4. Ensuring safety managers receive adequate and appropriate SMS training, and are competent in the management and application of SMS;
5. Providing or making accessible to all clubs and their members, adequate and appropriate parachuting safety information and SMS training;
6. Complying with and wherever possible exceeding legislative and regulatory requirements and standards;
7. Reducing the risks associated with parachuting operations, to a level that is As Low As Reasonably Practicable;
8. Monitoring and measuring parachuting safety performance against realistic objectives and targets, and undertaking effective treatment and preventative action in order to remedy gaps/deficiencies;
9. Fostering a learning environment in order to learn from incidents, accidents and experiences;
10. Ensuring that the SMS is effective, and is an integral component of all parachuting activities under the control of the APF.
11. Ensuring that each member acts in a safe and responsible manner with safety of utmost importance at all times, striving to achieve the highest levels of parachuting safety standards and performance, and understanding that effective safety management systems and processes are integral to safe and enjoyable parachuting related activities for all participants.

[Signed and approved]

Bradley Turner  
Chief Executive Officer

18 August 2017

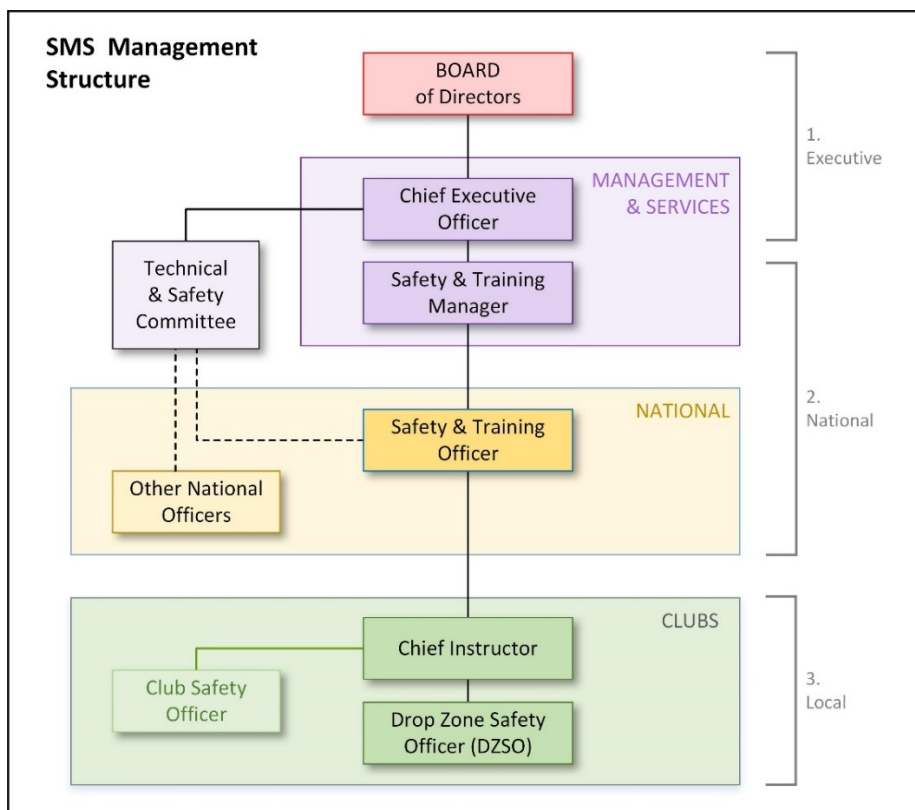
## 2.2 Safety Objectives

APF Senior Management is committed to a proactive, rather than reactive approach to the management of risk by setting practical and achievable safety objectives, which are regularly reviewed with outcomes communicated to the membership. The annual national conference is to review national safety objectives for the next year, including objective measurement for those objectives. Updated policy objectives are tabulated below.

Safety Objective	Measurement
<b>2017 Objectives</b>	
Introduce a Fatigue Risk Management System into all clubs	<ul style="list-style-type: none"> <li>Audit remarks indicating all clubs have received and are implementing fatigue risk management processes</li> </ul>
Develop and implement training and assessment on SMS and associated FRMS for instructors and pilots.	<ul style="list-style-type: none"> <li>Curriculum changes included as part of instructor review.</li> <li>Assessments trialled and validated by end 2017.</li> </ul>
Improve confidence that all incidents, occurrences and near misses are actually being reported.	<ul style="list-style-type: none"> <li>10% increase in number of reports received</li> </ul>
Develop an on-line incident reporting system including member feedback to complete Closed Loop management	<ul style="list-style-type: none"> <li>In-line system tested and accessible by clubs and members by end 2017</li> </ul>
<b>Longer Term Objectives</b>	
Encourage a culture of safety awareness and participation by supervisors and members.	<ul style="list-style-type: none"> <li>Annual inspections showing an increase in awareness of a safety culture.</li> <li>Increase in reporting, especially to local safety representatives.</li> </ul>

## 2.3 Organisational Structure and Safety Management Responsibilities

The following chart shows APF's hierarchical structure for managing the SMS. The 'organisational' SMS described by this Manual is primarily the responsibility of the Executive. Clubs develop and implement their own 'operational' club SMS.



For a comprehensive APF positional chart, see APF's Regulatory Schedule 57. The positions, roles and responsibilities of operational oversight personnel, including safety personnel, are defined in APF Operational Regulations Part 6 Operational Supervision and Responsibility, and in RS 57. Additional SMS responsibilities are as defined in this Manual.

For ease of reference and for the SMS only, positions tasked with responsibility for developing, implementing, applying and continually reviewing APF's SMS, have been banded into three levels as shown on the right-hand side of the chart and described further below:

<b>SMS Responsibilities - Titles and Definitions</b>		
<b>Level</b>	<b>Management</b>	<b>Comprised of</b>
One	Executive	Board, CEO
Two	National	Safety and Training Manager, Safety and Training Officers, other National Managers and National Officers, including the Technical and Safety Committee.
Three	Local (DZ operations)	Chief Instructors (CIs), Drop Zone Safety Officer (DZSO), Club Safety Manager, Club Safety Committees

## 2.4 Executive Management

Responsibility for safety throughout the organisation rests with senior management who are tasked with the overview of safety management; including establishing their commitment and responsibility for safety in a formal Safety Policy, and demonstrating their leadership of APF's SMS by actively supporting and promoting SMS throughout the organisation. This commitment also extends to ensuring provision of the necessary resources.

Safety management is much more than rules and regulations, and regardless of position all members can make a significant difference in reducing the number of near misses and accidents. Every APF member must believe that safety is important.

Senior management is striving for a culture of shared accountability and responsibility for risk management across the entire organisation, with an expectation that all members and all stakeholders, assist in the identification of safety hazards by complying with APF reporting requirements, including reporting all incidents/near misses/occurrences.

## 2.5 National Safety Representatives

### 2.5.1 National Managers and APF Office

Led by the CEO, the APF Office and its team is integral to the overall effectiveness of the APF's SMS, providing the necessary structure and support for introduction, implementation and maintenance of safety measures throughout the organisation. The APF Office also provides support and assistance to the various safety representatives:

The APF Office employs full time staff who manages the APF on a day-to-day basis. This includes four managers; three of whom are directly involved in safety related responsibilities. They are:

1. Safety and Training Manager;
2. Operations Manager; and
3. Technical Officer.

Each National Manager is responsible for:

- Reporting directly to the CEO and, when requested, the National Board.
- Keeping National Officers, Technical Committee and Board fully apprised of emerging issues and trends;
- Monitoring, seeking and promulgating safety related information to relevant stakeholders;
- Maintaining accuracy and currency of safety documentation and publications;
- Maintaining secure record keeping and data management systems;
- Developing and implementing strategies for improved safety communication; and
- Monitoring emerging trends/safety issues and providing useful information to stakeholders.

### 2.5.2 Safety and Training Manager (STM)

The Safety and Training Manager is appointed by and reports to the CEO. This is a permanent fulltime position, as an employee of the APF. This Officer's responsibilities include:

- (i) Organisational policy aspects of the SMS.
- (ii) Advice to the CEO and, if required, the Board of Directors.
- (iii) Provision of resources and support to the Safety and Training Officers, Chief Instructors and other appointments responsible for safety throughout the APF.

As the APF's principal safety representative, the STM's responsibility for the SMS includes:

- (i) Implementing, maintaining and reviewing the APF's SMS.
- (ii) Providing safety advice to all stakeholders.
- (iii) Promoting safety awareness and a positive safety culture.
- (iv) Assisting the Technical Officer in maintaining an appropriate reporting system to identify and manage incidents and risks.
- (v) Investigating accidents and incidents and provide reports highlighting trends and preventative measures.
- (vi) Identifying safety training requirements to support SMS objectives.
- (vii) Reporting regularly to the CEO and, if necessary the Board, on activities and safety performance.
- (viii) Ensuring reporting and feedback from members is encouraged throughout the APF.

Reflecting the STM's role as the principal safety representative, the selection criteria for this position includes:

- A thorough understanding of parachute safety and training operations and procedures. Specifically, he should have an Instructor A rating, Packer A or Rigger experience, endorsements in AFF, SFF and tandem operations; prior experience as a Chief Instructor is preferred.
- Qualification as a lead auditor from a recognised aviation audit training program.
- Hold a Certificate IV in Workplace Health and Safety.
- Hold a Certificate IV in Training and Assessment (TAE 40110 or equivalent).
- Have experience in DZ safety and training management.
- Have excellent verbal and written communication skills.

In accordance with RS 57, the STM is supported in the above duties by Safety and Training Officers, and may appoint Safety and Training Advisors (STA) to assist Safety and Training Officers or to work directly with the STM on a project basis.

### 2.5.3 Safety and Training Officers

Safety and Training Officers (STO) are appointed by and report to the Safety and Training Manager (STM). STOs will initially be allocated a geographic area by the STM although they may be deployed to other areas as needs arise. In general terms, they are the vital link between policy and performance on the ground and their selection process should reflect this important role. They should be experienced, have good communication skills and be committed to safety with all its permutations. These positions are permanent part-time appointments.

**STOs' responsibilities** are in accordance with the regulations and RS 57, and also include certain responsibilities under the APF's SMS including:

- (i) Ensuring Clubs are conducting operations in accordance with the organisation's SMS and in compliance with the APF Operational Regulations, particularly in respect to safety
- (ii) Ensuring APF Safety and Risk Assessment Audits are conducted in an efficient and timely manner
- (iii) Ensuring members are conducting parachuting activities in a safe and responsible manner and in accordance with the regulations and this SMS
- (iv) The conduct and reporting of incident and accident investigations
- (v) Fostering and actively encouraging a positive, healthy Safety Culture
- (vi) Setting good examples in personal values, standards and behaviour
- (vii) Encouraging a culture of trust and communication between members and the APF.

The selection criteria for these positions include:

- Significant experience and credibility as an Instructor, Examiner, DZSO and Display Organiser.
- Have an Instructor A rating, Packer A rating and endorsements in AFF, SFF and Tandem.
- Qualification as a lead auditor from a recognised aviation audit training program.
- Hold Certificate IV in Workplace Health and Safety.
- Hold Certificate IV in Training and Assessment (TAE 40110 or equivalent).

In accordance with RS 57, the STM, in consultation with the STOs, may appoint Safety and Training Advisors to assist the STO in their duties and particularly to act as an 'on-scene' expert in cases of accidents or incidents until the appropriate STO arrives.

#### 2.5.4 Other National Officers

National Officers are managed and appointed in accordance with RS 57, with each representative responsible for managing a specific portfolio area. There are four separate portfolios other than the STM (above). These representatives provide the CEO and Board with the assurance that:

- (a) Technical areas are being managed and oversighted to an appropriate level
- (b) Operational safety is being managed to a risk level As Low As Reasonably Practical (ALARP)
- (c) All members are adhering to, and applying, the principles, practices and procedures of the APF SMS

APF National Officers are:

1. National Aviation Officer: responsible for the oversight of aircraft operations including the activities of Jump Pilot Authorisation holders.
2. National Rigging Officer: responsible for parachuting equipment used by members and member organisation including the activities of Riggers and Packers.
3. National Competitions Officer: responsible for sport parachuting competition nationally and internationally.
4. National Judging Officer: responsible for all judging activities.

## 2.6 Local Appointments

### 2.6.1 Chief Instructor (for Training Operations only)

APF manages safety in its clubs (member organisations) under a system of supervision, oversight and responsibility with all clubs being required by regulations to have an appointed Chief Instructor (CI) in order for the club to conduct student training. The CI:

- (i) has complete responsibility for all aspects of parachuting operations, particularly safety. Attendance during operations must be in accordance with the regulations.
- (ii) must be the holder of an Instructor A (IA) rating. In order to have qualified for the IA rating the CI will be highly experienced, having spent many years exercising the duties of an APF Instructor, and having participated in a number of safety and training programs
- (iii) is responsible for ensuring appropriately trained and qualified personnel are appointed to various safety and oversight roles, before operations commence, particularly the appointment of a DZSO;
- (iv) is responsible for ensuring APF's SMS has been adopted by the club including implementation of SMS practices, principles and procedures; and
- (v) for existing clubs/drop zones, is to ensure the development and implementation of an operational SMS specific to that club/drop zone. Application to become a CI must be accompanied by an operational SMS for his/her club, in the same way that an applicant must produce their own Training Operations Manual.

### 2.6.2 Drop Zone Safety Officer

All APF clubs/parachuting operations, manage operational safety on a day-to-day basis through a system of oversight with all clubs required by regulations to have a Drop Zone Safety Officer (DZSO) appointed daily before operations commence. This applies regardless of whether student training is being conducted however the qualifications of the DZSO are considerably higher when student operations are underway.

The DZSO:

- (i) Is responsible for the safety and supervision of all participants and all aspects of the operation;
- (ii) Must be the holder of an Instructor C (IC) Rating. In order to have qualified for the IC Rating the DZSO will also be highly experienced, having spent a number of years exercising the duties of an Instructor and having participated in a number of safety and training programs;
- (iii) Is required to be in attendance 100% of operational time in accordance with the regulations;
- (iv) Encourages comments and feedback from members on safety issues and ensures those comments receive a fair hearing and follow up action is taken by the club.

### 2.6.3 Club Safety Manager (CSM)

The CSM is an important position at the DZ and plays a vital role in managing and driving SMS development, implementation and ongoing maintenance throughout the operation.

The CSM is appointed by the CI, reports to him/her and has direct access to the STO. Taking into consideration the size of the club, the CI may choose to take on this role or allocate it to his/her DZSO or another member. However, the position must be clearly promulgated to all members.

In general terms, the CSM's role is to apply the provisions of the APF and club SMS. Specifically, he/she is to:

- (i) Amend the APF SMS when required;
- (ii) Implement and maintain the club SMS;
- (iii) Conduct risk assessments, record the results and update the risk register;
- (iv) Ensure follow up action to mitigate identified risks; and
- (v) Encourage comments and feedback from members on safety issues and take action on those comments.

## 2.7 Safety Committees and Action Groups

### 2.7.1 Technical and Safety Committee (TSC) (*previously called Technical Committee*)

The **APF Technical and Safety Committee** is a vitally important group that plays a major role in the oversight of operational safety throughout the organisation. The composition of the TSC is:

- Safety and Training Manager (Chair)
- Safety and Training Officer (x3)
- National Aviation Officer
- National Rigging Officer
- APF Board Representative
- CEO.

The TSC is to meet no less than 4 times/year; actual meeting dates are arranged by the STM in consultation with the committee members. The STM (as committee chair) is to call for agenda items from delegates and issue the agenda prior to the meeting. Meeting minutes will be collated and published to the APF Board, the TSC and, where appropriate, to APF membership.

### 2.7.2 Technical and Safety Committee Role and Responsibilities

- (i) Responsibilities of the TSC include:
  - (a) Making recommendations or decisions about safety policy and objectives as appropriate
  - (b) Defining safety performance indicators and setting organisational safety performance targets
  - (c) Directing and monitoring the SMS implementation process according to the SMS Implementation Plan
  - (d) Reviewing safety performance and outcomes
  - (e) Evaluating safety training effectiveness
  - (f) Reviewing the status of current accidents and incidents
  - (g) Maintain and review a risk register to identify Big Picture risk and trends
  - (h) Ensure the management of all risks/risks to a level that is As Low As Reasonably Practicable (ALARP);
  - (i) Work as a team to ensure a positive safety culture exists throughout the organisation
- (ii) In addition to the other duties of the role, the TSC is focused on action and:
  - (a) Acts as a source of safety expertise and advice for senior management

- (b) Reviews safety regulations,
- (c) Reviews progress and actions taken, following an accident or incident
- (d) Makes safety recommendations to address risks
- (e) Reviews audit reports including response and resulting actions
- (f) Encourages lateral thinking about safety issues
- (g) Helps to identify risks/risks and defences
- (h) Prepares and reviews safety reports
- (i) Reviews progress against targets set by the Board and senior management on:
  - i. Safety objectives
  - ii. Safety targets
  - iii. Safety performance indicators.

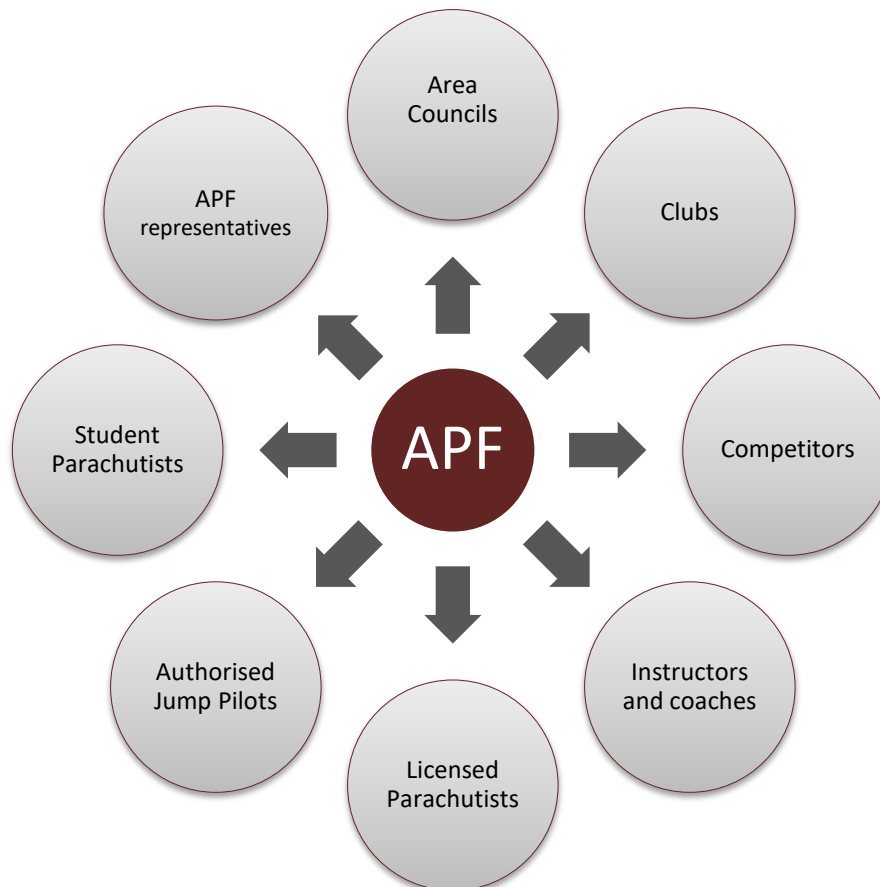
### 2.7.3 Risk Committees

APF Risk Committees may be formed as required by National Managers to advise or participate in projects within their field of expertise. Particular areas of concern may include:

- Safety.
- Training.
- Aviation.
- Rigging.

### 2.7.4 Industry Consultation

Industry consultation is fundamental to effective governance and plays a vital role in underpinning APF's SMS, and risk management and assessment practices. Industry consultation is necessary to ensure objectives and outcomes are relevant and reflective of the issues, needs and wants of the APF as a whole. Stakeholder groups should be identified and utilised in every step of the risk management process. Major APF stakeholder groups are shown in the following diagram:





APF management will ensure that the appropriate groups or members are consulted before implementation of important decisions that affect them. The aim will be to involve members in the decision-making process to ensure a positive reaction to, especially, safety matters.

The APF can obtain significant assistance from 3<sup>rd</sup> parties external to the Federation. Leaders and managers at all levels are to consider seeking advice and assistance from others who may be facing similar challenges. Obvious examples include CASA, other aircraft associations, airfield owners and other operators on the airfield, other (international) parachuting bodies and local emergency services.

## 3. SMS Component Two: Safety Risk Management

### 3.1. Applying Safety Risk Management

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#### 3.1.1 Scope

The APF will pursue a proactive strategy for safety risk management in the belief that the risk of accidents and incidents can be minimised by identifying weaknesses before an accident and taking steps to reduce the risk of adverse consequences. All clubs are to take a systematic approach to identifying and treating hazards and risks and ensure that appropriate monitoring occurs.

#### 3.1.2 Hazards and Risks (see definitions)

A **hazard** is defined as a **source** of potential harm (for example; slippery steps, high workload, fatigue, changes to procedures, sensory overload); it may have existed for some time in the past and complacency about its existence keeps the hazard present. A **risk** is the **chance** of something happening as a result of the hazard and, using formal risk assessment procedures can be objectively measured by combining the likelihood of it occurring with the consequences resulting from it.

#### 3.1.3 Risk Management

Safety Risk Management is 'the identification, analysis and elimination (and/or mitigation to an acceptable or tolerable level) of the risks that threaten the viability of an organisation. (ICAO Safety Management Manual (Doc. 9859). Safety risk management is a key component of APF's SMS and involves two related activities:

1. Identifying safety hazards; and
2. Assessing risks and mitigating them (reducing the potential of those risks to cause harm).

Whilst not all risks can be totally eliminated, they must be identified and managed in an appropriate manner. Once identified, risks need to be eliminated where possible, operations varied, or redesigned in a practical way in order to protect from potential harm.

#### 3.1.4 Agent use of risk assessments

All agents of the APF are to use formal risk assessments methods to identify hazards and eliminate or mitigate risks associated with those hazards. This procedure does not need to be overly laborious or time consuming; and can be tailored to suit the size and complexity of the particular operation. Using formal risk management:

- Will ensure all aspects/activities of any organisation/operation/event/task are examined in a logical, methodical, measurable and comprehensive manner;
- Must involve all stakeholders including senior management;
- Will open discussion amongst staff and management, leading to greater transparency and a shared understanding of risk and potential implications;
- Will ensure consistency of understanding and application of risk assessment methodology;
- Means a written record of the undertaking of risk assessment is kept

### 3.2 APF Risk Management Strategies and Analysis Tools

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#### 3.2.1 Hazard Identification

In order to be effective in this critical first step of the risk management process it is important that safety representatives think 'laterally' in their approach to hazard identification, and consider all possibilities, for example, clubs may consider operational hazards and risks to be their primary concern however domestic areas such as parking areas, buildings and bathroom facilities can present hazards which may still be the responsibility of the club.

**Operational hazards** may be obvious such as lack of training, or they may be more subtle, such as the damaging effects of fatigue and high workloads. For example, tandem instructors/packers fatigue might constitute risk during particularly busy periods/hot days etc.

**Systemic Hazards** are organisational factors which could result in a serious incident such as the loss of an aircraft, or a serious injury/fatality. These hazards might include:

- Insufficient training;
- Lack of policies or procedures;
- Members not following these policies or procedures.

### 3.2.2 Identification Methods

Identification of hazards and risks requires a systematic and formal approach combined with a detailed knowledge of the operation.

- (i) Identification of safety hazards by Executive Management/Safety Managers is to be undertaken using the following methods as a guide:
  - By conducting a Gap Analysis of the organisation or an operation
  - By conducting a Risk Assessment of all or any part of the organisation
  - APF's Industry expert group outcomes/minutes
  - Surveys to the membership
  - Formal review of standards, procedures and systems by safety managers
  - Incident/accident report review (Lessons learned)
  - Club Risk Assessment and Safety Audits
  - Accident Investigation.
- (ii) **Identification of safety hazards at a local level** (club/parachuting operation or display, etc) is to be undertaken using the following methods as a guide:
  - Staff or club members meetings
  - Brainstorming sessions
  - Staff surveys or questionnaires
  - By conducting a Risk Assessment of all or any part of an operation
  - Internal incident reporting

### 3.2.3 Risk Analysis - Likelihood and Consequences (see Fig.1)

The APF has adopted the CASA model for hazard identification and risk assessment and mitigation. Further guidance on this vital topic is in booklet three of the CASA SMS practical guide on their web site and in the Club SMS template issued to all clubs.

Having identified and listed safety hazards in accordance with 3.2.2, the process of risk analysis begins by considering each risk individually and making a determination as to the **Likelihood of their Occurrence**, and the **Severity/Consequence of their Occurrence** should they become a reality.

- (i) **The Likelihood of the risk occurring** (how often the risk might result in a safety occurrence) is determined on a range from rare to almost certain. This could be the likelihood of a single event occurring, or the likelihood of the event occurring based on exposure and repetition (how often the task is performed). Taking into account any current mitigation measures, an assessment is made of the likelihood/probability of a safety risk becoming a reality and actually occurring
- (ii) **The Consequence of Occurrence** (severity of the consequences). Consequence is the potential impact or outcome that may result from the hazard and can range from insignificant to catastrophic. The consequence severity is assessed in terms of the worst possible scenario, should the risk be realised.

The table in Figure 1 provides a definition of each assessment option under both Likelihood and Consequence.

Figure 1: SMS Analysis Table One – Likelihood of Occurrence and Consequence of Occurrence	
Likelihood	Definition
Rare	The event may occur only in exceptional circumstances
Unlikely	The event could occur at some time
Possible	The event is likely to occur at some time
Likely/Highly Possible	The event will probably occur in most circumstances
Almost Certain	The event is likely to occur in most circumstances
Severity/Consequence	Definition

Negligible	Insignificant, no injuries
Minor	First aid treatment at the scene
Moderate	Injuries serious enough to require medical treatment
Major	Very serious injuries to one or more people
Severe	Catastrophic. May involve a fatality(s), loss of aircraft.

### 3.2.4 Determining Risk Levels

**Step One:** Having made a determination as to the Likelihood and Consequence of the safety risk becoming a reality (4.2.3), Figure 2 (below) indicates a risk level.

**Step Two:** By cross-referencing the selected Likelihood and Consequence determinations values, the subsequent colour-coded value is recorded as the Risk Level (the two figures are added together). Likelihood + Consequence = Risk Level.

Fig 2. SMS Analysis Table Two: Determining Risk Levels							
ICAO SMM Safety Risk Assessment Matrix		Risk Severity/Consequence					
		1	2	3	4	5	
		Negligible	Minor	Moderate	Major	Severe	
Likelihood	5	Almost Certain	6	7	8	9	10
	4	Likely	5	6	7	8	9
	3	Possible	4	5	6	7	8
	2	Unlikely	3	4	5	6	7
	1	Rare	2	3	4	5	6
Likelihood + Consequence = Risk Level							

### 3.2.5 Risk Tolerability Rating

Using the calculated Risk Level (above), suggested actions are shown in Figure 3:

Figure 3: SMS Analysis Table Three: Risk Tolerability Matrix		
Risk Level	Risk Rating	Action Required
> 7	Extreme Risk	Operation must cease until further notice
6 – 7	High Risk	Mitigation actions must be applied immediately, before operations are allowed to continue
4 – 5	Medium Risk	Treatments to be applied ASAP, operations can continue with risk monitored carefully
< 4	Low Risk	To be monitored

### 3.2.6 Risk Mitigation and Treatment

Having identified and assessed the risks, the safety authority must mitigate safety risks to a level that is 'As Low As Reasonably Practicable (ALARP)' (see definitions) by:

- (i) Comparing the operation/organisation/activity against industry best practice;
- (ii) Reviewing current operating procedures, consider what controls are already in place - is there more that could be done to improve standards and reduce risk levels?
- (iii) Examining:
  1. Can the risk be eliminated altogether?
  2. Is there a less risky option?
  3. If not, how can risks be managed so that harm is unlikely?
  4. Have all possible means of mitigation been considered/applied?

In some instances, there may be a range of solutions to manage a risk with some solutions managing multiple risks. Whilst some solutions may cost more, others might involve control (e.g. operating procedures) and personnel (e.g. training). The solution need not be costly to be effective and failure to take simple precautions can be much more expensive if an accident does happen.

- Risks must always be mitigated to ALARP
- A risk may be mitigated to ALARP, yet still be high
- Risk review is a continuous process. All identified risks must be continually reviewed because:
  - The assumptions against which the risk was last assessed may no longer be relevant;
  - The controls applied to the risk may no longer be effective due to changed conditions

**The authority** to accept that a risk has been mitigated to ALARP is vested at local level in the Chief Instructor acting on advice from the Club Safety Manager and at National level, the CEO on advice from his STM and the TSC. These decisions are to be reviewed locally by the STO and nationally by the TSC.

### 3.2.7 Club Risk Register

The process of identifying, controlling and monitoring risk in current activities, including analysis of emerging risks and implementation of controls to eliminate and/or manage risks; is formally managed, driven and documented via the Club Risk Register. The Club Risk Register is the primary tool used by the Club Safety Manager to manage and track risks. The Risk Register provides a demonstration that all known parachuting and aviation safety risks applicable to APF have been identified and understood.

All clubs are expected to have a comprehensive risk register in place. Examples of a suitable risk register are enclosed with the Club Operational SMS template (Appendix B-2 of that document).

## 3.3 Seven-Step Strategy - Safety Hazard Identification and Risk Assessment (SHIRA)

### 3.3.1 SHIRA Strategy Benefits

In order to avoid accidents and incidents, clubs should have multiple layers of controls/defences in place, however as is all too often the case, controls are never foolproof. For example having well trained packers does not mean there will not be a mal-function due to a packing error, and standard operating procedures are only effective if they are adhered to. The SHIRA seven-step strategy:

- Has been adopted by APF in order to facilitate the involvement of various important stakeholders such as staff, in the process of safety hazard identification and risk assessment; and
- Is an important tool for operators as it allows them an opportunity to review existing defences, and identify further defences against recognised hazards/risks.

**Conducting Risk Assessment** brings many advantages and should be able to show:

- A proper check was made.
- The relevant people were involved and consideration was given to those affected.
- All significant risks have been eliminated or mitigated.
- Precautions are reasonable and residual risk is low.
- A clear list of responsibilities/tasks in relation to mitigation/management.

### 3.3.2 Seven-Step Strategy – Safety Hazard Identification and Risk Assessment (SHIRA)

The seven steps are to be followed by all safety-related positions in the APF:

1. Communicate and consult
2. Identify safety hazards
3. Rank and assess the severity of risks including risk tolerability
4. Evaluate the risks
5. Record findings and implement them
6. Monitor the effectiveness of implementation
7. Review risk assessment and update as necessary.

### 3.4 Emergency Response Planning (ERP)

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Every APF club is responsible for ensuring a safe environment is available to those in their care including having an Emergency Response Plan (ERP) outlining the actions to be taken, and the procedures to be followed in an emergency situation. If a club has multiple DZ locations, an ERP must be written for each DZ location.

Chief Instructors, Drop-Zone Safety Officers, Rating Holders, Coaches, and Tutors in all clubs have a duty of care to take reasonable steps to prevent injury to members, including students under their care. This duty can be seen to extend to taking reasonable steps to identify, assess and manage risks; and reasonable steps to plan, prepare, respond and recover in an emergency.

As a minimum guideline and in order to assist club representatives, the APF has developed an Emergency Response Plan Template for adaptation and subsequent implementation. This template has been issued to clubs via the club SMS template.

A vital part of emergency planning is to practice and review the plan based on experience. Clubs are to practice their response to emergency regularly. Special attention should be given to water retrieval by clubs operating close to stretches of open water.

## 4. SMS Component Three: Safety Assurance

### 4.1 Safety Performance Monitoring and Measurement

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#### 4.1.1 Feedback on Performance

APF senior management and safety managers require feedback on the organisation's overall safety performance in order to evaluate and make adjustments to APF's SMS as necessary. Members also need assurance of the level of safety being realised throughout the organisation. For example, APF senior management and all APF members need to be confident that:

- (i) 'Two-way' communication and feedback is being realised with organisational safety performance being regularly communicated to the membership and all relevant stakeholders;
- (ii) APF has robust systems and procedures in place that will foster and nurture safer operating environments; and
- (iii) Member training organisations are following those systems and procedures, and are providing safer operating environments for all members

#### 4.1.2 Types of Monitoring and Measurement

The APF monitors and measures safety performance by:

- (i) A national incident and occurrence reporting system.
- (ii) A system of responsibility which has individuals at the operating level monitoring and reporting on day-to-day incidents (DZSO's, CIs).
- (iii) A system of management and oversight in which trained STOs monitor safety activities in each parachute council area including:
  - Conducting an annual Safety and Risk Assessment Audit of each training organisation within the relevant council area.
  - Investigating and reporting on all serious accidents/incidents.
  - Fostering and encouraging a positive safety culture in all participants.
- (iv) Systematic review and follow up of all identified safety issues, conducted by the Safety Committee
- (v) Technical and safety conferences held annually, providing opportunities for industry leaders to come together to workshop and discuss safety issues, emerging trends etc.
- (vi) Surveys used to canvass members views about safety

### 4.2 National Incident and Occurrence Reporting System

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#### 4.2.1 Reporting

The APF knows that safety is everybody's responsibility and part of this responsibility is to report incidents, near misses, equipment/facility risks. The success of APF's SMS depends on effective reporting – gathering data to help identify issues and to track how risk management strategies are working.

The APF manages a national Incident and Occurrence Reporting system, which is detailed in Regulatory Schedule 55 and Operational Regulations Part 12. This reporting system operates within a robust framework of notification, prioritisation, investigation, analysis, action and feedback.

#### 4.2.2 Reporting Aims and Objectives

The aim of the APF's Incident and Occurrence Reporting System is education; leading to improvement. The effective two way communication of incidents and occurrences provides valuable information and data which the APF uses to help lower the risk of that or similar events occurring in the future. This information is reported back to the membership.

Reporting aims and objectives include:

- (i) **APF's safety culture** is such that all members of the organisation take responsibility for increased health and safety, for all participants.

- (ii) **'Near misses' or 'close calls'**, are reported. There are many more near misses than there are actual incidents in which the consequences are serious. These near misses providing valuable learning opportunities for avoiding larger problems.
- (iii) **APF conducts trend analysis** of all the collected information thereby enabling the focus of preventative efforts on areas of most concern.
- (iv) **Safety results/outcomes** are regularly communicated to members by newsletters, reports, especially the annual report to all members, APF website and target groups.

#### 4.2.3 Reporting Methods for Members

There are a number of ways for members to lodge a safety related incident notification, including:

- By completing an Incident Notification form in the Incident report book at an APF club.
- By completing an Incident Notification form (IN1 & IN2 available online at [www.apf.com.au](http://www.apf.com.au) )
- By Packers or Riggers completing an Equipment Defect / Rigging Report form (P2 also available online)
- In writing to a Safety and Training Officer.
- Reporting verbally to the CSM and/or the appointed DZSO.

#### 4.2.4 How Reports are Managed

- (i) Notifications or reports that have been lodged 'online' or via a club Incident Notification form are received by the APF Technical Manager at the APF Office and are automatically copied to the appropriate manager.
- (ii) In accordance with APF Operational Regulations and Regulatory Schedule 55, an incident or injury, including those involving aircraft and parachuting equipment:
  - incur certain notification time constraints depending upon the severity of the incident or injury (i.e. immediate verbal report, report within 48 hours); and
  - generates copies to relevant parties as defined in the Regulations.
- (iii) Data collected on each incident/occurrence, including type of incident, equipment, meteorological conditions at the time and identification of any underlying root cause(s) etc. is input under a variety of categorisations, enabling broad reporting capability.
- (iv) Data is analysed to identify trends and commonalities with appropriate mitigation treatment strategies able to be implemented in order to reduce or eliminate root causes.
- (v) Findings/outcomes/recommendations for change are promulgated back to the membership (and the originator of the report) via various safety communication mediums.

#### 4.2.5 Closed Loop Risk Management

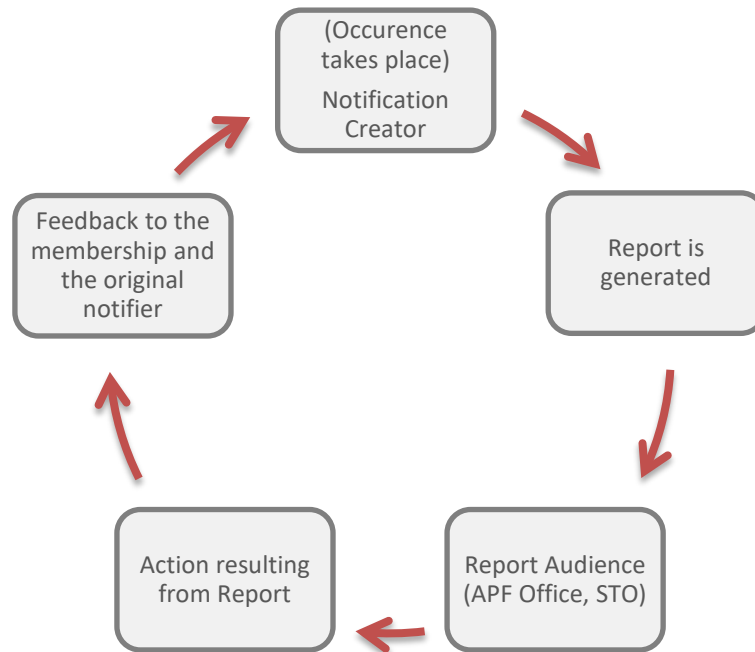
Closed-Loop Risk Management (CLRM) refers to the ability of the operational layer of the APF to provide information on incidents, occurrences and near misses, enabling safety managers to report back on how effective the risk management process has actually been, thereby "closing the loop" in the sense of a systematic process.

Incident data can influence continuous improvement and incorporating risk into incident management allows for an overall better decision-making process. The cooperation between senior management, operational safety management and operators and the feedback of information from operations through to management and then to the board, also "closes the loop" in the practical sense of communication.

#### 4.2.6 Application of a Positive Safety Culture

The APF endorses the principles of a Positive Safety Culture with its Internal Investigation Policy stating that the purpose of investigations and incident notification and reporting is to find systemic causes, learn from them, and implement corrective actions. Further details of the APFs positive safety culture are shown in Part C of this SMS.





#### 4.2.7 Effective Safety Reporting Summary

<b>Accountability</b>	Members are encouraged to report essential safety-related information, however there is a clear line between acceptable and unacceptable behaviour
<b>Flexibility</b>	In unusual or emergency situations, members can report direct to decision-makers to allow more timely response
<b>Information</b>	Members are knowledgeable about the various factors: human, technical and organisational, affecting the safety of the whole system
<b>Learning</b>	Those responsible for managing reporting are competent to draw conclusions from safety information systems; and are willing to implement safety changes where necessary
<b>Willingness</b>	Members are willing to report their errors or experiences

### 4.3 Safety and Risk Assessment Audit

#### 4.3.1 Safety and Risk Assessment Audit

Each member training organisation undergoes an annual Safety and Risk Assessment Audit which:

- Is conducted by a Safety and Training Officer.
- Assesses compliance with rules and regulations
- Analyses and understands an organisations operational structure and efficiency and identifies key areas for improvement including identification and prioritisation of safety issues.
- Provides assurance to APF senior management and to the regulators that safety risks in an operation are identified and assessed, and effective systems are in place to eliminate or mitigate those risks.

#### 4.3.2 Audit Benefits

A well conducted safety audit provides a host of tangible and intangible benefits, including:

- Helping to identify and correct regulatory deficiencies, which in turn can improve workplace safety and help reduce liability
- Identification and elimination of safety hazards, and the prevention of accidents
- Improvement of employee morale - can serve to increase employee/rating holder awareness and understanding of safety regulations,

- An opportunity to demonstrate the APF's commitment to compliance generally, and to SMS
- Development of a dynamic record of safety performance
- Creation of positive cycle of safety improvement
- Improvement of management awareness of problems
- Indicating that the APF is making a good-faith effort to comply with applicable regulatory requirements.

## 4.4 Internal Safety Investigation

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### 4.4.1 Investigation Fundamentals

- (i) All incidents are investigated by APF safety oversight representatives in accordance with Operational Regulations Part 12 and, specifically, Regulatory Schedule 55 which defines the notification, investigation and reporting process.
- (ii) In accordance with APF's principles of a positive safety culture, APF's Internal Investigation Policy states that the purpose of internal investigations is to find systemic causes and implement corrective actions, not to lay blame.
- (iii) Accountability for the management of internal safety investigations and the investigation process rests with the APF Safety and Training Manager, who is also responsible for:
  - (a) Defining the scope of an investigation
  - (b) Nominating investigators, including specialist assistance if required
  - (c) Recording investigation findings for follow-up trend analysis
  - (d) Defining timeframes for completion
- (iv) The extent of the investigation will depend on the actual and potential consequences of the event or hazard, which can be determined through an initial risk assessment.
- (v) Reports which demonstrate a high potential for risk will be investigated in greater depth than those with low potential.

### 4.4.2 The Investigative Process

- (i) APF's comprehensive investigative process will address the factors contributing to the event (active failures), rather than just focusing on the event itself.
- (ii) Lessons learned about safety are more beneficial when they include a focus on root causes (why) rather than a description of the accident or incident only (what).
- (iii) APF investigators look beyond the obvious causes at other contributing factors, including organisational issues, recent changes and human factors.
- (iv) Identified safety issues are disseminated throughout the organisation, along with 'lessons learned' from these identified safety issues.

### 4.4.3 Notification of Investigation Results

The APF recognises the importance of learning lessons from incidents and disseminating the results of investigations to supervisory staff and members. The process for these communications is:

- Equipment defects identified during investigation (for example, incorrect canopy, bag, harness combination) result in a Technical Directive (TD) issued from the National Office and promulgated to members on the APF web site.
- Collation of incident information and investigation is the responsibility of the APF Technical Manager who will identify trends and report to the Technical and Safety Committee for action. This may result in regulatory changes managed through the CEOs management structure.
- The Technical Manager publishes a safety section in the popular quarterly magazine issued to all members. The incidents listed in this publication describe the incident and draws lessons and preventative measures from it.
- Fatality reports are normally issued in three stages:
  - (a) A Preliminary Investigation Report (PIR), is compiled usually within 7 days of the incident and distributed electronically to all licenced members. It includes only the facts available at the time and is not intended to provide any conclusions nor give any explanations as to why a fatality has occurred.
  - (b) After a complete investigation is conducted (usually carried out in cooperation with local police), a detailed Fatality Report (FR) is provided to the State Coroner and promulgated to other relevant parties

- as soon as practically possible. The FR will provide as much information as possible in order to understand what has occurred and why and what could have been done to prevent reoccurrence.
- (c) Once a formal finding is determined by a Coroner, learning outcomes are distributed to relevant members.

## 4.5 Management of Change

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### 4.5.1 Need for Change

We are constantly exposed to change. The challenge for leaders and managers is to recognise that change invariably introduces new risks which, in turn, need also to be managed. The identification of new hazards associated with change and the elimination or mitigation of their associated risks is to be conducted in accordance with the risk management process outlined in this manual.

Some risks in change are obvious; a new aircraft or change in drop zone location requires a new risk management investigation. Some are not so obvious; a DZSO who has been doing the job for some time and may have become complacent. Also, a change introduced to improve safety may introduce safety risks elsewhere—change invariably creates the potential for unintended consequences.

Whether change is to be brought about through new projects, or through modifications to operating procedures, it will involve risks. There is a very strong link between change management and risk management—the two processes support each other and should be used together.

### 4.5.2 The management of change process

The steps in the management of change process to be implemented within the APF are:

- STEP 1: Communicate and consult
- STEP 2: Develop the case
- STEP 3: Conduct risk assessment and planning
- STEP 4: Prepare the project plan
- STEP 5: Implement the change
- STEP 6: Ongoing monitoring and review

Throughout all steps in the process, there must be ongoing communication and consultation with all those involved.

Although this SMS is designed as a policy document, the subject of change management appears not to be well appreciated throughout the Federation. The following detailed explanation of the required process is provided below for attention by all levels of management.

#### STEP 1: Communicate and consult

- Have I determined who my stakeholders are?
- Internal? External?
- Whom do I need to consult?
- Have all my stakeholders been consulted?
- Have I developed a communication plan?

#### STEP 2: Develop the case

Provide a compelling argument for making the change and a clear statement of the benefits that will result. If undertaken properly, this step will enable you to respond to people's questions, concerns and perceptions, thereby ensuring their willing participation, their sense of ownership and thus the project's eventual success.

#### Key activities

1. Establish the background and context that frame the case for change.
2. Develop the case for change.
3. Define the statement of need.
4. Determine the scope of change and the boundaries of the project or new venture

### **STEP 3: Conduct risk assessment and planning**

Whenever there is change, there are also likely to be both opportunities and risks. You should adopt a risk-based approach to planning change. Identify and quantify both opportunities and risks. Risk management planning is based on establishing the context (as in step 2: Develop the case), and then identifying, analysing, evaluating and reducing risk to minimise the negative impact of change on parachute operations, while maximising potential benefits.

Don't make this process complicated. The most important part of the process is having all the people who are likely to be affected by the change, or who can add value to identifying potential risk, in the room to openly discuss the issues.

#### Key activities:

1. Assemble a team to do the risk planning.
2. Develop your risk management plan.
3. Present this plan to the decision maker for approval.
4. Extract the risk treatment strategies and insert these as tasks into the project plan.
5. Re-evaluate your proposed risk treatment strategies to identify any new risks introduced as a result.

### **STEP 4: Prepare the project plan**

Developing a project plan that considers the decisions and planning outlined in steps 1, 2 and 3 will ensure effective implementation. The project plan should address the need to manage the change and be developed specifically for the organisation, taking into account its unique culture and circumstances. The level of detail in the project plan will vary with the organisation, how complex the change is and the number of variables involved.

The critical feature of step 3 is the link back to the risk management planning in step 2. This is achieved by extracting the risk treatment strategies identified and planned for in the venture risk management plan and listing these items as tasks in the project plan. Each task will have a nominated timeline, responsibilities and resources.

A project plan must also outline internal implementation and communication strategies, and needs to engage all staff. This will give stakeholders confidence that the risks of the change have been taken into account, and that the risk treatments are being appropriately resourced and managed.

A project plan also provides a documented record of activities, tasks, resources and performance that can be used as a reference for future change management. Cultural and organisational factors need to be considered to ensure that the change is implemented smoothly and effectively. The key to effective implementation is engagement and communication. Many people in the organisation will want the benefits of the change, but will need to be given a high level of confidence or reassurance that the benefits will outweigh the costs.

#### Key activities

1. Appoint a project director to be accountable for overseeing implementation and monitoring progress.
2. Appoint a project manager to be responsible for implementing the project plan.
3. Develop the project plan, including calculating the resources needed to implement it. Seek further approval if the scope or context has changed from step 2. Have a clear strategy for communicating the change.
4. Consider the 'people' aspect of change, the current cultural and internal barriers to change.

### **STEP 5: Implement the change**

Step 4 'executes' or implements the project plan developed in step 3. This is where the change takes place. The principles of change management are used to guide the activity, focus and approach adopted in this step. The pace of change and the required momentum also need to be considered in step 4. For larger and more complex projects, the change implementation program might need to be maintained over several years.

#### Key activities

1. Undertake the tasks and activities in the project plan.
2. Report progress to the project director.
3. Continually communicate with staff and other stakeholders.
4. Review progress and performance, ensuring that the risk treatments listed in the risk management plan (step 3 above) have been implemented and are complete.

## STEP 6: Ongoing monitoring and review

To ensure that the change is implemented as intended and changing circumstances do not alter priorities, the plan must be constantly monitored, reviewed, and adjusted where necessary. Maintain communication and consultation with all stakeholders. The following should be monitored for change:

- Knowledge (new factors or information are included)
- Stakeholders (new stakeholders are included over time)
- Consultation (all relevant stakeholders are consulted)
- Communication (high quality and appropriate methods used)
- Risks (risk treatments are implemented, and new risks are identified, addressed and managed appropriately)
- Common understanding (maintained by all participants)
- Quality of decisions
- Changes in legislation, regulation and market factors
- Effectiveness of the implementation plan.

### Key activities

1. Check regularly to ensure the ongoing deliverables of the project plan are clear and understood.
2. Establish a means of receiving feedback – communicate, communicate, communicate!
3. Monitor feedback and determine actions to continuously improve project.
4. Measure the success of any actions taken.

## 4.6 Continuous Improvement of the SMS

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### 4.6.1 A Measured Approach

The APF's safety objectives are Specific, Measurable, Achievable, Realistic and are subject to a Timeframe. This enables APF to measure and review current practices, including looking at all parts of the SMS to make sure they are still relevant and applicable, and improving on areas where the SMS is not as effective. Each element of the APF's SMS will undergo a full review every year, including:

- Safety Policy and Objectives
- Safety Risk Management
- Safety Assurance
- Safety Promotion
- Human Factors – Fatigue Risk Management.

The annual review will be conducted by the Technical and Safety Committee (acting on advice from the STM), to ensure that:

- The SMS continues to meet its core safety objectives
- Safety performance is monitored against objectives
- Identified hazards are addressed in a timely and appropriate manner.

## 5. SMS Component Four: Safety Promotion

### 5.1 Safety Promotion

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#### 5.1.1 Robust Safety Culture

Safety promotion is an important component of APF's SMS, setting the tone for the entire organisation, and helping to build a robust safety culture throughout. Safety promotion also helps nurture enhanced organisational safety performance, by providing feedback and safety information to the membership, and the distribution and ongoing availability of the APF SMS Manual.

#### 5.1.2 Training and Communication

In keeping with the guidelines under the ICAO SMS structure, safety promotion is divided into two elements, **Safety Training** and **Safety Communications** with both playing vital and ongoing roles in APF's SMS.

In order to successfully implement the APF's SMS, safety managers and representatives need to be selected, trained and competent to perform their roles, and strong lines of communication need to remain in place for all stages of SMS implementation and management.

### 5.2 Safety Training

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#### 5.2.1 Review of Training Needs

In introducing SMS training principles and practices into the organisation, APF safety representatives have taken the following steps:

- (i) Thoroughly reviewed SMS Training development and implementation including reviewing the findings of the Gap Analysis conducted on the APF, and
- (ii) Identified key skills, processes or areas of knowledge/knowledge gaps
- (iii) Identified training solutions to close those gaps

Whilst APF has developed and implemented various safety-related training programs and initiatives over-time, in the development of APF's SMS it has been identified that whilst there are robust safety systems in place, some further action in individual training needs to occur:

- (i) Stand-alone SMS and FRMS training courses may need to be developed
- (ii) SMS and FRMS content needs to be added to existing training syllabuses for, initially, pilots and instructors. In the longer term, this education may have to be extended to other safety critical areas, e.g., packers.
- (iii) While SMS Induction Training is under development, the SMS Manual forms the basis for any SMS induction training, in particular, the Club SMS which should be used for local induction training.

#### 5.2.2 APF's SMS Training Plan

By providing SMS training to all staff, regardless of their role, they are given a better understanding of APF's SMS, thereby involving them in the pursuit of the organisations safety objectives and goals. With consideration given to both operational safety representatives at local level, and senior management safety representatives, APF's SMS training plan includes:

- (i) A list of the type/level of training to be made available/conducted and the status of development/completion
- (ii) A list of those requiring SMS training, and what type/level of training is needed for each including:
  - Club representatives
  - APF Safety Oversight Representatives
  - APF Executive Management Safety Oversight Representatives
  - National Managers
- (iii) Recurrence training
- (iv) Evaluation of safety training effectiveness

### 5.2.3 Training Delivery Methods

In support of SMS implementation, the APF is developing training programs and supporting literature that can be delivered by any SMS trained safety representative. Training delivery methods include:

- One-on-one training or coaching in the workplace (conducted by trained APF safety representative);
- Short-term training courses – conducted at APF Office
- Self-directed learning – e.g. using written instructional material/guidelines developed by the APF or provided by CASA;
- Technical and Safety Conference SMS Induction Workshop.

### 5.2.4 Training Content

- (i) For Instructors:
  - Course syllabus for the DZSO rating includes significant safety-related content including incident/occurrence notification, incident/accident reporting and investigation and emergency response planning
  - Some assessment material on SMS/FRMS has been included in Instructors exams. Formal training material will be included in course documents following the instructor structure review being conducted in late 2017.
- (ii) For Safety and Training Officers:
  - Have been trained in Auditing.
  - Have a Certificate IV in Workplace, Health and Safety.
- (iii) For National Managers:
  - Have been trained in Auditing.
  - Have a Certificate IV in Workplace, Health and Safety (or are in the process of obtaining one).
  - Have a Certificate IV in Training and Assessment (or are in the process of obtaining one).

## 5.3 Safety Communication

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### 5.3.1 Two-way Communication

- (i) Maintaining two-way communication means ensuring all stakeholders are kept fully informed about APF's SMS, that stakeholder feedback is being captured and acted upon where appropriate and results and outcomes are communicated back to the stakeholder. The goals of APF's safety communications include:
  - Conveying safety-critical information
  - Ensuring stakeholders are fully aware of the SMS and its processes
  - Explaining why particular actions are taken, or are necessary, or why safety procedures are introduced or changed
  - Giving timely feedback to those who lodge safety/incident reports.
- (ii) APF's Safety Communication is also important for communicating 'good to know' safety information in order to build a more robust safety culture, by means such as:
  - Annual report
  - Safety bulletins
  - Newsletters with safety articles/information etc. included:
    - Instructors News Sheet
    - Club Advisor
    - Aircraft E News
    - Fortnightly Broadcast
  - Safety Matters Content - Australian Skydiver Magazine
  - Safety posters
  - Websites, online forums and email distribution lists
  - Safety communication campaigns
  - Seminars and workshops

### 5.3.2 Managing Communication

- (i) In order to be effective and achieve objectives, communication must be two-way, it must go up, as well as down APF's chain of responsibility in order to ensure everyone understands the organisation's risk management activities.
- (ii) Senior management and safety oversight representatives need to be able to get their message across, and members, club representatives etc. need to have their safety concerns heard and acted upon where appropriate, in order for the feedback loop to be closed.
- (iii) Communication focuses on raising awareness of potential hazards and risk issues.
- (iv) Regular discussion and review of incidents/near misses including causation factors, will help to foster a learning and reporting culture.



## 6. SMS Component Five: Human Factors (Fatigue Risk Management System)

### 6.1 Introduction

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In considering the policy for human-related safety issues, the APF accepts that:

- Human performance limitations continue to dominate aviation and parachuting accident statistics;
- The effective management of error remains one of the greatest challenges to the further reduction of accidents and improving safety;
- Effective technical **and** human factors are required for safe and efficient operations; and
- The need for improved efficiency and having fit-for-duty personnel highlights the crucial role of effective human factors.

In resolving the hazards and risks related to human activity and to avoid long term prescriptive measures (fixed and inflexible duty periods), the APF will gradually introduce a Fatigue Risk Management System (FRMS) as part of the overall consideration of human factors applying to parachute operations.

The FRMS is a systems-based approach to manage human-related risk and introduces management practices and procedures to predict, manage and monitor fatigue and stress-related risk.

The eventual aim is to achieve a fully incorporated FRMS where a cultural change has occurred leading to all our members contributing to a reduction in fatigue risk.

It is recognised that this change will not occur quickly and the transition has been designed to happen over three phases (outlined below).

### 6.2 FRMS Policy and Objectives

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#### 6.2.1 Management Commitment

The APF's safety policy objectives remain as outlined in the Safety Policy Statement located at the start of this SMS. In particular, effective communication and an open reporting culture are vital to the reduction of risks related to fatigue and stress.

No one will be penalised for reporting suspected fatigue hazards relating to themselves or others.

#### 6.2.2 Safety Objectives

The APF will treat the FRMS as an integral part of the overall SMS and safety objectives will be set, monitored and reviewed as part of the SMS.

#### 6.2.3 Organisational Structure and FRMS Management Responsibilities

The hierarchical structure and responsibilities for the FRMS are no different from those described earlier in this document as applied to the overall SMS.

It is noted that, although the Executive and National Managers have a significant role in establishing safety systems and processes, the identification and mitigation of fatigue risk can only be performed at local clubs. Chief Instructors and their DZSOs have an essential role in establishing clear communication with their staff to recognise developing fatigue hazards and eliminating them.

#### 6.2.4 Affected Members

Although all members could be affected by stress and fatigue, this instruction applies specifically to Operational Crew Members (OCM) who, if affected by stress or fatigue, could present a hazard to other persons or property. OCM include:

- Tandem Instructors
- Pilots
- DZSO (if also participating in tandem activities).

## 6.2.5 FRMS Phased Introduction

Introduction of the FRMS will be conducted over three phases:

- Phase 1: 1 July 2017 – 30 June 2018: Prescriptive guidelines have been set and communicated to all clubs by a continuing improvement module. These guidelines set duty periods and require both OCM and their managers to take advantage of rest periods and monitor fatigue levels.
- Phase 2: 1 July 2018 – 30 June 2019: Introduction of fatigue management which will include more emphasis on risk management, identification of fatigue hazards, monitoring of the process and training and education of OCM and other staff.
- Phase 3: 1 July 2019 – 30 June 2020. Finally, the FRMS introduction will require full compliance with club based FRMS. This will be supported by ongoing training and education of staff.

Instructions and guidelines for Phase 1 have already been distributed to clubs. Specific details regarding Phases 2 and 3 will be communicated closer to their implementation date.

## 6.2.6 Data Collection

The collection of fatigue-related data to support informed decisions will be an integral part of the developing FRMS. However, at this stage, collection of meaningful data is difficult to manage in a meaningful way.

During Phase 1, STOs are requested to include questions and comment on fatigue related issues during their audit visits.

## 6.3 FRMS Risk Management

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### 6.3.1 Risk Management Overview

FRMS risk management uses the same principles as the general risk management process outlined in Component 2 of this document. This approach is proactive in identifying fatigue hazards and depends on honest communication between OCM and club management. As with all risk management, the main steps are:

- Identify fatigue hazards and assessing the risk to operations and personnel;
- Treating the risk using control measures to eliminate or mitigate the risk;
- Monitoring, reporting and, if necessary, improving the control measures.

### 6.3.2 FRMS Process

The FRMS process is similar to the standard SMS risk assessment detailed in Component 2 of this document. In summary:

- (i) Communicate and consult with members either individually or in meetings.
- (ii) Identify fatigue hazards – all members are encouraged to speak up about perceived fatigue hazards (rest facilities, insufficient education, lack of clear policies or difficulty in following policies and procedures).
- (iii) Assess the severity of fatigue hazards by the club safety committee, safety manager or CI using the likelihood/consequence risk assessment matrix.
- (iv) Evaluate and mitigate the risks by calculated control measures. This will be done by the club management and may involve changes to rosters, operational procedures or other measures to preferably eliminate the risk completely.
- (v) The club will record the results of the risk management plan and share that with all staff.
- (vi) The club will monitor any changes and formally review them on a regular basis to ensure any changes are effective. Members are encouraged to participate in this review at any time.
- (vii) The APF audit system will include review of the club's activities in regard to FRMS.

### 6.3.3 Common Causes of Fatigue

The following table, provided by CASA, is included for the interest of APF Management:

<b>Common work-related causes</b>
Restricted sleep due to short rest periods or long commutes to the DZ
Multiple high workload periods
Long duty days
Hot weather during duty periods
High cumulative duty times (hours/month or year)
Changes to operations or procedures
Tasks required to be done before or after duty periods (administration, training, cleaning)
<b>Common non work-related causes</b>
Having a second job
Long commutes to and from work
Changes in domestic arrangements
New baby
Family commitments
Social life
Moving house
Sleep disorders or sickness affecting quality/quantity of sleep

## 6.4 FRMS Promotion

### 6.4.1 Training

The APF will gradually introduce assessment on SMS and FRMS matters on rating and revaluation examinations for instructors and pilots. Training material for these assessments will be included in course material following the review of the instructor structure to be conducted in late 2017.

OCM are encouraged to complete the eLearning modules provided on the CASA web site to gain an understanding of the subject. These modules are specifically designed for sports aviation participants. Each module takes about 10 to 15 minutes to complete. The modules can be accessed at: <https://www.casa.gov.au/education/landing-page/elearning-catalogue> (scroll down to 'Human Factors in Sport, Recreation and General Aviation').

### 6.4.2 Communication

It is essential that all staff and members participate in communicating issues relating to safety so we can build a more robust fatigue safety culture within the APF.

The risks to our clients are considerable if we do not maintain high levels of professionalism. Complacency, lack of awareness and bad decision making cannot be tolerated in our business and sport.

# **Part C: Safety Culture Improvement Strategies**

## 7. A Positive Safety Culture

### 7.1 Safety Culture

*If you are convinced that your organisation has a good safety culture, you are almost certainly mistaken. A safety culture is strived for, but rarely attained. **The process is more important than the product.***

**James Reason**

#### 7.1.1 APF's Safety Culture

APF continually strives to improve its safety culture, working to enhance a culture that is supportive of members and club representatives, recognises error can and will be made, and is of the belief that focusing on 'blame' will not resolve problems. APF encourages open and honest reporting, is willing to admit to, and learn from its failures, and strives to be open and fair in dealing with those involved.

#### 7.1.2 Trust

APF continually works to further enhance the atmosphere of trust that exists throughout the organisation. Members are encouraged to provide safety related information, but are also clear about where the line must be drawn between acceptable and unacceptable behaviour.

#### 7.1.3 Support

APF senior management openly supports, promotes and encourages an open and fair reporting culture and a positive and supportive safety culture, which is demonstrated by:

- (i) Clear evidence of senior management leading by example (members see examples of senior management actions, decisions and behaviours, all of which encourage an open and fair culture)
- (ii) Members see evidence of support and encouragement for risk/hazard reporting
- (iii) An open and fair culture is included, and endorsed, in various publications/documentation and communication to members
- (iv) The organisations 'safety climate' is continuously monitored by audits and surveys
- (v) All those with responsibilities under APF's SMS are involved in establishing and maintaining the APF's safety culture.

#### 7.1.4 Five Primary Cultural Elements of a Healthy Safety Culture

APF believes there are five primary cultural elements that support and nurture a healthy safety culture. Those are:

- (i) **Informed Culture:** In an informed culture, insight breeds a positive safety culture. The APF SMS system which collects, analyses and disseminates safety information, is a vital part of APF's informed culture. In keeping with an informed culture, 'reality checks' are regularly performed on the organisation, with the results disseminated in order to keep members informed.
- (ii) **Reporting Culture:** A reporting culture is based on trust with APF's requirements/guarantees defined as the following:
  - (a) Indemnity against disciplinary action except in cases of wilful violations or gross negligence (striking a balance between 'blame' and 'no blame');
  - (b) Confidentiality and de-identification;
  - (c) Competent analysis of incidents / accidents by independent individuals (people who report outside the chain of command of those involved);
  - (d) Rapid, useful, accessible feedback to the reporters; and
  - (e) Ease of making a report.
- (iii) **A 'Just' Culture:** A 'Just' culture is based on APF's beliefs that:
  - (a) SMS is a Corporate value;
  - (b) Our SMS programme considers our own particular "way of doing business" as well as our unique possibilities and constraints;

- (c) Occurrences are caused by systems failures;
  - (d) The failures observed at the “front end” of our operations are considered symptoms of deficiencies in safe operations;
  - (e) Human error is viewed as a symptom; and
  - (f) Error is accepted as a normal, unavoidable, but manageable component of human performance.
- (iv) **A Flexible Culture:** A flexible culture allows the following paradoxes. We:
- (a) Adhere to Standard Operating Procedures (SOP’s) but we seek better ways in a controlled, responsible manner;
  - (b) Actively avoid errors but we do not stifle initiative
- (v) **A Learning Culture:** The APF supports a learning culture which has:
- (a) The ability to ‘reframe’ (we try not to display a rigid, fixed ‘mind-set’);
  - (b) The will to implement reforms;

## 7.2 Application of a Positive Safety Culture Procedure

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### 7.2.1 Purpose

The purpose of this procedure is to provide all APF members, clubs and their representatives, and safety managers and safety oversight representatives with responsibilities under the APF’s SMS, with guidance on:

- APF’s application of safety culture procedures to incident management
- APF’s management of incidents, accidents, near-misses, hazards, and risks involving people
- APF’s commitment to a positive safety culture approach that is in keeping with APF’s values – zero harm outcomes and the sustained delivery of a healthy safety culture.

### 7.2.2 Scope

- (i) This procedure applies to all APF members, clubs and their representatives, and safety managers and safety oversight representatives with responsibilities under the APF’s SMS,
- (ii) It is used in conjunction with existing APF disciplinary procedures as defined in the *Misconduct Policy and Procedures Manual*.
- (iii) The positive safety culture procedure will also apply to safety oversight representatives and management processes following incident/accident investigation, in particular where the contributing factors involve human error

### 7.2.3 Responsibilities for Application of a Positive Safety Culture Procedure

- (i) Chief Executive Officer is responsible for:
  - (a) Implementing this procedure
  - (b) Providing necessary resources to give effect to this procedure
  - (c) Leading and modelling the safety culture process
- (ii) Safety Manager will:
  - (a) Assist managers and oversight representatives in implementation and maintenance of this procedure
  - (b) Promote and model the positive safety culture procedure
  - (c) Conduct periodic audits to ensure the implementation of, and adherence to this procedure
  - (d) Coordinate management level training/awareness about application of this procedure
  - (e) Compile and distribute statistics regarding its effectiveness and application
- (iii) National Managers are responsible for:
  - (a) Ensuring all members, clubs and safety oversight representatives comply with this procedure
  - (b) Leading and modelling the safety culture process
  - (c) Periodically reviewing this procedure and reporting to the CEO as to its effectiveness and application
  - (d) Providing appropriate training and support to any member in application of this procedure
- (iv) Safety Oversight Representatives are responsible for:
  - (a) Ensuring all members, and club representatives comply with this procedure
  - (b) Leading and modelling the safety culture process

#### 7.2.4 Application

- (i) **Healthy Safety Culture Commitment** - APF's approach to a healthy safety culture recognises that:
  - (a) People make mistakes
  - (b) People may develop unhealthy behaviour patterns
  - (c) There is a zero tolerance of reckless conduct
  - (d) Members must be recognised and rewarded for good performance and promoting sound work practices on an ongoing basis.
- (ii) **In the event of an incident**, near miss, or identified risk to safety, APF's Healthy Safety Culture approach creates an alternative to the two extremes of 'a punitive culture' or 'a no blame culture', and balances the need to have a 'non-punitive reporting and learning environment' (an environment not focused on attributing blame and administering punishment) with the very real need to hold people accountable for their actions.

**In the event of misconduct** associated with an incident, accident or near-miss. APF's *Misconduct Policy and Procedures Manual* deals with disciplinary action following a breach of the Rules or Regulations. It is based on adherence to underpinning principles to ensure disciplinary processes are timely, fair, accountable and transparent. These principles include a "just and fair safety culture" to discourage blaming the individual for an honest mistake. Sanctions should only be applied where there is evidence of a conscious violation, or intentional, reckless or negligent behaviour.
- (iii) **A healthy safety culture:**
  - (a) Focuses attention on identifying and addressing the system/organisation factors (root causes) which affect reliability and performance
  - (b) Provides an atmosphere of trust in which members are encouraged to report essential safety-related information (e.g. incident, risk, and near-miss reports) in order to build a healthy reporting culture
  - (c) Clearly defines where the line is drawn between acceptable and unacceptable behaviour.
- (iv) **Application of a Healthy Safety Culture:** High trust levels are necessary in order to create and sustain a healthy safety culture throughout the APF and senior management, national managers, and safety oversight representatives must apply the principles in a consistent manner. The healthy safety culture procedure should only apply following the conduct of a systemic investigation which focuses on identifying and addressing system/organisation contributing factors and related causes.

