

# **The Racer Tandem System**

## **Certification Course**

**Updated January 3<sup>rd</sup> 2007**

# **Preface**

## **OBJECTIVES**

1. Demonstrate the use of the Racer Tandem System.
2. Evaluate the instructor candidate's ability to apply Tandem Skydiving techniques.
3. To certify the competence of candidates as Tandem Instructors

## **OUTLINE**

### **1. COSTS**

- I. The course fees are payable prior to the beginning of the course.
- II. The cost of replacing any lost equipment, such as ripcords, free bags, etc., is the responsibility of the individual candidate.

### **2. TRAINING**

#### **Racer Tandem Instructor Certification Course**

- I. Tandem Equipment Manufacturer's Certification (Section I),
- II. Tandem Instructor Certification Course (Section II).

# **Prerequisites**

## **Racer Tandem System Instructor Candidate Prerequisites**

Each candidate for the TICC must have the following minimum skydiving qualifications. Original documentation must be produced and reviewed by the TICC Director.

The minimum applicant qualifications for Racer Tandem Instructor are:

- A. Has held a valid USPA Class D License or F.A.I. equivalent
- B. Skydiving instructional rating issued by a National Aero Club.
- C. Demonstrated the ability to consistently land within 25 meters (75 feet) of a pre-designated target.
- D. Must hold an FAA or equivalent class III medical certificate (in the U.S.).
- E. 500 freefall skydives with a ram air parachute.
- F. 50 freefall skydives with a ram air parachute within the preceding 12 months.
- G. Four hours of accumulated freefall time.
- H. Three years of skydiving experience.
- I. At least 18 years of age.

J. Successful experience with a cut-away situation, either from an actual malfunction or an intentional cut-away jump.

## **Racer Tandem System Equipment Certification**

### **Part I**

#### **Classroom Tandem Training**

(Minimum 3 Hours).

Each tandem instructor candidate must successfully complete an equipment familiarization phase conducted under the supervision of a manufacturer designated TICC director. The tandem equipment phase must consist of the following minimum sections:

#### **I. Equipment Familiarization:**

- A. Packing.
- B. Inspection and maintenance in accordance with manufacturer's recommendations.
- C. Pre-jump equipment adjustment and inspection.
- D. Correct student harness attachment and adjustment, with particular emphasis on safely fitting the harness to the student.
- E. Redundant gear checks by a qualified third party.

#### **II. Equipment related problems -- gear specific**

- A. The Drogue and its deployment:
  - 1. Location.
  - 2. Need for stable deployment whenever possible.
  - 3. High percentage of tandem malfunctions are drogue related.
  - 4. Positively toss drogue, do not pull out and release.
  - 5. Drogue malfunctions:
    - a. drogue slipped out of hand, still in pocket
    - b. drogue hard pull/no pull (MAIN TOTAL MALFUNCTION)
    - c. drogue collapsed in droguefall
    - d. drogue deployed, main container open
    - e. uninflated drogue caught in burble
  - 6. The Drogue

We installed the drogue in order to slow down the terminal velocity of the tandem jumpers. Unfortunately, many tandem instructors have been observed using the drogue to get stable. This is a very dangerous practice because if the drogue gets caught on the tandem pair or their equipment, the main parachute cannot be deployed. The reserve would then have to be deployed past the trailing drogue. Although this has been accomplished several times, it is not a desirable situation.

**Do not use your drogue to get stable**, and never deploy the drogue while out of control, or while head down with four flailing feet and legs above you. Skydive your way to a proper drogue deployment attitude.

**"NO DROGUE = NO MAIN"**

*The drogue must be deployed before the main canopy can be deployed.*

#### 7. The Burble and Your Drogue.

As we push air out of our way during freefall, the air rushes around us and downward behind us. A tandem pair of jumpers creates a large burble and care must be taken to launch the drogue vigorously. This must be done to avoid having the drogue get caught in this burble, falling on top of us, and possibly entangling with the equipment or the jumpers. **Immediate action must be taken by the tandem instructor if the drogue gets caught in the burble.** Look up at the drogue after launching it, pull both the students' and the pilots' arms in on one side, rolling the other side up in a quarter barrel roll. This will move the flow of air across the jumper's backs and should clear the drogue. This procedure is fine if only the drogue is launched, however, if the canopy is deploying then the shoulders **MUST** be kept parallel to the ground. As this is difficult to accomplish while looking over the shoulder it is recommended to look straight up over the head to break the burble.

If clearing the drogue cannot be accomplished, remember, the recommended minimum altitude for reserve activation is 3000 feet.

#### B. Tandem system handle locations.

1. Drogue deployment handle
2. Primary (student) drogue release
3. Secondary (instructor) drogue release and relationship with breakaway handle.
4. Breakaway handle
5. Reserve handle
6. RSL release

#### C. Student attachment.

1. Order of attachment
2. Verbal checklist
3. Second audible safety check

### **Part 2 Equipment Familiarization Jumps.**

I. One solo jump with Racer Tandem System to become familiar with placement of handles.

II. One jump with an experienced tandem master as passenger.

# **Elite Tandem System Instructor Certification**

## **Section II**

### **Overview of Course**

The Racer Tandem System Instructor Certification Course is designed to be a basic course of tandem method instruction as well as a means of candidate evaluation and certification. Therefore, mistakes will be made by the candidate. The Course Conductor will provide continuous instruction throughout the entire course.

The Racer Tandem Instructor Certification Course is designed to teach the Tandem Instructor Candidate the necessary procedures for safe Tandem Skydiving. Additionally, the certification course will introduce the candidates to the teaching opportunities presented by Tandem Skydiving.

During the Racer Tandem System Certification Course, the candidate will be assigned specific tasks to perform. These tasks are designed to allow the candidate to demonstrate his/her airskills and his/her ability to adapt to tandem training techniques as well as to the new and unfamiliar tandem equipment. Failure to perform these tasks can result in re-jumps or, in some cases, failure to satisfactorily complete the course. The training may end at any time, if in the opinion of the Examiner, the candidate has not demonstrated the required safety standards or parachuting skills.

Each Instructor candidate must be allowed to take advantage of all of the previous tandem jump experiences and the techniques that have already been developed and documented. The Racer Tandem System Certification Course provides an opportunity for us to share these experiences and help other new Tandem Instructors get started in Tandem Skydiving being better equipped and better informed than those before them. Each Tandem Instructor Candidate must understand that:

- 1) The candidate has the necessary skydiving experience to perform tandem instruction.
- 2) The candidate must keep an open mind:
  - A. The pressures of Tandem Skydiving can easily cause temporal distortion, which can have disastrous results.
  - B. The candidate should be willing to learn the different techniques that have been developed for using the tandem equipment. The candidate will be shown the procedures and techniques developed by experience. These procedures should not be modified without complete and thorough evaluation by the course approval authority.
  - C. The candidate must be as professional and disciplined as possible during the tandem instruction process. The candidate is responsible for the student.
  - D. The candidate may need to overcome the "Not me" syndrome.

The Tandem Instructor Certification Course is for candidates who have not been rated on any Tandem System. Candidates who have previously been rated as a Tandem Instructor

on equipment other than the Racer Tandem System, need only complete Section I (The Equipment Manufacturer's Certification).

The Jump Shack requires that the two section, six part training program be completed prior to being issued a Racer Tandem Instructor Certificate. After completion of the Equipment Certification Course (Section 1), the Tandem Instructor makes another fifteen tandem jumps with experienced jumpers (at least 100 skydives) acting as students (Part 2) in order to increase their tandem skills before taking first jump students. After completion of the fifteen Part 2 tandem skydives, the Tandem Instructor makes ten probationary tandem jumps with first jump students (Part 4). Upon the completion of the six parts of the Racer Tandem Instructor Training Program the candidate will submit the necessary paperwork to the Jump Shack for review and approval.

## **Standard Operating Procedures**

### **COURSE NOTES.**

Each candidate must bring:

- 1) A suitable jumpsuit .
- 2) A helmet of some type. (French Hats are acceptable).
- 3) Wrist mounted altimeter.
- 4) An audible altimeter is highly recommended.
- 5) Goggles
- 6) Proof to meet all requirements as stated in candidate prerequisites
  - a) USPA Class D License or FAI Equivalent
  - b) FAA or equivalent class III medical certificate
  - c) Instructional Rating from a National Aero Club
  - d) Log Books
- 7) Notepad & pen
- 8) Certification fee

## **Classroom Tandem Training.**

### **Part 1**

This part contains all the information that will be needed for the candidate to make the required Tandem Jumps, pass the written test, and pass the checkout jump.

#### **I. Student Problems.**

##### **A. Physical**

1. Age
2. Weight, and the need to take heavier students on cooler and/or windier days
3. Physical condition and limitations.
4. Health.

## B. Mental

1. Reassurance of nervous students.
2. Recognizing the difference between natural reluctance and bonafide refusal and the legal ramifications of each.

## C. Unusual body positions.\*

1. Reverse arch.
2. Swimming and kicking.
3. Fetal position.

\* Practice correct body position. Assure correct student body position before commencing exit (depends on type of a/c and exit technique). This can easily be done in C-182, C-206, large door a/c, etc.

## D. Physical interference with Instructor.\*

1. Student grabs instructors arms.
  - a. Student grabs one arm. Verbal command to "release" and instructor releases drogue and deploys main if no response.
  - b. Student grabs both arms. Bring arms together in front of student, pull straight back while twisting arms inward and thumbs down.  
\* Instruct student not to grab instructor. Also - while still sub-terminal, the instructor can calmly talk to the student: "Let go of my hands, please."
2.
  2. Student body movements may affect the ability of the instructor to reach deployment handles. Solutions for this problem are:
    - a. verify handle locations by touch.
    - b. verbal communication to ARCH AND RELAX
    - c. open parachute if situation is out of control and degenerating.

## II. Pre-Jump Procedure & Hook-up

### A. Pre-flight equipment check

1. Student
  - a. Shoulder Snaps, and Hip Attachments
  - b. Chest strap tension
  - c. Leg strap tension and dead-ends secured
2. Tandem Instructor
  - a. Drogue handle/proper packing of drogue in pocket
  - b. Drogue 3-ring attachment and release handle/handles
  - c. Main pin, closing loop and bridle routing
  - d. Reserve pins and closing loop, RSL routing
  - e. 3 ring assemblies
  - f. Reserve static line shackles attached
  - g. Cutaway and reserve handles.
  - h. Pin protection flaps and riser covers

## B. Pre-exit gear check

1. All snaps
2. All handles in order of use
3. Reserve static line
4. Student's chest strap, helmet, and goggles

## C. Hooking-up Plan

Ask the student to get up on his/her knees and face forward. Move up behind him/her and straddle his/her legs. You begin with the right side hip connector so that you retain the ability of movement while you complete the procedure. If you started with the shoulder snaps, you would unnecessarily restrict movement. Regarding the argument "If I forget something, I don't want it to be the shoulder snaps," use a set of procedures so that you don't forget anything. Conducting a tandem jump should be the same as conducting a flight by a commercial pilot.

This plan works in any aircraft, therefore, the procedure should never have to vary. After making each connection, you notify the student that the connection is made! At that time they should satisfy themselves that it has been, and they should acknowledge this to the tandem instructor.

- 1) Hook up the lower right connector. This allows you to move around to the right when transferring the student ripcord.
- 2) Remove the student's ripcord from its temporary pocket on the pilots harness and route it to the students harness . Secure the housing/pocket to the students harness, then, while still controlling the ripcord with your hand, check the security of the cable housing by pulling on it vigorously. If it were to come loose during the ripcord pull, then perhaps the ripcord would not be activated. The Instructor can "shadow" the Student at pull to verify housing security.
- 3) Hook up the left side connector. Leave the side connectors slack for comfort.
- 4) & 5) Hook up both shoulder connectors. We do not use safety pins on these connectors for the same reason that we do not use them on our leg straps; because the force on them is in the proper direction, downward, effectively locking the hardware together. Tighten the side connectors prior to jump run, allowing adequate time to stow the excess webbing.

## III. Exits

During normal Tandem Skydiving operations a variety of exits can be used safely and successfully. The type of aircraft as well as the personal preferences of the Tandem Instructor will dictate the type of exit that will be done.

After completing the Racer Tandem System Certification Course, Tandem Instructors should be confident enough to do any type of exit, and recover (if necessary) from any unusual attitude.

When deciding how to exit a new type aircraft, envision how a solo exit would be done. Adjust as necessary to allow for the student. It is not recommended that the instructor just

throw the tandem pair out of the aircraft. A clean and controlled exit is the first part of every tandem jump.

The Tandem Instructor Candidates will be shown the exits that will be used during the certification course. The exits will be selected based on the ease of performance, the tasks assigned for each jump, and aircraft being used.

Exit performance and the assigned tasks on each jump will be evaluated.

- a. Low tail aircraft. Discuss, with the pilot, the need for a good power reduction and level flight attitude before exiting a low-tail aircraft to reduce the probability of tail strikes.
- b. Avoid back-out exits on side door aircraft.

For the sake of consistency, the exit count "READY, SET, GO" will be used during the Certification Course.

It is becoming more common for freefall students to transition from tandem to solo freefall. Therefore, the same exit used for a solo training jump may be used on a tandem jump (head up, back straight, facing into the relative wind).

#### A. Sample Exit Procedure

Cessna 182 with an inflight door:

Two tandem pair on board, Tandem #1, and Tandem #2.

Seating:

#1: Student next to the pilot, back to the firewall, Tandem Instructor in the Jumpmaster position (sitting between the students' legs with seat belt on).

#2: Student behind the pilot, Tandem Instructor rear of the cabin.

We do not hook up the student to the Tandem Instructor during take off, primarily, for reasons of safety. In the eventuality of a crash on take off, evacuation of the aircraft would be more efficient. If there is no door on the aircraft being used, then those students in proximity to the open door shall be hooked up to their Tandem Instructor. In large aircraft, such as a DC-3, never allow the student out of your reach. The other consideration is the comfort of the Tandem Instructor and the student.

During the Certification Course, we will begin hooking up the student 2000 feet below exit altitude. This allows time to correct any errors that may be made as the candidates are becoming familiar with the equipment and the timing. Normally, as the Instructor becomes more familiar with this procedure, he/she will time himself so that he/she spends a minimum amount of time fully hooked up before exiting. Because of the restrictions to movement, this position is somewhat uncomfortable for both the student and Instructor. It is important that the candidates understand that they should never allow themselves to be rushed during this procedure, nor should they ever leave the airplane until they are totally prepared to do so. The hooking up of the student is the second most important procedure that an Instructor will perform. You must accept the fact, whether you agree or not, that the Instructor is under pressure to perform, and therefore can certainly make a mistake. The number of candidates that forget to deploy the drogue, or the main

parachute; and the Instructor who forgot to hook up one of the shoulder snaps in the first tandem fatality, bear witness to this fact.

## B. Exit Plan (Cessna 182)

Have the student participate fully in the exit by taking hand holds and holding onto the aircraft the same way that an experienced skydiver would. The pilot should guide and place the students' hands through the exit process as they would in freefall.

In the early development of Tandem Skydiving it was thought that the student might hurt themselves or disrupt the jump, so they were directed to hold onto their harness. Later, efforts towards training showed that with a little instruction the students performed much better when they were allowed to participate fully in the exit and the freefall. To illustrate the point, try making an exit while holding onto your main lift web. Your balance is off because we, as human beings, are used to using all of our extremities. It requires very little effort to teach a first tandem jump student proper exit and freefall procedures, but unfortunately, even less effort to have them hold onto their harness and learn a whole lot less. They can only get out of it, what you are willing to put into it.

On the command "Put your right foot out.", the tandem pair will both shift their weight onto their left knees and individually, first the instructor pilot, then the student, place their right foot onto the step, with the Tandem Instructors' outboard of the students.

On "Climb out.", they will grasp the strut and pull themselves out onto the step. Hold the student into the strut so they don't slip backwards.

Position the students' feet between the Tandem Instructors' feet, and place the students' hands on the strut, thumbs underneath the trailing edge, in the classic poised exit position. You use the thumbs under the strut on the first jump so that the student doesn't hold on after the Tandem Instructor has let go.

If you place your left foot on the landing gear above the step, you will be in a position of strength for a good launch in a step-to-the-right type exit.

On "Ready, Set, Go.", (using an out/in/out motion), step to the right (towards the wing tip), head high, spine vertical, facing into the relative wind. This basic student exit results in immediate stability, and there is no time or altitude lost recovering from an unusual attitude.

Exiting the second Tandem pair on the same pass is not difficult at all. As Tandem #1 climbs out onto the step, Tandem #2 can shuffle forward on their knees into the #1 position.

Tighten up the side connectors prior to jump run. What happens if you forget to tighten the side connectors? The student will hang down beneath you, and he/she will wash

around under you. You can control him/her by dropping your knees to either side of them.

In the Tandem #2 position there is no need to rush, get excited or out of breath. The tandem canopy will fly a long way, and we can always open a little high. Skydiving happens fast enough. There is no need to hurry it up.

### C. Other Aircraft, Other Exits.

During normal tandem skydiving operations, if you are using large aircraft, the tandems are the last to exit. This makes sense because the tandems open higher (something that must be considered when jumping at a boogie where there are multiple large aircraft, is opening at a normal altitude and having the next pass go flying past you in freefall. In order to avoid accidents between freefall and open canopies you must "Plan" but don't give up altitude you may need it for emergency procedures). If everyone took the time to make a back-out exit, the last to exit would indeed be far out. Forward exits are easy and faster, whenever possible.

Types:

- 1) Crouching (Twin Otter, Beech 99)
- 2) Sitting (Cessna 206, Islander, Porter)
- 3) Standing (DC-3)
- 4) Back-Out (Beech 18, Twin Otter, DC-3)

There are many ways to exit different aircraft. If you must devise your own method to accommodate an unusual aircraft then do as you would with known procedures- PRACTICE!

## IV. Freefall Control & Recovery/Droguefall

- A. Stable exit and heading control
- B. Intentional unstable exits and stability recovery
- C. Freefall turns and spin recovery with drogue
- D. High speed freefall and turns without the drogue
- E. Altitude Awareness.

1.No drogue. Time to react to emergency situation is greatly reduced due to the 40% faster freefall speed of two persons in tandem freefall without a drogue. Decisions must be made at a much higher altitude than with a properly functioning drogue.

2. Preoccupation with student, equipment, video\* or other outside factors. The first priority of every skydive is to open the parachute. All other factors of the skydive are of less importance and must be treated as such.

\* Suggestion: A chest mount altimeter on the video person, for reference by the Tandem Instructor, or; Dytter or similar audible altimeter for Instructor

## V. Canopy Control:

- A. Turns
- B. Practice flares
- C. Stalls and recoveries
- D. Landing techniques
- E. After deployment equipment check

Considering the fact that our cutaway and reserve handles are mounted outboard, and have become dislodged at times, and having the responsibility of our student to consider, it is prudent to take a look at our equipment after opening. You do this equipment check immediately after you have the student flying the parachute back to the DZ.

During this course, you will loudly verbalize the following checks:

- 1) Canopy, OK (open and flying).
- 2) Slider, OK (down).
- 3) Connector links, OK.
- 4) Cutaway cables, OK (on rear risers, properly seated).
- 5) Student shoulder connectors, OK (properly hooked up).
- 6) Cutaway handle, OK (in it's pocket).
- 7) Reserve ripcord, OK (in it's pocket).
- 8) Lower connectors, OK (extended). You extend, not release, the lower connectors. If you must release them, in order to extend them, then they should be reconnected. In a tandem fatality involving a cutaway from a CRW wrap, because the side connectors had been released, the student's feet went forward, and the pilot's feet went rearward. They hinged at the shoulders, possibly suffered injuries, and no reserve was activated. The webbing on the side connectors is sufficiently long enough to allow for maximum movement when landing.
- 9) Release the Stevens Static Line at or above 500 feet if the winds are high enough to drag you on landing.

## VI. Emergencies:

### A. Aircraft Emergencies.

1. Seatbelt use.
2. Low altitude emergencies and landings -- crash positions.
3. High altitude emergencies -- emergency exit procedures.
4. Premature deployment.
  - a. Jumpers still aboard, parachute aboard:
    - i. CONTAIN the canopy
    - ii. CLOSE the door
    - iii. DESCEND
  - b. Jumpers still aboard, parachute leaves: EXIT the aircraft immediately!
  - c. Jumpers on step, parachute leaves:  
Jumpers exit, pilot full right rudder.

The bottom line here is that each instructor pilot must have a plan for every

emergency. The plan must be rehearsed and available for immediate execution in the mind of the pilot, it must be executable without delay.

Ascertain the nature of the emergency, the terrain below, and the altitude, in order to establish any immediacy of exit.

Decide which student attachments will be hooked up, and which parachute will be used. Remember, the main is normally a two step procedure for deployment, but if the drogue release ripcord is pulled before exit, then the drogue becomes a throw-out pilot chute, a one step procedure.

Above 2000 feet, pull the drogue release handle before exit and deploy the drogue immediately after clearing the aircraft. The parachute will perform like a normal throw-out type deployment on a single parachute.

For exits at 2000 feet AGL. or below, use the reserve.

Below 1000 feet AGL ride the plane down if possible.

The Tandem Instructor must control the student very closely during an emergency. That student is your responsibility!

**B.**

**Freefall**

1. Midair Collision - If it occurs, immediately deploy canopy

2. Freefall/Droguefall - Passenger not hooked up

a. At top - If the passenger was not hooked up at the top passenger suspension point, the Elite Tandem System is designed so that the hips only attachment would support opening shock. It would be better to go ahead and deploy the drogue, or main in this situation than to struggle attempting to hook up the top half in freefall/droguefall. b. At bottom - The Elite Tandem System, as all rigs, would accept opening shock without separation of the passenger with only the top hooked up, however, the tendency for the pair to separate like a sandwich board must be accommodated if you find yourself in this situation. Our recommendation is to wrap your legs around the passenger at pull time.

**C.**

**Canopy**

1. Drogue-in-Tow Malfunctions.

If you are falling under a drogue and it does not release when you pull the ripcord, you must consider your options:

- a) Activate the second main ripcord. The drogue release is designed to let the cloth loop holding down the release rings fly away when both ripcords are pulled.
- b) Reach back and make sure that you deployed the drogue. You won't be the first one to forget it.
- c) Pull your cutaway handle.
- d) Your last option is to use your reserve.

2. Main Parachute Malfunctions:

a. Streamers.

If time and altitude allow, pumping the brakes or the rear risers might help inflate the canopy. It has in the past. If you have to cutaway, cutaway with the right hand and activate the reserve with left hand. The reserve static line should activate the reserve upon breakaway.

b. Partial Malfunctions.

For a hung slider, pressure knots in the lines, a broken steering line, etc., try to solve the problem, not compound it. If you have a full canopy, or an almost full canopy, over your head under control, you may want to land it rather than gamble on a reserve malfunction. The normal rate of descent is about 30 seconds per 500 feet. You can check your rate of descent against other canopies in the air, or against a stop watch. A broken steering line does not mean that you automatically cut the other one. Everything aft of the D lines is lost during the flare if both steering lines are gone, but it can still be landed safely by pulling down on both rear risers to flare, and by doing a PLF. Conserve energy during the descent for landing, you will need it during the flare.

Initiate breakaway and reserve deployment at or above 3000 feet. Here you can tell the Student to arch, bend knees and pull arms in.

D.

### **Landing**

#### 1. Powerlines

If you are approaching powerlines instruct the student to cross his legs & wrap your legs around the student so the powerlines will not come between you.

#### 2. Water

##### 1. Release RSL

##### 2. Disconnect student hip attachment points

##### 3. Remove pins out of top student attachment points (if used)

##### 4. Have student inflate LPU water gear

##### 5. Tandem instructor undoes chest strap

##### 6. Flare and land into the wind

##### 7. If there is a great deal of wind, release main

##### 8. Release student top attachment

##### 9. Push student away

##### 10. Tandem instructor swims out of harness

##### 11. Tandem instructor inflates LPU water gear

#### 3. Trees

##### 1. Prevent tree limbs from coming between the Instructor and student

##### 2. Have student cross his/her legs and wrap your legs around them

##### 3. Protect student's face and both the instructor & student's armpits when preparing to land in trees.

#### E. Winds

Winds in excess of 15 Knots are usually gusty. A 100 pound person can get injured by down drafts, which are usually associated with gusty winds, and a 300 to 400 pound load will land much harder. 15 Knots is a reasonable cutoff point for student operations. Landing in High Winds. Full deflection turns slow the canopy down and lessen the internal pressure. This could result in a gust collapsing a portion of the canopy. Set up high, and do gentle turns. As you land, you hand a toggle to the ground crew and let them collapse the canopy. You may want to disconnect one side of the RSL in case you land too far away from the ground crew and you have to cutaway.

# **Tandem Training Jumps.**

## **Part 2**

This phase will include a minimum of fifteen jumps. The purpose of this part is to allow the candidate to refine the tandem skydiving skills presented in the Equipment Section & the Classroom Training.

### **I. Training Jumps**

- A. One or more jumps with the candidate acting as the tandem student.
- B. Twelve or more jumps with the candidate acting as the tandem instructor, while an experienced jumper acts as the student.
- C. At least one of these jumps (2.) must be accomplished with a manufacturer's designated tandem instructor/examiner acting as the student.
- D. No relative work will be permitted during Part 2 skydives.
- E. Video is allowed only for training purposes and only by video persons who have made more than 100 video jumps.

### **II. Qualifications and the preparation of acting students:**

- A. Only those experienced jumpers who are familiar with the equipment, the sequence of events and the procedures used during the Part 1 training will be allowed to jump as students. In order of preference, they are:
  - 1. Other instructor candidates in Part 1.
  - 2. The TICC Director.
  - 3. Other rated tandem instructors.
  - 4. Experienced skydivers with more than 100 jumps.
- B. The Tandem Instructor candidate must provide each "student" a briefing. The briefing must include actual practice of all procedures on the ground while completely geared up. The briefing must cover the following minimum points:
  - 1. Emergency exits.
  - 2. The need to deploy the drogue by 6,000 feet.
  - 3. The need to release the drogue and deploy the main canopy by 4,000 feet.
  - 4. The need to initiate emergency procedures if the instructor candidate has not already done so by 2,000 feet.
- C. The "student" must:
  - 1. Be taught how to deploy the drogue
  - 2. Wear an altimeter
  - 3. Have a ripcord attached to the student harness for main parachute activation
  - 4. Be wearing tandem examiner handles in order to cutaway and deploy the reserve if necessary

### **III. Basic Certification Skydives**

During the tandem jump as the student, the candidate will deploy the drogue, make two 360 degree turns (in opposite directions), track, and then deploy the main canopy using

the student's drogue release handle.

During the tandem jumps as the instructor, the candidate will be presented with situations that he/she might experience while engaged in a tandem skydiving instruction program.

Such as:

- 1) Exiting in an unusual attitude.
- 2) The drogue being deployed by the student.
- 3) Accelerating into tandem terminal velocity before deploying the drogue (to experience high speed freefall).
- 4) Teaching the student 360 degree turns and tracking in drogue fall.
- 5) The main canopy being deployed by the student.
- 6) Teaching the student canopy control, including the landing flare.

Students will wear a helmet, an altimeter, and have access to a drogue release handle, the cutaway handle, and the reserve ripcord during the tandem jumps made during the certification course. In the past students have had to deploy the drogue and the main parachute because the Tandem Instructor candidate failed to do so. One of these tandem instructors had over 4000 skydives.

Non-jumpers will not be used as students during the course. Non-jumpers do not have the required skills to take action and save their lives if necessary.

The drogue release handle that will be used for main canopy activation, and who will activate it, will be discussed in the plan for the skydive.

Candidates should be paired up according to size compatibility for their comfort, although size and weight differences are acceptable.

The main parachute will be activated at a minimum altitude of 4,500 feet (approx. 1,400 meters) AGL.

Emergency cutaways should be no lower than 3,000 feet (approx. 925 meters) AGL.

Perhaps the most important aspect of each tandem jump is the need for consistent standard procedures. The instructor must react almost automatically while in a "high pressure" situation. At 180 MPH time and altitude passes very fast.

"A tandem jump is not just another skydive".

The procedures for each jump are described in the plan. The plan must be followed as closely as possible.

## **JUMP PROCEDURES**

**A. Level I.** The candidate jumps as a STUDENT.

This jump is intended to be exactly the same as a first jump for a tandem student. If the candidate was trained using the tandem method then they have already performed this step.

**Briefing:** Normally the student would receive a briefing from the Instructor prior to making this jump. However, on this training jump the candidate/student will practice by briefing the Instructor.

**JUMP PLAN:** After the basic exit (see section on exits) the tandem pair will attain stability into the relative wind, then the candidate student shall vigorously deploy the drogue while the Instructor holds them stable.

**Note:** There is no reason for the Instructor to hold onto the student until after the drogue

has been deployed, as this would interfere with the movements of the student as he/she deploys the drogue, and the Instructor, as he/she tries to achieve, or maintain stability. After drogue deployment, the Instructor takes gentle grips on the student's forearm. Ensure that the student's knees are bent, and then let them go. The Tandem Instructor is now in a position to control the student and guide him through two 360 degree turns and a tracking maneuver.

The candidate student shall wave off at 5000 feet and pull his/her ripcord at 4,500 ft. AGL.

The TANDEM INSTRUCTOR candidate jumping in front, shall demonstrate that he/she has the awareness to activate the drogue and the main parachute.

After the deployment of the main parachute, the TANDEM INSTRUCTOR will quickly observe the parachute and the surrounding area as a safety precaution. Now he/she can present the brake toggles to the candidate/student so that the student may learn by releasing the brakes.

While the candidate student steers the parachute, the TANDEM INSTRUCTOR shall perform his/her equipment check (see section on equipment check, pg. 12).

The TANDEM INSTRUCTOR will conduct a class on canopy control on each jump during this course. Turns, stalls and stall recovery shall be practiced. It is important that the candidate student steers the canopy, unassisted by the TANDEM INSTRUCTOR, so that he/she realizes the limitations of the student.

The landing may be executed by the TANDEM INSTRUCTOR candidate with the assistance of the candidate student.

During the TANDEM INSTRUCTOR Certification Course, the TANDEM INSTRUCTOR candidates will jump as a student for one another as many times as it takes to complete the program. One student jump is mandatory, but the opportunity for several student jumps is normal for each candidate in the course.

Each TANDEM INSTRUCTOR candidate in the course is an experienced skydiver who has met the requirements for the tandem rating, and who will attend a classroom lecture and demonstration in preparation for making tandem jumps.

The student jump exposes the candidate to the psychology of the student, the physical aspect of student comfort, and an appreciation of the learning opportunities afforded the tandem student. Once the candidate learns that from the student position he/she can deploy the drogue and the main, he/she will view this jump in proper perspective and take a very positive approach to it. The more student jumps the candidate makes, the better TANDEM INSTRUCTOR he/she will be.

As a student, the candidate will monitor the entire performance of the candidate TANDEM INSTRUCTOR as well as perform his/her own tasks on the jump. If the candidate INSTRUCTOR is not doing his/her job as the candidate student knows it should be done, or he/she is not doing his/her job at all (no drogue deployment or perhaps, no main deployment), we feel that allowing the candidate INSTRUCTOR 1000 feet for error is adequate to determine that he/she made a serious mistake. During the Certification Course, altitudes for drogue deployment and main canopy deployment are clearly defined, and the student candidate is expected to take over the deployment of the drogue, or the main, no lower than 1000 feet below the designated deployment altitude. These altitudes are established so that the candidate INSTRUCTOR has some margin for error, but also so that a safe amount of altitude remains should a real

emergency occur. This explains why Jump Shack uses the candidates; the Examiner; or, if necessary, other experienced skydivers; as students during this course. A person with few, or zero jumps, cannot give the candidate any assistance that he/she may require on these jumps.

**Jump Story:**

Recently, a candidate's student became aware that the candidate INSTRUCTOR did not deploy the main parachute and that he, the student must do it. This candidate's student took it upon himself to allow the droguefall to continue down to 2000 feet AGL. before he pulled his ripcord, in order to give the candidate INSTRUCTOR an extra 1000 feet margin for error. As this student was pulling his main ripcord, the candidate INSTRUCTOR was reaching for his reserve ripcord. By thinking that he could arbitrarily change the operating procedures of the Certification Course, this candidate's student:

- 1) Nearly caused a reserve and main simultaneous deployment.
- 2) Seriously jeopardized their chances of handling a real emergency, had one occurred, because he did not understand the complexities of a tandem malfunction at 2000 feet with unfamiliar gear and an candidate INSTRUCTOR who had already neglected to deploy the main parachute.

**FOLLOW THE PROCEDURES!**

**B. Level II.** The candidate jumps as the TANDEM INSTRUCTOR.

**JUMP PLAN A:**

This is essentially the same as a Level I jump, but as viewed from the TANDEM INSTRUCTOR position.

**JUMP PLAN B:**

If the student is not a candidate making a Level I jump, then the candidate INSTRUCTOR shall deploy the drogue and the main canopy. This is identical to a Level III jump and will serve to give the candidate an opportunity to practice a basic tandem jump.

Exits: (See the section on exits.)

After the exit, the candidate INSTRUCTOR should hold the pair stable and observe as the candidate student deploys the drogue. If the student neglects to deploy the drogue, the candidate INSTRUCTOR should remind him to do so by yelling in his/her ear, slapping him on the hand, or taking his/her hand and placing it on the drogue. Remember, the candidate INSTRUCTOR must also continue to hold the pair stable.

Additionally, the candidate INSTRUCTOR should perform 3 dummy pulls of the cutaway and reserve activation handles while executing the above step. These dummy pulls will be performed by touching each handle in turn as though they were to be used. This teaches familiarity with their location.

If the candidate student fails to deploy the drogue or the main he/she is not meeting the performance objectives of that jump and the Examiner must be notified, so that he/she can work with this candidate. This lack of performance could be fatal on the next jump. Remember, "NO DROGUE = NO MAIN"

Parachute deployment should commence at 5000 feet AGL.

After Parachute Deployment.

After the deployment of the main parachute, the TANDEM INSTRUCTOR will quickly observe the parachute and the surrounding area as a safety precaution.

They are now safely under an open canopy so he/she does not have to rush through the

remaining procedures. The TANDEM INSTRUCTOR should now take a deep breath and relax.

The tandem canopy is designed to fly while the brakes are set, so there is plenty of time to allow the TANDEM INSTRUCTOR to release the deployment brakes and present the steering toggles to the student.

While the candidate student steers the parachute, the TANDEM INSTRUCTOR shall perform his/her equipment check (see section on equipment check).

The TANDEM INSTRUCTOR will conduct a class on canopy control on each jump during this course. Turns, stalls and stall recovery shall be practiced. It is important that the candidate student steers the canopy, unassisted by the TANDEM INSTRUCTOR, so that he/she realizes the limitations of the student.

The landing shall be by the candidate student while following the instructions of the TANDEM INSTRUCTOR.

**C. Level III.** The candidate jumps as the TANDEM INSTRUCTOR.

This jump is designed to have the candidate exposed to making a tandem jump exactly as he/she might with a real first jump student.

The Jump Shack uses a very basic exit plan that presents the tandem pair head high, into the relative wind immediately after exit. (Refer to the section on exits.)

**JUMP PLAN:**

The candidate INSTRUCTOR will deploy the drogue, take ankle locks with the student, and grasp him gently behind the wrists, along the forearms. The candidate INSTRUCTOR will now lead the student through a figure eight and tracking exercise. The candidate INSTRUCTOR will activate the student's ripcord.

On this jump the 3 dummy cutaway and reserve pulls must also be executed as on the previous jump.

Now the candidate INSTRUCTOR can present the brake toggles to the student so that the student may learn by releasing the brakes.

While the candidate student steers the parachute, the candidate INSTRUCTOR shall perform his/her equipment check (see section on equipment check).

The TANDEM INSTRUCTOR will conduct a class on canopy control on each jump during this course. Turns, stalls and stall recovery shall be practiced. It is important that the candidate student steers the canopy, unassisted by the TANDEM INSTRUCTOR, so that he/she realizes the limitations of the student.

The TANDEM INSTRUCTOR will physically and verbally guide the student through the landing.

**D. Level IV.** Unstable Exit -- No Drogue Terminal.

TANDEM INSTRUCTORS must be prepared to handle an inadvertent unusual attitude exit and recovery from it. Many TANDEM INSTRUCTORS have been observed deploying the drogue dangerously close to the aircraft or in a position other than face to earth. They rely on the drogue to get them stable rather than relying on their flying skills to get them face to earth. The danger here is that the drogue can and has gotten caught on the pilot, the student, or the equipment. This can result in injury or unnecessarily having to fire the reserve into a trailing drogue.

Some TANDEM INSTRUCTORS are apprehensive about attaining no drogue terminal speed. This has resulted in TANDEM INSTRUCTORS doing something dangerous in order to correct a situation, while they still have thousands of feet left to effect a proper

recovery. TANDEM INSTRUCTORs must be exposed to terminal speed in order to learn that they and the equipment can handle it. This is a normal anxiety and it is quite common. **JUMP PLAN:** The plan for the Level IV tandem jump is that the tandem pair will exit so as to induce an unusual attitude such as a backloop or barrel roll. This often occurs with non-jumping students. The objective is to recover as soon as possible after one backloop or barrel roll, although two maneuvers is acceptable. This is for student comfort more than anything else and also so as not to waste freefall training time. Experience has shown that in most instances multiple backloops or barrel rolls dampen themselves rather than increase in intensity, unless you make an effort to keep them going. After the recovery from the unusual attitude, the TANDEM INSTRUCTOR will execute a figure eight while accelerating to no-drogue terminal speed. The TANDEM INSTRUCTOR will deploy the drogue 2000 feet above main canopy deployment altitude in order to decelerate to drogue terminal speed. The tandem student does not always feel the drogue when it is deployed so he/she must be told that it is out. This is a safety precaution that you use so that the candidate acting as a student can either complete his/her assigned turns and tracking maneuvers or deploy the drogue in case of failure of the candidate pilot.

It is hard to understand how someone with thousands of skydives could forget something as simple as deploying a drogue. This fact had better make everyone think beyond "It could never happen to me"!

**"NO DROGUE = NO MAIN" Remember that!**

On the Level IV jump, the candidate student will be participating in the backloops, the recovery to stability, the 360 degree turns, and will be contributing to the overall control of the jump. There is no need for the TANDEM INSTRUCTOR to hold the student's arms or legs. This would restrict the range of motion of both jumpers. The object of these maneuvers is to expose the TANDEM INSTRUCTOR to the unusual attitude exit, recovery to stability, and flight at no-drogue terminal speed. When initiating turns the TANDEM INSTRUCTOR can hit the hand of the candidate student to indicate the direction of the intended turn, so that the student can participate in the turns.

The TANDEM INSTRUCTOR will activate the main by pulling his/her own main ripcord. Now the INSTRUCTOR can present the steering toggles to the student so that a student may learn canopy control.

While the candidate student steers the parachute, the TANDEM INSTRUCTOR shall perform his/her equipment check (see section on equipment check).

The TANDEM INSTRUCTOR will conduct a class on canopy control on each jump during this course. Turns, stalls and stall recovery shall be practiced. It is important that the candidate student steers the canopy, unassisted by the TANDEM INSTRUCTOR, so that he/she realizes the limitations of the student.

The landing shall be by the candidate/student under the guidance of the INSTRUCTOR therein providing teaching experience for the candidate INSTRUCTOR.

**E. Level V.** The unusual attitude, Dynamic Exit.

The object of this lesson is to propel the tandem pair as vigorously as possible from the aircraft, causing multiple, fast changes in altitude and attitude. During this exit, the candidate INSTRUCTOR will assess his/her attitude, timing, and will stop the maneuver prior to deploying the drogue. Remember the drogue is deployed only after the flat and stable position is attained. The procedure is to set up for a rearward (backloop type) exit,

hold your bodies in close to the aircraft, with muscles tensed, and on command, both parties push off, with as much energy as possible, into backloops. Pull the arms and legs into the torso in order to get things going. After several revolutions, assume a neutral body position and stop face to earth. Three or four revolutions is adequate before recovery is initiated.

Benefits: the tandem pair get to see that no matter how hard they try to go unstable, they are always in a position to recover easily.

**Discussion: Tandem Side Spin Phenomenon**

The Tandem Side Spin Phenomenon has now been well documented by Bill Morrissey, of Strong Enterprises. The Instructor Examiner should explain the causes, avoidance, and solutions to this potentially dangerous situation. Basically, if the tandem pair find themselves spinning while on their side, unable to recover, the Instructor should assume the same body position as the student. This action will most likely result in the tandem pair going back to earth. From the back to earth position it will be possible to stabilize to a face to earth attitude, at which point the drogue can be deployed. If the side spin is allowed to continue, and not abated quickly, the high "G" forces will cause the Tandem Instructor and student to "black out".

The side spin usually occurs when the students legs drop down in front of him, and the tandem instructor instinctively arches as hard as he can. If the pair roll over onto their side, opposing control surfaces (the arms and legs of the Instructor and student), act like a free spinning propeller in a high wind. The spin naturally increases in speed and thus G forces.

Proper adjustment of the student's harness is one of the important factors in avoidance of the side spin. The student's hips must be securely locked to the Instructor's hips. The hip junction of the student harness must not be allowed to ride up above the hip bone. It should be secured below the hip bone. Additionally, thorough training, with emphasis on proper leg, head, and body position of the student is paramount.

Drogue deployment shall be by the candidate INSTRUCTOR.

Caution! The candidate student must be alert to see that the candidate INSTRUCTOR does not forget to deploy the drogue on this jump. The student must do it, if necessary.

The candidate student may not feel the drogue deployment, so the candidate INSTRUCTOR must signal that the drogue is deployed.

After the drogue is out, the candidate student will perform a random series of turns & tracking. The candidate INSTRUCTOR must learn to guide a student performing turns.

The TANDEM INSTRUCTOR will activate the student's ripcord.

The following procedures will be used:

The TANDEM INSTRUCTOR will present the steering toggles to the student so that the student may learn canopy control.

While the candidate student steers the parachute, the candidate INSTRUCTOR shall perform his/her equipment check (see section on equipment check, pg. 12).

The candidate INSTRUCTOR will conduct a class on canopy control on each jump during this course. Turns, stalls and stall recovery shall be practiced.

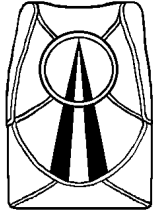
The landing shall be by the candidate TANDEM INSTRUCTOR.

**F. Jumps as Tandem Master with Experienced Jumper as Student**

At this point in the training the candidate may be signed off by the examiner for unsupervised tandem jumps with experienced jumpers as students. However, the

examiner may require the repeat of any unsatisfactory levels before sign off.  
Ten additional tandem jumps in the INSTRUCTOR position with an experienced (100 jumps with proper student briefing) jumper as student/evaluator are required. Landing must be standing up within 25 meters of target.  
Note: Before the next section is initiated the candidate's performance should be reviewed by an examiner and signed off to take actual students.

**Part 3 Written Exam & Check-out Jump**



# ***Jump Shack***

1665 N. Lexington Ave. # 106 - DeLand, FL. 32724-2187  
**(904) 734-5867 • FAX (904) 734-8464**

Name: \_\_\_\_\_

1. Tandem instruction reduces the anxiety and \_\_\_\_\_ experienced by the student.
2. Incorrect tandem procedures can quickly lead to \_\_\_\_\_.
3. List two unique features of the tandem instructors' harness.  
\_\_\_\_\_  
\_\_\_\_\_
4. The "D-rings" have a tensile strength of \_\_\_\_\_, the MS70121 shoulder snaps have a tensile strength of \_\_\_\_\_ lbs., and the connector rings and quick ejector snaps have a tensile strength of \_\_\_\_\_ lbs.
5. When hooking up the drogue 3-Ring release it is important that the instructor and student ripcord cables pass through \_\_\_\_\_ ends of the \_\_\_\_\_ loop.
6. During instructor training or refresher jumps what additional items of equipment must be attached?  
\_\_\_\_\_
7. A tandem pair falls approximately \_\_\_\_\_ mph with a drogue versus \_\_\_\_\_ mph without a drogue.
8. Describe the aircraft emergency procedures for the following:  
- Below 1000 ft AGL? \_\_\_\_\_

- Below 3000 ft AGL? \_\_\_\_\_

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- Between 3001- 4000 ft AGL?

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9. On a standard tandem jump, pull the first ripcord at \_\_\_\_\_ ft AGL. The minimum opening altitude is \_\_\_\_\_ ft.

10. You pull the instructor ripcord and nothing happens. What should you check next? If the drogue is out, what should you do?

\_\_\_\_\_

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11. Describe the correct response to a drogue in tow malfunction.

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12. You can't pull the drogue out of the pocket after a couple of attempts. What should you do next?

\_\_\_\_\_

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—

13. You accidentally pull the student ripcord handle before you deploy the drogue. What should you do next?

\_\_\_\_\_

\_\_\_\_\_

—

14. What would happen if you deployed a drogue that had not been properly set during packing? What should you do next?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

15. Cutaways should commence at a minimum of \_\_\_\_\_ ft AGL. Describe that emergency procedure for a partial malfunction.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

16. When adjusting the student harness, the key to proper fit and comfort is

\_\_\_\_\_.

17. What items of equipment are inspected prior to every jump?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

18. The instructors \_\_\_\_\_ should be tight with the \_\_\_\_\_

\_\_\_\_\_

straps, and fully tightened in a symmetrical manner.

19. Why are procedures the most important aspect to tandem jumping?

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20. List the hookup sequence.

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\_\_\_\_\_

21. List the instructor and candidate "handle" checks during freefall. Why is this important?

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\_\_\_\_\_

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—

22. List the post deployment equipment checks.

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\_\_\_\_\_

23. Prior to each jump the candidate instructor and passenger should practice the following to ensure that both are familiar with the jump. \_\_\_\_\_

\_\_\_\_\_

24. Care must be taken to protect \_\_\_\_\_ during climb out.

25. For what purpose is a drogue used in tandem jumping?

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26. When should the drogue be deployed on a normal tandem jump?

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—

27. What is the max. wind speed (kts) recommended? Under what condition is the use of a canopy catcher advisable?

\_\_\_\_\_

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28. Describe the 5 levels during Phase 1:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

29. During Phase 2, the tandem candidate's next 5 jumps must be made with \_\_\_\_\_ as passengers with a minimum of \_\_\_\_\_ jumps. Additionally, Phase 2 passengers must be familiar with basic tandem procedures and have \_\_\_\_\_ installed.

30. To be current, a tandem instructor must have made \_\_\_\_\_ tandem within \_\_\_\_\_ the past 90 days.

31. If a tandem instructor has not made a tandem jump after six months he must make \_\_\_\_\_ jumps, the first two of which with

\_\_\_\_\_

as a passenger. After 1 year he must

\_\_\_\_\_

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32. What is the minimum age for all tandem students? \_\_\_\_\_

33. Under the terms of the current tandem waiver, what types of tandem jumps are prohibited?

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34. What administrative (non-training) thing does Jump Shack require before an individual makes a tandem jump?

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35. Who may do RW or photo/video a tandem pair? What things must you brief them on?

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36. A tandem student should always be equipped with a working \_\_\_\_\_; and for immediate reserve activation, the \_\_\_\_\_ should attached on every tandem jump.

37. Why must the student wear a soft or French-type helmet?

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38. Describe how to make a student feel at ease during the climb to altitude.

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39. Under canopy, what can be done to the student's harness to make him/her more comfortable?

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40. What is the minimum briefing you should give any student before a tandem jump?

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41. During the student briefing the tandem pilot must cover safety, working around aircraft and not to grab the \_\_\_\_\_ on exit, or the pilots \_\_\_\_\_ during any part of the jump.

42. Summarize the primary cause of all tandem fatalities to date.

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43. To whom can you lend your Jump Shack tandem parachute system?

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44. How often should the tandem parachute system receive a complete inspection?

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45. Are you ready to begin the Phase 1 jumping portion of the tandem certification course?

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**"A TANDEM JUMP IS NOT JUST ANOTHER SKYDIVE."**

## **Part 4 Probationary Jumps**

Ten additional tandem jumps with a small properly briefed student who does not exceed 75% of the pilot's body weight. This student may be a first jump student. These jumps may be signed off by any licensed pilot or jumper who is a witness to the jump.

At the completion of all parts of training the candidate should send photo copies of his/her signed entries in their logbooks to the examiner who will in turn issue a tandem pilot certification.

## **Appendix A - Certification Summary**

A. The parts will be combined to include:

- Two or more jumps as the tandem student
- Classroom lecture
- Twenty-five or more jumps as the tandem instructor
- Equipment familiarization and packing Instructions
- Training evaluation

E. Specific emphasis throughout the course will be placed on safety procedures.

F. Each jump will be made according to the "PLAN".

## **Appendix B - Definitions**

Tandem Instructor - Is a person who has received the Tandem I rating from a manufacturer of an FAA approved tandem skydiving system prior to the implementation of the USPA Tandem Instructor Program.

Tandem Instructor/Examiner - Is a person who has received the Tandem I/E rating from a manufacturer of an FAA approved tandem skydiving system prior to the implementation of the USPA Tandem Instructor Program.

Tandem Instructor Certification Course Director - Is a person who has received a Tandem I/E Rating and is approved to conduct TICC's under the USPA Tandem Instructor Program.

Tandem Equipment Check Pilot - Is a person who is approved by the manufacturer to conduct equipment checkout (Section I) on that manufacturer's equipment.

I. TCC Director. The TCC director shall be qualified as a Tandem Examiner. This person may be a different person than the manufacturers designated examiner for Section 1.

A. Tandem Examiners are defined as any person who has received a Designated Examiner Rating from the manufacturer of an FAA approved tandem skydiving system prior to the implementation of the USPA Tandem Instructor program.

B. A Tandem Examiner may be an individual who holds a current Tandem Instructor/Examiner Rating issued by USPA.

1. To qualify for such a rating, the Tandem Examiner candidate must meet the following minimum criterion:

- a. One Thousand skydives, 300 of which are tandem skydives.
- b. Five years in the sport.
- c. USPA Instructor/Examiner rating.

2. The USPA Tandem Examiner must be approved as a Tandem Examiner by the manufacturer of the tandem system he intends to use in the TCC.

3. Final approval and designation of the Tandem Examiner candidate will be in accordance with the procedures specified by USPA.

II. TCC Director Authority. The TCC Director has the authority to disqualify any candidate at any point during the certification process.

## **Appendix C - Tandem Instructor Currency Requirements.**

To be current, the Tandem Instructor must have made a minimum of three tandem skydives within the preceding 90 days.

I. Recurrency requirements. The following recurrency requirements must be fulfilled before a tandem instructor may engage in tandem skydiving with student skydivers:

- A. Over 90 days -- three (3) jumps with experienced skydivers.
- B. Over 180 days -- three (3) jumps, of which two (2) must be made with another tandem instructor acting as the student may count this jump toward their own currency requirement.
- C. Over 365 days -- must attend a recertification course.

II. Annual recertification. The Tandem Instructor must have made a minimum of twenty-five (25) tandem skydives within the preceding twelve months, three of which must have been made in the preceding ninety (90) days. If this requirement has not been met, the Tandem Instructor must meet the 180 day recurrency requirement.

## **Cross training requirements.**

Tandem Instructors applying for authorization to make tandem jumps on another manufactures equipment must meet all Section I requirements on the equipment for which the authorization is being sought.

## TICC WRITTEN TEST ANSWER KEY

1. Nervousness
2. Loss of altitude awareness, malfunctions, and fatalities
3. Cutaway acts as drogue release, drogue handle convertible to left or right side, student hip attachment rings located between main and reserve containers.
4. 10,000 lbs., 5,000 lbs., 2,500 lbs.
5. opposite, double ended.
6. Belly band for solo jumps and examiner handles for check pilot or examiner.
7. 120 mph, 140-150 mph
8.
  - a. remain seatbelted in the a/c if possible
  - b. use reserve, attach as many hookups as possible ( hips or shoulders only will suffice in an extreme emergency)
  - c. pull drogue release and use drogue as a throw out after exiting.
9. 5000', 4000'
10. Make sure drogue is out. Pull the passenger drogue release. Pull cutaway (3rd drogue release).
11. pull both drogue release handles, pull cutaway, pull reserve
12. pull reserve if drogue proves to be irretrievable
13. deploy the drogue and expect an immediate opening
14. pull the drogue release high, the drag from the collapsed drogue should be sufficient to deploy the main but it will be a slower opening.
15. 3000', decide by 3000', peel and pull cutaway, peel and pull reserve.
16. Hip junction below hip bone, shoulder snaps behind shoulder (middle to top of scapula); passenger harness should be very snug
17. 3-ring assembly, both main closing loops, all cables for nicks, drogue setting, bridle for wear and pin condition, RSL, AAD, reserve pins, both harnesses, all handles.
18. drogue bridle rings, passenger's hip connectors
19. Prevention! To prevent oversights, accidents and fatalities.
20. right hip connector, passenger drogue release, left hip, left shoulder, right shoulder  
tighten hips.
21. after drogue is deployed, check all handles in order: primary drogue, passenger drogue, cutaway, reserve; familiarity is important in the event of an actual emergency.
22. canopy open and flying, slider down, connector links, three ring assy. including locking loops, student shoulder connectors, cutaway and reserve handles secure, stow drogue release, "clean up" and make passenger comfortable
23. climbout/exit, handle responsibilities, altitude itinerary, discuss the dive, practice hook up, DON'T RUSH IN THE PLANE
24. drogue, handles, and heads
25. to reduce freefall speed
26. as soon as the pair is stable
27. about 15k, whenever one is available (especially above about 7k)
28.
  1. candidate as student

2. candidate as instructor
3. candidate as instructor
4. unstable exit-no drogue terminal (emphasis on control)
5. dynamic exit, unusual attitudes (emphasis on control)
29. other I candidates, other Instructors, TICC director, or experienced jumpers with over 100 jumps; examiner handles
30. 3 (on any rig)
31. 3, another instructor, take a refresher course
32. 18
33. Demo, stunt, water and night jumps, CRW, passengers under 18, and jumps off a designated DZ
34. read, understand and sign the waiver
35. Competent videographer, preferably an AFF instructor with over 100 video jumps. Brief on avoidance of areas above the pair and potential for canopy deployment at any time, careful approaches, no CRW, and opening altitudes.
36. altimeter, RSL
37. prevents injury to head of either jumper
38. explain what's happening, review procedures, use reassuring physical contact
39. slide leg straps forward, under thighs; loosen chest strap, loosen main lift web, loosening hips helps with detachment on the ground but does nothing for comfort.
40. sign and understand waiver, explain handles, altitudes, body position, exit
41. aircraft, hands/arms
42. failure to follow all PROCEDURES as outlined in the course.
43. currently rated Jump Shack Tandem I
44. Each time the rig is packed (loops, housings, handles, drogue, etc.)
45. If the candidate has been properly briefed, the reply should be "YES."



# Jump Shack

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(386) 734-5867 FAX (386) 734-8464 [www.jumpshack.com](http://www.jumpshack.com)

## **Racer™** TANDEM SYSTEM INSTRUCTOR APPLICATION CHECKLIST

Applicant

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_ ZipCode \_\_\_\_\_ Country \_\_\_\_\_  
Home Phone Number \_\_\_\_\_ Work Phone Number \_\_\_\_\_  
Email Address \_\_\_\_\_

Do not send in your application unless you have enclosed the following;

- 1: Your Completed Application
- 2: Your Completed Test
- 3: A signed waiver
- 4: A copy of your License & Rating
- 5: A copy of your Medical Certificate
- 6: The Fee

