



AerOhio Skydiving Center, Inc.

Student Training Program

Revised 02/03

AEROHIO SKYDIVING STUDENT TRAINING MANUAL

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CHAPTER I

INTRODUCTION TO **YOUR** STUDENT PROGRAM

AerOhio Skydiving Center would like to welcome you to the world of skydiving! Are you ready for your FIRST jump? There are two different methods by which you can do your FIRST Freefall! You can choose from Tandem or Accelerated Freefall (AFF). After your first jump you will progress through the AFF 25 jump training program. At the completion of this student progression you will be qualified to jumpmaster yourself. You will also have the quality skydiving skills allowing you to have successful, fun skydives, and to apply for your basic A-License with the United States Parachute Association.

The following is a detailed description of the student progression from Jump #1 through your A-license qualification!

Have Fun!!

CHAPTER 2

TANDEM PROGRESSION TO ACCELERATED FREEFALL

The Tandem Progression is designed for those who prefer to learn the basic elements of skydiving while securely harnessed directly to an experienced skydiving instructor! You will do a minimum of two tandems then transition to the Accelerated Freefall Program to complete your Student Progression.

Tandem Level 1: First jump Targeted Learning Objectives (TLO's).
Student experiences controlled exit and relative wind, learns proper body position for Tandem Freefall. Student is introduced to altitude awareness and will check altitude during the skydive. Student is introduced to complete canopy control and landing, including left hand pattern, and landing hazards.

Tandem L1 Sequence: You will have a Tandem Instructor (TI) controlled exit to suit the aircraft. TI will direct arm, head and leg positioning for the correct freefall body position after Drogue inflation. Student will check altimeter during freefall and maintain arched body position through canopy deployment. Student is introduced to canopy control verbally and actively with the TI's direction and assistance if required. Student is introduced to Left hand landing pattern, flare and landing procedures. Student receives First Jump Certificate. TI Review of how to do the next jump and Tandem Level 2 TLO's.

Tandem Level 2: Second jump TLO's
Student experiences controlled exit and relative wind with immediate arch out the door. Student completes three practice touches. Student waves off at 6000 feet and pulls the ripcord by 5000feet. To progress ripcord must be pulled within 500 feet of 5000. Aspects of canopy control are expanded and practiced.

Tandem L2 Sequence: Student experiences controlled exit and relative wind with immediate arch out the door. Freefall body position is practiced with fewer TI cues and corrections. After the Drogue is deployed, the Student will maintain a heading and maintain altitude awareness. Student will perform three practice touches. Upon TI signal, student will do forward motion for a count of 3000. Student will wave off at 6000 feet and pull the ripcord. Student's canopy control is expanded by performing a Controllability Check, and the terms "Holding", "Running", "Crabbing", "Flaring", will be explained and demonstrated. Canopy flight plan along with etiquette while returning to the landing area and entering the pattern will be explained. Student assists in landing flare on TI's count. Student debrief and logbook & A-license card are completed.

You are now ready to sign up for the complete AFF solo first jump course. After your transition class for Accelerated Freefall, you will be able start with Level 2 of the AFF program.

CHAPTER 3

Accelerated Freefall 25 Jump Outline

LEVEL 1 -AFF
2 AFF Instructors

DIVE FLOW

Exit
COA
3 PHT's
COA
Altitude, arch, check legs, relax
Lock on altimeter at 6000
Wave Off @ 5500
Pull by 4500

CANOPY CONTROL

Release brakes & fix routine problems
Controllability check (360 turns R & L , Practice Flare)
Find landing area
Fly to 1000 feet holding area
Follow left hand pattern
Flare to land & PLF

CRITERIA TO PROGRESS

Freefall awareness
Stable for last 10 seconds
Altitude awareness
Assisted pull w/in 1000 feet
Land with radio assist 100 meters of landing area

LEVEL 2 -AFF
1 or 2 AFF Instructors

DIVE FLOW

Exit
COA
3 PHT's
Altitude, arch, check legs, relax
90 degree left turn
Altitude, arch, check legs, relax
Extend legs for 4 seconds, relax back to neutral
Altitude, arch, check legs, relax
(Relax for rest of skydive to prepare for Level 3)
Lock on altimeter at 6000
Wave off @ 5500
Pull by 4500

CANOPY CONTROL

Release brakes & fix routine problems
Controllability check (360 R & L , Flare) (Look before turning)
Find landing area & locate 1000 ft. Area (Especially for off field landings)
Stay upwind of 1000 ft. area
Look for obstacles around the landing area
Fly to 1000 ft. holding area to enter pattern
Follow left hand pattern
Flare to land & PLF

CRITERIA TO PROGRESS

Freefall awareness
Stable throughout
Leg control
Altitude awareness
Unassisted Pull w/in 500 ft.
Land with radio assist with in 30 degrees of wind line
Complete written A-License questions

LEVEL 2 - STUDY QUESTIONS

Describe how to avoid the propeller(s) when approaching an aircraft?

Answer: Approach from the rear

Who is responsible for seat belt use in the aircraft?

Answer: Pilot and jumper

When must seat belts be fastened?

Answer: Taxi, take off and landing according to the FAA. For skydiving until 2000 feet.

From whom do you take directions in the event of an aircraft problem?

Answer: Jumpmaster/Instructor

What is the purpose of the count on exit?

Answer: To all leave at the same time

Where does the wind come from initially upon exit from the aircraft?

Answer: The direction of flight

Why do skydivers first learn to fall stable face to earth (think in terms of the equipment)?

Answer: Best position for deployment

What is your planned main deployment altitude?

Answer: By 4,500

Describe two functions of canopy control performed by operating the toggles.

Answer: Turning, Flaring

What does a canopy do immediately following a turn?

Answer: Dives to the ground

LEVEL 3 - AFF
1 or 2 AFF Instructors

DIVE FLOW

Exit with strong arch and legs out
COA
1 PHT
Instructors' release grips as situation allows
Altitude, arch, check legs, relax
(Repeat as altitude permits)
Lock on altimeter at 6000
Wave off @ 5500
Pull by 4500

CANOPY CONTROL - Discuss how to compute wing loading

Release brakes & fix routine problems
Controllability check (360 R & L, Flare) (Look before turning)
Find landing area & locate 1000 ft. area
Stay upwind of 1000 ft. area
Look for obstacles around the landing area
Fly to 1000 ft holding area to enter pattern
Follow left hand pattern
Flare to land & PLF

CRITERIA TO PROGRESS

Can plan left hand pattern for landing according to wind
Can adjust pattern for wind changes
Stable with in 5 seconds out the door
Relaxed freefall with leg control
Altitude & heading awareness
Solo Pull at correct altitude
Fly pattern and flare with minimal radio assistance
Complete written A-license questions

JOIN USPA BEFORE NEXT JUMP!!

LEVEL 3 - STUDY QUESTIONS

What is each jumper's greatest responsibility once under canopy?

Answer: Find a clear area for landing

What is the purpose of the landing flare?

Answer: Convert forward speed to lift

Describe the procedure for a hard landing to prevent injury?

Answer: PLF

Who must directly supervise your student training jumps until a USPA Instructor in your discipline clears you from in-air freefall supervision?

Answer: A USPA JM/I

What is your most important task when in freefall?

Answer: Stay altitude aware and pull on time

What are the maximum winds in which a student may jump?

Answer: 18 at AeroOhio

Which is better, to pull at the planned altitude or to fall lower to get stable before pulling?

Answer: Pull at planned altitude, regardless of stability

How would you clear a pilot chute hesitation?

Answer: Check over right shoulder to change airflow

In the event of a canopy problem, the student should decide to cut away the main canopy and take action by what altitude?

Answer: 2500

LEVEL 4 - AFF

1 AFF Instructor

DIVE FLOW

Spotting awareness
Exit with strong arch and legs out (grip optional)
COA
PHT's (Optional)
Altitude, arch, check legs, relax
Find reference point on the ground.
Start & stop 90-degree turns
Move forward to redock
(Repeat as altitude permits down to 6000 feet)
Altitude, arch, check legs, relax
Wave off @ 5000
Pull by 4500

CANOPY CONTROL DIVE FLOW - Discuss Turbulence areas to avoid

Check position and traffic
Find landing area & locate 1000 ft. area
Stay upwind of 1000 ft. area
Look for obstacles around the landing area
Identify suspect areas of turbulence (**Turbulence occurs downwind of an obstacle at 10 to 20 times its height, depending on the strength of the wind**)
Fly to 1000 ft. holding area to enter pattern
Follow left hand pattern
Flare to land

CRITERIA TO PROGRESS

Operate AAD
Observe jumprun (as able)
Exit, stable within 5 seconds
Start & stop 90-degree turns
Pull at correct altitude
Complete canopy work listed above
Land with in 50 meters with minimal radio assistance
Begin learning to pack
Complete A-License written questions and get A-license card signed

LEVEL 4 - STUDY QUESTIONS

How would you address the following routine opening problems?

Twisted lines Answer: Spread risers and untwist by 2500

Slider stops half way down Answer: Release brakes and pump them

End cells closed Answer: Release brakes and pump them

Broken lines or other damage Answer: Do a controllability check and be sure the parachute turns and stops

What is appropriate action if below 1,000 feet without a landable parachute?

Answer: Deploy the reserve immediately

If the pilot chute goes over the front of the canopy after it has opened, how can you tell if it's a malfunction?

Answer: Do a controllability check

If part of the deployed parachute is caught on the jumper or the equipment (horseshoe), what is the correct response?

Answer: Try to clear it once and if you can't then cutaway and pull the reserve.

If the pilot chute extracts the deployment bag from the parachute container (backpack) but the deployment bag fails to release the parachute canopy for inflation, what is the correct response?

Answer: Cutaway and pull reserve

What are the compass headings of the runway nearest the DZ at your airport?

Answer: North and South

What compass directions do the runway heading numbers represent (northeast-southwest North-south, etc.)?

Answer: 360 and 180

How long is the longest runway at your airport?

Answer: 3200 feet

Describe the three legs of the canopy landing pattern with relation to the wind?

Answer: Downwind, crosswind, final approach

In moderately strong winds, how far downwind of an obstacle would you expect to find turbulence?

Answer: 10-20 times the height of the obstacle

LEVEL 5 - AFF

1 AFF Instructor

DIVE FLOW

Observe spotting
Exit with stable, relaxed arch
COA
PHT's (Optional)
Altitude, arch, check legs, relax
Find reference point on the ground
Start & stop a 360-degree turn to the left
Altitude, arch, check legs, relax
Move forward to redock
Altitude, arch, check legs, relax
Start & stop a 360-degree turn to the right
Altitude, arch, check legs, relax
Wave off at 4500 & Pull by 4000

CANOPY CONTROL DIVE FLOW - Rear riser turns & practice flare

NOTE: Your hands should go to the rear risers on opening every jump and each jump you should immediately check airspace and do a 90 degree rear riser turn to practice collision avoidance. Please note that when your brakes are released, you can flare your parachute to land with the rear risers in a situation where your toggle or toggles are rendered useless.

Check position and traffic
Find landing area & locate 1000 ft. area
Leave brakes set (unless needed to fix problems)
Use rear risers: Look right and turn 90 degrees right
 Look left and turn 90 degrees left
Release brakes
Use rear risers: Look right and turn 90 degrees right ; Look left and turn 90 degrees left.
 Do a practice flare using the rear risers
Stay upwind of 1000 ft. area
Look for obstacles around the landing area
Identify suspect areas of turbulence
Fly to 1000 ft. holding area to enter pattern
Follow left hand pattern & flare to land

CRITERIA TO PROGRESS

Operate AAD
Observe jumprun (as able)
Exit stable within 5 seconds
Start & stop 360 degree turns
Complete canopy work listed above
Left hand pattern & land within 50 meters with minimal radio assistance
Practice packing & Complete written A-license questions
Complete hanging harness exercise and get A-license card signed

LEVEL 5 - STUDY QUESTIONS

At what altitude over the ground do aircraft enter the traffic pattern at your airport?

Answer: 1000 feet

Why is it dangerous to land off the end of a runway?

Answer: Departing and approaching aircraft

In flat and stable freefall at terminal velocity, how long does it take an average jumper to fall 1,000 feet?

Answer: 6 seconds

What is the correct procedure for recovering to the belly-to-earth position?

Answer: Arch, check altitude

What is the purpose of the wave-off before deployment?

Answer: To let other jumpers know that you are ready to throw out

What is the purpose of the parachute landing fall (PLF), and why is it important for skydivers?

Answer: Protect against hard landings

What part of the landing pattern is most dangerous to skydivers?

Answer: The intersection of the cross wind to final approach

How do higher wind speeds affect the planned landing pattern entry point?

Answer: Makes it farther upwind

How do higher wind speeds affect the planned final approach leg of the landing pattern?

Answer: Makes it shorter

What should happen to the planned base leg of the landing pattern as the winds increase in strength?

Answer: Gets shorter too

LEVEL 6 - AFF

1 AFF Instructor

DIVE FLOW JUMP #6

Assist with spot (as able)

Door (floater) exit - Solo

Altitude, arch, check legs, relax

Back flip - recover in 5 seconds

Altitude, arch, check legs, relax

Back flip - recover in 5 seconds

Altitude, arch, check legs, relax

Tracking (in a straight line) for a count of 4000 & back to neutral

Wave off @ 4500

Pull by 4000

CANOPY CONTROL DIVE FLOW - Finding the sweet spot for landing

Check position and traffic

Flare to # 2 position at slow speed & hold - watch canopy for nose to lift (sweet spot)

Recover to full flight for 10 seconds

Flare to #2 position at quicker speed & hold - watch for sweet spot

Recover to full flight for 10 seconds

Flare to #3 position at slow speed - watch for sweet spot - recover

Flare to #3 position at quicker speed - watch for sweet spot - recover

Evaluate the most effective flare according to the strongest sustainable lift (sweet spot)

Evaluate flare practice according to landing results.

Stay upwind of 1000 ft. area

Look for obstacles around the landing area

Identify suspect areas of turbulence

Fly to 1000 ft holding area to enter pattern

Follow left hand pattern

Flare to land

CRITERIA TO PROGRESS

Estimate exit and opening points

Stable recovery within 5 seconds

Perform backloops & tracking

Understand open parachute orientation, RSL orientation & complete gear checks.

Left hand pattern and landing with radio supervision only

Practice packing

Complete written A-license questions and get A-license card signed

LEVEL 6 - STUDY QUESTIONS

What is the best procedure to use when flying your canopy in turbulent conditions?

Answer: Keep flying into the wind and fly in full flight

What weather conditions and wind direction(s) are most likely to cause turbulence at your drop zone?

Answer: Winds out of the west or east down thru buildings and trees

Why is it important to protect your parachute system's operation handles when in and around the aircraft?

Answer: To protect from premature deployment

Describe the equipment pre-flight strategy to use before putting on your gear?

Answer: Top to bottom or back to front. The key is to have a system and do it the same each time.

How does the three-ring main canopy release system disconnect the main parachute from the harness?

Answer: Pull the cables to release the cloth loop

How do you know if a reserve parachute has been packed by a FAA rigger within the past 120 days?

Answer: Information found on the reserve packing data card

How do you know the reserve container has not been opened since the FAA rigger last closed it?

Answer: Rigger's packing seal on the reserve ripcord

If the surface winds are blowing from west to east, which direction will you face to fly the downwind leg of the landing pattern? Answer: East

What is the wing loading of the parachute you will use on your next jump?

Answer: Divide the exit weight by the square footage

LEVEL 7 - AFF

1 AFF Instructor

DIVE FLOW

Assist with spot (as able)

Diving exit

Altitude, arch, check legs, relax

Barrel roll - recover in 5 seconds

Altitude, arch, check legs, relax

Front flip - recover in 5 seconds

Altitude, arch, check legs, relax

360 degree right turn, 360 left turn

Altitude, arch, check legs, relax

Tracking for a count of 4000 with heading awareness

Wave off @ 4500

Pull by 4000

CANOPY CONTROL DIVE FLOW - Finding the sweet spot for landing

Check position and traffic & check position between maneuvers too.

Flare to # 2 position at slow speed & hold - watch canopy for nose to lift (sweet spot)

Recover to full flight for 10 seconds

Flare to #2 position at quicker speed & hold - watch for sweet spot

Recover to full flight for 10 seconds

Flare to #3 position at slow speed - watch for sweet spot - recover

Flare to #3 position at quicker speed - watch for sweet spot - recover

Evaluate the most effective flare according to the strongest sustainable lift (sweet spot)

Evaluate flare practice according to landing results.

Stay upwind of 1000 ft. area

Look for obstacles around the landing area

Identify suspect areas of turbulence

Fly to 1000 ft. holding area to enter pattern

Follow left hand pattern

Flare to land

CRITERIA TO PROGRESS

Estimate exit and opening points

Stable recovery within 5 seconds

Perform a barrel roll & front loop

Tracking with heading awareness

Understands open parachute orientation, RSL orientation & complete gear checks

Solo left hand pattern and landing

Practice packing

Complete written A-license questions and get A-license card signed

LEVEL 7 - STUDY QUESTIONS

When is it OK to attempt a stand-up landing?

Answer: When the jumper has control of all the variables and has executed a good flare at the appropriate altitude

For planned deployment initiation at 3,000 feet, approximately how long should an average-sized jumper fall after exiting at 5,000?

Answer: 15 seconds

What is the most appropriate response to a loss of heading control in freefall?

Answer: Check your altitude, arch, check legs, relax -- try to counter the turn using the opposite arm.

What is the best way to avoid a canopy collision when turning?

Answer: Look first in the direction of the turn

What is the quickest and safest way to change your heading immediately after opening?

Answer: Back riser turn with the brakes still set

How would you steer a parachute that has a broken brake line?

Answer: Release both brakes and use the back risers to steer

How would you prepare to land a canopy using the back risers to flare?

Answer: Prior practice with rear riser flares at altitude with that canopy during a routine jump

Describe your procedure for landing on a building?

Answer: Disconnect the RSL(if time) , PLF, cut away upon landing, wait for help

What is the purpose of the automatic activation device?

Answer: To back up the jumper's emergency procedures

Describe the "check of threes."

Answer: Check three-ring release system for correct assembly and RSL; three points of harness attachment for snap assembly or correct routing and adjustment; three operation handles-main activation, cutaway, reserve

LEVEL 8 - AFF
AFF I or USPA Coach

DIVE FLOW - Tracking

Spotting (as able)
Optional Exit (student's choice)
Turn 90 degrees from line of flight
Track for 10 seconds (with heading control)
Check altitude, turn 180 degrees & track again
Repeat until 5000
Wave off @ 4000
Pull by 3500

CANOPY CONTROL DIVE FLOW

Discovery of stall point: **To be done only if above 2500 feet**

Produced by lowering the trailing edge (tail) below the leading edge (nose).

A stall collapses the canopy and may be unrecoverable. To find the stall point, pull both toggles down slowly and evenly. Watch the tail of your parachute and as it drops below the nose of your parachute the canopy will stop and start to fall back. Take note of how far down you had to pull your toggles to create the stall. To recover, **smoothly and slowly** raise your toggles back to full flight. This will prevent your parachute from diving forward or having one side partially collapsed.

Stay upwind of 1000 ft. area
Look for obstacles around the landing area
Identify suspect areas of turbulence
Fly to 1000 ft. holding area to enter pattern
Follow left hand pattern
Flare to land

CRITERIA TO PROGRESS

Estimate exit point
Stable recovery within 5 seconds
Practice tracking
Solo left hand pattern and landing
Practice packing
Complete written A-license questions and get A-license card signed

NOTE * When you fill out your own logbook be sure to have your Coach or Instructor sign it after each jump. Once you have your A-license, you need to have someone you jumped with or someone that was on the airplane sign your jumps for you.

LEVEL 8 - STUDY QUESTIONS

What must the spotter do to determine what is directly underneath the aircraft while on jump run?

Answer: Place head completely outside the aircraft and look straight down

How far must jumpers be from any cloud

below 10,000 feet MSL Answer: 2000 feet

10,000 feet MSL and above Answer: one mile

What are the minimum visibility requirements?

below 10,000 feet MSL Answer: three miles

10,000 feet MSL and above Answer: five miles

What is responsible for a jumper observing cloud clearance requirements?

Answer: FAR 105.29 - Both the jumpers and the pilot

What additional piece of equipment does the FAA require for jumps after sunset

Answer: FAR 105.33 - a light visible for at least 3 miles

Describe the techniques for determining the point straight below the aircraft during jump run?

Answer: Determine two lines from the horizon, one ahead and one abreast, and find the intersection of those two lines.

What must the jumper look for below before exiting the aircraft?

Answer: Other aircraft

What happens to a jumper's fall rate when performing acrobatics (rotational aerial maneuvers) or freeflying maneuvers? Answer: Increases

What happens to a visual altimeter when it's in the jumper's burble?

Answer: Reads erratically; unreliable

LEVEL 9 - AFF
AFF I or USPA Coach

DIVE FLOW - Forward to redock

Coach observes spot

Rear float exit position

Coach gives count after student okay

Student faces direction of flight until stable

Student and coach dock

Coach backs up 5 ft. and adjusts levels as needed

Student moves forward and takes grips

Altitude checks every 5 seconds or after each maneuver

Coach backs up 10 ft. - student moves forward to dock

Repeat until break off

Student initiates break off at 5500 and turns to track (**use the count of 8 rule**)

Coach remains in place & evaluates track

Student waves off and pulls by 3500

Coach observes landing pattern and distance from target on landing.

CANOPY CONTROL DIVE FLOW

Break turns: Performed correctly, braked turns provide the quickest heading change for the least altitude lost. It flattens your glide during the turn and allows you to lose less altitude during a turn. When on final approach or **too** low to do a full glide toggle turn to avoid an obstacle, braked turns may be the best choice to avoid the obstacle. If you are already in a turn that has been initiated too close to the ground, then you must neutralize the turn by pulling down the opposite toggle and land going in a straight line. Braked turns could also be used during an entire left hand pattern if the pattern is started at a lower than normal altitude.

Pull the toggles to the #1 position, then turn by pulling one toggle to the #2 position. This turn will be flatter, losing less altitude than a full glide toggle turn. Try to change heading as quickly as possible without stalling or banking the canopy. Repeat this exercise if altitude permits.

Stay upwind of 1000 ft. area

Look for obstacles around the landing area

Identify suspect areas of turbulence

Fly to 1000 ft. holding area to enter pattern

Follow left hand pattern

Flare to land

CRITERIA TO PROGRESS

2 redocks from at least 5ft. without assistance.

Break off without coach prompt at 5500 feet

Track 50ft. within 10 degrees

Land within 20 meters of target and document in logbook

Pack without assistance

Complete Written A-license questions and get A-license card signed

LEVEL 9 - STUDY QUESTIONS

What is the best way to recover from a stall to full glide?

Answer: Smoothly raise the toggles to control acceleration

Define an aerodynamic stall as it applies to a ram-air canopy?

Answer: Stable state of decreased glide and increased rate of descent

What is the difference between a stalled and a collapsed canopy?

Answer: A stall is a controlled state under a ram-air wing; a collapse results from reverse flight, which may also result in a spin

What is the best way to determine a canopy's optimum flare speed and depth for landing?

Answer: Practice different rates of flare entry at different depths of flare - practicing to find the sweet spot.

Describe your procedure for landing in high winds?

Answer: Stay well downwind of any obstacle, face into the wind early, disconnect the RSL, pull one toggle down completely after landing, cut away if necessary

How many A lines does a nine-cell canopy have?

Answer: Ten

How do you identify the center of the tail (trailing edge)?

Answer: Warning label or tape marker

To what part of the canopy does the steering lines (brake lines) connect?

Answer: Tail or trailing edge

What line groups go through the rear slider grommets?

Answer: C, D, and brake lines

Where does the main pilot chute bridle attach to the canopy?

Answer: Top center cell

LEVEL 10 - AFF
AFF I or USPA Coach

DIVE FLOW - Forward to redock

Coach observes spot

Rear float exit position

Coach gives count after student okay

Student faces direction of flight until stable

Student and coach dock

Coach backs up 10 ft. and adjusts levels as needed

Student moves forward and takes grips

Altitude checks every 5 seconds or after each maneuver

Coach backs up 15 ft. - student moves forward to dock

Repeat until break off

Student initiates break off at 5500 and turns to track (**use the count of 8 rule**)

Coach remains in place & evaluates track

Student waves off and pulls by 3500

Coach observes landing pattern and distance from target on landing.

CANOPY CONTROL DIVE FLOW.

Break turns: Performed correctly, braked turns provide the quickest heading change for the least altitude lost. It flattens your glide during the turn and allows you to lose less altitude during a turn. When on final approach or **too** low to do a full glide toggle turn to avoid an obstacle, braked turns may be the best choice to avoid the obstacle. If you are already in a turn that has been initiated too close to the ground, then you must neutralize the turn by pulling down the opposite toggle and land going in a straight line. Braked turns could also be used during an entire left hand pattern if the pattern is started at a lower than normal altitude.

Find the stall point of your parachute.

Pull the toggles to the #2 position (or just above the stall point), then turn by letting up one toggle just enough to allow the initiation of the turn. This will be the flattest turn, losing the least amount altitude during the turn. Try to change headings as quickly as possible without stalling or banking the canopy.

Stay upwind of 1000 ft. area

Look for obstacles around the landing area

Identify suspect areas of turbulence

Fly to 1000 ft. holding area to enter pattern

Follow left hand pattern

Flare to land

CRITERIA TO PROGRESS

2 redocks from at least 10ft. without assistance.

Break off without coach prompt at 5500 feet

Track 50ft. within 10 degrees

Land within 20 meters of target and document in logbook

Pack without assistance

Complete written A-license questions and get A-license card signed

LEVEL 10 - STUDY QUESTIONS

Who may pack a main parachute?

Answer: FAA rigger, person jumping the parachute, person under rigger's supervision

Who is in command of the aircraft?

Answer: Pilot

Who's responsible for parachutes carried aboard a aircraft for emergency use be packed by a FAA-certificated parachute rigger?

Answer: Pilot

Under what circumstance must a pilot refuse to allow a person aboard an aircraft?

Answer: Appears to be intoxicated by alcohol or under the influence of drugs

Name two purposes for wearing seat belts in an aircraft?

Answer: To maintain the correct balance; protection in a crash

Who is responsible that the aircraft is in condition for safe flight?

Answer: Pilot

Above what altitude MSL is the pilot of an unpressurized aircraft required to breathe supplemental oxygen?

Answer: 15,000 feet

In an aircraft with the exit door near the back what must jumpers do to maintain the balance during exit procedures?

Answer: Remain forward until it is time for their group to exit

LEVEL 11 - AFF
AFF I or USPA Coach

DIVE FLOW - Fall rate

Coach observes spot

Front floater exit

Student initiates count after coach okay

Student faces direction of flight until stable

Student turns to face coach - and they dock

Coach backs up 10 ft. and increases fall rate

After the coach's signal- student increases fall rate to go down to coach, maintaining 10 ft. distance.

Altitude check every 5 seconds or after each maneuver.

Coach slows fall rate

After the coach signals - student slows fall rate to come up to coach, maintaining 10 ft. distance.

Repeat until student initiates break off at 5500 (**use the count of 8 rule**)

Coach remains in place and evaluates track

Student waves off and pulls by 3500 ft.

Coach observes landing pattern and distance from target on landing.

CANOPY CONTROL DIVE FLOW

Discovery of flattest or best glide: choose a stationary point in the distance, adjust your brake position to position one and see if the stationary point moves down. If it does, then your glide has flattened and you will be able to cover more distance. Adjust the brakes more and re-check the stationary point position, if it went down again your glide is even flatter. Keep adjusting to deeper brakes until your canopy is sinking. You will recognize that it is sinking when your stationary spot moves up, meaning you now have **gone beyond** best glide. So now you are **sinking** faster than you are going forward. Best glide is used for getting back from a long spot. Best glide will change depending on whether you are upwind or down wind of the target. **Sinking** your parachute can be used if you need to shorten the distance covered before landing. If you are sinking your parachute it is best if you return to full glide before it is time to flare. Watch Fly-like-a-Pro video for further explanation.

Stay upwind of 1000 ft. area

Look for obstacles around the landing area

Identify suspect areas of turbulence

Fly to 1000 ft. holding area to enter pattern

Follow left hand pattern

Flare to land

CRITERIA TO PROGRESS

Show adjustments for fall rate, both up and down

Break off without coach prompt at 5500 feet

Track 50ft. within 10 degrees

Land within 20 meters of target and document in logbook

Pack without assistance

Complete written A-license questions and get A-license card signed

LEVEL 11 - STUDY QUESTIONS

If the winds from 3,000 feet and below are blowing from the west, in which direction from the landing areas is the ideal opening point?

Answer: West

What is the biggest danger to a jumper when flying the canopy pattern?

Answer: Other canopies

What is the best way to avoid a canopy collision?

Answer: See and remain clear of other jumpers

How does the RSL work?

Answer: Forms a separable link between the main riser and reserve ripcord that cuts away the main and activates the reserve, if the RSL is hooked up

What would happen if the main riser attached to the RSL breaks?

Answer: The reserve deploys with the main still attached to the other riser

What is the best way to prevent risers from breaking?

Answer: Inspection and maintenance; correct packing, tight line stowage, and stable deployment, all to prevent hard openings.

Name one way to prevent a dual deployment?

Answer: Open at the correct altitude

What is generally the best action to take in the following two-canopy-out scenarios?

Biplane Answer: Release brakes on dominant canopy only and steer that canopy gently, PLF

Side by Side Answer: Release brakes on dominant canopy only and steer that canopy gently, or cut away, PLF

Downplane Answer: Release RSL (if time) and cut away

Entanglement Answer: Never give up in fight as much as possible

At your drop zone, what is the lowest altitude the pilot would ask jumpers to leave the plane during a routine engine out emergency? Answer: DZ policy is 2000 feet.

LEVEL 12 - AFF
AFF I or USPA Coach

DIVE FLOW - Fall rate with redock

Coach observes spot
Front floater exit
Student initiates count after coach okay
Student faces direction of flight until stable
Student turns to face coach - and they dock
Coach backs up 10 ft. and increases fall rate
After the coach's signal- student increases fall rate to coach's level and comes in to dock
Altitude check every 5 seconds or after each maneuver.
Coach slows fall rate and backs up 10 ft.
The student slows fall rate to come up to the coach's level and comes in to dock
Repeat until student initiates break off at 5500 (**use the count of 8 rule**)
Coach remains in place and evaluates track
Student waves off and pulls by 3500 feet
Coach observes landing pattern and distance from target on landing.

CANOPY CONTROL DIVE FLOW

Discovery of flattest or best glide: choose a stationary point in the distance, adjust your brake position to position one and see if the stationary point moves down. If it does, then your glide has flattened and you will be able to cover more distance. Adjust the brakes more and re-check the stationary point position, if it went down again your glide is even flatter. Keep adjusting to deeper brakes until your canopy is sinking. You will recognize that it is sinking when your stationary spot moves up, meaning you now have **gone beyond** best glide. So now you are **sinking** faster than you are going forward. Best glide is used for getting back from a long spot. Best glide will change depending on whether you are upwind or down wind of the target. **Sinking** your parachute can be used if you need to shorten the distance covered before landing. If you are sinking your parachute it is best if you return to full glide before it is time to flare.

Stay upwind of 1000 ft. area
Look for obstacles around the landing area
Identify suspect areas of turbulence
Fly to 1000 ft. holding area to enter pattern
Follow left hand pattern
Flare to land

CRITERIA TO PROGRESS.

2 redocks with adjustments for fall rate.
Break off without coach prompt at 5500 ft.
Track 50 ft. within 10 degrees
Land within 20 meters of target and document in logbook
Pack without assistance
Complete written A-license questions and get A-license card signed

LEVEL 12 - STUDY QUESTIONS

In an aircraft emergency what is the lowest exit altitude that you would deploy your main parachute at before choosing the reserve instead?

Answer: School policy 2500 ft.

What should an A-licensed jumper do to regain currency after a ten-week period of inactivity?

Answer: Make at least one jump under the direct supervision of a USPA Static-Line, IAD, or AFF Instructor

What should an A-licensed jumper do to regain currency after a four-month period of inactivity?

If trained in the AFF method

Answer: Make a jump in Category D

If trained in the static-line or IAD method

Answer: Make a jump in Category B

What is the best way to change the direction of canopy flight while conserving the most altitude?

Answer: Braked turns

What happens if a canopy is controlled too deeply in the brakes?

Answer: Stalls

Describe the difference between flaring from half brakes and full glide?

Answer: Requires quicker stroke, stroke is shorter, stalls occur sooner

How does the half-braked position affect the canopy's flight?

Answer: Slows descent, changes glide

Name two functions of the legs while tracking?

Answer: Propulsion, steering

How can you tell if the RSL is routed correctly?

Answer: Clear path from snap shackle to guide ring

What is the make and model of parachute system you are jumping?

What is the minimum pull altitude allowed for student skydivers and A license holders?

Answer: 3,000 feet

LEVEL 13 - AFF
AFF I or USPA Coach

DIVE FLOW - Center point turns - 90's (Add legs into turns)

Student performs a floater track exit - coach dives out after 2 seconds

Student and coach dock and open to a star formation

Coach holds heading

Student performs 90 degree turns in place and docks between each one

Repeat turns as altitude permits

Student initiates break off at 5000 and turns to track **(use the count of 8 rule)**

Student waves off and pulls by 3000

Coach stays in place to observe the students' track

Coach observes landing pattern and distance from target on landing.

CANOPY CONTROL DIVE FLOW

Check position and traffic --**practice only if above 2500**

Reverse canopy turns: practicing these turns allows one to find the maximum safe toggle turn rate before line twists are induced. Enter the turn only as quickly as the canopy can maintain balance during the turn. Surging, lurching, or line twist indicate a turn entered too quickly. A canopy is more subject to turbulence during entry and exit from turn. Make a smooth but deep turn at least 90 degrees to the right, then reverse toggle positions smoothly but quickly for a 180 degree turn to the left. Repeat as altitude and position permit.

Stay upwind of 1000 ft. area

Look for obstacles around the landing area

Identify suspect areas of turbulence

Fly to 1000 ft. holding area to enter pattern

Follow left hand pattern

Flare to land

CRITERIA TO PROGRESS

Complete four (4) 90-degree center point turns

Initiates break off with out prompt at 5000 ft.

Track 100ft. within 10 degrees

Land within 20 meters of target and document in logbook

Pack without assistance

Complete written A-license questions and get A-license card signed

LEVEL 13 - STUDY QUESTIONS

When making tracking jumps from a large plane, why is it important to track perpendicular to the jump run?

Answer: To avoid other groups that left ahead and behind your group.

What is the ground speed of your jump aircraft when flying against a 50-knot headwind on jump run?

Answer: Jump aircraft airspeed minus 50 knots

How can jumpers assure adequate separation between groups exiting the aircraft when the pilot flies the jump run against (into) strong winds at jump altitude?

Answer: Gauge separation based on position over the ground & be sure that the group that left before you is at least a 45 degree angle from the plane when you exit.

What are the three most important aspects of packing the main canopy?

Answer: Lines straight and in the center, slider up, tight line stows (from packing lesson)

If a jumper falls for one minute through upper winds averaging 30 mph from the west:

How far will the jumper drift? Answer: ½ mile

In which direction? Answer: east

Describe your procedure for landing in power lines?

Answer: Avoid the area early during the descent, land parallel to the wires, prepare for PLF, try to touch only one at a time, wait for help.

In the event of an aircraft emergency with no students or jumpmasters aboard, who should coordinate procedures between the pilot and the other jumpers on the load?

Answer: Loadmaster or spotter

What is the primary directional control when moving forward to dock in freefall?

Answer: Legs

What is the minimum break-off altitude for freefall in groups of five or fewer?

Answers: 1,500 feet above planned deployment altitude

What does a canopy do after completing a maximum input toggle turn?

Answer: Dives

LEVEL 14 - AFF
AFF I or USPA Coach

DIVE FLOW - Center point turns - 360's

Student performs a floater track exit - Coach dives out after 2 seconds

Student and Coach dock

Coach holds heading

Student performs 360-degree turns in place and **docks between each one**

Repeat turns as altitude permits

Student initiates break off at 5000 and turns to track (**use the count of 8 rule**)

Student waves off and pulls by 3000

Coach stays in place to observe the students' track

Coach observes landing pattern and distance from target on landing.

CANOPY CONTROL DIVE FLOW

Check position and traffic --**practice only if above 2500**

Reverse canopy turns: practicing these turns allows one to find the maximum safe toggle turn rate before line twists are induced. Enter the turn only as quickly as the canopy can maintain balance during the turn. Surging, lurching, or line twist indicate a turn entered too quickly. A canopy is more subject to turbulence during entry and exit from turn. Make a smooth but deep turn at least 90 degrees to the right, then reverse toggle positions smoothly but quickly for a 180 degree turn to the left. Repeat as altitude and position permit.

Stay upwind of 1000 ft. area

Look for obstacles around the landing area

Identify suspect areas of turbulence

Fly to 1000 ft. holding area to enter pattern

Follow left hand pattern

Flare to land

CRITERIA TO PROGRESS

Complete 4 - 6 360-degree center point turns

Initiates break off with out prompt at 5000 ft.

Track 100ft. within 10 degrees

Land within 20 meters of target and document in logbook

Pack without assistance

Complete written A-license questions and get A-license card signed

LEVEL 14 - STUDY QUESTIONS

What are the first things to do in the event of a collision and entanglement with another jumper?

Answer: Check altitude, establish communication

What is the most critical aspect of closing the main container equipped with a hand-deployed pilot chute?

Answer: Bridle routing and placement

Why is it a bad idea to drag the harness and container system when stowing the lines?

Answer: Unnecessary wear on the three-ring release webbing and loops

Why is it a good idea to place your toggles back on the Velcro after you land?

Answer: Covers the hook velcro, which can damage other components and prevents tangles

Who may maintain a parachute system?

Answer: FAA rigger or anyone under the supervision of an FAA rigger

Why is it bad to leave a parachute in the sun?

Answer: Ultraviolet rays degrade nylon

What damage could occur from storing a parachute for prolonged periods in a car during the summer?

Answer: Shorter life for AAD batteries

How often must a reserve parachute system be inspected and repacked?

Answer: 120 days

What happens to Velcro touch fastener when it is used frequently?

Answer: Loses tackiness

What happens to stiffened tuck flaps that are frequently used?

Answer: Distortion

Who publishes and enforces rules regarding parachute packing and parachute maintenance?

Answer: FAA

What is the danger of recovering altitude (floating up) under a freefall formation?

Answer: Collision with formation, funnel

Why is it important to remain clear of the area directly above and below other jumpers in freefall?

Answer: Possibility of AAD activation

LEVEL 15 - AFF
AFF I or USPA Coach

DIVE FLOW - Swooping

Student spots - coach floats & student performs diving exit (SDU style)

Student leaves 1 second after coach

Coach establishes fall rate and holds heading

Student turns to coach

Student dives (start, coast, stop in stair step method) to coach and stops on level 20 ft. from the coach.

Student approaches and takes grips

Altitude permitting: coach dives to a point 50 to 100 ft. laterally and 20 to 40 ft. below and the student will then dive again to redock.

Student breaks off at 5000 ft. **(use the count of 8 rule)**

Student waves off and pulls by 3000

Coach remains in place and evaluates track

Coach observes the students landing pattern and distance from the target on landing.

CANOPY CONTROL DIVE FLOW

Front Riser work: optional depending on Students' physical capabilities

Complete all front riser work above 2000 ft. & keep your steering toggles in hand

Check position and traffic

Pull down both front risers to dive straight ahead

Pull one front riser to complete a 90 degree turn, repeat if altitude permits

Stay upwind of 1000 ft. area

Look for obstacles around the landing area

Identify suspect areas of turbulence

Fly to 1000 ft. holding area to enter pattern

Follow left hand pattern

Flare to land

CRITERIA TO PROGRESS

1 Swoop to and dock with the coach

Break off without prompt at 5000 ft.

Track 100 ft. within 10 degrees

Replace stow bands

Replace closing loop

Assemble a 3-ring and exercise 3-rings

Get A-license card signed

LEVEL 15 - STUDY QUESTIONS

What is the correct response to a canopy entanglement with another jumper below 1,000 feet if it appears the two canopies cannot be separated in time for a safe landing?

Answer: Deploy the reserve (except with SOS)

What extra care is required when wearing an AAD near the open door of an aircraft or when climbing out?

Answer: AAD activation could cause the reserve to damage or be damaged by aircraft and injure or kill the jumper and other around him

Describe your procedure for landing in trees?

Answer: Face wind, prepare for PLF, flare to half brakes, protect face and under arms, wait for help

What does a tall cumulus cloud indicate?

Answer: Thunderstorms in the area

What is the most dangerous part of an incoming front for aircraft and skydivers?

Answer: Thunderstorm in the gust front

Why is it important to look ahead during a swoop toward other jumpers in freefall?

Answer: See others and avoid a collision

What is the fastest way to slow down from a freefall swoop approach?

Answer: Slow fall position with arms forward and knees down

What is the danger of a loose or worn main container closing loop?

Answer: Premature Deployment

Why must the three-ring release cables be cleaned periodically?

Answer: Corrosion deposits cause them to bind

If you see that you have begun to turn too low to the ground for a safe landing, what should be your first response?

Answer: Neutralize the turn, get the canopy overhead

What effect does pulling on the front risers have on the canopy?

Answer: Dramatic increase in rate of descent

When performing front riser maneuvers, what should you do with the toggles?

Answer: Keep them in your hands

What are the two biggest dangers of front riser maneuvers near the ground?

Answer: Collisions with other jumpers, collisions with the ground

LEVEL 16 - AFF
AFF I or USPA Coach

DIVE FLOW - Long swooping

Student spots - coach floats & student performs diving exit (SDU style)

Student leaves 2-3 second after coach

Coach establishes fall rate and holds heading

Student turns to coach

Student dives (start, coast, stop in stair step method) to coach and stops on level 20 ft. from the Coach.

Student approaches and takes grips

Altitude permitting: coach dives to a point 50 to 100 ft. laterally and 20 to 40 ft. below and the student will then dive again to redock.

Student breaks off at 5000 ft.

Student waves off and pulls by 3000

Coach remains in place and evaluates track

Coach observes the students landing pattern and distance from the target on landing.

CANOPY CONTROL DIVE FLOW

Front Riser work: optional depending on Students' physical capabilities

Complete all front riser work above 2000 ft. & keep your steering toggles in hand

Check position and traffic

Pull down both front risers to dive straight ahead

Pull one front riser to complete two 90 degree and two 180 degree turns

Stay upwind of 1000 ft. area

Look for obstacles around the landing area

Identify suspect areas of turbulence

Fly to 1000 ft. holding area to enter pattern

Follow left hand pattern

Flare to land

CRITERIA TO PROGRESS

Successful swoop and dock with the coach

Break off without prompt at 5000 ft.

Track 100ft. within 10 degrees

Replace stow bands

Replace closing loop

Assemble a 3-ring and exercise 3-rings

Get A-license card signed

LEVEL 16 - STUDY QUESTIONS

What are some of the possible results of a turn made too low to the ground?

Answer: Injury, death

Describe your procedure for landing in water?

Answer: Inflate flotation device, disconnect chest strap and RSL, prepare for PLF, face into wind, flare, hold breath, cut away once feet are wet, remove leg straps, swim upwind; if under canopy, dive deep and swim away or follow one seam until out from underneath

What is the maximum percentage of visible wear allowable on a main closing loop?

Answer: Ten percent

Can a jump be legally made from an aircraft without an operating radio?

Answer: No

What is the least notification the FAA requires before any jump or series of jumps may be made?

Answer: One hour

Where can a pilot look to determine if a plane is approved for flight with the door removed?

Answer: AC 105.2C Appendix 2 or owner's manual

Whose name will the FAA require when filing a notification for parachute jumping?

Answer: Person giving notice

LEVEL 17 - AFF
AFF I or USPA Coach

DIVE FLOW - Sit fly

Student exits with back to the prop in sit position
Student adjusted body position for stable sit fly
Student watches altitude & is aware of increased speed and different visuals
Student picks heading and works on holding a heading
Student goes to belly by 6000 and tracks
Waves off and pulls by 3000

CANOPY CONTROL

Collision avoidance: know where other nearby jumpers are during opening and steer with the rear risers to change heading quickly to avoid them. If collision is pending , both jumpers turn right unless it is faster to turn left. If you do collide you must communicate before you take action. Here are some things to consider:

The jumper above can strike the jumper below during a cutaway unless one or both are clear or ready to fend off. The jumper below can worsen the situation for the jumper above by cutting away before he or she is ready. If both jumpers are cutting away and altitude permits, the second jumper should wait until the first jumper clears the area below. The first jumper clear should fly from underneath in a straight line after opening. At some point below a safe cutaway altitude (1000 ft.), it may be necessary to deploy one or both reserves. And, if both jumpers are suspended under one flying canopy at a low altitude, it may become necessary to land with only that canopy.

CRITERIA TO PROGRESS

Awareness of equipment requirements
Awareness of increased speeds
Awareness of body orientation
Student initiates going to belly & tracking at 6000 ft.

Equipment Requirements: Cypres
Altimeter
At least one audible altimeter
Tight BOC pouch
Tight pack job (closing loop length short)
Butt strap on rig
Hard helmet

LEVEL 18 - AFF
AFF I or USPA Coach

DIVE FLOW - Sit fly

Student exits with back to the prop in sit position
Student adjusts body position for stable sit fly
Student watches altitude & is aware of increased speed and different visuals
Student picks heading and works on holding a heading
Student goes to belly by 6000ft. and tracks
Waves off and pulls by 3000 ft.

CANOPY CONTROL

Braked turns revisited: Whenever you downsize parachutes, you should do braked turns, slow flight, sweet spot, and finding the stall point to become familiar with the flight characteristics of your new parachute.

Performed correctly, braked turns provide the quickest heading change for the least altitude lost. It flattens your glide during the turn and allows you to lose less altitude during a turn. When on final approach or **too** low to do a full glide toggle turn to avoid an obstacle, braked turns may be the best choice to avoid the obstacle. If you are already in a turn that has been initiated too close to the ground, then you must neutralize the turn by pulling down the opposite toggle and land going in a straight line. Braked turns could also be used during an entire left hand pattern if the pattern is started at a lower than normal altitude.

Pull the toggles to the #1 position, then turn by pulling one toggle to the #2 position. This turn will be flatter, losing less altitude than a full glide toggle turn. Try to change heading as quickly as possible without stalling or banking the canopy.

Pull the toggles to the #2 position (or just above the stall point), then turn by letting up one toggle just enough to allow the initiate the turn. This will be the flattest turn, losing the least amount altitude during the turn. Try to change heading as quickly as possible without stalling or banking the canopy.

CRITERIA TO PROGRESS

Awareness of equipment requirements
Awareness of increased speeds
Awareness of body orientation
Student initiates going to belly & tracking at 6000 ft.
Pulls by 3000 ft.

Equipment Requirements: Cypres
Altimeter
At least one audible altimeter
Tight BOC pouch
Tight pack job (closing loop length short)
Butt strap on rig
Hard helmet

LEVEL 19 - AFF
AFF Coach or Instructor Supervision

DIVE FLOW

(Planned with AFF Instructor from exit to landing)

Clear & pull from 3500 ft. (minimum)

Spotting

Head-high exit, facing relative wind

Pull by 3000 ft.

CANOPY CONTROL

Discovery of flattest or best glide revisited: choose a stationary point in the distance, adjust your brake position one and see if the stationary point moves down. If it does, then your glide has flattened and you will be able to cover more distance. Adjust the brakes more and re-check the stationary point position, if it went down again your glide is even flatter. Keep adjusting to deeper brakes until your canopy is sinking. You will recognize that it is sinking when your stationary spot moves up, meaning you now have **gone beyond** best glide. So now you are **sinking** faster than you are going forward.

Best glide is used for getting back from a long spot. Best glide will change depending on whether you are upwind or down wind of the target. **Sinking** your parachute can be used if you need to shorten the distance covered before landing. If you are sinking your parachute in for landing, it is best if you return to full glide before it is time to flare. It is often difficult to judge your descent rate when sinking in a parachute for landing and a hard landing may occur. Large 7-cell parachutes are better designed for this maneuver than 9-cell parachute.

CRITERIA TO PROGRESS

Stable exit facing relative wind

Deployed by 3000 ft.

Completed all A-license written questions and take A-license test

Complete hanging harness exercises

Acquired all necessary sign-offs on A-License proficiency card

LEVEL 20 - LEVEL 23 AFF

AFF I or USPA Coach Supervision

These 4 jumps can be coaching skydives or solo skydives or a combination of both. The choice is up to you! If you choose to make them coaching jumps you can choose from Freefly or RW jumps. The following is a list of possible coaching jumps from which you can choose. You and your coach will plan a specific dive flow for each jump depending on which skill is chosen.

Sideslides
360 center point turns
Fallrate drills
Swooping drills
Low recovery drills
Tracking
Hop & Pop
Sit Flying - (basic body position, turning, forward and backward movement)

You also must choose Canopy Control exercises to complete on each of these jumps.

They can include:

Rear riser turns
Finding the sweet spot for landing
Stall recovery
Break Turns
Slow Flight
Discovery of Flattest or Best Glide
Reverse Canopy Turns
Front riser turns
Collision avoidance
High Opening - to play with canopy

If you choose to do a Solo jump it must be planned with a Coach or an Instructor.

A solo jump is a great way to better learn to relax in freefall since you are able to plan as little or as much into the dive flows as you wish. Keep in mind that every jump must have some basic plan for freefall and canopy descent. **A flight plan for landing is always mandatory prior to every jump.**

These jumps are the perfect opportunity for you to complete any freefall exercises, canopy control exercises and accuracy requirements needed to complete the A-License Proficiency card. Be sure to look at your card prior to each jump and be sure it gets signed off after the planned exercises have been completed.

LEVEL 24 - AFF
USPA A-LICENSE GRADUATION DIVE
1 AFF Instructor

DIVE FLOW

Candidate chooses spot

Candidate briefs pilot

Candidate performs an equipment check on the evaluating instructor or another jumper.

Candidate plans break off altitude

Candidate establishes communication in the aircraft

Candidate spots

Candidate chooses exit

Candidate performs a 360 right and 360 left and back flip

The evaluating USPA instructor moves 20 ft. from the candidate

Candidate docks (additional points can be planned as desired)

Candidate breaks off and tracks a minimum of 100 ft.

Candidate waves off and pulls

Candidate follows pre-selected landing pattern

Candidate prepares equipment for next jump (or this jump)

Candidate completes a 20 question written A-License exam

Candidate gets A-License card completed, signed and stamped. Copy is faxed to USPA for processing.

JUMP # 25 - FREE JUMP !

The new graduate is invited on a skydive with other licensed skydivers!

CHAPTER 4

BASIC FIRST JUMP COURSE REVIEW PARACHUTE EQUIPMENT

COMPONENTS OF A PARACHUTE SYSTEM:

- A. CONTAINER: Holds both the MAIN and RESERVE parachutes which are mounted on the back.
- B. HARNESS: A set of adjustable webbing which secures the pack and the canopies to the jumper.
- C. MAIN CANOPY: The main parachute is stowed in the lower container and is attached by a THREE RING RELEASE SYSTEM at the shoulder.
- D. RESERVE CANOPY: The reserve parachute is stowed in the upper container and is permanently attached to the harness. All of our reserves are solid white.
- E. MAIN HACKY HANDLE: the handle to deploy the main canopy is located on the lower right bottom of the main parachute container. It is called a hacky.
- F. CUTAWAY HANDLE OR PILLOW: Red pillow secured with Velcro on the inboard right of the harness. When pulled, it separates the jumper from the main canopy.
- G. RESERVE RIPCORDER HANDLE: A metal handle located inboard left on the front of the harness; when pulled it releases the reserve pilot chute.
- H. ALTIMETER: Mounted on the wrist, the altimeter displays altitude above the ground in thousands of feet.
- I. AUTOMATIC ACTIVATION DEVICE (AAD): The AAD control box is located inside the container; this device is set to activate the reserve only at a pre-set speed and altitude. The AAD's in all our student rigs are Cypreses.
- J. RESERVE STATIC LINE : Connects the main canopy risers with the reserve ripcord cable. This is a back up system only.
- K. SECONDARY MAIN HANDLE RELEASE: Located on the left bottom of the main container and can only be activated by the instructor.
- L. STEERING TOGGLES: Located on the **back** of the rear risers of both the main and reserve. MAIN toggles are yellow; RESERVE toggles are red.

NORMAL OPENING SEQUENCE OF THE MAIN PARACHUTE: The jumper throws the main pilot chute, it catches air and acts as an anchor as the jumper falls away. The main container opens. This lifts the deployment bag (containing the main canopy) out of the container. The suspension lines unstow and extend, then the bag opens. The main canopy extends and then unfolds. As the canopy inflates the slider moves down the lines; finally the canopy completely inflates, the jumper releases the brakes and the canopy assumes normal flight.

The Golden Rules of Skydiving

- Rule #1.....Land safely
- Rule #2.....Land safe, not close
- Rule #3.....Leave room for error
- Rule #4.....Stay ahead of the jump
- Rule #5.....Always have a plan
- Rule #6.....Know thy Altitude
- Rule #7.....Know when to say no
- Rule #8.....Never give up

PULL PRIORITIES OF EVERY SKYDIVE:

- #1 **PULL**
- #2 **PULL** AT THE PROPER ALTITUDE.
- #3 **PULL** IN A STABLE BODY POSITION.

EXIT PROBLEM PROCEDURES.

- A. Out of control at exit or during the skydive--**ARCH!**
- B. Loss of one instructor--**ARCH!** and follow directions from the remaining instructor.
- C. Loss of both instructors--if you are alone in freefall, "**ARCH, SWEEP, FEEL, & THROW** " **IMMEDIATELY!**

AIRCRAFT PROCEDURES AND EMERGENCIES

Aircraft Familiarization: Your instructors will train you for the type of aircraft from which you will skydive. Type of aircraft may vary from time to time.

STANDARD AIRCRAFT PROCEDURES.

- A. The AFF group always arrives early, fully prepared to board the aircraft.
- B. Everyone will wear helmets for take-off, except the cameraman.
Everyone will wear their seat belt prior to and during take-off-**NO EXCEPTIONS**
- C. The ride to jump altitude is a time of mental and physical preparation. Run the skydive sequence through mentally to assure that it is fresh, and then run through it verbally once with your instructor.
- D. Relax your body and your mind; Look outside and enjoy the plane ride.
- E. Remain seated until your instructor tells you to do otherwise.
- F. Your instructor will give your equipment a final check.
- G. Your instructors will direct the climbout.

PARACHUTE PROTECTION IN THE PLANE

- A. Always be aware of your main and reserve ripcord handles; **PROTECT THEM!**
- B. If a canopy falls out in the plane, **JUMP ON IT! CONTAIN THE CANOPY! DO NOT LET IT NEAR THE DOOR!**
- C. If one of your parachutes does get out the door, **FOLLOW IT OUT IMMEDIATELY !** Check canopy and be prepared to cutaway.
- D. If you find yourself in tow on the aircraft, determine which parachute is out, if it is the main, cut it away by pulling the red handle and use your reserve parachute.

AIRCRAFT EMERGENCY PROCEDURES

- A. On take-off up to 1000 feet - assume the off field hard landing position.
- B. 1000 to 2000 feet; follow the instructor's commands, you will stay with the aircraft - assume the off field hard landing position.
- C. BAILOUT ON RESERVE:, 2000-3000 feet; in the door, both hands on the reserve ripcord handle, exit on instructor's command and pull handle.
- D. BAILOUT ON MAIN: above 3000 feet; in the door, right hand on the main pilot chute, exit on instructor's command and open your parachute.
- E. POISED BAILOUT, 5000 to 7000 feet; normal exit with your instructors. Performance objectives will not be accomplished. **DO ONLY STABLE FREEFALL.**
- F. POISED EXIT, above 7000 feet; normal exit with your instructors. Attempt all performance objectives as altitude allows.
- G. When descending in the aircraft it is your responsibility to put on your helmet and seat belt for landing.
- H. Your responsibilities in the aircraft **AT ALL TIMES** are:
 - (1) **TO PROTECT YOUR MAIN, CUTAWAY, AND RESERVE HANDLES.**
 - (2) **TO PAY ATTENTION TO YOUR INSTRUCTOR.**

IMPORTANT: KEEP YOUR EYES ON YOUR INSTRUCTOR. DURING AN EMERGENCY SITUATION HE WILL BE BUSY COMMUNICATING WITH THE PILOT WHO IS ULTIMATELY IN COMMAND OF THE AIRCRAFT. THE PILOT WILL TELL YOUR INSTRUCTOR WHETHER AND WHEN TO EXIT THE AIRCRAFT. WHEN YOUR INSTRUCTOR TURNS TO YOU HE SHOULD NOT HAVE TO GET YOUR ATTENTION; HE SHOULD ALREADY HAVE IT.

CANOPY DEPLOYMENT CHECK LIST AND CANOPY CONTROL

BASIC AERODYNAMICS: A very basic understanding of aerodynamics is necessary to help you understand how your main and reserve parachutes open, fly and are controlled. The basic air foil or wing works on a very simple principle. As the wing moves through the air, some air passes over the top of the wing and some under the wing. Because of the shape of the wing (THE TOP BEING CURVED) the distance from the nose to the tail is longer over the top than across the bottom.

The laws of physics state that all the air that strikes the nose of a wing must meet again at the tail at precisely the same instant. Therefore, the air traveling over the top of the wing must travel faster than the air crossing the bottom. This will cause a negative pressure area to develop on the upper wing surface. This forces the wing to move up into the lower pressure area. The wing is in flight. Forces acting on the canopy while in flight are: LIFT, DRAG, GRAVITY AND RELATIVE WIND.

LANDING PRIORITIES:

1. Land with your wing level , going in a straight line
2. Land in a clear and open area, avoiding obstacles
3. Land with a flare to at least the #2 position

CANOPY DEPLOYMENT CHECKLIST:

- A. CHECK AIRSPACE.
Check the airspace around you to prevent mid -air collisions with other jumpers. Be prepared to turn using your rear risers.
- B. GRASP THE YELLOW STEERING TOGGLES AND RELEASE BRAKES.
- C. CANOPY CONTROLABILITY CHECK
Check your canopy to determine if it is in good working order.
(Your parachute flies straight, you can do a 360 Right, 360 Left, & Practice Flare)
- D. LOCATE THE LANDING AREA to determine direction and path of descent.
This is sometimes a problem on your first jump. Always start by looking straight down directly under you. Your search pattern starts from there and goes out. Do not start by looking out to the horizon and moving in; this will take forever. Other references should be identified before exiting the aircraft. You can also follow your instructors.
- E. Remember, you are the pilot, not just a passenger. **TAKE CHARGE!**

CANOPY CONTROL - Flight Plan and Landing Pattern

- A. The "**WIND LINE**": is an imaginary line which runs from the exit or opening point through the center of the target.
- B. The **EXIT POINT** is the point at which a jumper leaves the aircraft in order to reach the target, based on how the wind is expected to push the jumper in freefall.
- C. The **PLAY PEN** is an area on the wind line pre-selected by you and your instructors. It is an ideal spot in which to learn the flight characteristics of the canopy and from which to begin the downwind, base and final legs of your flight pattern for a landing in the target area. This is also called the "**1000 foot**" area. If you are not able to reach this area by 1000 feet, you are to choose your alternate landing area immediately. It is important to have a plan for landing by 1000 feet, especially if you are not going to land at the Drop Zone.

- D. GROUND TRACK is your true direction and speed of travel across the ground.
- E. When you are flying directly into the wind you are HOLDING. You have the slowest ground speed and your ground track is the same as the wind line.
- F. Flying directly downwind, with the wind pushing you, is RUNNING. It gives you the fastest ground speed and the ground track is the same as your heading.
- G. When the canopy's heading is not aligned with the wind you are CRABBING, a sideward movement, or drift, is introduced into the ground track. Drift is most obvious when the canopy is headed 90 degrees to the wind, or directly CROSSWIND.

LANDING APPROACHES. The recommended ram-air landing approach is similar to standard aircraft practice. It is a simple procedure consisting of a downwind leg, a base leg and a final approach upwind, to the target. It is usually difficult visually to gauge variations in altitude accurately, so use your altimeter while under canopy.

- A. DOWNWIND LEG: Fly along the wind line RUNNING, passing the target area at an altitude of approximately 800 feet while flying approximately 400 feet to the right side of the target. Continue downwind and go past the target by 300-400 feet. When your altitude is 600 feet above the ground you need to turn on to your BASE LEG. (Crosswind)
- B. BASE LEG: At this point, approximately 300-400 feet downwind of the target, begin a gentle 90 degree left turn to fly the base leg. You are now going CROSSWIND. Under low wind conditions, fly the base leg to a point approximately 400 feet directly downwind of the target and at an altitude of about 300 feet before turning onto your final approach.
- C. THE SET- UP POINT is the optimum position to begin the final approach for landing. Since you always fly final approach into the wind, the set-up point is directly downwind of the target. One goal you need to have is to learn to recognize when you are high, low, or on the correct *glideslope* for the target in various wind conditions. Your set up point is 300 feet high along the correct glideslope, regardless of your distance from the target. In light winds, the correct glideslope is low or flat because you will cover more distance on final in light winds. In higher winds, it is high and steep because you will not penetrate into the wind and cover as much forward distance in higher winds.
- D. FINAL APPROACH: On final approach, you can make up to 45 degree turns to avoid obstacles. If you must turn more than 45 degrees to avoid an obstacle on final approach a braked turn should be used to conserve altitude during the turn. Always try to set up your final approach so that you have the longest possible "runway" to provide for misjudgement of your touchdown point.
- E. FLARE: Flaring means pulling down both toggles smoothly and evenly from the full up position. You want to flare the parachute to its lowest rate of descent and forward speed just as you touch down. Start from full flight, with your arms all the way up for the last 10 seconds of your descent so you can take advantage of all the canopy's forward speed. Flaring converts forward speed to lift. Once you pull your toggles down you need to hold them both down evenly at your thighs.

WARNING!

DO NOT MAKE TURNS ON FINAL APPROACH GREATER THAN 45 DEGREES. DO NOT ATTEMPT A 180 DEGREE TURN JUST TO LAND IN A SPECIFIC AREA OR DIRECTION. THE RAM-AIR CANOPY LOSES ALTITUDE RAPIDLY IN SHARP TURNS AND YOU CAN BE SERIOUSLY INJURED OR KILLED IF YOU LAND WHILE YOU ARE TURNING YOUR CANOPY.

MALFUNCTIONS AND PROCEDURES

1. By definition a malfunction is any failure of your canopy or related equipment which normally provides you with a normal rate of descent to the ground. The questions to ask are: is my main canopy big and square, flying straight, and controllable in turns and a practice flare? If the answer is yes to these questions you can probably land it safely.
2. It is imperative that you know what a good main canopy looks like. **You are the the only person who can decide if it is safe to land.**
3. Important altitudes to know:
Throw your main pilot chute by **4500 feet**
Decide if your main is safe to land by **2500 feet**
Do not cutaway below **1000 feet**, but you can add your reserve
3. There are two major types of malfunction:
A. High speed malfunctions. B. Low speed malfunctions.
4. High speed malfunctions are:
A. Pack closure - Total malfunction - (Pull reserve immediately)
B. Pilot chute hang up - Can't find it or can't get it out (1 try to release it then pull reserve)
C. Pilot chute in tow - (Pull reserve immediately)
D. Bag lock
E. Streamer
F. Horseshoe - (try to throw the pilot chute, and be prepared to cutaway. If you can't throw the pilot chute then cutaway & pull reserve.)
5. Low speed malfunctions are:
A. Line over
B. Slider up malfunction
C. Spinning malfunctions - including slider stuck up on one side
6. Procedures for dealing with malfunctions - FOR TWO HANDLE SYSTEMS:
A. Check canopy - **MAKE CUTAWAY DECISION BY 2500 FEET**.
B. ARCH HARD! (Put your feet on your butt)
C. Look at and grasp red cutaway pillow with both hands, Transfer eyes to reserve handle AND KEEP THEM THERE, then pull the cutaway down and out, throw it away.
D. Place both hands on silver reserve handle, pull down to full extension, and throw it.
E. Maintain Arch, Check over right shoulder for canopy deployment.
F. Check, fly, and land the reserve parachute just like the main.
G. Fly to a safe landing in a clear and open area.
8. Malfunction procedures will be practiced until you can perform them smoothly.
You will also review these procedures before every jump.
9. Unusual parachute openings which may **not** require a cutaway and reserve activation:
A. Pilot chute hesitation.
B. Small hole in cell
C. Closed end cells
D. Line twists
E. Slider up more than half way
F. Tangled pilot chute
G. Broken steering line and/or suspension line.
H. Premature brake release.

10. Two Parachutes out - Both Main and Reserve open:

- Check how the parachutes are flying (side-by-side, Bi-plane, Entangled)
- If they are side-by-side, in a Bi-plane (one in front of the other) , or Entangled **You will land both parachutes.**
- If side-by-side, steer gently with the the **risers** that the YELLOW toggles are connected to. If in a bi-plane steer the parachute in front with the risers.
- Gently steer for an open area, Prepare for a PLF, and land with NO FLARE.
- If your parachutes separate into a **Down Plane**, (they are at your sides or behind you) you are no longer suspended by them and are going into freefall with your parachutes, **THEN YOU MUST PULL THE RED HANDLE AND CUT AWAY THE MAIN PARACHUTE.** This is the only exception to the Do Not Cutaway Below 1000 rule.

HAZARDOUS LANDINGS
(OBSTACLE AVOIDANCE)

Planning your flight pattern as soon as your parachute opens and your landing pattern and landing area by 1000 feet is the best prevention to having a hazardous landing. The severity of hazardous landings can be reduced if you follow the basic steps outlined for each of the major types of hazards. Most of the time hazards or obstacles can be avoided by following the primary rule in dealing with obstacles:

“STEER AWAY”
AVOID AVOID AVOID

1. Tree landings.

- A. Face into the wind.
- B. Feet and knees together.
- C. Protect your face and throat.
- D. PLF.
- E. Recover.
- F. If you find yourself suspended in the tree, do not move, wait for help.

2. Water landings.

- A. Loosen chest strap.
- B. Face into the wind.
- C. Feet and knees together.
- D. PLF.
- E. Once in the water unfasten leg and chest straps and swim clear of your equipment.
- F. Do not attempt to save equipment!

3. Wire landings.

- A. Feet and knees together.
- B. Arms go between risers and prepare to flare.
- C. Turn head to one side.
- D. Prepare to do PLF.
- E. If you come to rest on the ground, cutaway your main canopy and slowly walk away. Do not attempt to recover any equipment. If under your reserve undo chest strap, and leg straps and get out of your gear.
- G. If you come to rest suspended, do not attempt to reach the ground. Wait for qualified assistance (your instructors, EMS, or power company).
IMPORTANT: DO NOT ALLOW ANYONE TO TOUCH YOU!

4. Other obstacles.
 - A. Buildings.
 - B. Vehicles
 - C. People
 - D. Dustdevils
5. Off field landings.- Face into the wind and land your canopy in at least the #2 position in a clear and open area; Do a good PLF. **CHOOSE YOUR LANDING AREA BY 1000 AND STICK WITH IT.**

IMPORTANT: YOU CAN LAND CROSSWIND OR DOWNWIND TO AVOID OBSTACLES, AS LONG AS YOU LAND WITH YOUR WING LEVEL, GOING IN A STRAIGHT LINE THE LOWER YOUR ALTITUDE THE SMALLER YOUR TURNS NEED TO BE. USE BRAKE TURNS WHEN CLOSE TO THE GROUND TO CONSERVE ALTITUDE

PARACHUTE LANDING FALLS (PLF'S)

1. We have taken you through a controlled freefall, a controlled flight, now we'll make a safe landing. Remember, until you have landed, have carried your gear back to the packing area and have been debriefed, the jump is not complete.
2. Four keys to a safe landing:
 - A. **Ideally** Face into the wind - but it is not a necessity
 - B. Always land with your wing level -- NOT WHILE TURNING
 - C. Assume the "prepare to land" position.
 - D. Do a good PLF.
 - E. Recover.
3. On final approach face ideally into the wind and do minor corrections to stay on the wind line or to avoid obstacles.
4. Prepare to land position:
 - A. Feet and knees together slightly bent. Relax.
 - B. Hands on toggles and arms all the way up.
 - C. Your chin level looking forward to the landing point.
5. Do a good PLF: five points of contact.
 - A. Balls of feet.
 - B. Calf muscle.
 - C. Thigh muscle.
 - D. Buttocks.
 - E. Back
6. Recovery: Avoid being dragged. The best method of recovery is to pull on one steering toggle and the canopy will turn to the ground and collapse. Keep reeling in the steering line to help the canopy turn toward the ground. You can also get up and run around your canopy so that the wind is blowing your canopy collapsed.

AFTER LANDING SAFETY

1. After you touch down and your canopy is collapsing, look around the air space for other landing canopies. Always look in all directions including up and behind you.
2. Place your toggles back on the Velcro on your risers and back away from your canopy until your lines are straight. Wrap your lines on your arm as neatly as possible and pick up your canopy and pilot chute for the walk back. **Be sure you are not dragging any part of your parachute!**
3. When you get close to the runway, **STOP AND LOOK AND LISTEN** for the airplane before crossing. If you can see or hear the airplane, you need to **WAIT** until the plane has landed and stopped before crossing the runway. When the plane is on final approach please go down to one knee to indicate to the pilot that you see him and will give him right of way.
4. Please return your equipment to the Student Packing area and replace your jumpsuit, altimeter, helmet, and goggles in the same room that you got dressed for your jump.
5. Your jumpmaster will meet with you soon to debrief your jump, give you your **logbook**, **First Jump Certificate**, and explain to you how you do **your NEXT Skydive!!!!**