

# TANDEM NEWS



A PUBLICATION BY STRONG ENTERPRISES  
FOR TANDEM INFORMATION

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## FAA EXEMPTION UPDATE.

The present FAA Exemption 4943(a) expires June 30th of this year. Strong Enterprises has filed with the FAA for a new exemption, not a re-issuance of the present one. If approved, this new exemption will help drop zones, owners and student jumpers alike that jump the Dual Hawk System. We anticipate this format for the exemption will be the guideline for a final rule change.

Some of the changes asked for:

- 1) Separate exemption from the Relative Workshop
- 2) Reduction in much of the present reporting requirements.
- 3) Five year term or until rule change.

We will let you know how the petition works out, if there is a substantial delay in hearing from the FAA, we may call upon the tandem industry for support.

## SET-400 - A GREAT HIT!

Since Mark Van Gelder, a DHT owner for several years, took a SET-400 to the World Skydiving Convention last summer, the canopy has just taken off. The slower, softer openings have some T/T's a little nervous waiting for it to open completely; but, my old neck really appreciates the soft openings. In order to monitor the openings, I recently put on a sensitive altimeter from an airplane. While focusing on these openings, I became aware of the opening being in two stages.

The first stage took about 2 1/2 seconds and 500 ft. The second stage took about 3 seconds and 300 ft. I could distinctly feel the abrupt deceleration which signaled the start of the second stage. I was surprised that the opening only took 800 ft. Time-wise, it felt like I used more altitude. Many of the new SET-400 users were reporting 1200-1500 ft. openings. Maybe the reality is a longer opening time-

wise, but not taking up as much sky as we think. We'll be keeping an eye on it as we continue to enjoy all of the other fine virtues of this canopy, such as the fast turns and the light toggle pressure.

The Specs: The material is zero porosity on the top and the bottom with lines of 940 lb. Spectra. Semi-elliptical in shape, it behaves like the high performance canopy that it is. In fact, we recommend that the user have 200 jumps on a high performance solo canopy before using the SET-400.

If you are thinking of upgrading your equipment this season, we recommend a SET-400. We have several current users that you could call for their comments. We are confident that they will give the SET-400 their endorsement. Cost: The canopy is \$2,800.00 with new risers, but don't forget that your trade-in value for your worn out canopy will be \$560 - bringing your cost down to \$2240. The materials cost may be a little higher, but this stronger material coupled with the softer openings should add considerably to the life expectancy of the canopy.

**INTERNATIONAL  
PARACHUTING  
COMMISSION (FAI), AND  
THE NORDIC TANDEM  
SEMINAR '96**

Dedicated to safety in parachuting, IPC Chairman, Liam McNulty invited Bill Morrissey to address the February '96 meeting of the Technical Committee in Paris, France. Bill's study, and video presentation, of the "Tandem Side-Spin Phenomenon" has quickly become appreciated as a "must see" event for everyone in the tandem community. The actual emergencies depicted, the solo side-spin research, and the proof of concept demonstration of an actual premeditated Side-Spin assures that the viewer understands the elements of the side-spin, and how to recover from them. **LIFE SAVING INFO!!**

Many skydivers do not know that the parachuting arm of the Federation Aeronautic International (FAI) is the International Parachuting Commission (IPC). That part of the IPC that looks after the safety in parachuting is the Technical And Safety Subcommittee. This committee, made up of delegates from the IPC member countries, meets every other year in an effort to enhance parachuting safety.

After the IPC Technical Conference, Bill was a guest speaker at the "Nordic Tandem

Seminar '96" in Karlsborg, Sweden. One hundred and ten tandem instructors from the Scandinavian countries participated in a two day series of lectures and working groups. Organized by Per Myrin of Sweden, and Stein Kynøf of Norway, the Seminar was hosted by the Swedish Parachute Association at a scenic military fort in Karlsborg, Sweden. It was a pleasure to witness this large group of instructors dedicate themselves to advancing tandem and keeping it safe. Strong Enterprises is happy to have been able contribute to that end.

**SIDE SPIN VIDEO.**

This important video was first introduced at the '95 PIA Symposium. The actual audio portion, as presented by Bill Morrissey, Strong Enterprises Tandem Program Director, has now been added to this video.

This tape is critical for T/I's to view. It is a required tape to have for Candidates going through the TICC. If you haven't seen it, you can now see and hear it! It's very impressive.

We are selling this tape for only \$39.00 ppd (\$30.00 For T/Is or \$25.00 when buying 20 or more). Available in NTSC, PAL, or SECAM.

**CALIFORNIA TANDEM  
CASE UPDATE**

**California jury awards  
\$650,000 in wrongful death  
tandem parachute suit.**

That was the headline of the Press Release that Strong Enterprises distributed on November 27th. If you are interested, we will send you a copy of the two page report. The bottom line is that SE was found 5% negligent in not controlling and supervising the Dual Hawk owner. That five percent translates into \$25,000 plus additional expenses that bring the total to \$63,500. This lawsuit has cost Strong Enterprises over \$300,000 in legal costs in addition to the judgment.

How does this effect you? The Dual Hawk owner, Milt Burton has judgements of \$668,670. against him. He has leans on everything he owns, he lost his planes, his parachutes, his ratings - his ability to work in the skydiving industry! His life has been seriously damaged!

This is one of the reasons USPA should not be involved in this "experimental" test program. One lawsuit will severely injure your national organization. USPA must wait until the change to FAR 105! If you agree, write to your regional director and two National Directors. They want and need, your input. Do it now!

### **The case goes on. . .**

To date, the Plaintiffs' attorney has filed three motions before the court:

- 1) A motion to disregard the jury's verdict and enter a verdict in favor of the plaintiffs.
- 2) Notice of motion for a new trial, on twelve grounds which allegedly prevented a fair trial.
- 3) Notice of motion to classify defendant Burton as an "agent" of Strong Enterprises.

It is clear to see that the Plaintiffs are not through with this case even after a 30 day court trial and a judgment in their favor. We expect that before this case is finally settled, it will be another six months and many thousands of dollars more in legal fees.

Support from the tandem industry? The Tandem Legal Fund has received contributions of \$26,130.00 in the last year. It is interesting to note that several of the largest tandem drop zones in this country that use the Dual Hawk have not contributed at all to this Legal Fund, nor has USPA, which gets thousands of new members each year through tandem.

There have been two contributions of \$2,500 each from people who are not involved in our tandem program but who are concerned about the future of tandem. If you would like to contribute to this important legal fight, send your

check to Tandem Legal Fund, c/o Strong Enterprises.

### **SYLLABUS AND APPLICATION FOR FIRST TANDEM JUMP STUDENTS**

This syllabus fits the required basic training for a first time tandem student. The four page overview of the first tandem jump gives the student the information that he needs and what you want him to know. A copy of this training guide is being sent out to all the Dual Hawk owners in the US. Feel free to use this format, or reprint it with your drop zone heading.

This document is also designed for your legal protection.

### **MAIN CONTAINER SAFETY IMPROVEMENTS**

Yes! Strong Enterprises is "The Parachute Company With Imagination". Imagination is what it takes to keep pace with the needs of the parachuting community, especially in the area of safety changes to the equipment. We have already decided that Mr. Murphy, of "Murphy's Law" fame, is a skydiver. He certainly spends a lot of time showing skydivers how to find ways to put themselves in danger.

In the area of equipment changes SE has been working with several prototype main container designs to address premature opening of the main container. We did mention this project in Tan. News # 17, in the "Equipment Info" section. The problem has focused on either accidental extraction of the main closing pin, or breakage of the main closing loop, resulting in the opening of the main container. Either of these events could occur prior to drogue deployment or before drogue release. Accidental extraction of the main closing pin can result from having worn out velcro on the pin bridle, from being pushed out of the closing loop, or from a careless conflict between the Kevlar drogue bridle and the pin bridle. That situation becomes more dangerous when the main D-bag comes out of the container and starts whipping around while still attached to the drogue riser by that length of drogue bridle between the ring at the drogue riser and the D-bag.

Entanglements of the reserve pilot chute with the horseshoed main/drogue have resulted in several tandem fatalities. This does illustrate the seriousness of the problem.

We are focusing our efforts in keeping the D-bag in the container, if for any reason the container opens prematurely and the drogue has not been released. We are currently jumping three different prototypes, but we need

more testing before we are able to finalize a design.

While we are still working on it, please remember the proper procedure in this event is to follow all normal procedures:  
Deploy the drogue!  
Release the drogue!  
Cutaway!  
Activate the reserve!  
*In that order!*

### **The Human Side.**

The human ingredient in this scenario is the tandem instructor going into shock when encountering an emergency that he was not prepared for. The “shock” manifested itself in that several instructors did not follow proper emergency procedure and failed to release the drogue before breakaway and/or reserve activation. See “Another Student Saves His Life” in issue #18.

Traumatic shock is a human factor that we can try to avoid by preparing ourselves to react to known malfunctions, and to think our way thru the unknown emergencies.

An example would be the fatality in Marshall, MI., on 13 Oct. 1995. An official investigation was held to review what was known, eyewitness accounts, and on-site video of the equipment.

The condition of the equipment suggests that at some time after exit the main container opened and the main D-bag came out of the container. The tandem

instructor proceeded to cutaway and pull his reserve. Wrong! The main could not be cutaway because the drogue had not been released! The reserve pilot chute then entangled with the main lines or drogue bridle.

Unfortunately, this instructor did what several others had done before him, he neglected to activate either drogue release. When a tandem instructor with over 500 tandem jumps, on his sixth tandem of the day, forgets to release his drogue, I suggest that an unknown, or perhaps little known ingredient called “traumatic shock”, entered the picture.

It makes no difference that this fatality occurred on a Tandem Vector, the basic truths apply to any system. If you are not prepared for “that” emergency, then there is a good chance that you will succumb to “traumatic shock”, and make a fatal mistake. Just look up the history of tandem fatalities in particular, and freefall related fatalities in general.

If you happen to be thinking, “what should we do to prevent this?”, good for you, you are on the right track. We all have to admit that we are vulnerable and prepare ourselves by practicing our emergency procedures.

Try giving yourself emergency scenarios to ponder, then time your analyses, solution, and reaction to the problem. Quite a few of your times will be too long. But you will improve with practice. You must also focus on the need to rehearse emergency

procedures by touching those handles in freefall in the order in which you may need every one of them, in the next 35 seconds.

Sure I get tired of hearing myself say the same thing over and over again, but I do practice what I preach.

### **HELPFUL HINTS FROM HILLY!**

When Australian tandem magnate Graham Hill visited SE in February., he informed us that his DZ made 4000 tandem jumps in ‘95, and had three (3) malfunctions. Now that’s impressive!

He operates twelve T-520s and two Master 425s, so I had to ask him to pass on some of his wisdom .

- 1) Pack the lines not the canopy! (Focus on the lines.)
- 2) Make short stows, 1” thru the rubber band!
- 3) Double wrap the rubber bands around the stow!
- 4) Use the ALS (anti line slump) bag! (It works!)
- 5) Pack indoors, on a mat!
- 6) Change your lines! (SE suggests every 250 jumps.)

### **CUTAWAY CABLES**

**Bare Stainless vs The Yellow Coated Cutaway Cable**

Two reasons that we went to the bare cable:

1) In several instances the yellow cable had folded 180° and pulled into the 0 grommet on the end of the cutaway cable housing, making it impossible to cutaway. Both Strong Enterprises and Relative Workshop tests show a force of only 60 lbs will pull the yellow cable through this grommet, while a force of 230 lbs., significantly more, is required on the thicker bare cable. Inside the yellow cover there is a 49 strand, 1/16 inch thick steel cable, while our 19 strand stainless steel bare cable is 3/32 inch thick.

2) Another consideration is the rough interior of the cutaway cable housing and the multiple compound curves that the cable must be pulled through. While the yellow cable pulls fine on a straight pull, when you add curves (friction) the bare cable requires less pull force.

The major deciding factor in changing to the bare cable was the propensity for the yellow cable to get jammed in the 0 grommet.

### THE GEOMETRY OF THE THREE RING RELEASE

According to Bill Booth, the three ring release was designed for one 200 lb. person. Tandem has been subjecting the three ring release to maximum loading

for a long time, and that fact is now manifesting itself in:

1) Tandem risers, as opposed to solo risers, have to be constructed to extremely close tolerances in order to assure proper ring geometry.  
2) Proper function becomes more complicated when tandem jumping usage of the risers over a period of time stretches the assembly out of proper geometry, thereby causing the loop to put a greater stress on the cutaway cable (1/8 inch deviation in geometry equals a 300% increase in pull force). We believe that this additional pressure on the cable may cause hard cutaways!

### RINGS

The RW-2 (middle) ring has proven to be in need of replacing. Current materials and construction techniques used on the canopies have increased opening shock. This, coupled with the suppliers of the middle ring on the 3-ring system (D.J. Assoc. & US Forgecraft) changing from a forged part (with a tensile test of 1,500 lbs) to a machined part (with a tensile test of 500 lbs) without any notification to the parachute industry, have pushed both Strong Enterprises and the Relative Workshop to stop using the RW #2 & #3 rings for tandem jumping.

### RISERS

Risers again! Two years ago, we changed the risers and thought the problems were solved. It took almost a year and 150 pair of tandem risers before we were aware of a problem with these rings. Then it took several months and dozens of phone calls, letters, and independent tests to determine the exact cause for the middle ring failure (See Product Alert 9 August, 1995).

This has resulted in Strong Enterprises having the middle ring and small ring, redesigned to a much stronger, forged ring. (See photo). It has taken six months of close work with the new forger to supply rings that are acceptable to Strong Enterprises.

These new tandem risers, available now, have several new

features:

- 1) New forged rings - tensile tested to 3000 lbs. & 1750 lbs.
- 2) New toggle design.
- 3) Spandura toggle pocket.
- 4) No velcro on the riser.
- 5) Stainless steel RSL release snap.
- 6) 2" shorter in overall length of riser.

### **Riser replacement policy.**

- (1) All Dual Hawk main risers manufactured between 1 June '94 and 31 July '95 will be replaced free of charge. The new risers will require new toggles for compatibility
- (2) Strong Enterprises recommends that all other tandem main risers manufactured before March '96 be replaced with the heavy ring risers made after 1 March '96. As an inducement, Strong will offer these new risers at \$90. a pair (\$150. retail) until 1 Sept. '96.

All replaced risers must be returned to Strong Enterprises, so that we can document that these risers are out of service.

### **INTERCHANGING COMPONENT PARTS PROHIBITED**

The Dual Hawk Tandem System was designed and tested as a complete system.

If there are other manufacturer's components installed and in use on a Dual Hawk System the system is considered to be non-airworthy and therefore it is grounded.

This includes:

- Main canopy
- Main deployment bag
- Main risers
- Drogue
- Reserve canopy
- Reserve pilot chute
- Reserve deployment bag
- All release handles and ripcords
- Passenger harness

The tandem instructor using the system will have his rating as a representative suspended.

Notification of this grounding and suspension will be sent to the local FAA FSDO.

Because of the nature of tandem jumping and the liability that Strong Enterprises is exposed to in protecting the tandem program under the FAA, we are adamant about maintaining the best possible program that we can. You need to make up your mind whether your going to be in it or out!

### **TANDEM INSTRUCTORS VISITING THE USA**

When you travel to the United States and are jumping under the FAA Tandem Exemption, you need to meet all of the requirements that are set out by this exemption.

Non-conformance with the exemption will create a problem for you, the drop zone, the owner of the tandem system you are jumping, and Strong Enterprises. The only tandem ratings valid in the US are those issued by a manufacturer holding a FAA exemption. It is your responsibility to know the rules in the U.S. and to comply with those rules.

### **CHECK THEIR CREDENTIALS**

We have been advised that someone is representing themselves as a Steve Jester and saying that he is certified by Strong Enterprises. as a Tandem Instructor. Strong has not certified anyone named Steve Jester as a Tandem Instructor. Don't be fooled, we all have too much to lose! If they don't have a certification card, they don't have a rating! Under our new operating rules, owners are required to have a copy of all TI cards on file, with a copy to SE.

# ! Seminar !

## **TANDEM INSTRUCTOR'S SEMINAR IN CALIFORNIA!**

Tandem Examiner Artie Paton,  
in coordination with Strong  
Enterprises, will host this  
Seminar on April 19, 1996.

Location: Red Lion Hotel,  
Ontario Airport, 222 N.  
Vineyard, Ontario, CA.  
91764, 909 983 0909, Fax  
984 9776

Guest speakers on many  
subjects important to your  
future! Send in your questions  
and other suggested topics by 1  
April.

FFI: Artie Paton, Perris Valley  
Skydiving School, 2091 Goetz Rd.,  
Perris, CA. 92570. Home # 909 674  
5320, or Bill Morrissey at Strong  
Enterprises.

## TIPS FROM THE PROS

- 1) For streamers: Pull rear risers outward & downward, exposing the tail of the canopy to the relative wind.
- 2) Tailgate exits: Address the tailgate facing away from the direction of flight. On "GO", take a giant step forward. You will be falling vertically, feet to earth. Hold your hands in a tracking position so as to create more drag on the lower half of your body. As you fall below the aircraft, the relative wind will push you into a backloop, which you

will be tracking out of into a face to earth attitude, looking at the airport and those who exited before you. A nice view!!

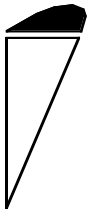
- 3) For better landings on the T-520, take one or two wraps

on the flare line. We need the proper length for full flight, so the lines can not be shortened.

### **Come on down under mate! See Australia!**

Sydney Skydiving Center is looking for Tandem Instructors!

Call ,write or fax  
Grahame Hill "Hilly"  
PO Box 84  
Bargo, 2574 N.S.W. Australia  
Tel. 61 46 309265  
Fax. 61 46 841163



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