



# Category H Training Aid

All training to be conducted by instructors of the:



## Category H

### Two jumps

The last category of the ISP finishes preparing you for the USPA A license so you can supervise yourself as an independent skydiver. These are the last jumps where you require USPA Instructor supervision. Next you take your test.

Freefall skills combine gross movements using the start and stop principle to swoop toward a position in the sky relative to another jumper, followed by the fine movements to safely dock that you learned in Category G. The freefall briefing includes a discussion on safety and the importance of recognizing and controlling formation approach speeds. You'll also learn to look around while tracking, signaling for pull, and during deployment.

Under canopy, students with sufficient upper body strength explore the use of the front risers. The instructor explains the benefits and dangers of front-riser maneuvers. The discussion includes how to best recover from a turn made too low, one of the sport's biggest killers. Emergency procedure review covers unintentional water landings. You should be able to demonstrate how to maintain the three-ring release system and replace a main container closing loop, two common owner operations.

Although A license holders are not qualified for demonstration jumps, you will be authorized to jump off the regular DZ into landing areas meeting the BSRs for students and A license holders. In this last category as a formal skydiving student, you'll study the FAA requirements for jumps into the airspace over a private field, including what additional approvals may be necessary for the jump aircraft. This discussion should be with a jump pilot who can discuss those sections of FAR 105.

### Learning and Performance Objectives

- Diving exit.
- Swooping.
- Break off.
- Front riser control.
- Water landing review.
- Owner maintenance of gear.
- Aircraft radio requirements.
- FAA notification requirements for jumping.
- FAA approvals for jump planes.

### Rules and Recommendations

Review all the *Rules and Recommendations* sections for each category to prepare for the oral quiz given as part of the USPA A License check dive.

### Equipment

1. Owner maintenance of three-ring release system:

- a. Disassemble the system every month to clean the cable and massage the ends of the risers.
  - (1) Nylon riser webbing develops a memory, especially when dirty.
  - (2) When disassembled, twist and massage the nylon webbing around the two riser rings.



- b. Clean the cables:
  - (1) Most three-ring release cables develop a sludge-like coating that causes them to bind, increasing the required pull force.
  - (2) Refer to the manufacturer's instructions for cleaning.
2. Use the correct stow bands for each type of lines:
  - a. Smaller lines require the smaller bands.
  - b. Larger bands may be required for larger lines.
  - c. Line stow bands should grasp the line stow bights tightly, resulting in six to 11 pounds of force to extract.
  - d. Replace each stow band as it stretches, wears, or breaks.
3. Main closing loop:
  - a. Damage greater than ten percent warrants replacement.
  - b. Tension:
    - (1) Tension must be sufficient to keep the container closed in freefall.
    - (2) The closing pin should require eight to 11 pounds to extract (or check owner's manual).
    - (3) A loose closing loop could result in a premature deployment.
    - (4) Freeflying maneuvers increase the importance of closing system security.
    - (5) Adjust the closing loop tension by moving the overhand knot or replacing the loop with the knot tied in the correct place.
  - c. Use only closing loop material approved by the harness and container manufacturer.

## **Spotting and Aircraft**

1. Overview of aircraft radio use requirements:
  - a. The jump aircraft must have an operating radio for jumping to take place.
  - b. The pilot must be in contact with air traffic control prior to jumping.
2. FAA notification required before a jump:
  - a. A jumper or the pilot must notify the appropriate air traffic control facility at least one hour prior to jumping (no more than 24 hours prior) in most airspace.
  - b. Some drop zones have a written notification renewed annually for that location only.
3. Aircraft approved for flight with door removed:
  - a. Some aircraft are unsafe for flight with the door open or removed.
  - b. Aircraft approved for flight with the door removed may require additional modifications and usually require additional FAA field approval.
  - c. Other modifications to a jump aircraft, e.g., in-flight doors, hand holds, or steps, require additional field approval or a supplementary type certificate.
  - d. Review with the pilot the certificates of approval for modifications on the jump aircraft.



## **Exit and Freefall**

1. Diving exit:
  - a. Position yourself in the door to place your hips and chest into the air coming from ahead of the aircraft, with your body oriented side-to-earth.
  - b. Exit in a neutral body position to arrest your forward throw from the aircraft, which is moving you away from your coach.
  - c. Before starting to dive, hold the neutral body position for two to three seconds while slowly turning toward your coach.
  - d. Use a delta position to begin diving toward your coach.
2. Using your spine to adjust dive angle:
  - a. Initiate the swoop with your legs fully extended.
  - b. Follow the person ahead closely, but be prepared to slow rapidly.
  - c. Pitch up or down by curving your spine to increase or flatten the angle of the dive.
  - d. Use fast- and slow-fall technique to adjust vertical position relative to the diver ahead.
  - e. For safety and to prevent a collision, dive with an escape path in mind.
3. Traffic on approach to the formation:
  - a. Dive in a straight line.
  - b. Prevent collisions by watching for other jumpers while on approach to the formation.
4. Start, coast and stop:
  - a. Once you are about halfway to the target, return to a more neutral position.
  - b. You can increase your speed to the target if you find you have slowed too soon.
  - c. Use a flare position (arms forward) to slow and stop at a position level and 10-20 feet away from the target; visual cues:
    - (1) Back pack in view: approaching too high.
    - (2) Front of harness in view: approaching too low.
  - d. Begin a level approach using legs only.
  - e. Remain aware of traffic to each side and for errant jumpers below the approach path.
5. Rapidly arresting forward movement (very effective):
  - a. Extend both arms forward.
  - b. Use slow-fall technique (cup sternum and abdomen).
  - c. Drop both knees.
6. Breaking off and tracking:
  - a. Plan break-off altitude high enough for the jumper with the least experience to track to a safe distance from the formation, at least 100 feet for groups of five or fewer (minimum distance required for A license check dive).



b. Break off:

(1) The minimum break off altitude recommendations for group freefall in SIM Section 6-1 apply to very experienced formation skydivers jumping at a familiar location, using familiar equipment, and jumping with familiar people.

i. Groups of five or fewer, break off should be 1500 ft higher than the highest planned deployment altitude in the group.

ii. Groups of six or more, break off should be at least 2000 ft higher than the highest planned deployment in the group.

iii. Break offs higher than these recommendations should be considered for groups; with lower experienced jumps; freeflying; involving props or special equipment (flags, smoke, banners, hoops; etc.); bad spots recognized in freefall; and jumps with other special considerations.

(2) If any of these conditions are not met, add 500-1,000 feet to your planned break off.

c. Develop techniques to scan and steer clear of other jumpers ahead and below.

d. Look sideways and above for other jumpers in the immediate area during wave-off and deployment so you can steer clear under canopy as soon as you open.

## **Emergency Procedure Review**

1. Refer to SIM Section 6-5 for "Water Landing Recommendations."

2. Water hazards:

a. Definition of a water hazard. (SIM Section 2-1)

b. Flotation devices:

(1) Are required for some jumpers; refer to the BSRs on Parachute Equipment

(2) Are recommended for jumpers using ram-airs when jumping within a mile of water

c. Adjust the planned spot to avoid bodies of water.

3. Procedures for an unintentional water landing. (SIM Section 5-1)

4. Recovery from a turn made too low. (SIM Section 5-1)

## **Canopy**

1. Using front risers:

a. Front risers may be used to dive the canopy:

(1) To lose altitude rapidly.

(2) To maintain position over ground in strong winds.

(3) To catch up with another jumper under canopy below.

(4) To have fun.

b. Heading control with front risers depends on:

(1) Airspeed.

(2) The rate of turn.

(3) The speed of turn entry.

c. Heading control with front risers takes practice to become predictable.

d. Practice heading control with front-risers:

(1) Pull both front risers down to dive straight ahead.

(2) Pull one front riser to complete two 90-degree and two 180-degree turns.



- e. Initiate a sharp, deep front-riser turn, raise the riser slightly to decrease the turn rate, and then pull the riser fully down again to attempt to increase the rate of the turn:
  - (1) The rate of turn may not increase.
  - (2) The resistance on the riser may make it too difficult to pull the riser down farther after raising it.
  - (3) This exercise demonstrates the different nature of front-riser heading control.
- f. Complete all front-riser maneuvers by 1,000 feet.

2. Front riser safety:

- a. Watch for traffic below and to the sides prior to initiating a front-riser dive.
- b. Front riser maneuvers can be very dangerous near the ground:
  - (1) Turbulence may affect canopy heading or descent rate.
  - (2) A mishandled front-riser turn can lead to an undesirable heading, e.g., towards an obstacle, without time to complete the turn safely before landing.
  - (3) A crowded landing pattern is never the place for high-speed maneuvers.
- c. Keep both steering toggles in hand when performing front-riser maneuvers to make heading changes more reliably and quickly if necessary.

- 3. Perform the remaining unassisted landings within 20 meters of the planned target to meet the USPA A license requirements. (Total of five required for A license).



## Category H Quiz

(Must be passed before Category H jumps)

- 1) Why is it important to look ahead during a swoop toward other jumpers in freefall?**
  - a) To maximize your speed.
  - b) To maintain heading.
  - c) To see others and avoid a collision.
  
- 2) What is the fastest way to slow down from a freefall swoop approach?**
  - a) Aggressive arch.
  - b) Neutral body position with arms forward and knees down.
  - c) Arms back at waist and legs straight.
  
- 3) What is the danger of a loose or worn main container closing loop?**
  - a) Premature deployment.
  - b) AAD fire.
  - c) Line over malfunction.
  
- 4) Why must three-ring release cables be cleaned periodically?**
  - a) Oxidation will cause microscopic burrs on metal which could tear fabric.
  - b) To remove tar.
  - c) Corrosion deposits cause them to bind.
  
- 5) If you see that you have begun to turn too low to the ground for a safe landing, what should be your first response?**
  - a) Quickly use toggle controls to turn in the opposite direction.
  - b) Neutralize the turn and get the canopy overhead.
  - c) Prepare to PLF.
  
- 6) What effect does pulling on the front risers have on the canopy?**
  - a) Dramatic increase in rate of descent.
  - b) Dramatic decrease in rate of descent.
  - c) Dramatic increase in forward speed.
  
- 7) When performing front riser maneuvers, what should you do with the toggles?**
  - a) Stow them.
  - b) Keep them away from the front risers.
  - c) Keep them in your hands.
  
- 8) What are the two biggest dangers of front-riser maneuvers near the ground?**
  - a) Collisions with other jumpers and collision with the ground.
  - b) Broken lines and collision with the ground.
  - c) Canopy stalls and collision with the ground.
  
- 9) What are some of the possible results of a turn made too low to the ground?**
  - a) Horseshoe malfunction.
  - b) Serious injury or death.
  - c) Increased chance of landing on target.



**10) What is the procedure for landing in water?**

- a) 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 the canopy, dive deep and swim away or follow one seam until out from underneath.
- b) Inflate flotation device, disconnect chest strap and RSL, prepare for PLF, face into wind, flare, hold breath, cut away five to ten feet above water, remove leg straps, swim upwind; if under the canopy, dive deep and swim away or follow one seam until out from underneath.
- c) Inflate flotation device, prepare for PLF, face into wind, flare, hold breath, remove leg straps, swim upwind; if under the canopy, dive deep and swim away or follow one seam until out from underneath.

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

- a) Fifty percent
- b) Twenty-five percent
- c) Ten percent

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

- a) No
- b) Yes
- c) Yes, as long as the aircraft has an operating GPS system.

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

- a) Twenty-four hours
- b) One hour
- c) One month

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

- a) No approval is needed.
- b) AC 105.2, Appendix 2, or aircraft owner's manual.
- c) FAR 105.3

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

- a) The person giving notice.
- b) The local safety and training advisor.
- c) The pilot.



## Category H-1 & H-2 Dive Flows

One AFF Instructor or Coach

### Freefall Dive Flow

- Exit from the door one second after the coach.
- Present belly to wind in a neutral body position and maintain it for two seconds.
- Coach establishes fall rate and holds heading.
- Turn toward coach.
- Dive and stop level 10 to 20 feet out.
- Altitude check every five seconds.
- Approach and take grips.
- Altitude permitting, coach dives to a point 50 to 100 feet laterally and 20 to 40 feet below.
- Follow and repeat docking procedure.
- Break off at 5,000 feet.
- Coach remains in place and evaluates track.
- Wave off and deploy by 3,000 feet.

### Canopy Dive Flow

- Check altitude, position, and traffic.
- Perform an on-heading front riser dive (keep toggles in hand).
- Check altitude, position, and traffic.
- Perform a 90-degree front riser turn (keep toggles in hand).
- Check altitude, position, and traffic.
- Perform a 180-degree front riser turn (keep toggles in hand).
- Check position and altitude.
- Enter a front riser turn, let up halfway and begin the turn again (keep toggles in hand).
- Complete all front riser maneuvers by 1,000 feet.
- Follow planned pattern over landing area or alternate.
- Prepare to PLF and flare to land.
- Coach measures your landing distance from a planned target.

## Advancement Criteria

### **Exit and Freefall**

- Two swoop and docks with minimum assistance.
- Break off at the planned altitude without prompting.
- Track 100 feet within ten degrees of the planned heading.

### **Canopy**

- Two cumulative 90-degree front-riser turns.
- Two cumulative 180-degree front-riser turns.
- Total of five unassisted landings within 20 meters of the target (A-license requirement).

### **Equipment**

- Disassemble, perform owner maintenance, and reassemble three-ring release system.
- Remove and replace or adjust a main container closing loop.

