AUSTRALIAN PARACHUTE FEDERATION

Instructor Guide

VERSION 01-2026

STATUS: EDUCATIONAL/ADVISORY

Warning

Parachuting and flying in parachuting aircraft can be dangerous.

This guide is not a do-it-yourself guide to skydiving instruction
and should only be used while under the supervision of a qualified APF instructor.

IMPORTANT: Version Control

It is important that members refer to the current version of this Guide. Current version number is shown on the front cover and in the below table. As this Guide is administered exclusively by the APF, it will be updated and amended when and as required.
Significant changes made from the previous version are shown in Amendments.

CURRENT VERSION	RELEASE DATE
01-2026	01 April 2026
PREVIOUS VERSIONS	REPLACED BY
01-2023	01-2026
01-2021	01-2023

AMENDMENTS

VERSION	AMENDMENT DETAILS
01-2026	• Replace 'Sporting Licence' with 'Annual Recency Certificate' and remove all reference to 'licence'.
01-2023:	• Minor administrative amendments

Front cover photo by Skydive OZ

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FOREWORD

One of the most satisfying experiences a parachute Instructor can have is to know that they have helped someone to become more competent in our sport and so more useful as a citizen. Through the application of your skill as an Instructor you can bring pleasure to others and feel proud that you are performing a service to Australia.

Sport parachuting does build useful citizens. It develops self-discipline, confidence and the ability to make decisions. This holds true of those who have made only one or two jumps as well as regular jumpers. You don't have to look far to see jumpers who have suddenly improved their position in life. Any Instructor who has been around for any length of time will be able to tell you of students who have lost speech impediments after only a month or two of skydiving.

One of the most exciting experiences an Instructor can have, which is hard to imagine until it has happened to you, is to discover dormant talent in a student. To awaken their interest, to see the pleasure they get from their newfound capacities, and to participate in the development of talent is a reward unique to the field of teaching.

Some of the contacts you make with your students will develop into strong lifelong friendships because of the mutual respect and understanding gained through working and learning together. You will enjoy the exchange of ideas that takes place among Instructors on the job and you will become interested in some new things about which you have given very little thought previously. These new interests will broaden your horizon and make it easier for you to find something in common with people in the world at large.

It has been said that the only way to really know anything is to teach it. Since this is at least partly true, you may expect to find yourself studying the things your students must learn from a new and perhaps more analytical point of view. Such study and thought will add to your knowledge of parachuting and make you better informed on all phases of the sport.

But to balance the pleasures and status that come with being a parachute Instructor there are the responsibilities. As an Instructor of ab-initio students you have considerable influence on their future behaviour, safety and attitude. If you impart a wholesome and safe attitude, you will never need to question your conscience, but if you impart an attitude of "she's right mate" and "anything goes" you may someday feel guilt for your contribution to a fatal accident.

So, set a good example, your students will learn from your example, as much as from your advice.

You have only succeeded in your task when your students have become safe and competent parachutists.

Success in parachuting depends on you - the Instructor.

C. GILLARD
President of the APF
1966 - 2001

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PART 1 - BECOMING AN INSTRUCTOR

This manual is for the guidance of APF Instructors and should be used as a study reference by candidates applying for or revalidating any APF Instructor ratings and endorsements.

Instructing isn't an exact science, but rather an art. The methods to be employed will vary according to the type and standard of the class.

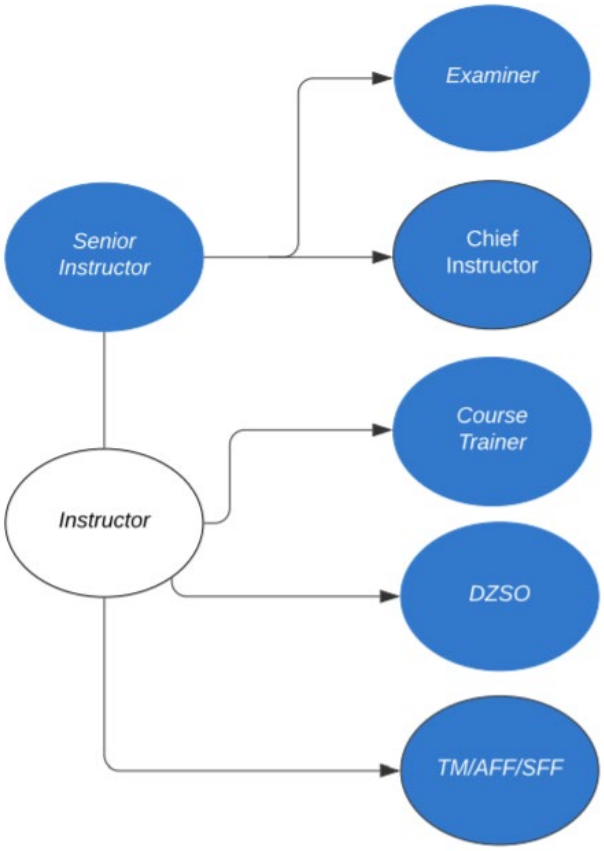
It is a definite rule that a thorough knowledge of subject matter is essential for any Instructor, but they will be successful only if they combine this rule with the principles and techniques of good instruction. These principles are not necessarily rigid rules. Your job as an Instructor will be to teach the basic phases of sport parachuting until a safe and proficient standard is reached.

It is the duty of all Instructors to comply with all APF Rules, Regulations, policies and procedures.

When contemplating becoming an Instructor, you should ask yourself these questions:

- Are you willing to devote many hours **most** weeks to instructional duties?
- Is your family amenable to these hours being spent in this way?
- Are you willing to learn as well as teach?
- Are you able to deal with the energy, opinions and actions of skydiving Students?
- Are you physically and emotionally fit to carry the workload?
- Are you able to take full responsibility for and be held accountable for your actions?
- Are you willing to do your best with whatever is available and improvise when necessary?
- Are you confident that you can produce good parachutists from the average run of students?
- Is it instructing and teaching you want to be a part of, or do you have a secondary payoff in mind?
- Do you currently follow the principles set out in the Australian Parachute Federation's Code of Ethics?

There will be few applicants who measure up with a definite "YES" to *all* of these questions. However, should the answer be "yes" to most of them, you are on the road to becoming a successful Instructor.



1.1 Instructor Attributes

An Instructor should have the following:

- An understanding of the basic principles and methods of instruction.
- A mature and professional attitude.
- The leadership and ability to control student and novice parachutists.
- Thorough and specific knowledge of parachute equipment which is covered by their endorsement(s).
- A working knowledge of sport parachute equipment, including parts, capabilities and limitations, harnesses and their adjustment, canopies and modifications, AAD's, helmets, footwear, protective clothing and accessories.
- The knowledge to recognise a worn, faulty, or improperly utilised part of a parachute assembly and to take appropriate action when necessary.
- Competence in briefing Students or Novice parachutists on all stages of the APF Training Table for which they are endorsed.
- The ability to safely jumpmaster Student parachutists within the scope of their endorsement(s) and to cope with any emergency situations which may arise in the aircraft, during exits, in freefall, under canopy or landing.
- The ability to accurately observe students during all phases of their descent and to effectively critique their performances, including assessing and offering feedback to Students in freefall.
- The emotional insight and intelligence to detect and work with or around any emotional response in a student which might affect their performance or safety.
- The ability to give practical spotting instruction.
- The ability to act as Ground Control Assistant and Target Assistant as necessary.
- The ability to determine correct exit points and opening altitudes.

1.2 Instructor Responsibilities and Duties

It is important that APF rating holders be aware of the various duties, responsibilities and potential liabilities that they assume when they accept that rating or a position authorised by the rating.

Responsibilities

It is the responsibility of all Instructors and Coaches to:

- Instruct students and novices only within the confines of an APF Group Member, under the supervision of a Chief Instructor approved by the APF.
- Teach only those subjects in which they are endorsed and qualified.
- Abide by all applicable regulations and the APF Code of Ethics.
- Keep abreast of the latest developments in their field and commit to a cycle of continuous learning and improvement.
- Ensure appropriate equipment is used by students and novices under their care.
- Gain the confidence of their students.
- Impart a wholesome attitude to all parachutists by setting an example in manners, appearance and safe parachuting.
- Act as Ground Control Assistant (GCA) and Target Assistant (TA) as necessary.
- Perform other duties as directed by the DZSO.

Instructor Duties and Privileges

An Instructor operates under the direct supervision of a DZSO and is responsible to the Chief Instructor who has agreed to supervise their activities.

The privileges of an Instructor with an AFF, SFF or Tandem endorsement are to:

(a) instruct parachutists in the briefing, descent and debriefing phases in the discipline for which the endorsement is held and

(b) brief, accompany and debrief student and novice parachutists on Certificate Class B Training descents with the permission of the DZSO.

The duties of an Instructor include:

- Check the Student or Novice in their performance of emergency procedures and assess their competence.
- Directly supervise Student or Novice training descents, including the fitting of equipment, pre-jump equipment checks, loading the aircraft and despatching or accompanying the student or novice in freefall, and to act as TA if necessary or required.
- Setting a safe standard of parachuting conduct by personal example.
- Knowledge of the Training Operations Manual and appropriate Training Tables.
- Detailed briefing and debriefing for all training jump stages/levels.
- Knowledge of the standards required.
- Detailed knowledge of applicable Operational Regulations and Regulatory Schedules.
- Detailed knowledge of equipment applicable to the type of jumps.

1.3 Requirements for Instructor rating:

To apply for an Instructor rating, the candidate must have:

- A valid APF/FAI International Parachutist Certificate Class D
- A valid Parachute Packer B rating
- An Australian Star Crest
- Adequate levels of reading, writing, oral communication and numeracy using the English language. If there any doubts as to a candidate's ability, the matter must be referred to the STO.
- The recommendation of the Chief Instructor of an APF Group Member, who is prepared to supervise the candidate for a period of at least six months.
- Successfully completed an Instructor course involving a minimum of twelve (12) days part-time or seven (7) days full time working under the supervision of a Chief Instructor.
- Passed the written, oral and practical assessments as set by the APF.
- Be recommended to receive the rating by the Examiner.

Endorsements

A candidate for an AFF endorsement must also have:

- Documented evidence of at least four hours of freefall.

A candidate for a Tandem endorsement must also have:

- A valid APF Certificate Class E,
- A current CASA Private Pilot Medical Certificate, or
- APF may accept a current CASA Basic Class 2 Medical Certificate, as recognition of the applicant's fitness to act as a Tandem Master.

There are no additional requirements for an SFF endorsement candidate.

Before issue of any instructor rating or endorsement, the applicant must:

(a) have successfully completed the course of instruction and relevant assessments approved by the STM,
(b) have the approval of:
  (i) the STM or the CI under whom the applicant intends to be registered, or
  (ii) where the applicant already holds an instructor rating, the CI under whom the applicant is currently registered,
(c) be trained, assessed, and authorised in accordance with the TOM to act as GCA,
(d) complete an AFF, SFF or tandem endorsement in conjunction with the Instructor rating.

1.4 Obtaining and Revalidating Ratings and Endorsements

The requirements for APF Instructor ratings and endorsements can be found in Regulatory Schedule 53.

Applying for a rating or endorsement

All applications for ratings or endorsements must be approved by the Chief Instructor with whom the applicant will be registered under for their initial six-month probation period.

Probation periods can be extended by the applicants CI if additional training is required.

With the approval of the Safety and Training Manager, candidates may apply for a rating or endorsement before they meet all the requirements. All requirements must be met before they are issued.

Purpose of APF Instructor and Coach assessments

The APF rating assessments ensure that student and novice parachutists receive instruction from persons who are not only proficient and knowledgeable parachutists, but also motivated and skilled coaches.

As well as meeting experience and expertise requirements a potential Instructor will also need to have:

- An understanding of the responsibilities and duties associated with the rating or endorsement applied for.
- An understanding of student needs and a corresponding ability to choose the correct instructional technique to suit the student and situation.
- The ability to teach with the correct use of instructional techniques to enhance student performance.
- A "safety first" attitude to earn and justify the Students' trust in Instructors and dropzone/APF systems.

Validity of Ratings and Endorsements

APF ratings and endorsements remain valid for a period of two years from the date of issue, provided the holder continues to:

1) hold a valid Annual Recency Certificate,
2) continues to remain current, and
3) remains registered under a Chief Instructor or the STM.

Instructor ratings and endorsements are initially approved for a probationary period of 6 months, and only becomes fully issued after CI validation.
The STM may approve an extension of 12 months to any Instructor rating if the holder has attended at least one APF Conference or completed approved training or professional development acceptable to the STM during the currency of their rating and has otherwise complied with all other requirements. The rating must still be valid at the time of extension and only one extension is possible before revalidation is required.

Revalidation of Ratings and Endorsements

Instructors and coaches whose ratings/approvals are about to expire will be notified by the APF Office. In most cases, ratings are valid for two years. Application and revalidation forms can be obtained from the APF website.

Only completion of the full revalidation assessment procedure and processing by the APF Office - not just applying for revalidation or beginning the process - will prevent a rating from lapsing.

Requirements for Instructor and endorsement revalidating are found in the Regulatory Schedules (RS 53, Part 7).

Instructor and Coach guides

All ratings and endorsements have a guide produced by the APF which forms the basis of the specific training required.

PART 2 - COURSE TIMETABLE AND ASSESSMENT

2.1 Timetable

The course timetable will be developed from the STO approved course syllabus by the Course Trainer. The timetable for most Instructor and endorsement is 7-10 days.

Courses can be run full time or on a part time basis, for example over several weekends. There is quite a lot to learn for any candidate on any course and there is a lot to be said for full time courses – as new AFF instructors will be finding out; candidate currency solves many course issues.

The timetable should be distributed to candidates prior to the course and should allow for the best mix of lessons to maintain attention and motivation.

Instructor courses with AFF/SFF endorsement will generally be more involved than an Instructor course with tandem endorsement, owing to time spent practicing briefings and debriefings. As such, a joint tandem/AFF course will be structured to make best use of everyone's time and not leave some candidates with little to do for long stretches.

An example syllabus for the Instructor rating aspect of any course can be found at the end of this document.

2.2 Assessment

The assessment process consists of written, oral and practical aspects.

There are separate assessments for each Instructor Rating and Endorsements. On a joint Instructor and Endorsement course, the assessments are generally conducted concurrently. If the candidate already holds an instructor rating, they will only need to sit assessments for the endorsement(s) being applied for.

The assessments are sent to the course Examiner when the candidate and course details are finalised. The assessment may be online or paper based.

An 80% pass mark is required for each assessment.

Written

The Instructor written assessment consists mainly of multiple choice questions which examine the candidate's grasp of the rules and regulations, equipment, instructional technique and general knowledge.

Oral

The Oral examination will be held in front of a panel of three Instructors, one of whom is an Instructor Examiner and all of whom hold the current Endorsement being assessed. The examination panel will ask as many questions as necessary (minimum 10) to test your knowledge of the Instructor's roles and responsibilities. Each panel member scores the answer to each question and the Examiner computes the final percentage by averaging the three Examiners scores.

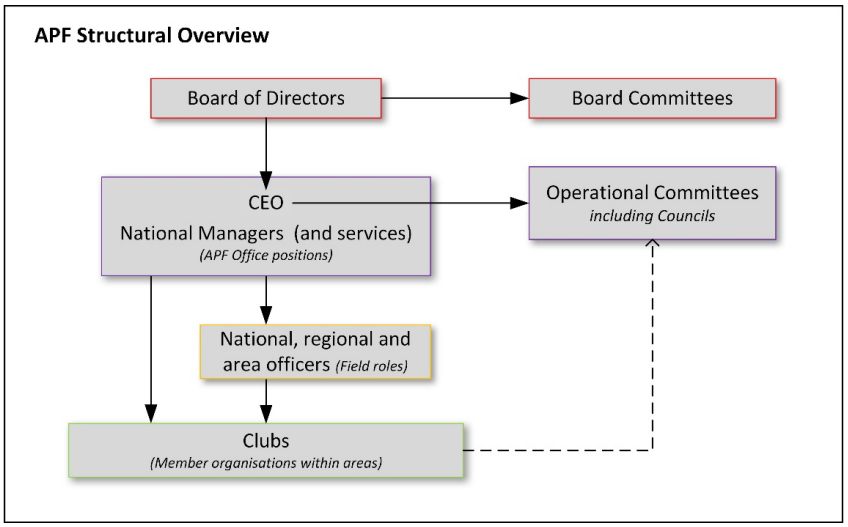
Practical

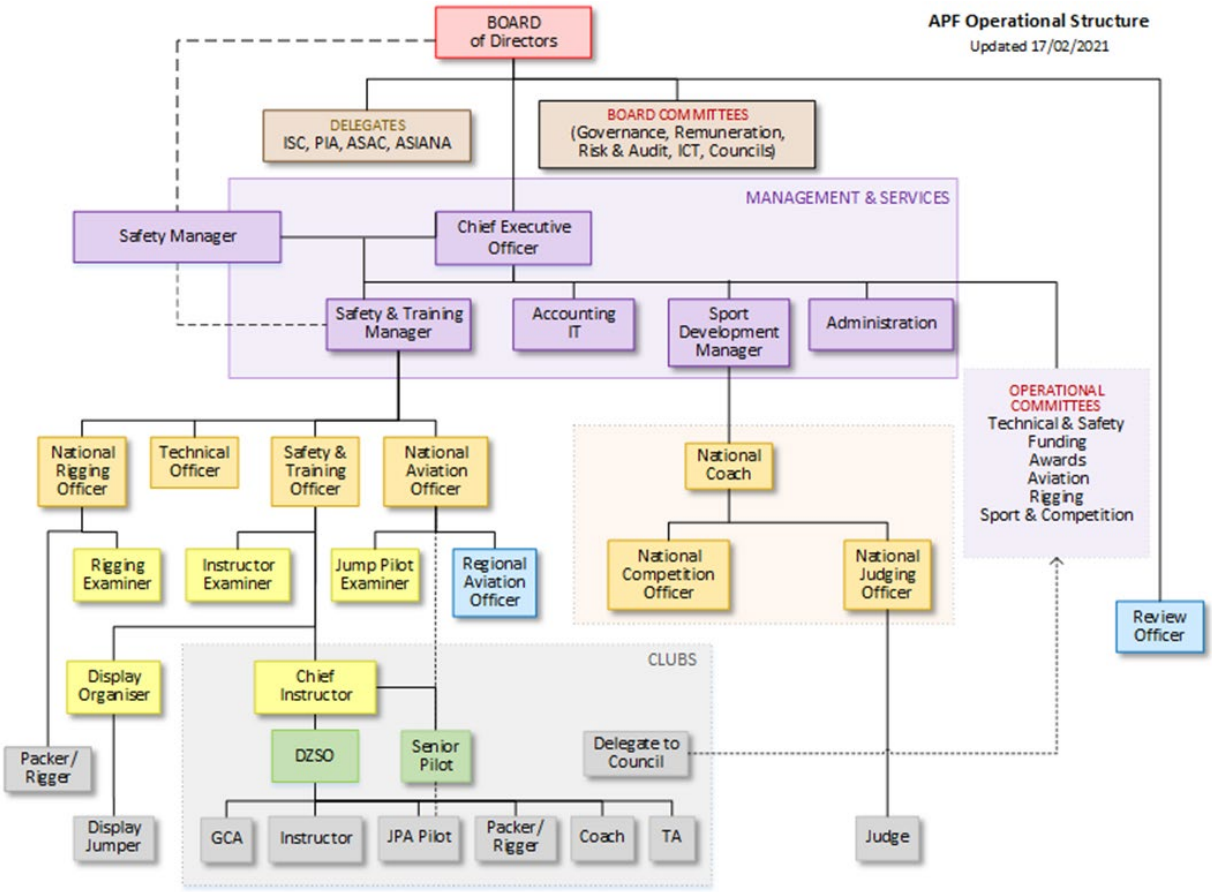
During the practical assessment the candidate will need to demonstrate competence in all aspects of instruction to the satisfaction of an Instructor Examiner. The practical assessment will consist of four parts: briefing, emergency procedures, assessment jumps and de-briefing.

PART 3 - THE APF STRUCTURE AND ORGANISATION

The details for the APF structure and organisation are detailed in the following charts.

Instructors should use the chain of command in all aspects to ensure fair treatment.





3.1 APF Document Matrix

The APF documents can be divided into two sections:

1. Mandatory - rules, regulations, policies and procedures.
2. Non-mandatory - guides, advisory and educational manuals for Instructors and Sport Jumpers.

3.2 APF Publications

APF publications that Instructors are expected to have a comprehensive knowledge of include:

- Operational Regulations and Regulatory Schedules
- Training Operations Manual (TOM)
- Instructor Guide
- Procedures Manual, APF Constitution and Code of Ethics
- All training and endorsement guides
- The Misconduct Policy and Procedures Manual
- CASA Specifications, CAOs and legal aspects of that responsibility
- Additional APF documents.

3.3 APF Website

Instructors should have familiarity and with the APF website and how to navigate its functions, and should:

- Have general understanding of the content
- Know where to find the contact list for APF staff and officers
- Be able to locate APF manuals and publications
- Be able to locate application forms
- Be able to perform a member look up.

PART 4 - LIABILITY

It is difficult to eliminate the chance of legal action regarding instructional activities. Ultimately, anyone can sue anyone else for any loss or injury, real or perceived. However, it is possible to minimise the chances of being this by understanding and following a few simple procedures.

Everyone who becomes a member of the APF is required to sign a **waiver** which state that the member will not take any legal action against another Member or the Federation. Most training organisations require a similar waiver to protect the Group Member/centre.

The best defence against legal action is to be able to prove that:

- **All** rules and regulations have been followed,
- Organisations and individuals have not been guilty of **negligence**.

Negligence is defined as an unintentional wrongful act. There is nothing complicated about this - to avoid being guilty of negligence simply requires exercise of common sense, reason and foresight.

From this it follows that negligence is the failure to use **reasonable care**.

The basic rule is that there is a legal duty to take reasonable care to avoid acts or omissions (an omission is a failure to take some positive action to prevent injury) which you can reasonably foresee as likely to injure somebody who may be affected by your actions.

In determining whether a defendant has been negligent, the law requires a "Yes" answer to all the following questions:

- Did the defendant owe a duty of care to the plaintiff?
- Did the defendant breach that duty of care?
- Did the plaintiff suffer damage because of the defendant's breach?
- Did the defendant's breach cause the plaintiff's injury?

Instructors and Coaches have a duty to provide a standard of care. The level of this standard is obviously a matter of opinion in law but the message for those involved in sport is an encouraging one.

> **The law does not require you to account for the safety of other people, but only for your own behaviour in respect of their safety.**

This means that individuals have the ability to protect themselves against legal liability and to guard against charges of negligence by being able to prove they have performed their duties to the same standard, as **a reasonable, professional Skydive Instructor** would have.

The duties of a reasonable, professional Skydive Instructor include:

- Teaching students all they need to know to experience a jump safely.
- Taking reasonable steps to ensure that the students have learnt what they need to know.
- Ensuring that the environment they jump in remains within legal/safe limits.
- Ensuring that the equipment used is in a legal/safe condition.
- Ensuring that their knowledge and teaching standards are up to current standards of skydiving operations.

The Written Assessment

The easiest duty of care avenue for the plaintiff to contend with is whether the Group Member or individual Instructor taught them all they needed to know and if the plaintiff had learnt it.

Therefore, the student written assessment is a very important part of the training procedure. Not only does it allow the Instructor or Organisation to ensure all the relevant information have been covered at the end of a course, but it is also providing a permanent record of the students' knowledge at the time of their first jump.

For both the above reasons, it is very important that the assessment is compiled thoroughly and covers all the information that the student needs to know about.

Any answers by a student that are not complete or indicate that more instruction/retraining is needed, should be reviewed, further training given, and records be kept.

Risk Minimisation

How to reduce the risk of legal action:

- Do everything right - **Follow the rules, regulations**, policies and procedures.
- Ensure all waivers are filled out with all required signatures.
- Ensure other paperwork such as exams are in order, and that any incorrect knowledge shown in exams is acknowledged and corrected.
- Do not admit fault.
- Do not volunteer that you are covered by insurance (The person with the most money is the one most likely to be sued).

In the event of an accident:

- Gather evidence immediately and write it down or keep records of it
- List names and witnesses and get statements from them.
- Do not lose any of this. Records may need to be kept for seven years, or in the case of a young person, for seven years after they turn 18.
- Be nice to the injured person:
  - Follow up with them after the incident
  - Do not bully them into an admission of fault

PART 5 - WORK HEALTH AND SAFETY

5.1 Safety Management System – SMS

An SMS provides a systematic way to continuously identify and monitor hazards and control risks while maintaining assurance that these risk controls are effective. SMS can be defined as:

> *...a businesslike approach to safety. It is a systematic, explicit and comprehensive process for managing safety risks. As with all management systems, a safety management system provides for goal setting, planning, and measuring performance. A safety management system is woven into the fabric of an organization. It becomes part of the culture; the way people do their jobs.*

For the purposes of defining safety management, safety can be defined as: *the reduction of risk to a level that is as low as reasonably practicable.*

All APF Group Members are required to have and maintain a SMS. They can be developed principally around periodically released APF SMS update packages or can be organically and individually grown at dropzone level. As well as parachuting, SMS is widespread throughout aviation and in close variations throughout almost all industries.

Group Member SMS's should detail local responses to hazards. This could be as simple as 'when winds are over 20knots, all tandems land in the west paddock', or might offer template checklists for equipment checks or detail GCA procedures to ensure prevention of issues airside.

As well as a repository for emergency response plans and contact details for key people, the SMS functions primarily as a tool to assist organisations to identify and mitigate risks by developing and documenting steps to adopt safer policies and procedures.

Each dropzone should have a Safety Committee and a Group Member Safety Manager, often the CI. These individuals should be driving the development of the Group Member's SMS, but all staff and instructors have an obligation to ensure risks are reported and the dropzone is made as safe as possible for everyone.

Speak to your organisation's CI about the SMS before your instructor course.

SMS – The Instructor's responsibility

Instructors at the dropzone have a responsibility to be aware of the Group Member's SMS. This means to know where it is and be familiar with the contents. You don't have to volunteer for the Safety Committee, but you do need to know the local risks and mitigation factors and know the responses to expected emergencies, or at the least, know where to find them in the event of an emergency.

5.2 Human factors

Human factors is a term referring to issues around how individuals perform in a role. They are social and personal skills, such as communication and decision making which complement an individual's technical ability to perform a task. These factors make a serious contribution to conducting skydiving and all the assorted tasks safely and efficiently.

Some human factors will be discussed below.

Fit for parachuting activities

Whilst employers and workers (employees, contractors, etc.) have specific Work Health Safety (WHS) obligations under WHS legislation, APF Members also have safety obligations under APF Rules and Regulations and in some cases, to CASA and other statutory bodies under legislation and subordinate instruments.

An obligation to be unimpaired

As with any physical activity, a higher degree of fitness will enable a better performance. It is a key element of maintaining work health and safety that Instructors are fit for parachuting activities. Being an Instructor doesn't make anyone fit but maintaining a good level of personal fitness will make life as an Instructor much, much easier.

It is also very important to acknowledge that a participant's fitness for skydiving activities may be affected by a variety of factors including the adverse effects of sickness, fatigue, stress, alcohol or drugs. Any one of these factors can lead to a severe impairment of an individual's ability to undertake instructional or general parachuting activities and can be a significantly contributing factor in incidents and fatalities.

Should an Instructor develop any physical or mental condition which may impede optimum performance, they must seek an expert opinion and not allow the matter to become detrimental to their ability to perform safely and adeptly.

Being "Fit for parachuting activities" means being in an unimpaired state (physical, mental and emotional) enabling the competent performance of parachuting activities, and in a manner which does not compromise or threaten your health or safety or that of others.

Maintaining your health and fitness

Consider these health and fitness areas and how they can help maintain and improve capacity to perform as an Instructor: aerobic and anaerobic fitness, hydration, diet, sun protection, hearing protection and mental preparation.

Hearing Protection: Hearing protection might not seem worthwhile when measured on a jump-by-jump basis, but its effect over hundreds or thousands of hours in noisy aircraft and the loud freefalls that follow is invaluable. Hearing damage is permanent; protect against it before the signs begin to appear.

Mental Preparation:

- Get plenty of sleep before jumping.
- Don't jump when distracted or effected by other issues.
- Always rehearse emergency procedures at the start of the day's jumping.

Fatigue

Fatigue and other non-physical aspects of fitness for parachuting (e.g. stress) have the potential to impair the ability of individuals to perform parachuting activities in a safe and efficient manner and as such are a risk factor that we have a duty to manage.

Fatigue is a physiological state of reduced alertness or capability to perform mental or physical tasks which can significantly impair an individual's ability to jump safely.

Fatigue can be caused by one or more of the following:

- lack of sleep
- extended wakefulness
- workload of mental activities, or physical activities at any relevant time
- skydiving-specific contributing factors, such as TMs packing for themselves, use of a non-turbine aircraft extending the length of a jumping day or long periods of being on hold for weather or operational reasons.

Fatigue has been shown to have a similarly negative affect on performance as alcohol. It slows down **reaction times**, which in skydiving, can quickly allow a very dangerous situation to develop.

Instructors must ensure they are not affected by fatigue or any other debilitating factors. This should include liaising with the CI and DZSOs to ensure rostering and workload or other dropzone issues don't compromise health and safety. Check the Group Member's SMS, as it should include Fatigue Risk Management procedures.

5.3 Risk Management

Let's be realistic: we are in a risky business. Instructors have a duty of care to manage the associated risks. The aim of risk management is to:

1. Protect your student and yourself from injury; and
2. Protect your dropzone and the APF from litigation.

Compliance

The rules are there for a reason. Firstly, when adhered to, they provide the safest practice known to us at the current moment. They have evolved over many, many years, often as the hard lessons learned from incidents, and will continue to do so into the future, to avoid history repeating itself. Following the rules is learning from the mistakes and the wisdom of others and compliance with the rules equals safety. We won't last long as individuals if we aren't willing to learn from others.

Secondly, if we follow the rules to the letter, we greatly reduce the risk of legal liability. If we do neglect a rule and an injury occurs, then we will easily be proven negligent in a court of law. In addition to the Operational Regulations and Regulatory Schedules, the Training Operations Manual must also be followed.

Compliance and risk mitigation also includes following the requirements and, where possible, the recommendations of equipment manufacturers.

Other avenues to mitigate risk

In addition to compliance, there are some other tricks of the trade which assist with risk management:

- For TMs, film Students practicing their landings. By filming the landing practice on the ground, we have evidence to confirm that adequate training was provided.
- Never give a verbal guarantee of safety to a student.
- Never apologise for anything. This is admitting fault and, sadly, even if intended as a polite or soothing gesture, could be twisted to infer guilt.
- Explain the waiver to the Student/Guardian.

Response plan

A good response plan to an injury or suspected injury is key to risk minimisation. Each dropzone must have an emergency response plan as a component in their SMS. Seek it out to understand what the process is before an incident occurs.

In the event of an injury:

1. Make the injured party as comfortable as possible. Never move someone with suspected back injuries. Never give water to a student who may have internal injuries
2. Call an Ambulance
3. Never say sorry or admit fault
4. Gather written witness statements. Having written witness statements to apparently small things, such as the injured party apologising or admitting fault, may make all the difference if the incident becomes a legal matter.
5. Fill out an online Incident Notification and Supplementary Incident Notification (Form IN2). Take care to use appropriate wording – seek assistance if in doubt.
6. Show concern by following up with the student's recovery progress.

PART 6 - WEATHER AND SPOTTING

Ground wind limits and rules regarding jumping through cloud are well established and are simple to assess and follow. Weather conditions must be assessed and interpreted constantly by instructors and DZSO's.

Weather is an infinite assortment of variables and requires skill and local knowledge to predict and plan around.

APF rules and regulations on weather conditions and details of Cloud Jumping Manual Procedures can be found in the Operational Regulations and Regulatory Schedules.

As people progress in their skydiving career, from student to certified jumper and then possibly instructor and beyond, their levels of responsibility rise accordingly, for themselves and eventually for all on the dropzone. With this responsibility comes a need to learn more about the environment they operate in. This, of course, doesn't mean they need to know everything, but there is a constant obligation to know and understand *more.* Learning about weather and the effects of weather require long hours of research, questions and observation – hopefully that started when you first began jumping, if not, it absolutely needs to begin with an instructor rating.

Some of the basic phenomena that any instructor needs to be aware of include:

Turbulence

Turbulence is simply chaotic airflow, akin to rapids in a river. It can be caused by a number of factors, including topography, wind shear or transitions between fronts or weather systems. On a more micro level, it can also be caused by a tree upwind of the landing area. Knowing when fronts or weather systems are coming through would allow jumpers or DZSOs to determine that perhaps a quick shut down and lunch break might be a good idea to allow a turbulent interface to pass.

Upper winds

There are no APF regulations in regard to the upper wind limitations. This doesn't mean that it is acceptable to jump in any upper wind conditions, but rather that it is up to each jumper and DZSO to determine the limit given the conditions on the dropzone with respect to local hazards and the experience levels of the jumpers.

The upper winds should be considered when determining whether or not to begin or continue operations. If the winds are 30 knots at 1,000ft, but only 15kts on the ground, it is a very different picture than if it is 24kts on the ground, or if it is 45kts at 6,000ft, but there is a strong inversion layer, or a layer of stratus at 10,000ft, preventing the sun from heating the ground and allowing the winds to mix down. In that overly complicated sentence, there is a brief glimmer of some of the layers of complexity that drive decisions.

Clouds

Clouds can be divided, readily, into high, middle and low. Low clouds are up to around 6,500ft, middle clouds from 6,500ft to 23,000ft and high clouds anywhere above that.

High clouds are unlikely to have any effect on normal skydiving operations. Clouds at this height are really just ice crystals, so will not cause any precipitation.

The most common types of low and middle clouds are stratus or cumulus, both causing precipitation. Any description of clouds with a suffix or prefix involving a variation of the word 'nimbus' or 'nimbo' means they are likely to cause precipitation.

Stratus means 'layer' and will present as exactly that, a flat layer of cloud at a given height. Precipitation caused by stratus clouds will tend to be consistent rain of a low or moderate intensity.

Cumulus means 'heaped' and will look like a fluffy ball. Precipitation caused by cumulus clouds may be shorter, sharper and more intense than stratus clouds.

Cumulonimbus clouds are large clouds which can transcend to low, middle and high altitude. They require moisture, unstable atmospheric conditions and a lifting force – generally heat. As they rise, they take moisture above the freezing level and the instability causes ice particles moving inside the cloud to build up an electrical charge which is released as lightning. They often cause very heavy localised falls of precipitation and can lead to flash flooding. They will often develop from smaller, lower cumulus clouds and then rise higher and higher, reaching maturity when they start to spread out at the top, forming an anvil shape. Cumulonimbus clouds can cause incredibly destructive microbursts and should be monitored closely whenever they develop around flying or jumping operations.

Wind shear

This is the effect created when the air around us is moving at significantly different speeds or in a substantially different direction than the air around it. It can be sudden shifts in direction or rising or falling air along a horizontal path or sharp changes in speed and/or direction on a vertical path.

If the winds are 30kts from the south at 1,500ft, but 25kts from the north at 2,000ft, it is a safe assumption that somewhere in between will be a turbulent and chaotic interface layer. If the wind shear is at 7,000ft, it may be less of a safety issue, but will still require a clear understanding in terms of spotting.

Causes of wind shear include: thunderstorms, frontal systems, sea breezes, frictional shearing, temperature inversions, obstacles, rotors and wake vortices.

Inversion layers

Inversion layers are areas where the normal decrease in air temperature with increasing altitude is reversed and the air above the ground is warmer than the air below it. Inversion layers can occur anywhere from close to ground level up to thousands of feet into the atmosphere. Sometimes they are visible if there are any fires or fields burning off, from above you can see the smoke rise and then level off as if trapped by a glass ceiling.

Stronger winds above the inversion layer will often help keep the colder air trapped. Inversion layers tend to break up as the earth warms the lower layer of air and forces it to mix. If there is a layer of high overcast preventing this heating, the inversion may persist.

Thunderstorms and microbursts

Thunderstorms are the product of cumulonimbus clouds reaching their mature size. They can generate huge amounts of rain in a short period of time, substantial down drafts in their centre and strong winds flowing out. Other hazards include wind shear, icing, hail, tornadoes, poor visibility, low cloud, rapid air pressure changes and lightning.

Being aware of any cumulonimbus clouds developing and being mindful on the days with conditions that might be advantageous to their development is important for anyone flying or jumping.

The Bureau of Meteorology (BOM) offers warnings on its website of thunderstorms it determines to be ‘severe’, but not all localised storms will satisfy their severe criteria which includes gale force winds and exceptionally heavy rain.

Dust Devils

Dust devils are well formed whirlwinds that range from half a metre wide and a few metres high to ten metres across and a kilometre high. To anyone or anything on the ground, they tend to be harmless; a canopy coming in to land, however, is very vulnerable to their effects and dust devils have killed skydivers in Australia in the past.

They are caused by hot air rising rapidly into cooler air. As this air rises, it stretches vertically and can cause a spinning effect. When they rise over desert or dusty terrain, they will lift dust into the air making them clearly visible. The dust they lift doesn’t help create or sustain them and dust devils can begin or move over grass or tarmac and will be much less visible.

The BOM doesn’t predict or forecast Dust Devils so instructors and DZSOs must be aware of their conditions that create them. These include flat, empty terrain, clear skies or only limited cloud so the ground can absorb maximum heat, light or no wind and cool atmospheric conditions to allow for the greatest temperature discrepancy with the rising warm air.

Sea Breeze

When the sun shines brightly on the ground, it heats up a very thin layer at the surface, causing the air close to the ground to warm sharply and rise. This creates an area of low pressure which is filled with air rushing in from over the sea. There is less of a warming effect over the ocean, as sunlight penetrates down as far as 10 metres, dissipating the warm it provides, and, of course, as the water is mostly in motion, the heating effect is applied less directly to a much greater volume.

Generally, after a sunny day, a sea breeze will appear in the afternoon. Mostly this is just the bottom layer closest to the surface and might only affect the last 100ft of canopy flight. If the prevailing winds are in same direction as the sea breeze, they may exacerbate it. If the day’s winds are in the opposite direction, they may act as a moderating force.

Sea breezes are more pronounced where there is a large heat absorbing surface for the sun to radiate upon, like open farmland or tarmac.

Many dropzones in Australia are located by a coast, or at least close enough to experience some element of a sea breeze. In general terms, the closer to the coast, the earlier in the day the sea breeze will come through.

Weather information

The BOM website offers a variety of tools to forecast and understand weather. This starts with basic regional forecasts, rain radars, satellite viewers and generic warnings but also offers aviation forecasting products which allow for much more useful and detailed forecasts for upper winds and fronts. They offer tutorials and explanations of how to get the most out of the tools they make available. They have a YouTube channel and a phone number available for more detailed discussion of local weather.

See also the APF Weather guide for more specific information.

How to generate The Spot

Spotting can seem an art, but there is a clear and understandable science to it.

Creating a Spot requires knowledge of the winds all the way from the surface to the exit altitude. This can be gleaned from the Graphical Area Forecasts (GAFs) on the BOM website or measured by the pilot using the difference between the airspeed indicator and GPS groundspeed as the aircraft changes direction on the way to height.

Once the windspeeds and directions at different altitudes have been collected, it is as simple as working out the freefall drift to put the load at the best possible canopy opening point to allow everyone to make it safely back to the dropzone.

The length of run in can be reasonably worked out to be the number of groups exiting multiplied by the distance between groups. Five tandem pairs exiting with 300 metres of separation would equate to a jump run 1200 metres long – as there is no separation after the last group. This 1200m jump run then needs to be appropriately positioned to let freefall drift bring all jumpers back to an opening point they can fly to the dropzone. This is sometimes referred to as a 'wind cone'. If you imagine a funnel with a wide top that narrows to a fine point as it meets the ground. The top of the funnel needs to be large enough to accommodate all the groups exiting. The top of the funnel can be a long way upwind and may kink in different directions on the way day to allow for any lateral freefall drift as the jumpers pass through the atmosphere.

Drift is best calculated by taking the windspeed in knots, dividing it by 2 to give a speed in metres per second and then multiplying that by the number of seconds in freefall.

Why divide by 2?

1 knot is equal to 1 Nautical Mile per hour, which is 1.85km/h, which translates to 1,850m per hour. 1,850 divided by 60 minutes means 1 knot equals 30.83m per minute. To make the mental calculations a little easier, we can round that to 30 and then divide again by 60 to express it per second. 30 divided by 60 equals 0.5, so 1 knot is equal to 0.5m/s.

This then means that if winds are consistently 20 knots for freefall, the load will be experiencing 10m/s drift for the duration of freefall. If they are in freefall for 60 seconds, this then means 600m of drift.

If the winds are of different strengths or slightly different directions, this should be reflected in either averaging them out or biasing drift expectations to account for the variations. If there is a significant discrepancy between winds encountered in freefall compared to those under canopy, the direction of run-in will need to be substantially biased – rather than just evenly split -towards the canopy winds, to allow people to actually make it back to the dropzone.

Working out the best opening point is relatively simple, if you were the first person to open, how far from the dropzone could you comfortably be? If the winds are 20 knots and there are 5 groups of fun jumpers on board, the first group will need to be somewhat upwind and the last group should be able to make it back from quite some distance. If the desired distance upwind from the dropzone is 300m, add this to the freefall drift of 600m to make the spot 900m upwind of the target.

Next, we need to express our desired spot to the pilot, who works in nautical miles, rather than metres, so, as a nautical mile is 1.85kms, a spot 900m upwind of the target can easily be converted to 0.5nm past.

Spotting can be an intimidating process to begin, especially if your dropzone exists in an area with strong uppers, as it'll all be your fault when everyone lands off, but with practice determining the spot is an enjoyable aspect of any Instructor or DZSO's daily duties.

PART 7 - THE INSTRUCTOR

Before signing an application for a rating or endorsement, the Chief Instructor will need to consider whether or not the candidate has the requisite skill, ability and aptitude for the rating sought. They will also need to weigh up if the candidate is ready for the level of responsibility they are applying for and if the candidate is a "fit and proper person".

The "Fit and proper" evaluation has many levels to it. For a Guide to characterising a 'fit and proper person' refer to Appendix A. For a CI to sign an application, it means they consider the applicant to be honest and to have integrity and principles in line with the values of the APF. This consideration helps the Chief Instructor to determine whether the applicant has the qualities of a Skydive Instructor.

As our sport continually develops, so must the quality of instruction. Our progress and wellbeing as individuals as well as the safety of our sport depends greatly on how open and committed our members are to making continual changes to themselves and ensuring their techniques and practices are as up to date as is possible.

7.1 The Qualities of a Competent Parachute Instructor

The competent Instructor in the classroom and on the dropzone builds bridges between the challenges of parachuting on one side, and a wide range of personalities on the other. Personalities of people who must learn new theories, new attitudes, and new skills.

Instructors are successful only to the extent that they enable their students to learn what they need to know at the right time.
The measure of their success is the learning which results from their instruction.

There are a number of broad qualities which are necessary if Instructors are to be successful. An Instructor should be:

1. COMPETENT in the subject being taught
2. KNOWLEDGEABLE, both of subject matter and of instructional techniques
3. RESOURCEFUL and CREATIVE
4. ANALYTICAL in evaluating student learning
5. Possessed of the DESIRE TO TEACH
6. Of good PERSONALITY

1. Competence and Knowledge of the subject

The Instructor should be thoroughly competent in the skills they are trying to teach, as well as in the related information.

Even the best teachers cannot teach what they do not know; "If you know how to teach, you can teach anything" is a fallacy. There is no substitute for experience and exact, detailed knowledge and skill in the subject being taught. The competent and knowledgeable Instructor will do a better job than an experienced teacher lacking in knowledge of the subject.

Students are usually alert, capable and quick to appraise their Instructor. If the Instructor knows their subject they earn their student's respect. If they are out of their depth, or attempt to bluff the class, they will very quickly lose respect and credibility and soon won't be listened to even in areas they are well versed in.

2. Instructional Technique

The competent Instructor prepares each lesson to be sure that the student's time is used as efficiently as possible. They ensure proper:

PLANNING:

- That the lesson plan ensues everything that happens in the learning situation is relevant to the objective of the lesson.
- The planning is flexible enough to capitalise on special interests or special experience of individuals in the class.

DELIVERY:

- Speak clearly and with an engaging manner.
- Organise instruction according to the learning capacities of the students.
- Repeat and emphasise key material in such a way that it stands the best chance of being absorbed, then seek confirmation from the students that it has been received, understood and remembered.
- Conduct demonstrations clearly, correctly and skilfully.
- Administer practice periods and tests in such a way as to promote and develop the skills and procedures required.

3. Resourcefulness and Creativeness

This learning pattern differs for each person. How rapidly an individual learns a particular skill depends to a large extent on how well they adapt their learning pattern to the method by which the Instructor teaches. This Instructor-Student relationship should work both ways. The Instructor must be quick to modify their instruction and communication styles to the way in which the student learns.

Resourcefulness is demonstrated when the Instructor:

- Designs a new training aid to help illustrate a principle.
- Develops an advanced project to improve their own competence in the subject they teach.
- Discovers a more effective way of measuring the progress of each student.
- Can quickly develop more relative explanations and examples for students who might not fully grasp the tried and tested ones.

4. Be Aware and Analytical

a) Awareness

Being an effective Instructor requires an awareness and emotional insight into the students, ensuring that their teaching technique is adjusted as required to keep the student engaged throughout the lesson.

Students have varied learning patterns almost to the point of uniqueness due to:

- Natural capacity
- Background experience
- Personality
- Age
- Fitness level

Instructors need to be attuned to and have the resources to deal with:

- People not understanding
- Over/Lack of confidence
- Confusion
- Misunderstanding
- Lack of interest

The Instructor must adapt their procedures to adjust to any learning difficulties.

b) Analytical

A good Instructor must be sensitive to the way the students are responding.

Student's understanding and progress must be constantly monitored to ensure the correct material is being fully assimilated. The instructor should seek confirmation from the students by way of verbal questioning, performance tests and having the students demonstrate skills. This confirmation and testing must be continuous, throughout the brief or lesson, to be effective and the effective instructor needs to assess and absorb student facial expressions and body language to understand how their information is being received.

**In the lesson plan there should be a review and discussion preceding the assessment.
This has tremendous value in the student understanding the lesson and fixing it into their memory.**

The PRIMARY purpose of an assessment at the end of a lesson is to test the amount and quality of learning and to re-teach if necessary.

5. Desire to Teach

The most important single factor in all of the things that make up the qualities of a good instructor is simply that they must possess a desire to teach what they are teaching. All the knowledge in the world can't make up for an instructor who doesn't want to be there and a half-hearted, distracted instructor will quickly alienate or produce the same emotional response in even the keenest of students.

With a strong desire to teach comes many of the other emotional qualities needed; patience, resolve and a willingness to take as long as it needs until the job has been done properly.

6. Good Personality

Favourable attitudes, such as a feeling of confidence increases learning and remembering, while unfavourable emotions, such as feelings of fear or failure may reduce or block learning entirely.

Instructors who have high levels of engagement and rapport with students will achieve better learning outcomes.

a) Be friendly and engage with students
- Meet your peers and students with a smile and a friendly greeting.
- Students respond very quickly to genuine interest.
- If a student feels that the Instructor likes them and has confidence in them, they will do their best not to let them down.
- Gather a few facts - their past sporting experience, occupation, why they are in the classroom today, etc.

b) Co-operate
- Friendly co-operation between all operational and office staff is essential.
- Instructors must work in harmony with their fellow Instructors, their CI and the Group Member they work for.
- Demonstrating a willingness to do more than is required assists in earning a high opinion of one's peers and superiors.

c) Compliment the achievement of others
- When Instructors experience unique success with a class or with a particular approach to some student's problem, compliments should be given sincerely.
- An effective compliment is to show an active interest in the progress being made.
- Be quick to praise students in front of their peers but take them aside to criticise if need be.

d) Use tact and consideration
- Consider the feelings of others.
- Since we cannot know how others feel about many things, we should be cautious in situations that may prove embarrassing.
- Think before speaking and err on the side of caution – a loss of credibility with students is hard to get back.

e) Maintain good personal appearance
- Remember – there is only one chance to make a first impression!
- An effort to look well-presented should be made.
- Cleanliness and neatness are required traits in the work environment.

f) Be cultivated
- An Instructor is expected to be well educated.
- The educated person is intellectually curious, thinks critically, weighs evidence objectively, is tolerant, temperate, balanced in judgement and displays maturity.

7.2 Techniques to Avoid

A good Instructor will work to improve themselves and seek to further enhance themselves. Techniques that an Instructor should avoid:

a) Discrimination
- Discrimination on any grounds are not acceptable.
- Pre-judging individuals on any basis, for example sex, race or age, is not acceptable.
- There may be a need to make allowances for people whose understanding of your language is limited, or who are physically less able or impaired, or who learn at a different pace. Individuals still need to be assessed to the same standard, but it may be a different process for the instructor to get them there.
- Nor is it acceptable or professional for Instructors to make sexual innuendo or overtones to their students. Any sort of sexual association, however minor, between an Instructor and a Student detracts from the ability to learn and to teach

b) Being a comedian
It isn't the instructor's job to make students laugh. It might be possible that some light, well-judged humour may lift the mood from time to time or help bond the students, but anything above what assists the students to learn is unhelpful and serves only to the instructor's ego.

c) Using sarcasm
There is never a place for sarcasm and ridicule in teaching. Be fair, firm and friendly

d) Bullying
Bullying students into co-operating is not an effective technique and allows for very little learning. It is essential that an Instructor develop a good measure of patience and tact. Being patient can be testing sometimes, but it gets better results

e) Bluffing
The Instructor who attempts to bluff when they do not know what to say or do will usually be found out by their Students. No Instructor can know everything about their subject.
Examples of situations an instructor might find themselves in after students have asked pertinent questions and the best solution are below.

SITUATION	***Correct Action***
Something the Instructor realised they should know and that should be taught in the lesson.	Promise to give the answer later. Find out and keep the promise.
Something of interest to an advanced student but beyond the scope of the course.	Tell the student where to get the information or help them find it at the proper time.
Something for which there is no exact information.	Inform the student that the facts are not known. A brief comment about work that has been done so far toward finding the facts might be given.
Something too advanced or complicated for the students at this time.	Briefly describe the techniques or process and indicate its complexity. Suggest the question be asked again in a later lesson or course. If appropriate make a note to include it in the later lesson

7.3 Student Standards

When the Student does not meet the required standard

Skydiving has clear inherent risks. At some point, an Instructor must have a cut off point for students who are, despite best efforts by all parties, unable to meet the standard required to complete the activity safely.

Although there can be a good deal of controversy as to when this should be, the decision requires no great wisdom.

The time to act is when you become afraid for the student's safety!

The safety of a student depends on an Instructor's sound judgement of their abilities.

Instructors may find it challenging to make the decision for a student not to jump, but that's why there are DZSOs and CIs. The newest to the oldest Instructors may require a second opinion to make sure they are being objective, or perhaps there is another way to communicate with the student and a fresh set of eyes can solve what the first couldn't.

There are other options too.

- An offer of further training at a later date might put relieve a student's stress at having to learn it all today, making them, paradoxically, able to learn faster. Explain to them that not everyone learns at the same rate, so that this is not an unusual situation. Most students in this situation understand they are not keeping up with the class and will likely welcome the option.
- Alternative training methods are also available. Performing a tandem jump or some initial training in a wind tunnel often works wonders for a student's confidence.

7.4 Giving Instructions

The four main aspects of instruction are:

1) When To give the instruction
2) How To give an instruction
3) Types What type of instruction do I use
4) Sides The 3 sides of an instruction

1. When to give an instruction

- At the correct time as per the Instructor technique guidelines.
- If requested to by a more senior Instructor.

2. How to give an instruction

General requirements of giving an instruction:

- **Be clear about what needs to be communicated** about what is trying to be achieved.
- **Think before speaking** and then confirm it is understood.

Instructions can be divided into two main methods of delivery; Verbal and written.

(a) Verbal instruction can be used when:
- Privacy is required
- The instruction is simple
- Distance is not a factor
- A demonstration is to be included

(b) Written instruction is used when:
- It is desired to hold the receiver strictly accountable
- A sequence of operation must be followed exactly
- The Instructions are complex
- The receiver is slow to understand or is forgetful
- Instructions are left for some person not present
- A record is needed
- The instruction will be referred to later

3. Types of Instruction and Methods of Asking Questions

Instructing can be considered an art form. The way we ask for tasks to be completed and the way we question students can make a big difference in how effective a lesson is. Generally questioning should start with a request. If this is ineffective, use a more direct method.

Ways to designate tasks and ask questions can be grouped into 4 categories:

1. Request Ask the group
2. Direct Select a person
3. Implied For experienced or motivated person
4. Call for Volunteers To get jobs done

Request is used:

- Towards a group of people
- To an older person
- To a nervous or sensitive person
- To a person of equal standing or to avoid making a person resentful
- To get a little more done

Direct is used:

- When all other methods have failed repeatedly
- In case of danger or extreme urgency
- The person refuses to obey safety rules
- To the chronic objector and talker
- When haste is important

Implied:

- When dealing with senior people
- To develop initiative
- To the person who assumes responsibility
- To the person who is keen and enthusiastic

Call for volunteers:

- For dangerous tasks
- For disagreeable jobs
- For extra heavy work
- For menial tasks

The 3 Sides of an Instruction

What **YOU THINK** you say
What **YOU ACTUALLY** say and imply
What the receiver **UNDERSTOOD**

Just because a meaning is clear in the mind of one party, it doesn't mean it is automatically communicated.

7.5 Customer Service

Though they operate at a slightly different level to normal instructor student relationships, it is important to note that all jumpers, be they tandem students or experienced fun jumpers, they are all a customer of sorts to the dropzone. For this reason, it is important for instructors to keep this in mind and adhere to some basic customer service principles.

- Listen to customers and staff, maintain a friendly attitude towards them
- Smile when talking to people in person or on the phone
- Treat them how you would like to be treated
- Be sensitive - take into consideration skydiving is an emotional event
- Show people you care, for example: an injured skydiver, at the first opportunity you should maintain communication following the incident
- Timely and honest communication to the customer is the best method to avoid complaints

Although customer retention management may seem like a step beyond the daily duties of an AFF instructor or a Tandem Master, the people you'll deal with day to day are students and customers of the business you work at. Skydiving certainly isn't the industry where the customer is always right, but some concessions to customer service go a long way.

PART 8 - THE STUDENT

Students come in almost infinite variations. The Instructor should be able to identify and adjust their training to suit.

8.1 Aptitude, Ability and Achievement

An Instructor should be aware that each person has a different aptitude, ability and level of achievements.

Aptitude	Latent or potential ability	Could do
Ability	What a student is capable of doing	Can do now
Achievement	Refers to the past	Has done

8.2 Understanding People

To understand, work with and motivate people, we must recognise:

- What effects our actions and reactions have as an Instructor
- That all people are different

By knowing that there can be differences in an individual's ability to understand, learn and perform, we must ensure our training is designed to allow a student to progress once they have reached the level of ability required.

a) What affects our actions and reactions as an Instructor?

We are all acting and reacting in an environment that is comprehended from

- Our own personal point of view
- Understanding only through listening, observation, thought, and then insight

How the proficient Instructor acts:

- Observes, listens to, and tries to understand each student
- Must decide which individuals need guidance, encouragement, extra instruction, more practice, or more challenging assignments

b) All people are different:

- **Mental ability** - Solving problems, speed in learning, understanding relationships
- **Intelligence** - Dealing with abstract ideas
- **In performance** - People perform differently throughout different stages
- **Physical ability** - Physical ability is easier to identify
- **Awareness of senses** - Each person uses each of their senses differently
- **Muscular coordination** - Varies significantly at different stages
- **Emotional stability** - How people handle the excitement and stress of skydiving
- **Interests** - Other interests and sports can help a student significantly
- **Age** - Can have advantages if the person maintains physical fitness

The Instructor must use this knowledge to determine what approach to use for each student

Skydiving students are motivated to learn by one of the strongest of mankind's basic drives, self-preservation.

Meaningful Instruction

- **Why it must be learnt** and ensure that it is meaningful to the student
- **To make instruction meaningful** we must start at whatever level the student has achieved

8.3 Motivating the Student

Everything that happens in the teaching environment influences motivation, for better or worse.

The surest method of teaching and getting along with others is to help them satisfy their basic needs.

Students may be motivated by a variety of factors, including:

- Recognition and approval by others
- The need to feel safe
- Searching for new experiences
- Social interaction
- Feeling comfortable in an environment
- Accomplishment and Success

Recognition and approval by others

People respond well when they have the approval of those around them.

Some ways to assist this is:

- Call students by name - it is very good to learn their names as soon as possible
- Find ways of giving recognition for achievement and progress
- Most students in a class can receive some degree of approval from the Instructor
- Let students work in groups occasionally so they get to know and help each other

The need to feel safe

People participating in a sport such as skydiving will at times need reassurance. It is important that Instructors and dropzones provide reasonable opportunities for students to be able to talk over their safety concerns with someone qualified.

Looking for new experiences

Ways to achieve this are:

- Having students assist with simple dropzone tasks
- Helping in the development of special projects
- Allowing them to work out some of the problems for themselves
- Making material available for advanced work

Social interaction

One reason people remain involved in our sport is for the social connections and the friendships formed.
An Instructor should:

- Treat students as individuals worth knowing
- Encourage friendships in the group
- Get to know each student
- Occasionally have after-class informal discussions on topics of mutual interest
- Acknowledge that becoming part of a new social group is important for student retention.

A good Instructor is rewarded by the achievements of their students and gains their respect and friendship for years to come.

Group Members with good social activity tend to retain students

Feeling comfortable in an environment

Students will achieve much more if they, and their Instructor, are rested and comfortable.

- Students should be seated for classes and demonstrations when possible
- Clean, comfortable and well-lit training areas provided
- Safe, well organised equipment
- The use of modern, functioning training aids

Accomplishment and Success

Satisfying a sense of accomplishment is very important. The APF Training Tables utilise this aspect, providing tasks that increase in difficulty during progression and continue to offer incremental challenges in attainable steps.

PART 9 - LEARNING

No method or approach to teaching will be successful if it fails to hold the students' interest and attention. It is important to remember that all people are different and will have different methods of learning and understanding.

The skilled Instructor uses techniques and activities that hold the attention and interest of the greatest number of students in their class.

With advanced students, difficult problem-solving activities may hold attention over long periods of time; with beginner students, activities involving greater variety and activity are necessary.

9.1 Types of Learning

There are basic learning methods that have been identified;

1)	Doing	Practical exercises
2)	Verbal and Observation	Listening, asking and watching
3)	Thinking	Mental rehearsal and exploring different options & ideas
4)	Solving problems	Debriefing a skydive and discovering a solution
5)	External source	Different people, places, manuals, web, etc

Using different types of learning simultaneously will heighten the student's ability to learn

Learning by: Doing

- Physical skills are learnt by doing and by experiencing how the right movements feel.
- Demonstration must always be followed by allowing the student to try it themselves.
- No amount of verbal education can take the place of real experience.
- Many learn by trial and error drawing from previous experiences.

As parachuting involves mainly learning physical skills, a significant amount of training should be practice in mock-ups, suspended harness, etc, to imitate actions as closely as possible.

Learning by: Verbal and Observation

When teaching a skill, it is recommended that verbal and observational techniques be combined.

Verbal instruction should generally be restricted to only a few key phrases or cues at a time.

Students are bombarded with large amounts of information when they first perform a new task. It is essential that the Instructor not add to this complexity, but rather provide a few key elements on which the student can focus. The challenge to the Instructor is to decide which elements of a skill should be taught first and how the student's skill acquisition should progress.

The visual presentation of an ideal performance, such as video or demonstration, is more effective than just verbal instructions to improve motor skill performance.

We learn much by carefully watching others do something we want to do. This helps to eliminate some of the trials we would have to make using trial and error.

The example shown by video or demonstration should:

- Show the performance which is appropriate and correct
- Be accompanied by verbal instructions which highlight the key elements of the skill
- Example is available during practice to provide reference of correctness of the desired performance

Learning by: Thinking

Experiencing skydiving and watching others gives students plenty to think about. They may be able to draw parallels from their other life experiences to help figure out things such as canopy control and how a balanced body position should feel.

Mental rehearsal also has great benefits (Refer to Part 11 - Mental Training)

Learning by: Solving problems

While presenting material by lecture, or performing a student debrief, it is possible to get mental participation. The skilled Instructor can apply the principle of "learning by doing" while they talk by challenging the students and allowing time for them to:

- Answer questions for themselves
- Understand the debrief and work out improvements required
- Question ideas

In other words, they prompt the student to learn by mental visualisation.

Learning from: External source

Students get a lot of information from sources other than the dropzone and their Instructor. It is absolutely important that students understand the need to ask their instructors about what they have learned before applying it in the air.

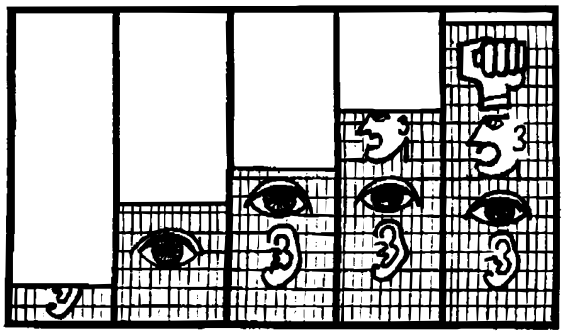
- Different people
- Places
- Manuals
- Internet

9.2 Learning and the Senses

In order to promote student involvement, the Instructor should appeal to as many of the senses as possible.

The 3 most important senses we can appeal to skydiving instruction are:

- Touching — Doing
- Seeing — Observing
- Hearing — Listening



Listening | **SEEING** | **Listening and SEEING** | **Speaking Listening and SEEING** | **DOING Speaking Listening And SEEING**

NOTE: The height of the pillar shows the relative efficiency of different types of learning

For example, when explaining emergency procedures

- Allow them to handle equipment — Touching — *Doing*
- Show the students the equipment — Seeing — *Observing*
- Explain how it works — Hearing — *Listening*

Encourage students to handle as much equipment as possible, so that they will familiarise themselves with the shape, weight and uses of the equipment.
Always position students to take maximum advantage of their sensual capacities; basic steps such as simply making sure that they can see and hear the instructor.

9.3 Feelings That Make Learning Difficult

There are certain factors that have been identified that make learning difficult.

a) Fear and worry

- Fear of ridicule or criticism from class or Instructor
- Fear or dislike of the Instructor
- Fear of accidents
- Fear of failure
- Personal problems; ie Family issues, sickness, worry over money
- Training aids that appear dangerous

b) Discomfort

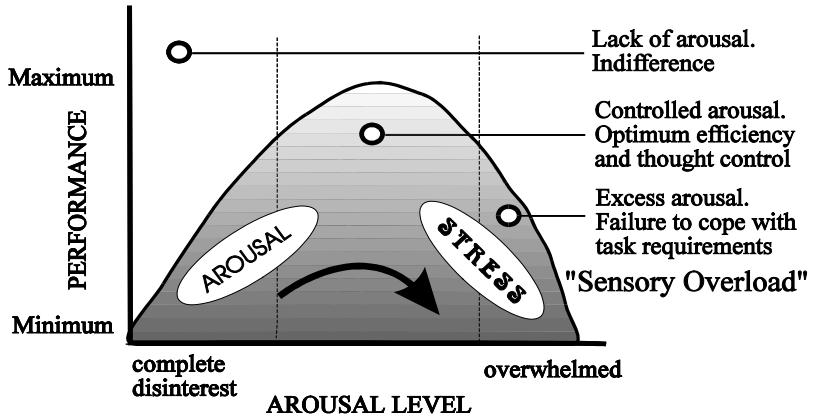
- Standing too long
- Dirty or unsightly training area
- Poor ventilation (too hot/cold)
- Hunger or thirst

c) Boredom

- Instructor talking for too long
- Little chance to use or handle equipment
- Instructor not prepared
- Training aids not used
- Training methods not adaptive
- Not appreciating the importance of the subject matter
- Too many students in the class resulting in a lack of attention from the instructor

9.4 Arousal Level

Arousal may be illustrated by the "Inverted U" shown in the illustration.



9.5 Sensory Overload

A student, whose arousal (stress) level goes very high when confronted with the actual jump, is likely to perform poorly. This is known as ‘sensory overload’

Sensory overload is a failure of the brain to appreciate, respond appropriately to, or remember all the significant sensory inputs, usually occurring in a situation of high stress and multiple sensory inputs.

Maintaining a good arousal level (stress level) can be helped by:

- Ensuring enough time for the lesson to be completed thoroughly
- Making the lessons interesting and revise topics when required
- Be aware arousal levels differ great with individuals
- Introduce as much **realism** (and stress) into the training as possible using training aids
- Keep the student focused on the jump by talking to them and asking questions
- Teach and remind the students about their mental rehearsal
- Advise the student to concentrate on the next sequence of actions – one step at a time!
- If the student admits to being nervous, ask them to be more specific on which part of the jump they are nervous about and then work on this area with them

- Teach your students about diaphragm (deep) breathing and its advantages (Keeping in mind; more oxygen = lower heart rate)

9.6 Positive and Critical Learning

Both reward and reprimand are useful tools for the Instructor.

(a) Positive learning
When we give reward for doing the right thing and ignore little mistakes, we are using the positive method. This is the preferred method.
When we concentrate on the mistakes, we are using the negative method. The negative method is not very effective.
Students are seldom perfect. An Instructor should see the good elements of their efforts just as they must see and correct all errors.

(b) Critical learning
Some Instructors find it easy to criticise but hard to praise.
When we reprimand, only those methods should be used which will help the student to understand and do what is expected of them and possibly leave them with a stronger desire to co-operate.

(c) Reprimand
Reprimanding - the good Instructor:

- Remains calm
- Knows and uses facts
- Considers the feelings of the student
- Talks to the student alone
- Includes some encouragement and praise for work well done
- Suggests a constructive course of action
- Criticises the mistake, not the individual

Reprimanding – the poor Instructor:

- Becomes angry
- Fails to know or use facts
- Fails to consider long term results
- Fails to consider the effect on others present at the time

Praise in public – Reprimand in private

When de briefing a jump, the following procedure should be followed to ensure the best possible result.

- Create a calm, personalised, non-threatening environment. Put the student at ease.
- Ensure that the student is not made to feel embarrassed in front of more competent students.
- Even when the jump has been unsuccessful something positive can be salvaged if the people involved allow it to be.
- Take a POSITIVE approach.
- Do NOT direct only NEGATIVE remarks at the student.

De-briefing should be a two-way communication.

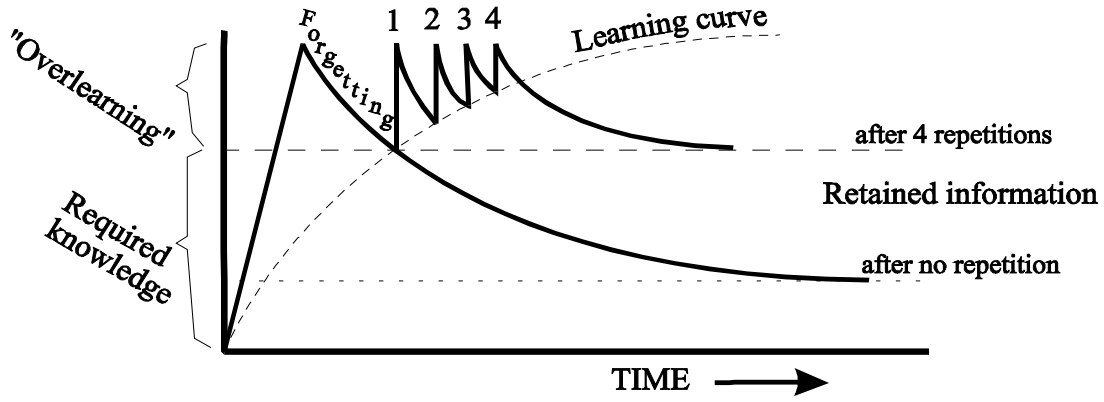
- Seek the student's feelings and observations first
- As much as possible debrief on the good points first
- Clarify and explain errors made by the student
- Question the student to ensure that they have understood what has been said

Ensure that the student understands where their weaknesses lie and the steps to take to correct them.

9.7 Repetition and Overlearning

The key element in learning, especially in learning practical skills, is repetition. As forgetting starts very soon and tends to weaken the performance, it must be compensated by continuous repetition.

As we can see from the diagram, a high level of skill cannot be reached without rehearsal, drill and repetition!



Permanent results require a great deal of "overlearning"

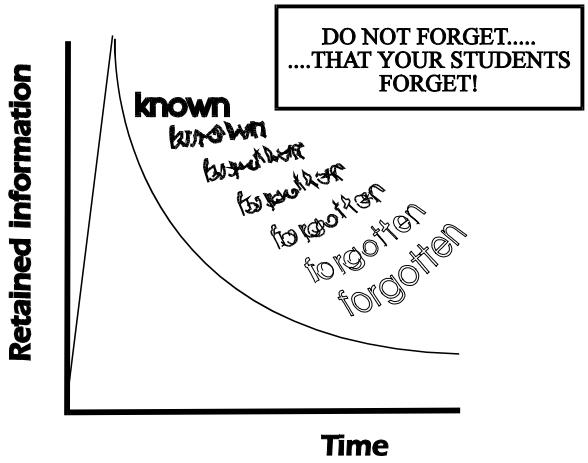
Drills should be used for the most important & fundamental skills.
Continued practise after a skill is understood and can be performed from memory results in overlearning. A skill that can be performed without hesitation after a considerable period of time has been overlearned and is more likely to be performed properly under pressure.

Emergency procedures are an example of something which must be OVERLEARNED

9.8 Forgetting Over Time

The more meaningful and useful the materials are, the longer we will remember it. As soon as a subject has been learnt, we start to forget unless we continue to use the material or skill and keep it fresh in our minds.

As forgetting will always tend to occur, it is impractical to expect the student remember everything. It is important that they retain the things they **MUST KNOW** from the course.



9.9 Time Periods for Effective Learning

The experienced Instructor learns to judge the effectiveness of various lengths of concentrated study and practice periods for each level of student and each type of subject matter.

Attention span is the amount of time that an instructor is able to hold someone's attention for.

The recommended period for a lesson is 20 to 40 minutes;
Maintaining student interest is the determining factor

The factors on which maintenance of interest depend are so many and vary so widely that these parameters can only be used as a guide.

1. The length of lesson periods varies depending on:
   - The type of lesson

- The capability of the student.

2. How to judge when a break is required:
   - When the student's performance shows errors
   - The Instructor recognising lack of interest
   - When students look tired.

3. Methods for dividing up lesson times are:
   - Having a break
   - Introducing class participation
   - Changing from drills to seated class time
   - Moving from inside to outside
   - Introduce training aids such as video.

PART 10 - TEACHING THE LESSON

This part contains 3 basic concepts that can be applied for teaching a lesson.

3 principles of	***Instruction***	**Preparation – Motivation - Confirmation**
6 parts for	***Structure***	**Preparation - Review - Aims - Content - Confirmation – Summary**
4 stages for	***Teaching***	**Preparation - Explanation - Practice – Evaluate**

When teaching a lesson, all the parts of this guide should be used.

The good Instructor knows WHAT to apply, WHEN to apply and WHERE to apply

10.1 Three Principles of Instruction

There are three basic principles of instruction which the Instructor must apply with common-sense according to the circumstances. Each are described in more detail below.

a) Preparation
b) Motivation
c) Confirmation

PREPARATION

Successful instruction depends to a large degree on the amount of planning and preparation which has taken place beforehand. Off the cuff lessons often leave the way open for important parts of the lesson to be missed entirely.

MOTIVATION

In presenting the prepared lesson, the instructor must promote and maintain the student's desire to learn. Students have an interest in what you are about to teach them or they would not pay money to join the Group Member or take the course. The instructor has to convert this interest into a desire to learn. If the instruction is dull and lifeless the student will become bored and their attention will start to wander.

CONFIRMATION

The instructor must ensure that the instruction has been assimilated. Confirmation is an important part of the teaching process, it is necessary at all stages of instruction to ensure that the facts or skills are being absorbed by the students. You must confirm assimilation at every single stage of instruction, whether it be the stages of a lesson, the end of a lesson, or the end of the course. If you do not confirm their assimilation, you do not know how well they have learnt and you do not know how well you have taught

10.2 Structure of a Lesson Plan

The lesson plan is made up of several parts and it is one of the most important assets to have while instructing. It should be brief in subject matter but list everything that requires action or attention before, during, and after the period.

Most importantly once a lesson plan has been created – make sure it is followed.

P	**Preparation**	Location, teaching aids, how/what/methods of delivery, rehearsal.
R	**Revision**	List questions which will uncover what they have already learned.
I	**Introduction**	Aim of the lesson, objectives and standard to be achieved.
C	**Content**	Information, focusing on the “MUST KNOWS”.
E	**Evaluation**	List the questions to ask which will confirm the teaching.
S	**Summary**	Give "KEY" words/phrases that will enable them to recall the lesson.

Preparation

The aim of preparation is to select the:

1. Type of delivery
2. Ways to present the material
3. What to prepare

1. Types of delivery
   a) The lesson is an ideal way to teach; individuals can be taught in small groups
   b) The lecture enables large classes to be taught and a lot of information can be imparted in a short time. It is economical for Instructors and use of aids
   c) The seminar or discussion group helps to consolidate knowledge already acquired and so may follow the lesson or lecture It can be more of a question and answer period
2. Ways to present
   a) Discussion and verbal lesson periods can be used for introductions, new content and confirmation of what has been taught and what they know
   b) The demonstration may be part of a lesson or lecture and helps to clarify complicated motor actions such as landings or emergency procedures
   c) Power point presentation can work with a demonstration period
   d) The video period can generally be grouped with a demonstration and is particularly useful in giving the students a visual model to base their own rehearsal on
   e) Practice or drills confirm an action or skill, particularly after a demonstration to teach a practical skill.
   f) Two or more ways for most subjects are often required to ensure that teaching is complete
3. What to prepare
   a) The amount of time for each part and for the total lesson
   b) The best training area available
   c) The best training aids available

Revision

This is to assess what the student already knows prior to the lesson. Spend sufficient time on revision to make sure that the students have enough knowledge to proceed with the lesson.

- List questions which will assess their existing knowledge
- Check log book
- Watch their previous video
- Ask other Instructors

This will start them thinking about those things that they have already learned which will have a bearing on what they are about to learn.

Aims

The aims are found in the Training Operations Manual for all training descents.

- Have aims displayed throughout the lesson in a position where they are readily referred to.
- Express to the student the reasons why they must learn it and why it is important
- State the criteria: let them know exactly what is expected of them

Content

As each lesson has aims, the content of the lesson must reflect this.

There will be a mass of material that might be incorporated in the lesson, so break it down into the following groupings:

MUST KNOW	Vital points necessary to achieve the aim of the lesson
SHOULD KNOW	Desirable information but not essential
COULD KNOW	Relatively unimportant knowledge

The contents should:

- Have all the knowledge required to achieve the aim
- Be in a logical order – this does not necessarily mean the order of the skydive
- Broken down into stages
- Have brief headings for each stage to avoid an unwieldy or cluttered lesson plan.

When to apply the content

- When constructing a lesson
- Throughout every teaching period
- Answering student questions

Content and Time

- 20 to 40 minutes should be enough time for a briefing – depending on what is being taught

MUST KNOWS	*have to be included*	in the time period
SHOULD KNOWS	*can be included*	according to the time available
COULD KNOWS	*might be included*	only if there is time to spare

The things that effect the time of a lesson are:

- What is being taught
- The size of the class
- What previous knowledge the student(s) have
- The ability of the student(s)
- The speed at which they learn

Points for a good delivery of content

- Perform each stage before moving on to the next
- If, by the nature of the subject, there is much to be explained and the class must mostly listen, try to introduce variety in order to hold the attention of the class.
- Repeat important content in clear, concise and easy to understand phrases.
- If using a whiteboard or Power point, note key words in a clear manner.
- Keep questions relevant and where possible prepared beforehand.
- Use aids in the most useful places.
- Include as much student participation as possible.

Evaluation

Confirmation is an integral part of every lesson. List tasks or questions which will be asked of the student(s), this is designed to measure the success of the teaching and what has been received against the aim of the lesson.

This can be done by:

- Asking questions
- Getting them to give a demonstration
- Written exams

Once an evaluation has been made:

- Inform the students if they have achieved the aims
- If they haven't achieved their aims explain what and how additional training is to be done

Summary

This is used after the lesson has been taught

Give students a number of easily remembered "KEY" words or phrases. This will assist in recalling the rest of the lesson, which they can then use for rehearsal. This is a good opportunity to reinforce the aims of the lesson.

Summaries can be used:

- Any time after the lesson
- Just before emplaning
- For students doing a repeat jump
- For a student that has been briefed by someone else

10.3 Teaching - The 4 Basic Stages of Delivering a Lesson

Understand there are situations which can't be planned for, but the following structure should still be applied.

P	**Preparation**	Use notes, suitable area, training aids ready, student revision
E	**Explanation**	Of aims by verbal, demonstration, video, watching others etc
P	**Practice**	Having the student demonstrate what has been explained
E	**Evaluate**	Confirm lesson learnt by questions and observing

This combines all of the skills and methods that are contained throughout this guide

10.4 Summary of Teaching a Lesson

Teaching can be considered an art form and the methods and concepts will often overlap.

The lesson matrix assists in the understanding and delivery of instruction.

Priciples	Preparation	Motivation			Confirmation	
Lesson plan	Preparation	Review	Aims	Contents	Confirmation	Summary
Lesson stages	Preparation	Explanation		Practice	Evaluate	

10.5 Example Lesson plan structure

Subject _____
Aims _____

Then build the lesson including the following:

1. Planning

Classroom/teaching aids, Prepare content, Rehearsal

2. Revision

a. Relevant to this lesson (i.e. previous jump performance to see where the student is at)

b. Motivation/Arousal which leads into the Aim of the lesson.

3. Introduction

Aim of this lesson, Reason for lesson being taught, Objective/ Standard to be achieved

4. Content

Break down lesson into new skills or information and **confirm in stages**.

Remember to focus on the "Must Knows" rather than the "Could Knows"

(a) **Practical or Drill Lesson** - Complete demonstration of skill to be taught
Stage One Explanation– new skills
Demonstration – of new skill
Practice – to confirm

Stage Two Explanation– new skills
Demonstration – of new skill
Practice– to confirm (Repeat as necessary)

5. **Theory Lesson** - Explanation on information to be taught.
Stage One Explain - new information
Q & A – to confirm

Stage Two Explain - new information
Q & A – to confirm (Repeat as necessary)

6. Evaluation

- Confirmation of learning (Practice of skill taught, or Q & A of new information learnt)
- Feedback of standard achieved and areas to improve

7. Summary

- Restate the aim of the lesson.
- Give key words or phrases that will enable students to recall the lesson for practice.

10.6 Delivery Techniques

Most lessons will have the opportunity to implement more than one technique. As an Instructor gains experience, they develop a sense as to which techniques to use and when.

Some delivery techniques are:

1)	Primacy in learning	Instruction the right way, the first time, every time
2)	Question technique	Ask, pause, nominate
3)	Demonstrations	Explanation by demonstration
4)	Using emphasis	Ways to highlight important points
5)	Correct use of voice	Adjustments in voice pitch or tempo to be understood more clearly
6)	Drill periods	Understanding the importance of time awareness for lessons
7)	Positive use of stress	Ways to simulate the stressful skydive environment in Training

10.7 Primacy in Learning

It is of great importance to learn skills correctly from the start because once they become habits, they are extremely difficult to change.

Teaching it RIGHT the FIRST time is called
"Primacy in learning"

Similarly, another golden rule of skill training: **"The last thing learnt is the first thing to break down under pressure".**

The Instructor is to be particularly careful during planning and initial instruction of a skill.

If a student performs a drill incorrectly, stop them, correct them, then immediately get them to repeat it the correct way.

10.8 Question Technique

How do we ask questions?

ASK THE QUESTION
- PAUSE -
NOMINATE A STUDENT

- The pause allows each student to think of the answer knowing they may be called on to give it.
- If the student answers correctly, confirm that it is correct and make sure that the whole class heard.
- Be sure to correct wrong answers by having one (or more) of the students answer the question correctly before making a clear statement of the correct answer.
- If a question from the class is not connected with the lesson, or is a "red herring", explain that it is outside the scope of the lesson and steer the discussion to relevant matter.

Proper questioning by the Instructor can have several desirable results:

- It reveals the effectiveness of the training they have given
- It checks the student's retention of what has been learned
- It reviews material covered in previous lessons
- It can be used to heighten the student's interest
- It can stimulate creative thinking
- It can emphasise the important points
- It can identify points which require review
- It can check the student's comprehension of what must be learned
- It promotes active class participation
- It increases the student's confidence that they are learning what they need to learn

Effective questioning requires preparation. Good questions are rarely spontaneous

It is good practice to:

- Make a list of questions for each instruction period
- Update your question list from time to time
- Share your lists with other Instructors
- Discuss not only the wording of questions but their presentation
- Continuity and other aspects of question technique

With questioning avoid:

- A question which suggests its own answer
- “Prompting" a student for an answer they do not know
- Asking the question "Do you understand?"
- Questions about performance or skills (have them demonstrate the skill)
- Questioning a student while they are performing a skill or doing something
- Questions which can be answered with "YES" or "NO"

10.9 Demonstrations

A demonstration is a very effect way to explain to explain a requirement or action.

Use the demonstration to show:

- A standard that must be achieved
- Actions that must be performed by the individual
- Equipment- how it works, and the best method of operating it

For demonstrations:

- Have only the essential parts (MUST KNOW)
- Be kept as short as possible
- If it contains a lot of detail, break it into stages
- Choose an area free of distractions

- Ensure that all students can see the demonstration
- If someone might have missed it or part of it, repeat it
- If it is performed incorrectly, tell the class and repeat the demonstration
- Have the best training aids to assist properly arranged

10.10 Using Emphasis

Effective instruction is greatly assisted by emphasising the important elements in the lesson so that they stand out. Keep in mind that overly repetitive emphasis can decrease its effectiveness.

There are several techniques which we may use when speaking:

- Repeating the statement several times during the lesson.
- Writing the statement on the whiteboard or Power Point.
- Preceding the material with phrases like "Remember that", "Make a note of this", "Now this is an important part", etc.
- Pausing before and after a statement.

10.11 Correct Use of Voice

Using your voice correctly will be a good help in getting your subject over to the class. A well-prepared piece of instruction must be complemented by using your voice effectively.

In using your voice, try to remember the following hints:

- Pronounce words clearly and distinctly without being unnatural.
- Vary the pitch of your voice – a monotonous voice quickly bores an audience.
- Put emphasis on the important words.
- Speak slowly and loudly; normal speech is generally too fast for instruction.
- Pause at planned intervals to collect your thoughts on what you are about to say. This will avoid hesitations and awkward moments on your part and allow the students to consider what you have said.

10.12 Drill Periods

Drill periods are used for practical instruction such as emergency procedures.

These practical periods are to be preceded by a:

- Lecture period in which the drill has been fully explained and the reason for it.
- Demonstration of how the procedure will be carried out.

When conducting a drill period:

- Give detailed directions and make it as realistic as possible.
- Teach each step before progressing to the next.
- Give close and constant supervision – divide the class into smaller groups so they can be supervised in the initial phase of learning the skill.
- Make sure that the students perform the drill correctly.
- Re-teach and re-demonstrate when the need arises.
- Ask pertinent questions during the drill period.
- Stress the need for accurate procedures.
- Give patient encouragement to slow learners and rotate students frequently.

Primacy in Learning is particularly important in any drill period. If students are allowed to initially perform a drill incorrectly then changing those first impressions requires a great deal of care and repetition.

10.13 Positive Uses of Stress

Remember the importance of stress during the learning phase, particularly if the drills being learnt will need to be recalled under stress which include exits and emergency procedures.

Memories stored while in a calm state of mind are not always available when under stress.

From this it follows that training should be conducted under conditions as realistically as possible, i.e. under some stress.

During emergency procedure training, conditions need to be **as real as possible**, such as:

- movement of the harness by the Instructor
- time/reaction pressure
- reminders of the realities of the situation
- reaction to visual clues (pictures of malfunctions)
- Insistent commands to complete the drill

If the student makes any errors, the instructor must **immediately** correct the fault and ensure the student understands not only what was wrong but also why it was wrong.

PART 11 - MENTAL TRAINING

11.1 What is Mental Training?

Mental training is a psychological skill which:

- Focuses attention on visualising completing a drill or skill successfully with a vivid mental and physical reconstruction of what actually happens as it is performed perfectly and in real time.
- Recreates with imagination, what the senses experience during the drill see, feel, hear, smell, touch etc.
- Can be combined with moving through the actual physical motions as the visualisation of the skill progresses.

There is nothing that might occur during a skydive which cannot be mentally practised in some way.

Though there are obviously some skydiving and parachuting situations that cannot be physically practised on the ground, mental training can help to control arousal levels, therefore enabling the student to be able to concentrate and perform more effectively during each skydive.

Mental practice in combination with actual physical practice is in many circumstances, IS MORE EFFECTIVE than just physical practice alone.

11.2 Aim of Mental Rehearsal

The ultimate aim of mental rehearsal is to create a feeling of having **"been there, done that"** any times before the actual occurrence. This way the student feels comfortable with the execution of skills, and completely in control of the situation when tested in reality.

11.3 How to Mentally Rehearse

Use the following guidelines when visualising the skydive and/or canopy flight:

Real Speed	The ability to rehearse in real time is a critical part of performance, be sure to perform the skill at the same speed it will occur at.
Sufficient time	It is important to rehearse a large enough "chunk" of an activity so that natural rhythm is maintained. Split into segments and then rehearse in its entirety.
Perfect Practice	One of the great of mental rehearsal is that the perfect performance can be practiced, even if it rarely happens in real life. If it is not perfect – stop and start again until it is.

11.4 When to Use Mental Training

Effective rehearsal should include:

• The perfect skydive	How it is meant to be
• Emergency procedures	Done perfectly
• 'Plan B' strategies or disrupted plans	E.g., changing circuit due to traffic
• Recovering from mistakes	E.g., recovering from unstable exit
• Broken concentration	Reacting to a distraction in freefall/canopy

11.5 Mental Training for Students

Instructors should take the time to brief students on their next jump well in advance, this allows them plenty of time for mental practice before the actual jump.

For students to learn mental training effectively they must develop the process of:

- Knowing what they should be doing, and doing it the correct way
- Developing the ability to maintain a high level of concentration throughout
- Become aware of, and able to control, what they see and feel and what they can ignore
- Physically move through the action as it is rehearsed

The value of mental imagery for student skydivers should not be underestimated.

If students make the effort to acquire the psychological skills used in mental training, this will lead to faster progression.

Mental training WORKS – so you should choose to use it

PART 12 - TRAINING AIDS

Explanations are necessary to assist understanding. Showing a student a relevant training aid while they listen to a description will allow them to understand a subject more quickly as the instructor can appeal to multiple types of learning at the same time.

The purpose of an aid is to help the Instructors lessons by adding interest to the lesson and making it easier to understand.

There are many more aids than those listed here and they are limited only by the imagination of the Instructor and the resources of the training operation.

12.1 Classroom Training Aids

a) Video
b) Whiteboard
c) Power Point Presentation
d) Equipment
e) Pictures and Diagrams
f) Movable manikin
g) Online courses
h) Virtual Reality simulators.

a) Video

A video showing a performance of the skills that are to be taught is possibly the best way to present the whole subject.
The use of video requires:

- To be well planned and explained
- Confirmed with discussion and practical application

The APF website has a great selection of training videos of student training tables, malfunctions and canopy piloting that have been created exactly for this purpose.

b) Whiteboard

The use of a whiteboard is very effective and allows flexibility within a lesson.
The following points will assist in making the best use of it:

- Plan its use (where will it be placed/use it for what/write what on it- can be prepared it beforehand)
- Do not overcrowd the board with information
- Do not talk to the board
- Use colour for emphasis
- When the diagram is finished, stand aside and explain it clearly
- Erase unrelated or no longer relevant material

c) Power Point Presentations

A power point presentation is recommended to cover the complete course.
When using a power point presentation, it is important to:

- Be set out in a logical order
- Be well presented and easy to read
- Incorporate pictures and video
- Do not allow a lesson to become Death By Power Point

d) Equipment

Showing equipment to be used is an important part of each lesson.
Equipment should be used to:

- Show how a parachute works
- Identify handle location
- Demonstrate gear checks

e) Pictures and Diagrams

Diagrams can be used for lessons such as canopy circuit patterns and heights
They should:

- Have a clear concise title
- Should be fairly large and clearly drawn

f) “Woody” The Moveable Manikin
The skydive model can be used as a great tool to show the desired body position.
It can be used:

- To show basic body positions
- Show how the body can move in freefall

g) Online courses
Some dropzones have offer delivery of aspects of a course’s classroom component via online learning.
Structuring parts of a course online offer significant operational advantages to dropzones and to students.
This must:

- Be well structured and easy to follow.
- Have regular assessments to ensure competency.
- Not be intended to wholly take the place of face to face instruction

h) Virtual reality simulators
Some dropzones around the world have VR equipment to simulate freefall and canopy flight. It needn’t be as complicated as it may sound and will have great appeal to students and instructors alike. It allows students to build experience and judgement quickly by taking them – and as many of their senses as possible – through multiple skydiving scenarios before they go near any risk.

12.2 Practical Training Aids

a) Camera
b) Aircraft mock-up
c) Suspended harness
d) Training harness
e) The table
f) Creepers
g) Training altimeter

a) Camera

Camera is an essential tool for Students, Instructors and coaching for all disciplines of skydiving.
Video can show 'stop' or 'slow' motion, point out important parts of the biomechanics involved and generally give the student a "feel" for what is to be performed in the air.

Briefing: Showing video on how to perform skills such as turns, tracking and canopy landings can give the student a greater appreciation of what skills and movements are involved than any verbal briefing or demonstration could.

De-briefing: Having the student's performance videoed is by far the best way of showing a student what they did in the air and is one of the foundations of the rapid progression.

If a camera person is used, ensure a complete briefing with the camera person for their involvement in the exit, freefall, opening and canopy flight

b) Aircraft Mock-up

A mock-up is a fabricated aircraft door frame to practice exits. It is important that it replicates the door size and items which will affect movement in the aircraft and climb out. Exits are an important lesson to be taught and a mock-up is a great tool to use.

c) Suspended Harness

This aid can range from a pair of risers tied to a rafter to sophisticated devices with pulley controls, quick release mechanisms and cutaway facility and may incorporate some means to visually simulate views of malfunctions.

It is used mostly for emergency procedure training. The more advanced models can simulate the stable freefall position, main deployment, opening shock and steering the canopy.

Care should be taken to simulate the toggle pressure and range of movement as realistically as possible, as modern square canopies require quite positive input which increases progressively through the range of toggle movement.

The use of a suspended harness is mandatory prior to any first AFF or SFF jump.

d) Training Harness

This consists of a simple harness fitted with the appropriate ripcord pocket(s)/handle(s) the same as the equipment that will be used on student jumps. It can be worn by all the students and allows them to readily visualise any reference to their handles and to practice at any time far more realistically than with basic imagery.

e) The Table

Used extensively to simulate the freefall position and manoeuvres. The table should be mounted on a pivot to turn the student while they lie in the face to earth position. It should be well padded and shaped so that an extended session does not become painful.

f) Creepers

Creepers are used extensively by teams to practice their manoeuvres but are also very useful to allow students and novices to truly see the distances and visuals involved in their jumps.

g) Training Altimeter

A training altimeter lets the students see an altimeters needle simulating descent in real time which allows for more realistic rehearsal. A training altimeter can be fitted to the Table or to a training harness.

PART 13 - THE INSTRUCTOR AND THE JUMP

This section contains information about the Instructor's responsibilities for the whole process of the skydive. Instructors can instruct training jumps, B-rels and can be nominated as Loadmaster of the load. This means responsibility for all the skydivers on the aircraft and knowledge of basic dropzone and safety procedures for each stage of the process.

13.1 Student Prerequisites and Legal Requirements

- Each student must become at least an APF Student Member holder by purchasing and completing an APF "Parachuting Contract" that incorporates the warnings and waiver. This is what the student completes (and all certificate holders as well) annually for every Group Member they wish to jump at. It is not usually the Jumpmaster's job on the dropzone to process this, however instructors should make themselves satisfied that this has completed prior to beginning training. There are personal legal ramifications for taking a non-member skydiving.
- Students must be of the minimum age defined in the Operational Regulations
- Students who are under the age of 18 years must have their parent or guardian's written consent. Consent must also be given on the appropriate sections of the Group Member Waiver
- Some States legally require Instructors to acquire a 'Working with Children' police check. Dropzone owners face heavy fines for non-compliance
- Students must not be under the influence of drugs or alcohol
- Student descents are classed as 'Training Descents' and therefore must be made under the auspices of an APF approved Training Group Member supervised by an approved Chief Instructor. They must be made under direct supervision of an approved DZSO. Refer to the Operational Regulations
- Light weight students (approx. 60kg and less) have their own issues also. Whilst they may be much easier to negotiate out of the aircraft, their reduced wing loading may make a jump unsafe on a windy day. The legal maximum wind limit for a non-tandem Student descent is 15 knots. Sometimes it may be necessary for the DZSO to reduce this for lighter students. Putting the student on a smaller canopy may not be the answer

PART 14 - GROUND CONTROL ASSISTANT AND TARGET ASSISTANT

The Operational Regulations allow instructors to act as a Target Assistant and a Ground Control Assistant. See the TOM for more information, and for sample written assessments for each role.

14.1 Acting as Ground Control Assistant (GCA)

The GCA 's job is to communicate with the aircraft.

A GCA is required to be a person with a thorough knowledge of ground-to-air communications, meteorological conditions and the rules and regulations.

Acting as a GCA involves five key practical elements:

1. Preparation: Access the information, identify hazards, seek advice, inform pilots and loadmasters, confirm details of each load and appropriate conditions.
2. Aeronautical radio: Set-up, select correct frequency, operate using the appropriate basic radio procedure, shut down.
3. Radio language: Use appropriate phraseology and phonetic alphabet.
4. Communication using an alternative ground-to-air communication strategy (without radio), e.g. using target panels.
5. Monitor the weather, aerial activity of participants and ground conditions.

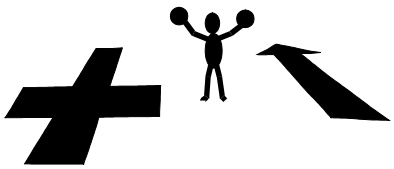
Jumpmasters are required to brief the GCA on the composition of the load and the conditions under which the GCA is to vary the "clear to drop" signal. The various signals (or radio commands) must be clearly understood by both the jumpmaster and the GCA and if conditions change, the different signals should be given by the GCA with as much time as possible prior to exit. In addition to radios, alternative ground-to-air communications may include ground panels or arrows, or coloured smoke or flares.

If there is any doubt about the safe conduct of a parachute drop due to weather conditions, the GCA should advise to either delay or cancel the drop.

Care must be exercised if a visual GCA system is in use with multiple aircraft or a mixture of students and experienced jumpers, to ensure that signals are not misunderstood.

14.2 Acting as Target Assistant (TA)

The TA is a qualified person who is responsible for giving canopy control and landing advice to students via a predetermined system, either an arrow, batons, radio, or a combination of these.
In order to act as TA for students, the person must either hold an Instructor rating or must be trained and assessed in accordance with the TOM and hold the CI's authorisation in writing to act as a TA.



What you must be able to do?

Acting as a TA involves five key practical elements:

1. Preparation: Participate in briefing and recorded relevant information (student and gear details, despatch order and heights); Check conditions are suitable for landings.
2. Radio: Set-up, select correct frequency, operate using the appropriate basic radio procedure, shut down.
3. Communication using an alternative signalling procedure and equipment (without radio contact), e.g. using a target arrow.
4. Monitor the weather, aerial activity of participants and ground conditions.
5. Provided appropriate feedback on individual student canopy control.

Providing Canopy Control Assistance to the Student

The signalling system in use on a dropzone is established by the Chief Instructor, but generally a combination of the various methods is found most effective bearing in mind that the system must be easy to operate and easy to understand. Ground-to-air radio is a good system but is most effective when used as a back-up to a visual system which means that the student is not left without assistance due to a radio breakdown or off-dropzone situation.

The TA should try to keep the canopy control commands as simple as possible while working the student back toward the target, and close to the wind-line. The final landing pattern should be well planned to avoid directing the student to turn their back on the target and to keep them away from hazards around the dropzone. The final turn into wind at about 200 feet should leave the student with plenty of clear space below and in front and in an area not affected by turbulence.

If batons are being used, be sure to keep the student well out in front of the TA so that there is no danger of the student flying over their head. Gentle "S"s or half brakes can assist here but the student must be directed back on to full drive at a safe height in order to flare correctly.

A common fault at this point is that the student will be distracted by the ground and look away from the TA. Small movements of the batons may help them to stay focussed as they approach the all-important final flare.

During final approach, the TA must monitor the actual height of the student by looking at their feet in relation to the ground so that the final flare command can commence slightly earlier than the ideal height. Most students will be slow to react but if the student is up to speed then the flare signal can be slowed to still give a good landing. **A late flare signal will usually produce a hard landing.**

The Target Assistants job:

Identify

- Know the colour of student canopies on the load
- Know the exit order where possible
- Know which Jumpmasters are with which students
- Are any other students on the load?

Response

- Get arrow moving to check response time of student
- If no response to arrow, try the other arrow if there are two
- 'Which is my student?' - Turn the arrow
- Keep any radio commands clear and simple

Flight Control

- Keep student upwind - going back and forth across wind line where possible
- Keep student near largest clear area
- For off-dropzone landings, try to direct them to JM's canopy or landing area
- Do not turn the student 180 degrees with batons
- Consider second load opening whilst first is still in air

Pattern and Final Approach

- Downwind leg to side of Target not over top
- Stick to the heights taught to the students, e.g. 1,000ft downwind past target, 500ft onto base leg
- 200ft, turn onto final
- Consider aircraft landing whilst giving student canopy control assistance near runway
- Avoid turning the student's back to the Target
- Better to land short than to overshoot

Flare and Debrief

- Flare earlier rather than later
- Tell Jumpmasters about the student's canopy control

If windy, give the student advice or assistance to avoid being dragged and be sure they look after the parachute for the walk back to the packing shed.

After the first jump, the student needs to be guided towards being able to land confidently and unassisted. To this end the various procedures may be modified in consultation with the DZSO to enable the student initially to conduct part of their canopy control unassisted until they have developed the skills and confidence needed and they are able do it all by themselves.

PART 15 - FURTHER TRAINING

FREEFALL RELATIVE WORK (RW) TRAINING

Refer to the Certificate Class B Training Guide on the APF website for information about this discipline.

TRACKING, FREEFLY, CRW AND WINGSUIT TRAINING

Refer to Guides on the APF website for information on these disciplines.

PART 16 - INCIDENTS AND ACCIDENTS

This section should be read in conjunction with Regulatory Schedule 55.

16.1 Five Golden Rules when Handling Incidents

1. Availability: Be in the correct place and time and be present in the moment
2. Knowledge: Share knowledge with relevant personnel. Ask questions, familiarise yourself with immediate surrounds
3. Honesty: Be truthful with students, staff, other jumpers and public
4. Keep cool: Stay calm, ignore distractions
5. Be aware: Of your surroundings, other jumpers/staff/gathering crowds, weather etc

16.2 Incidents – Always Go Directly to Your Emergency Response Plan

The Emergency Response Plan must be followed when an incident occurs and should include:

a) Incident definition
b) Emergency Contact List, in order of relevance
c) Reporting to the APF
d) Addressing incidents at dropzone level
e) Disciplinary matters (if relevant)

16.3 Major Accidents – Always Go Directly to the DZ's Emergency Response Plan

- Serious accidents must be reported to an STO immediately (and the CI if not present or aware)
- Contact APF Office as they will be receiving calls from various sources (police, public, media)
- If APF Office is unattended, leave a voicemail. Give name, place, date & description of accident.

16.4 Managing the Scene

Serious accidents are rare, but it is important to be prepared to handle the situation should it arise. The following procedures are recommended:

- Send a reliable person to call an ambulance by the fastest possible means.
- Immediately notify the Police (who may notify ATSB and/or CASA), the STO and the APF Office.
- Appoint a responsible person to prevent spectators and others from approaching the impact area
- Appoint a responsible person to discourage all persons present (staff, witnesses, spectators) from posting anything on social media (i.e. family and friends who may hear of an incident need only know the skydiver is okay, not additional details). Any contact with outsiders should include such caution. This should also include the retention of any video footage or photographs taken by

others of the incident – this becomes evidence and should be passed on to the DZSO or APF investigator and not circulated
- Proceed to the parachutist, if there is any person qualified to render first aid assistance have that person accompany you
- If the parachutist is beyond first aid assistance **do not disturb the body or the equipment**
- If the weather or other factors may destroy any possible evidence, take precautions to protect the scene. It may be helpful to take photographs from as many angles as possible. Take close-ups of any abnormality in the equipment that is apparent
- Cover the body and await the arrival of emergency services. **The body or equipment should not be moved for any reason.**
- Detail a responsible member of the organisation to handle enquiries from press and radio. It is far better to give the media the relevant facts concerning the fatality than to have the reporters base their stories on information gleaned from unqualified witnesses. (Refer to the APF publication "Media Liaison Techniques")
- Give every assistance to ATSB, Police or APF officials in their investigation into the causes of the accident

Complete an Incident Report giving as much information as possible and including written statements from anyone who may have useful information.

If it is possible to contact an STO and have them attend the scene of the accident, as their experience and assistance at this time would be of great value. In any case, remain in contact with the STO and the APF Office.
Note: When calling for the ambulance ensure that the nature of the accident is clearly understood as the ambulance service may have to make special arrangements.

16.5 Incident Reporting

Incident Reports are an important part of the APF safety enhancement program. As well as being a CASA requirement, they supply statistics so that we can compare the occurrence rates of different types of incidents. When particular types of incidents increase, we can sometimes locate a cause and help prevent further occurrences. More interesting or educational reports are de-identified and published for the benefit of all jumpers.

An incident refers to:

- Any breach of the APF Regulations
- Any happening which, in the course of operations, causes injury to any person or damage to property
- 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
- Includes an off dropzone landing by a Student Parachutist, a tree or water landing, any equipment malfunction and the activation of a reserve parachute or an AAD

These incidents must be reported to the APF within 7 days of occurrence.

Serious Incidents

The DZSO must immediately report an incident to the STO and the APF Office if it involves any of the following:
- A fatality
- A serious injury
- Major equipment failure
- Likely media interest
- Likely legal action
- Likely attention from CASA or other aviation authority

Aircraft Incident
Notifying CASA and/or the ATSB is a requirement for an aircraft related serious incident. Information about the process is available on the ATSB website at www.atsb.gov.au. Consultation with STO, STM or APF Office is strongly recommended when contemplating contacting CASA or ATSB. Additionally, the PIC, Senior Pilot or CI must immediately notify the APF National Aviation Officer (NAO), and then in writing within 24 hours to the NAO and the APF Office.

Rigging issues

In accordance with RAC 212 and Regulatory Schedule 55, equipment reports must be submitted online by packers and riggers to the NRO and the APF within seven days of the occurrence or defect being identified.

16.6 Media

The DZSO requires the knowledge how to deal with the media if an accident occurs. Following are a summary of guidelines found in the "Incident Communications Guide" available on the APF website.

- Do not provide comment or information about an incident unless permitted to do so. To avoid misinformation or unnecessary commentary, designated staff and members such as Chief Instructors are best placed to be official spokespeople.
- Individuals always have the right to make no comment to the media. Be aware that journalists can use extended declinations as quotes in their stories (eg: "I don't want to comment because I saw the body after the accident and it's just traumatic to talk").
- Do not say "No comment" as journalists can use this as the basis to report that the APF or Group Member 'refused to comment'. It is best to politely advise them to contact the DZ manager or the APF.
- Do not release the names or details of people involved in an incident. The police are responsible for managing the release of such information.
- Do not post commentary or details about an incident on social media (business or private). The media is legally allowed to use information posted on social media, including photos and videos, even when on personal pages.
- Do not provide media outlets with footage of an incident unless permitted to do so. In Catastrophic or Serious Incidents, this can be a legal concern given such material will likely be used as evidence in potential police and coronial investigations. In Minor Incidents, the release of such footage can lead to increased and often sensationalist coverage of an event the skydiving community would consider routine (eg: use of reserve parachute after a main parachute malfunction)

PART 17 - EMERGENCY PROCEDURES

An Instructor must be aware of possible parachuting emergency situations and the preferred methods of dealing with those situations.
Each dropzone will have an Emergency Response Plan for emergency situations. All staff members should be aware of where it is located and what to do.

17.1 Aircraft Emergencies

Aircraft Emergencies, can, do and have happened. Everyone needs to be ready with a quick response to any given situation. Do not wait until there is trouble to devise a plan.
Some things to keep in mind when considering your action plan:

- Most planes can glide and land successfully without engine power. Sitting still and maintaining the current weight/balance of the aircraft assists the pilot greatly with the controllability of the aircraft. **Obey pilot direction**.
- If you are nearest to the door, being prepared and having an efficient exit will give everyone else on the load a better chance of survival.

Single Point Restraints (SPR)

Single point restraints must be worn at all times below 1,000ft AGL and at any other time as directed by the pilot or specific dropzone procedures.

Failure to use these in large aircraft has resulted in multiple fatalities in forced landing situations when those at the back of the aircraft are slammed into those at the front crushing them. Restraints can also prevent the occupants sliding towards the rear and causing the aircraft to stall and crash.
Helmets, especially those with cameras, can become lethal weapons in a forced landing. These should be worn and secure or attached to a restraint.

Consider the following scenarios:

a) Catastrophic failure -below 1500ft, between 1500ft-4000ft, above 4000ft
b) Non-catastrophic failure - below 1500ft, between 1500ft-4000ft, above 4000ft
c) Canopy opens in aircraft
d) Student freezes on step
e) Static line hook-up
f) Canopy deploys during climb out/exit

Be aware of AADs possibly firing too. It is important all jumpers understand their equipment and know at what height their AAD arms when ascending, as this could determine whether or not it fires, potentially causing a two out situation.

17.2 Freefall Emergencies

a) Unstable exits
b) Loss of height awareness
c) Collisions
d) Unstable at deployment height
e) Altimeter reading higher due to body position relative to the air (ie-back flying)

17.3 Canopy Deployment Problems

a) Partial malfunctions, stable and rotating
b) Total malfunctions
c) Deployment problem, lost handle, floating, hard pull
d) Equipment entanglement, horseshoe, drogue
e) Minor malfunctions, lost toggle, small tears, etc
f) Post deployment problems, slider up, end cell closure, line twists
g) Two canopies out (accidental reserve deployment)
h) AAD activation heights

17.4 Landing Emergencies

a) Collision/close call with other canopies
b) Off dropzone landing
c) Obstacles - trees, power lines, water, buildings
d) Turbulence
e) Being dragged (main/reserve)

17.5 Low Turns

a) Attempting a high performance landing
b) Left too late/trying to get back
c) Avoiding an obstacle
a) Understand what training can be given to overcome all of the above situations

The APF have guides (such as the Canopy Pilot Guide) on the website that can help educate and prevent some of the above scenarios. Refer to the website for more information.

PART 18 - EQUIPMENT

All Instructors and coaches should have a comprehensive understanding of equipment.

The Instructor should be aware that there are many common defects in equipment which, if allowed to pass unnoticed, may lead to serious or even fatal results. The very fact that some of these defects are uncommon makes constant awareness of them extremely important. It must be understood that the instructor is responsible, not only for their own equipment, but also for the equipment used by their students.

Consistent gear checks should be done periodically to ensure gear is up to standard. Refer to the Certificate A training Guide for an inspection checklist and consult the DZSO if unsure about any equipment.

18.1 Fitting a Parachute Container on a Student and Gear Checks

Choosing and fitting equipment:

- Choose/check the size of the canopies and ensure a suitable wing loading for the student
- Have the student don the harness and secure leg-straps and chest-strap
- Tighten the leg-straps around the thighs to be firmly secured, not restricting. This should bring the leg-strap confluence down to the hip
- Adjust chest-strap to be secure in the arch position without pulling the main lift-webs inward
- Tighten any side adjusters or back diagonals to prevent the pack from shifting
- Ask the student to arch, then look at and reach for each handle. The student should be able to do this confidently
- Secure all loose straps (tucked away in keepers or tied around the webbing)
- Overall appearance, (each parachutist has the correct equipment for their jump)

This is a particularly critical area of instructing and demands close attention to detail.

Gear Checks:

A jumpmaster needs to develop a standard procedure for checking equipment. Get into the habit of "saying out loud" what is being checked and touching each item as it is inspected.

If a gear check is ever interrupted, it must be started again, or the likelihood of missing something increases. If time permits, teach students to check their own equipment prior to putting it on. This will increase their confidence and teach them good habits.

It is important to check the overall appearance of the gear, and that each parachutist has the correct equipment for their jump.

Back of container:

- Risers correctly routed and flat into containers
- Steering toggles not exposed
- Reserve pin(s) correctly positioned in loops. (Check between flaps for temporary pins or obstructions)
- Reserve Static-Line (RSL) fitted and stowed. (Will not interfere with the 3-ring?)
- Main closing loop in good condition, pin position ok and PC cocked
- Main pilot-chute secure and bridle correctly routed and not exposed
- Check between the main flaps for any obstructions
- Ripcord cable running free from housing to pins (no pigtail), Ripcord cable not exposed
- AAD turned on and set correctly

Front of Container:

- Helmet fitting, chin strap fastened and loose ends stowed, clear goggles, tight fitting and clean
- Risers through restraining tabs or covered by riser protection
- Canopy releases (3 rings) fitted correctly, enough cutaway cable through loops
- Reserve (RSL) connected to riser
- Check routing of ripcord housing(s)
- Cutaway handle and reserve ripcord correctly positioned
- Chest strap correctly adjusted, locked and not through either handle. (not on an angle)
- Altimeter secure, visible and set correctly
- Main throw-away pilot-chute handle secure and bridle routing is correct and secure

- Check main pin position and ensure the pilot-chute cocked
- Harness fitted correctly for body length etc
- Adjustment straps threaded correctly, stop ends OK
- Leg straps tightened correctly, not twisted, snaps closed and tongue in place
- Loose ends of straps retained or tied away
- Jumpsuit and footwear suitable and secure (beware of hooks on boots and deep cleats in soles).
- Radio turned on and operational (this may be a ground or in-aircraft check)

Sizing Equipment and Canopies

When selecting equipment for a student to use, it is important that the rig fits the student and that the size of the canopy is appropriate for the weight of the student (i.e. the 'wing loading' is correct). Your dropzone may follow a chart or provide guidelines to you on the method to determine the correct parachute size for your student.

Wing loading is a measurement of how much total weight is supported by how large a wing and is usually expressed in pounds per square foot. Everything the jumper exits with, including all clothing, the rig and both canopies must be included in the weight.

For example: Exit weight Canopy size Wing Loading

- 190 pounds 190 square feet 1.0 lb./sq. ft.
- 150 pounds 150 square feet 1.0 lb./sq. ft.
- 190 pounds 95 square feet 2.0 lb./sq. ft.
- 150 pounds 75 square feet 2.0 lb./sq. ft.

In general terms, the higher the wing loading, the increase in performance factors, such as forward speed, descent rate, turn rate, toggle/riser pressure and recovery arc. With these increases, correct flight technique becomes even more critical.

Many student harnesses are adjustable. Ensure you are familiar with adjusting the harness to fit your student correctly and comfortably. Many rig manufacturers websites will provide a manual explaining the correct technique to fit and adjust the students harness.

Keeping up to date

As an Instructor, it is very important to keep current with equipment changes and issues. Nothing is fool proof and you must stay aware and up to date. To achieve this, regularly check:

- The manufacturer website
- Check the RAC's and Service Bulletins on the APF website.
- Ensure you are receiving and reading APF Broadcasts and other emails from the APF Office.

IF YOU HAVE ANY EQUIPMENT YOU ARE UNSURE ABOUT CONSULT THE DZSO

18.2 Back-Up Devices

Skydiving technology is developing constantly with devices such as:

a) Automatic Activation Devices
b) Reserve Static-Lines and MARD's
c) Radios
d) Audible altimeters for canopy heights
e) Visual altimeters with ground speed and heading indication (Smart Alti's)

Back-up devices are exactly that, never rely solely on these items!

Parachute training must be conducted on the basis that the student will be able to save themselves in all situations and they must be actively discouraged from relying on anything but their own abilities.

Automatic Activation Devices

Only modern, computerised AAD's are included below, they are the types most commonly used. The older mechanical type (FXC, ASTRA) of AAD are rarely used.

If any Instructor or coach comes across an AAD they are not familiar with - consult the DZSO.

Currently Cypres, Vigil and Mars are the most common AADs used in Australia.

ALL AAD'S DIFFER AND UPDATES OCCUR SO ALWAYS REFER TO THE MANUFACTURE REGARDING OPERATION.

Every skydiver should have a sound understanding of the different AAD operations including:

- Turning the unit on
- Mode options – Expert, Student, Tandem, Swooping, Wingsuit etc
- Setting to a variation between airport altitude and dropzone altitude
- Getting information such as jump numbers and freefall speed
- Serviceability and life span
- Arming and activation heights

AAD Activation

All AADs are activated by barometric pressure and consequently need setting to a datum point (usually calibrated as zero at ground level).

The AAD is a computerised mechanism, which controls the cutter. The cutter (two cutters for two pin systems) is fitted around the reserve closing loop and, when activated, cuts the loop by firing a pyrotechnic charge. The loop must be the type supplied by the manufacturer.

Example – CYPRES specification
This AAD will fire if the pre-set descent speed is exceeded at the set altitude.

There are currently 6 models of Cypres 2 (Expert, Student, Tandem, Speed, Wingsuit and changeable). Below are examples of 3.

It should also be noted that the heights that each activate (whilst ascending in the aircraft) differ also, and you should be aware of what height the AAD you are jumping will activate.

model:	*Will fire at this height:*	*If exceeding a vertical speed of:*
Expert	750 feet.	78 mph (6890 ft/min)
Student	750 - 1000 feet (see user's guide for more details).	29 mph (2580 ft/min)
Tandem	1900 feet	78 mph

Reserve Static-Lines and MARDs

Reserve static lines and MARDs are common and can have a positive use.

An awareness of situations that may require them to be disconnected, like water landings or canopy wraps should be taught.

Radios

Radios are excellent tools mainly used for canopy control from ground-to-air or air-to-air communication.
A back up system should be in place in case of radio failure

Audible Altimeters

Audible altimeters are used as height indicators for freefall and canopy flight. They are mandatory for Freefly, Wingsuit, night jumps, when doing camera with tandems and for the first 50 tandems as a Tandem Master.

As all electronic devices may fail, jumpers must not become complacent and always need to remain time/height aware in freefall and always remaining vigilant under canopy, eyes scanning for visual referencing.

Multi-functional Devices

Devices with multiple features such as smart altis, can include additional information such as ground speed and heading indication.

These devices can increase the amount of information jumpers are able to gather, but they mustn't be relied on fully: jumpers absolutely have to maintain full awareness of their surroundings.

PART 19 - INSTRUCTOR COURSE SYLLABUS

BECOMING AN INSTRUCTOR

COURSE TIMETABLE

THE APF STRUCTURE AND ORGANISATION

LIABILITY

WORK HEALTH AND SAFETY–FIT FOR PARACHUTING ACTIVITIES

THE INSTRUCTOR

THE STUDENT

LEARNING

TEACHING THE LESSON

MENTAL TRAINING

TRAINING AIDS

THE INSTRUCTOR AND THE JUMP

GROUND CONTROL ASSISTANT (GCA) AND TARGET ASSISTANT (TA)

WEATHER FOR INSTRUCTORS AND SPOTTING

FURTHER TRAINING

INCIDENTS AND ACCIDENTS

EMERGENCY PROCEDURES

EQUIPMENT

EXAM PREPARATION

EXAM

Required reading for Instructor rating:

- Instructor Guide
- Relevant endorsement guide
- TOM
- Operational Regulations and Regulatory Schedules
- Certificate Class B Training Guide
- Canopy Pilot Guide
- Injury Prevention Exercise Program for Tandem Masters (optional)

Appendix A - Guide to Fit and Proper Person

Appendix 4 of CASA's Enforcement Manual provides a useful guide to characterising 'fit and proper person' and of 'good repute' with detailed explanation of five factors including common law precedents used to define them.

To assist decision-makers, the following non-exhaustive list of points for each of the five factors [(a) to (e)] are taken from CASA's Enforcement Manual and adjusted to give a parachuting/APF perspective:

(a) Context, Setting and Purpose

- The safety of those on the ground and those in the air involved in parachuting activities;
- The safety of air navigation;
- The specific functions, duties and responsibilities associated with the authorisation, approval, rating, endorsement or disciplinary powers.

(b) Confidence

- Demonstrated evidence that a person has the ability to perform, and appreciates the responsibilities of, the duties and functions of their particular authorisation, approval, rating, endorsement or disciplinary powers; and
- Demonstrated temperament that gives the APF the confidence that the holder or applicant can be relied upon to carry out the duties and functions of their authorisation, approval, rating, endorsement or disciplinary powers.

(c) Honesty, Knowledge and Diligence

- Demonstrated frankness in dealings with the APF;
- Demonstrated positive attitude to the responsibilities and duties of the authorisation, approval, rating, endorsement or disciplinary powers; and
- Demonstrated openness and contrition in relation to inadvertent breaches made by the holder or applicant;
- Adherence to the APF Code of Ethics, demonstrating an understanding of the difference between 'right' and 'wrong' and applying that understanding to decisions.

(d) Inappropriate Attitude, Responsibility and Respect for Regulatory Compliance

- Attitude to dealing with the APF and its officers in the context of that attitude reflecting on a broader lack of respect for the Rules, Regulations and policies and those who uphold and enforce them;
- Attitude to demonstrated breaches and failure to take responsibility for those breaches;
- See also "Confidence" (above) regarding the APF having confidence in the holder or applicant's ability and temperament to comply with the Rules, Regulations and policies; and
- Demonstration by a holder or applicant that they consider that they are 'above the law' such as where:
  - They have put commercial concerns above compliance;
  - They have chosen their interpretation of the rules, regulations and policies over expressed advice of the APF or that contained in APF publications or other advisory publications; and
  - Demonstrated instances of compliance with some regulatory or policy requirements and not others.

(e) Pattern of Behaviour, Recency and a Systematic Approach to regulatory Compliance

- A pattern of behaviour even over a long period;
- A lack of a systematic approach to planning that demonstrates lack of foresight, planning and a lack of appreciation of the need to comply with the regulatory and policy framework.