

Skydiving™

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A Skydiving survey:

Will the energy shortage affect jumping this summer?

The scarcity of automobile gasoline and avgas is not causing significant problems for skydivers and parachute centers across the U.S., according to a survey conducted by *Skydiving* magazine. Jump prices are going up, and jumpers are having to carefully plan their trips to distant DZs, but otherwise it's business as usual for most areas of the country.

Bill Dause, operator of Pope Valley Parachute Center in Northern California, told *Skydiving* that "sometimes I have to slip a few dollars under the table to get the avgas I need, but I don't mind. The gas is there if you're willing to pay the price."

Dause recently increased his DC-3 jump rates to \$8 for a jump from 10,500 and to \$9 from 12,500 — up a dollar each. It was the first increase in some time for the center, which has been furiously active lately as RW teams from literally all over the world have made Pope Valley their training camp. This year's world meet is no doubt the cause of such serious training.

California has had a tough time getting enough automobile gasoline recently, but the long lines at the gas pumps haven't prevented jumpers from getting enough fuel to get to Dause's center each weekend. Pope Valley is located in a relatively remote area about two hours north from San Francisco.

Meanwhile, things have been a bit tougher in the Northeast. Ripcord Paracenter in Burlington, N.J., told *Skydiving* that a few jumpers have been stranded at the center on Sunday night when they couldn't find gas for the drive home. Jim Strait reported that Ripcord has recently raised its rates to \$8 to

10,500 and \$9 to 12,500, and "we might have to do it again soon." Although avgas costs more, Strait said they've been able to get what they need to keep Ripcord's two Cessna's and one Twin Beech in the air.

Strait advised jumpers in his area to "do a thorough preflight" before climbing in their cars for a weekend at the DZ. Such planning will avoid a lot of trouble.

Organizers of the United Parachute Club's Skyvan Boogie held over Memorial Day were concerned that the tight gasoline supply would ruin attendance at the Herd's big bash. Their fears were unfounded, however, as over 500 determined jumpers showed up. The big turnout proved that skydivers will get to the DZ, gas shortage or not.

It was concern for the supply of auto gas that convinced Jerry Rouillard to cancel a boogie he and his partner had planned for a weekend in May. Rouillard and his partner operate three DZs in Texas, a state that produces and refines much of the petroleum used in the U.S., and he told *Skydiving* that he has had "indications of tightening supplies that will affect the small operator."

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Dalton Air Sports adds Twin Beech

Dalton Air Sports in Dalton, Ga., has added a large cabin Twin Beech to its flightline of two Cessnas. Dalton is located in the upper northwest corner of Georgia, about 30 miles from Chattanooga, Tenn.



Constellation practices a competition sequence over Pope Valley in preparation for the 1979 National Parachuting Championships held in Richmond, Ind., this month. The team includes Cheryl Creson, Claire Meredith, Mary Foard and Karalee Canham. *Skydiving* previews the nationals on page 10.

Jump plane catches fire, crashes in California

A Cessna 182 caught fire on jump run over a DZ in California with a full load of first-jump students last May 22, but all four of the passengers and the pilot parachuted to safety. No one was injured, although the aircraft was destroyed when it crashed a few moments later near the drop zone.

Richard Dancer, the owner and pilot of the Cessna, had lined the aircraft up on jump run at 3,000' when smoke and flames began pouring into the cabin near his left leg. Aboard were three students and their jumpmaster, Dennis Murphy. Murphy, a member of the past two Sierra 4-man teams, was aboard the DC-3 that crashed shortly after take-off during last year's National Championships at Richmond, Ind.

The static lines of all three students were already hooked up, and Dancer ordered everyone out, according to George Morar, who runs the center. The first two exited in rapid succession. By now, the cabin was filled with smoke. Dancer kept the aircraft on jump run and pulled the mixture control to help stop the flow of fuel to the engine.

With the engine now shut down, Dancer made a 180-degree turn to bring the aircraft back over the DZ. The third student was determined to make a poised exit, and "spent a long time getting out and going," according to Morar. Murphy followed quickly, and used his reserve as the aircraft was passing through 1000 feet.

Dancer pointed the aircraft away

from nearby residential area, trimmed the nose down to decrease its gliding distance and bailed out between 700-800 feet.

The aircraft then "made a nice graceful, smoking spiral dive" into some power lines and crashed, according to Morar. There was a moderate post-impact fire.

Meanwhile, the students were "talked down" with guidance radios attached to their harnesses. All three landed uneventfully on the drop zone along with the jumpmaster. The pilot, who is also a skydiver, landed under the 24' ripstop, 4-lined emergency parachute on the airport nearby.

The FAA is investigating the cause of the fire, and no determination had been

(continued on page 3)

New DZ opens near Reno

A new DZ has opened about 20 miles north of Reno, Nev., and offers two 8- to 10-place DeHavilland Beavers as jump aircraft. The DZ currently is operating on weekends with about 20 regular jumpers, and student jumps are made on PCs.

Spokesman Gordon Wicksten told *Skydiving* that traveling jumpers are welcome and advised that they call the loft at (702) 972-6493 if they need further information.

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Rough air ahead for NPRM to restrict airspace

With at least 45,000 letters of protest in its files and an angry Congress threatening to pass laws that would limit its powers, it appears as if the FAA is looking for a way to salvage its efforts to put major restrictions on the use of the U.S. airspace by general aviation, including skydivers.

Soon after the mid-air collision of a PSA Boeing 727 and a Cessna 172 over San Diego last December, the FAA issued a Noticed of Proposed Rule Making (NPRM 78-19) that, if enacted, would have greatly reduced the freedom of general aviation aircraft to operate near larger airports and at altitudes above 10,000' MSL. The purpose of the proposed regulation, according to the FAA, was to prevent accidents such as the one over San Diego.

Pilots and owners of general aviation aircraft — and those that jump out of them — strongly felt otherwise, and viewed the NPRM as an attempt by the FAA to sterilize the air for airliners, who

already have the equipment and the need to operate according to the provisions of the NPRM. Organizations representing general aviation quickly banned together to coordinate their members' efforts to block the proposal. The USPA joined the efforts.

A letter-writing campaign was initiated to protest the action to the FAA, Congress, state legislatures and the White House. In testimony before Congress, the FAA stood firm, feeling the airspace restriction proposal would enhance safety. FAA Administrator Langhorne Bond backed the bill in testimony before Congress and took other, unrelated steps to "get tough" with airmen who he feels pose a hazard to the public safety by violating FARs.

(Some of actions Bond has taken: personally putting chains on a non-airworthy DC-6 that was operating out of Miami International Airport's "cockroach corner," an area of the airport where many larger, older

transports are tied down. It's also been rumored that this summer Bond will order his inspectors across the U.S. to begin surprise "ramp checks" of pilots and aircraft, an action similar to a program that was conducted several years ago.)

Meanwhile, Congress has been feeling pressure from its flying constituents who want that branch of government to take some sort of action to block the FAA's proposed rule. Technically, the FAA can proceed with making the NPRM a regulation even if the public strongly objects to it. Bringing Congress into the action is a way to prevent that possibility.

Congress has introduced several bills that would deny the FAA the authority to enact most of the regulations that are contained in NPRM 78-19. Several of these bills have apparently died in committee. One, known as H.R. 3942, however, is still very much alive in Congress and is looming over the FAA.

H.R. 3942 would restrict the FAA's freedom to designate busy airports as TCAs and TRSAs, two types of airspace classification that pose significant hardship to VFR general aviation traffic.

More recently, an important aircraft noise bill, H.R. 3942, was amended to include restrictions on the type of regulations the FAA could adopt regarding changes to the national airspace system. The amendment is similar to H.R. 3480 and would also effectively block the NPRM 78-19.

The FAA is technically going ahead with the rule-making process that would make NPRM 78-19 a federal aviation regulation. However, there is some evidence that the FAA is reconsidering the action. Administrator Bond told a Senate subcommittee in late May that his administration may issue a new airspace restriction proposal. He didn't give an indication what provisions might be contained in the proposal, but he said he "wouldn't be surprised" if a new proposed rule is issued.

But until the FAA officially withdraws the NPRM, if that is indeed what it intends to do, supporters of general aviation will continue to push for ways to defeat it.

GQ Security to offer new reserve

GQ Security of San Leandro, Calif., has recently completed the TSO testing of a new reserve canopy that it plans to begin delivering later this summer. The new canopy weighs 5.75 lbs., according to Marketing Manager Bob Peterson.

Peterson told *Skydiving* that the company's new reserve is of a "tri-conical" design. Most reserves have straight-sided, triangular-shaped gores, but the gores of GQ Security's canopy change shape twice from the skirt to the apex. The result is a "tall" conical canopy, with the apex rising considerably above the circle formed by the skirt. The tall shape is said to reduce the likelihood of malfunctions and damage caused by the apex being blown below the skirt during one phase of the inflation sequence.

This canopy will not be the first to incorporate the tri-conical design, as at least one manufacturer offers a reserve with this feature.

The canopy will be constructed with

the same material used on the Unit main canopy. It will have a nominal diameter of slightly more than 22 feet and incorporate lines made from 425 lb. test braided nylon, according to Peterson. It is TSOed in the Standard, or "high speed" category.

It will be diaper deployed and feature a mesh-covered tri-vent modification. Peterson said that, unlike many of his

Declining dollar helping some centers

Jim Hooper, manager of Zephyrhills Parachute Center in Florida, told *Skydiving* recently that the "plunging dollar" is in some ways helping business.

Much of the center's customers come from Europe. They typically come to Florida to spend two weeks or more jumping every day, sometimes making nearly 100 dives during their visit. Since the U.S. dollar declined in value when compared to many European currencies, foreign jumpers are finding that their francs, marks and guilders are worth a lot more than they were several years ago. And because the U.S. has always had comparably cheap jump rates, those rates look even cheaper now to foreigners.

Hooper reported that Swiss jumpers, for instance, can pay for their round-trip air fare from Switzerland if they make just 52 jumps at Zephyrhills. Swiss jumpers pay about \$21 for a jump from 10,500', about three times what Zephyrhills and many other American centers charge.

Recently a group of eight Swiss jumpers became impatient when local jumpers were late in showing up at the DZ one morning, so nine of the foreign skydivers paid \$160 for a minimum load from the DC-3. The jump from the nearly empty aircraft was still cheaper than a jump back home.

company's recent reserve designs, this canopy will not be offered with the 4-line release modification. "We're discovering that jumpers are having less trouble with canopy damage with the mesh-covered modification than with the four-line," Peterson reported.

Peterson went on to explain that since 4-lined canopies open as if they were unmodified, they tend to be more susceptible to "blow through" caused by "secondary inflation," a breathing process that occurs after the initial opening shock.

Because a canopy modified by removing panels is able to vent some of the air that is scooped into it during initial inflation, the severity of breathing is much less, and reliability is supposedly improved.

Peterson emphasized that the canopy was not in production at this time and he didn't know exactly when the first ones would be available. A suggested retail price was not given.

USPA and PEIA push the sport

In an effort to attract more of the public to give skydiving a try, the USPA and its affiliate, the Parachute Equipment Industry Association, are placing small advertisements in publications across the U.S.

The ads promote the sport and suggest that the reader purchase an information kit from the USPA for \$2. The kit contains, among other items, a directory of centers and clubs and a sample copy of *Parachutist*.

Dan Poynter of Parachuting Publications and Ron Edwards of National Parachute Supply did most of the legwork for the effort. The USPA and PEIA each put up \$500 for the project.

Chaffin wins POPS Nationals

Bob Chaffin of Dallas won the 1979 Parachutists Over Phorty Society National Championships, out-jumping 16 other POPS, thus earning the title "Super POP." The competition was held over the Memorial Day Weekend last May at the Skydance DZ in Tahlequah, Okla. Chaffin finished first in individual accuracy, second in hit-and-rock, behind Roy Grace, and was a member of the winning 3-man speed star team of Chaffin, Leonard Klinert and Alvin Bullock.

Chief Judge Sherry Schrimsher reported that the weather was less than ideal, putting several holds on the competition. "That didn't stop the POPS," Schrimsher said. "When they couldn't shoot accuracy they made fun jumps out of the Twin Beech. Most of the competitors were jumping squares. However, there were a few *downwind* accuracy runs on *round* canopies! The judges weren't expecting that from the so-called Geritol Jumpers."

Schrimsher reported that Chaffin

won the meet under a new canopy from Para-Flite, a 260-square-foot Strato-Cloud, a canopy the POPS dubbed the "grandpa chute," apparently without considering the name "grandperson chute." Chaffin told *Skydiving* the canopy packs much smaller than he thought it would, "I swear it packs up smaller than my Lightweight Strato-Cloud." Landings are reported to be very soft.

Schrimsher had nothing but compliments for the host, Ken Hills, who owns Skydance. "He and his staff really know how to put on a meet and make everyone feel welcome. They had some great trophies, including a solid oak, handmade rocking chair."

During the meet, Lou Watson of Ada, Okla., was awarded his gold wings for 1,000 freefalls. Cliff Davis and Georgene Worthington served as judges.

Plans for next year's championships have not yet been made.

Skydiving

Parachuting's Newsmagazine

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Skyvan Boogie '79: The Memorial Day Drizzle

by C.J. Wentzel

photos by the author and Ken Basmajian

It was a dark and stormy Friday night as I squished my van to a stop at the United Parachute Center at New Hanover, Penna. I was hoping that for just once the weather would do a quick one-eighty and the Memorial Day Skyvan Boogie would be a dry one.

But it was not to be, as clouds and drizzle were to visit frequently throughout the three days. But, as with practically every gathering of skydivers, the soggy weather didn't dampen anyone's spirits.

Saturday morning, after another slippery and muddy drive into the parking area at the Pottstown-Limerick Airport, we settled in for our first loads of the day. Let the boogie begin!

As usual, the Herd was well organized and had anticipated practically every possible circumstance. Registration and equipment check went quickly. The manifest system, once it was explained, worked very efficiently: loads were manifested, organized and jumped very smoothly, taking every advantage of the good weather that was available.

The first thing we noticed, though, was that for a Skyvan Boogie, there was only *one* Skyvan, instead of the three or four that usually lined up by the runway. Apparently the FAA was still making waves from an incident over Delaware last year when a Skyvan dropping jumpers and an Allegheny commuter flight came pretty close to colliding. It seems that the FAA had effectively prevented Summit Airlines (who rents their Skyvans to the Herd) from bringing more than one Skyvan to the boogie by presenting the company with a big stack of last-minute paperwork that was impossible to have completed by the weekend. So the rest of Summit's Skyvan fleet sat on the ground in Philadelphia.

In addition to the one Skyvan, a Lodestar from Stormville, N.Y., was used to haul jumpers during the boogie. It didn't climb and descend as fast as the turboprop Skyvans, but it was no dog, either. I didn't hear much bitching from visitors who had come to jump the Skyvan but got manifested on the Lodestar instead — they had come to

jump and would get up anyway they could. The winter and spring had been pretty hard on the jumpers in the Northeast again, and it felt damn good just to get back into the air.

Since some 500 jumpers eventually registered for the boogie, the poor weather may have served to be a blessing in disguise. If the weather had been better, the three aircraft available (a DC-3 showed up on Sunday) wouldn't have been able to handle the throng wanting to jump, possibly creating some disappointment. As it was, it was the weather and not the number of aircraft that limited the number of jumps one could make.

All lifts were manifested, organized and paid for to 12,500'. Planes left the ground in hopes of that altitude destination but for the early jumps on Saturday, 7500' to 8500' was the usual altitude for jump run. But after the freefall and canopy rides, we had an unexpected treat: REBATES. The buzz word for the meet was rebate. With our economy falling down around us, it still felt natural to hear Tommy Dunn over the PA system calling out, "Okay, load seven, everybody on load seven, come on up to the manifest and get your rebate. REBATES for load seven up at the manifest."

Only 13 loads got off the first day. But there wasn't all that much grumbling. A lot of skydives weren't the quality dives these jumpers were generally capable of, but the mood was "Let's jump and have fun anyway" in spite of the low ceiling. But on the lifts where we did get ceiling, the pilots made up for earlier disappointments: the 12,500 passes usually turned onto jump run at 13 or 14,500'. The pilots were happy to get us up as high as they could.

Along with the skydiving, there was a lot of ground activity as well. A local Philadelphia television station was out to cover the meet. It was their third time at a boogie and they were well prepared. At the last boogie, Labor Day



KEN BASMAJIAN

A Summit Airlines Skyvan, engine spinning, waits to load. Summit is selling its Skyvans, and the Herd is actively looking for alternate aircraft. (Photo by Basmajian)

78, they got a wealth of material and produced a fine video tape about the record 61-man. The station's weatherman, Jim O'Brien, had made his first jump last August and he was back as a novice relative worker. The station wanted to cover his participation in the boogie and every now and then, we'd see the cameraman and a sound lady chasing a jumper around and recording his impressions of the excitement and thrill of skydiving. It was good to see professionals capturing images of our sport.

"...the buzz word for the meet was 'rebates'..."

In between the weather holds, I walked around Van City — the parking area — a bit and renewed a lot of acquaintances. There were a lot of friends roaming around, and since we had more down time than usual, I got a chance to meet a lot of new faces, too. A group from New York was selling shirts with an unusual graphic design on it. It uses the international man symbol you see on a lot of traffic signs, in a freefall

body position with an ascending aircraft next to him. I closed my eyes and imagined the symbol of signs leading to all the dropzones on earth.

Another "ground activity" that turned me on were paintings by a young lady named Kathy Statzer from Evans City, Penna. Her boyfriend, Jim, is a jumper and that helped her point her considerable talent to skydiving to create some fine and unusual paintings. Her work showed jumpers in swoops, dives, flares and formations. I liked them so much I bought one for myself and another, depicting three jumpers tracking around the rings of Saturn, was particularly beautiful. I hope we'll see more of Statzer's fine art in the future.

Sunday was a teaser. The fog and haze cleared by midmorning and it looked like we were going to get going full bore. The manifest backed up quickly and the sky started filling with parachutes.

The women organized a 22-way attempt, a quadra-diamond cluster flake. (Got that?) Mary Todd and Mary Wolper did most of the organization. Everyone watched from the ground as a

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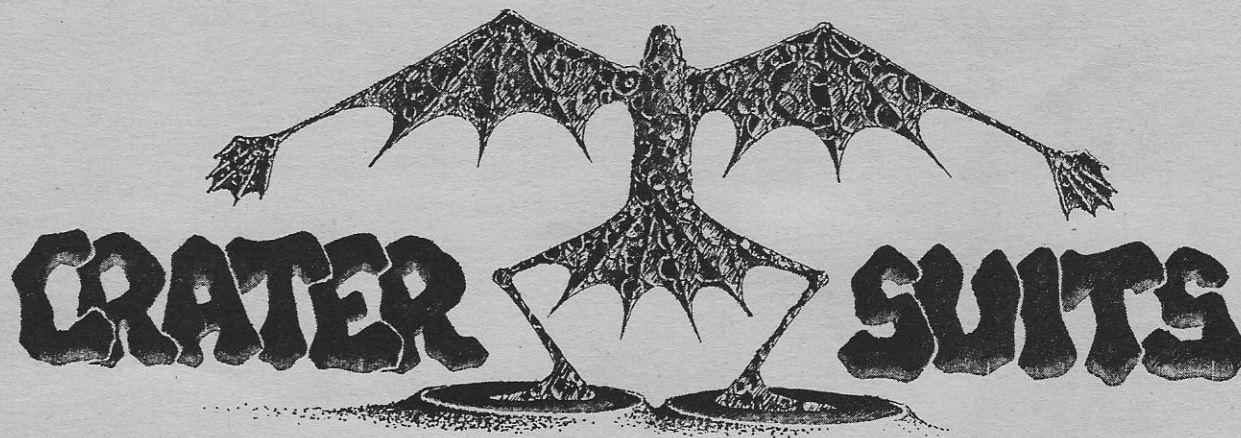
Jump plane crashes

(continued from page 1)

made at press time. Morar told *Skydiving* that "the FAA considers this to be strictly an aircraft accident, not a skydiving incident." Besides the destroyed aircraft, the only property damage was to the power lines it struck.

As a result of the accident, Morar re-evaluated his first jump course syllabus and decided that it adequately covered in-flight emergencies. He doesn't think "that emergency bailouts should be emphasized, but they should be mentioned — and made a part of jumpmaster training, too."

The jump aircraft accident at Yolo followed a minor one the week before when the nose wheel fell off another 182 during landing, damaging the propeller. Yolo, located near Sacramento in Northern California, reopened last April after the county had closed it nearly two years before by requiring that Morar's company secure a \$1 million liability policy, which was unavailable.



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Skydiving, June 27, 1979/3

North American Aerodynamics and Pioneer ready new 7-cell canopies

North American Aerodynamics is in the final stages of designing a 200 square foot Para-Foil that will compete for the fast growing "mid-size" 7-cell market. Meanwhile, Pioneer Parachute Company announced plans to offer the "Merlin," a 200-sq. ft. version of its Viking 7-cell. Both canopies should be shown at the Nationals for the first time.

NAA's canopy will be called the "Jalbert 200" in keeping with the company's practice of including the surface area of the canopy in the name, such as the 252 Lite and the 189 Para-Foil. It features lightweight materials and construction techniques to keep the canopy as small and light as possible without compromising strength.

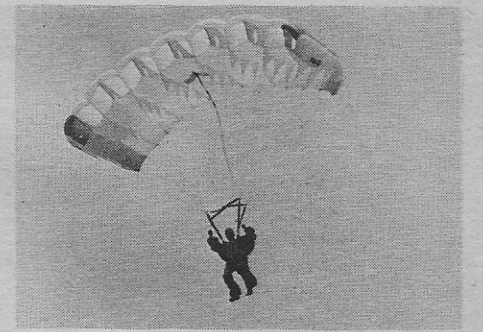
Like other models of NAA's Para-Foils, the Jalbert 200 has load-bearing flares that extend below the bottom surface (or "floor") of the canopy. These flares are unique to Para-Foil designs, as other manufacturers use stabilizers to improve the stability during flight and reduce sliding in a turn. The flares give a distinctive appearance to an inflated Para-Foil.

The Jalbert 200 will also use the company's pilot chute controlled slider to reduce opening shock. This type of slider, sometimes called a "spider" because of its gangly appearance, utilizes a bridle that extends from the pilot chute through a hole in the middle of both the top and bottom surfaces, to a slider that is built from two lengths of

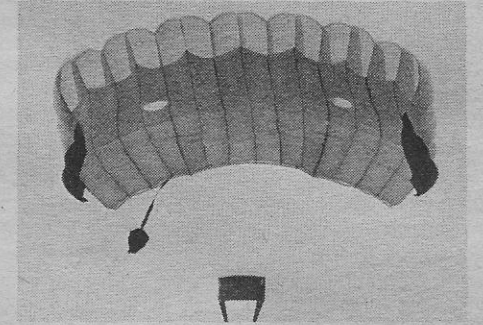
webbing. The line groups from the four risers each pass through a grommet on the end of the slider's arms.

During deployment, the pull of the pilot chute works to keep the slider up against the bottom surface of the canopy while the forces of inflation try to force it down. As a result, the slider moves relatively slowly down the lines, resulting in a staged, gentle opening.

The Merlin features a new canopy construction technique that results in a lighter, less bulky canopy with no loss in structural strength, according to Jim Mowrey, Pioneer's marketing manager. Instead of 14 roof panels and 14 floor panels which are sewn to 15 ribs, the Merlin has 7 extra-wide floor and roof panels. The edges of each panel is rolled and sewn into a rib to which the suspension lines will be attached, called a load-bearing rib. The remaining seven ribs are butted and sewn between the load-bearing ribs. The result is a reduction in



The Jalbert 200 is similar to the 252 shown above, while the Merlin is similar to the Viking shown below.



the number of the bulkier rolled-and-sewn seams. Mowrey claims that it isn't necessary to roll and sew the non-support ribs, that the Merlin's durability will be as good as its competitors.

The Merlin uses Dacron lines that are continuous from canopy to connector link; there are no cascades except in the steering lines. The Unit, built by GQ Security Parachute Company, also has lines of a similar configuration.

Mowrey also reported that the Merlin does not experience the end-cell closures that were common with the Unit and early models of the Cruisair by Para-Flite. (Para-Flite has since redesigned the stabilizers to eliminate that problem, and the stabilizers of early models of the canopy can be quickly modified to the new configuration. Owners of Units have been cross-porting their canopies — cutting holes in the ribs between cells — to help keep the end cells inflated.)

Both the Merlin and the Jalbert 200 should pack into the smallest containers easily, according to their manufacturers. Risers and soft toggles are standard. Prices are not yet available for either canopy, although Mowrey said the Merlin's "should be more than competitive."

Skydiving will publish a more detailed evaluation of each canopy as soon as it has the opportunity to jump them.

CRW Record Attempt Planned for Boogie

Tom Courbat, the administrator of the CRW Awards and a participant in several large canopy stacks, recently announced that he will organize a world record CRW attempt at the boogie following this year's national championships in Richmond, Ind.

"Right now, we're planning on attempting a 10-stack, since only a couple have been built and none held for the required 60 seconds," Courbat told *Skydiving*. "However, if a 10-stack or larger is completed before the attempts we're planning, we'll then try for something bigger."

Courbat will call a meeting at the airport on July 4th of all interested jumpers with solid CRW experience. Courbat explained that his plans weren't that formal: "If enough jumpers show up, we'll organize more than one group for the attempts."



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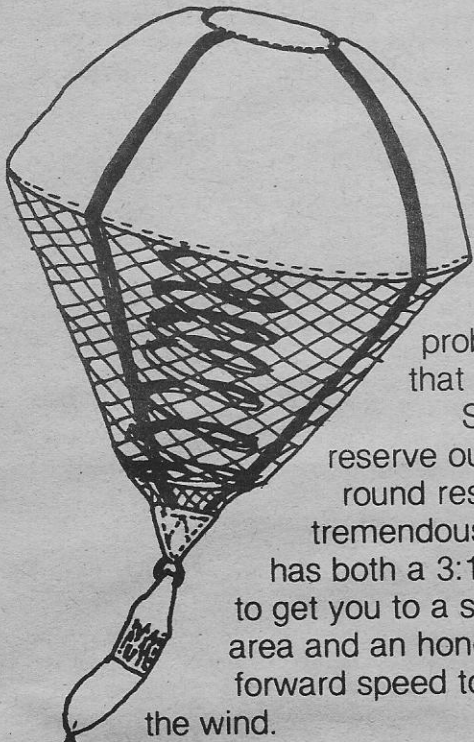


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You might not know, however, about the Safety-Flyer's unique free bag deployment system, a feature which lets this reserve deploy with unprecedented reliability. The Safety-Flyer, in fact, can open even if the pilot chute snags on the jumper or his gear — something that no round can do.

The Need for a Bag

Our tests and jumper surveys revealed that the Strato-Flyer main opened more reliably from a bag than if it was free packed. Since the Safety-Flyer is derived from the Strato-Flyer design, our engineers decided to keep the bag deployment.

"Free Bag" Explained

"Free bag" means that the bag, bridle and pilot chute are not attached to the canopy. These items do their jobs during deployment and then separate from the canopy before it inflates. Since they're gone, it's impossible for them to tangle with the canopy while it inflates and begins flying.

The Safety-Flyer's Components

The bag, bridle and pilot chute were all specially designed for the Safety-Flyer. The Hog Dog® pilot chute has a powerful spring and large mesh to help it get off your back and inflated quickly. The bridle is 13' long and made from 2" cotton tape. The bag is lightweight nylon, loose fitting with a pocket for stowing the lines. (High speed films revealed that a pocket deployed the lines better than rubber bands.)

How It Works

During a normal deployment the pilot chute, bag and bridle function just as you would expect, except that they separate from the canopy after the lines extend. The result is a nice, fast, staged deployment.

The unique bridle becomes important if something goes wrong and the pilot chute snags during deployment. This could happen if you're tumbling, or if you can't breakaway from a streamering main, or if you're wearing a camera or a smoke bracket.

In such a situation, the extra-long bridle deploys into the air-stream. It creates enough drag (because of its width) to lift the bagged canopy out of the container, unstow the lines, and pull the bag off the canopy — *even with the pilot chute still hung up on the jumper*. The canopy can then inflate.

Again, no other reserve can open under these circumstances.

Why We Know It Works

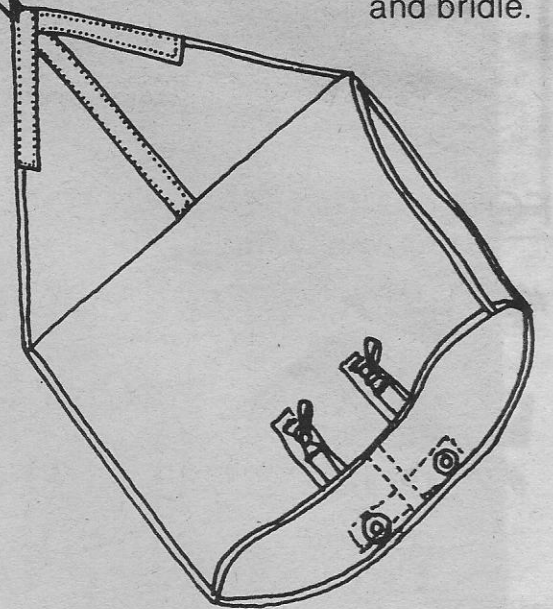
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Skydiving, June 27, 1979/5

Study by USPA:

1978 Fatality Study reveals problems with breakaways, gear

According to Robin Heid, fatality study project chief of the USPA Safety and Training Committee, the USPA recorded 48 sport parachuting fatalities in 1978. Heid analyzed the reports on the incidents and concluded that:

Nearly one-third of the fatalities involved breakaway problems: too low, not at all, failure to pull the reserve after the breakaway, or reserve entanglements with the jumper or his gear. Novice jumpers were especially prone to having problems with breakaways.

Heid recommended that the parachute industry produce a reliable, sim-

ple rig for novice skydivers that will make breakaways easier. (He made no mention of the Stevens Cutaway System, a method where a static line automatically pulls the reserve ripcord after a breakaway.) He remarked, however, that the parachuting public must support the industry's efforts, apparently by buying such rigs when they are offered.

The author also pointed out that lack of altitude awareness results in both low pulls and low breakaways. This same lack of aerial awareness caused five fatal collisions in 1978. Heid recommended that experienced jumpers not push less experienced jumpers into situations they

are not yet ready to handle, where they can become confused or lose track of altitude.

Hand deploy pilot chutes received special attention from Heid, who noted that more than 25% of the 1978 fatalities were "hand deploy related." Three involved twisted belly bands, four involved "loop lock" (a situation where the bridle hangs up in the locking loop), and three more deaths were attributed to problems resulting from the pilot chute entangling with the jumpers' arms.

The report recommended that hand deploy rigs be built so it is impossible to

twist the belly band, if a belly band is used. It also recommended that hand deploy rigs be equipped with the gutted cord/curved pin locking system.

Heid remarked that better student gear is available right now that probably would have prevented several of the 1978 fatalities. The direct bag static line system is one example, as are automatic openers. It was also recommended that transition from conventional to sophisticated tandem rigs be accompanied by plenty of on-the-ground instruction.

The report presented brief descriptions of the following fatal incidents. They are grouped into arbitrary experience categories as has been done in previous USPA fatality reports.

Novices — 1 to 3 Jumps

Heid stated that "while the inability to deal with an emergency was the major factor in the nine student [novice] deaths in 1978, in four of them, better equipment would have eliminated the emergency situation entirely, or resulted in a proper reserve deployment."

Two novices experienced sleeve locks, when the deployment sleeve failed to clear the canopy completely. Both jumpers "failed to perform the proper emergency procedures."

Another novice deployed his reserve while unstable, causing the canopy to snag on one of his 1½-shot Capewell canopy releases.

"... better student gear is available that would have prevented several fatalities..."

One novice was killed when she could not pull her reserve ripcord after experiencing a hard pull on her main. The center-pull reserve had both non-rotating cones and, according to reliable witnesses, a lanyard that was designed to prevent the loss of the handle. The combination prevented one pin from clearing the cone, and the reserve container stayed closed.

Three novice jumpers died as a result of no or low pulls. One exited for a five-second delay and remained stable until a very low altitude, when she pulled her reserve. Another novice jumper with 15 jumps laid base for a 4-man attempt and did not pull his main until about 150'. The third novice rode a streamer until impact, apparently without trying any emergency action.

Another inexperienced jumper rode a malfunctioned main to about 150', when he cut it away and pulled his reserve too low for complete canopy inflation.

(continued on page 16)

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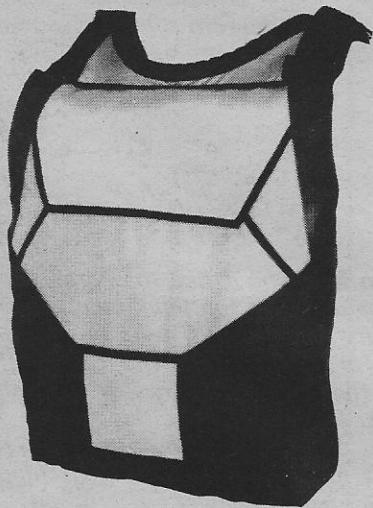
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Mike Barber of DeLand, Florida, devised a neat approach to sequential RW earlier this year when he invented "Simon" dives. A variation of simultaneous sequential, Simon dives require a high level aerial awareness, smooth docking and no-contact RW, a competitive spirit and . . . a minimum of dirt diving.

The basic idea behind Simon dives is this: The group, composed of even number of jumpers, is divided in two. One group copies the formation shown to them in freefall by the other group. The "copy cat" group has no idea what formations the "lead" group will perform: it lies outside the lead group waiting for them to complete a maneuver. The lead formation then slides out of the center of the ring formed by the copy cats, who then fly in and duplicate the formation.

That is a general idea, and it probably seems pretty confusing right now. Read on and study the diagrams: it'll become clear. It'll help to have a few friends walk through these instructions.

Barber and other jumpers at DeLand have already come up with several variations of the Simon dive theme. We'll discuss the basic kind in this issue, with more to come.

Organization

Simon dives are easy to organize. Any even number of jumpers from four up is fine. You should limit the total number to six for the first few attempts, as larger groups can cause aerial chaos unless each member has some previous experience with Simon dives.

Anyway, take the group and split it in two.

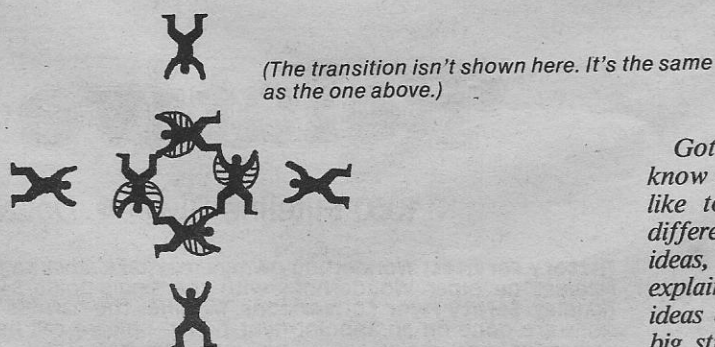
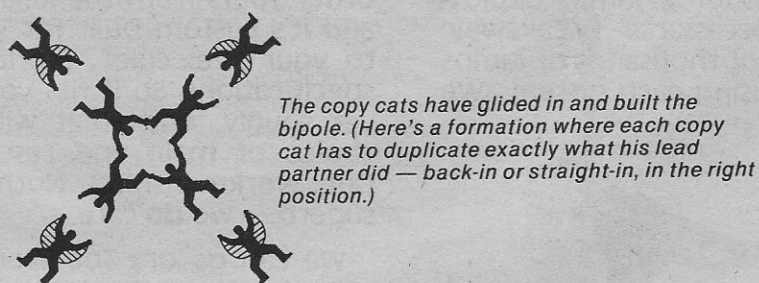
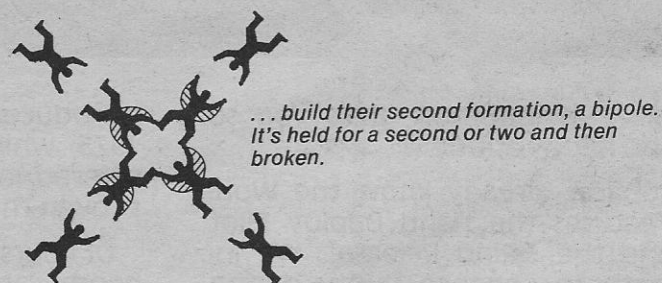
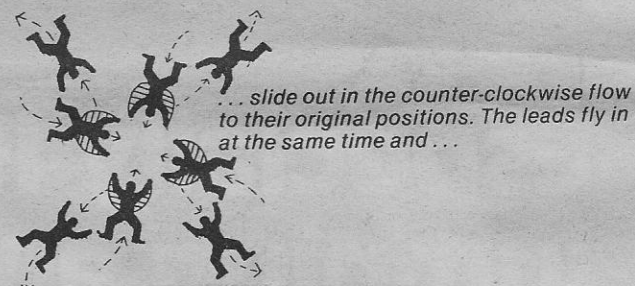
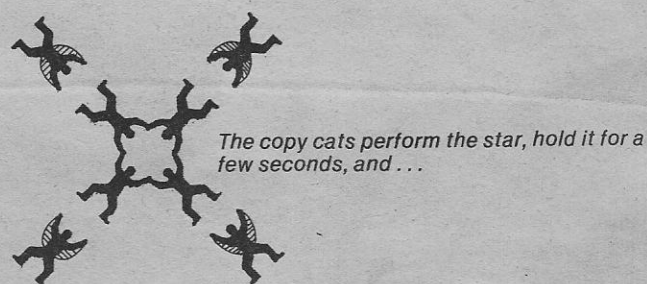
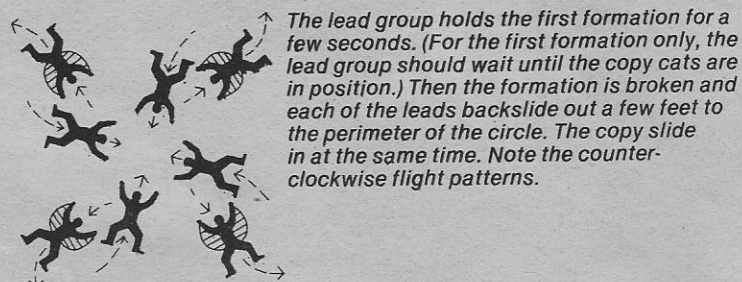
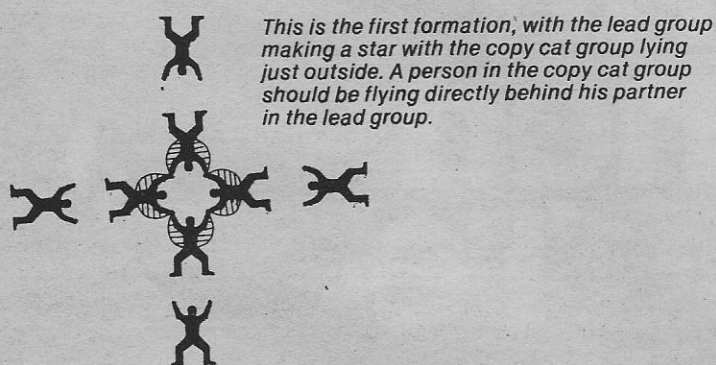
Designate one group as lead and the other as copy cat. The lead group goes off by itself and plans and practices a sequence of maneuvers. (Three formations is a good number.) The first has no dirt diving to do.

Get both groups back together and pick partners. In the air, one specific person in the copy cat group will always duplicate the position of his partner in the lead group. For example, if his partner does a back-in into a Murphy star or bipole, so will he.

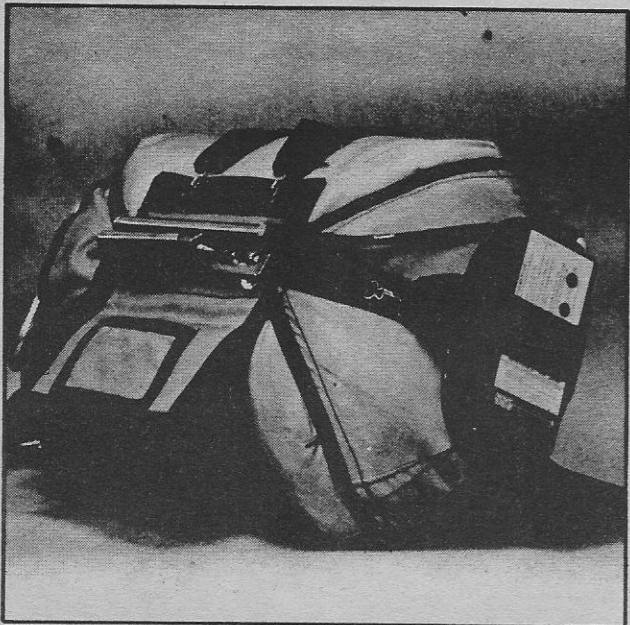
Hints

1. The waiting group — the group not building the formation — should fly as closely as possible to the group in the center. Stay about five feet out and three feet up — *no more!*
2. Try to "centerpoint" the formations. That means that each member of a group should fly into the center at the same speed so that all four will arrive at the same time. Ideally, the only thing that has to be done at that point is close grips.
3. Be *smoothooooooth!* Crashing a formation together will cause problems as it will slide around the sky, drop a few feet, and probably turn. Simon Dives are most fun if everyone concentrates and thinks "Smooth, you bag!"
4. Stick to a clockwise or counter-clockwise flight pattern. Each person should simply backslide out of the center so he can keep his eyes on everyone else.
5. Pick fairly simple formations, especially at first. Complex ones, especially if they're built sloppily or broken quickly, will confuse the copy cats. It's funny (until it's your turn next dive), but not much flying gets accomplished.
6. Keep track of altitude! (That sounds pretty basic, but take our word for it — these dives can get you so involved that you tend to forget about such things.)
7. Build on the basic concept. Use larger groups. Do a complex version where each group is both a leader and a copy cat on the same dive. Force yourself to fly smoothly, to stay close, and to work with your team members so you centerpoint your formations.

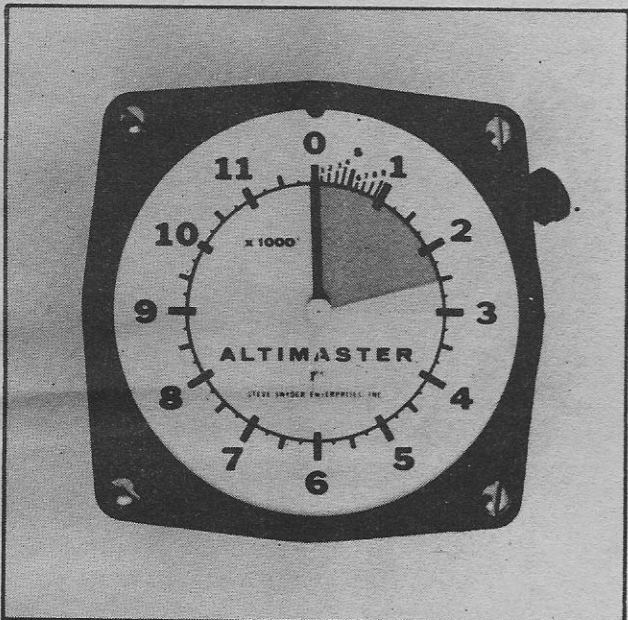
Simon Dives



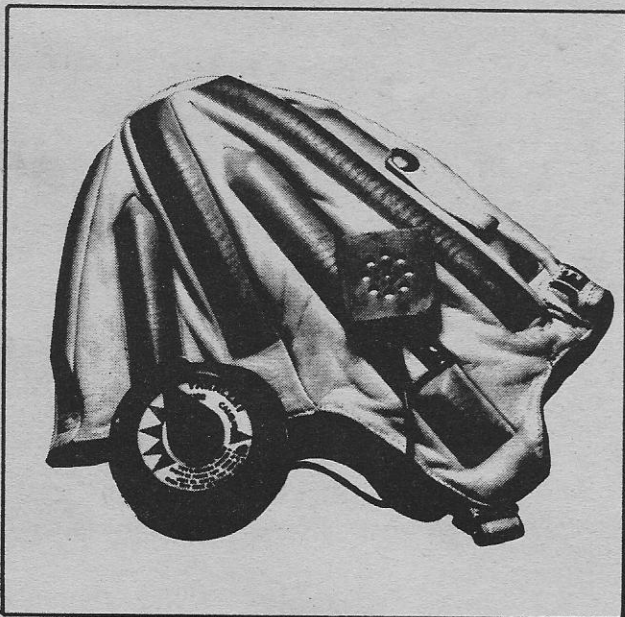
Got an idea you'd like to share? Perhaps you know of a dive that you think other jumpers would like to try because it's fun, or challenging, or different or educational. Send SKYDIVING your ideas, perhaps using sketches or diagrams to help explain it. We'd like to use this page to show your ideas and experiences with formations, sequential, big stuff, little stuff, simple stuff, complex stuff, whether it's basic or advanced.



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Skydiving, June, 27, 1979/9

The 1979 National Championships: Which RW teams will win?

A survey of the country's relative work teams by *Skydiving* has revealed that the competition for a gold medal at this year's national championships will be particularly intense, with several extremely competent and dedicated 4- and 8-man teams making final preparations for the six jumps they'll make during the actual competition.

Based on its performance at several recent RW meets, and the fact that it is the defending world champion in this event, Mirror Image from Pope Valley, Calif., must be considered the team to beat for the 8-man title. There are, however, at least five other 8-man teams including the 1978 Champion Army Team that have both the talent and the desire to win in Richmond.

Tesseract, last year's 4-man champion, is looking to make it two in a row and is practicing hard. Three other teams, however, have shown in recent months that Tesseract will not have an easy time at Richmond winning this fast-paced event.

The third RW event held at the nationals, 10-man speed stars, is receiving little serious attention from competitors. Air Freight, who won in 1977 and 1978, has disbanded. Several 8-man teams have used their alternates to qualify for the event and can be expected to enter 10-man at Richmond, but all seem to approach it almost as an afterthought. Competition expected to be spirited but scores will probably be mediocre.

On the other hand, scores in the sequential events will be anything but mediocre. Some of the better 8-man teams have scored seven points in working time before judges, while 4-man teams have twirled out 10 more. It appears as if it will take a six point average — seven for the set sequences and five for the three random rounds — to win a 8-man medal in Richmond this year. 4-man teams will probably have to average two points more.

Skydiving surveyed the country to determine the training schedule that were being followed by the top teams, what sort of gear they were jumping, and if they were using video recording

systems as training aids. The teams' performance at their conference meets was used to rank them in some sort of order, although such an approach is wildly inaccurate at best, because scores vary greatly depending on exactly what sequences were attempted. This survey, then, is mostly valuable as an overview of some of the major teams. Of course, there are probably several noteworthy teams that were not located by the survey but will come to Richmond and surprise everyone.

The winners of the sequential events at the nationals will become the 1979 U.S. Parachute Team and, under the leadership of the USPA, travel to France to represent this country at the World Meet. Canada flew to the overall world RW title in 1977 in Australia, and can be expected to vigorously defend their position.

Teams to watch at this year's U.S. nationals include:

8-Man Mirror Image

After winning the 8-man event at the U.S. Nationals and then the world meet in Australia in 1977, Mirror Image disbanded and the team's members spread out over the country and Thailand. The team didn't reform in 1978, a world cup year, but reassembled at Pope last April to begin two months of jumping five days a week. The team expects to have about 150 jumps by the time the nationals start.

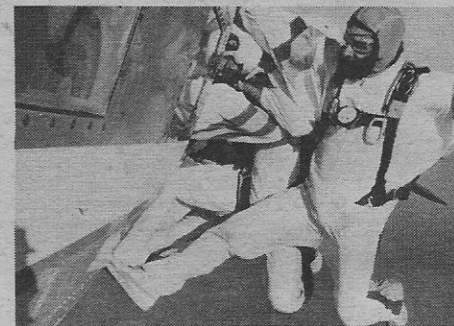
Mirror Image is a team of highly experienced jumpers and led by B.J. Worth and Garry Carter. Worth captained the 1973 U.S. Freefall Exhibition Team which essentially showed the sport both in the U.S. and overseas that there was a lot more to RW than round stars.

Mirror Image jumps gear built by GQ Security. Jumpsuits are Crater Suits, provided by the ProS Company. The team has received limited sponsorship in terms of discounts on gear and jumps plus a few freebies such as team clothing.



Mirror Image, back row, l to r: Garry Carter, B.J. Worth, Dale Spencer (alt.), Mike Eakins, Steve Mayes. Front: Hod Sanders, Craig Fronk, Mike Gennis, Jim Captain, Marty Martin.

Mirror Image has been working especially hard to develop aerial techniques that clearly show the judges that the sequences of formations is completed properly. The team has stressed disciplined flying and smoothness, and have developed several variations of their exit in an effort to



build the first formation as quickly as possible.

Mirror Image used both air-to-air and ground-based video systems to record their training jumps. Rande DeLuca put a convertible system together that permits it to be used in both ways.

Members of Mirror Image include Jim Captain, Garry Carter, Mike Eakins, Craig Fronk, Mike Gennis, Marty Martin, Steve Mayers, Hod Sanders and B.J. Worth. These nine jumpers plus Jerry Bird will enter the 10-man event in Richmond. Four of Mirror Image form the Refraction 4-man team, discussed below.

Visions

From 1974 through 1976, a team called Captain Hook and the Sky Pirates dominated 10-man speed star competition, winning three consecutive U.S. nationals and the only world meet it entered. The leader of that team, Al Krueger, skipped national competition in 1977, entered last year, and is back again in 1979 with an 8-man team that has been performing very well since it started practicing in January at Elsinore, Calif.

Visions is a "weekend team," making 10 to 12 jumps per weekend. Krueger told *Skydiving* that he expects his team to have about 150 practice jumps by the time competition begins over Richmond.

Visions has competed twice this year against Mirror Image, losing in a sudden-death jumpoff at the Heydorn Meet at Elsinore in April and by three points after six rounds at the Pacific conference meet last month.

The team wears small jumpsuits. "It's back to the old style theory — fall faster so you have more air to work with," according to Krueger. As a result, they run out of working time at 3,500' or so, much lower than many other teams. The team wears Handbury rigs built by Advanced Air Products of Elsinore. Krueger told *Skydiving* the team has no sponsorship, other than a "break" on gear and jumps.

Like all sequential teams, Visions uses an exit that optimizes the likelihood of building a consistently fast first formation. The team's goal is to have the first formation completed in 10 seconds or less, ranging from times in the eights for stars and snowflakes to 13s and 14s for the more difficult ones such as the hope diamond and caterpillar.

Visions' teams jumps were recorded for later review by a video air-to-air unit worn by Ken Crabtree, who apparently also assembled the system.

Members of Visions include Jim Edwards, Rick Jones, Al Krueger, Kent Lane, Scott Meek, Steve Parker, Mike Parnell and Tom Start.

Focus

Focus, from DeLand, Fla., surprised many observers when it won its conference meet by beating both the Army and Slots. Captained by Mike Cerasoli, Focus has six of the eight jumpers it had when it finished second in the 8-man event at last year's Turkey Meet.

Focus has been working hard to develop an exit where the first formation is taken directly off the side of the aircraft, with everyone hooked up in some manner, and perhaps only a grip switch or two needed to score the first point. The disadvantage of such an exit is that if a funnel occurs, it usually is of major proportions, while the funnel of a

Focus, l to r: Sheila Whitten, Ron Johnson, Kathi Embrey, Scott Parker, Mike Cerasoli, Martha Scott, Mark Kilmer, Charlie Kenlin.



Visions, back row, l to r: Al Krueger, Jim Edwards, Ken Crabtree (alt.), Kent Lane, Scott Meek. Front: Mike Parnell, Steve Parker, Tom Start, Rick Jones.



CHRIS WENTZEL



Unity, back row, l to r: Dan O'Brian, Ron Ardizonne, Dave Wallace. Front: Bob Bonitz, Bungee Wallace, Al Hawthorne (alt.), Tom Piras, Jeff Barboni, Ernie Butler.

3-man base is more easily recovered. But Focus has had good success with their exit, and recently any funnels have been relatively minor.

Focus is primarily a weekend team, making three to four jumps per weekend day since January. The team scheduled a fulltime week jumping for the week immediately prior to the nationals.

The team likes to think of itself as "new blood," since most of its members have little or no national competition experience. Cerasoli was a regular member of Slots for several years and also jumped on several of Jerry Bird's teams at Z-Hills, but the remaining several members have been primarily jumping on "fun teams" until last year.

Focus jumps fairly large jumpsuits, in spite of being a comparatively light team — four of its nine members are women. Most of the team jumps Wonderhogs, SST Racers or rigs of experimental design.

Focus is comprised of Mike Cerasoli, Kathy Embrey, Ron Johnson, Mark Kilmer, Charlie Kenlin, Scott Parker, Martha Scott and Sheila Whitten, with Candi Prosser as alternate.

Unity

Unity, also from Pope Valley, was put together by Bungee Wallace and Ernie Butler. Wallace was a member of the 1977 National Champion 4-Man Team and last year's Permutation 8-man Team that finished second at Richmond.

Unity made its first team jump in late February and has been making eight to ten dives a weekend since then. They planned to spend a week of intensive training at Wilmington, Ohio, before the nationals, making some 50 jumps to bring their practice total to about 175.

The team uses the "California exit," a front and rear floater outside the door of the DC-3 with the base backed between them. Wallace calls this the California exit because Mirror Image and Visions also use it, with minor variations.

Contrary to what many believe, Unity is not connected with GQ Security Parachute Company, in spite of their name and fact that both Wallace and his brother David (who is also on the team) work there. They do jump the company's Unit main canopy and System rig. Most of the team also jumps Crater jumpsuits, with suits made by the Altitude Shop being the pick of the remaining jumpers.

Polaroid Land Camera Company donated the use of a Polavision instant movie camera and viewer to the team, along with 150 free film cassettes. Wallace said the system is "dynamite" for training purposes, and someone follows them out on every practice dive, filming the jump with the helmet-mounted camera.

Wallace told *Skydiving* that Unity has been quite consistent since their third-place showing at the Pacific Conference



Kinetic Sunshine, l to r: Jim Thrift, John Robbins, Willie Kivipelto, Doug Smith.

Meet, averaging over five points a jump within working time. Al Krueger of Visions called Unity "the dark horse team of the 1979 nationals," as he believes their ability is greater than the conference meet scores showed.

Members of the team include Ron Ardizonne, Jeff Barboni, Ernie Butler, Bob Bonitz, Al Hawthorne, Tom Piras, Dan O'Brian, Bungee Wallace and David Wallace.

(continued on page 14)

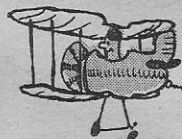
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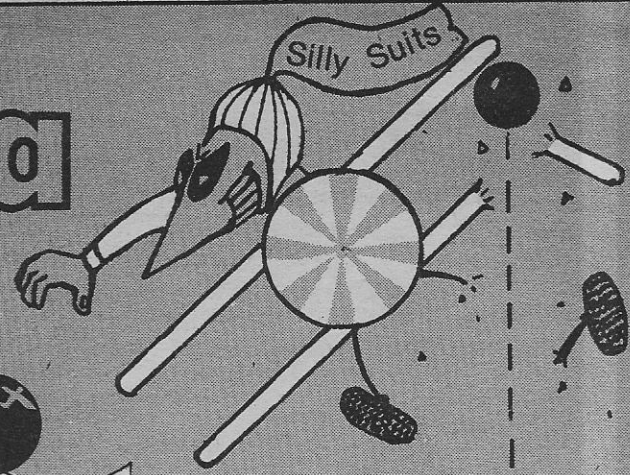
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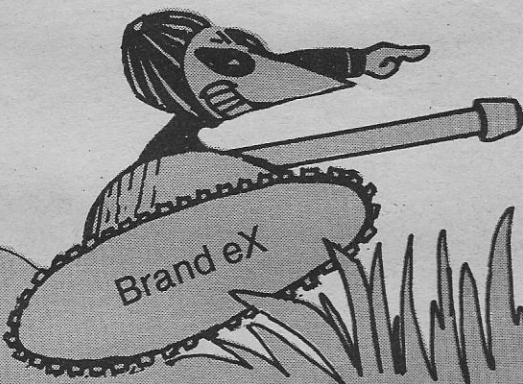
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Which teams will win?

(continued from page 11)

Army

Although 1977 was the first year that the Army entered national RW competition, they came back to win the 8-man event in 1978. And, representing the U.S. at the World Cup in France last year, they backed up their fine performance at the nationals by winning this international meet, too. Most of the jumpers on last year's team are back again for 1979.

The Army has had a tough time of it this year, however, has several factors have prevented them from practicing as much as they would have liked. Although the Army 8-man team is a fulltime team that enjoys the benefits of the logistics and facilities that only the

government can provide, they also must deal with such unforeseen problems such as losing a teammate because he gets promoted and removed from the team, something that happened in early June when team leader Fred O'Donnell left the squad.

According to spokesman Dave Goldie, the Army's 8-man team has been practicing since February and should have about 160 jumps by the meet. The team has been making many of its practice jumps out of helicopters and twin-engined Caribou aircraft, which puts it at a disadvantage when it comes time to jump out of civilian DC-3s. Still, the team's first formation is unusually done as quickly as anyone's.



The Army, also called the Golden Knights, jumps Brand X jumpsuits. SST Racers are worn by most members. Ground-based video was used extensively.

Goldie told *Skydiving* that 1979 has been the Knights' "worst training year," as poor weather, aircraft unavailability and personnel changes have prevented

the team from really knocking under. The team finished in second place at the Southeast conference meet and fourth at the Pacific conference meet.

But considering the Army's performance last year and its overall reputation for competitive excellence, it is expected that they will do well in Richmond in all of the three RW events. (The team in emphasizing the 8-man event in practice.)

As of early June, the team included Glen Bangs, Fred Gerber, Matt McManus, Reed Robbins, Mike Sweeney, Pat Van Bibber, Greg Van Camp, and Bill Wenger, with Mark Shields being alternate on 8-man and Roger Jutras rounding out the 10-man team.

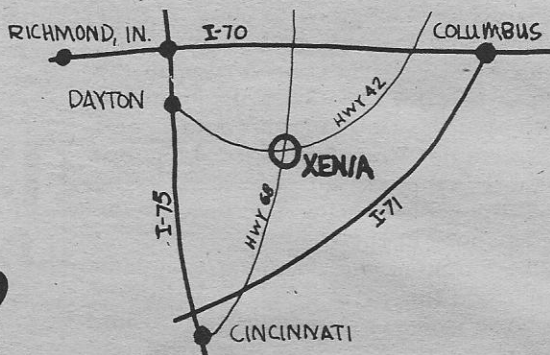
Slots

This team also jumps at DeLand, where it has made about 110 jumps on weekends since it started practicing in January. There has been a Slots team of some sort since 1973, and the team has dominated the Z-Hills Turkey Meet for the past five consecutive years. Slots finished second in 10-man in 1976 at the nationals and third in 8-man the following year.

Slots has relatively straight-forward exit, utilizing a front and rear floater, a 3-man base and three divers. The base exits in a Oppenheimer star and switched grips in freefall to form a piece of

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CHRIS WENTZEL

the first formation. The remaining five jumpers free fly in. First formations take eight to 15 seconds, depending on exactly which formation is attempted.

The team wears jumpsuits with fairly large wings, favoring Silly Suits and Ozone jumpsuits. Five jumpers wear Wonderhogs.

Slots filmed many of its jumps with a video unit set up on the ground. The use of the ground-based unit was two-fold: to view the jump as the judges will see it to see if any changes have to be made to insure the maneuvers are adequately shown, and to simply review the overall performance of the team.

Slots was third at its conference meet behind Focus and the Army.

Members of Slots include Mike Barber, Carl Daugherty, Hoot Gibson, Bob Gray, Jay Hilden, Dave Jancsar, Andy Reyling and Mike Truffer, with Ed Mosher and Roger Nelson as alternates.

4-Man

Tesseract

Tesseract is the defending national champion 4-man team, having won in Richmond last year in front of Reflections and the Army. Tesseract jumps at Ozmo Paracenter in Athol, Idaho, compensating for the area's nasty winters by jumping in the spring and summer in the evenings after work. Jeff Wragg, a member of Tesseract, told *Skydiving* that he expects his team will have logged about 145 jumps by time

(continued on page 19)

The Cruisair Project.

How one careful project resulted in one hot canopy.



The Objective:

Para-Flite's goal: design a ram-air that would meet the needs of the most demanding relative workers. This new canopy had to be small and light enough to fit in any rig — but big enough to land softly in all conditions. It also had to be fast and responsive, for fun and for easy canopy RW. Reliability and durability couldn't be compromised, either.

The Project:

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1978 Fatality Study reveals new problems as well as old ones

(continued from page 6)

There was one accident where a student performed a poor PLF and suffered fatal head injuries.

All told, there were nine fatal parachuting accidents involving jumpers with less than 31 jumps in 1978.

Intermediate Jumpers — 31 to 100 Jumps

Lack of altitude awareness was cited as the major contributing factor to the eight of the 12 fatalities recorded among intermediate parachutists.

Three jumpers got their arms entangled with their hand deploy pilot chutes and pulled their reserves too low or not at all. Another experienced a towed pilot chute and did not pull his reserve at all.

Two fatalities resulted from failure to pull either ripcord: One involved a jumper with 43 jumps who was using a homemade fabric ripcord, while the other encountered rain on an RW jump which may have contributed to the accident.

Three fatalities involved problems with the reserve parachute assembly, according to the report. One jumper broke away cleanly but suffered a reserve total. Apparently the closing loops of her reserve were lengthened against the recommendations of the manufacturer (although the manufacturer was not allowed to inspect the gear after the incident).

Another reserve-related fatality occurred when the reserve riser separated

from the harness during deployment. The report stated the jumper was wearing a Greene Star Express system and advised that the owners of such rigs have the harness fixed before jumping it.

The report did not give specifics for the third reserve-related death.

One jumper strangled after landing in a tree. Apparently he caught his neck on the front-mounted reserve while attempting to slide out of the harness after releasing the leg straps.

Experienced Jumpers — 101 and More Jumps

Heid's report stated that collisions and gear problems were the major factors that caused the fatalities among this

group of jumpers. Specific incidents:

One experienced jumper was intent on filming another jumper in freefall when he was knocked unconscious by a third jumper who deployed his canopy under the cameraman. In a separate incident, a jumper collided with a deploying canopy and was apparently stunned as his reserve was pulled too low.

The study also reported an incident where an experienced jumper was knocked unconscious when he tracked into the back of a person who had exited a DC-3 six people before the deceased. Heid speculated that the jumper may have lived if he had been wearing something more adequate than a leather French hat.

Two more collisions were recorded. In one instance the jumper in freefall was killed when he failed to pull either ripcord after tracking into an open canopy. In the other fatality, the deceased tracked into another jumper after an RW jump and was incapacitated.

Towed hand deployed pilot chutes were mentioned in five incidents. Two parachutists suffered main/reserve entanglements after they pulled their reserves into a towed pilot chute. Another experienced a towed pilot chute and apparently couldn't pull his blast handle reserve ripcord. Another safely opened his reserve at a low altitude into a towed pilot chute but landed in a lake and drowned. The fifth death involved a jumper "who performed his emergency procedures poorly," according to the report.

One jumper unknowingly jumped his rig with a temporary pin still in the reserve. The reserve container stayed closed after he pulled the ripcord in response to a main malfunction.

*"...towed hand deploy
pilot chutes were mentioned
in five incidents."*

One very experienced parachutist, according to the report, replaced his lost reserve ripcord with one that was too long. It "pig tailed" and could not be pulled after a breakaway.

A reserve that had been contaminated with battery acid from a car trunk blew up after a breakaway, killing the jumper. The rigger had not inspected the canopy adequately, according to the report.

In an incident similar to one mentioned previously, a reserve riser of a Greene Star Express failed after a breakaway when it tore free from the harness.

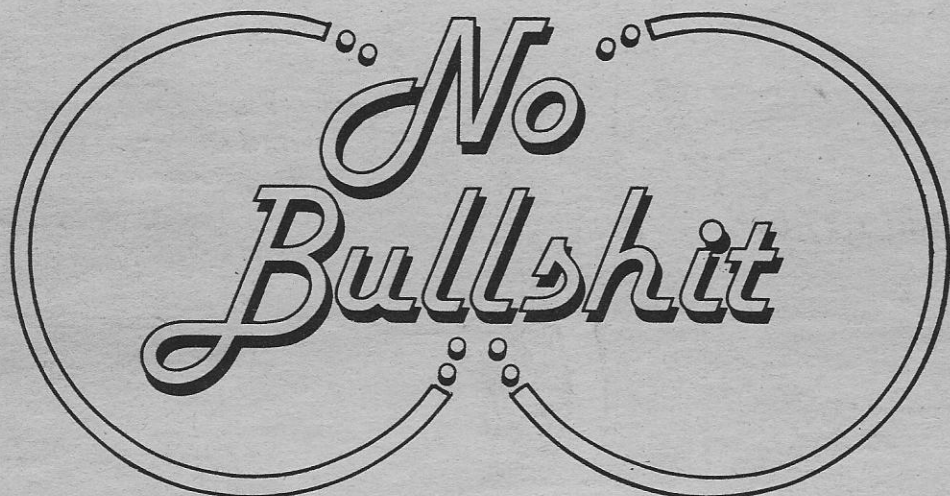
Several jumpers had other breakaway problems. One jettisoned his main at 1,500 feet and "spent 1300 feet trying to get stable," according to the report. Two other experienced jumpers rode malfunctioned mains to too low of an altitude before they tried their emergency procedures.

Heid's study reported that two skydivers were killed when their "reserve canopies fouled after successful breakaways."

One fatality occurred on a night jump as a result of a main/reserve entanglement due to causes that couldn't be determined after the jumper was found in the dark.

Two jumpers died when they apparently couldn't see their reserve rip-

(continued on the next page)



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Fatality Study

(continued from page 16)

ords after breaking away from their mains. One was wearing a full-coverage motorcycle helmet as protection against the cold. The other apparently pulled on his reserve ripcord housing until impact.

Two jumpers died as a result of injuries sustained when they made radical turns with their ram-air canopies too close to the ground. One of these parachutists had his canopy on backwards by mistake and may have become confused by the reversed controls (pulling on the righthand toggle will cause a turn to the left).

One death was attributed to heart attack in freefall that resulted in a failure to pull either ripcord.

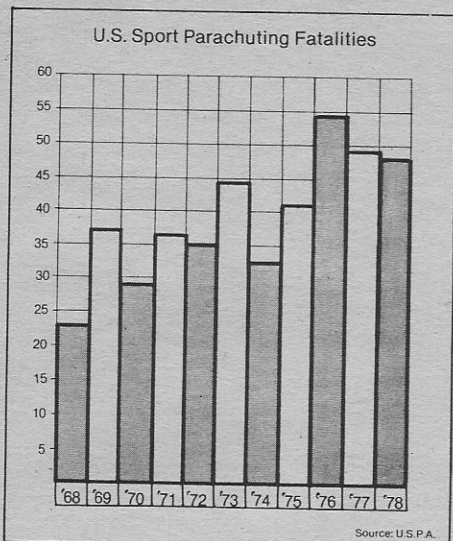
There was one suspected suicide in 1978, when a jumper who was reportedly having personal problems broke away from his fully deployed main canopy and made no apparent attempt to pull his reserve.

The final fatality discussed in the report involved an experienced jumper

"...one of these ... had his parachute on backwards."

who tracked away after an RW jump until impact.

Heid's report was written from data collected from fatality reports sent to the USPA from Area Safety Officers and drop zone operators who investigated them. The full text of the report will be published in *Parachutist* magazine after it is reviewed by the association. Names, dates, locations and brand names of equipment are omitted from the report for legal considerations. ●



SANDY WILLIAMS

Bagley gives a seminar to night demo team

Early this year five skydivers, billed as the Longmont Night Demo Team, made a demonstration jump at night into a high school stadium in Erie, Colo. According to Robin Heid, the team failed to notify the FAA of their intentions as required by law. The FAA found out about the demo, traced the jumpers and slapped them and their pilots with "heavy" civil penalties — fines.

Larry Bagley, an FAA air traffic controller and USPA national director from Salt Lake City, heard of the action and interceded on behalf of the team. He was able to convince the FAA to reduce the penalty to only \$100 per man, providing each attended a seminar on "complying with airspace regulations," Heid reported.

Bagley taught the seminar himself on June 8 and 9, stressing that demonstration jumps require at least notification to and possible authorization from the nearest FAA General Aviation District Office.

Freakbrother Convention dates set

The annual Freakbrother Convention will be held on August 10-12 at Big Foot, Ill. Unspecified turboprop aircraft are being advertised as the jump aircraft.

This annual event attracts several hundred skydivers who celebrate the fact that there's much more to skydiving than just parachutes and freefall. More information is available from (414) 275-9259.

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Skydiving makes a quick evaluation

Paralert

by Michael Truffer

This may sound ridiculous, but sequential RW these days has made it difficult to keep checking an altimeter in freefall. Competition 4- and 8-man jumps require intense, continuous concentration. Dropping your head to focus on an altimeter suddenly becomes an interruption to your skydive. And since "brain lock" can ruin a sequential dive just as surely as sloppy flying, anything that will help you concentrate will help you perform better.

But *not* checking an altimeter can hurt a lot more than just your skydive. Forgetting about altitude can result in token tracks, no wave-offs, panic pulls, low pulls or no pulls. To add to the mess, vigilant DZ operators and meet directors will not hesitate to ground you before you can say "springbok."

Since I dislike the distraction of checking an altimeter almost as much as I hate low pulls, I was very interested to hear of a new product dubbed "Paralert." It's an altimeter, but you don't look at it — you listen to it.

To be more specific: The Paralert is an altitude warning device that "sounds off" at a preselected altitude. At first glance it looks like an old Altimaster III with a different face and a long tail. (The resemblance to the discontinued Altimaster III isn't coincidental — both share the same manufacturer, SSE, Inc. of Pennsauken, NJ.)

The case contains an aneroid, some electronic gadgetry and four mercury batteries. The face has an altitude-select pointer and calibration slot.

The speaker is small enough (1"x1" x 1/4") to mount comfortably over your ear and under your helmet, soft hat or whatever. Most installations I've seen have the sensing unit (the case) sewn or screwed to the back of the headgear with the excess cable being stowed

under the edge of the hat. The whole works weighs only a few ounces.

I borrowed a Paralert and set up a temporary installation. A bit of Velcro hook glued to the back of the speaker and a bit of pile sewn to the strap of my helmet held the speaker in place nicely. I dropped the sensing unit down the front of my jumpsuit where the chest strap and belly band of my harness kept it trapped.

Operation is simple. You calibrate it (which zeros the unit to field elevation and ambient barometric pressure) and select the "sound off" altitude before a jump. The whole procedure takes about 15 seconds and requires no tools other than a coin for the slot. Simple.

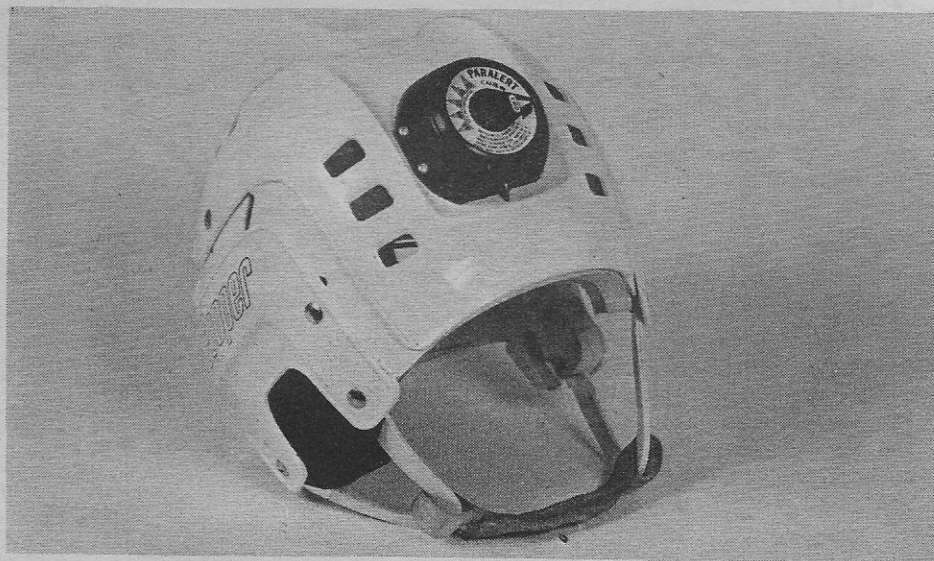
I set the sound off altitude for 3500', climbed aboard the DC-3 at DeLand and went up to try the Paralert out.

To spare you any further suspense: it worked exactly as the manual said it would. I forgot about it as soon as I zip-

"...it's almost as if it has its own self-preservation instinct..."

ped up my jumpsuit before exit, but it didn't forget about me. It started beeping quite suddenly in freefall at 3500', right on the button, and kept it up for 10 seconds. It could be heard easily, even while I tracked away. (The volume can be adjusted with a small screwdriver through a slot in the sensing unit's back.)

I wore it on about 20 jumps and was impressed. Unlike a conventional altimeter, which is useless if you can't or won't look at it, the Paralert takes matters into its own hands. It's almost as if it has its own self-preservation instinct:



A Cooper helmet with a Paralert installed on the rear of the shell. The speaker is mounted to fit over the left ear. (Photo by SSE, Inc.)

you can try to forget about it (and yourself, for that matter) but it'll interrupt your skydive when you reach that present altitude.

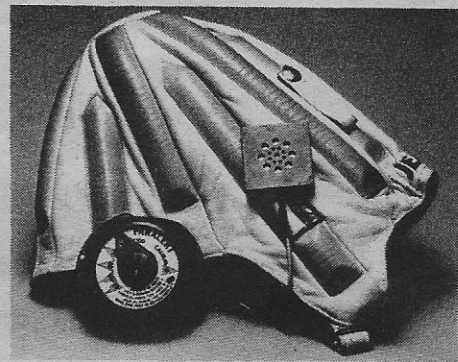
The Paralert does have a few drawbacks. It requires a \$4.70 set of batteries periodically. The beep is a mechanical intrusion into the pleasure of freefall.

And it may be habit forming. Until I started jumping the Paralert, I had relied on my eyes and glances at other peoples' altimeters to keep track of the ground. I stopped that habit after about five jumps with the Paralert, which was pretty stupid: I calibrated the unit one afternoon in a taxiing aircraft, next to the door, so I couldn't hear the calibration beep adequately. Sure enough, I did it wrong and, yes, it *did* sound off — at 500' under my canopy. (I couldn't figure out why everyone was tracking off so high. After all, I hadn't heard a beep yet...)

We learned years ago to calibrate automatic openers very carefully, but I failed to apply that same lesson to the Paralert. Then I compounded the problem by failing to keep my eyes on the ground. Double dumb.

Aside from those objections, the Paralert is a great little device. Freefall cameramen, who usually need to keep

their cameras and attentions fixed on their subjects, will snap the Paralert up. Instructors and jumpmasters will find it to be an aid for beginning freefallers. The Paralert will be nice for night jumps, too, obviously.



A photo that better shows the speaker. (Photo by SSE, Inc.)

Although I do little CRW, I imagine that a conventional visual altimeter will remain the best choice for this application. The Paralert can't give the wearer a continuous readout of his or her altitude, information that saddle-sore CRWers probably want (as do some freefallers).

Another advantage of the Paralert is its moderate cost: \$87.50.

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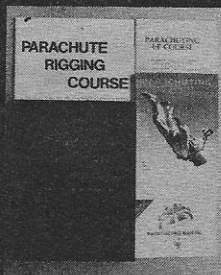
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Which teams?

(continued from page 14)

the competition begins, with those jumps having been made since the first weekend of March.

Tesseract stressed random jumps during practice, and did some no-contact random sequences to polish their ability to fly closely and smoothly at the same level. They've been somewhat at a disadvantage as there has been no one to observe and critique their jumps, let alone film them.

The team jumps Classon jumpsuits that were custom made with 4-man in mind. Two of the members jump Classon rigs, one jumps a Wonderhog and the fourth jumps a SST Racer.

Wragg told *Skydiving* that "we're a better team than last year," and expects to face about five other teams that stand an equal chance of winning. Besides, Wragg, Tesseract is formed by Tim Florea, Brad Dunkin, John Culler and Michael Jensen as alternate.

Kinetic Sunshine

Kinetic Sunshine first competed in 4-man at the nationals in 1976 and came back the next year to finish only one point behind the winning Dirt Divers. The team was one of several that was zapped during last year's competition.

Kinetic Sunshine started practicing in DeLand last October for the 1979 nationals, and will have logged about 170 leaps by the start of competition in Richmond. (All told, this team has made some 800 dives together.)

The group wears small jumpsuits under their Wonderhogs, believing that falling faster reduces the degree of arm and leg motion required to maneuver during a sequence.

Although most of Kinetic Sunshine's jumps have not been video recorded, team member John Robbins told *Skydiving* that it was "very helpful" to have even a few recorded for later review. He added that the use of video for judging the nationals "will allow the competitors to perform by eliminating the 'gobblers.' Since the judges can review a tape as many times as they want, they'll be able to give a team exactly what it deserves."

Kinetic Sunshine won the Southeast conference meet with a 7.3 average for three jumps. DeLand Parachute Center has provided the team with some sponsorship for 1979.

Members of Kinetic Sunshine include Willie Kivipelto, John Robbins, Doug Smith and Jim Thrift with Ken Coleman as alternate.

Refraction

Refraction is a subset of the Mirror Image 8-man team. The team won medals at the 1977 and 1978 nationals, finishing one point behind Tesseract last year.

Although Refraction essentially makes no 4-man practice jumps, it does well by virtue of its members' extensive 8-man experience. It won the Pacific conference meet last May scoring 40 points in six jumps.

Refraction includes Garry Carter, Mike Eakins, Mike Gennis and Marty Martin.

Team #8

Team #8 from Marshall, Mich., has the same jumpers it used to place fourth at the 1978 Nationals. Sam Brown, who leads Team #8, was a member of the Rainbow Flyers, the team that won three consecutive 4-man championships in 1974, 1975 and 1976 and the World Meet in 1975 in Germany.

For 1979, Team #8 started practice in February by traveling to Florida for a week of intensive training. Weather and aircraft problems have hampered their training efforts in the Midwest, although the team jumped as much as possible in the evening during the week to accumulate about 70 practice jumps.

Brown told *Skydiving* that his plans to have a video unit fell through. Team #8 wears Shoobi suits, those unusual small-wings, paddle-belled jumpsuits that are popular in that part of the country. Three of the team wear SST Racers while Brown jumps a Shoobi rig.

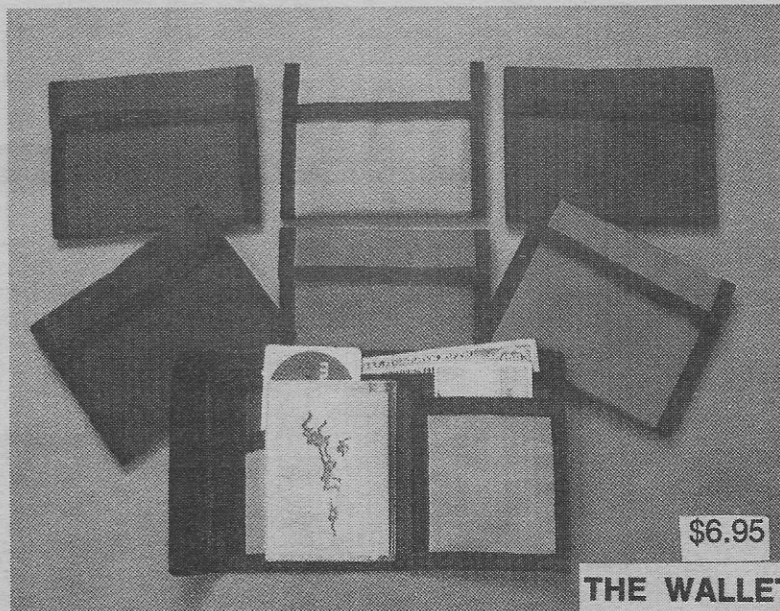
Team #8 won their conference meet by scoring 22 points in three jumps, with the last jump made from 7,100' due to cloud cover.

Members of Team #8 include Sam Brown, James Highsmith, Van Wideman and Royce Wolfe, with Rocky Evans as alternate. ●



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Skydiving, June 27, 1979/19

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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.

GQ Security 150/250 Thinpack

GQ Security has published a new packing manual for this emergency chair-seat parachute. The new manual states that the Air Force-style locking loops are no longer to be used. These loops are to be replaced with factory-made ones, as the older style could cause malfunctions if used incorrectly, as they frequently were. (The old 100 lb. type I cord loops can still be used, although they're difficult to work with.) The new manual is available from GQ Security, P.O. Box 3096, San Leandro, CA 94578.

Lightweight 7-Cell Canopies

It seems to me that all the new lightweight 7-cell canopies are experiencing problems of one sort or another. The early Pioneer Vikings and some of the early GQ Security Units had built-in turns, and both factories were busy rebuilding or replacing the defective canopies.

The NAA 252 Para-Foil has had some durability problems, with panels tearing during opening. The factory has issued a bulletin which recommends that reinforcing tape be installed to the A-line flare. Information on this modification is available from North American Aerodynamics, Hwy. 202, Flemington, N.J. 08822.

Para-Flite has also issued a recommended modification to its Cruisair canopy. The bulletin describes a fairly simple modification of the stabilizers to reduce the likelihood of the end cells collapsing during flight. Para-Flite's address is 5801 Magnolia Ave., Pennsauken, N.J. 08109. (Some jumpers removed the stabilizers from their Cruisairs, a modification that can be done to the Para-Flite Strato-Cloud with success. However, the Cruisair suffers a noticeable loss of stability if its stabilizers are removed, and therefore it's not a good idea.)

Also, owners of all lightweight canopies should inspect the seams where the pilot chute bridle attaches to the canopy, preferably from the inside. There have been reports of damage in these areas.

GQ Security recommends putting cross-port vents in the ribs of the Unit. The ribs are even conveniently marked to show where the holes should be cut. Cross-porting doesn't seem to help the openings much, but it sure keeps the end cells from closing during a steep turn.

If you didn't receive a packing manual with your unit, they are now available from the factory. The manual includes everything you always needed to know about the Unit, but already found out on your own.

3-Ring Risers

The Relative Workshop has prepared a set of recommended maintenance procedures for its 3-Ring Release (which is now available on most rigs). The procedures recommend, among other things, that the risers be periodically detached from the harness and flexed to soften them up.

I hadn't done this to mine in a while and happened to have my calibrated scale handy, so I decided to see just how much force was required to pull the risers from the harness. It required 25 lbs. before each side would release! It made me just a little scared. After flexing the nylon for a few minutes, the pull force was down to five to six pounds.

Believe the factory and follow the procedures. (Riggers should probably do this as a favor for the owner of the rig when the reserve is repacked.) The Relative Workshop recommends the procedures be done every month.

Main Bridle Lines

I've seen some problems with bridle lines becoming knotted up with the deployment bag and therefore preventing the canopy from inflating completely. It happens on all rigs from Systems to Wonderhogs and with all types of canopies from Strato-Flyers to Strato-Clouds. It seems to happen most frequently on the small-grommet type bags such as those now sold with Wonderhogs. (I'm not saying anything bad about the Wonderhog, but I have seen two of their bags hang up.) Like I said, it happens on other systems, too.

One way to stop the problem is to not pull the bridle line all the way out of the bag during packing. This is what I'm doing now. GQ Security, in fact, recommends not pulling any of the bridle out of the bag.

The problem seems more prevalent on canopies with two bridles that join together four to five feet above the canopy. The Cruisair, though, seems to

have the best set-up: It has only one bridle cord, and a steel ring is installed between the canopy attachment point and the end of the bridle. The ring effectively prevents the canopy from being pulled through the grommet in the bag, another cause of partially inflated ram-air.

I'm putting this set-up on my canopy and let you know how well it works. In the meantime, pay attention to your bridle during packing, being sure it's not knotted or twisted.

DPREs

The FAA now has a new, mandatory course for Designated Parachute Rigger Examiners (DPREs). You must attend one within two years to keep your DPRE designation. The courses have already been used to make modern training

films for the FAA. The practical exam is also being revised, with the written exam to follow. The FAA people that we've been working with on these projects were very open to our idea, which is a pleasant surprise.

Privileges

Not many riggers know this, but you must be certified by the FAA to pack life preservers, rafts, etc. Your shop has to be FAA approved, too, and the equipment must be TSOed. The FAA (rightfully) feels such stuff is life saving equipment, just like reserves, so packing and maintaining it must be done correctly. (The same is true for hot air balloons: Just because you're a rigger who's handy with a sewing machine doesn't legally give you the privilege of working on these things.) ●

Memorial Day Drizzle

(continued from page 3)

4-way base was taken out the door, providing a good target for the smooth docks that followed. But three people went low, so a clean 19-way formation fell untouched from 6,500' to breakoff altitude.

Five ladies earned their WSCRs on the load, and when the formation broke, tacked and opened, there was a lot of whooping and hollering. Paul Proctor of USPA photographed the jump in freefall. Here is a list of participants that was given me:

Alicia Coventry	Ruby Janusas
Terry Quejo	Raylene Wilson
Beth Pline	Mary Wolper
Callie Foster	Chris Cataldo
Mary Todd	Robin Mardin
Sandy Williams	Carol Clay
Mickey McT	Crikett
Julie Stoddard	Cindy Cooper
Pat Gillespie	Kay Griep
Stephanie McLaughlin	Shortcake
Sylvia	Ann Uhrig

There were no big attempts or other high-powered jumps as the unpredictable weather made planning them impossible.

Since the Herd was losing its collective shirt on the Boogie — little jumping means no income — they organized a raffle each day. It was a "50-50" raffle where the winner got 50% of the proceeds. Dave DeWolf, notorious "father of the Herd," won the first drawing on Saturday night, and good-natured accusations of "It's rigged!" were thrown at the sponsors. (But it had to be an honest deal as I won on Monday, and I never win *anything!*)

Monday morning the weather broke and the loads started rolling. Finally a good day? Not for long. About mid-morning the clouds filled the sky and it was back to Plan B. With intermittent ceiling, all sorts of loads went up, some made it all the way, but most were exciting between 6500 and 8500'. The Herd had a member going for his 1500th jump so they planned a pretty dive for the occasion. Jan Tlush was the jumper and he'd been with the United Parachute Club for nine years. I spoke to him and found in addition to his 1500 sport jumps, he'd had four more that sounded wild: ejection jumps out of F-4J military jets in trouble. He said one had

been from as low as 50 to 75' AGL and one as high as 38,000'.

Anyway, the dive they put together used Jan as a spider base, with 13 docked around him. When the formation was complete, Jan did a pullout. The sky above was overcast, so we had a perfect backdrop to watch the jump. It was a beautiful 1500th jump.

Off in the distance we could see a huge storm coming our way. It was going to be a race between the load in the air and the weather. A 9-stack CRW attempt was planned. Over the hills, almost at the horizon, we watched the stack. It was so far away we couldn't tell whether four or five finally got together. When the jumpers got back to the field, an hour later, we were glad to learn that they all got to the ground before the high winds of the storm swept through. They were soaked but smiling. And that's the way the boogie ended, wet but wild! ●

The Herd finds new aircraft

The United Parachute Club, often called the Herd for short, will again have a steady supply of turboprop aircraft. Dave DeWolf, a club member, told *Skydiving* that the Herd signed a contract in mid-June that will insure they will have a DeHavilland Twin Otter every weekend beginning after the Nationals. The Herd recently lost access to the Skyvans they'd been renting for many years when the owner sold the aircraft.

The runway at the Herd's home DZ in Limerick, Penn., is being lengthened so that the Twin Otter can operate there.

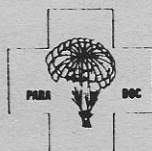
Plans available for freefall trainer

Blueprints and detailed construction drawing of the Davey Tower Trainer are available from Skyword Publishing Company, 2203 Ridge Drive, Broomfield, Colo. 80020. The trainer is a training aid for novice jumpers consisting of a platform located about 15 feet above the ground from which a set of cable slope to the ground. The student, strapped into a harness, does an exit off the platform and begins to slide down the cables, realistically simulating an exit and early freefall from an aircraft. The apparatus is reported to make training much more realistic and faster than other methods.

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Will the gas shortage pinch skydiving?

(continued from page 1)

Rouillard recently had to fuel his aircraft at a nearby airport when his supply ran out, and his distributor has notified him that he will be unable to provide 100% of the fuel Rouillard needs.

Still, such problems haven't apparently reduced the volume of business at the three centers Rouillard operates. He raised the jump rates by 50 cents recently, so that a jump out of his Cessnas cost \$6.50 from 7,500' and \$8 from 10,500'.

The price of avgas isn't the only reason jump rates have been going up — the cost of everything is rapidly increasing. Rouillard told *Skydiving* that he's "more concerned about the unapparent costs" that are affecting the DZ operator. He reported that his company recently replaced the fuel tank liners of one of their Cessna 182s. The liners, which are essentially rubber bladders, cost about \$150 a couple of years ago. Rouillard paid Cessna \$400 for his recent set. According to Rouillard, the increase in cost of items such as aircraft parts will have a greater effect on his operation than the increasing cost of avgas.

(A survey by *Business and Commercial Aviation* revealed that the average cost of 100 octane avgas is \$1.01, up from \$.55 five years ago. It increased in price by 5 cents a gallon from March to April. Although 100 octane is the most popular widely used avgas, 80 octane is more popular with the operators of jump aircraft such as Cessna 180s, 182s and Twin Beeches. The price of 80 octane now averages about 95 cents a gallon.)

"Some centers have run out of gas."

Jim West of Xenia, Ohio, oversees the Greene County string of centers in several central and southern states including Ohio, Georgia, Florida, Louisiana and Tennessee. West operates three Cessnas and two Twin Beeches at Xenia, and told *Skydiving* that "80 octane is in abundance" for those aircraft. He said that price hasn't been a problem — yet.

West also reported that the availability of auto gas hasn't affected his operation, although he's noticed a higher frequency of "van pooling" and camping out, rather than commuting back home on Saturday evening.

West also told *Skydiving* that his Greene County centers weathered out the gas crises in 1973-74 by "tightening our belts." He and his managers, for instance, reduced the amount of free jumps that were given away, thus reducing that overhead cost so that jump rates wouldn't have to be raised.

The Greene County center at Xenia charges \$6.50 to 10,500' and \$7.50 to 12,500'.

DeLand Air Sports at DeLand, Fla., operates a DC-3 and a Cessna 182. Co-owner Brent McLarty reported that there was no problem in getting avgas for the center's aircraft, although the price has gone up substantially in the past few months. DeLand recently raised its rates by \$1.00; a jump from 10,500' costs \$8 and one from 12,500' costs a dollar more.

Some centers have run out of gas. Zephyrhills Paracenter ran out during

the Memorial Day weekend. Operator Jim Hooper explained how it happened, and his story provides insight into the complexities of the "gas shortage" issue.

Like many fuel wholesalers, Z-hills is currently on an allotment program where the oil company will sell it only as much gas as it purchased during the same month a year ago. (Some oil companies are allocating 100% of the 1978 level, while others will supply 75% to 90% of that amount.)

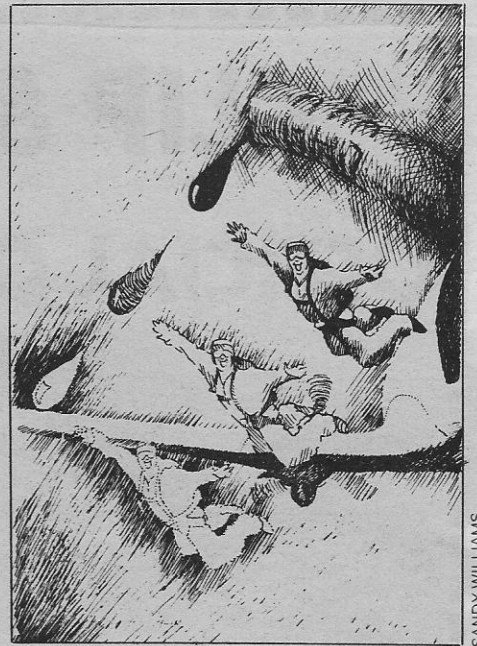
So a fuel user can get in a real bind if he needs more gas in say May, 1979, than it needed in May, 1978. That's exactly what happened to Z-hills: it ran out of its May allotment before the end of the month (because it didn't operate its DC-3 in May, 1978). An operator in

such a situation can either not fly, or he can go elsewhere and buy fuel at retail prices, if he can find an FBO that has any gas to sell.

Hooper told *Skydiving* that he'll have enough avgas for at least the rest of the summer, unless something unforeseen happens to his supply.

Every DZ operator that *Skydiving* interviewed was very uncertain about avgas supplies throughout the summer. Although they all seem to be getting the gas they need now, the oil industry will not assure them that the supply will continue to be provided. Such a situation makes planning difficult, but it appears it will not improve.

Skydiving contacted Exxon, the coun-
(continued on page 7)



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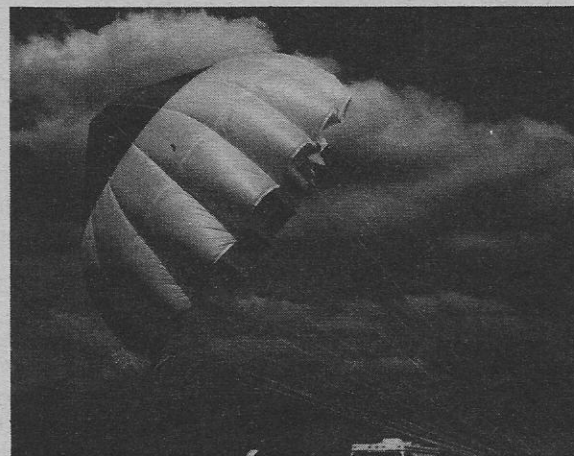
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17 fps with 200 lbs.
1:1 glide angle
10 mph forward speed
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Gas shortage

(continued from page 21)

try's largest oil company (and largest corporation, by most standards), to determine if that company would predict the availability of avgas throughout the summer. An Exxon spokesman in Houston told *Skydiving* that "we believe the supply of both turbo fuel (jet fuel) and avgas will be 'tight' throughout the summer."

When asked what "tight" meant, the spokesman would not elaborate, saying that it was impossible to predict the supply of crude and the demand for avgas (and other refined products that compete with avgas for distillation from the same barrel of crude).

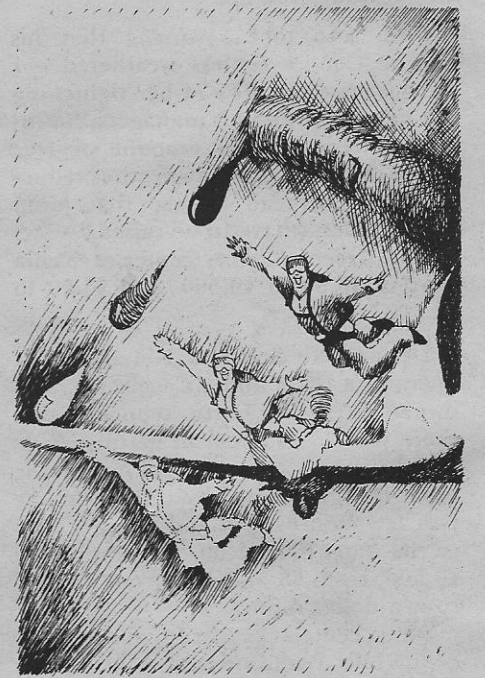
Although parachute centers, for the most part, seem to be operating quite well in face of the gas shortage, other aircraft operators are not. The airlines have been fairly hard hit and have had to cancel some flights and in some cases pay double the price for jet fuel than they paid only five months ago. The National Air Transportation Association, which lobbies for the airlines, sent an interesting letter to its oil company counterpart, the American Petroleum Institute, protesting the "insensitive manner in which certain oil companies responded to decontrol (in price) of aviation fuels." The letter went on to say that "if we are to continue to support a strong policy opposing government intervention in the private sector, particularly in the area of windfall profits and disinvestment, it will be necessary to see something positive from the oil industry."

The government, depending on whom you ask, seems to have no idea if there will be sufficient fuel throughout the summer. The consensus at the moment is that June through August should be better than May was, as far as supplies go. Prices are expected to continue to escalate.

It appears, then, that sport parachuting will not be curtailed by the supply of avgas this summer. It also appears that it will cost more to participate in the sport, as the price of energy continues to climb.

The parachuting community can take some steps to reduce the problem. One obvious action is to conserve the avgas and gasoline that is available. Another is to encourage and support energy conservation outside the aviation community as well as within it — a barrel of oil not burned to cool a shopping center to 65 degrees is a barrel of oil that can be diverted for more worthwhile uses.

Such as skydiving. ●



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(time) _____ a.m. _____ p.m. at _____

the above named skydiver did participate in a _____
(specify size and type)

canopy formation entering _____ for a period of _____

_____ minutes on his/her jump No. _____ and does thereby qualify for the:

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Issuance of any of the above Awards recognizes the progression of said parachutist to a highly advanced level of canopy control, maneuverability and proficiency. In receiving and exhibiting this Award, the recipient agrees to exercise good judgement and wisdom toward the promotion of safe canopy relative work among his peers, those less experienced than himself and toward observers of the sport.

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Please complete the information below by obtaining signatures of all participants in the canopy formation, in stack entry order, from top to bottom.

Participants In Canopy Formation	CCR/CCS #	Canopy Type Used	Participants In Canopy Formation	Canopy Type Used
1. _____	_____	_____	10. _____	_____
2. _____	_____	_____	11. _____	_____
3. _____	_____	_____	12. _____	_____
4. _____	_____	_____	WITNESSES ON GROUND:	
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	PILOT(s) of AIRCRAFT: AIRCRAFT TYPE(s):	
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____

AWARD REQUIREMENTS (your basic "rules"):

The above awards are issued after successful completion of a 4 (or larger) or 8 (or larger) - canopy formation. (as appropriate) in which there is continuous contact among all connected jumpers & canopies for a minimum period of 60 seconds. The formation does not necessarily have to be a stack, it could be a diamond or any other type of recognizable formation.

Those qualifying for a Canopy Crest Recipient (C.C.R.) or Canopy Crest Solo (C.C.S.) Award (8 canopy or larger formations) are issued a card with a sequentially issued number in addition to a patch. The Canopy Crest Solo (C.C.S.) Award has all the requirements of the C.C.R. Award (including 8 canopies or more) with the added condition that the participant must have closed 8th or later on the formation. It must still be held for a minimum of 60 Seconds. 4-Stack participants are issued a patch (emblem) but not a number or a card.

COST OF AWARDS (the bottom line):

ITEM	QUANTITY	PRICE Ea.	AMOUNT ENCLOSED
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C.C.R. or C.C.S. Patch only (indicate)		7.00	
C.C.R. or C.C.S. Card only (indicate)		1.00	
4-Stack Decal (must be qualified)		2.50	
C.C.R. (8-Stack) Decal (Must be qualified)		2.50	
C.C.S. Decal (must be qualified) (Avail. 10/79)		2.50	
TOTAL			

*A card is issued for first time awards at no additional cost. Replacement cards are \$1.00 each.

4/79

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Looking for site, rules

Canopy relative workers want to compete

Canopy relative workers, that breed of saddle-sore skydivers, are actively writing rules and looking for a site for a major CRW competition. Several events have been proposed, and several sites have been considered, but nothing definite has been planned.

The USPA is understandably reluctant to offer CRW as a national event, even on a trial basis, because the sport has no experience conducting large or formally run CRW competitions. The organization would prefer that CRW proponents present a tried-and-true set of rules that it can adopt before it decides to conduct a CRW meet.

Freefall relative workers faced similar reluctance from both national and international organizations before those bodies officially sanctioned RW meets. Relative workers wrote their own rules and held their own meets for several years before 4-, 10- and 8-man RW was recognized as an "official" form of parachuting competition. Even then, the events were offered as world cups at first and not official world meets.

Most leaders in the sport, including managers of several well-known drop

zones, are eager to accommodate the CRWers, but simply don't know how. The canopy relative workers themselves don't seem to have decided exactly what they want.

Progress is being made, however. Tom Courbat, who administers the CRW awards, recently circulated descriptions of possible events. Included were:

4-Stack Rotation. Four jumpers exit from 9,500' and build a stack. The jumper on the top releases, spirals down and docks on the bottom, scoring one point. The process is repeated, and scoring stops after six minutes, a proposed working time, has elapsed.

8-Stack Speed. Exit from 12,500', with the clock starting when the last canopy opens. The clock stops when the last person docks to make the 8-stack. Maximum working time is eight minutes. (Lower available altitudes could be accommodated with smaller-sized groups.)

One drop zone owner pointed out that CRW "ties up a lot of airspace with just a few jumpers." Unlike freefall RW, where a competitive team can exit and



be scored every two minutes or so, CRW would go four or five times as slowly unless more than one stack was in the air being scored at one time. This is a consideration if a CRW event is held at the Z-Hills Turkey Meet, for instance, when jumpers and management alike are trying to cram as many jumps as possible into available good weather.

It appears as if CRW enthusiasts should continue to carry their proposals to the national association while working hard to develop rules and procedures that have been shown to be workable in an actual CRW competition.

Canada may adopt FARs

Transport Canada, which regulates that country's transportation system, have proposed adopting several of the United States' Federal Aviation Regulations on January 1, 1980. Among the FARs being considered for adoption is Part 37, Technical Standards Order Authorizations. Part 37 contains the minimum performance standards for several flight-related items, including parachutes, which are listed as TSO-C23b.

FAA publishes revised Advisory Circular on sport

The FAA has published a revision of its Advisory Circular on skydiving, titled "Sport Parachute Jumping," (AC-105-2A, dated April 11, 1979). The circular provides suggestions from the FAA on improving the safety of skydiving. It contains realistic but undetailed basic training requirements for first jump students that are patterned after standards developed by the USPA. The publication also provides guidance for jumpers and pilots on complying with the federal aviation regulations pertinent to sport parachuting. It clarifies, for instance, what types of jumps require advance notice to or approval from the FAA.

Although AC-105-2A is only slightly changed from the 11-year-old document it replaces, there are a few noteworthy revisions.

For example, there has always been disagreement between jumpers and their local GADO as to what types of demonstration jumps require written FAA authorization in advance. The federal aviation regulations prohibit jumps into "congested areas" or over an "open air assembly of people," but what is "congested" to the FAA frequently isn't "congested" to the jumpers who just made the jump. The revised circular gives specific examples of jumps that do and do not need authorization, so reading it may save some trouble in the field.

Another change to the advisory circular is that the FAA now considers the installation of automatic openers on reserve parachutes is a "major alteration" that must be done by a Master Rigger. Until now, most Senior Riggers felt that such work was within the privileges of their certificates.

The new AC-105 is as dry to read as the previous one, but it contains information that is essential to any jumper, rigger or jump pilot who wants to stay within the law as interpreted by the FAA. Copies are available at no cost by writing the Department of Transportation, Publication Sections, M-433.1, Washington, DC 20590.




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Skydiving Gets Photos

Parachuting is primarily a visual sport. Practically any jump will burn several images in your mind, images that will stay with you for years. The prompting of a logbook entry or a glance at a photo is all that it takes to bring such lasting images to your mind's eye to be enjoyed once again.

Because skydiving is mostly a visual experience, and because a dive is over so quickly, jumpers are particularly avid photo freaks. They love posing before a camera. And they typically stick out tongues to express their feelings at the moment, perhaps doing so because doing anything else, such as waving, doesn't really stand out of a photograph.

These two pages show some of the photographs sent to *Skydiving* by photographers from across the U.S. Some were originally supplied in color, so printing them here in black and white doesn't quite do them justice. Still, we think they portray much of the beauty and excitement of a sport that whuffos can't begin to imagine.

If you have a photo that you think other jumpers would like to see, send it to *Skydiving* today. We'd like to help show it off.



Carl Nelson filmed a 60-man attempt over Zephyrhills last Easter.

Randy Quiroz took this photo of an "interlock" dive. Mike Barber, Carl Daugherty and Dave Jancsar built the all-out 3-man in the middle. Mike Cerasoli, Hoot Gibson and Mike Truffer did back-ins to flake it. Taken over Zephyrhills about eight months ago.





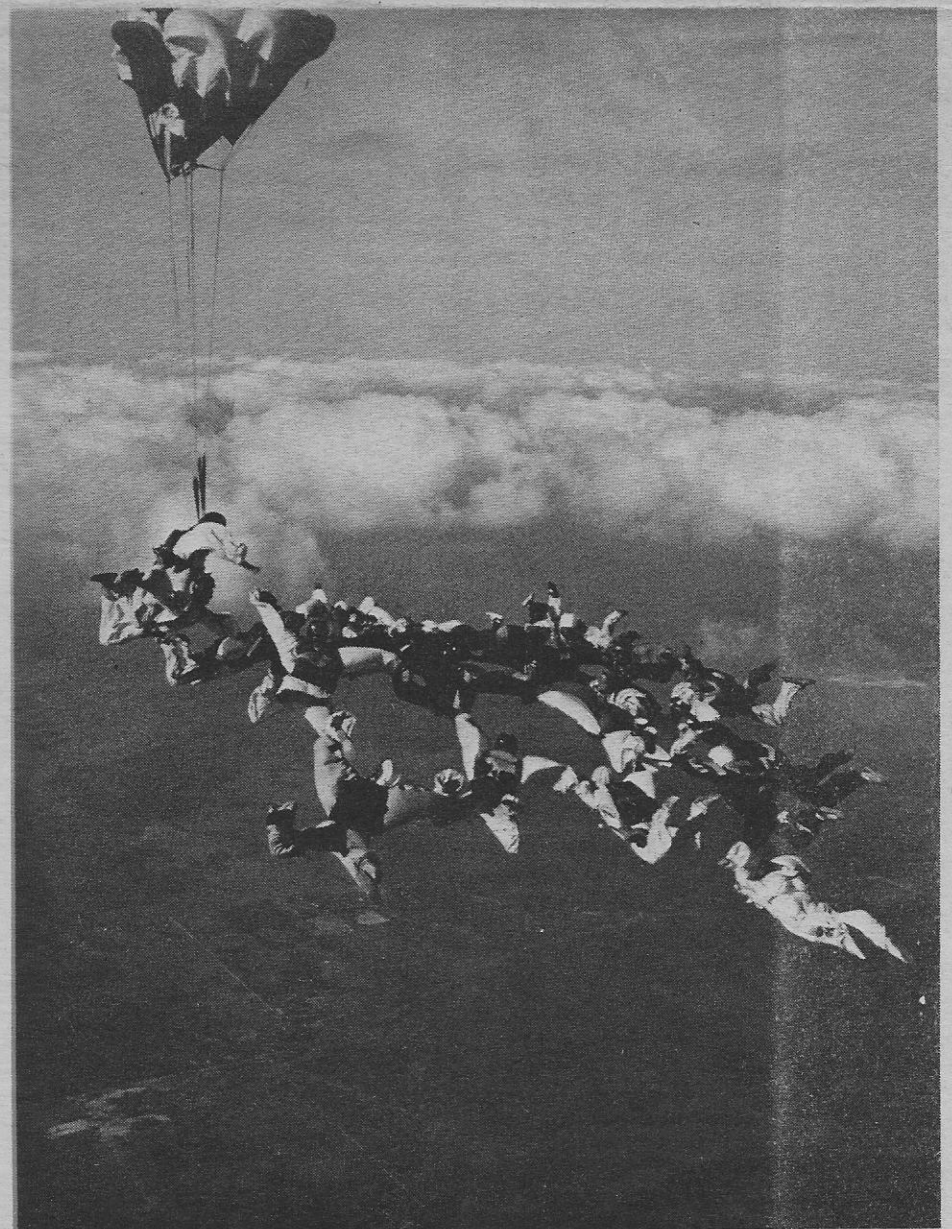
Chris Wentzel contributed this view of an unidentified, upside-down jumper over Zephyrhills.

Rick Snow supplied the caption for these two photos: "These two photos show Mitch Dakota's canopy getting dumped out of a 24-man wagon wheel. I've run through the entire sequence, and I can't see any reason for the deployment. I had been directly over the formation a few seconds before, so on a scale of 1 to 10, this dive had a pucker factor of about 18!"



Ken Basmajian tripped his camera's shutter as two divers left the ramp of a Skyvan over Pennsylvania.

Rick Rundell filmed this unusual buddy jump. The passenger got his SCR on the dive.



Video: About Time

One thing became apparent during *Skydiving's* discussions with representatives of many of the nation's RW teams: sequential competition makes it necessary to have access to a video recording system for both training and competition dives.

It's not that video is absolutely essential. However, a team that can review its training jumps several times on the ground after a practice jump will improve faster in fewer jumps than one that can't. And although most judges can do a creditable job of judging through telemeters alone, most quickly point out that the complexity of the sequential events makes it difficult to evaluate a team's performance with just one viewing.

1979 is the first year that video will be used as the primary method of judging the RW portion of the nationals. "Primary method" means that the judges will score a jump by viewing the image that was recorded previously. They will *not* use it as a back-up method after first judging the jump through telemeters.

Competitors in both style and RW have recognized the need for video judging for many years. Although the USPA once owned a ground-based video system as far back as 1972 (and had it running at several nationals through 1975), it sold it in 1976 as the cost of maintaining and transporting the unwieldy and obsolete system became excessive.

Since then, advances in video technology have resulted in more portable and affordable systems. Several ground-based and freefall systems were put together in various places across the country. The advent of sequential RW as the most popular form of RW competition made video even more of a necessity, and soon competitors and some judges were pressing USPA to take advantage of video and allow its use at the nationals.

The association rewrote the rules last year that made video the method of judging this year's nationals. Basically, the procedure goes like this: Two units will film each competition jump. One of these units is the "primary" system while the other is a back-up whose tape will be used only if the primary system misses the jump. Although the judges may observe the jump through telemeters in real time (as it happens), it won't be scored until the judges later review the jump on a television monitor.

Each event judge has his own television monitor, and the jump is played and replayed until the judge is confident he or she has scored it correctly.

The jump is observed at normal speed, not slow motion, and stop-action isn't used.

Once each judge has scored the jump, the scores are tabulated and the final score posted. If a team disagrees with its posted score, it may ask for a review, whereupon the judges will view the jump again and give it another score if necessary. During such a review, the point score may either be raised or lowered; a team takes the chance of a lowered score when it asks for a review. But that is only fair, when one remembers that the whole idea behind video is to give each team the score which reflects *exactly* what it accomplished in the

air — no more or no less. (It is still the responsibility of the team to perform the jump in a way that does not create a questionable impression in the minds of the judges that the jump was performed correctly — a team will *not* get the "benefit of the doubt.")

One team cannot ask that the judges review *another* team's jump, nor may the judges review the jump on their own after the score is posted.

Since the video systems used to record the nationals are ground-based units, they have the same limitations as telemeters. They cannot see through clouds or heavy haze. A distant jump-run means that the video will see the jump from the "edge" of the formations, making accurate judging difficult. There are limits to how far the camera can travel in its mounts; an improper jump run or a team that exits too late can result in a missed jump. Since the field of view of the lenses used on most video systems is quite small, an unskilled operator can lose a jump if his tracking isn't done with great care.

A video system can also experience mechanical trouble, although this year's primary unit has been in use for several months at DeLand, Fla., with no problems whatsoever.

While video recording is a boon to judges and competitors during competition, it is equally valuable to a team during practice. Using a video system allows a team to review its jumps from the same viewpoint as judges, so it can determine if the formations and transitions were adequately obvious to a viewer on the ground. At least two teams experimented with Polaroid's Polavision instant movie camera, calling it the "poor man's video."

Using a video as a training aid also helps a team evaluate different ways to build formations. A team can see exactly what cause a formation in trouble to collapse, usually. The performance of each individual jumper on a team can also better be evaluated.

Air-to-air video has some distinct advantages, mainly because the camera is closer to the jumpers. And an aerial camera doesn't miss many jumps because a cloud gets in the way or because the jumpers exit too far away from the drop zone.

The systems used at the 1979 nationals are owned by DeLand Air Sports, The Army Parachute Team and Raeford Aviation from North Carolina. They are being furnished to the USPA at no charge, although the association is paying a room and board allowance of \$15 per day for each of the operators. Transportation to and from Richmond, operator salary, and all other expenses are being borne by the equipment owners.

The use of video at major parachute competitions will result in smoother running meets, less protests and bruhaha, less frazzled judges who are expected to observe up to 32 hands and legs simultaneously, and cleaner skydiving by teams that realize that the video sees (practically) everything. The spectator appeal of video-recorded meets is also greater, as observers and competing teams can watch a jump in real time on a "public" monitor in the relative comfort of a tent.

Many parachutists and meet officials wonder how they got along without it.

EDITORIAL...

It's obvious: the more you know about sport parachuting, the more you enjoy it. It becomes safer, since knowledge of other jumpers' mistakes should keep you from repeating them.

Equally important, the more you know, the more fun you have. You learn faster and therefore fly better. You're able to intelligently select the gear that is most suited for the kind of skydiving you want to do. You're able to decide what events to attend. As a result, you meet more people (all as insane as yourself) who share your enthusiasm for this energizing sport.

That's why we started *Skydiving* newsmagazine. Our sport needs a magazine that is published frequently, that will bring its readers accurate and objective information on all aspects of our sport. "Spreading the word" is what *Skydiving* newsmagazine is all about.

And *Skydiving* is published *only* for its readers. Your interests come first. Compliments and criticism will be given only to those who deserve it. There are no sacred cows to protect and no axes to grind.

There's real evidence of the need for this publication, too. Even though it was announced only three months ago, it has already received healthy support from subscribers, contributors and advertisers. I hadn't anticipated the strength of this support, and, frankly, it feels great to receive it.

And we'd like your support, too. Of course we'll appreciate your advertising and subscription orders, that's obvious.

But what may not be obvious, but is even more important, is that *Skydiving* needs your input. Send us your letters, articles and photos, the ones that other jumpers will want to read and see. Help make parachuting more fun and safer by sharing your ideas and knowledge.

I want *Skydiving* to be one half of a lively two-way conversation about sport parachuting. You, the reader, are the other half.

Michael Truffer
Publisher

LETTERS.....

If you are getting a new canopy (or any new gear), be sure to check it thoroughly before you jump it.

I just bought a new Para-Flite Cruisair and after eight jumps the canopy split, exposing about two feet of the center rib at the pilot chute attachment point. Apparently the worker who sewed the reinforcement tape did not fold it deeply enough into the seam. Consequently, when the tape pulled out of the seam (where it joins the two bottom panels), the stress was transferred to the fabric and it wouldn't hold.

Just before this a friend bought a lightweight Strato-Cloud that had a problem. We checked it over and found that the left rear stabilizer had been tacked to the wrong suspension line.

We have repaired both canopies without too much fuss. In all fairness, Para-Flite was very willing to assist us.

Finally, stick your head inside the cells of your canopy sometime and check the line attachment points. We've found that the stitching of the reinforcement tape leaves something to be desired. Check with a rigger if you are uncertain. No need for paranoia; these lightweights just require more attention.

Van Warren
Senior Rigger
Champaign, Ill.

A manufacturer's reply:

Mr. Warren's perception about lightweights requiring more attention is absolutely correct.

On the old heavy parachutes a small construction error could go unnoticed for 1,000 jumps. On the new lightweight construction methods the same error can result in a destroyed canopy in ten jumps or less.

Since to build perfect parachutes is not possible, and to build near perfect parachutes would make the price of the parachute too high, we have to settle for the next best thing. That is to compensate for the few main parachutes that slip through quality control with a "no hassles" customer service policy.

Elek Puskas
President
PARA-FLITE INC.

Skydiving's "Letters" column is the place to publish your tips, suggestions, announcements, observations, corrections and amplifications.

Send your letters to Skydiving, P.O. Box 189, Deltona, Fla. 32725. Generally, letters cannot be acknowledged or returned. Skydiving reserves the privilege of editing a letter to meet space requirements.

CLASSIFIED ADS

MUST SELL — Custom Cruisair, black, white and red, excellent condition: \$600. Piglet reserve, block const., new: \$260. Silly Suit, rust, for woman or smallish man: \$50. Wonderhog II, rust and black, for Pig/Flyer, step-in, latest model with no belly band: \$350. Everything: \$1200, or make offer. See at Nationals. Candi Prosser, (904) 780-4212.

LIGHTWEIGHT 5-CELL PARA-FOIL. White and yellow. 200 jumps, excel. cond. Asking: \$525. Scott Parker, 3702 NW 59th Ave., Miami Springs, FL 33166. (305) 871-5138.

STRATO-STAR. White and blue, 400 jumps, good condition; opens and flies well. \$325. P.O. Box 883, DeLand, FL 32720.

STARLITE TANDEM, custom-made for small girl— good for a short person. With Strato-Star and 26' Navy conical: \$500 complete. Call Sandy or Allen after 5 PM at (904) 775-2042.

DO YOU NEED A FREEFALL CAMERAMAN? I am available for your private

and commercial projects, worldwide. Contact Chris Wentzel, 1704 Swinburne Ave., Crofton, MD 21114, (301) 721-2687.

CAMERA PERSONS. 8 mm freefall movie outfits to mount on your helmet. Includes new Chinon slow motion camera, mount, mirror ringsight, hardware, and instructions. \$250. Also custom mounts for your camera. FMI: write or call Bill Sutton, 3630 Paskin Place, Apt. 5A, Baltimore, MD 21207 (301) 521-2566.

FRENCH PAP. Multi Color with risers, sleeve and pilot, 75 jumps. Sage green Mini System. Both \$250. Penny Adams, 641 Cameron Way, Modesto, CA 95351 (209) 527-2086.

CAMERA SIGHTS. Fine for freefall photography: the reflecting reticle bazooka sight. (This is not a Newton ring sight!) Incl. data sheet, mounting instructions. 360° sight: \$45. Check or money order to Divers, 1704 Swinburne Ave., Crofton, MD 21114.

STOLEN GEAR

The following gear was stolen from Lakewood Paracenter on May 8, 1979. A large but unspecified reward is being offered for information leading to the arrest and conviction of the thieves, or for the return of the equipment. Contact the paracenter at (201) 363-4900 with such information.

Parafoil: R,B,Y&O, serial no. unknown, all lines fingertrapped, pilot chute slider, name "SHRAGER" printed on data panel. **23' Tri-con:** ser. #584779, multi-colored RW material reserve, gold, red, purple and green. **Condor:** green and black, ser. #0040, black R-3s, padded ripcord handle, repair stitching on rear flap. **Hornet:** purple and white in red POD. Two Pioneer **Razorback** containers, tan cotton material, both hand deployed, one has blue rear flap. **Tri-con reserve,** ser. #526243, red and white. **26' Navy conical:** multi-colored, ser. #18658, name "SHRAGER" on skirt. **Para-Plane:** red with yellow end cells, red stabilizers, fingertrapped lines. **Strato-Cloud:** ser. #S5933, black with gold stabilizers. **Para-Foil:** R,B,Y&O, new lines, ser. # unk. **Zephyr II:** all-white container system, hand deployed. **25' Navy conical:** Switlik, ser. #34800. **RW PC:** purple with white stabilizers, in a black with yellow Strato-Star harness and container.

SKYDIVING CLASSIFIED AD ORDER FORM

Costs: 20¢ per word, \$3.60 minimum per issue. All first-time ads will be run without changes in two consecutive issues for the *one-issue* charge (no less for one issue). **Blind Ads:** When name and address are to be withheld and ad is to appear with a box number, add \$3 extra per issue (or \$6/issue foreign). Replies to blind ads will be forwarded via First Class mail.

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Strato-CloudTM



The Best. Period.

If you're the kind of jumper who controls his canopy with gentle pressures rather than by sweeping tugs on the toggles, you'll like flying a Strato-Cloud.

The Strato-Cloud is designed to provide you with the very best flight performance possible. It's stable and responsive in all flight modes, even deep brakes. It lands softly. It is these features that help the competitor win accuracy meets, the demo jumper stand up on target in tricky conditions, and the fun jumper land gently on no-wind days.

Take those features and add the Strato-Cloud's exceptional forward speed, and it's obvious why this canopy is the choice for CRW, too.

Improved for 1979

Now, the Strato-Cloud is even better. New materials and design refinements have reduced its bulk so that it fits into most Strato-Flyer containers. It weighs only 11 lbs. 6 oz. Redesigned stabilizers have improved the Strato-Cloud's sink, flare and landing even more. Openings and durability are as great as ever, thanks to our uncompromising quality control standards.

Whether it's stepping on the disk, docking on a stack, or gentle landings, a Strato-Cloud flying overhead will make it easier.

\$699

Suggested U. S. price.
Includes canopy, risers
and bag.

Canopies by Para-Flite
have been the choice of
every U. S. Accuracy
Champion since 1972.



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