

TANDEM NEWS



A PUBLICATION BY STRONG ENTERPRISES
FOR TANDEM INFORMATION

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USPA, TANDEM JUMPING AND YOU,

A report on the current state of affairs after the USPA BOD meeting in Seattle, WA., July 21-23, '94.

Strong Enterprises announced to the Safety and Training Committee that on June 15, 1994, SE made the decision that as of July 1, 1995, all SE Dual Hawk Tandem Systems will have to have an approved, functioning, AAD installed when being used for making tandem jumps.

Strong's announcement regarding mandatory AADs on tandem jumps means that all the tandem exemption holders will now require AADs, so the Safety and Training Committee recommended, and the BOD adopted, that AADs be required on all tandem systems as July 1, 1995. This is part of the program that USPA wants to have in place for their operations after the change to FAR 105.43(a).

USPA BOD adopts the TPPT recommendations for programs for the training of: [A] the tandem instructor; [B] student parachutists. Explanation:

[A] The tandem instructor candidates would receive training on equipment familiarization, and on how to safely make tandem jumps, directly from the manufacturer of the equipment

being used. The program is the 10 jump, 2 Phase, program currently in use by Strong Enterprises and the Relative Workshop. All other programs will have to use this format if their ratings are to be recognized by USPA.

It is USPA's intention to issue tandem instructor ratings to those members who hold both a manufacturers tandem certification and a USPA instructional rating. This USPA T/I rating will be necessary to make tandem jumps at USPA affiliated DZs after the Exemption.

All SE TIs who hold a USPA instructional rating are advised to apply for a USPA T/I rating as soon as they become available. Reason: the just approved program for getting this rating is to take a copy of your manufacturers tandem certification, and your USPA I rating, and send them in to USPA with application for issuance of a USPA tandem I rating. This is important because the USPA Tandem Certification Course concept, which would have mandated reevaluation of all tandem instructors, at a training camp, was removed from the TPPT recommendations in order to insure passage by the BOD. I have assurances that a movement will be made to reinstitute this idea in the future, making it an unnecessary hardship. Why this concept would be appropriate is a

point of contention. Manufacturer certified tandem instructors have an FAA approved tandem instructor rating, which means that they are capable of safely making tandem jumps, and they have a USPA "I" rating which means that they already know how students learn and how to teach, so it seems that there is no reason for these particular skills to be re-evaluated. The same would apply to AFF instructors, who would be using the new Instructor Assisted Freefall format. These skilled instructors should only need a syllabus which outlines the instruction that the student needs to receive, through targeted learning objectives, for the tandem jumping, the instructor assisted freefall, or any additional teaching format.

[B] Student training. The TPPT has formalize a program, referred to as Tandem/Instructor Assisted Freefall (IAF), that has been used in varying degrees for several years, and was a seminar topic at each of the last two PIA Symposiums. USPA agrees that there is a place for this type of single instructor program which includes both tandem jumps and AFF. It is comprised of three levels of tandem jumps, and four levels of IAF. An AFF rating will be necessary for instructors in the IAF portion of the program.

ONLY 13 RESPOND

In preparation for the July BOD meeting I requested from National Director, Larry Bagley, copies of all responses from the USPA membership to the call for comments to the pending adoption by USPA of tandem operating procedures.

These pending procedures were published in the May '94 issue of Parachutist magazine. I was embarrassed for all of us when I realized that out of 28000+ members, only 13 took the time to write a response.

13 just won't get it! Strong Enterprises will be counting on 100% response from our tandem instructor/representatives when we request that you express your opinion to USPA or to the FAA. These are issues that will affect your future, so you must be a part of the decision making process. It was only through the efforts of National Director, Larry Bagley, that we were able to stall the efforts to institute the requirement to re-evaluate all tandem instructors (as published in May '94 Parachutist). Be prepared to do your part, with unity and strength we can get the job done.

TANDEM STORIES

Donut Side Spins

"I knew that I was in a tandem side spin because I had previously read a lengthy description of one in Strong Enterprises Tandem News." In the middle of a crisis this guy remembered what he had read so he was able to identify his problem. He understood the difficulty that others had experienced in this situation, and based on what he was now experiencing he decided to deploy his drogue. His drogue side was down so he had to deploy the

drogue behind him. It worked for him, and looking at a video of a side spin it appears that it should not be difficult to accomplish.

Unstable

".....he was unable to get stable enough to safely deploy his drogue so he used his reserve".

He did what??? NO! NO! NO! NO! If you are so out of control that you are afraid that you may not be able to deploy your drogue cleanly and that you might wrap your drogue around a part of the gear or bodies, then the same would be true for deploying your reserve. Would you rather:

a] Have your reserve wrapped around you, leaving you with nothing left to save your life, or,

b] Have the option of deploying your reserve past a drogue that did get caught on something and is now in tow.

Considering the large number of successful deployments of reserves past drogues-in-tow, it appears that taking a chance with the drogue would be the correct choice. We hope that you will remember reading the above information if you are ever faced with this situation.

FED FACTS

The FAA and the tandem exemption.

Although the parachuting community responded to the FAA's request for our input in their development of a proposed change to FAR 105.43(a), this change is not going to happen in the near future. Therefore, Exemption 4943 has been extended until June 30, 1996. The enclosed copy of the letter of extension must be attached to your copy of Exemption 4943. While you are fulfilling your obligation to read and understand this exemption you will notice that it

states that it must be carried in the airplane during tandem jumping operations, and that the pilot of that aircraft must have read it and understand it. Please remember that you are making tandem jumps as representatives of Strong Enterprises and as such you are responsible for adherence to those guidelines established in the exemption as well as by Strong Enterprises.

THE DROGUE

When you are packing the main, the drogue is often left sitting in the sun the whole time. Considering that we estimate that your system gets about 10 minutes of ultra violet exposure per jump before you get to the packing area, your drogue could easily get 30 or more minutes of exposure if you leave it unprotected during packing. At that rate it will lose about 70% of its strength in 150 jumps.

DRUGS

Drug and alcohol use while parachuting, particularly while having an innocent tandem student attached to you, is not only an abandonment of common sense, but it is illegal for a pilot to allow a person who is intoxicated or under the influence of drugs, to be carried in that aircraft. Refer to FAR 91.11. If you know that a tandem instructor is under the influence of drugs or alcohol while making or attempting to make tandem jumps, theoretically all you should have to do is to make the pilot aware of this situation. The pilot's responsibility for adherence to the FARs should get the matter resolved at that time. The holder of the exemption under which the jump was made, or attempting to be made, should also be notified.

DROGUE RELEASE

The student's drogue release ripcord is your PRIMARY ripcord. This is important because:

1. Although it is easier to find, its position is not constant. It may be a PVC, throw-out type ripcord, placed at the hip. It may be a Martin-Baker ripcord placed at the chest, or the snap on the cable housing may have separated and the housing may be blowing along your side. In short, it may not be where you expect it to be. (This could be the first step in a very small number of events leading up to traumatic shock.)
2. The first step in emergency procedures in the event of the drogue failing to release when a ripcord is activated, or if the ripcord cannot be found, is to activate the other drogue release ripcord.

The drogue release ripcord located on the instructor's main liftweb is the SECONDARY ripcord because:

1. It's position is fixed and easily located (We do not want the failure to find the second ripcord to be another step towards traumatic shock, where we forget all emergency procedures or freeze).
2. In the event that the tandem instructor does not release the drogue, but instead releases the breakaway handle and the reserve ripcord, then the new breakaway/drogue release handle [PN 862020] will activate the instructor's drogue release handle just prior to jettisoning the risers. Three tandem fatalities in 1993 may have been prevented with this device. If you are going to forget to activate that second ripcord, let it be the one that gets activated by the breakaway handle!

MISUSING THE ALS (Anti Line Slump) BAG

Maybe our instructions are not clear enough, because we are hearing about people using this bag in a manner that will encourage line dump, when in fact the bag is designed to prevent it. It is no more than a common D-bag with one extra flap. This one extra flap is the key to preventing line dump. The objective is to:

1. lock the canopy in the bag with a flap and locking stows [like most D-bags].
2. stow the lines on top of the locking flap [like most D-bags].
3. cover the line stows with the remaining flap and lock it in place with the last three line stows [unlike most D-bags].

Misusing the ALS bag can cause malfunctions

This last flap is the key in that it cradles the lines during bag snatch, preventing line dump, thereby allowing us to use rubber bands instead of the more difficult bungee/plastic choker system to stow the lines. If the bag is incorrectly used, the very serious problem of line dump is probably being encountered and will lead to malfunctions and perhaps catastrophic failure of the main. Please contact Strong Ent. if you have any questions or doubts about the correct use of the ALS main D-bag.

This D-bag will prevent line strip, but only if the outer flap is cradling the stowed lines during bag snatch.

MURPHYS LAW AGAIN

The new breakaway/drogue release ripcord is designed with a ring at the end of a small tab hanging off the bottom of the pud. The idea is for the ripcord cable to first be passed through this ring before the cable is inserted into the cable housing. When the breakaway handle is pulled, the ring would pull the instructor's drogue release ripcord downward and out of the housing. Well, Mr. Murphy saw fit to help one instructor screw it up. This instructor took the ring and the tab and inserted them between the main lift web and the cordura cover which forms the breakaway handle pocket. The ring was indeed placed in front of the cable housing, but instead of being able to extract the ripcord, the ring was now pulling the cable at a right angle while the cable was being held in place by the cable housing and the stitching on the pocket, resulting in the breakaway pud being locked in place. The only way to cutaway this main would have been to pull the bare cables a little at a time with one or perhaps both hands. Who woulda thunk it!

Pulling the reserve ripcord while simultaneously pulling the breakaway handle, is not a good idea.

Pulling the reserve ripcord while simultaneously pulling the breakaway handle is not a good idea.

At least it wasn't for this tandem

instructor. He was using the old vinyl coated breakaway cables and they got jammed as he was moving both hands forward. Needless to say, his left hand kept moving when his right hand stopped, and he wound up activating his reserve into the malfunction that he was trying to cutaway from. A hurried two handed pull did get him away from the main without further incident. A little application of imagination can present us with some unhappy woulda/coulda's in this particular case. Breakaway cleanly (with your left hand on the reserve ripcord) before pulling your reserve ripcord, after all, you do have a reserve static line, and you will have an AAD by July 1, 1995, to help assure reserve activation.

BARE CABLE FACTS

Reports from the field say that in four out of six breakaways, the new bare cable breakaway/drogue release was very easy to release. In the one case the instructor reports that he had a very hard pull, but could not determine why. He was not able to reconstruct his situation in a suspended harness. In another case, the instructor reported that he experienced a sluggish pull because he did not pull the handle downward, in alignment with the cable housings. In performing the tests that led to the use of these bare cables, Bill Morrissey, SE's Tandem Director, was sold on their benefit in reducing pull forces necessary for activation. He feels that this hard pull may have been an impossible pull, had the instructor been using the vinyl coated cables. We will continue to monitor the performance of these cables.

SUMMARY OF TANDEM FATALITY ON-SITE INVESTIGATION

April 2, 1994, Belen, NM. While making her second tandem jump of the day, a current tandem instructor with 1500+ freefalls, [25 of which were tandem jumps], and her female student became Strong Enterprises fourth tandem fatality.

This jump was from a Cessna-182 at 8500 feet AGL. After recovery from a barrel roll during the exit, the tandem instructor was observed by the pilot to be dealing with her students body position, [legs straight, knees locked, bent at the waist, arms extended in front of her chest] as they did a slow turn to the right and fell face to earth. No drogue or drogue release ripcords were activated. The reserve was activated so close to the ground that the freebag landed 30 meters away in a 15 knot wind, and the ripcord landed 16 meters away. There was no AAD installed on this system.

The equipment was inspected by the FAA, the Valencia County Deputy Medical Investigator, and Strong Enterprises and was found to be in compliance with the manufacturers specifications and was properly assembled and packed.

Speculation: It appears that this tandem instructor lost focus on the priority of drogue and main parachute deployment while dealing with her student, and then lost altitude awareness. With about 30 seconds between exit and impact at no-drogue terminal speed, there just isn't time for anything but flying yourself to a good drogue deployment attitude and following your procedures.

CARELESSNESS LEADS TO CUTAWAYS

Two recently submitted "Incident Report Forms" describe rigging errors in the installation of suspension line sets.

1. The B lines were installed at the A line attachments, and the A lines were installed at the B line attachments. This canopy had to be cutaway, needlessly endangering two lives.
2. In this incident the rigger installed the D lines on the C line attachments, and the C lines on the D line attachments. In this case the canopy did not have to be cutaway, but it was jumped by this rigger/owner for two months knowing "...there was something wrong somewhere that made the canopy perform so poorly". The system was sold and the new owner discovered the error.

Other noteworthy problems that were reported:

1. After removing a slider stop from the stabilizer in order to make a repair, the slider stop metal insert was misplaced. The lost metal insert was replaced with two layers of thin plastic. This plastic was not strong enough for the job, therefore it bent and allowed the slider grommet to be pushed over this "non-standard" slider stop during main deployment. The slider was stuck and the main had to be cutaway, again needlessly endangering two lives.
2. A torn drogue pouch was replaced in the field with a factory supplied replacement. On the next jump the tandem instructor severely sprained his back trying to extract the drogue from the pouch. While we are trying to determine what went wrong with this particular rig, I would like to pass along two little tips. [A] Before you remove the old pouch,

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mark its location, for exact placement of the new one. [B] If you are having difficulty extracting your drogue from the pouch, try placing your right forearm against the side of the container, and use your forearm and/or elbow as a fulcrum for leverage.

3. A missing bartack on a steering line caused the line to

come off the toggle, leaving the instructor with the decision to breakaway from a fully opened canopy or to land it with the rear risers. On a routine tandem jump, you could prepare for this event by practicing rear riser flares at altitude, and steering to a landing with one toggle. The fact that this instructor had not prepared for

this possibility may have influenced him to take the chance on a breakaway.

A STITCH IN TIME

A few of the latest Dual Hawk main containers have the elastic keeper behind the closing loop sewn on horizontally. The deploying main bag rubs against the elastic, folds it back and strips out the closing loop. We have redesigned it, but those rigs in the field can be protected by tacking down the closing loop.

PREMATURELY OPENED CONTAINERS

In 1993 there were several incidents involving prematurely opened main containers. Three of these incidents resulted in tandem fatalities, one of which was on a Strong Dual Hawk. This problem is generic to tandem systems, so we must all be aware and take the necessary precautions while the manufacturers try to eliminate the problem. Some causes are:

1. Broken closing loop. Routine preventive maintenance on a tandem system should eliminate this risk.
2. Closing loop too long. Container is so loose that the pin is easily pushed out or falls out. Use approved parts and dimensions.
3. The lower end of the kevlar bridle is stowed in a manner that will pull the pin bridle during drogue deployment. Check this routing during prejump inspection.

What SE is doing about this problem. We have reengineered the closing of the main container to include the use of a coated cable closing pin instead of the curved pin currently in use. This would

prevent the pin being pushed out of the closing loop or being pull out by sloppily stowed slack in the kevlar bridle. Replacement of worn closing loops would be extremely important. Although in prototype stage, we will be looking for a higher wear factor on the closing loop. This type of main container closure may be retrofitable to Dual Hawks in use. Watch for a forthcoming report on this system.

ADDITIONAL EMERGENCY PROCEDURES

1. The passenger grabs the tandem instructor's arms/hands.

Remedy:

The instructor brings his hands together, rolls his thumbs [to include the forearm, and hand] towards one and other, and pulls his elbows backwards vigorously. This procedure is an excellent way to break the grip of the passenger, and it has been recommended by the Tandem Proposal Project Team and adopted by USPA.

2. You observe that your main deployment bag is outside your container, nearby to your head and shoulder, and you are aware that you did not consciously make this situation happen.

You must understand:

- A. You have a prematurely opened main container.
- B. You have a horseshoed main because,
- C. Your drogue has not been released, and
- D. Your drogue may not have been deployed yet.

Remedy:

- A. Make sure that your drogue has been deployed.
- B. Pull your drogue release ripcords. This action will put your main in position to open, or to be

cutaway.

C. If your main fails to open, breakaway and deploy your reserve.

Do not forget to practice your procedures. Just because you are faced with an emergency situation that you have not seen before does not mean you are authorized to go into shock, fail to follow proper emergency procedures, and kill yourself and your passenger. *You are expected to use your head and think your way out of unforeseen emergencies.*

3. New reserve activation altitude! Because of the addition of an AAD to your tandem system, we have to re-evaluate the minimum exit altitude for the use of the main parachute. The Cypres AAD is programed to fire at 1950 ft [600 m] AGL. Therefore, when making emergency exits below 3000 ft. the reserve must be the primary canopy for activation.

AAD MANDATORY ON DUAL HAWK TANDEM

Strong Enterprises has announced that on June 15, 1994, they made the decision that: **As of July 1, 1995, all SE Dual Hawk Tandem Systems will have to have an approved, functioning, AAD installed when being used for making tandem jumps.**

The manufacturer of the Cypres, the only AAD currently approved for use on the Dual Hawk, has assured us that he will have produced the required number of units. With this date for compliance, we have been able to give you almost one year to arrange financing.

The decision to require an AAD was based on:

- 1. The number of tandem instructors who have failed to follow appropriate emergency

A REVIEW OF PARACHUTE DEPLOYMENT PROCEDURES FOR TANDEM JUMPING

**DEPLOY THE DROGUE
RELEASE THE DROGUE
BREAKAWAY FROM THE MAIN
DEPLOY THE RESERVE**

**They must be performed in the proper sequence!
Out of sequence procedures have resulted in several tandem fatalities!**

FAA RULES STILL APPLY

Have all tandem passengers sign Strong Enterprises Experimental Test Jumper Waiver and send it with your monthly log forms.

procedures, which resulted in their death and that of their passenger. Out of 23 double fatalities world wide, 4 of these have been on the Dual Hawk Tandem System.

2. The number of successful reserve deployments past drogues in tow.

3. The high confidence factor that we have developed in the Cypres, both from our in-house testing and worldwide usage.

It seems that there is a greater chance of the tandem instructor failing then of the Cypres failing.

EQUIPMENT SERVICE LIFE

Tandem has been in existence for over 10 years. In that time all of the components have gone through major improvements. So what can you realistically expect from your tandem equipment? How long before you have to replace it?

Dual Hawk Harness / Container life expectancy is 2,000 jumps.

Jamey Woodward had over 4,000 jumps on a harness/container.that he traded-in.

New technology obsoleting older designs is the most common reason to update a harness/container system. The new canopies require larger containers, the drogue bridle is now hidden rather than being exposed over the side flap.

Drogue (6 gore).

Life expectancy is 600 jumps.

Replace Y-deflation line as necessary.

Master and T-520 Main canopies life expectancy is 500 jumps.

Cliff Dobson Jr. has over 1,600 jumps on his T-520 canopy.

Factors: Packing is the most significant factor in canopy malfunctions and longevity. When the packing is done by the owner/user there is little question that there are fewer malfunctions

and less canopy damage. Canopy preventive maintenance is the second factor in extending canopy life. Things like: changing the lines before they start to break, resetting the grommets in the slider, repairing any small tears or holes before they get larger, etc.

Lines: Life expectancy of a line set is 200 jumps,

but lines should be changed when they start showing signs of wear. Lines should be adjusted to bring the canopy back into trim if they exceed + - 1" from factory specification.

Master Reserve Canopy - Life expectancy is 20 reserve rides.

It is estimated that after 20 uses the canopy has reached it's safe useful service life.

Some factors, beyond a manufacturers control, that dictate equipment service life are: sand; hot, dry climate; high field elevations; the quality of routine inspection and maintenance; and packing.



SALE!!!!

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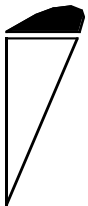
<u>Description</u>	<u>Cost</u>	<u>No. Jumps</u>	<u>Cost/Jump</u>
Main canopy, trade in	1,680.00	600	2.80
Three line sets, installed	600.00	600	1.00
Drogue	350.00	600	0.58
Harness/Container, trade in	950.00	2000	0.48
D-bag	75.00	250	0.30
		Total	\$5.16

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