



AUSTRALIAN PARACHUTE FEDERATION

Solo Freefall Endorsement Guide



*A Handbook for SFF Instructors engaged in
Static-Line Deployment and Instructor-Assisted Deployment*

VERSION 01-2023

STATUS: ADVISORY

This document is offered as a free download to APF members.
Alternatively, contact the APF Office for a paper copy at a cost of \$5.00



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.

About This Publication

This guide is produced by the Australian Parachute Federation Ltd (APF) for the information of APF members interested in attaining a Solo Freefall Endorsement with a Static-Line or Instructor-Assisted Deployment sub-endorsement. The regulations and best practice procedures quoted herein are believed to be accurate at the time of publication. If you want more information or copies of this guide (or others listed above) for yourself or your friends, please ask the instructional staff at your DZ or contact the APF Office.

Australian Parachute Federation Ltd 2023

Version Control

It is important that members refer to the current version of this guide. This guide is current only at the time of download. Current versions of APF regulations, manuals, guides and associated forms can be found on the [APF website](#).

Credits

The majority of this guide was compiled by Justin de Waard, as body of work, and his assistance is much appreciated. Some of the content contained within this guide is a copy of information from within manuals such as the CSPA JM Guide, the Static-Line Instructor Handbook by Sam McKay, and other previous publications. Examiners and Instructors too numerous to mention have been sourced to complete this guide.

Cover photo by Justin de Waard.

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PART 1: INTRODUCTION

1.1 Welcome

Congratulations on your decision to begin your Solo Freefall Instructor Course.

The method of using a Static-line to train students is not new in Australia, but with the introduction of Instructor-Assisted Deployment in Australia, initial training was given by the CSPA (Canadian Sports Parachute Association) followed by a trial program at two drop zones in Australia. The information that has come out of this training and the trial has been used to compile the majority of this guide.

Scope of Study Guide

The study guide is intended to be used in addition to an official course of instruction conducted by an APF Solo Freefall Instructor experienced in the sub-endorsement(s) you are training for. It aims to provide information and guidance to:

- Prepare you for your initial examination;
- Give you a foundation of knowledge necessary to begin Solo Freefall instructing, whether this be in Static-line deployment or Instructor-Assisted Deployment;
- Be a useful source for future reference during your career.

It does not contain all of the information required. To use this guide, you will require additional documents which are listed below. It is a mandatory part of your course that these materials be studied.

How the guide works

The Guide is divided into Lessons. At the beginning of each lesson, the aims of that lesson will be clearly stated. At the end of the lesson, you will be provided with a set of questions to answer. The questions are designed to confirm your learning and to prepare you for your written and oral examination. Some of the lessons will require interaction between you and your Course Instructor.

You will also need:

- APF Operational Regulations
- APF Training Operations Manual
- APF Regulatory Schedules
- APF Instructor Guide
- The manual for the AAD fitted to the Student Equipment.

1.2 Prerequisites to the Solo Freefall Endorsement

Firstly, to be an APF Instructor you are required to have an adequate level of English and capability in each of the core skill areas of learning, reading, writing, oral communication and numeracy (RS 53, 4).

If there is any doubt about your ability to both read and write English adequately, the matter should be referred to the STO. You may be required to sit a short test to ascertain your capability level meets a minimum standard.

Secondly, to begin training for your SFF endorsement, you must satisfy this checklist of requirements:

- You hold current Full APF Membership
- You hold a minimum APF Certificate Class D

- You hold either a Packer A rating, so are required to provide a copy of the required evidence (e.g. packing log showing the minimum 6 emergency/reserve repacks)
- OR**
- You hold a Packer B rating, *or* no longer a valid Packer A so reverting to Packer B
- You hold a Star Crest
- You already hold an Instructor rating, **OR** are being assessed for an Instructor rating concurrently with this SFF endorsement assessment.

To begin, you must complete an APF application, i.e. an R1 Form, have it certified by your Chief Instructor and pay the appropriate fee to the APF.

A Solo Freefall Endorsement is a privilege and an extremely large responsibility. It requires the holder to exercise a high degree of professionalism especially in regard for safety. Holding the endorsement requires a commitment to remain up to date with relevant technical and safety information. It should also require a desire to represent your sport and industry in a positive manner.

1.3 Assessment Outline

The assessment process consists of three parts: Written, Oral and Practical.

1.3.1 Written

There is a separate exam for the Instructor Rating and a separate exam for the Solo Freefall endorsement (known from here on as SFF) and Static-line Deployment (known from here on as SLD) or Instructor-Assisted Deployment (known from here on as IAD) sub-endorsements. If you already hold an Instructor rating, then you will only need to sit the relevant written exam for the endorsement(s) you are applying for.

- The Instructor written exam consists mainly of multiple choice questions which will examine your knowledge on Operational Regulations, General Knowledge, Equipment and Instructional Technique. An 80% pass mark is required.
- The SFF written exam consists of mostly multiple choice questions designed to evaluate your knowledge of the regulations and procedures relevant to SFF Instruction. An 80% pass mark is required.

These exams will have been sent to your examiner for when you have completed your study and set the date for the training and assessment.

1.3.2 Oral

When the SFF endorsement is being conducted in conjunction with the Instructor rating, the Oral examination is usually a combined SFF/Instructor. When the SFF endorsement is completed alone, the Oral examination will focus on SFF related content only.

The Oral examination will be held in front of a panel of three Instructors, one of whom is a SFF Instructor Examiner and all of whom hold a SFF endorsement.

The examination panel will ask as many questions as necessary (minimum 10) to test your knowledge of the SFF Instructor's job and responsibilities. Each panel member scores the answer to each question on the collation assessment sheets provided to the Examiner.

The Examiner computes the final percentage by averaging the three Examiners scores. An 80% pass mark is required.

1.3.3 Practical

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

(a) Briefing

A thorough briefing for your student with dirt dives and exit mock-ups is essential to a successful jump. You should introduce mental visualisation of the jump along with muscle memory to your students throughout the briefing to better prepare the student for the real jump.

(b) Emergency Procedures

The introduction of a Static-line attached to an Aircraft or placing a pilot-chute straight out the door can introduce situations you may have never thought of before. There are a number of factors you need to consider, which include the type of equipment used. This is covered in more detail later.

(c) Assessment Jumps

Prior to commencing assessment jumps acting as Solo Freefall Instructor, you must have:

- Completed all application requirements
- Completed and successfully passed the Emergency procedures examination
- Received authorisation from the SFF Examiner to commence the examination jumps.
- Hold a valid Instructor rating (ID Minimum) **OR**
- Completed the SFF written examination with a pass of 80% **AND**
- Completed the Oral examination with a minimum pass of 80%

Once you have satisfied the above requirements, you may start your exam jumps. For full exam jump requirements, see the Examiner.

You will be required to act as both student and Instructor during the assessment. The following assessments are required to be completed for each sub-endorsement of IAD and SLD.

Assessment 1: You will be required to demonstrate a full mock-up of a climb-out with a minimum of 3 students at the same time.

Assessment 2: You will be required to dispatch a load of students (minimum 3) with students acting normal to perfect. The last student to be dispatched may be the examiner.

Assessment 3: You will be required to dispatch a load of students (minimum 3) with students having minor problems. The last student to be dispatched may be the examiner.

Assessment 4: You will be required to dispatch a load of students (minimum 3) with students having unusual problems. The last student to be dispatched may be the examiner.

(d) Assessment Jump Guidelines:

- The aircraft should be at or close to capacity on at least one of the assessment jumps to simulate the lack of room in the aircraft.
- For the purpose of the four assessment jumps above, the 'students' will be licensed jumpers.
- All dispatches are to be in accordance with the Operational Regulations and Regulatory Schedules.
- For the first load an IAD candidate dispatches with a strut hung exit such as a 182 exit, the 'candidate' will go through the climb-out with the 'student' but the student will deploy their own pilot-chute. In this instance the 'student' will be a licensed skydiver. This is due to the increased risks involved with strut hung exits.

(e) Additional consolidation jumps

- A Candidate may start to dispatch real student jumpers once the four assessment jumps have been completed to the satisfaction of the examiner
- A minimum of an IB with the appropriate sub-endorsement of IAD or SLD must be in the aircraft for direct supervision of any dispatches the Candidate makes until the candidate has completed a minimum of 20 dispatches to the satisfaction of the Examiner.
- The first 20 dispatches must be videoed for review by the examiner.
- As required by the SFF examiner.

1.4 Static-line Deployment and Instructor-Assisted Deployment

1.4.1 Method

The Static-Line and Instructor-Assisted Deployment methods of instruction, whilst sharing the same training descent table, offer some differences. The static-line method of instruction was adopted by civilian training operations from a military background. It had been developed as a method for dispatching troops and it was the only method of training students to skydive until the introduction of the AFF method. The AFF program has become the method used to train the majority of first jump student in Australia. However, drop zone operators still use the Static-Line method of training for various reasons.

With the introduction of IAD in Australia, it is expected that IAD will become a more popular method of student training due to equipment used for IAD being the same as AFF. These may include a cheaper first jump price, low cloud ceilings allowing SLD and IAD descents where AFF descents are not possible and a reduced instructional staff load compared to AFF.

1.4.2 The SFF Instructor

The SLD and IAD instructor is unique in that they must be able to deal with more than one student at a time. The instructor will need to be able to manage briefing, gearing up, dispatching and debriefing multiple students all on the one aircraft load. These students may all be on their first jump, or from a variety of stages of the SFF Training Table.

The SFF instructor is also required to make observations and evaluate the student's performance from inside the aircraft. This aspect of SFF also presents some challenges for the instructor. IAD dispatching is physically demanding and requires a higher degree of strength and ability to move around. Therefore, this may be more difficult for older instructors and should be taken into consideration when deciding if a candidate is suitable to act as an IAD instructor.

1.4.3 Must know items from the First Jump Course

Your SFF students will have already been through a First Jump Course conducted by a qualified instructor in accordance with Operational Regulations. The First Jump Course would have contained content as defined by your Group Members Training Operations Manual.

It is important to understand that it is not your job to be the primary teacher of content from the first jump course, but rather, to revise and confirm this content. By confirming you will pick up any omissions or misunderstandings. Omissions or misunderstandings that appear consistent across a range of students need to be discussed with the Chief Instructor and Course Trainer to ensure future courses can be improved.

A student who cannot perform content from their first jump course training adequately should be referred back to the Course Trainer for review.

Your drop zone will use standard key words during first jump courses that assist the student in their drills. These key words also assist instructors to be consistent in their review of student's procedures.

The key words can be varied by a CI, but ideally, not between Instructors conducting First Jump Courses on the same drop zone.

Key Words

The key word sequences are significant in the drill periods taught during a first jump course. It is expected that you will have recently attended a first jump course to observe the lessons. Here you will gain an appreciation for the training students have undergone before being handed to you as a SFF jumpmaster. As the jumpmaster you will require a thorough knowledge of the training undertaken by your students on all aspects listed in the Training Operations Manual and be able to revise their understanding of it.

Examples of typical key words are shown later in this guide. Record your drop zones key words and descriptions for each of the procedures as a record of the drills your students should be following. Hereafter in this guide the procedure will be referred to by its name (i.e. 'emergency procedures'). Understand the procedures, their key words and the associated actions or checks. Be able to demonstrate them flawlessly (a lazy or incomplete demonstration will often result in a lazy or incomplete execution from your student).

PART 2: EQUIPMENT

In this section:

- Main deployment procedures
- The difference between equipment for SLD and IAD
- Sizing equipment and canopies'
- AAD's
- Staying up to date
- Packing
- How to perform gear checks.

2.1 Solo Freefall Equipment

Main Deployment Procedure example – Hip ripcord with spring loaded pilot-chute

LOCATE	Ripcord, using an open hand Left hand moves to a symmetrical and balancing position.
GRIP	Close a fist around the ripcord
PULL	the ripcord away from the Bendix housing to arm's length, and
ARCH	for stability during opening sequence

Main Deployment Procedure example – Bottom of Container Throwaway Pilot-chute

LOCATE	Main deployment handle using an open hand; back of hand towards ground
GRIP	the handle, making sure of it
THROW	the pilot-chute to your right as far as you can, still with the back of your hand towards the ground.
ARCH	for stability during opening sequence

2.2 Static-Line Equipment

The static-line assembly itself consists of a deployment bag (D-Bag) attached to a tether (the static-line). The end of the tether is attached to a strong point within the aircraft. As the jumper falls away from the aircraft, the weight of the jumper extends the static-line until it extracts the main closing pin. The weight of the jumper and their continued descent extracts the D-Bag from the container, pulls the parachute lines from their stows, and eventually extracts the parachute from the D-Bag. The D-Bag remains with the aircraft on the end of the static-line. A regular parachute opening sequence occurs from there.

There are variations of equipment brands and emergency systems in use on Australian drop zones. If you instruct static-line students on various Australian drop zones, you will encounter both SOS and DOS systems in combination with direct bag static-line deployed main parachutes.

When conducting equipment checks, it is vital to have a system to follow to ensure a complete check. In addition to the parachute system, your equipment checking system should include the helmet, altimeter, goggles, footwear and jumpsuit (floatation, radio and gloves where appropriate) of the student. It is important to note the differences in checks required from static-line equipment to freefall equipment.

It is prudent to perform an equipment check prior to fitting the student with the rig. However, it is mandatory to conduct a check of the student's equipment immediately prior to boarding the aircraft.

Before opening the door of the aircraft the instructor should again conduct an equipment check and ensure the students main and reserve pins are properly located.

Important points for static-line equipment checks

There are some important points to note for gear checking static-line equipment:

- There should be enough slack in the static-line between the main closing pin and the first static-line stow, such that the main pin will not be dislodged by normal body movements when putting the equipment on.
- The static-line is the correct length for the aircraft from which the jump will occur.
- The stows holding the static-line are very secure (3 or 4 turns of the elastic band), especially the first stow (closest to the main closing pin).
- The static-line does not have any signs of wear.

2.3 Instructor-Assisted Deployment Equipment

The IAD assembly itself may be more familiar to you as it is much the same as many sports rigs. It consists of a D-Bag attached to a pilot-chute. The pilot-chute is held by the instructor dispatching the student and placed into the airflow. As the jumper falls away from the aircraft, the pilot-chute drags through the air until it extracts the main closing pin. The weight of the jumper and their continued descent extracts the D-Bag from the container, pulls the parachute lines from their stows, and eventually extracts the parachute from the D-Bag. The D-Bag and pilot-chute remains attached to the top of the student canopy. A regular parachute opening sequence occurs from there.

IAD requirements for the system to work:

- Pilot-chute to be in good condition
- 36 inches if F-111, 32 inches if zero P
- Bridle condition and correct length - the length of the bridle should be shorter than the length from the risers to the bag.
- No stow less bags
- Pin in good condition and attached to the bridle
- Preferably No upward facing pin protector flaps, if you have an upward facing flap, the Bridle needs to be re-routed to avoid a pilot-chute in tow.
- Closing loop in good condition and correct length.

Automatic Activation Device

- All Student Systems must be equipped with an AAD and must be active on every jump. AAD's must be approved by the manufacturer of the System. The makers of electronic AAD currently approved on Student equipment are Vigil and CYPRES. Each has different functional characteristics and it is imperative that you study the owner's manual for the model that you will be using.
- This AAD will fire if the pre-set descent speed is exceeded at the set altitude.
- For Electronic AAD's make sure they are set to either Student or Expert (as per your Group Member TOM)
- Set FXC to activate 300 feet below planned opening height (minimum 2500ft)
- Some discussion on how the AAD works could be done here (refer to AAD manuals):
 - Leave on all the time?
 - How to turn on and calibrate?
 - Descent rate
 - activation height
- The factory recommends turning off a Student model if descending in the aircraft.
- Refer to the AAD manual for the AAD in your student equipment

RSL

- Proper attachment and routing

Miscellaneous

- Jumpsuit, goggles, suitable footwear (runners, no boots, no sandals, no open toed shoes) Radio, helmet, altimeter

2.4 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 drop zone 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. 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 very general terms, the heavier the wing loading of a parachute, the more quickly everything happens in flight, and the more critical correct flight techniques becomes.

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.

2.5 Keeping up-to-date

As an Instructor, it is very important to keep up to date with equipment changes and issues. Even today, nothing is fool proof. You need to keep your finger on the pulse so that you know what's going on. To achieve this, regularly check:

- The manufacturer website
- Check the RAC's and Service Bulletins on the APF website under 'Rigging Equipment'.
- Ensure you are receiving and reading APF Broadcasts and other emails from the APF Office. Always update your email address with the APF and avoid unsubscribing from the list.

2.6 Packing

Part of your practical exam will be to demonstrate competence in the packing of the main canopy. Following the manufactures instructions and always exercising attention to detail, greatly reduces the risk of malfunction.

Take the time now to read the Packing section in the owner's manual for the System you will be trained on. Whilst learning this process you should have an experienced instructor or your course instructor supervising you.

2.7 How to perform a gear check

2.7.1 Equipment Checks

This is a particularly critical area of jump mastering and demands close attention to detail. A jumpmaster needs to develop a standard procedure for checking equipment. For example, this may be back first, then front, on the front, down one side then up the other. This is one system, there are many others?

Once you have developed a system, stick to it. Get into the habit of saying what you are checking whilst having your hand on the item. If you are interrupted during a check, refocus and start again and if you have the time, teach students to check their own equipment prior to putting it on. This will increase their confidence and teach them good habits. When you are checking several students at once, keep them under your control. Do not let them wander off, or go and talk to someone at the other end of the line.

2.7.2 General

- Overall appearance, (each parachutist has the correct equipment for their jump).
- All running strap ends doubled and sewn and secure. AAD set for correct height activation. (This may be on the front, back or side depending on type) BACK (FREEFALL/MAIN RIPCORD)
- 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.
- Main pilot-chute positioned correctly.
- Check between the main flaps for any obstructions.
- Ripcord cable running free from housing to pins (no pigtail).
- Ripcord cable not exposed.
- Mechanical AAD connected to appropriate pins. End fitting of AAD cable secure.
- Electronic AAD turned on and set correctly.

2.7.3 Back (Static-line)

In addition to the applicable checks above:

- Static-line correctly fitted.
- Check the security stows of the static-line.

2.7.4 Front

- Helmet fitting, chin strap fastened and loose end stowed.
- Goggles tight fitting and clear.
- 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 and 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 bridle routing is correct and secure, or main ripcord cable end swage secure (and still some free cable showing).
- 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). Pay attention to Velcro closings as these can deteriorate without being very obvious. If you think some item of equipment will need attention soon, show it to the DZSO.

2.7.5 Throw-Away Pilot-chute – Additional Checks

- Check position and security of handle.
- Check routing of bridle from before the main pin to the pilot-chute and handle.
- Check the security of any Velcro.
- Check pin position
- Check pilot-chute cocked (if applicable).

Your course instructor will guide you to a system that works for you.

Take the time to understand how the equipment operates. Always revise the deployment and emergency procedures and always perform a gear check.

2.8 Review Questions

1. Why is the closing of the container so critical? What can happen if this is done incorrectly?

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2. Who is responsible for checking the Student Rig before jumping? When must this be done?

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3. What size should an IAD pilot-chute be?

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4. Where would you find the correct closing sequence for the main of the student rig you are using?

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5. What extra precautions should you take to avoid a dislodgement of the main pin on a Static-line rig?

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6. How do you convert Kilograms into Pounds?

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7. Where is the Static-line attached to on the aircraft at your DZ?

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8. What is the wing loading of a student with an exit weight of 95kg on a 260sq ft canopy?

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9. Where would you find information on how to use the AAD in your student equipment?

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10. Where would you find the most up to date RAC's?

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PART 3: STUDENT PREPARATION AND BRIEFING

Effective student pre jump preparation is a key ingredient for a safe and enjoyable experience for both the student and the instructor.

In this section:

- Student prerequisites
- How to prepare your student for their jump and conduct the briefing
- Confirming your training with your student

3.1 Student Prerequisites and Legal Requirements

- Each student must become at least an APF Student License holder by purchasing and completing an APF "Parachuting Contract" that incorporates the warnings and waiver. This is what the student completes (and all Sporting Licence holders as well) annually for every Group Member they wish to jump at.

It is not usually the JM's job on the DZ to process this, however you should be satisfied that this is completed prior to beginning training. There are personal legal ramifications if 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 section of the Group Member Waiver.
- Some States legally require Instructors to acquire a 'Working with Children' police check. DZ 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 Organisation supervised by an approved chief instructor. They must be made under direct supervision of an approved DZSO. Refer to 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 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.

3.2 Student Briefing

3.2.1 Topic knowledge required for briefing students or novices

To successfully train your student or novice, you should consider the following points and ensure you understand each of them:

- Knowledge of training table;
- Knowledge of required standard;
- Lesson plans. All jumps;
- Classroom briefing;
- Practical briefing for each particular stage or skill;
- Student exits from common aircraft;
- Use of training aids and dirt diving;
- Revue of emergency procedures;
- Canopy piloting briefing;

- Loading the aircraft;
- Spotting;
- Target Assistant (providing canopy control assistance) skills;
- Use of video for briefing and debriefing;
- Debriefing and log-book entries; and
- Knowledge of Tandem Assisted Freefall as an option in the modified training table.

3.2.2 How to conduct the briefing

The student usually already has a number of skills. When progressing a student to the next stage, there is usually a repeat of what has been done on the previous jumps with the introduction of some new skills.

Introduce the new skills then combine with what is already known. When teaching a new skill, always explain the reason for it. The following simple points serve as a reminder of what you should have covered in your Instructional skills training and are followed in 3.3 by a Lesson Plan.

When conducting the briefing, you should:

- Give detailed directions;
- Make it as realistic as possible;
- Break new information into segments; Teach each step before progressing to the next;
- Give close and constant supervision;
- Make sure that they 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;
- Show a genuine interest in each student's progress;
- Rotate students frequently;
- Help students evaluate their own performance;
- If practicable, have good students help slower students, but be careful to monitor their efforts closely;
- Don't use the word "Difficult". Words are powerful. If you tell a student it's difficult, the student will have difficulty. Teach it instead as "different", or a "new skill". This is especially important when approaching a "different" aircraft exit and
- When making height calls during briefings, keep the timing realistic. Do not be lazy and always call the same heights. The student should be prepared to have to make a decision if, for example, they have to be preparing to pull instead of doing another turn.

3.3 Incorporating the Principles of Good Instruction into Preparation

Your instructional skills training is important foundation to the briefing, including an understanding and application of:

- primacy in learning: "The last thing learnt is the first thing to break down under pressure";
- coaching backwards: teaching each part a link in a chain, but with the first thing taught being the finished position;
- reinforcing the required outcome.

CLASSROOM/TEACHING AIDS

- Have them in place before you start the briefing
 - Whiteboard marker
 - Suspended harness
 - Handout notes
 - Video tapes
 - Mock-up

MOTIVATION

Progress and advancement through SFF programme

BRIEFING SEQUENCE:

- Check student logbook (check certificate class, currency, competency, general health)
- Check student flight plan
 - Revision: relevant to this briefing, i.e. Exits, malfunction drills, canopy control
 - Introduction: – Aim of this brief is to progress through the SFF table – Reason for this brief is to learn the new skills – Objective/standard which needs to be achieved
 - Explain SFF aims of the stage and cross relate to sequence of stage
 - Complete demonstration of stage to be briefed – break down briefing into new skills and confirm in stages
 - Explain Demo – of new skills and signals Practice
 - Explain Demo – of new skills and signals Practice (repeat as necessary)
 - Consolidate with complete practice (standing initially)
- Confirmation:
 - Restate aim of brief
 - Confirmation of learning (complete practice on table)
 - Manifest/gear up
 - Conclude with exit practice and sequence
 - Check winds/emplane

IN THE AIRCRAFT

AIM: To give the candidate a thorough knowledge of jump mastering techniques.

INSTRUCTOR: APF Instructor with extensive experience in the appropriate Endorsement.

REFERENCES: APF Instructor Manual, Endorsement package, Group Member Training Operations Manual.

OUTLINE TAKE-OFF AND CLIMB

- Follow the planned procedures as the student was briefed.
- Talk to the student(s).

SPOTTING

- Do not lose sight of the drifter (may need to direct pilot).
- Look for drift at different heights.

JUMP RUN

- Prepare the student well in advance. – Final review and mental rehearsal. – Final gear check (AAD, Static-lines, Pilot-chute).
- Show enthusiasm and quiet confidence.
- Look for aircraft below.
- Check target panels (and check for jump clearance from pilot).

DESPATCHING or EXIT

- Procedures depend on whether AFF, SFF or TAF.

REFUSAL

- Nobody has to jump; we are doing it for fun.
- If refusal can be relocated safely, continue operation.
- Take aircraft down rather than take a risk (remember to disarm any AADs).
- A student on descent is to be accompanied by an instructor.

AIRCRAFT EMERGENCIES

- Aircraft/power failure - minimum exit heights depending on jump type.
- JM/pilot relationship.
- Parachute open in the aircraft (protect handles). Must the aircraft descend?
- Static-line hang-up procedures.
- IAD Premature opening inside the aircraft and outside the aircraft and the pilot’s reactions to these situations.

CANOPY FLIGHT

- Confirm the flight plan with the student prior to emplaning
- Confirm canopy drills that the student will do on each flight.

3.4 Confirming your training with your student

Before emplaning with your students, you should ensure you are confident they are ready for the jump. If a student is not performing the tasks correctly in the dirt dive, it is unlikely they will perform them correctly in the air. Retrain in areas of weakness and practice on the ground until you are satisfied they are ready.

Remember, your students are paying a lot of money for this experience and you want to make it as positive and successful as possible. This will also help ensure a better retention rate with your students.

3.5 Review Questions

1. What paperwork must all students complete prior to their first jump?

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2. What is the minimum age to complete an SFF descent?

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3. Where would you find the training table for SFF?

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4. What is the wind limit for a student on the SFF descent table?

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5. When can TAF be used as part of the SFF Training Table?

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6. What should be done to a Student AAD if the student is to land in the aircraft?

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7. What are you looking for outside the aircraft prior to exit?

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8. What would you cover when doing revision with a student?

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PART 4: AIRCRAFT AND EXITS

In this section:

- Safety aspects
- Mixed loads
- Aircraft emergencies
- Use of single point restraints
- Pre-exit brief
- Spotting
- Exits
- SLD loads
- IAD loads.

4.1 Aircraft Safety and Working with the Jump Pilot

4.1.1 Prior to approaching aircraft

Ensure you have completed your 'Pre Jump Gear Inspection'.

4.1.2 Approaching aircraft

Always approach from the rear or the side of the aircraft. Never approach from the propeller side. Ensure you keep control of your students ensuring you keep them in site at all times. Remember they can be experiencing sensory overload even at this stage of the skydive and may not be thinking clearly.

4.1.3 Aircraft Loading and Mixed Loads

Key points:

- The aircraft must be loaded within its weight and balance limits. The pilot can assist with this.
- Your students should be in a position to exit safely in case of an emergency.
- Please refer to Operational Regulations regarding the use of restraints in aircraft.

Ensure when loading the aircraft you position your students in the aircraft such that:

- you can communicate with them
- you can conduct a pin check prior to opening the door
- you can operate the door
- you can guide the aircraft to the exit point
- the student can climb out or adopt their exit position without other jumpers being in the way of both the student and instructor.

Mixed Loads: Consideration should be made as to what types of different jumpers should be allowed on the same loads. Have some discussion with your CI taking in regards the type of aircraft at your drop zone and the equipment is being used. Consider if you would have SLD students on the same load as Tandems and what some of the issues that could occur might be.

4.1.4 Briefing the pilot

You will need to brief the pilot on the following points:

- Inform the pilot there is static-line equipment in use on the load if applicable.
- For IAD that there will be exposed pilot-chutes.
- Inform the pilot of the required height(s) they will need to achieve.

- Conducting a slow turn once the student has exited to allow you to monitor their entire jump
- The time required between each pass when dispatching multiple static-line students
- To fly with the tail trimmed for level flight
- Ensure there is clear communication that the door is about to be opened before it is opened. This is particularly important with exposed pilot-chutes on IAD.

4.1.5 Take off and Climb

- Check that you or your student's equipment is not in a position to interfere with the aircraft controls.
- Observe that your student does not interfere with any equipment.

4.1.6 Jump Run

Students may take longer than experienced jumpers to prepare for their climb-out. Have your students ready to exit the aircraft early so you are not rushed at exit point. Remember if you have multiple students on one load, you will require even more time to check out each student prior to opening the door.

4.1.7 Climb-out

Different aircraft will have different procedures for dispatching your SFF student. This is covered in more detail later in this Guide. You should ensure you assist your student to get into the correct position for exit as much as possible. Your course instructor will demonstrate this with you in the exit training part of your course.

4.2 Aircraft Emergencies

4.2.1 Action Planning

Aircraft Emergencies, can, do and have happened. You need 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, your efficiency will give others a better chance of survival.

With these considerations, here is a suggested action plan for aircraft emergencies. Discuss the action plan for your DZ with your DZSO and CI.

4.2.2 Catastrophic failure

(a) Above 2,000 feet:

- IAD students in stages 1 and 2 have not yet been taught to deploy their main parachute, so Instruct them to exit and pull their reserve. Others should be told to exit the aircraft and deploy their main canopy.
- Exit the aircraft and deploy your main.

(b) Below 2,000 feet:

- Exit the aircraft and deploy reserves immediately.

4.2.3 Loss of power (Aircraft controllable)

Note: These procedures may differ between CIs. It may be that you are instructed to exit or choose to exit and so the action would be to deploy reserves immediately. Be aware at lower altitudes of AAD firing resulting in 2 canopies out.

(a) Above 2,000 feet:

- Discuss options with Pilot
- IAD students in stages 1 and 2 have not yet been taught to deploy their main parachute, so instruct them to exit and pull their reserve. Others should be told to exit the aircraft and deploy their main canopy.
- If exiting, exit quickly and deploy main canopy.

(b) Below 2,000 feet:

- Check with the pilot in command for instructions.
- Reconnect Single Point Restraints, minimize movement and assume the brace position. Re-brief your students on disconnecting the Single Point Restraint.
- The “brace” position when facing the rear of the aircraft is different to a forward facing situation. Slide towards the front of the plane as far as you can, and have your students lean back, placing their heads back as far as possible. Attempt to minimise the flailing of arms and legs – a common cause of injury – upon touchdown. Ensure all loose items in cabin are secured.
- Once safely on the ground, exit aircraft promptly and have everyone move safely away from the aircraft.

4.3 Pre Exit Check

4.3.1 Develop a System

Part of your training will be to develop a Pre Exit Check System. You will use this system for the rest of your career. Your course instructor will help you with this. Whatever your system is:

- Stick to it Never miss it Start again if you get distracted.

4.3.2 Pre Exit Brief

Now that you are ready to go it is a good idea to reconfirm with your student, a few of the basics before the jump:

- Talk your student through the climb-out procedure and the safety aspects.
- Remind the student of the importance of the Arch for exit and Freefall.
- Ask your student how they are feeling. Provide some support if necessary. Most people are extremely nervous at this stage!
- Get your student to visualise the jump in their head.

4.4 Use of Single Point Restraints (SPR)

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 on your head or on a restraint.

Buckle up for take-off, landing and flight below 1,000 feet.

4.5 Spotting

When guiding the aircraft to an exit point, you should consider the following:

- The number of exits on each jump run
- The strength and direction of the wind at different heights
- The opening height of the canopies and how they will be affected by the winds
- The size of the canopy and the wing loading.

4.6 Exit Configurations

4.6.1 Aircraft door styles

Skydiving aircraft used in Australia can be categorised under two types of door/exit configuration:

1. Side Door: Cessna Caravan, Cresco XL 750 and 500, Cessna 206 Rear door, Navajo, Air Van, Beaver, Islander.
2. Under-wing Wheel Strut: Cessna 182, 185, 206 front door

IMPORTANT: For IAD loads, the dispatching instructor should be assessed as competent for the style of aircraft being used, i.e. if an instructor has only received training on a side door, sitting/ poised exit, they should NOT dispatch students from an Under-wing wheel strut.

4.6.2 Side Door – Poised Exit



Poised exits work well in larger side door aircraft such as a Caravan, but is more difficult in medium or small side door aircraft.

For IAD, a clear exit cadence such as one used in AFF will assist with the timing of the exit and the placement of the pilot-chute. An example of this is,

Horizon, Up, Down, Arch.

4.6.3 Side Door – Seated Exit (option one)

This option works well in rear door C-206 or similar aircraft for SLD but not so well for IAD as you have less control over the student than option 2.



4.6.4 Side Door – Seated Exit (option 2)



This exit works well in Medium size side door aircraft such as an Airvan. It allows the instructor great control over the student with hip and shoulder grips on the harness.

Once again, a clear exit cadence will assist with the timing of the exit for IAD, an example of an exit cadence for this type of exit might be,

Head Down, Up, Down, Arch.

4.6.5 Side Door – Strut Hanging exits

The student must first climb out of the aircraft to be able to adopt this position. Adopting key words may help the student to make a smooth climb-out. An example might be “left hand, right foot... right hand, left foot.”

The hanging exit position



Remember to protect the static-line or pilot-chute bridle during the climb-out. Support the bridle in the propeller blast to avoid a premature opening. If the parachute prematurely opens at this point, the parachute and the student are both heading straight for the tail!

The student must climb out beyond the step. If they do not, then they will hit the step as they make their exit. After climbing out of the aircraft the student should ‘shimmy’ their hands as far as possible up the strut so they are positioned beyond the step.

A correct strut hang exit position will have the following attributes:

- Both hands on the strut beyond the step
- Hanging from the arms, suspended from the strut
- Head looking forward and up to promote the arch on exit

This type of exit allows the student to more easily achieve a stable exit when compared to the seated exit. On the other hand, the student must climb out of the aircraft and is now in a difficult place if they refuse to jump, when compared to the seated exit.

4.7 Observing the Student on Exit

Give your command for the student to exit. An example would be “GO!”

Observe the student and their performance on the jump. Try from the beginning to practice focussing on the student’s body position, rather than on the deploying canopy.

Have a method for recording this information for the students debrief (you may have several students each load). For SLD, Retrieve the D-Bag promptly. When you have observed the student canopy open, close the door and prepare the next student for their jump.



When students require a TA, it is important to observe each student land before dispatching the next. This will avoid the dangerous situation of the TA having two students in the air at the same time requiring instructions. Your drop zone may overcome this problem by having the ability to have more than one TA operating at a time. If necessary, adjust the spot for subsequent students.

4.8 Student Supervision — Unusual Situations

4.8.1 Safety and Unusual Situations

Situations in which the student's actions are not appropriate to their training or in which the necessary technical or environmental requirements are not suitable for skydiving are termed Unusual Situations.

An unusual situation can occur during any of the five phases of the jump, which are:

- Unusual Preparation Situations;
- Unusual In-flight Situations (including climb-out);
- Unusual Freefall Situations;
- Unusual Canopy Control Situations; and
- Unusual Equipment Situations.

Not all the unusual situations listed below fit neatly under this Part 4’s heading of Aircraft and Exits; however, as they can occur during any phase of the jump, some non-aircraft/exit topics have been included here.

4.8.2 Unusual Preparation Situations

(a) Adverse Weather

It is recommended that you allow an experienced load to go ahead, while watching the rate of change of conditions. If a large airport is nearby, you can check with aviation weather for an accurate forecast and ask the pilot for an opinion. Remember that poor weather conditions will have a significant detrimental effect on your student's capacity to perform. Especially if they have to climb out onto a wet wheel strut and hang onto a wet wing strut.

Don't push the weather. If there are storms on their way, stop dispatching students; if it is getting dark, stop dispatching. In skydiving as in other sports, it always takes longer than you think and by the time you are dispatching it will be either dark or real windy; both are bad situations for students.

- Wind — Signal to hold or to land.
- Cloud — for freefall students, make an IAD below clouds (if above minimum).
- Daylight — do not push the situation.

The student needs adequate light for perception on landing; official time of sunset is close of activities for students. Remember it takes time to dress load and make the flight to jump altitude.

Each training organisation should have a set of standard procedures for each DZ which form part of the Group Member's SMS. These may include guidelines on weather, maintained for local conditions and discussed with all staff. Your DZ should develop a chart like this example:

Problem	Solution
High wind	Check the forecast, wait call aviation weather,
Low cloud	Ceiling check, experienced load
Refusal on jump run	Discuss, try again seat in rear of aircraft, bring down

(b) Equipment

If a reserve is out of date, return it to the equipment room and tell the person in charge of gear; if another type of deficiency is suspected, check with a rigger or the DZSO.

(c) Serious Doubt at Aircraft

If at the aircraft, the student expresses the feeling that they are not ready, you may try to positively reassure them, highlighting their satisfactory performance of all required skills. However, it is recommended that you allow them to change to a later load and continue to practice, rather than talk them onto an aircraft ride and then experience a refusal at altitude or worse a sick student.

(d) Negative Response to Another Skydiver's Accident

If an accident occurs, it is best to allow the experienced jumpers and those among the students who display more confidence to proceed with their jumps, rather than trying to convince a doubtful student that nothing else will go wrong. Watching subsequent successful jumps is stronger encouragement.

(e) Aircraft Breakdown

If there is any doubt about the serviceability or reliability of the aircraft, it should be sent for a test flight first, then possibly with a load of experienced jumpers, rather than with a group of student parachutists aboard. (See Aircraft Emergencies)

4.8.3 Unusual In-Flight and Climb-out Situations

(a) Student Sick

If your student experiences dizziness or light headedness, they should close their eyes, put their head down and/or breathe deeply and deliberately. If the aircraft is performing steep turns, have the pilot fly wings level for a while.

There is the chance that your student may actually want to or have to vomit. If this happens, you could have your hands full! It is best to recognize that this is going to happen and take action. Have an airsick bag (or glad kitchen catcher bag) on board your aircraft and use it. If not, zip down the student's jumpsuit and pull up their shirt like a bowl. Once they are finished, have them hold up their shirt and zip up the jumpsuit. Sticking their head out of the aircraft will usually result in vomit spraying in their face or even back in the aircraft! The act of opening the door may be the little push that they need to actually vomit if they were close.

(b) Student Legs Asleep

If your student's legs go to sleep, have them try to sit up on their knees or in a position to facilitate the best circulation of blood to that area. Also check to see if the leg straps are tightened excessively and loosen if necessary.

(c) Refusal Prior to Exit

It is your responsibility to be prepared, if a student refuses to leave the aircraft. Watch for potential indicators on the ground during rehearsals: undue stress, nervousness, uncertainty, a significant change in mannerisms. Provide positive opportunities for the student to express anxiety and receive a sympathetic response. Provide honest replies to student's concerns; if you feel it is warranted, offer them the opportunity to jump on the next (subsequent) day to allow the training to "sink in overnight". When loading, try to position a strong performer as the first student. During inflight, display confidence and ensure your students are able to orient themselves, hear your instructions and that your pilot flies conservatively. At exit, be firm, clear and positive. Be certain to involve the student in the jump activity prior to exit (i.e. where is the DZ, target; do you see the other aircraft; put your hand out in the airflow).

If your student refuses, then go around and try again. If still a no go, do the shuffle of positions if possible or if necessary. If possible, dispatch the remainder of the load and then ask the refusal student if they want another try.

If the shuffle is not possible or necessary, then landing with the load may be the only option. If still a no go, then put seat belts on and land with the student. Be sure to reassure them for their self-confidence on the flight back down. The pilot should not bring the aircraft down as fast with people on board. Careful of AADs firing if descent is too fast. Once landed, make sure that they get off the aircraft by physically escorting them off and away from the aircraft, then to the hangar safely and see that the gear is returned.

(d) Refusal in the Door

If the student balks inside the aircraft or in the doorway, move them back from the doorway, close the door, direct the pilot to go around and ask them to describe their problem. Respond to/resolve the difficulty where possible, bring the aircraft around on jump run and dispatch that student, then continue with the remainder of the load.

If the student refuses to accept your information, replace the pilot-chute in the pouch, move them to the sitting position behind the pilot's seat, facing rearward, then dispatch the remainder of the jumpers. Close the door, seat belts on and make the descent with yourself, the refusing student and the pilot on-board the aircraft. Implement procedures to prevent AADs firing during aircraft descent.

(e) Refusal Outside the Aircraft

Should the student balk once they are outside the aircraft, your first action is to repeat the 'Go' command and to accompany it with physical contact (e.g. slap on the butt – dynamic, downward harness pressure – hanging). This could be repeated a total of three times. Advise the pilot, requesting a slow turn back towards the spot. If the student continues to balk, you must assess your ability to bring them back inside the aircraft safely. Remember this means not releasing their main (IAD or SLD), and not activating their reserve or either of your canopies as you manoeuvre them back through the doorway.

For IAD students with the dynamic exit, bring them back inside. The best method is to grasp their harness at the hip with your non-pilot-chute holding hand, and pull them back to the aircraft into a sitting position such that they sit on their butt in the doorway. Once in this position, their arms and legs can be brought inside easily.

With a poised or hanging exit (e.g. 182), it is not safe to try to bring the student back inside the aircraft. Advise the pilot and continue with your DZ procedure. It is safer to ensure the student is despatched. This may require the addition of engine power or ailerons and more pressure by you to ensure the student releases their grip on the aircraft. Your pilot should be acquainted with the procedure and potential situations to deal with.

(f) Long Student Climb-Out

Assess the student's ability to climb-out in the normal allotted period of time; consider their level of stress, strength, particularly upper body strength, the person's size-to-weight ratio (is the student overweight?), and the individual's physical size. You can expect a reasonable increase in the individual's level of stress when the door opens. Remember that very small and very large persons have more difficulty; you should allow them additional time for their climb-outs. The same is true for someone who is overweight.

When using the hanging exit, an additional problem is encountered. Almost all students climb out slowly on their first few jumps due to the distance they must climb. Once a student is outside the aircraft, there is no getting back in. you don't want to have a slow climb-out resulting in a deep spot, therefore the command to "Get Ready" should be given well in advance of the intended exit point. It is better to start early and have them wait on the step, in the door, or hanging on the strut (most students appreciate a chance to collect their thoughts) than to rush them or abort the exit.

Exceptionally strong upper winds would allow a later start, as would more experienced students. In low wind conditions, the student may commence climbing out over the target. The more experienced or aggressive student will not require as much time, but may still desire a long lead time to enable concentration on practice pull procedures before the launch.

On a strut-hung IAD exit, the instructor can control the speed of the climb-out of the student by holding the students harness at their shoulder.

Note: Do not place the pilot-chute until the student releases their grip from the aircraft (i.e. visible separation).

During the First Jump Course, the student should be advised that once they are out on the step/strut, they are considered gone! This can be referred to as a "no return threshold".

If the climb-out is taking really long, the Jump Master and pilot must teamwork quickly. Advise the pilot, requesting a slow turn back towards and circling of the spot. The pilot should already be aware that the climb-out is taking too long. The pilot should angle off to the left of the jump run, then turn the aircraft 90 degrees to the right and start a circle back around towards the DZ. The student can leave at any point in this pattern and still have a good chance to land safely. The pattern shape is basically a "light bulb". While this is occurring, the instructor must hang on!

(g) Fast student climb-out

If a student is exceptionally fast, their climb-out may have to be slowed. If you can put your hand in front of their face showing a “stop” signal, and shouting “STOP”, hold their harness, offer resistance, cover the eyes, or block the door. If a student climb-out is fast, once outside the aircraft, hold them or give them a tug with your harness gripping hand. At this point they will most likely stop and look at you. Once you have caught up, nod yes at them and continue on.

(h) Premature Activations

Accidental opening of the student's main or reserve parachutes can be serious. Accidental activations can occur either in the aircraft, during climb-out or while making final exit preparations outside on the step. They may occur as a result of snagging or the unintentional firing of an AAD. This later case in particular is possible near an open door or in a descending aircraft.

It is also very important that the instructors equipment is in good condition, especially during strut hung climb-outs during IAD dispatches, the instructors gear may be rubbing on the door.

Take the following actions, if the main container is open but the parachute is not heading out the door:

- Contain the canopy; Alert the pilot and Close the door.
- Move the student away from the door and disconnect the parachute from the harness by removing both the RSL and the main canopy release handle in order to secure the situation.
Note: If the student’s rig uses a single point release/reserve handle, carefully pull the cutaway cables out of the housing without pulling on the reserve cable. Stuff the pilot-chute in the D-bag.
- Move the student to the back of the aircraft away from the door and where they can contain the cutaway canopy. The remaining students can then be dispatched.
- You will then remain with the student and prepare to descend with the aircraft. You must secure the seat belts. Both the student and you will then land with the aircraft.

If the reserve container has been opened, immediately contain the canopy and close the door. If there is no door, then contain the canopy and have the student carefully move away from the doorway. Do not continue to dispatch the students, door or no door. Get everyone’s seat belts on. The whole load is to land with the aircraft.

A common error by novice instructors is to give the climb-out command too close to the intended exit point, causing long spots. Expect a slow climb-out and call the climb-out command early.

It should be noted that your gear is also susceptible to accidental deployment, especially as students move past you to climb out, or as you climb out and back into the aircraft. You must be aware of your gear as the student is preparing to get ready. You should try and cover your reserve handle as the student moves past.

(i) IAD Bag Drop

If the bag drops during the climb-out for any reason, the pilot-chute must be held until the jumper has released from the aircraft. Scream “GO!”, use force get the jumper off the step and then place the pilot-chute after they are gone.

(j) IAD Obvious Unstable

If the jumper has an obvious unstable exit or is in risk of interfering with deployment (back to earth, roll-overs), then short-line them by holding onto the pilot-chute until the bag is clear or the pilot-chute is ripped out of your hands (use the pilot-chute and bridle as a SL until the bag has cleared their appendages and then place the pilot-chute). Usually this only occurs with a hanging exit and only when the jumper is incurring rotation while still ON the aircraft. The other possible situation is when a student slips while climbing out and then hangs on while the bag drops.

4.8.4 Unusual Freefall Situations and Under Canopy

In the following two situations, ground observations can provide better feedback than the in-flight Jumpmaster.

(a) Freefall Situations

As Jumpmaster on SLD and IAD despatches, you should observe all aspects of the student's exit until the canopy is open, committing it to memory for the debrief. Once you've observed the student canopy open, close the door and prepare the next student for their jump.

On freefall descents in the SFF Training Table, openings, canopy control and landings, it is difficult to impossible to see with any clarity what occurs. It may also distract you from more important tasks. In addition to a TA, briefing an instructor on the ground to observe student performance is good practice.

(b) Radio Check under Canopy

If your student has not received any communication within 30 seconds after the canopy opens, then they should be looking for visual signals such as an arrow. Ensure, if you are not getting a response from your student via the radio, try the visual method used at your DZ.

4.9 Review Questions

1. Describe the manner in which a student must be secured in the aircraft.

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2. What should you ensure before opening the aircraft door in-flight?

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3. Discuss with your CI the DZ accepted Aircraft Emergency Procedure for: Catastrophic failure above 2,000 feet and below 2,000 feet; Loss of power above 2,000 feet and below 2,000 feet.

4. Discuss with your course trainer your pre exit check. Describe this:

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.....
.....

5. Who is ultimately responsible for the student's spot?

.....

6. Name 3 safety considerations whilst your student moves towards the door and climbing out:

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7. Describe your reaction to a premature bag deployment on climb-out, where the bag has fallen out of the aircraft.

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8. What can you do to avoid refusals? At what point do you accept the refusal?

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9. How can the pilot briefing differ on an SFF load from your usual one?

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10. List three considerations when loading the aircraft.

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11. List three safety concerns in-flight.

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12. Lack of horizontal separation and overlapping between freefall groups can be dangerous. How can this be avoided?

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PART 5: STATIC-LINE AIRCRAFT LOADS

Static-line equipment in an aircraft presents particular safety and operational requirements. This chapter deals with the considerations that need to be made when operating aircraft where static-lines are present.

In this section:

- The static-line in and around the aircraft
- How to load the aircraft
- How to move around the aircraft and exit with a static-line
- What to do if your student refuses to jump
- The dangers of "short-lining" a static-line.

5.1 The static-line and the aircraft

The aircraft used to make static-line descents must a suitable strong point for attaching the static-line. This strong point should be engineered for the strength, durability and safety required to perform this task. This strong point must be installed in the aircraft such that it will not put stress on the airframe.

The length of the static-line is determined by the distance from the strong point in the aircraft to the leading edge of the tail. The static-line is designed to retain the D-Bag 15cm's (6 inches) from the leading edge of the tail of the aircraft. This allows the student to fall the maximum distance below the aircraft before the parachute is extracted from the D-Bag, reducing the chances of the canopy deploying over the tail, whilst protecting the tail from interacting with the D-Bag.

The static-line and D-Bag flapping in the prop blast will cause superficial damage to the aircraft fuselage if left unattended. You can minimise this damage by promptly retrieving the D-Bag and static-line after the student has exited the aircraft.

5.2 Loading the aircraft and positioning students

Your Chief Instructor may have a policy which does not allow certain combinations of users to share the aircraft when there is static-line equipment on board. You should consult your Chief Instructor to establish your drop zone policy regarding allowable combinations. For example, tandem skydivers and static-line jumpers may not be permitted to share an aircraft load.

Ensure:

- you can protect the static-line from propeller blast by supporting it (Cessna 182 front door);
- the static-line will have a direct line to the door without wrapping or tangling with other jumpers;
- you can observe the students climb-out, set up and exit, canopy deployment and Freefall where applicable; and
- you can retrieve the static-line and D-Bag promptly and stow it in the appropriate location in the aircraft.
- that movement in the aircraft is minimised at all times to reduce the risk of a pin popping in the plane. If a static-line becomes caught or tangled, it can extract the pin inside the aircraft.

When attaching the static-line to the hard point of the aircraft, always check the connection by tugging on the static-line. Have the student confirm you have attached the static-line to the hard point correctly by having them also tug vigorously on the static-line.

Once the student is seated in the plane gather up any slack in the static-line and have the student hold the excess in one hand. Make sure the static-line is not wrapped around their hand. Ensure the static-line is clear of any obstacles including other jumpers and their rigs.

Your static-line student will often be loaded in the aircraft such as they are first to exit. This is usually the case because of their low exit altitude. This is a consideration for the static-line instructor when they encounter a student 'refusal'.



5.3 Exiting the aircraft with static-line student equipment

The fundamental basis of the SFF Training Table is establishing stability from exit as the student's first skill. Thus, the instruction and rehearsal undertaken by an SFF student naturally focuses a lot of attention on achieving the correct body position when setting up for the jump.

As an SFF instructor you will be required to teach students a variety of methods for exiting the aircraft. Some of these exits are used when the student's equipment has a static-line. Others are used for the freefall stages of the SFF Training Table. We will deal with the static-line exits now.

The 'seated exit' (Cessna 206 rear door) and the 'strut hang exit' (Cessna 182 front door) are in use on drop zones in Australia for exiting an aircraft with direct bag static-line arrangement. See section 5.6 Exit Configurations for different exit options. These exit procedures will help your student achieve the best position with their body before exit, therefore assisting the student achieve stability during the jump.





5.4 Dealing with Refusals

A student who is on Stage 1 static-line jumps will often be located in the aircraft in a position to allow them to exit first. If this student refuses while still inside the aircraft, it will likely be necessary to land the aircraft without any other jumpers exiting. This is because it is too dangerous to relocate this student due to the presence of the static-line and the likelihood of entanglement and/or pin dislodgement.

What if the student adopts the exit position and then refuses to exit? During their first jump course, the student will have been informed that if they decide to make a jump, then once they have begun to climb outside the aircraft they will not be coming back inside. It is a dangerous practice to attempt to allow a student to climb back inside the aircraft once they have begun the climb-out. If the student is having trouble completing the exit, then encourage them to leave the aircraft in the safest way possible.

Remember, students must be accompanied by an Instructor on-board the aircraft (OR 11.3.6) until at least Stage 6. If your student refuses to jump, accompany them back to the ground in the aircraft.

5.5 The Dangers of Short-lining

'Short-lining' is the practice where the despatching instructor holds the static-line in their hand such that it is shorter than usual. This practice was used to minimise the distance the student fell away from the aircraft, thus, reducing the time they had to become unstable.

This practice means the student has not fallen the maximum allowable distance below the aircraft before the canopy is extracted from the D-Bag. Short-lining increases the chance of the main canopy deploying over the tail of the aircraft.

Note: In IAD, short-lining during deployment of a hand-held throw-away pilot-chute is however acceptable and sometimes a useful technique

Short-lining is a dangerous practice and should not be used for SLD.

5.6 Review Questions

1. Where do you attach the static-line to in the aircraft?

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2. Why would you have the student yank on the static-line prior to exit?

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3. After loading the aircraft, you notice slack in some of the students' static-lines. What would you do with this?

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4. What do you do if your student refuses to jump?

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5. What is short-lining?

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6. Why is it dangerous to short-line a static-line student?

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PART 6: INSTRUCTOR-ASSISTED DEPLOYMENT AIRCRAFT LOADS

In this section you will learn about

- The importance of a good exit cadence for IAD exits
- What to look for as the student leave the aircraft before placing the pilot-chute
- How to hold the pilot-chute
- How to hold the student and assist them into the airflow.

IMPORTANT:

For IAD loads, the dispatching instructor should be assessed as competent for the style of aircraft being used, i.e. if an instructor has only received training on a side door, sitting/poised exit, they should NOT dispatch students from an under-wing wheel strut.

6.1 Exit Cadence

A clear exit cadence such as one used in AFF will assist with the timing of the exit and the placement of the pilot-chute. An example of this:

Head down, Up, Down, Arch

OR

Horizon, Up, Down, Arch.

Unlike static-line dispatches where the student leaves the aircraft without any one touching them, the IAD student is held onto by the instructor. This is so the instructor can control the speed of the climb out and the position the student is in for exit.

6.2 Leaving the aircraft

It is important to pay attention to the direction your student may turn off aircraft heading during exit.

- If the student stays on aircraft heading, place the pilot-chute into the air flow.
- If the student turns towards the aircraft, this is less than desirable, there is the potential for the student to get the bridle around their neck, be prepared to act fast and Short-line.
- If the student turns away from the aircraft, this is ok, but be prepared to Short.

As a rule of thumb:

If you can see their face, Place (the pilot-chute)

If you can see their back, Hold Back (short-line).

Note: Whilst short-lining of static-line students is not to be used, short-lining of IAD students may be useful in the above circumstances and when ensuring main deployment will occur clear of the aircraft.

6.3 Exits



If the student stays on aircraft heading, place the pilot-chute into the air flow



If the student turns away from the aircraft, this is ok, but be prepared to Short



If the student turns towards the aircraft, this is less than desirable. There is potential for the student to get the Bridle around their neck. Before this happens, be prepared to act fast and Short-line.

6.4 Holding the Pilot-chute

The standard is a right over-hand grip on the left cross connector (under-wing exits).

Benefits of an Over-Hand grip are:

- 1) If you have to hold onto the pilot-chute for whatever reason, this is the best position to have it in. With the underhand position the potential to break your wrist is large as the bridle will pull your wrist 180 degrees while putting significant force on the wrist/arm/shoulder. So if you have a person who falls off and you have to short-line - it will hurt... a lot.
- 2) It is the most natural position to use and most logical for dispatching. Overhand is way more balanced which is a great benefit for people learning how to do this job.
- 3) If a person slips off the wheel or step and swings a lot, an underhand grip will cause you a lot of pain if your wrist is wrenched or pulled.
- 4) The overhand grip allows you to keep the grip on the harness until the pilot-chute is thrown.
- 5) Allows downward pressure to be exerted if the rig is being rubbed on the door as the individual is climbing out. (under-wing exit)

- 6) One places the pilot-chute more easily with a downward throw. With an under-hand position there is a larger tendency to hold onto the pilot-chute too long and/or release it too close to the back rather than beside the student.
- 7) The argument of holding students up is incorrect. If students cannot climb out by themselves they should have been ground trained better. And most people are generally stronger pulling weight up with an overhand grip (climbing) as opposed to underhand grip - unless they work out at gyms. Think about climbing a ladder.

NOTE: The instructor should **not** have anything, like an alti or similar on the arm that is being used to hold the pilot-chute. There is a risk that the pilot-chute can snag onto that thing and wrap around the arm. This is something that is more common when the student is in a standing position, because this will put their arms higher up in the door than if they are sitting down.

Note: When holding the pilot-chute:

- the Hacky is to the top,
- the Bridle is on the outside of the pilot-chute being held by two fingers and the thumb,
- the Bridle is locked-off with the remaining two fingers.



If the student has done a good exit, the Bridle can be released without dropping the pilot-chute.

This stages the release to avoid a dump of Bridle and still gives the option for pulling back and popping the pin.



If the student is still on heading, all Bridle is released, still holding the pilot-chute.



In the event the instructor now needs to pull back and pop the pin, they can lock their hand off on the hacky.

If a good on heading exit has taken place, the pilot-chute can simply be placed into the airflow.



6.5 Controlling the student throughout exit



On a Strut Hung exit, the instructor holds the pilot-chute and student with their right hand while holding onto the plane with their left.



On a side door exit, the instructor is able to hold the student at the shoulder and the hip, giving greater control over the student's movement.

This method also allows for better control of the Bridle and pilot-chute.



While holding the student at the lateral webbing near their hip, the Bridle is locked off with the instructor's thumb, preventing any slack.



6.6 Student that jumps hard

This is a problem that can occur when a student is standing up for the exit. Sometimes the student might jump really hard upwards.

When this happens the instructor should not let go of the pilot-chute until the student is below the point they were standing on. If you release as they jump up, the pilot-chute might get a kick from the burble, and fly over the stabiliser. This has happened on different aircrafts, even a Twin Otter.

It is imperative that the pilot does NOT fly nose-up during the dispatches. The plane should be neutral, or a slight nose down, to minimise this scenario.

6.7 IAD Strut Hung Procedure

With the student on their knees facing forward, the instructor can lean over the student and prepare the pilot-chute.



Prior to exit, the instructor can be seated facing backwards with one foot on the wheel strut, and the student kneeling facing forward.

From this position the instructor can block the door and guide the aircraft to the exit point.

By moving your foot off the wheel strut and under the aircraft, the instructor signals to the student it is time to climb out.



As soon as the student commences the climb out, the instructor can put their foot back on the wheel strut to follow the student out.

Once the student is hanging from the strut and the instructor is in position, the instructor yells for the student to get their head back and Go!





With the student on aircraft heading, the instructor places the pilot-chute into the airflow, behind the wheel strut. This is done before the bridle becomes tight.



You can see the instructor releases the pilot-chute below the aircraft and behind the wheel strut.



Once the student has gone, the instructor can climb back in and prepare the next student.

6.8 Review Questions

1. Why is a good exit cadence important for an IAD dispatch?

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2. Why can the direction your student turns off heading during exit affect how you react when dispatching the student?

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3. When should you short-line an IAD student?

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4. Why is short-lining acceptable and often done for IAD dispatches but not static-line dispatches?

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5. What is the dangers of an under-hand grip on the pilot-chute?

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6. Why is it important to hold onto your student prior to an IAD dispatch?

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7. Why is it important to hold onto your student during an IAD dispatch?

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8. What is the danger of an IAD student turning towards the aircraft during exit?

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9. Describe the Ideal body position during exit of an IAD student?

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10. Why is the bridle folded and held outside the pilot-chute opposed to inside the pilot-chute?

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PART 7: THE TRAINING TABLES

In this section you will learn about

- What the Training Operations Manual is and what is in it
- What is in the Solo Freefall Training Table
- Options for a modified training table
- What is next for the student after completing the SFF Training Table.

7.1 The Training Operations Manual (TOM)

You should have studied the TOM to become familiar with its contents. The APF TOM is the industry standard and all Training Organisations must adopt the standard TOM or apply to the APF for approval to use a modified version. Your CI will provide access to the TOM in use by your Group Member.

The TOM provides the detail standards for all student training. Solo Freefall is covered in:

- Part 2: Basic Training Courses;
- Part 3: Student Training to Class A Novice Skydiver;
- The Appendices, in particular:
 - Appendix D: SFF Training Table (SLD/IAD), and
 - Appendix F: A Modified Student Training Table (SFF with AFF/TAF).

Each Training Table shows the nine stages of student training. These are summarised in this comparative table, and for the SFF stages in more detail on the following pages.

Ensure you check heights in the latest version of the TOM.

Stage	Accelerated Freefall			Solo Freefall			Modified SLD/IAD		
	Jump #	Type	Exit	Jump #	Type	Exit	Jump #	Type	Exit
1	1	AFF/TAF	9,000' ^{MM}	1 - 2 3 - 5	IAD/SLD	3,500' ^{MM} 3,000' ^{MM}	1 - 4	IAD/SL D	3,000' ^{MM}
2	2	AFF/TAF	9,000' ^{MM}	6	5 sec	3,200' ^{MM}	5	AFF	9,000' ^{MM}
3	3	AFF/TAF	8,000' ^{MM}	7	5 sec	3,200' ^{MM}	6	10 sec	4,500' ^{MM}
4	4	AFF/TAF	8,000' ^{MM}	8	10 sec	4,200' ^{MM}	7	12 sec	5,000' ^{MM}
5	5	AFF	8,000' ^{MM}	9	12 sec	4,400' ^{MM}	8 - 9	15 sec	5,500' ^{MM}
6	6	AFF	8,000' ^{MM}	10 - 11	15 sec	5,000' ^{MM}	10 - 11	20 sec	6,500' ^{MM}
7	7	AFF	8,000' ^{MM}	12 - 13	20 sec	6,000' ^{MM}	12	25 sec	7,500' ^{MM}
8	8	AFF	8,000' ^{MM}	14	25 sec	6,500' ^{MM}	13 - 14	30 sec	8,500' ^{MM}
9	9	Solo clear & pull	4,500' ^{MX}	15 - 16 17	30 sec Eval	7,500' ^{MM} 9,000' ^{MM}	15	Eval'n	10,000' ^{MM}

Note: MM = Minimum exit height; MX = Maximum exit height.

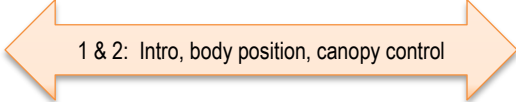
7.2 Solo Freefall Training Table (SLD or IAD)

The SFF Training Table incorporates alternative deployment techniques in the early stages: either static-line deployment (SLD) or instructor-assisted deployment (IAD).

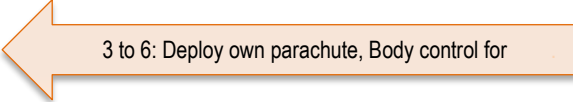
The 2-page table on the next two pages summarises the SFF stages described in the TOM.

Summary of SFF Stages 1 – 9

Stage:	1 a and 1 b	2	3	4
Title:	5 stable solo SLD/IAD & Practice pulls	First freefall (5-second delay)	Second freefall, on-heading (5-sec)	10-second freefall on-heading
Minimum Exit Height:	a. 3,500' 1st- 2nd Jump b. 3,000' 3 rd -5 th jumps	3,200'	3,200'	4,200'
Jumpmaster:	IAD/SLD Direct supervision (in aircraft)	SFF or AFF Direct supervision (in aircraft)	SFF or AFF Direct supervision (in aircraft)	SFF or AFF Direct supervision (in aircraft)
Aims:	Exit the aircraft stable Maintain stability throughout opening of the parachute	Perform a safe, stable and competent 5-second delay freefall descent	Consolidation of previous stage Remain on heading during a safe, stable and competent 5 second freefall descent	Consolidation of previous two stages. Remain on heading during a safe, stable and competent 10-second freefall descent Initiate opening procedures after the correct time in freefall.
Minimum manoeuvres:	Stable body position	Control of a stable body position	Heading and stability maintained throughout the freefall and opening parts of the descent. Effective pull on a 5-second delay (within 25% of the stipulated time, i.e. 4 to 6 seconds).	Heading and stability maintained throughout the freefall and opening parts of the descent. Effective pull on a 10-second delay (within 25% of the stipulated time, i.e. 8 to 12 seconds).
Skills:	Canopy control	Freefall skills Canopy Control	Time awareness Freefall skills Canopy skills	Time awareness Freefall skills Canopy Control
Pull complete:	N/A	3,000'	3,000'	3,000'
Notes:	Similar jumps with similar aims, but with emphasis on improving heading control and eliminating any faults or problems encountered on the previous jump.			



1 & 2: Intro, body position, canopy control



3 to 6: Deploy own parachute, Body control for

These are recommended heights (refer to TOM for regulated heights).

5	6 a & b	7 a & b	8	9 a & b
Instruments 12-sec freefall	Delta & Relaxed Arch 2 x 15-sec freefalls	Turns & Backloop 2 x 20-sec freefalls	Figure 8 & Backloop 25-sec freefall	Track, S-track, Flare, Wave-off (25-sec)
4,400'	5,000'	6,000'	6,500'	7,500'
SFF or AFF Direct supervision (in aircraft)	SFF or AFF Direct supervision (in aircraft)	SFF or AFF Aircraft direct supervision unless DZSO satisfied	SFF or AFF Aircraft direct supervision unless DZSO satisfied	SFF or AFF Instructor may evaluate in freefall
Consolidation of previous stage with fall rate approaching terminal flat fly velocity. Remain on heading during a safe, stable and competent 12- second freefall descent Use the altimeter to determine the nominated altitude to initiate opening procedures or to initiate opening procedures after the correct time in freefall.	6a) Demonstrate the ability to adopt and hold the delta position in freefall and return to the arch without loss of stability, heading or height awareness. 6b) Demonstrate the ability to fly in a relaxed arch position without loss of stability, heading or height awareness.	7a) Learn/Improve control of the body through the horizontal plane. Demonstrate the ability to initiate a flat turn in freefall, maintain it through 360 degrees and stop it on heading, without loss of stability or height awareness. Repeat the manoeuvre in the opposite direction. 7b) Learn/Improve control of the body through the vertical plane. Demonstrate the ability to perform a backloop in freefall without losing stability or height awareness.	Consolidation of previous stages, for control of the body through the horizontal and vertical planes. Demonstrate the ability to fly smooth figure-eight turns (left through 360 degrees and right through 360 degrees) stopping on original heading, followed by smooth backloops	Demonstrate the ability to initiate and maintain horizontal movement in freefall using the track body position, without loss of heading, stability or height awareness. Demonstrate ability to flare and wave prior to opening.
Consistently demonstrate the ability to read the altimeter in freefall, opening at the nominated height, and maintaining stability and heading throughout the freefall.	6a) Transition from stable arch to a held delta position and return to arch. No loss of stability, heading or height awareness. 6b) Fly in a relaxed arch position No loss of stability, heading or height awareness.	7a) From heading, initiate left and right turns through approximately 360 degrees. Stop each turn within 45 degrees of the original heading. No loss of stability, heading or height awareness. 7b) Demonstrate the ability to perform a back loop in freefall without losing stability or height awareness.	Figure-eight turns stopped within 20 degrees of the original heading. Backloop(s) demonstrate control in the vertical plane. No loss of stability or height awareness.	Track on heading. Flare, wave and pull. No loss of stability, heading or height awareness.
Reading an altimeter Stable freefall Stable deployment Height awareness Canopy control	Forward movement to stable straight down position Height awareness Canopy control	Re gaining stability when unstable Heading control and turns	Re gaining stability when unstable Heading control and turns	Forward movement with heading control Heading control and turns Stability in freefall
3,000'	3,000'	3,000'	3,000'	3,000'
The use of an Altimeter to determine the opening altitude and eliminating any faults or problems encountered on the previous jump.				Should not be attempted if exit technique is not perfected.

heading and hover control

7 & 8: Stability and tracking

Refer to the TOM Appendix D for the SFF Training Table.

The difference with SLD and IAD in the means of deployment of the main canopy involves subtle but very important differences in dispatch technique by the jumpmaster. In other words, the SFF table shows the competencies required of a student irrespective of how the main canopy is deployed on the initial jumps.

CI's may choose the most appropriate deployment method depending on the needs of their DZ and students, provided the instructor has the appropriate APF endorsement for that deployment method.

Due to the added complexities of IAD and SLD, an instructor conducting these descents must have completed an APF approved course of instruction on these techniques, hold an endorsement in IAD and/or SLD and have his/her CI's approval to dispatch students using this method.

7.3 Modified Student Training Table – SFF with AFF/TAF

The Modified Student Training Table described in the Training Operations Manual (TOM, Appendix F) is approved for use without the need for a Group Member CI to submit a Modified TOM for separate approval. This hybrid table is based in part on the SFF Training Table and incorporates an AFF/TAF descent in Stage 2.

This training table differs from the standard SFF Training Table with the DRP IAD/SLD descents and existing stages 2 and 3 being replaced by two additional IAD/SLD descents (without DRP) and an AFF descent.

Once student parachutists have successfully completed Stage 9 of a Student Training Table, they may be approved to commence flatfly RW descents but only with an instructor. Once they've attained their Certificate Class A, they may be approved to jump with a Certificate B Coach.

7.4 Review Questions

1. After successfully completing what stage of the SFF Training Table may a student complete a solo skydive with the DZSO's approval

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2. Until successfully completing what stage must an SFF student be accompanied in the aircraft by an instructor?

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3. Once a student has successfully completed the SFF Training Table, but before attaining their Certificate A, who can they jump with?

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PART 8: TANDEM-ASSISTED FREEFALL (TAF) FOR THE MODIFIED TRAINING TABLE

TAF is an option opposed to an AFF jump in the modified training table. TAF should only be used as a last resort, not as standard practice for every student.

In this section:

- TAF as part of the modified SFF Training Table.

8.1 TAF as an Option

Traditional PP's using IAD/SLD in Stage 1, are problematic as the BOC and pilot-chute are not in the correct place once dispatched from the aircraft, due to the collapse of the main container.

Stage 2 of the Modified Student Training Table is an AFF/TAF jump. The main aim of this stage is for the student to practice main deployment pulls (PPs) prior to moving to their first solo freefall.

It is ideally done as an AFF jump, as the student performs PPs and deploys their own parachute under close supervision – with their equipment the same as it is for all their jumps.

As an option, it may be done as a TAF jump, however this is not preferred as the and pilot chute BOC/Ripcord set-up using tandem equipment is less compatible.

Qualifications

A TAF Jumpmaster requires both a Tandem endorsement and an AFF endorsement, plus at least fifty jumps as a Tandem Master. This Operational Regulation is current at time of publishing. Please refer to the current Operational Regulations.

Procedures

Your Group Member's TOM will establish the requirements and minimum manoeuvres required. The CI will have established a Dive Plan, and you should draw up a lesson plan to go with your SFF Lesson Plans to cater for this type of jump.

Considerations

- This is not just another tandem. It should be treated as a stage 1 solo.
- Jumping in strong winds (close to or on Tandem limits) is not a realistic training scenario for the student and may not be beneficial. It is impossible to conduct an effective canopy control lesson when busy dealing with the challenging conditions.
- Allowing the student to flare on this Tandem jump can result in injury to both Instructor and passenger. The TI should check with their CI before trying this. The student has more than enough opportunity to learn 'flaring' whilst under TA on their solo jumps. If it is an accepted practice at you DZ to allow your student to flare of a TAF jump, a thorough brief is imperative. The purpose of the TAF jump in the SFF modified table is for the student to deploy the parachute. This method may not be suitable if your student equipment is a throw away pilot-chute
- It is best to get the student to begin their deployment procedures at 6000 feet. This allows for a slow response.

8.2 Review Questions

1. What ratings are required to by the instructor to do a TAF descent?

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2. What would you do if you noticed or suspected your altimeter was not reading correctly?

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3. What other forms of height awareness may lead you to this conclusion?

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4. What is the minimum open height for the main canopy on a TAF jump?

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5. When using TAF for the modified SFF Training Table, what are the key aims you need to ensure the student is achieving?

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6. What reasons would you choose a TAF jump over an AFF jump for the modified SFF Training Table?

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PART 9: MALFUNCTIONS AND EMERGENCY PROCEDURES

In this section:

- Considerations
- Briefing other jumpers
- the Key Words

9.1 Key Words – Emergency Procedures

Emergency procedures are used when a malfunction is encountered and/or the reserve parachute needs to be used. Key words are selected to assist the student to complete their emergency procedures in the correct order and at an acceptable pace.

Emergency Procedures example – Dual Operation System (DOS, most common) and the Two Action System (TAS)

LEGS	Bring your legs back for symmetry as you move your hands in the following procedures so as you remain belly to earth (and arch your back)
LOOK	for cutaway handle
LOCATE	your right hand on the cutaway handle
LOOK	for reserve ripcord
LOCATE	reserve ripcord, placing a thumb through it and taking a grip
PEEL	the cutaway away from the Velcro with an upward twisting motion
PUNCH	cutaway pad, aim for your feet, to full arm extension
PULL	reserve, aim for your feet, to full arm extension
ARCH	arms wide, hands still gripping cutaway and reserve cables.

Emergency Procedures example – Single Operation System (SOS)

LEGS	Legs back and pushing our hips forward when the cutaway handle is pulled we will naturally fall back into a "belly to earth" attitude.
LOOK	Look at the yellow cutaway handle.
REACH	Right thumb through handle - left hand locked over right assist.
PUNCH	Punch down and out with the right hand pulling the reserve handle to full arm's length.
ARCH	for stability during opening sequence
CLEAR	Look at the reserve cable housing. Use left hand to clear cables completely from housing. Check that the red handle has gone.

9.2 Time Awareness Count

The time awareness count is used after the execution of the main deployment procedure or emergency procedures. After the main deployment it is used to clear a pilot-chute hesitation and provide the student with a base time frame for initiating emergency procedures. The example time awareness count should take six seconds (approximately 1000 feet).

Transition from the time awareness count to emergency procedures should be seamless, specifically for the high speed malfunction scenario. Student should continue the time awareness count after emergency procedures to clear a reserve pilot-chute hesitation.

9.3 Canopy Checks

The student will be required to check their main canopy to identify a need to use emergency procedures or to correct common opening occurrences (such as line twists) and to check the canopy can be steered and flared. The students will be required to check their reserve canopy for common opening occurrences (such as line twists) and to check the canopy can be steered and flared.

Typical canopy flight time for a student is about four minutes.

Source: APF AFF Instructor Handbook

9.4 Main Deployment Procedure

Your DZ may have 'Main Deployment Procedure' key words for students to follow when opening the main parachute. These procedures would become relevant to the Static-Line student when they progressed to Freefall stages (Stages 2 to 9) of the Static-Line Descent Table. (NOTE: The main deployment is via the direct bag static-line on all stage 1 jumps)

The procedure will vary depending on the parachute systems used at your drop zone and the location of the main parachute deployment handle. You may encounter different arrangements if you instruct at several drop zones. These may include (TOM Appendix 6):

- Chest mounted ripcord with spring loaded pilot-chute
- Hip mounted ripcord with spring loaded pilot-chute
- Bottom of Container Throwaway Pilot-chute

9.5 Static-Line Hook-up

A static-line hook-up occurs when the jumper exits the aircraft and is left suspended under the aircraft by the static-line. This may occur if the jumper or their equipment becomes entangled with the static-line upon exit, or, if the closing sequence of the container is incorrect and the pin is retained in the closing loop.

Although a rare event, this situation has arisen. As such, your Static-Line student was instructed during their First Jump Course as to what to do if they found themselves with a static-line hook-up. The actions of the jumpmaster will vary depending on the status of the student suspended under the plane; are they conscious or unconscious.

The student and the instructor must be mindful of the seriousness of the situation. The pilot is now flying an aircraft with a person suspended beneath it. If the student deploys the reserve canopy before their static-line is severed the aircraft will now have a parachute inflated behind it attached by the static-line. This will likely place the students head in contact with the tail, and, prevent the pilot from being able to continue flying the aircraft.

If the students gear does not have an AAD connected to the reserve container, the only way a parachute will be deployed for the student after the static-line is severed is if the student successfully executes their emergency procedures. It is prudent of the static-line jumpmaster to carry a personal knife in addition to the knife kept in the aircraft. This knife should be able to easily cut the material of the static-line.

Static-Line Hook-up with conscious student EXAMPLE

Actions of Student	Actions of Instructor
	Inform the pilot there is a static-line hook-up. Instruct the pilot to maintain altitude or climb slowly. Ask the pilot to radio the situation to the DZSO / GCO.
Look back up at the aircraft and attempt to establish eye contact with the instructor	Look down at your student and try to establish eye contact.
Place both hands on your head to signal to the instructor that you are conscious	Watch for student placing both hands on their head to indicate they are conscious.
Watch for the instructor showing you the knife he will use to cut your static-line	Retrieve knife and display the knife to the student so they know their static-line will soon be severed.
Maintain hands on head until your static-line is severed and you fall away from the aircraft.	Sever the static-line.
One your static-line has been severed execute emergency procedures immediately	Observe student reserve parachute inflation. Watch student to observe landing area (likely to be off drop zone).
Complete your canopy checks	
Locate a safe landing area (likely to be off drop zone landing)	

Static-Line Hook-up with unconscious student EXAMPLE

Actions of Student	Actions of Instructor
The student is unconscious. They are not attempting to look at you and they have not placed both their hands on their head.	Inform the pilot there is a static-line hook-up. Instruct the pilot to maintain altitude or climb slowly and keep the plane at a close proximity to the DZ. Ask the pilot to radio the situation to the DZSO / GCO. Inform other students or jumpers in the aircraft of the situation.
	Look down at the student and evaluate the situation.
	Inform pilot you will be going to the aid of the student underneath the aircraft. Ensure all other students remain in aircraft with single point restraints fastened.
	Ensure you have a knife. Locate it such that it will not be dropped as you descend down the static-line and such that it can be accessed once you arrive at the student.
	Utilise the spare carabineer from the aircraft hard point to attach yourself to the static-line.
	Descend to the student keeping in mind your arrival is likely to be brisk. Be aware of your own gear as you exit the aircraft and descent the static-line. Be careful to prevent premature deployment of your equipment or snagging.
	Sever the student static-line. If possible, grasp the students reserve ripcord before severing the static-line.
	Deploy the students reserve parachute. Deploy your main or reserve parachute (depending on altitude) after falling away from the student.
	Attempt to observe the students landing area and land close by to render first aid as necessary.

Know your drop zone's procedure for static-line hook-ups and record it before attending the course.

9.6 Other Procedures

There are other essential points from the First Jump Course that you will need to know as an instructor and your student will need to revise regularly and retain. You must be familiar with your drop zone's procedure and protocols for each of the following situations:

- Field pack – How your students has been directed to Field Pack the equipment;
- Aircraft runways – What your student will do if they land on an aircraft runway;
- Drag recovery – What your student will do if they are being dragged after landing;
- Off Drop Zone landings – Procedure? Areas to avoid? Retrieval? Determining wind direction?
- Unassisted landings – Performing a 'Half Brake PLR';
- Water landings – How to use floatation devices;
- Other DZ specific hazards or procedures;
- Target Assistant procedure (primary and back-up methods);
- Circuit patterns in use at your drop zone and student canopy piloting procedures;
- GCA communication methods and back-ups.

9.7 Review Questions

1. What is a static-line hook up?

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2. What can you do to avoid this happening to you?

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3. Describe your response to the following emergencies:

(a) Static-line bridle around student's arm:

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(b) Student is in the door and the bag falls out of the plane:

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(c) Student is at the front of the aircraft and you notice their reserve has opened:

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4. What is the time awareness count for your DZ?

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PART 10: CANOPY PILOTING AND LANDINGS

In this section:

- Under canopy lessons and tasks
- Landings.

Refer to the APF Canopy Pilot training guide for content. This material is not just for students and novices – ensure you are conversant with its content. Canopy handling and approach techniques and landings are covered extensively in this guide.

10.1 Under Canopy Lesson

Your CI will have established a lesson plan, consistent with the requirements of the TOM, for the canopy component of the jump. These must include:

- Checking the canopy is properly deployed;
- Steering the canopy towards the landing area;
- Following the directions of the TA; and dealing with a bad spot and/or off-DZ landing, i.e. canopy control and landing independent of the TA.



Here are some canopy piloting points which can be taught:

- Performing a ground speed check and establishing wind line;
- Crabbing;
- Stall point and stall recovery;
- Flaring;
- Turning. Have your student appreciate the increased descent rate; and
- Landing circuit/approach.

Note: As an Instructor, the OpRegs allow you to act as a Target Assistant and a Ground Control Assistant – see Part 14 for details.

10.2 Landings

A safe landing is paramount. The most common SFF Student injuries are lower limb on landing. Remember that the skydive is not over until the jumper is safely back in the packing area. Not being able to walk away from a landing with a smile on their face detracts from their experience and the sport.

The TOM covers your role as a Target Assistant. As an instructor, you must not only know and understand how to provide advice on canopy piloting and safe landings, but you should be modelling the correct techniques and attitude.

10.3 Review Questions

1. Who decides if a student is to progress to the next stage?

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2. What are some important things you should know about the student and their equipment before the jump?

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3. Where should you hold the student under canopy in relation to the landing area?

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4. In relation to the target, where should you aim to land the student?

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5. What sort of student injury is most common? What is the most common cause of this? What can YOU do to avoid this from happening?

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6. Your student has a habit of flaring too early. What tips can you give them to improve their flare timing?

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7. How would you advise a student to alter their canopy circuit for higher winds?

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PART 11: DEBRIEFING AND LOG ENTRIES

In this section:

- How to debrief the student
- How to fill in the student log book.

11.1 Debriefing

1. Marshall the facts.
2. Listen to the student.
3. Speak to the student.
4. Watch and discuss the video together.
5. Discuss the next jump.
6. Fill out the student's log.
 - Before debriefing the student, review the dive in your own mind, confer with the other jumpmaster on the student's performance and the heights at which the student performed actions. Confirm which jumpmaster will lead the debrief session. Also see the TA/CCA and get their opinion of student's canopy control.
 - Shake the student by the hand and - with sincerity - congratulate them!
 - Ask your students for their recollections of the dive first. Listen and prompt for missing information. You need to know how much your students remember and whether they feel they have done a good job before you influence them.
 - Also, their awareness is part of their training/skill assessment.
 - Then add your own information.
 - In a debrief, you can always find something to praise. Praise first, constructive critique next. Praise everything that was done well. Do not praise parts of the performance that do not deserve praise.
 - Your debrief should cover everything of significance between the gearing up process and returning the gear after the skydive. Remember to include canopy handling and landing in your debrief using information from the TA/CCA.
 - If a criticism has to be made, criticise the performance, not the student. Keep criticism factual: avoid emotion. Instead of "You failed to perform that manoeuvre properly", say "Next time, that manoeuvre could be improved by ..."
 - Concentrate on the root, not the outcome, of any problem. It's easy to know that the student was (say) making uncontrolled turns, but what the student needs to know is that he/she had one knee dropped.
 - A student who has performed poorly will often know it and may suggest a re-jump. This may be more satisfactory than the jumpmaster having to order the re-jump.
 - The video is there to confirm to the student the result of the verbal debrief. It is not a remedy for poor jumpmaster memory and recall.
 - Discuss the next jump with the student. His/her confidence may determine whether they advance to the next stage, as well as your assessment of their competence. If you decide that they should repeat a stage, approach it as: "We will have you do the same stage again next time to consolidate your skills and to perfect your (say) height awareness" rather than: "I'm failing you on this one because you lost height awareness. You will have to repeat the stage."

Considerations for Advancing a Student to the Next Stage

1. Have all the aims of the skydive been met?
If not, the student should not go on to the next stage. Some concessions might be made if the next dive is a consolidation dive.
If not, was the unfulfilled aim a high priority such as loss of height awareness?
2. Will the unfulfilled aim be addressed in the next skydive?
3. Do you have any concerns about the student's safety if you allow them to progress to the next stage?
4. Are you reasonably confident of the student's ability to perform competently on the next stage?
5. Don't be bullied by others if you are not satisfied with your student's ability.

If you decline to allow the student to progress to the next stage

Your student has a personality, and an ego and normal human feelings. Keep this, and your professional attitude, in mind.

The term "Fail" is emotive. Avoid it if you can. You may ask the student to do the jump again for you, or point out to the student that the most effective course is to perfect some manoeuvre before going on to the next stage. "Consolidate" is a good word when used effectively: point out that stage 4, 6 and 8 are already in the system for consolidation, and that it is not uncommon for students to require further consolidation to meet the aims.

ALWAYS find something positive to say to the student about their performance.

REMEMBER, the DZSO has the final say if a student is to progress to the next stage.

11.2 Log Entry

- The log entry is a very important part of the debrief. It should be something the student will feel proud to show his buddies or his mother, but at the same time, it must clearly convey the student's performance to the next jumpmaster.
- Be concise with log entry so next instructor gets a correct overview of the student's performance.
- If a criticism has to be made, criticise the performance, not the student. Keep criticism factual: avoid emotion. It is better to write "Main parachute deployed by JM" than to write "Student failed to pull own ripcord", which criticises the student, and adds the emotional word "failed".
- You should note if the landing was made under the control of a TA. This is essential information for the next jump, and is important, too, because to qualify for the Certificate A, the student is required to have made a certain number of accurate landings without help from the TA.
- Every entry should include a recommendation for the next jump. This might be specific: "Do stage two next", or it might have conditions: "OK for next stage if not more than two weeks before next jump" or "Next jump at discretion of DZSO".
- The log book page shown here is an example: In general, the log entry should comment on each of the areas listed, as appropriate. The following is required by the Operational Regulations, in addition to the information needed for the next jumpmaster: Type of descent (AFF Stage 4), Date, Location of DZ, Exit height, Freefall time, Distance from Target, Type and registration of aircraft (Cessna-182, VH-AFF).
- Sign the log using your name and Instructor number to identify yourself. The next jumpmaster may want to confer with you about the student's performance.

11.3 Other log entries

The log may be used to record other pertinent information relevant to the student's training, such as:

"Certified as competent to pack main parachute for own use or for use by a parachutist who holds at least a Certificate Class A."

"Grounded 14 days from xx/xx/xx for deliberate low opening."

"Shoulder injury xx/xx/xx. Recommend medical clearance before jumping again."

"AFF Stage One completed as a tandem jump. Has not received instruction on emergency procedures, hazardous landings,"

"Ground training for first AFF jump completed xx/xx/xx." Or "Theory part of first jump course completed, xx/xx/xx. Has not yet done practical emergency training". Or "First jump written exam completed".

11.4 Sample Log Sheet

Jump No.:	Date:	Drop zone:
Aircraft type and call sign:	Main:	Harness:
Type of descent:	Exit height:	Delay:
JM1:	JM2:	Camera:
TA/CCA:	Landing distance:	
<i>Jumpmaster's Comments</i>		
Climb-out		
Exit		
Practice Pulls		
Body Position		
Fall Rate		
Tasks completed or manoeuvres		
Height Awareness		
Awareness Checks		
Ripcord Pull		
Canopy Control		
General Recall		
<i>Jumpmaster's Recommendations:</i>		
..... <i>Signature and Instructor number</i>		

Shaded areas are those required by the regulations to be completed. The entry in the student's log should cover each area shown above, as appropriate for the particular jump.

11.5 Review Questions

1. What is the purpose of a student log book?

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2. What is the minimum information that should be in the student log book for each jump?

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3. What should be considered before passing a student to the next stage?

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4. When you teach a new skill to a student, what should you always do?

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5. If you are unsure if a student should pass to the next stage, who should you ask?

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PART 12: RISK MANAGEMENT

Let's be realistic: we are in a risky business. As an Instructor, you 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 Drop zone and the APF from litigation.

12.1 Compliance

The rules are there for a reason. Firstly, when adhered to, they provide the best safest practice known to us at the current moment. They have evolved over time and continue to do so, to avoid history repeating itself. Compliance equals safety.

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 OpRegs, the Training Operations Manual also must be followed.

Manufacturers of equipment also have requirements which must be adhered to. These include, but are not limited to: Load Limits (see equipment Part) and the approval of AAD types.

Your Instructor and SFF written exams will test your knowledge of relevant Operational Regulations. Please take the time to study them, the Training Operations Manual (TOM), the Instructor Guide and all the other material included with your study package.

12.2 Other things you can do to manage risk

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

- Filming the landing practice. 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.
- If providing canopy control assistance as a TA and you are in ear-shot when the student is on finals, you can yell out: "Feet together" in preparation for their PLR.
- Never apologise for anything. You are admitting fault when you do this and it may come back to bite you.
- Explain the waiver to the Student/Guardian.

12.3 Response plan

A good response plan to an injury or suspected injury is key to risk minimisation. In the event of an injury:

1. Assist student comfort to the best of your ability. Never move a student who you suspect may have back injuries. Never give water to a student who may have internal injuries.
2. Call for Ambulance.
3. Never say sorry or admit fault.
4. Gather written witness statements. Things such as the student admitting fault are very important things to have witness to.
5. Fill out an Incident Notification (Form IN1) 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.

12.4 Review Questions

1. What does risk management mean to you?

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2. Who or what is at risk if you do not abide by the rules or fail to adhere to your training?

- (a)
- (b)
- (c)
- (d)

3. If you are unsure about the student or the conditions what would be your course of action?

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4. In which section/s of the APF Operational Regulations would you find the procedures dealing with incidents??

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PART 13: WORKING IN THE INDUSTRY AND WHS

13.1 Customer Service

It's part of the job

Today's Skydiving industry is a far cry from the small club style environment that it used to be. It is a fiercely competitive and professional business. To be competitive, excellent customer service practices play a big part of a business's success. Some Instructors have had prior training or background in these skills from past work experience. For those who have not, we will provide you with some exposure to 'Customer Service'.

What is excellent customer service and why provide it?

For a customer to feel that they have received excellent service, they must feel that they have had all their expectations either met or exceeded. The benefit of providing this feeling of total satisfaction, is that the customer will go away with such a positive feeling, that they will look forward to coming back themselves and enthusiastically promote your business to other potential customers.

Customer expectations and your role

Because of competition, customers have choice. Because of choice, they have grown to expect good service. Customers expect service providers to show respect for the fact that they have chosen to spend their hard earned money with your business and not someone else.

So how do you, the Instructor, demonstrate respect and provide good service to your student the customer?

Presentation

Always be dressed well. Most DZs have a uniform. Make sure it is clean. If you wear a jumpsuit, keep it presentable. Always be shaven (males) and smelling good. It is a good idea to keep underarm deodorant and breathe fresheners at work. You come in very close contact with your client. Be aware that your presentation and personality may be on your student's video for life. Make sure it is how you would like it to be seen by others.

Demeanour

Be friendly and show interest in your student. They are spending a lot of money. Make them feel special.

'Bad safety jokes', whilst may seem funny to you and your colleagues, often are not appreciated by your student. It is their first jump and more than likely are very nervous. Don't take advantage of this. They look up to you and are relying on you to install confidence in them. Don't treat them like an idiot.

Equipment

Demonstrate respect and care for your equipment in front of your student.

After the jump

Although you only see a small portion of the money the student has paid for the service, you are responsible for providing the student with all the value for that money. In doing so, you will ensure that more and more people keep coming back to your DZ.

You are in a great position to help sell our sport as a lifestyle to likely candidates. Talk to your CI about how to market skydiving on your DZ.

13.2: Hand Cam or Helmet-mounted Camera

Recording student jumps has become an integral part of the skydiving industry, particularly with Tandem, and a must-have in the Adventure Tourism industry. The training benefits are obvious, providing feedback in debriefs. For the student, footage of their jumps allows them to show their jumps to others.

Hand Cam should not be used for SLD and IAD dispatching, as it compromises the Instructor's ability to use the hand. Both the instructor's hands are too busy managing the equipment and student, to be focusing on obtaining video footage.

A helmet-mounted video camera can be beneficial during SLD and IAD dispatching for the obvious training benefits. However, as the SFF instructor does not jump with the SFF student on the freefall stages of the SFF descents, it will have limited use.

Priorities

You are an Instructor first, and a videographer second. Video should be the last priority on the skydive, and fit in around your primary duties of conducting a safe jump.

From the Jump Shack (Racer) advice on Hand Cam:

"A bad video of a good skydive is preferable to a good video of a bad skydive."

13.3 Work Health and Safety – 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.

Your obligation to be unimpaired

As with any physical activity, the fitter you are, the better you will perform. It is also an important element of maintaining work health and safety that you are fit for parachuting activities. The APF recognises that a parachutist's fitness for parachuting activities may be affected by a variety of factors including the adverse effects of sickness, fatigue, stress, alcohol or drugs. These factors can lead to impairment of a parachutist's fitness for parachuting activities and can be a contributing factor in incidents and fatalities.

"Fit for parachuting activities" means that you are in an unimpaired state (physical, mental and emotional) enabling you to perform parachuting activities competently and in a manner which does not compromise or threaten your health or safety or that of others.

Being an instructor won't make you fit, but you will perform your job with greater ease if you keep up some form of fitness program. You must also seek expert (medical) advice if you develop any form of condition that may affect your ability to safely act as an Instructor.

Maintaining your health and fitness

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

Hearing Protection: If you don't already, now would be a good time to start wearing hearing protection. Over time, aircraft noise and freefall noise will damage and reduce your hearing. Take note when you next have a conversation with the older jumpers in our sport at the hearing difficulties they have. Once you've lost it, you cannot get it back.

Mental Preparation:

- Get plenty of sleep before work jumping.
- Don't jump if you are mentally distracted by other issues.
- Always rehearse your emergency procedures at the start of the days 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:

- (a) may impair your ability to jump safely;
- (b) is caused by one or more of the following:
 - (i) lack of sleep;
 - (ii) extended wakefulness;
 - (iii) circadian phase at any relevant time;
 - (iv) workload of mental activities, or physical activities at any relevant time;
 - (v) parachuting-specific contributing factors, such as self-packing and use of non-turbine aircraft.

Fatigue has been shown to have similar negative affect on performance to alcohol.

You must ensure you are not impaired by fatigue or any of the other debilitating factors. This should include liaising with your CI and DZSO to ensure your rostering and workload don't compromise health and safety. Check your Group Member's SMS, as it may include Fatigue Risk Management procedures.

PART 14: ACTING AS TARGET ASSISTANT AND GROUND CONTROL ASSISTANT

As an Instructor, the Op Regs allow you to act as a Target Assistant and a Ground Control Assistant. Whether you are a candidate for an AFF, SSF or Tandem endorsement, the study guides for each endorsement are the only place this learning material appears. See the TOM for sample written assessments for each role.

In this Part:

- Acting as a TA/CCA
- Acting as a GCA.

14.1 Acting as Target Assistant (TA) / Canopy Control Assistant (CCA)

(a) 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.

(b) Providing Canopy Control Assistance to the Student

(i) Identify

- Know the colour of student rigs on the load
- Know the exit order where possible - 10,000 ft and/or 12,000 ft. etc...
- Know which JMs are with which students.
- Are any other students on the load?

(ii) Response

- Get arrow moving to check response time of student (usually the same when you go to batons).
- 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.

(iii) Flight Control

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

(iv) Pattern and Final Approach

- Downwind leg to side of Target not over top.
- Stick to the heights taught to the students, e.g. 1,000 ft downwind past target, 500 ft onto base leg
- 200 feet, 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.

(v) Flare and Debrief

- Flare earlier rather than later
- Tell JMs about canopy control.

Contact your Course Trainer for appropriate study materials and guidance.

14.2 Acting as Ground Control Assistant (GCA)

What you must be able to do

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.

Contact your Course Trainer for appropriate study materials and guidance.

14.3 Review Questions

See the TOM, Appendices N and O for questions on Target Assistance and Ground Control Assistance.

