



Australian Ballooning Federation Inc

Aviation Safety Manual

Australian Ballooning Federation – Providing a superior standard of access to safe, responsible and fun recreational ballooning.

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PREFACE

This manual is intended to acquaint all ABF members with the ABF's practical ballooning safety procedures. It's for day-to-day use and should be read in conjunction with the ABF Operations Manual and the ABF Safety Management System Manual. It is a living document and members are strongly encouraged to provide both constructive comment and suggestions for amendment.

GLOSSARY OF TERMS

ABF: the Australian Ballooning Federation Inc.

ABF Committee: the President, the Vice-president, the Secretary and the Regional Representatives

ABF Executive/Board: the President, the Vice-president and the Secretary

ABF Management Group: the National Administrator, the Operations Manager, the National Training Manager, the National Safety Officer, the President, the Vice-president, the Secretary and the Regional Representatives

Accident: in regard to a balloon, an occurrence causing major damage, serious injury or fatality

Accountability: being answerable or liable for one's decisions/actions

ALARP: as low as reasonably practicable

Audit: to examine and verify; inspection; appraisal; review

Emergency: an urgent need for action; crisis; tragedy

Error: a legitimate decision, action or inaction resulting in an outcome neither planned for nor expected

Event: an occurrence that is non-standard, out of the ordinary or a 'near-miss' where the probability of damage or injury was either non-existent or low

Hazard: anything that poses a danger or harm relevant to the activity to be undertaken

Incident: in regard to a balloon, an occurrence causing minor damage or injury

IRIS: Integrated Risk Information System – the ABF's online occurrence reporting tool

Just Safety Culture: *In a just culture, employees are confident that while they will be held accountable for their actions, they will be treated fairly. They also know that those who act recklessly or deliberately take unjustifiable risks will be punished.* (James Reason)

Key Performance Indicator (KPI): a measure of performance in achieving long-term goals; part of a measurable objective, which is made up of a direction, benchmark, target, and time frame.

Near Miss: an event that definitely had the potential to cause damage or injury

Open Reporting Culture: *Reporting cultures are receptive to member safety-problem reports. The members know they will not be punished or ridiculed for their reports. The Flight Safety Foundation stated several years ago that if you expect members to provide safety information, then you must have a printed policy signed by the CEO that assures them the organisation will not initiate disciplinary proceedings against a member who, in good faith, discloses a hazard or safety incident due to conduct that was unintentional. Members must be certain that confidentiality will be maintained.* (James Reason)

Occurrence: any one of an identified event, incident, or accident in regard to a balloon

Responsibility: liability in regard to one's actions; duty; reliability

Risk: the danger posed by a hazard expressed in terms of likelihood and consequence

Safety: protection from harm; security

Stakeholders: In regard to safety management, stakeholders are 'those people and organizations who may affect, be affected by, or perceive themselves to be affected by, a decision or activity during the risk management (RM) process.' Reference AS/NZS 4360:1990:

Violation: the intentional non-compliance with rules or procedures; negligent or reckless behaviour

1. GOVERNANCE AND OVERSIGHT

Management Commitment to Safety

The ABF Management Group confirms here its total commitment to placing safety above all else in regard to ABF ballooning operations. Its safety commitment statement is clearly enunciated in the following paragraph and in the ABF Safety Management System Manual.

In essence it highlights the *primacy of safety*. It stresses the support for a Just Safety Culture in which human error is fully accepted as unavoidable, and that blame and culpability are considered only where violation or negligence is evident.

The safety statement also supports an open reporting culture that sees reports not as a means of finding fault and taking disciplinary action, but as a positive step in building a data base of safety information that can be used to direct safety resources in the most efficient manner possible. Any safety issues shared will lead to positive outcomes.

The ABF Management Group Safety Commitment Statement

We, the ABF Management Group, have a Duty of Care and Moral Obligation to manage the ABF in a way that gives priority to the safety of all members when they are ballooning. This is under-pinned by common law legislation and the ABF's values. We are unequivocally committed to discharging this Duty of Care and Obligation.

When ballooning, all members must however manage their own safety and be actively involved in the safety of any others involved. Aviation has some level of risk and members' planning and execution must be thorough to ensure the risks are as low as reasonably practicable.

Risk management is an essential part of the ABF safety culture. We view the injury to or loss of any of our members due to incidents or accidents as avoidable. The ABF safety target therefore is to actively seek to eliminate injury and adverse events within all ballooning activities. To achieve this, the ABF must be an organisation that:

- 1. Establishes and maintains an effective Aviation Safety Management System that fosters a Just Safety Culture;*
- 2. Openly and honestly identifies, reports and manages hazards, near misses and occurrences;*
- 3. Responds to reported occurrences in a fair and just manner where no member will be punished for openly reporting an honest error but where deliberate violation of rules and procedures will not be condoned;*
- 4. Utilises Aviation Risk Management principles to identify, assess and control hazards associated with all ballooning activities;*
- 5. Ensures safety staff are trained, and all members receive regular safety information;*
- 6. Ensures that ABF-wide communication mechanisms are established and are operating effectively;*
- 7. Complies with ABF, ATSB and CASA aviation safety occurrence reporting and investigation requirements by impartially investigating all occurrences, learning from them, and taking action to prevent their recurrence;*
- 8. Includes measurable safety goals and objectives into the ABF's annual business plan, thereby maintaining visibility of safety performance; and*
- 9. Fosters habits where maintenance and modification of equipment are in accordance with CASA rules.*

The importance to the ABF Management Group of the safety of all ABF members must not be underestimated. We likewise request a genuine commitment by all members. The aim is that together, as members of a recreational ballooning organisation, we will be best placed to undertake and enjoy ballooning to its fullest and safest extent.

System Structure

The ABF's operational safety system comprises:

- A dedicated National Safety Officer (NSO).
- Regional safety representatives.
- An in-house occurrence reporting system where reports go only to the Operations Manager and the NSO for information and analysis.
- Funds for regional clubs to run regular safety seminars/events to encourage safety awareness.
- Delegation of experienced members at regional events and gatherings to monitor activities.
- Publication via Pilot Circulars to all members and on the web, of important operational information and the results of occurrence investigations.
- The monitoring of occurrence data as an ABF key performance indicator (KPI).

2. SAFETY RESPONSIBILITIES

Responsibility and Accountability

Every ABF stakeholder, from the Executive to the newest student pilot and crew person, has a responsibility for balloon safety. Management Group members and others in an oversight position have responsibility for the broader safety issues while pilots and crew will be focused on the day-to-day operational issues.

All members and relevant stakeholders must accept that they are responsible and accountable for their decisions and actions in regard to their area of safety responsibility. Undoubtedly all will be aiming to achieve the safest outcomes possible. However where decisions and actions lead to an adverse outcome the relevant person must accept they will be held accountable. Accountability is in the context of a just culture as outlined in Section 1.

Responsibility Hierarchy

The ABF Management Group has responsibility for providing a national organisational safety system which, when combined with responsible member activity, aspires to achieve an exceptional level of safety for recreational ballooning Australia-wide. While all members of the Group have this responsibility the three officers most directly involved are the National Operations Manager, the National Training Manager and the NSO. Of these the NSO shoulders the major portion of managing the safety system.

This responsibility flows down to the Regional Representatives and, where appointed, to their regional safety officers. Their focus is to be on issues at the local level relevant to location, environment and their member activity regime.

3. SAFETY STANDARDS

Compliance Requirements

The ABF policy on meeting safety standards is that all certificate members must comply with or adhere to:

- Relevant Commonwealth legislation
- CASA legislation
- ABF rules and procedures as outlined in all ABF documents and manuals
- Balloon manufacturers' flight and maintenance manuals
- In regard to LPG, AS/NZS 1596:2002 and the various State legislation
- Common law requirements in regard to OH&S

Compliance with these rules and procedures aims to ensure members meet the required safety standards. Non compliance may be acceptable only where it can be demonstrated that compliance, under the circumstances at the time, would have been the less safe option.

Standards and KPIs

In general, the standards required are outlined in:

- CASA performance and competency standards
- ABF competency standards as per the relevant ABF manuals
- Standards contained in balloon manufacturers' manuals
- CASA Human Factors standards
- Australian/State/Supplier standards for transport, storage and handling of LPG

The KPIs are:

- The number of hazards and occurrences reported annually.
- The ratio of occurrences by classification to the estimated amount of ballooning activity as normally occurs on a regular basis.
- The amount and type of member feedback on safety issues.
- The amount of sharing of information and data among all stakeholders and all Recreational Aviation Organisations.

The rules, procedures and standards hierarchy are to be available on the ABF website.

4. RISK MANAGEMENT

Policy and Process

The ABF supports a Risk Management (RM) policy in which risk management is both a formal and an informal tool for balloon safety management and operations.

RM involves the following process:

- prior to conducting an activity, relevant hazards for that activity are identified,
- an overall level of risk is assigned and, based on the results,

- a formal safety decision is made to continue with, modify or abandon the activity.

Risk Planning

When you use the RM process for your day-to-day ballooning activities this is known as Operational Risk Planning (ORP). A step-by-step pilot's guide in how to conduct ORP in the context of ABF's operations is to be available on the ABF website. A handy checklist of operational risk considerations for a standard recreational balloon flight is at Appendix 1. Formal Operational Risk Profiles are at Appendix 2.

Venture Risk Management Planning (VRMP) is the RM process as applied to infrequent, one-off though generally important events, such as balloon fiestas and competitions. The ABF has developed a template for the VRMP process and event organisers will be assisted by experienced ABF members to compile the plan on an individual basis.

Industry Risk Planning (IRP) is the RM process as applied to the corporate and strategic objectives of the ABF as an organisation. Outcomes assist the ABF Management Group to make decisions that best ensure the continued viability and effectiveness of the organisation.

Hazard Register

The ABF is developing both a hazard and a risk register. Contents are compiled from events past, from on-going reports and from proactive member input which of all these is the most important and therefore strongly encouraged. It is used to assist the ABF Management Group to focus on areas that may have an adverse effect on the safety of balloon operations. As a result resources can be directed more effectively at safety initiatives such as upgraded risk profiles, revised or additional training, safety seminars and safety promotion in general. See Section 5 following, for hazard and occurrence reporting instructions.

Variation Reporting

- For reporting anything different or out of the ordinary – reported simply as an event.

5. OCCURRENCE REPORTING AND INVESTIGATION

Report Basics

As stressed in Section 1 above, the ABF supports the contemporary approach to reporting, known as a 'reporting culture'. CASA has advised in writing likewise their unequivocal support. The aim is that by being aware of the nature and advantages of a reporting culture, members will actively participate in reporting all events and occurrences, minor or major, in the knowledge they will not be punished or ridiculed for their reports. It's important to note that nothing is too small to report.

The aim of all reporting is to provide valuable information that may help to prevent future occurrences. Follow-up investigation generally exposes lessons which can be passed on to all. ABF occurrence reporting covers hazards, events, concerns, near misses, incidents and accidents. Often the latter two involve damage or injury, and of necessity are made post-event.

All other reports, being proactive, are made before damage or injury have a chance to occur and are therefore absolutely vital in the occurrence prevention process.

Where members have difficulty or queries regarding reporting they should contact the ABF National Safety Officer through the ABF National Administrator or the ABF website.

Submitting an Occurrence Report

An occurrence report may be submitted by any ABF member or stakeholder.

Reports are submitted in one of two ways. The first is by printing and then filling in the PDF report form available at the ABF website. It, along with supporting material, should then be emailed or faxed to the ABF National Office. The second is by use of a secure on-line reporting system (IRIS) which obviates the printing/emailing/faxing steps. This is the preferred option and full instructions for use of IRIS are available on the ABF website.

All reports are investigated by the NSO. All personal information remains confidential. If a report is to be published due to its significance for ballooning safety, it is first fully de-identified. The only people who have access to a submitted report are the submitter, the Operations Manager, the NSO and the IRIS system owner. Fully confidential reports can be submitted only via the ATSB REPCON reporting system. See the ATSB website. Anonymous reports, since they can't be followed up, cannot be accepted

Investigations

When occurrence reports are received by the NSO a decision is made whether to conduct an abbreviated or a full investigation. This is made on the basis of the significance of the event and the resources available. Hazard and risk reports are noted in a hazard register. Members will receive follow-up and feedback on their report from the NSO. If relevant, lessons learnt will be published as a Pilot Circular *in a de-identified format* so that all may benefit.

As a guide the following prioritises some of the types of occurrences that would call for submission of a report and an investigation, ranging from full to abbreviated:

- Fatality, serious injury or major balloon or property damage (ATSB, CASA).
- An LPG fire.
- A powerline strike.
- Dangerous contact with another balloon.
- A heavy landing causing injury or damage.
- Collision with an obstacle causing injury or damage.
- An adverse outcome arising from maintenance issues.
- Operating a balloon without proper certification.
- An adverse outcome arising from error or violation.
- Experiencing an event or a near miss.
- Recognition of a hazard or risk.

Note: this list is not exhaustive.

6. SAFETY COMMUNICATION AND PROMOTION

System Aims

Over the years the ABF has established a robust system of safety communication and promotion. The ABF is intent on maintaining and enhancing this system as an on-going activity. The aims of this system are to:

- Disseminate urgent safety information to all members in a timely manner.
- Provide important safety information to members on a regular basis.
- Provide to members articles on safety that foster and enhance their interest in and knowledge of safety in general but in particular in regard to balloon operations.
- Provide information aimed to refresh or provide new knowledge regarding balloon operations and technology.
- Provide a forum for members to express their views regarding ballooning in general.

System Details

The system comprises:

- Written communications such as emails broadcast as required, Aeronotes published regularly and Pilot Circulars dispatched either with Aeronotes or separately – all by hard-copy, on-line or both.
- Seminars and events supported by the ABF Management Group but generally organised at regional level or as offered by other agencies such as CASA.
- Individual ad hoc safety promotion such as briefings at mass balloon events.
- Pilot recognition and rewards as outlined in the ABF Operations Manual.

As mentioned above, members are strongly encouraged to contact the ABF NSO should they wish to communicate on an individual basis or if they have any queries regarding the ABF Safety Communication and Promotion system.

7. SAFETY TRAINING

Formal safety training for all ABF safety officers is the organisation's ultimate aim. In particular the NSO is expected to come to the position with some aviation safety training and experience.

Safety training for Regional Safety Officers (SOs) and others is problematic in regard to funding, member remoteness and availability. Accordingly training for these members is generally on an informal basis that relies on the provision of advice and information by the NSO and on individual interest.

All SOs should gain a general knowledge of the James Reason approach to human error and accident causation. This is known as the Just Safety Culture. They should expand their knowledge of the discipline of Human Factors which goes hand-in-hand with the aforementioned approach. Information on these subjects is readily available in both printed form and via the internet.

8. SAFETY AUDITING AND EVALUATION

ABF Audit Policy

The ABF views the auditing of its operations, both external and internal, as a fundamental and on-going component of its quality assurance and improvement process. Regular audits are therefore welcomed.

Types of Audit

External audit is generally conducted by CASA directly or by a CASA-nominated party. Experience has shown that these audits occur infrequently but prove valuable for their quality and relevance.

The ABF has its own documentation set out in the Safety System Manual for the conduct of internal audits and aims at having at least one member trained in the audit process. An internal audit shall be conducted on a biennial basis.

Audit Results, Action and Recording

All audit results are assessed by the ABF Management Group and priority is given to those items requiring immediate attention. All other audit items, whether raised or not, are considered in a proactive manner in terms of 'can we do it better?'

Action items in the first instance will be addressed by the ABF Executive who will respond to the auditor. Relevant operational items will be processed and passed on to regional representatives and/or members directly for their action. Confirmation and feedback from representatives and members are strongly encouraged.

All audit correspondence, action and feedback will be kept on file at the ABF Head Office.

9. SAFETY RECORDS AND DOCUMENT MANAGEMENT

Records Policy

ABF administrative documentation and records are managed by the ABF National Administrator. Information is kept both in hard copy and electronically. All members may access this information on request except for confidential and private information.

Operational documentation such as operations, training and safety manuals, comes under the over-sight of the relevant management group officer. Each has responsibility for review and amendment within their portfolio where necessary.

Safety Document Control

The ABF maintains the following safety-related documentation and systems:

- ABF Safety Management System Manual – broad safety functions
- ABF Safety Manual – ‘coal face’ operational safety guidance
- Hazard and Risk register and management
- ABF Committee information management
- Occurrence reporting and investigation system
- Audit and workplace inspections
- Action management
- Training register

10. EMERGENCY RESPONSE MANAGEMENT

Emergency Response Policy

By its nature recreational ballooning often takes place in remote country areas and is not subject to flight notification. If a significant emergency occurs the retrieve crew will likely be the first external agency to know. For this reason pilots and crew must have and be familiar with their own emergency response plan (ERP).

The ABF Executive’s response to a major emergency will be one of oversight and broad support for those at the ‘coal face’ of the emergency. The ATSB, the regional representative or the police will be the liaison link between the ABF Executive and those directly involved.

Emergency Response Action

The ABF has developed a generic ERP which is at Appendix 3. Also included is an Emergency and Abnormal Procedures Guide at Appendix 4.

Reporting

In addition to notifying the ATSB, as soon as possible after an emergency the pilot or other responsible member shall submit a report to the ABF in accordance with the procedures outlined in Section 5 above. This allows for incident analysis, the learning of lessons and the making of recommendations that hopefully will prevent similar occurrences in the future.

APPENDICES

1. Preparation and Flight Planning Considerations – Risk
2. ABF Operational Risk Profiles
3. ABF Generic Emergency Response Plan
4. ABF Emergency and Abnormal Procedures Guide

ABF BALLOON RISK MANAGEMENT TOOL
PREPARATION AND FLIGHT PLANNING CONSIDERATIONS

Prior to a ballooning activity the majority of pilots, whether they realise it or not, will conduct an informal *safety assessment*, usually parcelled within their pre-flight preparation and planning. However, a more formal approach will ensure important things aren't missed. The following list, while not exhaustive, includes items that a pilot should take into account to maximise safety assurance.

1. **Task restrictions** – The pilot is aware of any restrictions that may apply regarding, for example certification, medical, airspace, radio, etc. The pilot needs to be satisfied the impending task does not exceed or breach restrictions.
2. **Task details** – The pilot fully understands the requirements, breadth, limitations and restrictions applicable to the proposed flight.
3. **Task Risk Profiles** – Risks relevant to the task have been considered.
4. **ABF Code of conduct** – Pilot to have a general understanding of and has considered specific application relevant to task at hand.
5. **Pilot status:**
 - a. pilot and radio certificate;
 - b. recency requirements are met;
 - c. physical condition – fit, healthy, nourished, hydrated, well-rested;
 - d. mental condition – not unduly stressed, capable of full task focus;
 - e. compliance with CASA rules on Alcohol and other Drugs (AOD).
6. **Crew status:**
 - a. preferably at least one trained and experienced;
 - b. observed to be physically and mentally fit;
 - c. compliance with AOD.
7. **Equipment status:**
 - a. balloon rig – serviceable, maintenance up-to-date and not due during flight/s;
 - b. balloon ancillaries/support equipment – serviceable, maintenance up-to-date;
 - c. vehicle and trailer – serviceable.
8. **Additional equipment** – Example: for tether – available, serviceable and on-board.
9. **Flight planning, weather** – Examined to assess whether likely wind strength and atmospheric stability will remain benign for the projected period of flight.
10. **Weather forecast** – Examined to ascertain that the likely weather conditions for the flight period will ensure flight under the VFR.
11. **Navigation** – That it will be possible to navigate by:
 - a. continuous visual reference to the ground or water when flying at a height of no more than 2,000 ft AGL, and/or
 - b. visual position fixes, that may be confirmed by electronic means if the PIC elects to do so, at intervals of not more than 30 minutes.
12. **Fuel quantity** – Sufficient so that the balloon can land with fuel reserves; eg: 20 minutes.
13. **Beginning/end of daylight** – Noted for the day and at the place where the flight will take place.
14. **Airspace classification** – Rules and procedures noted and planned for.
15. **Primary and alternative landing places** – Available and suitable in the event that adverse changes in weather or other circumstances occur during the flight.
16. **Post task** – As soon as reasonably possible, pilot to critically assess all task aspects for general and safety improvement; submit event, hazard or occurrence report as required.

**Appendix 2
To ABF Safety Manual**

ABF BALLOON OPERATIONAL RISK PROFILES

RISK	TREATMENT	CONSEQUENCE	LIKELIHOOD	RISK LEVEL	ALARP
<p>PILOT TRAINING AND CURRENCY (no pax): Fatality or serious injury to pilot/s, crew, public or other aircraft crew/passengers. Damage to balloon, equipment, vehicle/trailer, private property or other aircraft.</p> <p>Caused by: Human Factors (error, negligence, violation), incorrect instructor/pilot/crew techniques, equipment failure, inadequate procedures, sudden adverse weather, collision with other aircraft.</p> <p>Impact: Injury/loss of pilot/s, ground crew, passengers, public; loss of aircraft, equipment, private property; cost and down-time for repairs/replacement; repercussions from police, DPP, CASA, negative PR for ABF.</p>	<p>Rigorous pre-flight preparation and flight planning process. Pilot/s (instructor and student/pilot) and crew properly trained and qualified, fit and healthy, well rested, and preferably have Human Factors training. Balloon, equipment and vehicle/trailer properly maintained and serviceable.</p>	Critical	Rare	Low	Y
<p>FREE FLIGHT (with pax): Fatality or serious injury to pilot, balloon passengers, crew members, public on ground, or other aircraft crew/passengers. Damage to balloon, equipment, vehicle/trailer, private property or other aircraft.</p> <p>Caused by: Human Factors (error, negligence, violation), incorrect pilot/crew techniques, equipment failure, inadequate procedures, sudden adverse weather, collision with other aircraft.</p> <p>Impact: Injury/loss of pilot/s, ground crew, passengers, public; loss of aircraft, equipment, private property; cost and down-time for repairs/replacement; repercussions from police, DPP, CASA, negative PR for ABF.</p>	<p>Rigorous pre-flight preparation and flight planning process. Pilot and crew properly trained and qualified, fit and healthy, well rested, and preferably have Human Factors training. Effective passenger briefing (pax briefing card). Balloon, equipment and vehicle/ trailer properly maintained and serviceable.</p>	Critical	Rare	Low	Y

RISK	TREATMENT	CONSEQUENCE	LIKELIHOOD	RISK LEVEL	ALARP
<p>TETHERED FLIGHT. Fatality or serious injury to pilot, passengers, crew members or public on ground. Damage to balloon, equipment, vehicle/trailer or private property on ground.</p> <p>Caused by: Human Factors (error, negligence, violation), incorrect piloting/crew techniques, equipment failure, inadequate procedures, sudden adverse weather, unsafe passenger/on-looker actions.</p> <p>Impact: Injury/loss of pilot/s, ground crew, passengers, public; loss of aircraft, equipment, private property; cost and down-time for repairs/replacement; repercussions from police, DPP, CASA, negative PR for ABF.</p>	<p>Rigorous pre-flight prep and flight planning process. Pilot and crew properly trained and qualified, fit and healthy, well rested and preferably have Human Factors training. Effective passenger briefing and crowd control. Current/updated weather forecasts noted. Ambient weather conditions in tether layer closely monitored. Tether rope arrangement monitored and adjusted in-situ for ambient conditions. Movement of public monitored and controlled around balloon tether area. Balloon, equipment and vehicle/trailer properly maintained and serviceable.</p>	Critical	Rare	Low	Y
<p>GROUND CREW OPS. Fatality or injury to balloon crew, other balloon vehicle occupants, other vehicle occupants, members of public. Damage to vehicle/trailer, equipment and to private property.</p> <p>Caused by: Human Factors (error, negligence, violation), incorrect crew techniques, vehicle/equipment failures, inadequate procedures, vehicle collision/loss of control, adverse environment, adverse OH&S factors – eg: lifting, heat, noise, slips, falls, knocks; environmental impact of 4WD/trailer.</p> <p>Impact: Injury/loss of crew, passengers, public; loss of equipment, private property; cost and down-time for repairs/replacement; repercussions from police, DPP, CASA, negative PR for ABF.</p>	<p>Crew properly trained, fit and healthy, well rested and preferably have Human Factors awareness training. Vehicle operations: compliance with road rules legislation. Avoidance of adverse driving conditions and fatigue. Ex-vehicle ops: use of activity-appropriate personal protective equipment (PPE). Increased vigilance at unfamiliar locations and in darkness. Vehicle/trailer and equipment properly maintained and serviceable.</p>	Critical	Rare	Low	Y

ABF BALLOON EMERGENCY RESPONSE PLAN

CONTACT DETAILS

EMERGENCY SERVICES	000
ATSB	1800 011 034
ABF HEAD OFFICE	03 5968 6533
LOCAL POLICE	
FIRE BRIGADE / RURAL FIRE SERVICES	
AMBULANCE	
STATE EMERGENCY SERVICES	
ELECTRICITY	
GAS	
HOSPITAL	
LOCAL AIR TRAFFIC CONTROL	
CENSAR (AIRSERVICES)	1800 814 931
AUSAR	1800 815 257
BALLOON PILOT MOBILE	
BALLOON CREW MOBILE	
COMMON CONTACT (FOR LOST)	
UHF EMERGENCY CHANNEL	CH 5
VHF EMERGENCY FREQUENCY	121.5 MHz

INITIAL ACTIONS

- Senior crew person to take charge until the police can take over.
- Priorities: get to balloon location, assist the injured, adopt relevant procedures from ABF Emergencies Procedures Guide (EPG, should keep copy in the retrieve vehicle).
- Attempt further communication with pilot for an update – radio, phone.
- Establish or estimate location and commence search if balloon is unsighted.
- See contact details above and in the following order advise:
 - Emergency Services if suspecting casualties, fire, major damage;
 - ATSB – brief details, pass on further details when known;
 - ABF Head Office for admin support, eg: getting police to advise next-of-kin.
- Time permitting, obtain witness information/contacts; revisit later if required.
- Look for signs: smoke, fire, noise.
- Review EPG for specific emergency procedures on arrival at accident site; share with others when they arrive – police, etc.

ACTIONS BY CREW ON-SCENE

- From a safe distance – survey, assess, decide.
- Consider risks; do not endanger self/others.
- All site-attending crew to have personal protective equipment – gloves, glasses, all limbs covered.
- Look for powerlines, LPG leak, fire, injuries.
- Ensure site safety and adopt appropriate emergency procedures – see EPG.
- Tend the injured if they can be accessed – first aid: ‘DR ABCD’, and if relevant move casualties 100m upwind of accident site.
- Guard the wreckage from damage/disturbance until relieved by police.
- Advise on health, safety and protection for those entering crash site, eg: LPG.
- Keep crew and witnesses separate where practical.
- Media – acknowledge accident has occurred, will be investigated, but no detail; refer to police or ATSB.
- Arrange immediate quarantine of balloon logbook, pilot logbook/s, maps, etc.
- Photograph or sketch position of fatalities, wreckage, witness marks, site, etc.
- Keep a log of event times, eg: accident, notification, arrival of police, etc.
- Hand over to and assist police, emergency services and ATSB.

POSSIBLE PROBLEMS AND ACTIONS

- Heavy landing – vertical, horizontal – spinal injuries, fractures, lacerations.
- Envelope still inflated – deflate using red vent line ASAP if appropriate; do not attempt deflation if in contact with or in the vicinity of powerline.
- Gas leak – pilot lights OFF, close main and vapour tank valves, BUT do not touch if in contact with or in the vicinity of powerline
- Fire – locate, have on hand and activate fire extinguisher if appropriate.
- Powerline contact – remain clear if contact still exists; call electricity authority.

FOLLOW-UP ACTIONS

- Confirm next-of-kin notification has been arranged.
- Inquiries from relatives/friends – provide only known facts, don’t speculate – refer to police or ATSB.
- Confirm witness contact details have been obtained.
- Arrange for documentation of witness and crew recollections ASAP.
- Arrange for submission of relevant incident form/s.
- Arrange for trauma counselling as necessary.
- All involved to review actions, procedures, checklists – suggestions for revision.
- Final evaluation – written report.

ABF HOT AIR BALLOON EMERGENCY AND ABNORMAL PROCEDURES GUIDE

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1. EMERGENCY CONTACT DETAILS

Emergencies – Urgent:	000, all local police, ambulance, fire, SES
Police:	000, or _____
Ambulance:	000, or _____
Fire Brigade:	000, or _____
Rural Fire Services:	000, or _____
State Emergency Service:	000, or _____
Hospital:	_____
Electricity:	_____
Gas:	_____
Water/Sewer:	_____
Local Air Traffic Control:	_____
AirServices Australia (CENSAR):	800 814 931 (24 hrs)
Aust Transport Safety Bureau (Air):	1800 011 034 (24 hrs)
Balloon Pilot:	_____
Balloon Crew:	_____
Common Contact (for lost):	_____
UHF Emergency Frequency:	Channel 5
VHF Emergency Frequency:	121.5 MHz

2. FIRST AID AND MEDICAL ASSISTANCE

First Aid. Have an accessible first aid kit. Remember, 'D R A B C D': (Doctor ABCD)

- D – danger; ensure no danger to self, others or casualty before assisting.
- R – response; check for a conscious response, squeeze shoulders, talk to casualty.
- A – airway; ensure airway is clear.
- B – breathing; look/listen for signs of breathing, No? give two breaths.
- C – CPR; check for circulation/heart beat, apply CPR as necessary.
- D – use portable defibrillator if available and required.
- Resuscitation cycle is: **'thirty compressions (rate 100/minute), two breaths'**.
- Breathing/circulation resumes, place in recovery position, manage wounds/bleeding/shock.

Medical Assistance. Pilot or crew contact emergency on 000 and request an ambulance. Also:

- Proceed to nearest hospital.
- If phones unavailable try UHF Channel 5.
- Last resort contact Air Traffic Control (or other aircraft) VHF 121.5 MHz if available.

3. COLD INFLATION – MOUTH CREW

Gas Leak. Smell? Listen? Visual?

- Inflation fan OFF, move fan >5 metres away.
- Ignition sources OFF, eg: radios off, no one smoking.
- Pax, on-lookers moved back at least 50 metres.
- Tank valve/s OFF, await or call pilot.

Abnormal Fan Operation. Eg: blade/shroud contact, alignment, smoke/fire, noises.

- 'Kill' switch – ACTIVATE.
- Minor problems, throttle IDLE. Rectified? Re-apply throttle. No joy? 'Kill' switch ACTIVATE.

Unmanageable Wind Gust.

- Mouth crew RELEASE, step back from the mouth till settled.
- Fan – 'KILL' switch ACTIVATE, move fan upwind and well clear.
- **Crowd Encroachment.** Redirect people to a safe distance – 3 metres minimum.

4. COLD INFLATION – CROWN CREW

Excessive Envelope Rolling. Due excessive wind/gusts. Keep considerable tension on crown line but do not attempt to prevent the motion. Retain tension along line of average of wind direction.

5. COMMUNICATION FAILURE

- **Primary** communications is UHF radio. **Secondary** is telephone (mobile). Both use line-of-sight principle, so *obstruction* is first consideration.
- **Change Location.** Go to higher ground, clear of obstacles. No joy? Try UHF as follows:
- **Controls and Adjustments.** Check/recycle channel. Squelch to just off 'hash' level. Continuous hash or clicking means flat battery. No joy? Turn off U/S (unserviceable) radio, try a spare.
- **Vehicle radio.** Ignition to 'ACCESS' or 'ON', other electrics OFF. Readjust as above.
- **Hand-held set.** Get out of vehicle, hold set so antenna is VERTICAL. Try spare battery or vehicle cigarette lighter adapter. Readjust as above.
- **Transmit 'BLIND'.** The 'transmit' button may be stuck ON giving continuous transmission. Transmit anyway (BLIND) on both hand-held and vehicle radios. Include whereabouts, destination, plan of action, visual contact yes/no. Then turn suspect radio OFF to avoid clogging up airwaves.

- **Continue retrieve.** Anticipate landing site for 1 hr flight. See 'Lost Balloon', next.

6. LOST BALLOON

- **Phone-in Procedure.** Using the common point of contact (POC) the pilot notifies position as grid reference or other description. Crew to make frequent contact with POC to obtain these details. Leave crew number with POC to assist their contact.
- **Search Procedure.** Plot balloon course for approximately 1 hour flight time from take-off site. Search along/either side of line. Look for pax, fuel tanks, etc on road-side or high ground. Ask locals if they've sighted balloon. Get description to avoid finding **wrong** balloon. Direct vehicle occupants to keep a lookout. If balloon is sighted, get a bearing, note on the map, proceed to the location.

7. INACCESSIBLE LANDING SITE

- Contact land owner (if possible) to obtain directions to access balloon
- Balloon still up-standing: manoeuvre at neutral buoyancy to better location.
- Lay-over landing: dismantle and move piece-by-piece to vehicle.
- May have to negotiate new hazards, EG: barbed wire, electric fences, creeks, canals, marshes, forests, ditches, gullies, etc. Result? Higher injury risk therefore requires thought and planning.
- Crew to carry portable UHF outside of vehicle. Pilot may advise best access route.
- **Important:** Avoid rushing and apply a little extra care and attention.

8. VEHICLE/TRAILER BREAKDOWN

- Has most effect during chase and retrieve.
- In all cases keep the pilot informed.
- Communication lost? Use POC as in **6.** above.
- Proceeding to intermediate landing? Use other vehicle or pax-following vehicle.
- Summon roadside assistance, NRMA, RACQ, RACV, etc.
- Serviceability restored? Use discretion: return to launch site or proceed to balloon.

9. VEHICLE/PROPERTY ACCIDENT

- **Note:** When dealing with land-owners it is an absolute requirement to abide by the procedures under '**Code of Conduct**' set out in the ABF Pilot Training Manual.
- **Minor Accident.** Landowner unavailable? Continue retrieve, report to pilot after flight. Other party present? Exchange names, addresses, telephone Nos, licence Nos, insurance details, incident details, etc. Explain the need to, then resume balloon retrieval ASAP.
- **Major Accident.** Generally one of: (1) major vehicle damage, (2) major property damage and/or (angry?) owner in attendance, and (3) serious injury. Terminate retrieve. Damaged vehicle? Make suitable arrangements. Property damage? Adopt ABF Code of Conduct procedures. Remain courteous/apologetic to landowner. For injury, proceed as per para **2.**

10. STOCK DISTURBANCE/PROPERTY DAMAGE

Occurs due to low flight or urgent landing.

- Keep the pilot informed.
- Landowner away? Livestock alarmed but OK? Note the location for pilot's return.
- If required, secure straying stock.
- Try to pacify landowner if they're present (and angry), or make polite, tactical retreat.
- Politely, explain why problem has occurred. Advise pilot will return ASAP to discuss.
- **Important:** 'Code of Conduct' procedures as per ABF Manual must be adhered to.

11. POWERLINE CONTACT

*Powerline contact is a **critical emergency** in a balloon.*

- If balloon is still in contact with power lines DO NOT APPROACH.
- LIVE WIRES lying on the ground? See phone list para 1., call electricity supplier.
- No joy? Dial 000 and seek either emergency electricity contact or police.
- Pilot and pax should stay in the basket, unless there is a fire risk.
- Should pilot/pax have to exit, they should jump clear to avoid electrical bridging.

12. CRASH LANDING

IE: Landing at High Speed. Either horizontally or vertically. Risks are as follows:

- **Gas Leak.** Pilot incapacitated, cylinder valves still open? If risk is minimal, main and vapour valves on tanks – OFF. Burner pilot valves on burner frame – OFF.
- **Fire.** Use extinguisher if available. Activate/direct at base of fire. If out of control, evacuate area to at least 100 metres – LPG tanks might explode. Remember your own safety has priority. If uncontrolled basket or bush fire, send for Fire Brigade.
- **Injury.** Injuries? Proceed as per para 2. Tree rescue? Send for Fire Brigade.
- **Horizontal Landing.** Strong winds may drag balloon through trees/fencing/buildings/ power-lines, etc. Take instructions from the pilot. Pilot incapacitated? Attempt to stabilise balloon – pull on main vent line, if clear of powerline, to ensure all air is expelled. Remember, people take priority over equipment.
- **Vertical Landing.** Injuries may include broken bones/back injuries. Do not move suspected back injuries unless fire risk. Medical assistance required? See para 2.

13. USE OF HANDLING LINE

Handling Line. Deployed for difficult landing situations, EG: balloon becalmed or on track for 'unfriendly' terrain, etc. Crew urgency is required. Must be on-scene, in place ASAP.

- **Crew Response.** Pilot will advise crew ASAP via UHF of handling line requirement. Crew procedure: (1) at least two crew required downwind of but not under balloon, (2) gloves ON, take UHF radio, (3) stay clear of falling handling line, grasp it when safe to do so.
- **Anchoring the Line.** Nil wind? Any solid anchor point is OK. Balloon in motion? Crew to respond with urgency, quickly anchor the line by wrapping it at least four or five times around a tree trunk or other **very** stout anchor point. Note, balloon has *huge* inertia. Treated pine fences and street signposts are **not** strong enough.
- **Important:** Keep handling line at arm's length and ensure it does not get wrapped around any part of the body. Body entanglement could result in very serious injury. Release and get clear of the line if entanglement becomes a risk.
- **Haul-Down.** Once balloon is anchored there's a pause while motion ceases and balloon is stabilised. Pilot will issue haul-down instructions. Landing is a combination of crew pulling on the line and the pilot burning/venting*.

14. INCIDENT REPORTING

- Incident reporting is a legislative requirement. Any ballooning safety incident *must* be reported. If not a witness, pilot may request crew to assist with drafting the report. See ABF Safety Manual or website use online IRIS reporting system www.irisasn.com.
- Flying-related incident? Pilot will submit necessary reports.