

# Skydiving™

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## Butler Parachute Offers Pilots Rig

Butler Parachute Systems, Inc., has announced that it recently received FAA TSO approval for its Beta Emergency Back parachute for pilots. The company is moving into new facilities in Austin, Tex., to begin full-scale manufacturing of the parachute.

The Beta Emergency Back was designed by Manly Butler, president of the firm. It features a lightweight, compact harness and container that is suitable for three common military surplus canopies — the 24' Army, the 26' Navy and the 28' C-9 — as well as the National Parachute Supply 26' Lopo. Butler designed the rig to meet the needs of pilots who are looking for a comfortable emergency parachute.

The system is TSOed in the Standard (or "high speed") Category and is delivered with steerable canopies only. The rig uses a Para-Flite Hog Dog pilot chute or equal, which is packed onto a set of internal flaps to provide for a staged deployment. Construction is of a double layer of parapack for durability.

Butler decided to TSO the Beta Emergency Back for use with military surplus canopies because they are both strong and readily available.

The system weighs 16½ lbs. with a 24' or 26' Navy canopy, 19½ lbs. with a 28' canopy, and 13 lbs. with the National Lopo. For comparison, the GQ Security 150 Safety Chute weighs 16½ lbs. with a Security Lopo canopy.

Suggested retail price of the Beta Emergency Back with a 24' or 28' canopy is \$399 complete. The harness and container alone retail for \$250. A customer can trade in his current emergency parachute (such as a surplus B-12 or NB-6) and receive a substantial reduction in price.

The company is establishing a dealer network, and Butler told *Skydiving* that "we're being very selective." Information is available from 401 E. Fawnridge, Austin, Texas 78753.



The all-woman world record formation built over Elsinore on November 2. Photo by Robert Buehrer.

## U.S. Women Set World RW Record

Women skydivers from all over the United States met at Elsinore Paracenter in California on the first weekend of November to attempt to establish an official world record for the largest all-woman formation. Five jumps were made in an effort to build 24- and 30-woman formations, and the second dive resulted in a clean 24-quadra-wedge that was held for some 20 seconds. The judges certified the jump's success and the feat was filed with the FAI for official acceptance.

The jumps were made from a DC-3 from 15,500 feet. The plan was to build the formations in waves — each row of jumpers from the base star out were to set up directly behind their slots and move in to dock when others in their row were set up and ready to close.

There were problems, however. The base tended to float, making it difficult for the flyers to stay up with it and fly in a relaxed position. Organizer Karalee Canham reported "there was a great deal of smooth, clean, graceful flying with at least one geek on every dive," and four of the five jumps either funneled or were incomplete.

It took almost two days for the judges to certify the record. There were several cameramen on the jumps, and apparently the judges were determining how many women were in the formation

by counting the numbers of jumpers out of it. After the second jump, the record dive, the judges could not be sure the quadra-wedge was built and held for the required five seconds because of confusion as to how many cameramen were in the air. The photographs helped prove the record.

Participants in the record were Marilyn Perrine, Sue Barnes, Jan Works, Cynthia Frueh, Chris Doss, Becky Avilla, Cathy Cullman, Cheryl Rowe, Karen Collett, Karalee Canham, Cheryl Creson, Diana Rowland, Valeria Thal, Sandy Matthewson, Vicki Christensen, Pat Davis, Bonnie Chalfant, Mary Wolfrank, Denise Lashmett, Betty Hawkins, Chris Deli, Daen Arbogast, Dana Morrison, and Wendy Neustrup.

(continued on page 17)

## Slots, Symbiosis, Coon Asses Win Z-Hills Pumpkin Meet

The 1979 Zephyrhills Pumpkin Meet was small compared to previous years, but competitors and fun jumpers alike generally agreed that the 11-day event was a good one.

Zephyrhills has been hosting the "Turkey Meet" for the past eleven years, offering events such as 10- and 20-man speed stars, 16-man speed formations, and 8-man sequential. This year Operator Jim Hooper added 4- and 8-

way canopy relative work, making Zephyrhills the site of the first major CRW competition.

Although the Turkey Meet has historically been held over the Thanksgiving holidays, the parachute center made a major change in 1978 when it scheduled the competition for the last weekend of October — hence the name Pumpkin Meet — while reser-

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# Arizona Jumper Earns SCS on Seventh Jump

The manager of the Arizona Parachute Ranch near Coolidge, Ariz., reports that Jim Slocum, a flight technology student at Arizona State University, closed 10th on the end of a 9-man line and then flew the line into a 10-man star to qualify for his SCS award last August. What is so unusual about the feat is that it was Slocum's seventh skydive.

Slocum is a pilot with several thousand hours in both powered aircraft and gliders, much of it in jump aircraft. His first jump was a static line, using a GQ Security Unit deployed from a Jump Shack Racer. His second jump was a ten second delay, followed by a 30-second delay when he tried turns, tracking and waving off. He was in a 2-man on his

fourth jump, and closed on a 3-man twice on jump number five. He did a back-in on jump six, a 60-second delay involving a bipole formation.

He went middle floater from a Twin Beech for a jump that was designed to earn his SCR award. A 9-man was built, at which time the jumpers on either side of Slocum let him go so he could close on the resulting line.

A jumper on the load reported that the line wasn't flying too well and Slocum went a little low during his approach. He did a reverse arch, popped back up, flew into one end of the line and helped close it back to a round star.

Apparently, Slocum is the first person to earn an SCS with so few jumps.

## Deca-Plane Built at Zephyrhills

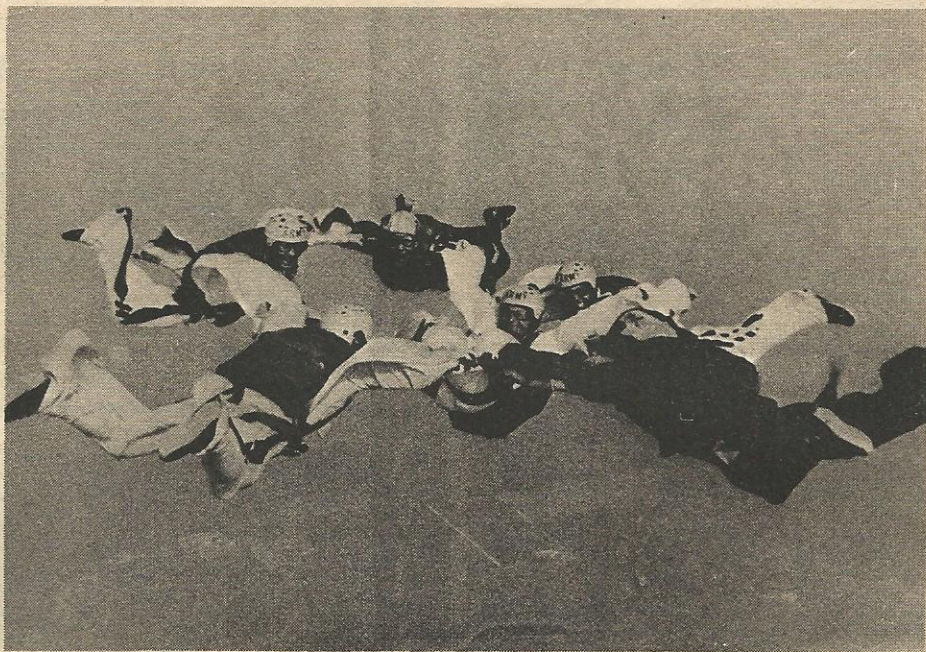
A "deca-plane" was built over Zephyrhills, Fla., on November 1, making this the largest of this type of canopy formation yet built. (A "plane" is a canopy formation where the upper jumper slides down the lines of the lower jumper's canopy and locks his feet in the risers or lines of the canopy.)

Previously, the largest plane was a 9-way, built at the Skyvan Boogie at Limerick, Penn., Labor Day weekend. Several of the Stormville, N.y., jumpers who built the 9-planes (two were built at Limerick) were participants in the deca-plane.

The deca-plane was held for 56

seconds before it funnelled. Participants, in order of entry, were: Fred Boger, Cliff Dobson, Dean Richardson, Jim Perry, Frank Carter, Willie Maier, Tom Brandariz, Jack Gregory, Garrett Dolan and Mike Lewis.

Randy Kerr reported that the Stormville CRW jumpers had refined their plane-building techniques "to a science." Each jumper has an assigned entry order that must be followed. After a dock, the lower jumper gently stalls his canopy to back it off the upper canopy's lines and get it fully inflated. Keeping all the docked canopies inflated helps keep the formation stable.



Andy Gerber of the U.S. Parachute Team commemorates his 1,000th freefall surrounded by his teammates. Photo by Mark Shields.

## GQ Security Offers Kevlar Lines

Responding to requests from customers, GQ Security Parachutes of San Leandro, Calif., will install Kevlar suspension lines on its Unit main canopy. Kevlar is a synthetic fiber that, pound for pound, is many times stronger than nylon or dacron. Kevlar suspension lines are extremely thin, not much thicker than a pencil lead. Not only is pack bulk reduced, but the thinner cross section significantly reduces aerodynamic drag in flight, resulting in a slight increase in forward speed. Pack volume is also reduced substantially.

Kevlar has its disadvantages, however. It's a relatively new fiber and the sport has had some disappointing experiences with it in the past. Older versions of the line were very susceptible to damage by abrasion; dragging a canopy on concrete could ruin the lines very quickly.

Kevlar also has a very low stretch modulus, meaning that the lines do not stretch under a load. The result is that Kevlar suspension lines do not absorb any of the forces generated during opening, transmitting them without loss to the jumper and the canopy.

The Kevlar line used by GQ Security apparently has a high resistance to abrasion. The fibers are resin treated before they are spun into line, a process which seems to be much better than treating the suspension line after it is spun. Resin treating is commonly used on parachute lines and webbing to provide "body" and improve wear characteristics.

Michael Cerasoli, president of Sky Supplies in DeLand, Fla., installed Kevlar lines on his Unit about a year ago. He's logged several hundred jumps on the canopy since then and the lines show an acceptable amount of wear. Cerasoli mentioned that it is important that the grommets in the slider be kept free from nicks that will fray Kevlar suspension lines quickly.

Bill Dause, operator of the Pope Valley, California, Parachute Center, has made over 100 jumps on his Kevlar-equipped Unit. An employee of GQ Security inspected the canopy and reported to *Skydiving* that the lines showed very little wear.

In spite of the encouraging results, the company does not recommend the line as it feels more testing should be done to accumulate a reliable data base.

Kevlar reduces the weight of a Unit by 12 to 14 ounces and the bulk attributed to the lines by three-quarters. A Unit without risers with Kevlar lines weighs in at 6 pounds, 14 ounces, according to the factory.

GQ Security charges \$35 to install Kevlar lines at the time of manufacture or \$50 on a retrofit basis. The company will not reveal the name of the manufacturer of the line.

## Tecumseh Airport Sold

The ownership of the Al Meyers Airport near Tecumseh, Mich., has changed hands, but the action should have no affect on the parachuting center which has operated there for years. Tecumseh is the home of Parachuting Services, owned by Harold and Judy Lange and was the training site for the 1979 U.S. Team.

The airport was purchased from a small aircraft company by a local businessman. The new owner, who owns land adjacent to the airport, plans to have light industries settle around the airport, which "will continue to function as usual."

## Skydiving

Parachuting's Newsmagazine

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# Record Night Formation Built Over Z-Hills

Twenty-four skydivers built a clean quadra-wedge over Zephyrhills, Fla., a few minutes before midnight on November 3. It was the largest night formation built so far, surpassing the 21-wedge that was built over the same drop zone in April, 1978.

The jump was made under a full moon on the last day of the Z-Hills Pumpkin Meet. Dave Sickler organized the load and had lined up most of the participants several days in advance. It was his goal to keep the record attempts "low key" but well planned.

A practice dive was made late Sunday afternoon, the day of the jumps. The 24-way quadra-wedge was selected as the target formation because of its simplicity and stability.

Many of the people who had originally committed to the night attempts changed their minds that afternoon. Some wanted to get on the road towards home, while others were skeptical that the weather — windy with high clouds — would prevent the jumps that night. As a result of the last-minute snivels, Sickler was forced to hustle replacements.

The practice jump went well, with the formation being built quickly in the afternoon sun. The wedges even did a little sequential — each turned 90° and docked apex-to-wing, making a momentary open box.

It took two jumps that night to secure the record. The first, which got off about 9:30 p.m. in a conventional-door

DC-3, built well except that one jumper went low. FIA Judge Gordon Riner observed the jump in freefall close to the formation, while Photographer Randy Quiroz took still pictures of the attempt.

Visibility was excellent with clear skies and a full moon. Jumpers wore Cyalume "cool lights." It was windy, however, and the jumpers reported that they backed up under their square canopies until they were very close to the ground. One jumper on the first attempt had a malfunction, broke away and landed without incident about a mile from the drop zone near the congested area of Zephyrhills. He got back in time to make the second jump.

Three jumpers on the first attempt

didn't make the second as they had to start their trips home. Riner observed the second jump from the ground through telemeters, while U.S. National Judge Dave Singer was a participant in the formation and served as an aerial judge.

Exit altitude for the second jump was 13,500'. The formation built without a problem and was held, according to Carl Daughtery, 15 to 20 seconds.

DZ Operator Jim Hooper was so pleased with the success of the jump that he paid for the jump.

Participants in the night 24-way were: Mike Barber, Carl Daughtery, Craig Fronk, Sheila Whitten, Dave Sickler, Helen Sickler, Vicki Wery, Dave Singer, Greg Wirth, Dave Arquist, Bobby Wilson, B.J. Worth, Jerry Bird, Otis Van der Kolk, Joan Murphy, Paul McGowan, Jerry Madison, Al Madison, Jay Augustine, Mike Millhorn, Dwayne Bruette, Roland Hifiker, Jack Linville, and Mike Smith. Quiroz took several freefall photographs of the completed formation and then docked on it.

Although the formation is the largest night formation yet built, there is some question whether the jump will be recognized as an official world record by the International Aeronautical Federation. The FAI Sporting Code, the document that contains the procedures and requirements for attempting and certifying a parachuting world record, is ambiguous in stating whether night RW records are recognized.

The USPA filed for the record, although Executive Director Bill Ottley told *Skydiving* that he couldn't be sure the record would be officially recognized.

## 8-Woman Night Formation Built

All all-woman 8-way formation was built over Perris Valley, Calif., on the night of November 3, which qualified several of the participants for their NWSCR patches. It was the fourth known 8-way or larger all-woman night formation built in the United States.

The dive was organized by Dana Morrison of Elsinore, Calif. In addition to the eight women, she included two men who were to close on the formation once all eight women were docked. They did, and therefore also qualified for the patches.

The ten jumpers used a Twin Beech for the jump. Participants, in order of entry into the "eagle" formation, were M.J. Townsend from Elsinore/Perris; Cheryl Rowe, Salt Lake City; Cindy Frueh, Pope Valley, Calif.; Dana Morrison; Betty Hawkins, Pope Valley; Vicki Christensen, Farmington Hills, Mich.; Cheryl Creson, Pope Valley; Valarie Thal, Coolidge, Ariz.; Jim Handbury, Elsinore/Perris, and Tom Piras, Pope Valley.

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# Pioneer Parachute Company Offers Viking Superlite 2

Pioneer Parachute Company has begun deliveries of its Viking Superlite 2 canopy. The 230 sq. ft. canopy replaces the Viking Superlite in the company's product line, and offers the jumper significantly less weight and bulk.

A spokesman for Pioneer said the new canopy weighs 9 lbs. 2 oz. with standard 3-ring risers, soft toggles and single-point bridle attachment. For comparison, the "mid-size" 200 sq. ft. Pioneer Merlin weighs in at 8 lbs. 3 oz. The latest version of the Viking will easily fit into the Relative Workshop Wonderhog Sprint and Jump Shack SST Racer.

The -2 version of the Viking Superlite has only one major design change from its predecessor. The stabilizers have been changed to the Merlin design, although they're slightly larger in size. Pioneer claims that the stabilizer design is extremely effective in preventing end cell closures.

The canopy has 600-pound test Dacron lines arranged in four lines per cell. The lines are cascaded.

The reduction in weight and packed volume has been attributed to the Harris F-111 fabric and the company's I-beam construction technique. I-beam construction reduces weight and bulk by

reducing the size and number of seams required to construct the 7-cell parachute.

The Viking Superlite 2 uses "crows feet" of Type 3 tape to reinforce the load-bearing ribs at the line attachment points. Some canopies, such as the Para-Flite Lightweight Strato-Cloud, use a single strip of tape to reinforce the rib. This method results in a bumpier air foil shape, although the aerodynamic affects are presumed to be very insignificant. Both methods provide adequate strength.

The new Viking is significantly more stable in all flight modes than the smaller Pioneer Merlin. The jumper has a full range of control movement, from keepers to hips, instead of the 12 to 24" that the mid-size 7-cell canopies such as the Merlin, Cruisair and GQ Security Unit generally have.

Compared to the Merlin, forward speed and rate of descent are less, as is turning rate.

As a result, the Viking is more suitable for the jumper who is interested in accuracy, softer landings, and very stable flight. Since it will still pack into the smallest rigs made today, Pioneer feels that many jumpers will buy the parachute as an all-around canopy.

Suggested retail price for the Viking Superlite 2 is \$735.

Pioneer has other projects in progress. It has built two prototype ram-airs, a 265 sq. ft. Titan and a 180 sq. ft. Phoenix. The Titan has seven cells while the Phoenix has five. Both canopies are built from the F-111 fabric using lightweight construction techniques.

Neither canopy has been jumped yet, nor has the company made any definite plans to develop and market them.

Pioneer is also experimenting with Kevlar suspension lines. GQ Security Parachute Company offers the ultra-thin lines as an option on the company's Unit canopy, although the manufacture advises customers that it cannot assure the line will be as durable as more conventional line made from nylon or Dacron.

## Pilot's License Pulled For Flying Jumpers

An administrative law judge for the National Transportation Safety Board suspended a California pilot's certificate for 90 days for flying paying jumpers with only a Private Pilot Certificate. The FAA charged that the pilot, Dwight Reimer, flew several loads of jumpers in his B-25 in May, 1978, near Taft, Calif., and accepted payment for the flights in spite of the fact that he didn't hold a Commercial Pilot Certificate.

Federal Aviation Regulations prohibit private pilots from "flying for hire." Although a pilot may share the cost of his flying with his passengers, the FAA contends that such flights must be conducted for a common purpose, such as flying to the same destination. The agency pointed out that Reimer wouldn't have flown if the jumpers hadn't paid for the flights.

Reimer was also cited for not having enough seatbelts in the aircraft for the number of passengers he carried.

Reimer has indicated he will appeal the decision. He feels he is being harassed because of his opposition to rate increases that are going into effect at the county's airports. He also said that he and his jumper passengers had a common purpose, recreation.

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## Para-Flite Offers "XL" Cloud

Although the canopy has been available for several months on a special order basis, Para-Flite, Inc., of Pennsauken N.J., has recently assumed a more aggressive marketing stance for its 260 sq. ft. "XL" canopy. The parachute has more surface area than any previous production ram-air, and is designed for jumpers looking for extremely stable flight and soft landings.

The XL will compete with the NAA 252 Para-Foil for the "big canopy" market. With 252 sq. ft. of surface area, the 252 Para-Foil has become popular with accuracy jumpers, including the 1979 U.S. National Champions Cheryl Stearns and Dwight Reynolds. Reynolds said the "solidness of the 252 on final approach" made him prefer the canopy to the Para-Flite Strato-Cloud, a 230 sq. ft. parachute that has long been the choice of accuracy jumpers. Whether the XL will recapture the loyalty of competitors such as Stearns and Reynolds remains to be seen.

Although the XL is big when inflated, Harris F-111 fabric and lightweight construction techniques have allowed Para-Flite to produce a canopy that weighs a trim 11½ lbs. with risers and packs into most Strato-Flyer sized rigs. For comparison, the 252 Para-Foil weighs 12½ lbs., the Lightweight Strato-Cloud weighs in at 11½ lbs. and the Para-Flite Cruisair is about 10½ lbs.

The XL has more in common with the Cruisair than the Strato-Cloud. Both the Cruisair and the XL were designed around the Lissaman airfoil, a shape developed under contract to Para-Flite by the engineer who designed the successful man-powered aircraft that was recently pedaled across the English Channel.

Because of the Lissaman airfoil, the XL will outfly a Strato-Cloud — it has more forward speed and a flatter glide angle.

Skydivers who have jumped the XL were very impressed. Bob Chaffin used it to win the POPS Nationals last July, and former Parachutist Editor Mike Leeds reports that the canopy lands him softly even after a slow speed flare, a maneuver that results in undesireably hand landings with smaller canopies.

The XL is essentially a sport version of a canopy that Para-Flite has been marketing to the military for some time. The company has developed a tandem parachute system that uses a 260 sq. ft. main and reserve that provides the capability of putting soldiers into a tight drop zone from an aircraft that may be twenty miles away from the target. Called the MT-1 Tactical Gliding Parachute System, the rig uses a 260 sq. ft. canopy equipped with a slider and free-bag for the reserve, while the main is a similar canopy relying on the pilot chute controlled reefing system.

Suggested retail price of the XL is \$825.

Para-Flite has other parachutes under development. It is test jumping a 180 sq. ft. 5-cell main canopy that is also based on the Lissaman airfoil and lightweight construction techniques. Plans are to have the canopy ready for production in late 1980. Weight will be less than 8 lbs.

The company is also actively testing a 180 sq. ft. 5-cell reserve. The canopy will have a packed volume similar to the 165 sq. ft. Safety Flyer reserve but will offer heavier jumpers' softer landings. TSO testing and other development work should be completed by Spring 1980.



China entered its first World Parachuting Championships last August when it sent 4- and 8-way teams to the world RW meet in France. Both teams did quite well, finishing 4th in the unofficial combined standings. Although most teams preferred piggyback rigs, the Chinese came to France with conventional "fore and aft" gear, shown in the inset photo above. Jumpsuits were modern, however, with relatively small wing areas of the type favored by many sequential jumpers. The larger photo shows Hod Sanders of U.S. Mirror Image 8-way team trying on a Chinese team suit under his Wonderhog. Both photos by Bill Booth of the Relative Workshop.

## China and Australia Practiced Hard for the World Meet

The Chinese relative work team that attended the World Parachuting Championships in France last summer had more experience than many people thought.

According to John Mahaffy of Parachutes Australia, the 4- and 8-man

teams had some 500 practice jumps together, all of them free. Twenty-nine 8-way teams competed at the Chinese Nationals.

The Chinese also had an interesting method of performing a back-in. Rather than have a jumper fly up to the formation and turn around, the "back-in" flies forward through a gap between two jumpers who catch his legs as he passes.

Mahaffy also reported that the "Americans, Canadians, French and British teams hogged the free jumps after the world meet trying for a record 40-man formation." The effort wasn't successful. Apparently no Australians were invited on the loads.

Someone stole the FAI flag at the site of the meet after the competition was completed and all jumping stopped until it was returned. It wasn't, so only French jumpers were allowed to jump on the last day of the meet.

The Australian 4-way team was the only 4-way team at the world meet that was taking the first formation off the tailgate of the Nord Atlas, according to Team Captain Allan Soukup. They were successful in nine of the ten rounds of competition, as they funneled and scored four points in round seven. The team, called Rapid Transit, finished third in the event behind Canada and Great Britain. It trained intensively before the meet, making 107 practice jumps out of a Cessna 182 over a three-week period followed by 45 free jumps out of an Australian Air Force DeHavilland Caribou in twelve days. (A Caribou is a twin-engine transport with an in-flight tailgate.)

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# Yosemite Permits El Capitan Jump

The U.S. Department of the Interior, responding to a request from Jumper Al Warsh, surprised the skydiving community in early November by issuing a letter authorizing Warsh to jump from the El Capitan cliff in Yosemite National Park. At least twelve jumpers have been arrested for making unauthorized jumps from El Capitan, and most people assumed the government was determined to prevent all parachuting from the sheer cliff.

But the letter, signed by Yosemite National Park Superintendent Robert O. Binnewies, seemed to indicate the government's stand wasn't as firm as most people thought. Warsh wrote Binnewies on October 15, and the reply two weeks later told Warsh that his "was the first written request for a permit to make a parachute jump from the top of El Capitan . . . From a safety standpoint, we must regulate the air space in the Valley particular, so that hang gliding, cliff jumping, helicopter medical evacuations, search and rescue, and fire fighting activities do not conflict with each other."

The letter went on: "Until we have a policy regulating cliff jumping, we will try to work with the United States Parachute Association and its members. We will begin issuing permits on an individual basis based on the following regulations:"

## Backwards Bi-Plane Built in Colorado

Two Colorado men deliberately attached their square canopies to their rigs backwards and went up and built a biplane with the gear. The formation, built over Littleton, Colo., on September 2, is the first one ever made according to Randy Kerr and Bob Korbus, who performed the jump.

Kerr said it took five attempts to figure out the right approach angles. He was making floating approached on Korbus by looking over his shoulder. "When we did get together, Bob just grabbed the lines with his hands and slid down," Kerr reported. The two flew the formation for about 2,000 feet and then separated to make solo landings.

Two weeks later, at the same drop zone, Kerr, Korbus, Alf Humphries and Jeff Wagner built the first quadraplane over Colorado. Jumping from 10,500 feet, the formation was built by 6,500 feet.

The "local regulations" listed in the letter were clear and reasonable. Binnewies required USPA membership and a USPA D license, a hard helmet, jumpsuit, and a main and reserve parachute, and a main parachute equal to the Para-Flite Strato-Cloud. Relative work is prohibited, as are round canopies and delays longer than ten seconds.

Other requirements are that a jumper who lands in a tree remove the canopy from the tree, that jumps be made before 8:30 a.m. and aborted if winds are "unfavorable," that no litter be left behind at the top of the cliff and that the party have a wilderness permit.

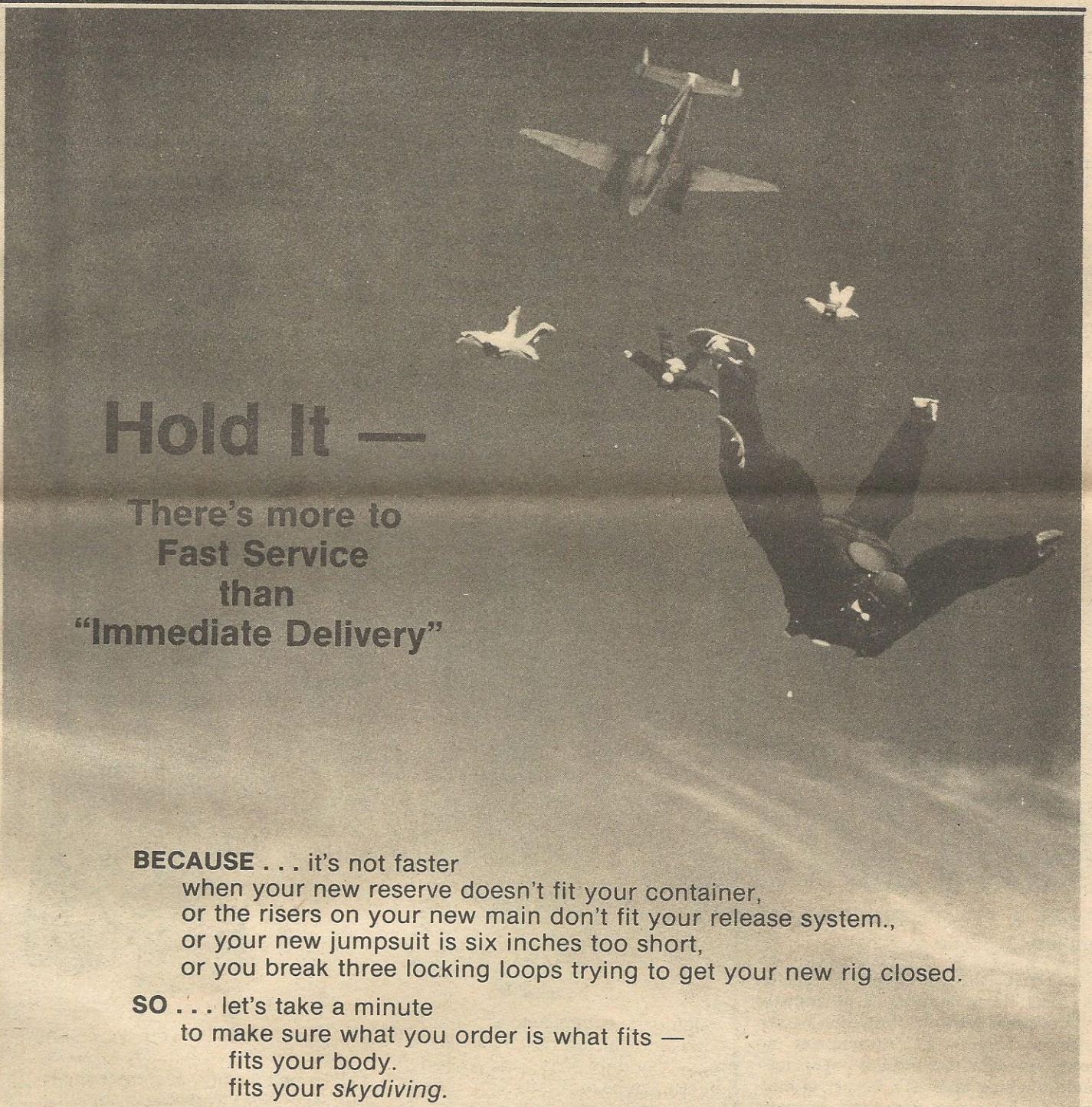
Binnewies set the maximum number

of jumps per day from the cliff at twelve. He ended his letter with "Thank you for allowing us the opportunity to work with the sport parachuting community. The 'cat and mouse' game that has been played may be exciting to some, but it is counterproductive in terms of furthering our respective goals. We hope that this is the beginning of reasoning. The return of this letter with your signature authorizes your jump on November 23 or 24, 1979."

A short statement was added below the superintendent's signature for Warsh's signature. By signing it, Warsh affirmed he had read the letter and agreed to abide by the regulations listed in it, that he would assume all risk, and

that a filming permit would be required for any commercial filming.

Skydivers couldn't understand why hang glider pilots were allowed to request a permit to fly off the top of El Capitan and rock climbers were permitted to climb its face. Binnewies letter gives the impression that the Park Service had been open to the idea all along and it was simply waiting for a jumper to go through channels and request permission to make a jump. Jumpers close to the situation, however, say this is not the case, that the Park Service was opposed to parachute jumps from the cliff. They say this letter actually reflects a substantial change in the agency's position on the activity.



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# Two Trim Tab Designs Evaluated

by Robin Heid

With the increasing popularity of canopy relative work, and the widening differences in canopy performance, more and more people are turning to canopy trim tabs to give them a greater range of compatibility with other canopies and more general maneuverability. Until recently, most trim tabs have been the product of basement riggers and, like basement rigging everywhere, some of them worked and some of them didn't.

Now however, a couple of national manufacturers, Phildo's Phlite Service of Garrettsville, Ohio, and The Altitude Shop of Vallejo, Calif., have begun producing trim tabs. I picked up a set from each company and put them through a number of CRW jumps, ranging from hookups with novices to closing eighth on a stack.

I used Phildo's Phlite Tabs on my front risers. Phildo's tabs consist of a completely enclosed unit (Figure 1) which are sewn to the risers at three points. Phlite Tabs utilize two control handles, one for setting trim, one for releasing it. Made of velcro pile, they secure to the hook velcro sewn on the surface of the tab. To set Phlite Tabs, the black handle is pulled down to the desired level. To release, the red handle is pulled down until the riser releases.



Figure 2. Phildo's Phlite Tab, installed.

I carried Altitude Shop trim tabs on my rear risers. Similar in function to Phlite Tabs, Altitude Shop tabs are not enclosed (Figure 2). Attachment involves sewing at top and bottom of riser, and attaching an elastic keeper at mid-riser to keep the trim line properly channeled. To set Altitude Shop tabs, the free end of the trim line is pulled down. To release, a red stirrup at the top of the unit is pulled until release occurs.

### Comparison

Both Phlite Tabs and Altitude Shop tabs are easy to install. Just lay Phlite Tabs on the risers and sew in place. Altitude Shop tabs require a little more work to assure correct placement. But in either case, the job takes only five or ten minutes.

In actual use, the differences are more noticeable. While both designs are easy to set, I found Altitude Shop trim tabs difficult to release on occasion.

With Phlite Tabs, the release handle is placed at mid-riser, within easy reach of any jumper. They release instantly and easily, requiring little physical effort for activation. Altitude Shop tabs are more difficult to release, primarily because of the release stirrup location high up on the riser. It is hard to reach, and an upward movement, further extending the arm, is required on the part of the jumper for effective activation. I needed to perform the operation twice on a couple occasions when my initial pull on the stirrup failed to return the canopy to the full flight position.

Altitude Shop trim tabs have a

greater range of adjustment than Phlite Tabs. They can alter riser length by 15½ inches while Phlite Tabs are capable of only a 10½-inch range.

If neatness counts, Phlite Tabs win handily. Being completely enclosed, they are far cleaner in appearance and less likely to snag on things than Altitude Shop tabs. When asked why their units were not enclosed, a spokesman for the Altitude Shop said their product was designed for container systems with riser covers.

Because they have no cover, these tabs are less bulky than Phlite Tabs and

(continued on page 19)

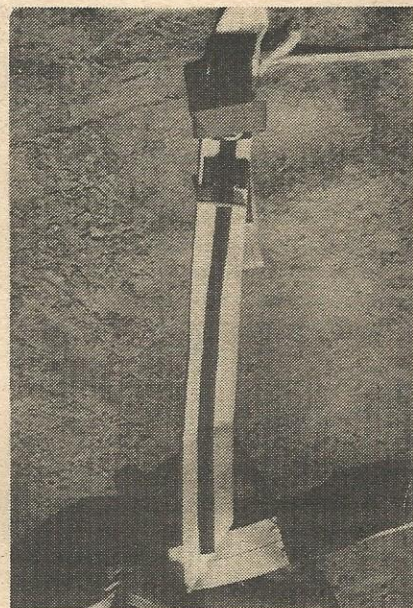
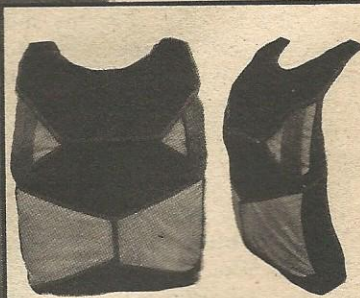


Figure 1. Altitude Shop Trim Tab.

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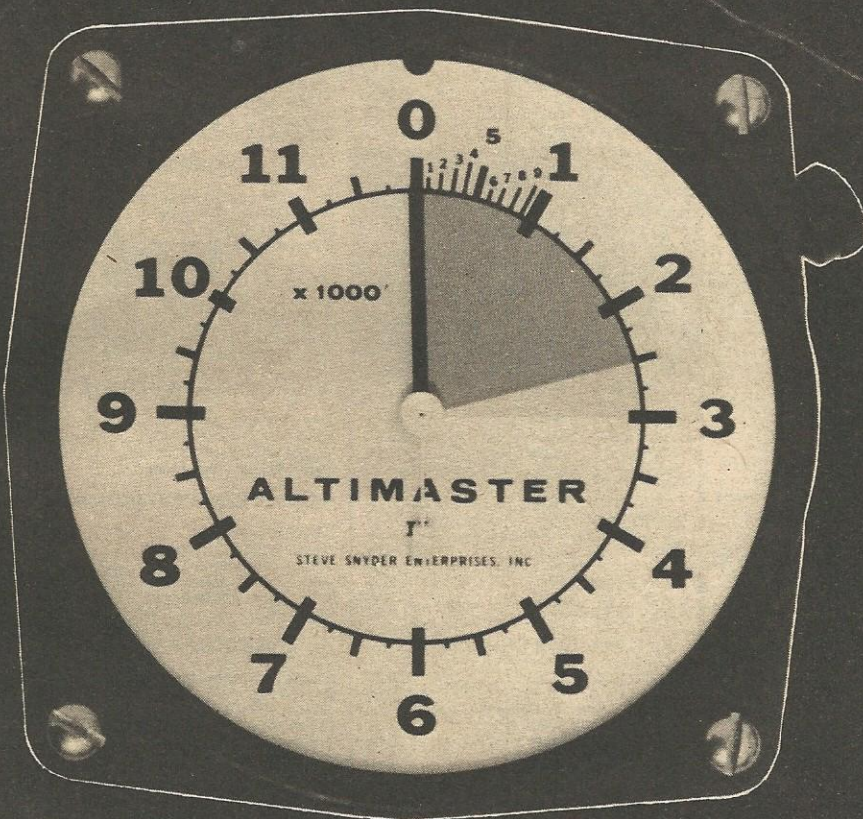
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# Rules Proposed for 4- and 8-Way Canopy Relative Work Competition

As a result of their participation in what was probably the first major CRW competition anywhere, jumpers and judges at the Zephyrhills Pumpkin Meet wrote a set of rules for two different CRW events. The authors feel the rules will provide meet organizers with practical guidelines for running a CRW meet. They also hope the rules will serve as a foundation on which the USPA and CIP can build during the process of

adopting CRW as both a national and international competitive event.

Tom Courbat, administrator of the CRW awards program and enthusiastic promoter of CRW, pushed to get the rules on paper during his stay in Zephyrhills. It is his goal to convince the USPA and the CIP to include CRW in national and international competition as soon as possible.

Rules for two separate CRW events

were written, 4-way rotational stacks and 8-way speed stacks. The rest of the rules, as submitted by FAI Judge Rich Lijequist, are as follows:

## 4-Way Rotational Event

**Entry Requirements:** Participants must have 4-man certification (4-stack patches).

**Exit Altitude:** 9,500' AGL.

**Working Time:** Five minutes. The watch starts when the first pilot chute shows.

**Scoring:**

A. One point for the first 4-canopy formation.

B. One more point for each additional 4-canopy formation. Additional formations may be made by the top person in the formation dropping grips, flying

to the bottom of the formation and repeating the formation.

C. A tie for first place will be broken by a jump-off using the above scoring system.

## 8-Way Speed Event

**Entry Requirements:** Participants must have 4-man certification (4-stack patches).

**Exit Altitude:** 10,500' or 12,500', at DZ operator's discretion.

**No docks below 2,000'.**

**Working Time:** Seven minutes from 12,500'. Six minutes from 10,500'.

**Scoring:** Time starts when the first pilot chute shows and stops at the docking of the eighth canopy. Holding time is 30 seconds. One point is awarded for each jumper connected for at least 30 seconds. In case of a point tie, the lowest completion time determines the winner. If a tie still exists, a jump-off will be held.

## General Considerations

(both events)

**Air Conditions:** No CRW competition jumps will be made when, in the opinion of the majority of the team captains/representatives, the air is not acceptable.

**Malfunctions:** A parachute malfunction during deployment will be grounds for a rejump at the team's expense. Remaining team members shall not engage in CRW.

**Equipment:** Each team member must carry a hook knife. Each team shall carry at least one altimeter.

**Local Rule:** If a stack is landed, each team member shall wear a hard, protective helmet.

**Definitions.**

**Formation:** A complete formation is four open parachutes with legal grips between all four parachutes. This rule excludes end cell closures.

**Legal Grips:** When hands or feet of the higher jumper are secured in the lines or cells of the lower jumper's canopy.

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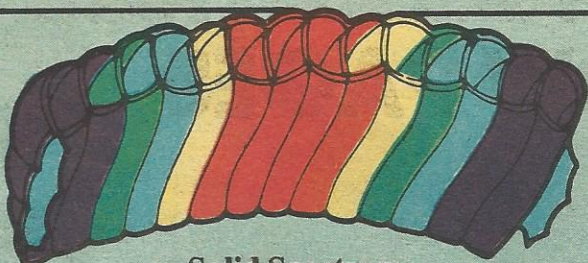
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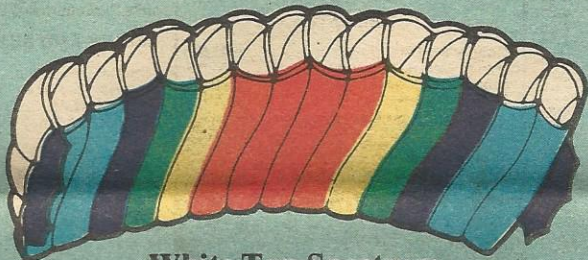
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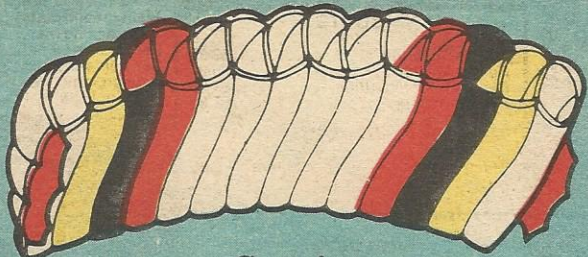
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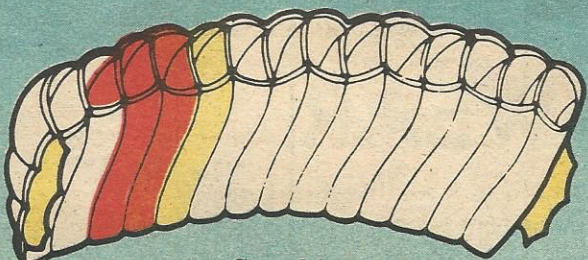
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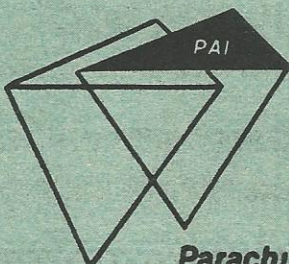
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# Zephyrhills

(continued from page 1)

ving the last part of November for a straight boogie. The change was made mostly because of the ever-increasing number of competitors that entered the meet. There were over a hundred 10-way teams in 1977, making it difficult to complete the meet in a reasonable length of time, in spite of up to 12 DC-3s and Lockheed Lodestars on the flightline.

The crowd also swamped the motels and restaurants of the retirement city of Zephyrhills.

Splitting the Turkey Meet into the Pumpkin Meet and the Turkey Boggie, then, seemed to be a good idea.

This year only a few teams entered the four RW events and two CRW events. The Slots won the 16-way and the 10-way events, making it the sixth year in a row the team won the speed star event. Symbiosis, a team composed primarily of members of the British national 8-way team, won the sequential event, while the 20-man team called We'll Discuss It in the Morning won the big star event.

A team from Zephyrhills won the 4-way CRW event and then joined forces with a 4-way team from New York to

win the 8-stack speed event.

This was the first time in several years when essentially no practiced teams showed up for the RW events. Many jumpers, including former members of teams such as Mirror Image, Slots, Exitus, Focus and No Cause for Panic showed up several days before the competition to scramble for positions on what they thought would be the best teams.

One real advantage of the last-minute organizing was that the teams were much more competitive. Although scores were not impressive when compared to past Turkey Meets, the competition was better as leads would

change hands several times, even in the two- and three-jump events.

This point was best illustrated in the 20-way speed star event. If any teams were favored to win, it was Slots and Noah's Ark, the one-two finishers in the 16-way event. Both of these teams, however, were unable to build two consecutive 20-man stars, while the "dark horse" team of We'll Discuss It in the Morning built two slow — but complete — big rounds.

We'll Discuss It in the Morning, more popularly called the Coon Asses, had a core of jumpers from Louisiana, although its members were from several states. Three of its members earned

(continued on page 16)

## Results — 11th Annual Zephyrhills RW Meet

### 16-Way Event

Team	Rd. 1	Rd. 2	Total
1. Slots Kathy Embrey, Mike Johnson, Scott Parker, Roger Ponce de Leon, Mike Cerasoli, Ron Johnson, Charlie Kenlin, Dave Jancsar, Steve Chalfant, Allen Gencarelle, Hoot Gibson, Jay Hilden, Mike Truffer, Joe Paquin, Bob Gray, Jack Wallace	16/25.9	16/22.3	32/48.2
2. Noah's Ark	16/32.8	16/23.7	32/56.5
3. Odyssey	16/36.5	16/33.4	32/69.9
4. Sky Scams	16/38.7	16/37.6	32/73.3

### 20-Way Event

Team	Rd. 1	Rd. 2	Total
1. We'll Discuss It in the Morning David Murphy, Bill Blythe, Craig Rishel, V.S. Melancon, Greg Wirth, Gregg King, Jeffrey Thompson, Ralph Hante, H.A. Elias, Martha Scott, Pam Fowler, Van Wideman, Michael Huber, Cheryl McGovern, Darrell Berger, Jack Cassidy, Dave Shoptaw, Arnold Camfferman, Michael Smith	20/49.1	20/52	40/101.1
2. Noah's Ark	20/33.0	19/55	39/88
3. Slots	19/55	20/41.8	39/96.8
4. International Rough Links Salvage Company	19/55	19/55	38/110

### 8-Way Speed Stack

Team	Rd. 1	Rd. 2	Total
1. The Other Plane Old People Folks Fred Boger, Cliff Dobson, Dean Richardson, Frank Cater, Jack Gregory, Garrett Dolan, Jim Perry, Willie Maier	8/6.03	8/6.56	16/12.59
2. Cheap Trick Revival Jamie Garard, Scott Belasco, Phil Schultz, Jim Olson, Jerry Fields, Gary Gillmore, Wes Colder, Jim Grigus	5/—	8/2.58*	14/—

\* Fastest time.

### 10-Man Event

Team	Rd. 1	Rd. 2	Rd. 3	Total
1. Slots Dave Jancsar, Mike Truffer, Craig Fronk, Mike Johnston, Roger Ponce de Leon, Andy Reyling, Ed Mosher, Bob Gray, Garry Carter, Jay Hilden	15.1	17.6	16.2	30/16.3
2. Symbiosis	19.4	17.9	13.3*	30/16.8
3. Raving Hormones	19.0	20.9	15.6	30/18.5
4. Cosmic Cruisers	17.2	23.1	20.0	30/20.1
5. Twilight Zone	27.0	16.7	22.5	20/22.0
6. Hot Pursuit	24.3	20.7	25.6	30/23.5
7. Snowflake	37.5	55.0	23.7	29/—

\* Fastest time.

### 8-Way Event

Team	Rd. 1	Rd. 2	Rd. 3	Total
1. Symbiosis Rob Coopus, Sandy Spence, Robin Mills, Geoff Sanders, Duane Kenny, James Keery, Joan Murphy, Anthony Urgallo	5	4	5	14
2. Slots	7	3	3	13
3. DAB	7	3	2	12
4. Mission of Gravity	6	3	2	11
5. Pelican Poofers	5	2	2	9
5. Noah's Next	5	2	2	9
7. Snort	1	0	0	1

### CRW 4-Way Rotation

Team	Rd. 1	Rd. 2	Rd. 3	Total
1. The Plane Old Folks Alfred Boger, Cliff Dobson, Frank Cater, Jack Gregory	5	8	8	21
2. Chicken Chokers	6	6	7	19
3. The Other People	4	4	5	13
4. Them Toad Suckers	3	2	6	11
5. Salt	2	2	3	7
6. Cheap Thrills	1	2	2	5
7. Dago's Job	0	3	1	4
8. Cheap Trick	0	0	0	0

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DeLand, a college town of about 25,000 residents, has many good motels. Two that are popular with skydivers are:

**The Boulevard Motel**  
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DeLand, FL 32720  
(904) 734-0716

**Save Inn**  
E. Highway 44  
DeLand, FL 32720  
(904) 736-3440

Camping is allowed on the drop zone, and hot showers are available at the airport, too.

### **WHAT ELSE**

DeLand is also the home of two parachuting businesses:

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(904) 734-9641  
(Manufacturers of the Silly Suit, plus a dealer of a wide range of gear.)

**Relative Workshop**  
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There is also an FAA-certified parachute loft on the field.

## Zephyrhills

(continued from page 14)

their 20-man patches during the first round of competition.

The 16-way competition included the same two formations used for the last three years, a jewel flake and a quadrapod. Slots scored the fastest time for both jumps.

The 8-way competition wasn't decided until the last round, however, when Symbiosis made up a one-point deficit and then some, to win the event by one point in front of Slots who in turn finished one point in front of DAB from DeLand, Fla.

Compared to previous years, the 10-way event was the least impressive as only seven teams entered and average times were in the mid-teens. Symbiosis had the fastest star of the meet, 13.3 seconds, while Slots won with a 16.3 sec. average. Most of the 10-man teams entered the meet with five or fewer practice jumps.

CRW generated a lot of enthusiasm from participants, hosts, judges and spectators. The competition was held early in the morning to take advantage of the smooth air and to avoid airspace conflicts with freefallers. The rules for the two events were developed in several meetings on site before the competition started, and the authors feel the rules they've written are workable.

Eight teams entered the 4-way CRW event called 4-stack rotation. The goal was to build a 4-stack and then have the top jumper release from the stack and spiral down and redock on the bottom, scoring a point. The Plane Old Folks won it with 21 points after three jumps, two points in front of Chicken Chokers.

Only two teams entered the 8-stack speed event, which was won by the Plane Old People Folks who built two stacks in an average time of 6½ minutes. The second place team, Cheap Trick Revival, built only one 8-stack, but it was fast — 2 minutes, 58 seconds.

Anheiser-Busch, the beer company, contributed prizes to the CRW event. Such sponsorship, although relatively minor at this time, was appreciated by the competitors and CRW leaders intend to do their best to help it grow.

All the competition events ran smoothly, as the weather was mostly cooperative (there was only about a day and a half of non-jumpable weather). The staff, used to manifesting and judging many more teams than were present in 1979, had it relatively easy.

Video judging was not used at the Pumpkin Meet, a departure from the way the meet was run in 1978.

There were several mechanical problems with three of the four DC-3s used during the meet. Two required one new engine each (one new engine cost \$29,000), while the third was down for a while with less serious problems. Mr. Douglas, the DC-3 from nearby DeLand, was called over as the fourth aircraft and for a while it was the only aircraft flying.

Cliff Dobson inspected and tagged every jumper's rig, and he reported that about 450 skydivers went through his check. There didn't seem to be that many jumpers on site at any one time, as many were not there for the entire eleven days.

All fun and competition jumps were from 12,500', and a ticket to that altitude cost \$10, plus \$10 entry fee per event.

Although there was a considerable

amount of fun jumping going on before, during and after the official competition, only a few of the jumps were really noteworthy. A deca-plane was built by the CRW folks, and a night 24-formation was built, both world records, but a big majority of the jumps seemed to be practice dives for com-

petition or less serious fun loads.

Allen Gencarelle organized a 49-man formation attempt, but cancelled it when it became apparent on the last day of the meet that many jumpers wanted to unwind from the competition.

(continued on page 18)

## Search and Reprint Service Started

Parachuting Resources, a company owned by Mike Horan, has started a search and reprint service for the field parachuting, offering to assist researchers, writers, lawyers and enthusiasts find the information they need in a hurry.

Parachuting Resources has compiled what Horan feels is the largest and most comprehensive library on parachuting in the world, a library that provides immediate access to information on practically every aspect of parachuting. For \$10 an hour, the company will research specific topics for a customer and provide anything from a list of best sources to summaries of articles to complete analyses.

A customer may also order reprints of selected articles from any periodical for \$5 per article up to 10 pages. Horan's library is said to contain complete collections of the periodicals dealing with parachuting.

Horan has been active in sport parachuting for twenty years. He com-

plied and wrote the *Index to Parachuting* and serves as curator of the USPA's fledgling parachuting museum. The company's address is P.O. Box 1333, Richmond, IN 47374.

## CALENDAR

**December 22 — January 2, DeLand Christmas Boogie, DeLand, Fla.** DC-3, Cessna, showers, warm weather, clean airport, good vibes. FMI: DeLand Air Sports, P.O. Box 1657, DeLand, Fla. 32720. (904) 734-5867.

**December 22 — January 6: Christmas and New Year's Boogie, Pope Valley, Calif.** FMI: Pope Valley Parachute Center, P.O. Box 166, Pope Valley, CA 94567. (707) 965-3400.

**December 27-30: National Collegiate Parachuting Championships, Marana Ariz.** Style, accuracy and 4-way RW. Must be fulltime college student. FFI: Al King, NCPL, 806 15th Street NW, Suite 444, Washington, DC 20005, (202) 347-5773.

**December 29-January 6: Christmas and New Year's Boogie, Coolidge, Ariz.** FFI: John Janes or "Zing," Arizona Parachute Ranch, P.O. Box 1807, Coolidge, AZ 85228, (602) 723-5336.

**January 26-27 1980: West Coast Pro Para-Ski Championships, Bend, Ore.** Two accuracy jumps and two Nastar runs on Mt. Bachelor. FFI: Ted Mayfield, P.O. Box 237, Sheirdan, OR 97378.

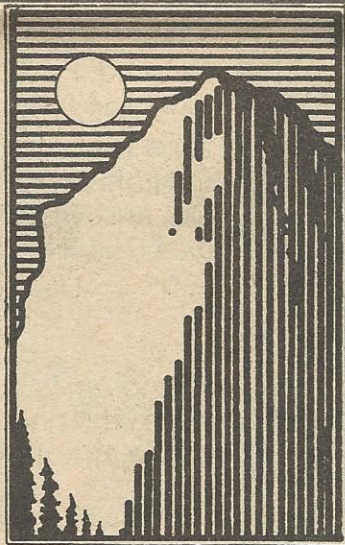
**March 29-30, 1980: Jackson Hole Para-Ski Meet, Teton Village, Wyo.** Two accuracy jumps from a helicopter and two Mastar runs. FFI: Ted Mayfield, P.O. Box 237, Sheridan, OR 97378.

## Parachutist Magazine Raises Rate

*Parachutist* magazine, the publication of the U.S. Parachute Association, has raised its advertising rates effective with the January, 1980, issue.

Citing inflation as the reason for the increases, Editor Paul Proctor said this is the first time in two years that rates have been raised. A black-and-white page goes from \$375 to \$470 at the one-time rate; 4-color goes from \$550 to \$690.

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Eight skydivers are facing a variety of charges stemming from cliff jumps made off El Capitan Mountain in California's Yosemite National Park. Park Service officials forbid the jumps, even though no regulation prohibits it, and park rangers are arresting any persons they catch jumping and confiscating their gear and cameras.

### THEY ARE REPRESENTING YOU

If the charges these men face are beaten, it will be a major step toward ending the discrimination now being visited upon skydivers by National Park Service officials, and open the way for access to El Capitan by any qualified jumper interested in skydiving from the 3,000 foot cliff.

### THEY NEED YOUR HELP

The cost of mounting a defense against Park Service harassment is high. Legal fees, telephone calls and travel are taxing the financial resources of the jumpers on trial.

### CONTRIBUTE NOW!

El Capitan belongs to all Americans, and skydivers have as much right to the mountain as climbers and hang glider pilots. Your generous contribution will greatly aid the fight to end restrictions on cliff jumping.

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California City Paracenter added a Twin Beech to its flight line last month, and this photo shows the first load of jumpers who took advantage of the 10-place aircraft. California City is located 90 miles north of Los Angeles near Interstate 5. The drop zone, which has a restaurant and a camping area, is open weekends and holidays. Student training is available, according to spokesman Kathy Walker. More information is available from P.O. Box 2178, California City, CA 93505. Telephone is (805) 373-4659.

## Womens Record

(continued from page 1)

Canham said the women were somewhat disappointed that only one dive was completed and that none of the sequential or CRW that was planned was tried. She said that the attempts received tremendous support from everyone involved — the participants, the women who came to make the jumps but remained on the ground, men jumpers, and the donors to a raffle.

She had special words for the women who were not on the loads. "They didn't complain and they offered cheerful and sincere support to the attempt. The emphasis in Elsinore was definitely on the group effort rather than on the individual, which is as it must be — but it's still not easy to sit on the ground."

She also reported that it was difficult to organize successful large formation

attempts when the jumpers come from several drop zones and flew differently. "We learned a lot about where it is important to concentrate experience and the absolute necessity of dirt diving the jump, exactly as it is to be, and then flying it that way."

Canham had an answer to a question of the need for all-woman records. After all, there are no all-men records as such. "Very true," she said, "but the number of women included on them (most record attempts) is far from representative of the male-to-female ratio of competent jumpers."

"And it's not clear, even to us, whether we are trying to prove something to ourselves, or to the men, or whether we are in fact trying to prove anything to anybody. Sometimes, for some unknown reason, there simply exists a need to gather together, for the achievement for a specific goal, those persons with whom you share something very exclusive."

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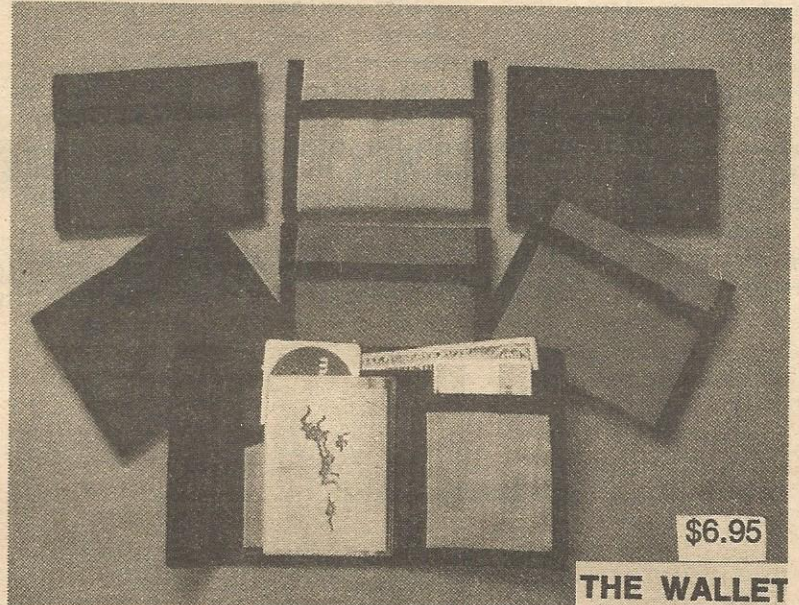


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(continued from page 16)

There were several new items of gear at Zephyrhills, although most of it was evolutionary rather than revolutionary.

Jim Mowrey of Pioneer Parachute Company had several production versions of the 200 sq. ft. Merlin on hand. The canopy appeared to fly and land very well — one member of Mirror image called it a "sports car" — although at least two different jumpers had steering line entanglements that required breakaways.

Mike Furry of Django Enterprises was there with his Pegasus ram-air, as was Mike Mount with his Para-Mount. Both canopies are currently in limited production and are popular in the areas in which they're built.

The Jump Shack has opened up a shop in downtown Zephyrhills, dubbed it the Jump Shack South, and is dealing all types of gear as well as doing repairs and repacks. President Mike Johnson told *Skydiving* that he'll wait and see

how business goes before committing to keep the shop open through the slower summer months.

Paul Sitter traveled from northern California to show the Altitude Shop's new Corsair harness and container system. Larry Krueger of Sky Suits, Inc., a division of National Parachute Supply, was on hand to jump and demonstrate his firm's line of Balloonsuits and conventional jumpsuits.

The Relative Workshop has developed another version of the Wonderhog. This one is slightly narrower and is tapered a bit more in the shoulder area. Some jumper expressed a preference for the new design, while others like the wider model better.

Jack Wallace, known more widely as Wildman, represented Rick White's Body Flite company and had models of the firm's Shube Suit and rig. The Shube suit has foam-padded bells, plastic reinforcement, and swoop cords that extend from the ankle to the wrist.

There seemed to be relatively few malfunctions, and most were slow descending deployment problems that were dealt with correctly up high.

Two jumpers, however, were seriously injured in separate incidents when they attempted low hook turns into the wind just before landing. Both jumpers started the turns too low and kept turning even when it was apparent they wouldn't complete the turn before striking the ground. Both went to the hospital with serious back injuries.

Another jumper broke his femur on landing after intentionally snagging in midair a canopy that had been jettisoned by another jumper after a malfunction. The descending canopy lodged in the lines of the chasing jumper's canopy. It was fairly windy, and the extra drag of the snagged canopy effectively slowed the forward speed of the jumper's main canopy. It also required some toggle to compensate for the turn that the drag caused. As a result, the

jumper landed going straight down without flaring his canopy and broke his leg.

And, unlike some big meets at Zephyrhills, there was very little "zooping" by visiting jumpers — no smoke grenades were launched into crowded restaurants, no swimming pools were spiked with sudsy detergent, and there was no repeat of the wet t-shirt contest of several years ago, a contest that resulted in arrest warrants being issued for several jumpers.

There were quite a few jumpers from outside the U.S. at Zephyrhills — hearing the names of the jumpers called over the PA system was a good indication of that.

Many jumpers, including Hooper, wondered why more people didn't show up. Some said the meet wasn't advertised enough, others blamed the "economy," while others said that it's easier to get off work for Thanksgiving than in the last part of October.

But no one, with the exception of Hooper and his accountant, expressed dissatisfaction about the Pumpkin Meet. The "meet at the meet" attitude this year resulted in more mingling of ideas. It allowed those present to jump with and learn from other skydivers who they see only at big meets such as this.

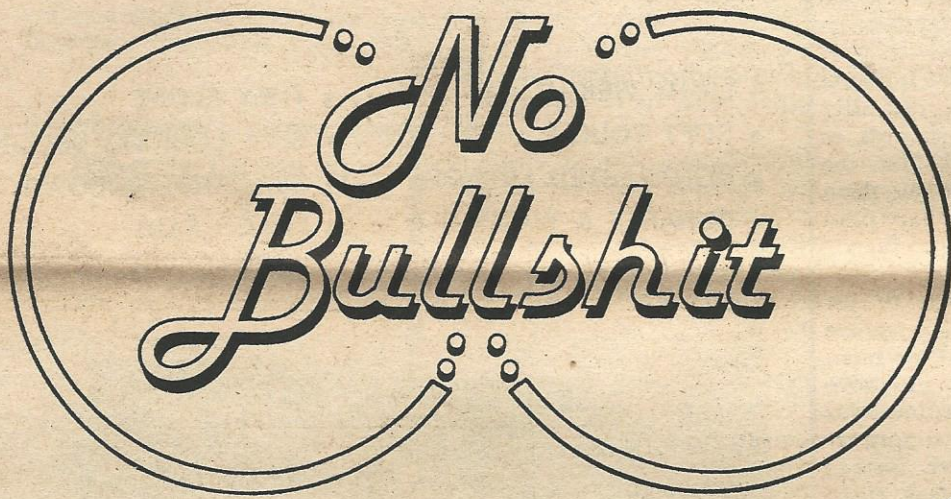
## Recent Incidents Involve Novices

Several recent accidents involving novices illustrate that today's equipment and training methods have not solved problems of this group of jumpers.

A novice in Australia returned to the drop zone after a three-month layoff to make his second static line jump. He went through 1½ hours of retraining. Exit and canopy deployment were normal, although he was observed heading towards a group of trees when he was about 500' above the ground. Someone on the ground yelled, "Left toggle!" and the student immediately pulled the single-point emergency handle of his Parachutes Australia Pygmeo System. This jettisoned his main canopy and opened his reserve. The subsequent landing was uneventful.

A novice in Michigan made an "excellent" exit and arch but experienced a severe spinning Mae West malfunction. The jumper continued to ride the malfunction to about 1,000', in spite of repeated instructions to breakaway given by a ground controller through a reserve-mounted CB radio. At that altitude the novice broke away and did not pull the reserve ripcord until 300', too low for the reserve to inflate. The jumper was killed on impact. An SSE Mk 2000 Automatic Ripcord Release was mounted on the reserve, although the report did not state whether the activating charge was expended or not.

In Florida, a novice was presented with a stabilizer entanglement of her Pioneer Mk I Para-Commander after a normal static line exit. She rode the malfunction down to about 200 feet. At that altitude a group of jumpers on the drop zone began yelling in unison "Pull your reserve!" Instead, the novice broke away from the PC and pulled her front-mounted reserve. The deploying reserve may have become entangled with the jumper; in any case, it did not deploy completely and the novice was killed on impact.



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# DC-3 Boogie Held in Kansas

by John H. Schuman

Big-time skydiving returned to Kansas on the first weekend of October when Sky Sports, Inc., sponsored a DC-3 boogie. Nearly a hundred jumpers showed up to dive from Dave Sickler's "Sky Train" DC-3. It was the first time in four years that something larger than a six-place aircraft was available for Kansas jumpers. Even the weather cooperated and 14 loads got off during the three-day affair.

Since most of the jumpers had attended the Sky Dance Boogie in Tahlequah, Okla., the month before,

## Trim Tabs Compared

(continued from page 10)

weigh slightly less (3 ounces a set, compared to 4 ounces for Phlite Tabs).

Both designs perform well. When used in a variety of situations, both tabs operated as expected, holding front and rear riser trim without slippage. Other canopy relative workers have reported slippage with Altitude Shop tabs, but I experienced no such problem.

Altitude Shop trim tabs are light-weight and inexpensive (\$8.50 a set),



Phildo's Tab retracted, side view.

and while they are sloppy on rigs without riser covers, they make a good choice for freefall relative workers who do a little CRW on the side, but want to minimize weight and bulk.

For the serious canopy relative worker, however, Phlite Tabs are the better choice. Their neat packaging and excellent operating features more than make up for their extra bulk and much higher price (\$25.00 a set).

Neither of these designs are a final answer. As CRW grows, better trim devices will undoubtedly appear. However, these two designs represent a good start.

organizing and manifesting went very smoothly. The quality of the skydives was excellent.

The two managers of Sky Sports, Dale Boyer and Richard Brockman, threw a good party on Saturday night with plenty of food and beer. A blue grass band provided the entertainment.

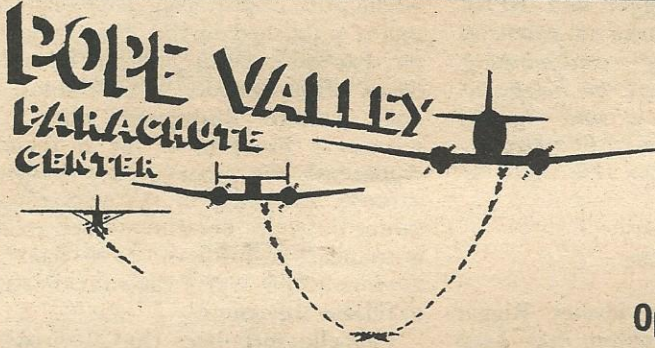
Several noteworthy dives were made. An attempt was made to break the Kansas state RW which was established in 1975 when a 15-way formation was built. A 24-quadrant wedge was tried, but three jumpers didn't get in and the 1975 record still stands.

Besides being just a boogie, the weekend was also a reunion of Kansas jumpers who were active between 1970-1974 when Sky Sports was located in Herrington, Kan. Many invitations were sent out, including ones to Matt Far-

mer, Pat Melroy, Jim Captain and Jim Baker — all members of the 1976 U.S. Freefall Exhibition Team, a demonstration team that developed and popularized sequential RW back when 10-man speed stars were king. Jim Captain was a member of the 1977 and 1979

gold-winning Mirror Image 8-way team.

With the DC-3 out of action for a while, the drop zone's three Cessnas flew in perfect formation to drop 12 jumpers. The dive, a static formation, went perfectly.



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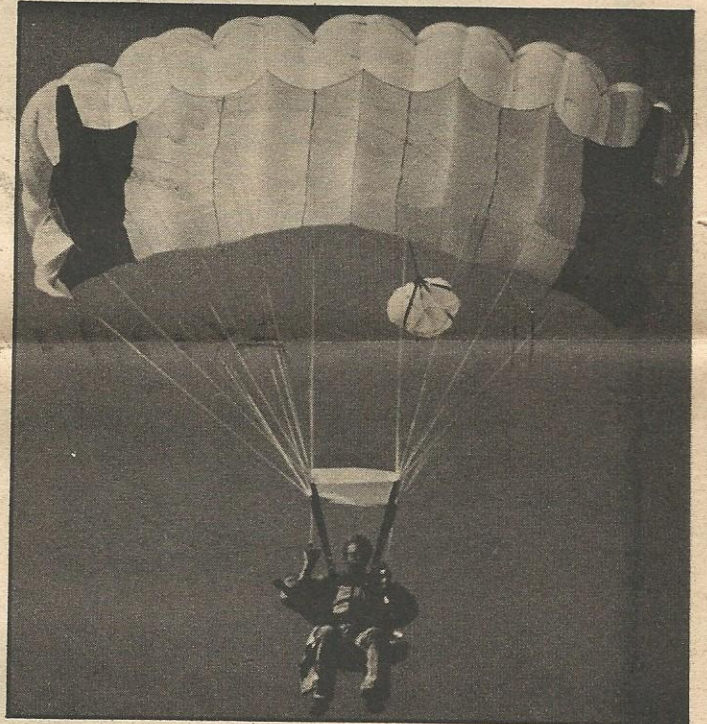
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# From the Loft

This column is written by Bob Stroud, a Master Parachute Rigger and DPRE from Edmond, Okla., who has extensive sport parachute rigging — and jumping — experience. Bob will be happy to answer your equipment and rigging questions. Address them to Bob Stroud, c/o Skydiving, P.O. Box 189, Deltona, Fla. 32725.

## Green Star Problem

According to FFA Master Rigger Dick Paoliello, a problem has been

discovered with the out-of-production Green Star Trac II piggyback rig. In a report published in the PEIA newsletter, Paoliello tells of "four or five 'table totals' of the reserve." A table total is a pack closure discovered when the reserve is brought in for a repack. Apparently the rubber bands that pass through grommets in the reserve container flaps are becoming stuck to the grommets. A force of 25-40 lbs. has been required to free the rubber bands to release the canopy.

Paoliello speculates that the rubber

bands are reacting chemically with the brass grommets. He said the problem is "most pronounced where the rig has been stored in a car truck for a period of time and subjected to high heat (90-130 degrees), high/low humidity and with the pilot chute spring pressing the rubber bands against the grommets."

He replaced the brass grommets with nickel-plated ones with the hope that it will stop the problem, but he admits it will take "several months" to determine if the fix works.

Paoliello advises that riggers and owners of rigs that use a rubberband closure be inspected carefully.

Other rigs, such as the Relative Workshop Wonderhog, may be packed with an elastic loop through the side flaps that serves to provide a staged reserve deployment. The Wonderhog,

however, uses a nylon-covered elastic loop that has shown no tendencies whatsoever to stick to the grommet.

## More on Cross Porting

We've received several comments to the short piece *Skydiving* ran in Issue #2 on cross porting ram-air canopies. Cross porting involves cutting holes in the ribs of such canopies to help the cells inflate during deployment and stay inflated during steep turns and stalls.

Wayne Stephens of Redding, Calif., uses a coffee can to cut the ports. He uses steel wool to clean the paint off the can and then heats the can on a stove and presses it to the canopy, neatly cutting out a smooth, symmetrical hole of the proper size.

Mike Furry of Django Enterprises in Atlanta cuts elliptical instead of circular cross ports. The long axis of the ellipse is aligned vertically. The idea is that such a hole weakens the rib less than a round hole but still provides enough air flow to work properly.

I've also heard that now GQ Security Parachute Company delivers its Unit with cross ports already cut. Before, dotted lines indicated where the owner might want to cut them. Owners of Units say cross porting is essential for acceptable openings.

## On Inversions

Almost everyone thought deployment diapers ended malfunctions such as line-overs and inversions of round reserves. I did, too, until several eye witnesses told me how a diaper-equipped National Parachute Supply 26' Lopo completely inverted itself after a breakaway last month. Still, diapers definitely seem to have greatly reduced the frequency of such problems.

## On Inspection

Riggers sometimes give only cursory inspection of a parachute they're packing, especially if the parachute is in for a repack and hasn't been opened. Recently a jumper with some 3,800 jumps was killed when his reserve failed because many of the suspension lines broke. It is speculated that the lines had been unairworthy for a long time but were never inspected closely.

## BACK ISSUES

Back issues of *Skydiving* are available for \$2 each from P.O. Box 189, Deltona, FL 32725. Please include your remittance with order.

Number 1. Nationals preview, gas shortage survey, Paralert, NPRM, jump plane crash, Sky van Boogie, Fatality Report.

Number 2. Complete report on U.S. Nationals and USPA Boogie, CRW world record, trouble in Oregon, new DZ near Houston.

Number 3. U.S. Team training report, Strong Lopo Lite, Pelicanland open, Jumpshack moves, new TSO, Verrazano Bridge jump.

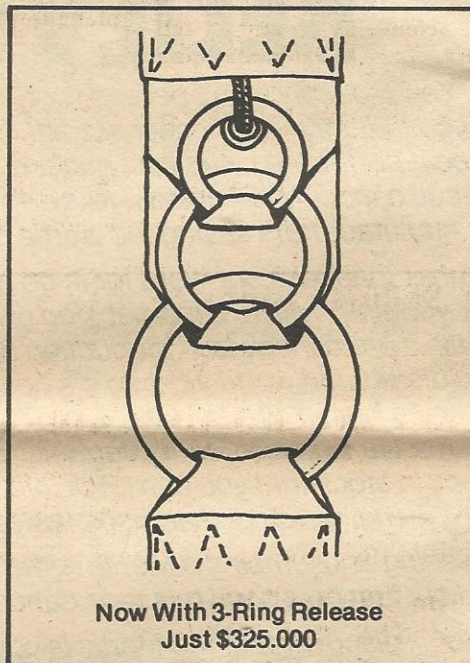
Number 4. World Meet results; U.S. Wins CISM Meet; Freakbrother Convention; Herd Boogie; Canopy RW for Beginners — Part 1; Jumping Off El Capitan Requires Preparation.

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# LETTERS.....

## Record 9-Plane

I feel I have to correct one of your articles in Issue #4. The Herd Labor Day Boogie article stated "... a clean 9-stack was built, held for a while, and then sequentially broken into three 3-stacks."

In the first place, the formation wasn't a stack, but the first 9-man plane ever built. Secondly, two were built back to back, and the second was spiralled for about two revolutions.

I should know, I was in the middle of both of them.

**Tom Brandariz**  
Stormville, N.Y.

I am really impressed with your publication.

However, I was considerably disappointed with your comment on the Labor Day Boogie at New Hanover, Penn. To have our efforts summed up as a few "impressive attempts" at CRW was to say the least infuriating. Not only did we attempt, but we completed two nine-planes (not "stacks") back to back to set the new world record! I think you owe us poor recognition-starved skydivers an apology.

**Richard Nordli**  
Westport, Conn.

## Editorial in #4

Regarding your editorial in Issue #4: If the sport is slowing down, it must be partly blamed on quite a few commercial operators who have gone ahead with the attitude of "gimme, gimme, gimme and the sport be damned."

I find it ironic that some of the people who have been doing nothing for the sport in the last few years are now crying for help. They've done nothing more than complain that they couldn't enforce helmet BSRs or stop the use of drugs or booze at their DZs. They have been giving quickie first jump courses that, instead of sending out tens of thousands of what would be the best PR agents we

could have, are turning out people who don't even know there is a sport, or USPA, or licenses and ratings.

(I have nothing against being commercial — I've managed to make my jumping and flying pay for most of the 18 years I've been involved with it. But I look at sport aviation as something like farming: you can't keep taking from the soil without putting something back in.)

**Mike Marthaller**  
D-298, I/E  
Para-Sky Sports  
Colton, Ore.

Congratulations on a fine #4 issue. The articles were simply very, very good.

I was trying to find something to criticize in your editorial and finally did: you misspelled "shakey."

**Mike Schultz**  
Laurel, Md.

My first impression after reading the editorial in Issue #4 was one of disbelief that a single article could be so seemingly confusing and self-contradictory. Then I realized that it had been intentionally composed in that manner as a satirical spoof at us all.

I believe Art Buchwald would like your style.

**Ron Doughty**  
Alexandria, Va.

## Rocky Mountain High

I want to commend you for the September 29 issue of *Skydiving*.

It was great to see that some attention was paid to the Canadian RW Team. They are so often "royally" ignored. In fact, the Chinese probably received more attention for their mere presence in France than Rocky Mountain High (the Canadian 4-man Team) did for their second-time win.

As usual, the Americans were the shining knights (and should be, because they're great), but so little attention is given to 4-man I wonder why they bother.

**Marlene Marsin**  
Flying High  
Abbotsford, BC

## F-4 Update

Your story on me ejecting from an F-4 was right on the money (Issue #3), except that you can't go through the canopy of an F-4.

By the way, how many people do you know have made a \$15 million two-plane formation load?

**Bob Waltzer**  
Yuma, Ariz.

*According to an F-4 pilot, the aircraft's seat is affixed with a sharp projection designed to break through the canopy in the event it isn't jettisoned in the normal manner. But normally the canopy is*

*blown off before the seat fires.*

## Thanks to Sponsors

The participants in the 1979 Women's World Record Attempts held at Elsinore, Calif., on November 3 and 4 want to express some heartfelt thanks to the following donors of prizes for our fund-raising raffle:

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(continued on page 22)

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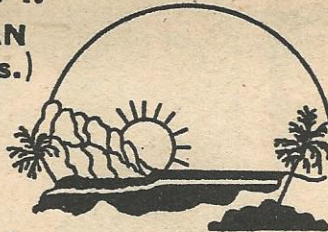
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# EDITORIAL...

## Implementing Innovation

In an effort to increase their volume of business, several parachute centers are devising new ways of attracting and keeping jumpers of all levels of experience. The management of these centers have realized that no longer can they offer primitive facilities and services and expect to turn a reasonable profit in today's more competitive industry.

There are several good examples of what enlightened DZ managers are doing to make their centers better places to jump while also improving the bottom line of their financial statements.

Two major parachute centers, Zephyrhills in Florida and Perris Valley in California, offer programs of RW instruction to their customers. Although each of the two programs are quite different in structure, the goal is the same: help the customer learn RW faster with more safety and less disappointment.

Both participants in the programs and the DZ managers are extremely happy with the success of the instruction. The centers enjoy the benefits of having more jumpers to fill up their aircraft, and the jumpers become proficient in very short periods of time.

Neither Perris nor Zephyrhills originated the idea of such courses, nor are they the first centers to try them. But they are, as far as I know, the first that were willing to keep the programs going even in lean times. Both businesses are fairly generous with the "perks" provided to the instructors who do the teaching. In other words, the managers of these two centers stuck with the idea long enough until it began to pay off. And paying off it is.

There are a bunch of other innovations managers can implement to make their centers better places to jump. All require the investment of time and money to work. But risking time and money with the expectation of an eventual return is what business is all about.

As jumpers, we'll benefit from DZ managers who take the far-sighted approach to running their centers. It'll be interesting to watch such managers in action.

— MFT

Considering that the time elapsed from inception of the raffle idea to the actual drawing was only three weeks, it was an amazing success. The record attempts were also successful — we built a 24-way quadra-wedge on the second dive.

Thanks again for what was a major contribution to a really "good vibes" event.

Karalee Canham

WSCR 469

San Leandro, Calif.

Chris Deli

WSCR 339

Westminster, Calif.

## A Skydiving First?

We have what we feel may be a skydiving first:

On November 9, 1979, twelve members of the 2nd Ranger Battalion Military Freefall Team exited two UH-1H Hueys at 11,000' over Ft. Lewis, Washington.

The jumps were so unique because the aircraft were flying in a heavy left formation, 50 meters apart. We subsequently built two 6-way wedges with no contact.

I've never heard of a dive from rotary wing aircraft flying in formation. Please correct me if I'm wrong!

Gregory J. Franz

Ft. Lewis, Wash.

## Jump Shack SSTR-T

In the second issue of *Skydiving*, a report on gear at the Nationals, describing the Jump's Shack's SSTR-T student system was incorrectly edited, leading readers to believe the rig possessed a single-operation emergency system.

The Jump Shack does not currently use a single-operation system nor does it intend to incorporate one into its gear any time in the near future. We would like to see a workable single-operation-system, for we believe the idea of simplifying student emergency procedures to be a sound and desirable one.

However, through extensive research and testing, we found the single most important requirement of any emergency system is that it achieve *positive riser/harness separation before reserve activation*. No single-operation system

currently available can guarantee that. All single-point releases on the market today have a record of at least occasional hesitations, and in the case of some, outright failures. *A reserve cannot be deployed the same time the risers are released if there is any chance riser separation will not be immediate*. And since not all emergency situations are the same, a single procedure for skydiving emergencies is no more practical than a single procedure for driving emergencies.

In addition to riser separation before reserve activation, we found three other requirements necessary to the development of an effective emergency system for students. They are:

— automatic reserve activation as soon as possible *after* riser separation.

— insuring reserve activation does not take place unless *both* risers have separated.

— a manual override for reserve activation.

These requirements were kept in mind as design guidelines when the SSTR-T was developed. To achieve the highest probability of positive riser/harness separation, we used R-3 canopy releases, for our research indicated them to be the most reliable releases available at this time.

To achieve automatic reserve activation after riser separation and insure activation does not occur unless both risers are separated, we installed a cross-connector at the base of the main risers which is hidden under the reserve riser covers and routed under the reserve ripcord housing. Bolted to the container at one end and fitted in an elastic channel at the handle end, the reserve ripcord housing is pulled free from its elastic housing and extended vertically by the cross-connector when riser separation occurs. At the same time, the reserve ripcord is also extended, activating the reserve, but leaving the housing attached to the container and the ripcord in its pocket, thereby preventing the possibility of the handle hitting the student in the face as the reserve deploys, like the original Stevens cutaway system. And should manual reserve activation be desired, the handle is easy to pull, unencumbered by other attachments.

The SSTR-T has other design features as well. From a safety standpoint, it is the only rig available where riser/harness separation is guaranteed before primary automatic reserve activation takes place. Mechanically, the system is simple to operate and maintain (the simpler the machine, the less likely it is to fail). And if a student wants to purchase the rig he's used since his first jump, he can do so without modifying it, for it is gear suitable for all skydiving activities, not just student operations.

Combined with a direct-deployed main canopy and an automatic opener, the SSTR-T can provide students and drop zones with a level of safety and reliability that has been proven through the years by use of one or more of these features on conventional equipment, and its comfort and good looks will help drop zones retain a higher percentage of student jumpers.

Michael Johnston  
The Jump Shack, Inc.  
Farmington Hills, Mich.

## Parting Shot

The jump club of Juneau has been thoroughly enjoying your paper; we always share it between the two of us.

Rex Richardson  
Juneau, Alaska

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The Cruisair is a pretty impressive mid-size canopy. It opens cleanly. It flies fast with a flat glide angle. It lands you so softly that you'll think it's bigger than it actually is. Yet it packs very small.

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