

Skydiving™

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July 18, 1979

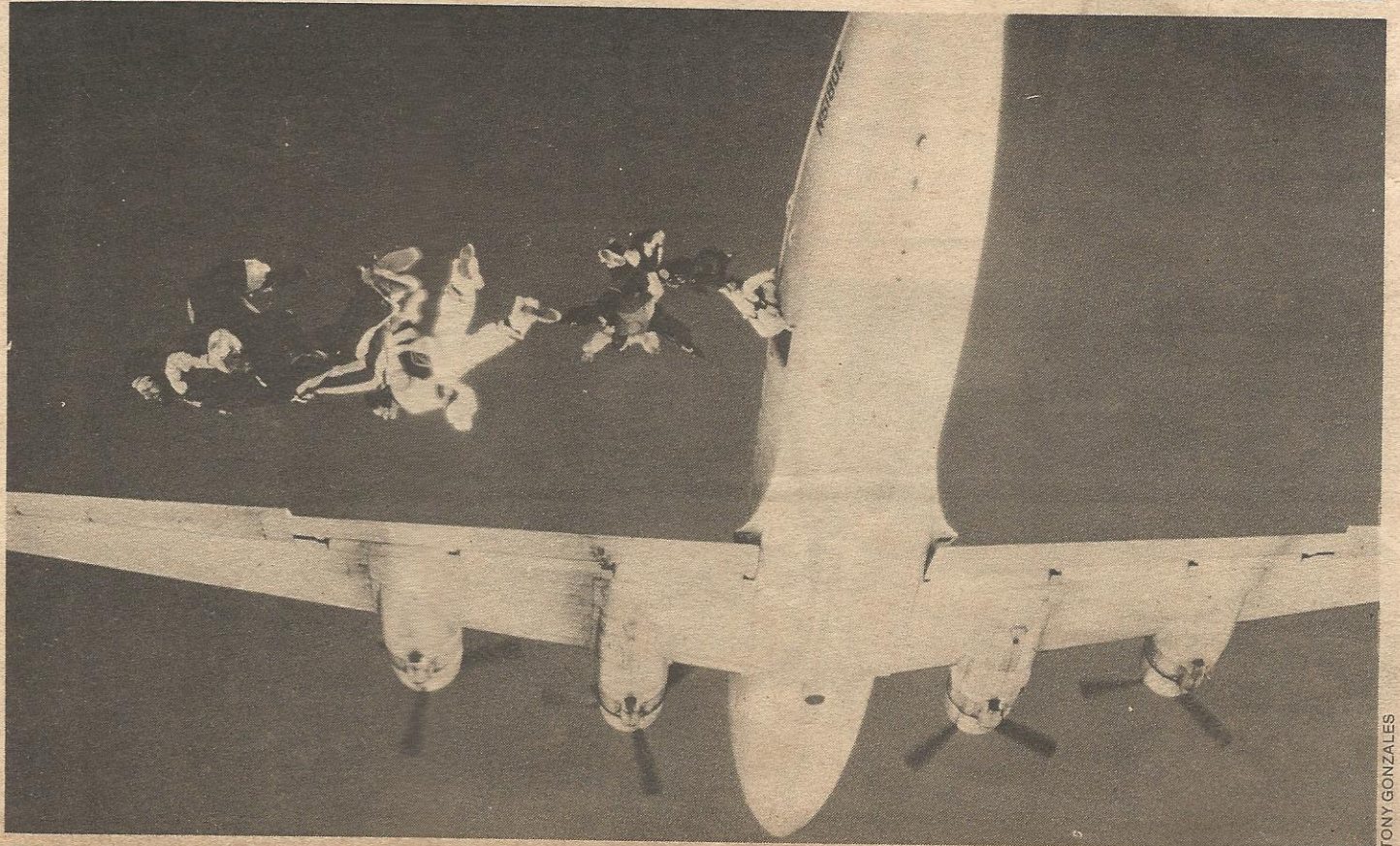
Published 17 times a year

Army RW Team may be axed

The U.S. Army Parachute Team's RW competition squad may disband permanently in September, according to a source on the team.

Knights' Commander Jerry Fry paid a visit to the team after their third-place finish in the 8-way competition and, according to the source, who asked not to be identified, he was not there to congratulate them. Fry informed the team that Army brass "higher up" had decided to disband the team and assign its members to the demonstration team for the remainder of the summer, at which time a determination would be made about the future of the RW team.

Apparently the Army was unhappy with the team's performance, feeling that the Knights should have dominated the 8-way event as they did the individual portion of the 1979 Nationals. The Army won the 8-way event last year in Richmond and followed it up with a victory in that event at the World Cup of RW in France.



TONY GONZALES

This will be a familiar sight over the Arizona Parachute Ranch again this fall when a DC-4 will again become available for jumping. The big four-engine aircraft is working Alaska hauling salmon this summer. Photo by Tony Gonzales.

World Meet teams practice in Michigan

Tecumseh drop zone, southwest of Detroit, will be the scene of the world meet practice of the U.S., New Zealand, British, and Canadian national teams from August 1-17. A Short Brothers Skyvan will be jumped daily, according to Owner Harold Lange, except for August 10-11 when the aircraft will be used for the Freakbrother Convention.

Lange said any jumpers are welcome as support for the aircraft is needed — it sits on the ground a lot it will cost the teams a lot. As Lange put it, "Here's a chance to make some skydives out of a Skyvan and support the U.S. Team at the same time."

Jumping causes "irreversible soil compaction"

Trouble brewing in Oregon

Claiming that parachuting causes "irreversible soil compaction" besides being a "nuisance," the government of Clackamas County, Ore., has so far been successful in preventing the Western Sport Parachute Center from conducting jump operations on its own land, according to Owner Ralph Hatley. Hatley feels that if his efforts to overturn the county's actions in court are not successful, the precedent will be set for counties across the state of

Oregon to arbitrarily put a stop to sport parachuting within their boundaries.

Problems for Western began last year when the county passed a land-use and zoning ordinance that claimed sport parachuting was detrimental to farm land and therefore had to be regulated. To regulate the activity, the county required that a jump-operation of any sort — fulltime center or a one-time demonstration jump — apply for a \$350 permit. Western fought the action and permitted jumpers to land at the center without the permit. The county sought

and finally received an injunction from a local judge that prohibited parachute landings on the property, property that is owned by Hatley and his wife. Now jump aircraft may operate from the land, but no jumper dare land at the center.

Hatley sought help from the Oregon State Board of Aeronautics, but ran into a stone wall. The board told Hatley that since no state law specifically allows sport parachuting, it is powerless to intercede on Hatley's behalf.

(continued on page 3, column 1)

INSIDE Skydiving

From the Loft.....16 Editorial.....22 Letters.....22

USPA to assume CRW awards. 2

Tom Courbat and the association reach an agreement

New DZ opens near Houston. 3

With a Lodestar to keep everyone up

Tesseract, Mirror Image, Visions the big winners 8

A full report on the 1979 RW Nationals

The Army cleans up 9

The "Classic" Nationals was small but well run

USPA Boogie: quality, not quantity 12

Robin Heid reports on USPA's annual affair

Gear at Richmond: no surprises 15

Evolution and not revolution was the rule

CRW world record set at Boogie

The world's largest canopy stack was built July 6th over Richmond, Ind., by twelve jumpers from the Green County drop zone at Xenia, Ohio, eclipsing the record 11-stack the same group had built the day before.

Jumpers in the stack and the canopies they wore, in order of entry, were: Karen Dean, Para-Flite Strato-Cloud; Donald Buckmin, Lightweight Strato-Cloud; Nancy Kurlin, Lightweight Strato-Cloud; Patt Valley, Strato-Cloud; Andy Spurlock, Para-Flite Cruisair; Terry Burris, Lightweight Strato-Cloud; Jeff Saunders, Cruisair; Brian Barrett, Strato-Cloud; Jim Fangmeyer, GQ Security Unit; Roger

Gardner, Strato-Cloud; Jayne Marchant, homebuilt; and Chris Milliken, Cruisair.

The stack was held for 1:41 before breaking into a 5- and 7-stack. The fifth jumper, Andy Spurlock, received a severe ankle sprain from the tension in the stack as he had wrapped his ankle in the lines of the canopy below him to reduce the likelihood of a lost grip.

The record was the culmination of several weeks of hard work by the Greene County jumpers. With the record secure for a while, the 12-stack people intend to lay off CRW for a while and let their bodies recuperate with a little freefall.

USPA to take over CRW awards

The USPA will begin to issue CRW on January 1, 1980, having reached an agreement with Tom Courbat, the founder and present administrator of the program.

Courbat originated the program in late 1977 after the first 8-stack was built over Livermore, Calif. A participant in a 4-stack is eligible to receive a patch, while one in a part of an 8-stack receives a number in addition to the patch and is recognized as a Canopy Crest Recipient, or CCR. Docking eighth or later entitles a jumper to receive the CCS award, or Canopy Crest Solo. The CCR and CCS currently cost \$7 each.

The CRW award program was designed to recognize outstanding performance in CRW and to encourage

this form of parachuting. Approximately 150 skydivers have earned the award to date.

The program is structured much like the Bob Buquor Memorial Star Crest, administered since the mid-1960s by Bill Newell in Bakersfield, Calif. Among other awards, Newell offers the SCR and SCS awards to recognize two levels of participation in an 8-way or larger star or complete formation. (Although both the CRW and BBMSC awards offer nothing but prestige — a low number means the recipient has been around for a while — they are quite popular with jumpers around the world.)

Courbat told Skydiving that USPA Executive Director William Ottley ap-

proached him last year, suggesting the association assume the CRW award program. According to Courbat, the USPA is interested in assuming the program because it would generate both cash and influence for the organization. Courbat wanted to turn it over to the USPA because it could administer the program better than he can, while insuring its continued existence in years to come, even if Courbat loses interest.

Although both men agreed in principle to the idea, it took more than a year to hammer out a contract that was acceptable to both USPA and Courbat. Both parties finally signed the necessary papers last month.

The eligibility requirements for the awards will remain pretty much the

same, as Courbat insisted. As of January 1, however, an applicant must be a USPA member. Applicants from countries outside the U.S. must be a member of their national parachuting organizations rather than USPA members.

Although Courbat has not been issuing numbers to those who have been a participant in a 4-stack, it is expected that USPA will.

U.S. RW Team selects gear

The 1979 U.S. Parachute Team has selected the equipment it will jump at the World Parachuting Championships in France next month. The squad, composed of the Tesseract 4-way team and the Mirror Image 8-way team, has selected Relative Workshop Wonderhogs for rigs and two canopies by Para-Flite, the Cruisair main and the Safety-Flyer reserve. The gear, according to a representative of the Relative Workshop, is being provided by the manufacturers at no cost to the team, which is a common practice. Apparently several manufacturers offered to outfit the team this year.

Mirror Image jumped GQ Security products at the Nationals in Richmond, while members of Tesseract displayed a variety of gear, including Wonderhogs, Classon rigs, Jump Shack SSTs for harness/container systems and home-built ram-airs for mains.

Greene County Bardstown hosts celebration

Greene County Sport Parachute Center in Bardstown, Ky., will have been open for ten years on August 26th, and it's planning a celebration of the event. A representative from the center told Skydiving that a Lockheed Lodestar was being brought in to supplement the center's three Cessna 180s and DeHavilland Beaver. A "hog roast" barbecue will be thrown that evening.

The celebration is open to anyone, and more information is available from the center at Rt. 2, P.O. Box 140, Bardstown, KY 40004, (502) 348-9981.



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Parachuting's Newsmagazine

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Trouble in Oregon

(continued from page 1)

Apparently the board would just as soon see parachuting die in Oregon. It refused Hatley request for permission to jump on any of the 35 state-owned, back country airports, stating that the lack of control towers made such operations unsafe. One airport, Aurora State Airport, has been listed by the FAA in the Airman's Information Manual as a parachute jumping area for "about the past 15 years," according to Hatley and recently received about \$1,000,000 in federal funds for airport improvements. Federal law states that a federally funded airport may not restrict what sort of legitimate aeronautical activities take place there, except for reasons of safety. The state managed to convince to feds that the ban of skydiving was for reasonable safety reasons, and the FAA told Hatley there was nothing they could do.

The board of aeronautics' rationale for not encouraging parachuting is simple. "They told me that parachuting isn't a method of transportation, so they (the board) aren't required by law to foster its growth," Hatley told Skydiving.

Des Moines Club Schedules Meet

The Des Moines Skydiving club will host a meet consisting of style, accuracy and TRAC events on August 10, 11 and 13 at their drop zone near Perry, Iowa.

This meet will be visited by members of the Army's Golden Knights, who will send a contingent of five jumpers to conduct seminars on accuracy, RW and CRW. In addition, the Knights' video unit, used to help judge last month's national championships, will be supplied.

The seminar is a first in recent years for the Golden Knights, who have embarked on a small-scale program to interact more with civilian jumpers. Major Jerry Fry, who is the new commander of the team, feels that conducting seminars and attending parachute meets is a good way for the Army to contribute to sport parachuting while encouraging a two-way flow of information between the team and civilian jumpers. Fry told Skydiving that the team will consider requests from clubs and center to conduct seminars and clinics. The program is so new that firm policies and procedures are still being drawn up.

The meet in Perry is open to everyone, and there is no charge to attend the seminars. Further information is available from Denny Hayes, (515) 223-6019 or (515) 276-8235.

New DZ opens near Houston

Billed as the "relative worker's playground," Cow Palace DZ has opened at Rosharon-Damon, Tex., near Houston, according to the Southwest Swooper newsletter. Offering a Lockheed Lodestar and good jump rates — \$7 to 10,500 — the DZ is run by the Lost Horizons Parachute Club. The club was formed by 20 Houston-area jumpers to help insure the new DZ would stay open and to keep their leased Lodestar busy.

More information is available from Laird Cogburn, (713) 376-6332.

Parachuting's problems with Oregon began in 1972 with the appointment of Paul E. Burket and Ralph McGinnis to the state board of aeronautics. Burket, who has been quoted saying "someone's got to take care of these goddam parachutists," was instrumental in 1973 in getting a rider on a state bill dealing with aircraft ELTs (emergency locator transmitters) that greatly broadened the board's power over parachuting.

Hatley told Skydiving that USPA has done little to help win the issue for jumpers; the organization said it simply didn't have the money to do more than write several letters.

Hatley claims he has spent "about \$15,000" in legal fees and other expenses in his hassle with the government. He faces state criminal charges for "operating and unlicensed airport," the

first time Oregon has levied these charges against someone, according to Hatley.

A legal expense fund has been set up to handle contributions: Save Our Skydiving, P.O. Box 68141, Oak Grove, Ore. 97268. The fund is administered by Hatley himself and the address is that of the center.

Hot air balloon ready for jumping

Two members of the Dallas Parachute Association have purchased a four-man hot air balloon that they are making available for parachute jumps.

Jerry Schrimsher and Howard Hughes, both experienced jumpers, own the balloon and intend to use it for demonstration rides and balloon pilot training in addition to parachuting. Schrimsher's telephone number is (214) 783-8947.

Parachuting Booklet Translated

Dan Poynter's *Parachuting Manual with Log* has been translated into Spanish to make the booklet readily useable in Spanish-speaking countries. The translation was done by Huber Hughes, a parachuting instructor who lives in Spain.

The booklet is a log-book size soft-bound publication that is especially suitable for use by novice jumpers. It contains basic information on the sport in a clear, concise format. Over 25,000 have been printed, and Poynter claims parachute centers around the world issue one during their first jump courses.

Copies of the Spanish version are available from the Caida Libre, Apartamentos Maran-9A, Cabo de la Huerta, Playa de San Juan, Alicante, Spain for \$2.50 per single copy.

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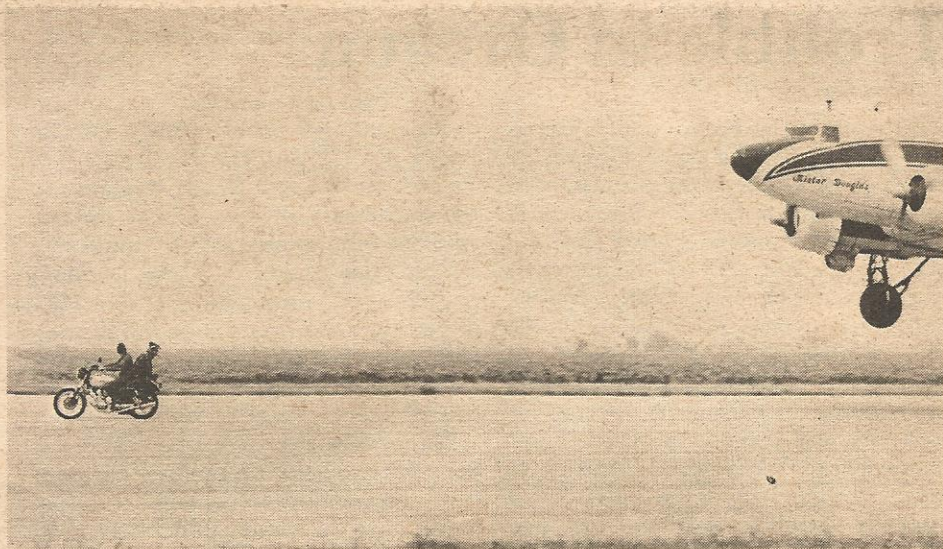
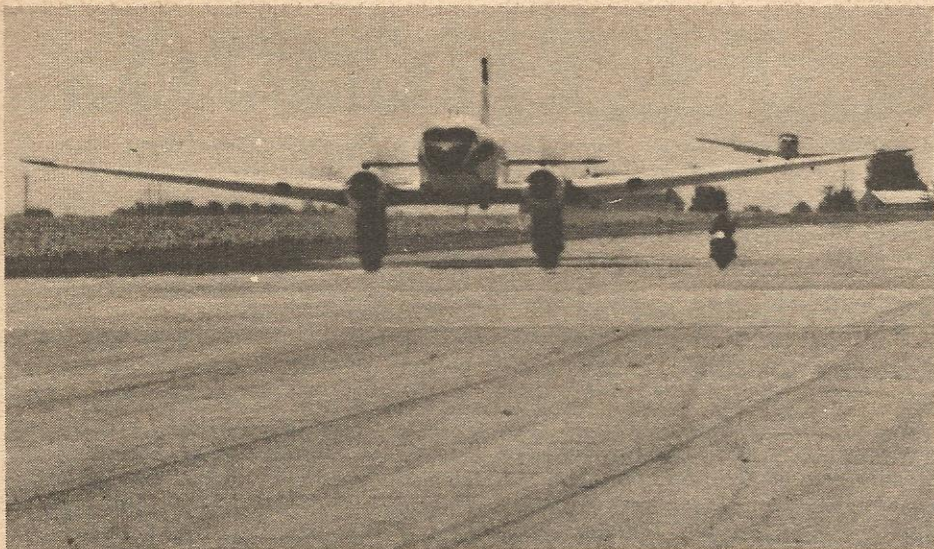


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Skydiving, July 18, 1979/3



Carl Boenish is filming a variety of skydiving scenes for an up-coming movie. He took advantage of the six DC-3s and long runways at Richmond, Ind., the site of the U.S. nationals, to film some close up shots of the jump aircraft taking off. Strapped to Ed Mosher's six-cylinder Honda CBX motorcycle, Boenish faced backwards and used helmet-mounted 16

mm movie camera. The photo on the left shows the position of the bike and airplane soon after the beginning of the DC-3's take off roll. The photo on the right shows Boenish and Mosher after they'd pulled ahead of the aircraft right after it had lifted off. Speed at this point was about 100 mph.

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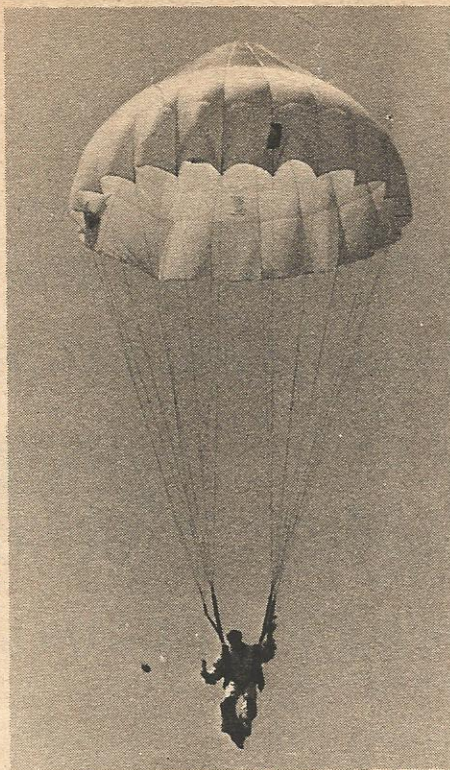
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Ozone Aerosport changes hands

Ozone Aerosport Company, manufacturers of custom jumpsuits, has been sold to Altitude South. Wayne George, who founded the company about a year ago, sold out because increasing commercial flying responsibilities was keeping him away from his shop in DeLand.

Altitude South, owned by Bruce Templin, purchased the company and hired Don Yarhling to manage it. The shop will be moved from DeLand, Fla., to near Jacksonville. Yarhling gave the new address as P.O. Box 576-S, Green Cove Springs, Fla. 32043.

McElfish publishes new catalog

McElfish Parachute Service has published a 1979-80 catalog of parachuting equipment. The 85-page booklet offers a very extensive line of gear, including big-ticket items such as main canopies to odds and ends and rigging supplies.

The catalog is available for \$1 from the company at 2615 Love Field, Dallas, Tex. 75235. The dollar is refunded on the first order over \$10.

AOPA wants FAA to extend term of flight physicals

If you hold a Student or Private Pilot certificate, you might be interested in a petition that the Aircraft Owners and Pilots Association recently submitted to the FAA. The AOPA has asked the FAA to extend the term of third-class medical certificates from the present two to three years.

Based on research by Dr. Stanley Mohler, former head of the FAA's medical program and now director of aerospace medicine at Wright State University in Dayton, the AOPA said the proposed change will not reduce safety. The association said that more than 98 percent of all applicants for third-class medicals receive them, and an average of only six pilots per year suffer cardiovascular incapacitations in flight out of a total U.S. pilot population of nearly 800,000.

Based on an average of \$35 for each exam, the annual savings to pilots would be more than \$2.5 million.

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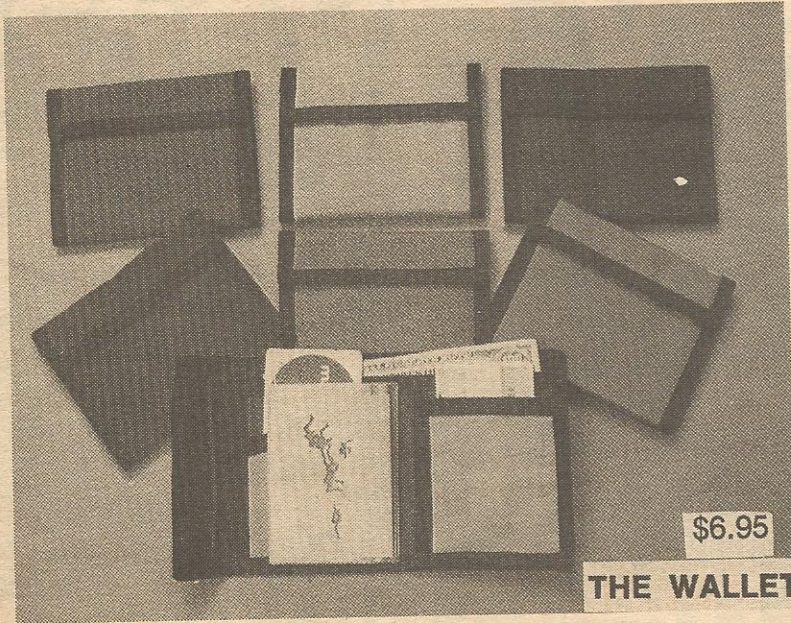
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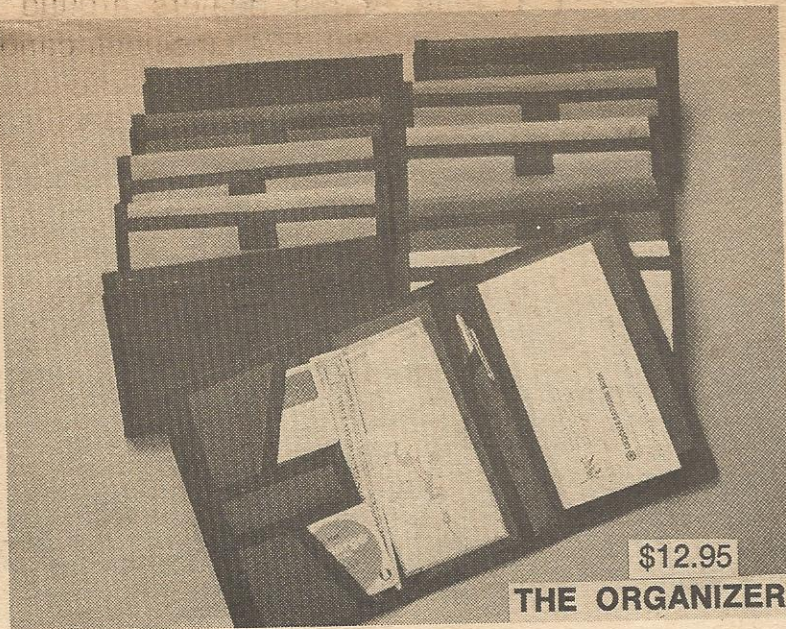
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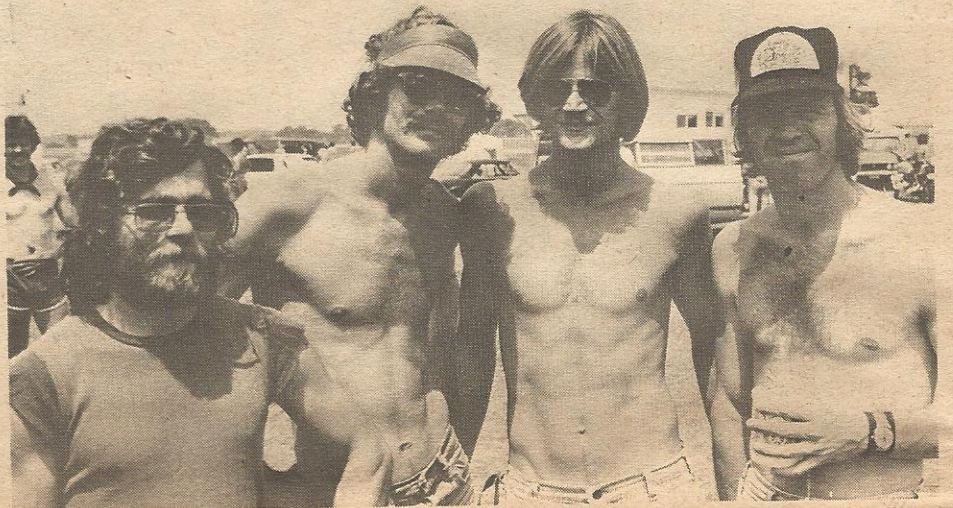
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Nationals medal winners

These teams also won medals at the 1979 U.S. Nationals. A complete report begins on page 8.



Slots Eight, second place, 8-way, from left: Ed Mosher, Jay Hilden, Carl Daugherty, Andy Reyling, Mike Truffer, Mike Barber, Bob Gray, Hoot Gibson, Roger Nelson, Dave Jancsar.



Team #8, second place, 4-way, from left: Royce Wolfe, Van Wideman, Rick Highsmith, Sam Brown.



No Cause for Panic, third place, 10-way, from left, standing: Mike Arbour, Roger Nelson, Ed Mosher, Bill Sweeney, Jay Augenstein, Allen Gencarelle, Roger Ponce de Leon. In front: Jim Handbury, Mike Millhorn, Jim Carroll.



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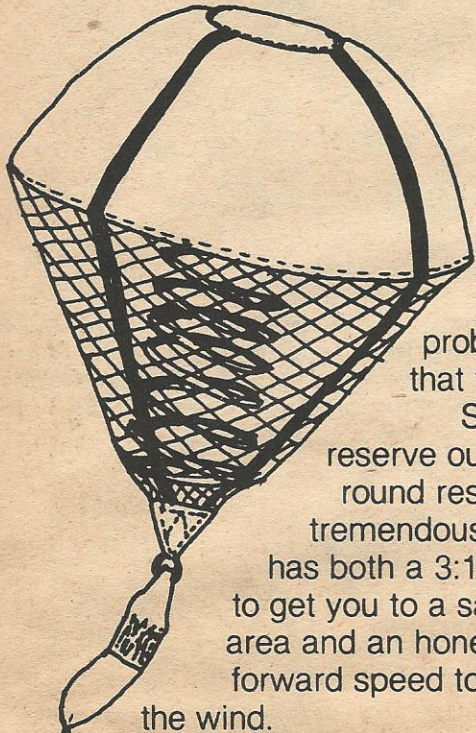
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You might not know, however, about the Safety-Flyer's unique free bag deployment system, a feature which lets this reserve deploy with unprecedented reliability. The Safety-Flyer, in fact, can open even if the pilot chute snags on the jumper or his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

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"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 airstream. 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

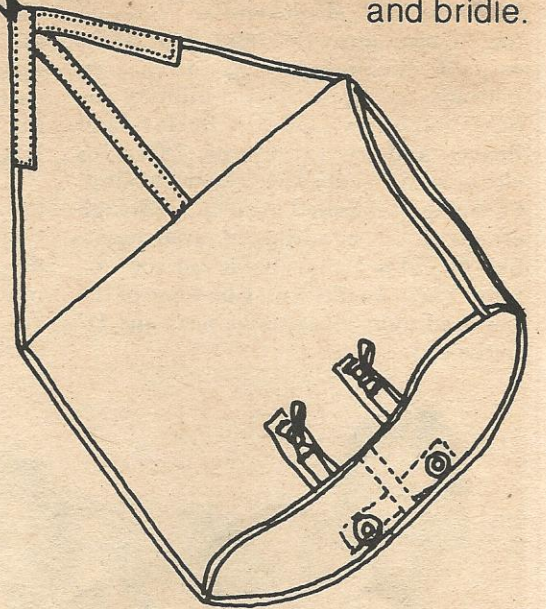
Para-Flite made test drop after test drop with intentionally horse-shoed pilot chutes to test this system. Many of you saw the films of a few of these drops last year at the Nationals.

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The free bag is only *one* feature of the Safety-Flyer. We applied similar efforts to perfect the other components of this reserve: the lines, the slider, the brake locks and the canopy itself.

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Tesseract, Mirror Image, Visions Win

Mirror Image, Tesseract and Visions won the 8-, 4- and 10-way events respectively at the smoothly run but weather-plagued RW portion of the 1979 National Parachuting Championships held in Richmond, Ind., 3 weeks ago. Practically all competitors left Richmond feeling that the best teams were indeed entitled to their gold medals.

This year's nationals were especially competitive, since the first-place teams in the 4- and 8-way events earned the privilege of representing the United States at the 2nd World Parachuting Championships to be held in France this August. The incentive of representing the U.S. in international competition resulted in many teams making 100-200 practice jumps each during the several months that preceded the nationals.

The use of ground-based video units to record the competition jumps was probably the most important single reason that this year's meet was almost trouble free. The use of video allowed precise scoring by the judges who were permitted by the rules to view multiple replays of each jump before assigning a final score. Most competitors, judges and meet administrators are now convinced that no major RW meet can be run successfully in the future without video scoring.

All credit for the success of the nationals can't be attributed to the video alone, however, as it was also evident that meet's judges and administrators had worked hard to prepare for this country's most important — and historically the most controversial — parachuting competition. The competitors themselves, for the most part, also arrived in Richmond with a solid understanding of the rules.

Most of the "serious" RW teams spent up to a week practicing at the Skydiving, Inc. drop zone at Wilmington, Ohio, located about 1½ hours east of Richmond. The drop zone is located on a quiet former military airfield, and offers a DC-3, a DeHavilland Beaver and several Cessna 182s. It's clean, with an expensive concrete ramp. Camping is allowed nearby, although excellent air conditioned apartment-like facilities are available on the airport. These facilities may be some of the best and most inexpensive near any DZ in the U.S.



The Mirror Image contingent, 1979 U.S. 8-Way Champions, from left to right, standing: Mike Sandberg, Mike Gennis, Dave Sheldon (a member of the 1977 team, Sheldon is still recovering from an auto accident and is not jumping), B.J. Worth, Jim Captain, Craig Fronk, Mike Eakins, Marty Martin, Jerry Bird, Steve Mayes, Randy DeLuca. Kneeling: Garry Carter, four unidentified friends, Hod Sanders, another unidentified friend. Mirror image also placed second in 10-way.

DeLand Air Sports flew its DC-3 and video unit to Wilmington six days before the meet began in Richmond. At least eight 8-way teams were there by the weekend, along with several 4-way teams and two 10-way teams. A USPA training judge also showed up to get some experience judging from the video monitor before the actual competition began.

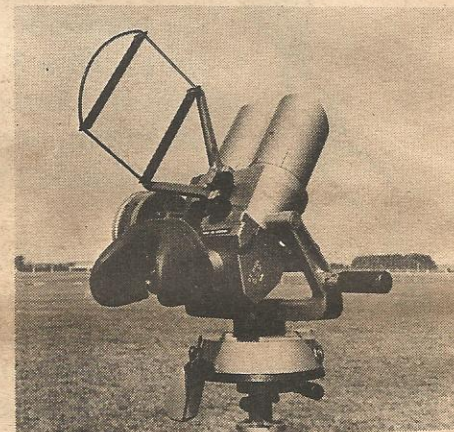
Some teams made five or more practice jumps a day in Richmond, in spite of occasional weather that stopped the jumping.

Sunday, two days before the meet, was used by most of the teams to move to Richmond and get settled there. The style and accuracy portion of the nationals were completed by then and the meet staff was gearing up for the RW portion.

The set-up in Richmond was pretty much the same as in 1978. A row of aircraft T-hangars along the grassy landing area was used for offices, judges rooms, and souvenir sales. A large circus-type tent covered several concession stands and later became the hangout of

the "tent judges" — a group of jumpers and others who observed the jumps on a TV monitor set up under the tent. The tent judges (who saw the same recording of the jumps as the staff judges observed) quickly became quite competent in giving accurate scores of the competition and practice dives. Such unofficial scores were very useful to teams who wanted such information quickly.

A Richmond city ordinance still prohibited camping on the airport, and tents and campers were relegated to an open field several miles from the airport. Although the sponsors and hosts set up a large tent and sold beer and food at the campground — curiously called "Happy Land" by the Richmond Jaycees — some competitors were unhappy that they could not camp within walking distance of the airport. Some viewed the ordinance as an attempt by the local government to help fill the city's motels, although at least one DC-3 owner told Skydiving that allowing camping on the airport would expose his aircraft to possible damage, intentional or otherwise, by campers or



A set of telemeters, useful but not important at the 1979 Nationals as video units were used to score the meet.

others posing as campers.

Jumpers who camped out weren't the only ones who expressed some dissatisfaction with the situation at Richmond. Practice jumps cost \$9 to 10,500, a shock to the wallets of teams coming



Tesseract, 1979 U.S. 4-Way Champions, from the left: Brad Dunkin, John Culler, Jeff Wragg and Tim Florea.



Visions, 1979 10-Way Champions and bronze medal winners in 8-Way, from the left, standing: Al Krueger, Jim Edwards, Ken Crabtree (alt.), Kent Lane, Scott Meek. Front, Mike Parnell, Steve Parker, Tom Start, Rick Jones. Not shown: Mike Sherrin and Willie Morgan.

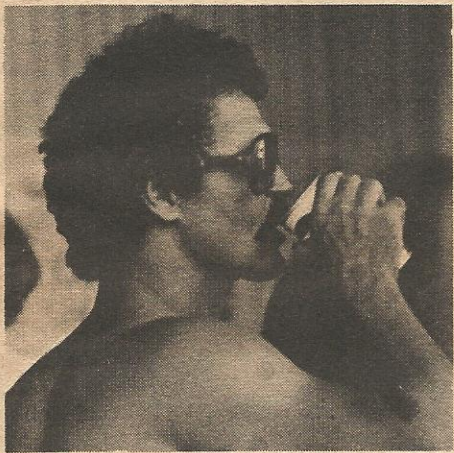
from Wilmington where they had been paying only \$6 to the same altitude in Paul McCowan's "Firestone" DC-3.

Practice jumping started in earnest Sunday afternoon and continued through Tuesday, as the weather was excellent. Although there seemed to be a need for more Cessna 182s to accommodate the 4-man teams, there were at first four and eventually six DC-3s to carry everyone else.

With the meet scheduled to begin Wednesday morning, tension began to mount among the competitors on Tuesday, the last practice day. Mirror Image, from Pope Valley, Calif., got a psychological jump on the other 8-way teams and the judges by setting an official world record by scoring nine points in 50 seconds with set sequence #14. The Army's Golden Knights later that day tried to beat that record, but a portion of the dive was missed by the video and could not be scored.

Like the competitors, the meet staff was also making last-minute preparations for the meet. Tony Fugit, a past U.S. 4-man champion, was RW meet director under Jack Bergman who was overall meet director, positions both held last year. RW Chief Judge was Rick Lilliquist while event judges were Mike Grady in 8-way, Phyllis Hancotte in 4-way and Wayne Noel in 10-way.

These staffers made real efforts to clarify the meet's rules and procedures to both the competitors and the rest of



Tony Fugit directed the RW portion of the Nationals for the second year in a row.

the staff before the meet competition began. Such careful clarification was especially important this year as it was the first time that video was the primary method of judging the meet, so the rules hadn't been tested in an actual national meet.

Several meetings and briefings were held with the team captains and the entire group of 233 competitors. Attempts by some teams to change the rules (as published in USPA Part 50) at the last minute were rightfully resisted by the staff.

Registration became an ordeal for some teams, especially those who came

(continued on page 10)



Six DC-3s were available for the competition, about twice as many as were needed.

Stearns outscores the men

Army cleans up in S&A

Individual members of the Army Parachute Team dominated the style and accuracy portion of the 1979 U.S. Nationals as they left Richmond with seven gold, four silver and two bronze medals. Cheryl Stearns, also a member of the Golden Knights, posted the best score of the 47 men and women that entered the meet, averaging 6.84 secs. in the style event and totaling 0.02 meters after eight rounds of accuracy.

Video was used to score style this year, with Raeford Aviation and the Army providing the equipment.

The meet was small and well run, with 44 staff members to accommodate the 47 competitors. Poor weather caused some delays in the competition, but still the meet was finished a day in advance.

Style and accuracy is divided into men's and women's divisions, with the men's division split again into senior and master categories. A competitor is assigned to the master category if he has received an average style score of eight seconds or has received an average accuracy score of 0.10 meters at a previous national or international competition. By providing two divisions, less proficient or experienced competitors stand a better chance of winning a medal.

Men's Master

Dwight Reynolds won the master accuracy event by besting Danny Durden in a jump-off; both were tied for first place at the end of the eight scheduled rounds. Reynolds took third in the master accuracy event, too, and his combined score put him at the top of the master category and earned him the title of National Overall Champion.

Maurice Fernandez turned an average of 7.19 seconds to win the gold medal in master style.

The Golden Knights took the first six combined overall men's position, with Tony Fugit placing seventh.

Men's Senior

In the senior division, Golden Knight Cliff Jones won the overall slot, with Rick Kuhns winning senior accuracy and Chuck Schmutz taking first in senior style.

Women's

In the women's division, Cheryl Stearns took the gold in front of Raylene Wilson in both accuracy and style.

Diane Senkow, who didn't enter style, was the third women competitor.

Although Stearns' combined score was better than that of Reynolds the national overall trophy was presented to Reynolds. This was the first year that a woman out-scored the men at the U.S. nationals.

Equipment

Although 17 of the 33 competitors who entered style wore piggybacks instead of conventional, or front-mounted reserves, the top three stylists in each category wore conventional gear.

In accuracy, 32 competitors jumped Para-Flite Strato-Clouds, 11 jumped Jalbert Para-Foils from North American Aerodynamics, three selected Pioneer Vikings and one jumped a Para-Flite Delta II. Para-Foils took the first three

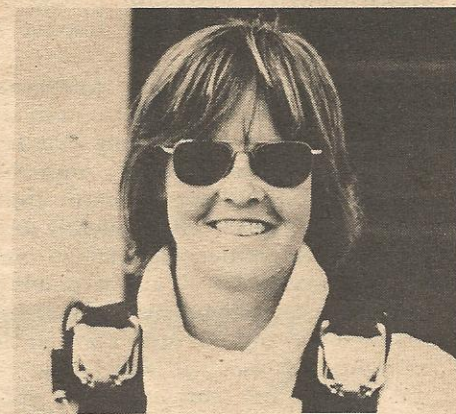


Dwight Reynolds punches the electronic scoring pad for a dead center under his NAA 252 Para-Foil. He is 1979 U.S. Overall Champion.

positions in master accuracy, while Strato-Clouds finished 1-2 in senior accuracy. Stearns wore a Para-Foil while Wilson, the runner-up in women's accuracy, jumped a Viking.

There was one malfunction, when Al King couldn't locate the pull-out handle of his SST Racer and deployed his reserve.

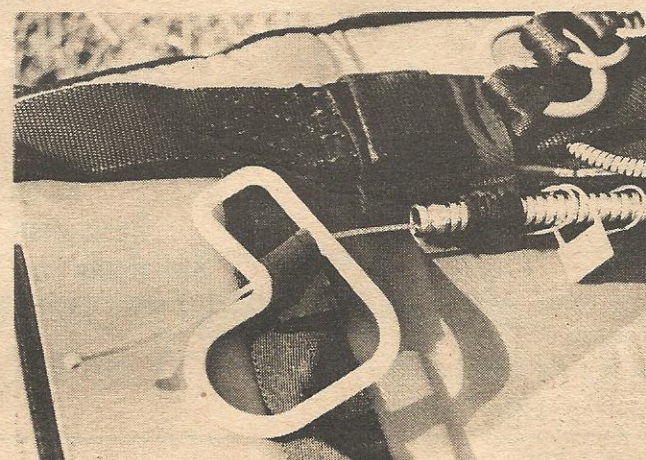
This year was an "off year" for style and accuracy, as the world meet consists of RW events in odd-numbered years and style and accuracy in even-numbered ones. Many observers felt this was the reason for the relatively poor turnout for the style and accuracy events. This portion of the nationals attracted over 80 competitors last year.



The Army's only female member of the Golden Knights, Cheryl Stearns outscored everyone at this year's nationals.



Vic Deveau suits up for style.



Blast handles weren't allowed at Richmond, and some jumpers made last-minute, on-site conversions.



The Golden Knights did well, tying for third, but the future of the team is in doubt as some had greater expectations.

to Richmond without the proper licenses or other credentials. The USPA, in what a board member admitted was purely a move to generate more cash for the organization, announced over a year ago to required licenses of all national competitors, but quite a few showed up without them, requiring phone calls to USPA's offices in Washington to verify the issuance of the licenses. One team, Nose Dive from Elsinore, Calif., apparently tried to register for the meet using the credentials of someone who was no longer on the team. The effort was discovered and the team disqualified from the meet. Bergman held the approximately \$1000 of entry fees until near the end of the meet, when all but the entry fees of ineligible jumpers returned to the team.

All told, 16 teams entered 8-way, 36 registered for 4-way and 13 signed up for 10-man.

There were quite a few "fun" teams entered in each event, with a "fun" team being one that had qualified but made only a few practice jumps.

Entering all three events was an at-

tractive idea for several reasons: it made a competitor eligible to win the combined overall award for RW, an award that goes to the jumper or jumpers who finished the highest in all three events combined. Entering all events also meant the jumper would be jumping and staying current while other were sitting on the ground waiting for their event to be run. Finally, entering all events allowed a competitor to make the most jumps for the least amount of money.

The competition began Wednesday morning and lasted six days, until the late afternoon of the following Tuesday. The weather was generally unpredictable but mild during the entire time, and haze or low clouds frequently stopped the competition completely, once for an entire day. Still, all six rounds of each event were completed, although it required starting the meet early in the morning and using all day to squeeze the jumps into the available good weather.

Generally, the teams that insiders expected to do well did; there were

few surprises when the final scores were posted.

The 4-way event was the most exciting, as the lead changed hands several times during the six rounds.

Tesseract, from Ozmo Paracenter in Athol, Idaho, and Team #8 from Marshall, Michigan, were tied for first place after five rounds. Tesseract was last year's national champions and Team #8 took the silver medal, and both had trained hard for 1979. Each team made their sixth jump within an hour or so, and the tent judges reported that Tesseract won by one point by scoring a seven to Team #8's six for the final random round. The official scores, posted the next day, confirmed the tent judges' call and Tesseract's victory.

Third place was taken by the 4th Dimension from Elsinore.

All three medal-winning 4-way teams were "serious" teams, with 4-way being their primary event. 4th Dimension was overlooked as a serious contender before the meet, but the team's steady good performance proved that their ability was underestimated.

The top two 4-way teams jumped from Cessnas, while the 4th Dimension team jumped from DC-3s as the competitors in this event had their choice of aircraft. The advantage of the Cessnas, according to competitors who talked to Skydiving, is that it's easier to take the first formation directly off the Cessna, since it flies at a slower airspeed and has a strut and a wheel that permits a team to climb completely out of the aircraft prior to exit. Thus, 4-way saved valuable working time choosing Cessnas over DC-3s.

One team, Kinetic Sunshine of DeLand, Fla., suffered a bitter disappointment after the second round when the judges ruled that the first formation was not built according to the diagram in the rules. A grip was in the wrong place, the judges reported, and scoring stopped until the formation was correctly built during the team's second time through the sequence. (Any formations performed after an incorrectly performed formation are not scored; Part 50 requires that a team rebuild the formation correctly for the scoring to continue).

The team protested the decision, claiming that they had shown the formation correctly. But since the score was already officially posted, the video

with a tremendous number of reviews requested by teams who make "speculative protests" — protests made in the hopes of browbeating the judges into giving them a higher score when there is actually no real reason to believe the first score was incorrect.

The protest was eventually denied, and Kinetic Sunshine kept the three points they were originally given instead of getting the eight they felt they deserved.

Other teams performed well in the 4-way event. Mirror Image, a subset of five members of the Mirror Image 8-way team, lead for a while and finished 4th overall with 44 points. Kinetic Sunshine was fifth with 42 points.

Several 4-way teams had trouble with their exits. Although their freefall sequential ability was good, not being able to consistently have the first formation in five seconds or less put them at a disadvantage. (Both the 4- and 8-way events this year proved that a good exit is as important in sequential competition as it is in 10-way. A team with a good exit and resulting fast first formation had, in effect, more working time left to score more points).

The 4-way event, with more than twice as many teams entered as in the other two RW events, took the longest to complete. Having more Cessnas available would probably have speeded things up.

The meet was only several hours old when it became apparent that video judging was resulting in the scores being posted very slowly, usually several hours after the jumps were performed. The USPA secured another video playback unit for the judges to make the scoring go faster. The tent judges soon began to prove their worth, and the competitors adjusted to the long scoring delays. One commented that he would "rather wait a long time for scores that are correct than get fast but possibly inaccurate ones."

While the winners of the 4-way event weren't decided until the final round, the eventual winners of the 8-way event led from the first jump, making the other 15 teams play catch-up for remainder of the meet. Mirror Image, who won the event in Tahlequah, Okla., in 1977, won by three points as the expected threat from Visions, the Golden Knights, Focus and Unity did



The video and air traffic control center. The Army's video unit, operated by Bill Knight, was set up to be operated out of the back of a van, while the DeLand Air Sports unit, on the right, was free-standing. Skip Giles in the center with a microphone, directs the aircraft overhead.

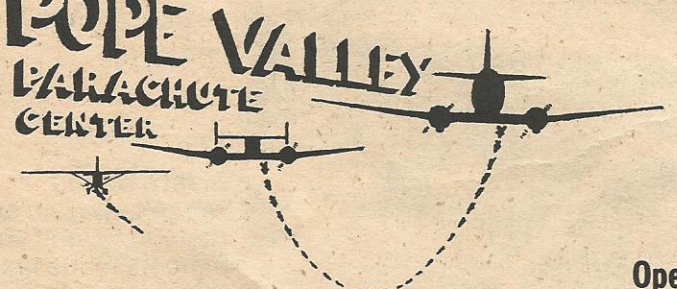
record of that jump could not be reviewed and possible rescored — the rules prohibits a review of the video record in response to a protest based on the judges' call. Many competitors, as well as some judges, feel that the video should be available to help resolve such protests. Apparently that clause was written into the rules to prevent the possibility of bogging the meet down

not materialize. Although Mirror Image was out-scored on two rounds, they equaled or beat everyone else's efforts on the remaining four.

Jerry Bird, Mirror Image's alternate who doubled as a coach and tent judge, told Skydiving that "Mirror Image won the event by scoring three points in one second — they consistently squeezed their final point within working time by

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(continued from page 10)

a few tenths of a second, while other teams seemed to miss a point by the same margin."

Slots Eight of DeLand earned the silver medal by accumulating 35 points. The Slots had a slow start, being three points behind Mirror Image and well down in the standings after the first mance in the last two rounds, however, that took them from fourth to second place.

Two teams tried for third place, Visions of Perris Valley, Calif., and the Army's Golden Knights. Visions had been especially impressive during practice, reportedly averaging about seven points a dive. They did well during the meet, but lost with a relatively low score in round three that they could not make up.

The Knights performed very consistently throughout the six rounds, showing real improvement from scores they had posted earlier this year.

A sudden death jump-off between the two third-place teams was organized, but weather prevented the jumps. In an effort to go ahead with the jump-off, the use of an air-to-air video system (designed by Visions' alternate Ken Crabtree) was arranged but the weather became bad enough to prevent jumping of any sort.

The 10-man event was competitive and almost light hearted. Visions won it, turning a 14 second average, respectable for a team that made less than a dozen 10-way practice dives. Visions is captained by Al Krueger, who led a 10-man team called Captain Hook and Sky Pirates to three consecutive U.S. and one world 10-man title in the mid-70's. Several of Visions' other members used to jump on Air Frieight, (which won the nationals in 1977 and 1978) was turned in by what is basically an 8-way team.

Mirror Image finished second in 10-way, while No Cause for Panic was third. 'Panic was led by Ed Mosher, of the former Exitus team.

The combined overall RW trophies were awarded to Garry Carter, Mike Eakins, Craig Fronk, Mike Gennis and Marty Martin of the Mirror Image teams. It was the third year in a row that Carter, Eakins and Gennis earned this title.

The scores by the winning teams demonstrate how much the U.S. jumpers have improved their competitive sequential RW skills in the past three years. Although sequential scores can vary widely from meet to meet depending on exactly which set and random sequences are drawn, and although the rules have changed somewhat since sequential was first introduced at the nationals in 1977, a comparison of scores is still interesting:

Mirror Image won the 8-man event in 1977 by totaling 28 points, while the Golden Knights took first last year with 24, and Mirror Image scored 38 this year.

(Mirror Image scored 10 of their 38 points on one jump, eclipsing the world record they had set a few days before during practice).

In 4-way, the Dirt Divers scored 44 points in 1977, while Tesseract earned 37 last year followed by 49 this year.

On the other hand, 10-way times have deteriorated. Visions' 14.0 1979 average is much worse than Air Freight's 11.0 average last year.

Besides selecting the national champions, the 1979 nationals taught the competitors the disadvantages and benefits of the video scoring. It was

discovered that the video equipment used at Richmond has equal or greater capability to watch a jump as telemeters; that the proper lenses and filters can see through haze better than human eyes looking through telemeters. Even flat viewing angles, caused when a team is in freefall at lower altitudes off the airport, was easier to judge with video. Good operators are essential, and Bill Knight of the Army and Tom Herr from DeLand received well-deserved compliments from jumpers and staff alike.

The jumpers found that they could do faster and closer sequential when they were being video judged. In the past, with telemeters, a team might get zapped if they didn't show several feet of separation between jumpers during a transition, but this can be reduced to inches in some cases.

But video still requires competent

judges to interpret what they see correctly, and it requires a team that develops a technique that still clearly demonstrates to the judges that grips are made correctly, that any required separation is adequate, and that control is shown. In other words, a team must still jump "for judges".

Besides video judging, another aspect of this year's nationals was frequently discussed by competitors and staff alike: the site. Although many jumpers enjoy Richmond's good facilities and central-U.S. location, others told Skydiving that the area's weather makes them wish the USPA would consider conducting the meet elsewhere, where better skies would result in a short meet. No one, however, seemed to be able to suggest a site that had the right combination of facilities, weather, location and eager hosts. ●



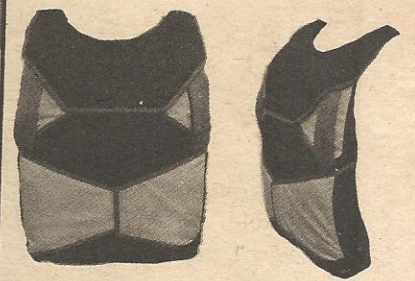
The "tent judges" watch a jump. The monitor displayed the same image the actual judges were viewing in their room.

Complete scores begin on page 18.

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Skydiving, July 18, 1979/11

USPA Boogie: quality, not quantity

By Robin Heid

After a shaky start, the 1979 USPA Boogie picked up steam and turned into what may have been the most enjoyable boogie Nationals-goers have seen since it began in 1976. It was back then, at the urging of several USPA leaders, including Bill Stage, Bill Ottley and Larry Bagley, that the association decided to hold the boogie in conjunction with the nationals. Such an event would serve as a summer convention to get members together. A boogie would also be the natural time for various equipment companies to show off their wares. A boogie, if successful in terms of number of jumps made, would also bring revenue into the organization which

would ultimately help finance the U.S. Parachute Team.

Like the majority of big boogies seem to, this one started with a rainstorm. Spirits sank as jumpers anticipated a repeat of last year's poor weather and many who had originally planned to stay packed up and left. DeLand Air Sports flew their DC-3, Mr. Douglas, home that afternoon as only 300 jumpers had registered by then and five other DC-3s on the flight line meant Mr. Douglas wouldn't be flying that much. As it turned out, well over 600 jumpers registered for the boogie.

But later that afternoon the skies suddenly cleared. The melancholy

mood evaporated as jumpers scrambled for the aircraft. A few late loose loads and a CRW load filled the first bird and the boogie began!

A few more loads went up before dark and people left the DZ that night thinking that perhaps things would work out alright after all.

Good Morning, Richmond

The next three days, July 5-7, dawned sunny and clear, and jumpers were out early each morning to get the ball rolling.

Chief Manifestor Skip Giles greeted the crowd each day with his slow Southern drawl and urged everyone to

make a lot of skydives and pick up their trash.

The dives went up: 10-, 12-, 16- and 20-way loads, for the most part, with occasional 25s and 30s. No magamaddness hit the boogie. Twelve and sixteen were the popular numbers and many very hot sequential dives were logged.

Pat Works, from Southern California, was busy organizing skydance loads. Most of skydance is flying, with few grips and little contact. A number of jumpers got their first taste of skydance on one of Works' loads and their enthusiasm for this innovative form of jumping was readily apparent. Skcratch Garrison and Matt Farmer, who've been pushing skydancing for years, would have been proud.

Canopy relative work got a lot of attention, too, with Tom Courbat and Jamie Garrard organizing many stack loads.

Quality vs Quantity

The pace of the boogie was leisurely. Only half the number of skydivers who attended the '78 boogie showed up this year at Richmond and that, along with the better weather, made for a slower pace.

The jumpers also seemed more interested in getting *good* dives, rather than *lots* of dives or jumps with a lot of people. There were a few "rollerball" jumps viewed from the ground, but for the most part, skydives usually built to some semblance of the dirt dive.

Manifestor Giles had a lot to do with the mellow atmosphere, too. Unlike some boogies in the past, manifest always had a smile; it never got riled or ruffled. On the 4th, after a day of rain and clouds, many jumpers began popping tabs, resulting in a friendly admonition from the manifest loud speakers.

"Ya'll know that drinkin' on the DZ is a no-no," said Giles, as he quaffed a cool one in the trailer. "The city fathers and the airport fathers say we can't do it, so let's put that stuff away." The double meaning did not go unnoticed.

Giles and Chief Pilot Bob Branch ran the operation easily and efficiently. Faced with the problem of canopy relative work jumpers flying around at high altitude with others in freefall in the same airspace, the two had a brief conference and figured out a solution that worked flawlessly.

Cornflakes and 12-Stacks

A few dives of note took place at the boogie. Some of the USPA Board of Directors got together and built a "cornflake," so named by National Director Larry Bagley because he thought it up at breakfast. The dive was such a success — they even transitioned from the cornflake to a wedge — that USPA President Scott Hamilton said, "If the pictures don't come out, no one will believe we did it." Paul Proctor, a USPA staffer who took some freefall shots of the dive, replied, "If these pictures don't come out, I may need a new job."

Canopy relative workers from Greene County DZ at Xenia, Ohio, built a 12-stack on July 6th, setting a new world record, and letting the world know that CRW is here to stay.

(continued on page 14)

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very conservatively with "bells" from the elbow outwards. The legs are designed and sized to give you the balance you need in a jumpsuit. The rear part of the arm and leg control areas are double thickness material to "grab" the air better. The stripe placement enhances this principle for function rather than decoration.

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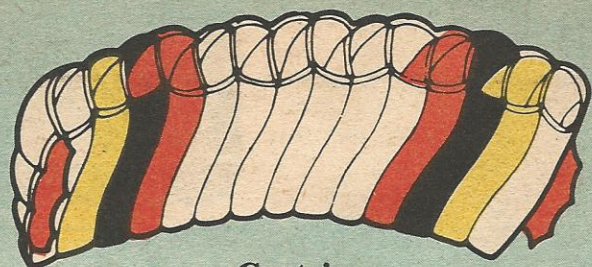
Safety Flyers
Strong Lo-po
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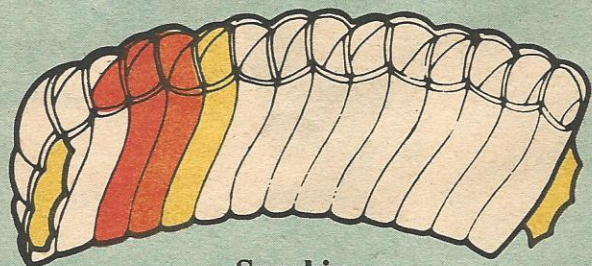
Solid Spectrum



White Top Spectrum



Captain



Sunshine

The Cruisair

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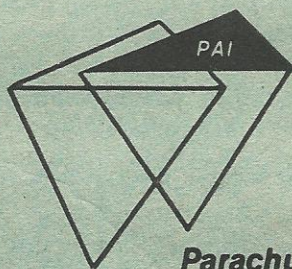
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Parachute Associates, Inc.

USPA Boogie

(continued from page 12)

None of the other dives were outstanding on their own, but they were all exceptional in one regard: the dives made over Richmond were so diverse you could get any kind of skydiving you wanted just by shopping around the various groups. There was an attitude of, "Let's not do something bigger, let's do something different." The result was more enjoyable parachuting for jumpers and spectators alike.

Campground Capers

The campground, located a couple of miles from the DZ, was the scene of several wide after-jump parties. On Thursday, a jaded local cop, bored with duty in Richmond, arrived at the campground to watch the goings on. He obliged the jumpers' rowdiness by flashing his lights and running his siren periodically, and the campers repaid his joviality with a 15-man moon. One enterprising soul, without a place to stay that night, attempted to land himself a bed in the local jail by running up and over the policeman's car sans clothing. The cop knew what he was up to and steadfastly refused to arrest the naked partygoer.

On Friday, Carl Boenish and Bill Sutton showed skydiving flicks, including a made-for-whuffos movie from South Africa about the '78 Nationals that had

the whole tent rolling on the floor in laughter.

Saturday night's party was even wilder, and many survivors of that one took hours to recuperate on Sunday.

Complaint Department

By far the biggest complaint was the cost of jumps — \$10 to 12,500 and \$13 to 15,000. The other major bitch was voiced by competitors, who had to pay the same \$8 boogie fee non-competitors paid, even though they'd shelled out an average of \$16 per jump during the competition.

Some jumpers complained that the USPA General Membership Meeting was conducted in "near secrecy"; that it wasn't publicized in advance well enough and then it was held in the early evening when many jumpers were still out skydiving. Some felt that the meeting was intentionally underplayed to avoid any angry confrontation between the members and the association's leaders.

All in all, though, the 1979 USPA Boogie was one to remember. A lot of energy was generated, and many new ideas were exchanged. And perhaps most significantly, this boogie seemed to be a confirmation of the trend first seen at the 1978 Pumpkin Meet last October in Zephyrhills, Fla., a trend toward smaller, more intricate and innovative dives and away from large, static formations.

CRW popular in Richmond

Canopy relative work was the big story at this year's boogie. Formerly, stacks were rare at big meets, but the skies over Richmond were filled daily with towering canopy formations from July 4th until July 7th.

CRW madness started with the first load to go up when the skies cleared on a cloudy, rainy 4th. Nine jumpers from all over the country who had never flown together before proceeded to build a clean 8-stack on their first attempt, prompting organizer Tom Courbat to remark upon landing, "It was just a cheap trick." The group was known by that designation for the rest of the weekend.

CRW jumpers from Xenia, Ohio, showed up on the 5th and set a new record, building a smooth-flying 11-stack with 4,000 feet to spare. Not satisfied with that, they returned the following day and put together a 12-stack, right after Cheap Trick's 10-stack, their finest effort of the Boogie.

There was a lot of interest in canopy relative work among the general population, too. Many jumpers approached Cheap Trick and Greene County people with a variety of CRW questions, mostly dealing with 2-stack formations, and how to get the initial hookup. Roger Gardner of Greene County and Robin Heid of Cheap Trick also spoke at the relative work seminar on July 5th, with Gardner talking over the intricacies of stack building, while Heid concentrated on basic techniques and fielded questions from an eager audience.

Acceptance appears to be growing among all members of the parachuting community for canopy relative work. USPA National Director Tony Fugit, who banned CRW at his drop zone last year, got his first hookup and first three stack on the same day, and he is ready for more.

Manifestors are also more comfortable with it. In past boogies, CRW was 14/Skydiving, July 18, 1979

usually not permitted during normal jump operations — manifestors and DZ operators were nervous about canopies and freefalling bodies sharing the same airspace. At Richmond however, there was no such problem. After jumpsuitless skydivers strolling out to the first plane created a mild outbreak of CRW paranoia, the manifest crew decided canopy relative work passes would merely go last out of each bird. That was the only additional control, and it worked without a hitch. Jump operations proceeded without interruption and canopy freaks got all the CRW they wanted.

RW SEMINAR HELD

A relative work seminar is held every year at the boogie usually featuring that year's RW champions who discuss the theories and training techniques that helped them achieve the top spot. Lead this year by Mirror Image Spokesman Craig Fronk, the speakers discussed topics from basic team organization to how to train a novice in canopy relative work. Some notable quotes from this year's seminar:

"To me, no-contract relative work is the greatest teacher in the world." — B.J. Worth of Mirror Image, 1977 and 1979 8-way champions.


On canopy relative work: "Get to know your canopy. Fly it. Dive it. Stall it. Get to know it before you start doing CRW." — Robin Heid, member of

Cheap Trick CRW team.


"Entry level experience (of newly formed teams) is meaningless. It may get you there quicker, but, on the other hand, experienced people are often harder to work with because their ideas are already set." — Jeff Wragg, spokesman for Tesseract, 1978-79 4-way champions.

"You must relax and be aware of your body position, not only arms and legs, but body as well." — Pat Works, author of the *Art of Freefall Relative Work*.

"Relative work is a social disease — spread it around as much as possible." — Jerry Bird of Mirror Image.



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Gear at Richmond: no surprises

The gear worn by the medal-winning teams at the 1979 Nationals generally reflected the teams' geographical origins, with competitors selecting equipment that was built close to their home DZ.

For example, teams from Southern California such as Visions and 4th Dimension mostly jumped rigs built by Advanced Air Sports Products and Para-Innovators, two companies located near or in Elsinore and Perris, Calif.

Two Northern California teams, Mirror Image and Unity, both trained at Pope Valley and both had gear by GQ Security: Unit main canopies and System harness/containers.

No dramatically new gear was introduced in Richmond. The Relative Workshop has developed a "Sprint" model of its Wonderhop 2, designed to compete head-on with the Jump Shack's SST Racer for the ultra-small, ultra-light harness/container market. The Sprint features a profile that is more tapered than other Wonderhog designs and a very light and compact hand deploy pilot chute that fits into a small pouch that may be mounted practically anywhere — on the front or back of the leg strap, on a belly band, or on the bottom flap of the main container. The Sprint is designed for compact mains such as the lightweight mid-sized 7-cell canopies and for reserves that pack up smaller than a 26' lopo.

There was evidence in Richmond that canopy manufacturers are still working to make smaller and lighter canopies. Several competitors were jumping prototype Pioneer Merlins, a 200 sq. ft. 7-cell that seemed to pack up smaller than either the Para-Flite Cruisair or the GQ Security Unit, two canopies it will compete with when finally offered for sale. The Merlin seemed to open, fly and land as well as other canopies in this size class, although a real evaluation can't be made until the design is frozen.

Other canopy manufacturers are actively developing better products, too. Para-Flite is looking into the practicality of reducing the weight and bulk of their Cruisair by experimenting with different construction techniques. The company also had a 5-cell version of the Cruisair at Richmond, indicating the company feels the 5-cell ram-air still has a future.

North American Aerodynamics is reportedly finalizing the design of a 200 sq. ft. Para-Foil, but Skydiving didn't see any in Richmond.

In spite of all the attention given to the new lightweight main canopies, many competitors still flew Para-Flite Strato-Stars, Strato-Flyers, and Strato-

Clouds, Pioneer Vikings, NAA Para-Foils, Advanced Air Sports Paradactyls, and even a Piglett or two from Para-Innovators.

Jumpsuits were a popular topic of discussion in Richmond, as several teams had experimented with different styles and sizes during their training jumps. The consensus was that jumpsuits with big wings and extra-full bells are actually detrimental to fast and precise sequential RW. As a result most suits were conservative by today's standard. Visions, who tied for third in 8-way, were happy with their extremely small PI Jerry Bird jumpsuits, one that has not been in production for several years.

The SSE Paralert, an audible altimeter, was quite popular among the competitors. ●



The nationals experienced only one incident that could be called a "close call," and it occurred when a wind dummy steered his PC onto the roof of a T hangar. Only the building suffered any damage.

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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.

Cross Porting Ram-Airs

The question has come up asking whether it's a good idea to cross-port Para-Flite Strato-Clouds and, if so, how is it to be done.

Cross-porting simply means cutting holes the ribs between the cells of ram-air to help the end cells inflate during opening and stay inflated during flight as air can pass from an inflated (pressurized) cell to a collapsed one.

Designers and manufacturers have experimented with cross-porting for many years. Some canopies, such as the Jalbert Para-Foil, are cross-ported by the factory, while others, such as the GQ Security Unit, are delivered with intact ribs, but with markings indicating where holes may be cut, if desired. Para-Flite and Pioneer, two other ram-air manufacturers, make canopies with intact ribs and no marks.

Jumpers who own Units and early models of the Para-Flite Cruisair report that cross-porting these mid-size 7-cell canopies definitely makes them open better and stay inflated. Para-Flite, however, found that modifying the stabilizers of the Cruisair greatly reduced the frequency and severity of end cell closures and that cross-porting isn't needed.

The problem with cross-porting is that it weakens the canopy significantly, making it more likely to become damaged during opening. If you live at high altitudes (where canopies open harder), or if you're a heavyweight, cross-porting is a bad idea.

Skydiving talked with a representative from Para-Flite about cross-porting canopies. He supplied these considerations:

1) Cross-porting Para-Flite canopies is not recommended by the manufacturer, since it weakens the canopies. But some jumpers, especially those who do CRW, will insist on doing it as it does help a canopy stay inflated. So, if you insist:

2) In order for cross-porting to be really effective, the load-bearing ribs (those to which the suspension lines attach) as well as the non-support ribs must be cut. Cutting should be limited to the three ribs closest to the wing tip of the canopy. Obviously, do not put a hole in the very outside rib, but only in those between cells.

3) The holes should be 6" - 8" in diameter and located exactly midway between the B line and the B cascade (see Figure 1). Use a hot knife to cut the holes, following a template made of cardboard. Sewing tape around the raw edges won't strengthen the ribs; just leave them exposed. When cutting, be careful to cut only the rib and not accidentally slice through any other material. Also, don't nick a seam or reinforcing tape.

Although Para-Flite feels that cross-ports, if they must be cut, should be located in the aft part of the rib, towards the trailing edge, many canopies are nonetheless cut in the forward part of the rib, usually between the A line and the A cascade. Since much of the stress of opening shock is taken by the forward part of the canopy, Para-Flite has found that aft cross-porting weakens the canopy less. Vents in the rear of the ribs seem to be just as effective as those in the forward areas.

Some jumpers have cut two holes in each rib, one fore and one aft. It is probably a good idea to be more cautious, starting with one hole in each of two or four ribs and then increasing

the number if subsequent jumps indicate more are needed.

So is it a good idea to crossport a Strato-Cloud? Sort of ...

Wonderhogs and Safety-Flyers

Although the Relative Workshop manufactures a model of their Wonderhog especially for the Para-Flite Safety-Flyer reserve, they have developed a procedure for modifying older Wonderhogs for this ram-air reserve.

Apparently some jumpers — and some riggers — have modified Wonderhogs on their own, without guidance from the factory. According to Bill Booth, the company's president, some of such modified rigs may not function correctly. In addition, such rigs are no longer TSOed.

If you jump a Safety-Flyer in a Wonderhog that was modified by someone other than the manufacturer, contact the Relative Workshop immediately at 1050 Flightline Blvd., DeLand, Fla. 32720, (904) 736-7589.

The instructions for such alteration of a Wonderhog will soon be available to lofts.

"Zoo" Toggles

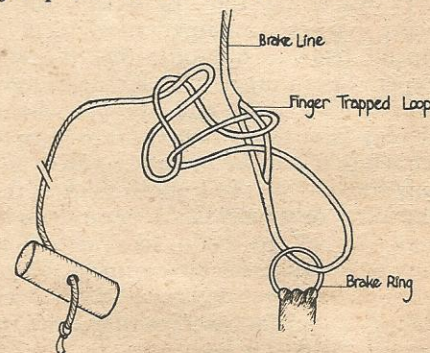
I've seen several cases of the "Zoo"-type toggles cutting lines. (Zoo toggles use a pin of some sort to lock the steering lines at about 3/4 brakes during deployment.) Apparently the pin wears through the line gradually, after many jumps, and the steering line

eventually breaks, usually during opening. Check your steering lines frequently for wear, as a broken steering line sometimes requires a breakaway.

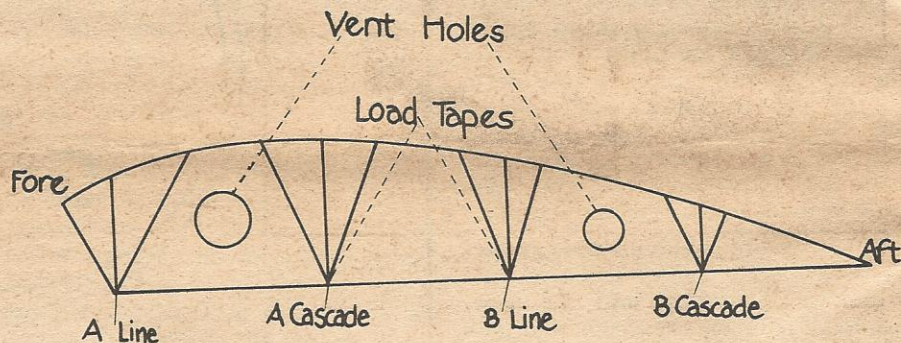
I prefer to daisy chain my steering lines to lock the brakes, using a finer-trapped loop installed in the brake line. (Most canopies come with the loop already installed.) See Figure 2 if you're interested in trying my method. It takes a little longer to set the brakes this way, but for me it's more reliable. Make sure you daisy chain correctly, as it's possible to do backwards and find out after opening that it won't release.

Also, I rub a little beeswax on the lower part of my steering lines from time to time to help reduce wear.

One advantage of daisy chaining, by the way, is that the canopy doesn't surge forward when you release the brakes, as it does with other methods. Keeping surging down helps reduce the possibility of colliding with another jumper on an RW load.



The author's way of daisy chaining steering lines using the brake lock loop. Knots should be snugged up as they are tied.



Side view of a typical load-bearing rib, showing the two areas where cross-port vents may be cut. See text. (Illustrations by Sandy Williams)

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(See Romans 3:23)

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(See Romans 3:10)

However, there is a way out from sin, guilt, fear,
inferiority, hell.

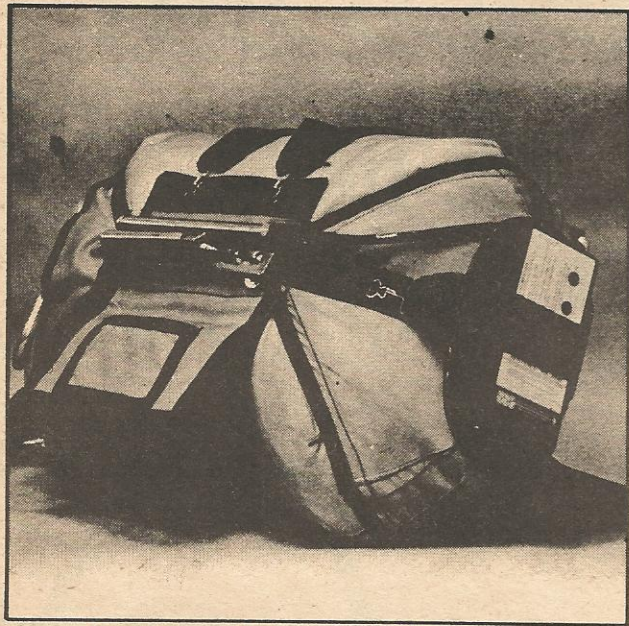
His name is JESUS. (John 14:6)

Get to know Him. (Rev. 3:20)

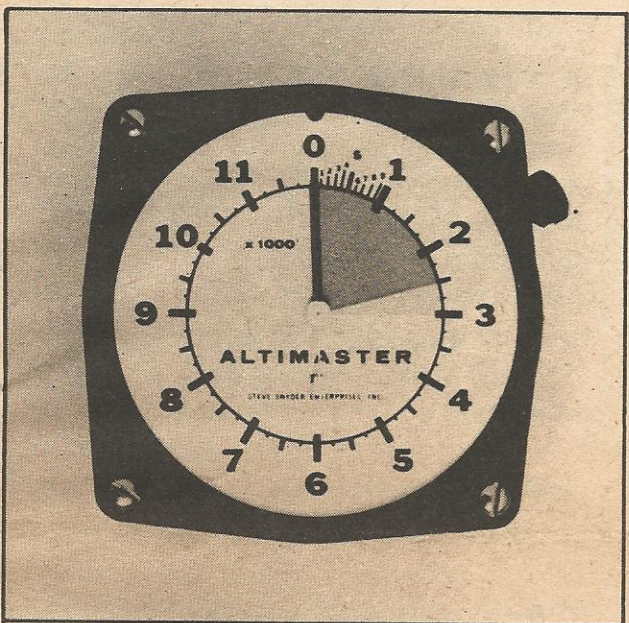
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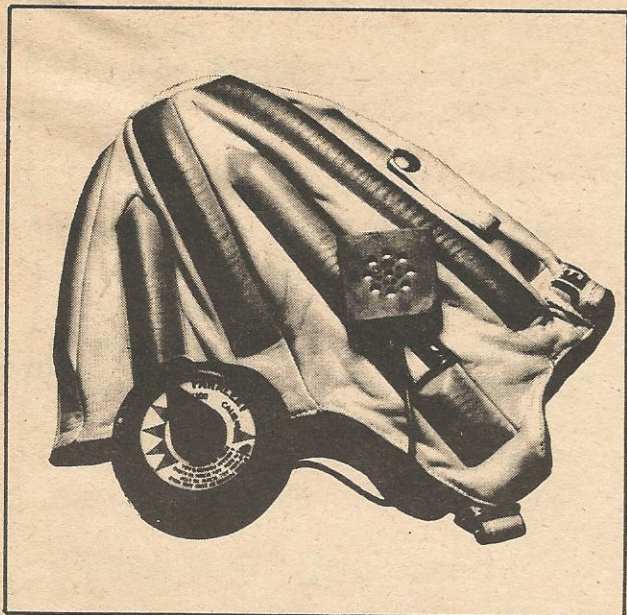
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Skydiving, July 18, 1979/5

California may drop skydiving laws

California may stop regulating drop zones and parachutists, if a bill before the state senate passes the legislature and is signed by the governor.

SB 514 would delete the provisions of the law that permits the state Department of Transportation to regulate the sport. California has, since the early 1960s, required that every DZ be licensed on a yearly basis, with the operator applying for a permit and proving that the drop zones meet certain standards. The state, then, has the authority to prevent parachuting even into privately owned property, regardless of whether the owner approved or if all federal regulations are complied with.

Besides regulating drop zones, the existing California Parachuting Regulations require that jumpers who wish to perform demonstration jumps apply for an identification card which is, in effect a license. The requirements for the card parallel USPA's requirements for its Class D license except that a medical examination is required. Prior permission from the state must be granted for each demo jump.

The proposed bill would eliminate these laws, and take California out of the business of regulating parachutists and parachuting. Very few states have parachuting laws, with the notable exception of several states in the Northeast.

In the past, the USPA had worked with the California Aeronautics Commission to keep the regulations as tolerable as possible. Several years ago, in 1975, the state began to revise them, but the action died. It's been rumored for some time that California might drop the law, but action didn't surface in the legislature until recently.

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1979 U.S. Nationals — Results

8-Way Relative Work

| Team & Origin | Rd. 1 | Rd. 2 | Rd. 3 | Rd. 4 | Rd. 5 | Rd. 6 | Point Total | Ave. |
|--|-------|-------|-------|-------|-------|-------|-------------|------|
| Mirror Image Pope Valley, Calif. Craig Fronk, Mike Gennis, B.J. Worth, Garry Carter, Marty Martin, Mike Eakins, Hod Sanders, Jim Captain, Steve Mayes*, Jerry Bird* | 8 | 5 | 10 | 4 | 6 | 5 | 38 | 6.3 |
| Slots Eight DeLand, Fla. Mike Truffer, Dave Jancsar, Mike Barber, Hoot Gibson, Bob Gray, Andy Reyling, Carl Daughtery, J.G. Hilden, Ed Mosher*, Roger Nelson* | 5 | 4 | 9 | 3 | 8 | 6 | 35 | 5.8 |
| Golden Knights Ft. Bragg, N.C. Patrick Van Bibber, Craig Van Camp, Glenn Bangs, Fred Gerber, Mike Sweeney, Fred Wenger, Reed Robbins, Matt McManus, Mark Sheilds*, Roger Jutras* | 7 | 4 | 8 | 4 | 7 | 4 | 34(t) | 5.6 |
| Visions Perris Valley, Calif. Tom Start, Kent Lane, Rich Jones, Steve Parker, Scott Meek, Mike Parnell, Jim Edwards, Al Krueger, Willie Morgan*, Ken Crabtree* | 7 | 5 | 7 | 3 | 7 | 5 | 34(t) | 5.6 |
| Unity Pope Valley, Calif. Ernie Butler, Bungee Wallace, Dave Wallace, Jeff Barbani, Tom Pitas, Ron Ardizzone, Bob Bonitz, Al Hawthorne, Dan O'Brien* | 5 | 4 | 7 | 4 | 6 | 4 | 30 | 5.0 |
| Kaleidoscope Spaceland, Tex. Ron Cox, Phill Mayfield, Gregg Hackett, Robert Armstrong, Dane Nielson, Phil Smith, Wayne Mosley, DeWayne Bruette, Ken Gillespie* | 3 | 4 | 6 | 3 | 6 | 5 | 27 | 4.5 |
| Focus DeLand, Fla. Scott Parker, Ron Johnson, Martha Scott, Mark Kilmer, Mike Cerasoli, Charlie Kenlin, Kathi Embrey, Sheila Whitten, Candi Prosser* | 7 | 4 | 5 | 3 | 2 | 4 | 25 | 4.1 |
| F.A.T. Michigan Bill McKernan, Neil Callen, Bill Royer, Dave Crummel, Howard Linsensbigler, Chris Coteff, Bill Jancosko, Ward Pererson, Phil Younker* | 4 | 2 | 4 | 0 | 4 | 4 | 18 | 3.0 |
| Roller Ball Rules Pelicanland, Md. Mark Radcliff, Phil Caputo, Bob Waltzer, Butch Campbell, Chuck Prodey, Pat Davis, Joe Lagioia, Paul Reed | 3 | 2 | 2 | 1 | 3 | 3 | 14(t) | 2.3 |
| Freefall Expression Marshall, Mich. Rick Highsmith, Cliff Alfiche, Van Wideman, Charlie Greenfield, Sam Brown, Royce Wolfe, Al Kidd, Frank Boutorwick, Rocky Evans*, Connie Bushey* | 4 | 2 | 3 | 1 | 2 | 2 | 14(t) | 2.3 |
| Casual Corner Ohio, Md., Conn., Calif. Mike Arbour, Jim Carroll, Jay Augenstein, Al Mattison, Jerry Mattison, Mike Milhorn, Roger Nelson, Roger Ponce de Leon, Jim Handbury* | 4 | 3 | 2 | 0 | 2 | 0 | 11(t) | 1.8 |
| Blue Bottle Rockets Michigan Mike Johnston, Vickie Christensen, Ray Hancock, Chris Carson, Perry Engstrom, Jan Grider, Mike Kostka, Tom Shannon, Valerie Thal* | 2 | 2 | 3 | 0 | 2 | 2 | 11(t) | 1.8 |
| Greene County Half & Half Greene County, Ky. and Ohio Bill Rhodes, Bob Boswell, Par Stallard, Rusty Vest, Bill Brandon, Bobby Steele, Jim Fangmeyer, Joe Wichman | 0 | 2 | 3 | 0 | 3 | 2 | 10 | 1.6 |
| 2nd Impression Elsinore, Calif. Al Frisby, Dale Axelson, Vicky Wery, Bob Smith, Dennis Ray, Bob Butt, Mike Raible, M.J. Townsend | 1 | 1 | 3 | 0 | 3 | 0 | 8(t) | 1.3 |
| Funnell Vision N.Y. Joe D'Affusio, Bill Richards, Al Jacobs, Niggy Zemantauski, Kay Griep, Ken Griep, Ray Finneran, Jerry Leener, Wayne Schoonmaker, Al Jorgensen | 1 | 0 | 2 | 0 | 3 | 2 | 8(t) | 1.3 |
| Chute, Toot & Jazz It Up Ozmo Paracenter, Idaho Tim Florea, Jeff Wragg, John Culler, Brad Dunkin, Ron Urton, Dave Singer, Helen Sickler, Jeff Massey | 1 | 3 | 0 | 1 | 3 | 0 | 8(t) | 1.3 |

*alternates

1979 U.S. Nationals — Results 4-Way Relative Work

| | | | | | | | | |
|--|---|---|----|---|----|---|----|-----|
| Tesseract Ozmo Paracenter, Idaho Emmett Florea, Jeff Wragg, Brad Dunkin, John Culler, Ron Urton* | 6 | 9 | 10 | 7 | 9 | 7 | 49 | 8.1 |
| Team #8 Marshall, Mich. Sam Brown, Van Wideman, Royce Wolfe, Rick Highsmith, Rocky Evans* | 7 | 9 | 8 | 8 | 10 | 6 | 48 | 8.0 |
| 4th Dimension Elsinore, Calif. Jerry Swovelin, John Downing, Brian Johnson, Paul Stromberg, Yuki Fujiwara* | 7 | 7 | 8 | 7 | 10 | 6 | 45 | 7.5 |
| Mirror Image Pope Valley, Calif. Garry Carter, Michael Eakins, Craig Fronk, Michael Gennis, Marty Martin | 8 | 9 | 6 | 6 | 8 | 7 | 44 | 7.3 |
| Kinetic Sunshine DeLand, Fla. Douglas Smith, James Thrift, Willie Kivipelto, John Robbins, Kenneth Coleman* | 8 | 3 | 8 | 7 | 9 | 7 | 42 | 7.0 |
| Unique Pope Valley, Calif. Ernie Butler, Jeff Barfani, Tom Piras, Ron Ardizzone, Dan O'Brien* | 8 | 5 | 6 | 7 | 8 | 6 | 40 | 6.6 |
| Sun Bums Zephyrhills, Fla. Mitch Decoteau, Dan Landis, Paul Juel, Steve Anderson | 5 | 9 | 8 | 6 | 8 | 4 | 40 | 6.6 |
| Focus Four DeLand, Fla. Mike Cerasoli, Sheila Whitten, Ron Johnson, DeWayne Bruette, Kathi Embrey* | 7 | 7 | 7 | 6 | 8 | 5 | 40 | 6.6 |
| Foresight Elsinore, Calif. Kent Lane, Tom Start, Rick Jones, Willie Morgan | 3 | 8 | 6 | 7 | 9 | 7 | 40 | 6.6 |
| Cosmic Debris Pope Valley, Calif. Robert Bonitz, Bungee Wallace, Dave Wallace, Al Hawthorne | 7 | 8 | 5 | 6 | 6 | 6 | 38 | 6.3 |
| Wizards North Carolina Ed Christy, Michael Griggs, Gary Holbrook, David Mangis | 6 | 6 | 6 | 5 | 9 | 5 | 37 | 6.1 |
| Experiment in Terror Elsinore, Calif. Otis Vanderkolk, Bob Bender, Frank Radford, Tom Gade, Mike Sheerin* | 6 | 6 | 6 | 6 | 7 | 4 | 35 | 5.8 |
| Scintillians Elsinore, Calif. Scott Meek, Mike Parnell, Steve Parker, Al Krueger, Jim Edwards* | 5 | 6 | 4 | 7 | 6 | 5 | 33 | 5.5 |
| Ho Chin Minh's Sandals Minnesota Miles Hubbard, Patrick Quaschnick, Dave Fitterer, Kevin Schilling, David Karter* | 7 | 4 | 5 | 4 | 7 | 5 | 32 | 5.3 |
| Parahawks Michigan Charles Greenfield, Al Kidd, Cliff Alfiche, Frank Boutorwick | 6 | 5 | 4 | 5 | 7 | 4 | 31 | 5.1 |
| Sloppy F.A.T. Ohio Bill McKernon, Bill Jancosko, Howard Linsenbigler, David Crummel | 5 | 5 | 4 | 4 | 8 | 5 | 31 | 5.1 |
| F.A.T. Ohio Eugene Callen, Phil Younker, Chris Coteff, Ward Peterson, Bill Royer* | 5 | 4 | 3 | 6 | 6 | 5 | 29 | 4.8 |
| Going South CPI, Conn. Bill Beaudreau, Roger Ponce de Leon, Allen Gencarelle, Jim Mowrey | 6 | 4 | 2 | 4 | 6 | 5 | 27 | 4.5 |
| Captain's Lady Birds Pope Valley, Calif. Cheryl Creson, Valerie Thal, Karalee Canham, Jim Captain | 5 | 6 | 5 | 2 | 4 | 4 | 26 | 4.3 |
| Lost Washington David Singer, Hugh Dickson, Jeff Massey, Vicky Wery | 6 | 4 | 3 | 5 | 4 | 4 | 26 | 4.3 |
| Brain Damage Illinois Tom Shannon, Mike Kostka, Jim McCann, Chris Carson | 6 | 5 | 3 | 4 | 5 | 3 | 26 | 4.3 |
| High Speed Dirt Pelicanland, Md. Mark Radcliff, Phil Caputo, Bob Waltzer, Butch Campbell | 5 | 5 | 2 | 3 | 4 | 5 | 24 | 4.0 |

(continued on page 20)

Manufacturers, dealers show off at USPA Boogie

by Robin Heid

Booths are set up each year at the USPA Boogie so representatives of the parachute equipment industry can show off their products, answer questions about its use, and get feedback on their products from a variety of jumpers from across the U.S.

Harnesses, containers

There was some newly designed gear displayed. Troy Loney of Centaurus Corporation in Denver showed off his harness/container system for the first time on a national level. Although the rig has been produced for a number of years, it has been sold primarily to local jumpers in the Rocky Mountains.

Steve Stewart's and Cliff Schmucker's Sweethog is another "local" rig that is now being marketed nationally. The Sweethog offers two different deployment options and is compatible with the Para-Flite Safety-Flyer. The latest model has a new over-the-shoulder taper to the reserve container.

The Relative Workshop was displaying their new Sprint model of the Wonderhog II, designed for the smallest main and reserve canopies. It features a small hand deploy pilot chute pouch built into the leg-strap padding on the front of the strap. This location eliminates the need for a belly band and shortens the distance between the stowed pilot chute and main container, thus reducing the probability of routing the bridle incorrectly. President Bill Booth said the Wonderhog can be ordered with the pilot chute mounted in a variety of locations. He also said he is testing a reserve container for the Wonderhog that will stay tight and flat when packed, no matter what kind of reserve is packed into it.

The Altitude Shop also had a new rig at the boogie, a refinement of the Top Secret/Classflyer line.

The Jump Shack had a popular booth, displaying the company's new student SST and a ripcord pull force tester that many passers-by tried. The test device seemed to accurately simulate a rig with a ripcord mounted in a variety of locations. A recording strain gauge measured the highest force at the end of the cable that a subject could exert, either with a steady pull or a sudden jerk. President John Sherman tested hundreds of jumpers at the boogie and tallied these averages: women averaged 26-27 pounds with either the right or left hand and 70 pounds with both. Men scored a 50 pound average with the left hand, 40 with the right, and 108 with both.

The student SST, now in use at several centers, is quickly adaptable for either static line or ripcord deployment. Its most interesting feature is its "universal emergency handle" which both releases the main risers and extracts the reserve ripcord pins in quick succession in one pull. A student can essentially be trained to simply pull the handle in response to any type of malfunction, partial or total. The system is also compatible with an automatic opener for additional safety.

The main container is large enough to accommodate a T-10.

(continued on page 20)

Skydiving, July 18, 1979/19

Equipment show off

(continued from page 19)

Pioneer Parachute Company had a booth manned by Jim Mowrey who extolled the virtues of their new mid-size 7-cell main canopy, the Merlin. Although several prototypes were being jumped at Richmond, the design is not yet finalized, but Mowrey said the production canopy will weigh in at about eight pounds. He expects the canopy will be available by the summer's end.

Jack Brake manned the Para-Flite booth and said jumpers had questions on every subject imaginable, but the most frequent dealt with the stabilizer modification to the Cruisair, a simple procedure that keeps the end cells inflated. He advised readers to simply send a post card to the company and modification procedures will be returned promptly.

Jumpsuits

The Shoobi is another piece of gear that has been around for a number of years, but has been popular only near where it is built. Manufactured in Wisconsin by Rick White and Dave Trebilco of Body Suits, Inc., the suit utilizes wide, foam padded arm and leg bells and knee-to-elbow swoop cords for flight control, eliminating the need for extra large, membranous wings like most suits have. Jumpers who tested it said it was very smooth and controllable in both high-drag and diving flight. They also said it would take a few jumps to get used to its unique features.

Shoobi Suits weren't the only uniquely designed jumpsuit being displayed at Richmond, as Midwest Parachute Company showed offered test jumps on the various models of their Windjammer ram-inflated suits. President Tom Campeau said everyone who tested the suit bought one. The company also reported good sales of its versatile gear bags.

Another new jumpsuit was displayed by Larry Krueger of Sky Suits, Inc. Krueger has been designing and selling Balloonsuits for the past couple years, and now has rounded out his line by offering the Comp II, a relatively conventional suit for jumpers who do not want or need the float offered by the ram-inflated Balloonsuit. The Comp II has no vents and features high-drag bells and conservative wings.

Reserves, etc.

GQ Security is on the verge of marketing its new five-pound reserve, according to President Al Levinson. The Security Aero Conical — or SAC — is based on a design the company found suitable for military ejection-seat canopies. The SAC joins the Advanced Air Sports II, Para-Innovators Piglett and Strong Enterprises soon-to-be sold Lightweight LoPo in the ultra-compact, ultra-light round reserve niche.

George T. Harris was there, too, draping samples of parachute fabric he sells around his company's booth. Harris buys unfinished fabric from mills, has it dyed and calendared to his specifications and then sells it to parachute manufacturers. It is said that Harris is the source practically all the canopy manufacturers use today.

Phildo's Phlite Service sold many sets of trim tabs and Zoo toggles to CRW enthusiasts and made many repairs to jumpers' equipment.

Dean Westgaard's Parachute Enterprise reported brisk sales of T-shirts and other para-phernalia, and said he sold over 150 hackey sacks from his company's booth. ●

20/Skydiving, July 18, 1979

4-Way Results (cont.)

| | | | | | | | | |
|---|---|---|---|---|---|---|----|-----|
| Tesselation Houston, Tex. Gary Scarborough, Steven Tacconelly, Rob Fulks, Eric Pehrson | 5 | 5 | 4 | 3 | 4 | 3 | 24 | 4.0 |
| H.A.L.O. Fayetteville, N.C. Lamor Mallette, Bill Mathews, Bob Bean, Nel Lyles | 4 | 3 | 3 | 4 | 5 | 4 | 23 | 3.8 |
| Horizontal Descent Virginia Beach, Va. Bill Harmon, Bob Surrells, Ed Green, Joe Lacaze | 2 | 4 | 2 | 3 | 8 | 3 | 22 | 3.6 |
| Snow Bound Michigan Perry Engstrom, Jan Grider, Mike Johnston, Ray Hancock, Vicki Christensen* | 3 | 5 | 2 | 3 | 4 | 4 | 21 | 3.5 |
| Head First Santa Clara, Calif. Dave Andersen, Paul Landry, Larry Phillips, Bob Patrick | 6 | 5 | 2 | 2 | 1 | 4 | 20 | 3.3 |
| High Energy Southern Calif. Darrell Wilson, Allen Richter, Rick Zemke, Richard Brune | 2 | 4 | 4 | 4 | 6 | 0 | 20 | 3.3 |
| What Four? DeLand, Fla. Alex Perez, Pam Fowler, Candi Prosser, Dana Morrison, Charlie Kenlin* | 4 | 4 | 3 | 4 | 5 | 0 | 20 | 3.3 |
| Where Four New Jersey Joe D'Affusio, Bill Richards, Niggy Zemantauski, Al Jacobs | 6 | 2 | 0 | 3 | 5 | 3 | 19 | 3.1 |
| Final Impression Elsinore, Calif. Al Frisby, Dale Axelson, Dennis Ray, Mike Raible | 3 | 4 | 2 | 3 | 3 | 2 | 17 | 2.8 |
| Why Four New York Ray Finneran, Allen Jorgensen, K.W. Schoonmaker, Jerry Leener | 5 | 3 | 0 | 2 | 3 | 4 | 17 | 2.8 |
| Ducks ala Orange New Jersey Michael McNamara, Herb Eskelson, James Mack, James Pollard | 2 | 2 | 3 | 2 | 4 | 2 | 15 | 2.5 |
| Greene County Bardstown Bardstown, Ky. Patrick Stallard, Rusty Vest, Bill Rhodes, Bob Boswell | 4 | 0 | 2 | 3 | 5 | 1 | 15 | 2.5 |
| Chuting Stars Norfolk, Va. Frank Mulcahy, Fred Crawley, Davjd Bach, Rich Doheny | 2 | 0 | 2 | 3 | 5 | 3 | 15 | 2.5 |
| Click CPI, Conn. Rayelene Wilson, Rob Bonadies, Randy Thompson, Al King *Alternate | 2 | 0 | 3 | 3 | 5 | 0 | 13 | 2.1 |

10-Way Results

| | Rd. 1 | Rd. 2 | Rd. 3 | Rd. 4 | Rd. 5 | Rd. 6 | Total Time | Total Points | Ave. Time |
|--|-------|-------|-------|-------|-------|-------|------------|--------------|-----------|
| Visions Perris Valley, Calif. Tom Start, Kent Lane, Rick Jones, Steve Parker, Scott Meek, Mike Parnell, Jim Edwards, Willie Morgan, Mike Sheerin, Al Krueger, Ken Crabtree* | 15.2 | 17.5 | 12.4 | 14.1 | 13.8 | 11.0 | 84.0 | 60 | 14.00 |
| Mirror Image Pope Valley, Calif. Craig Fronk, Mike Gennis, B.J. Worth, Garry Carter, Steve Mayes, Marty Martin, Mike Eakins, Hod Sanders, Mike Sandberg, Jim Captain*, Rande Deluca | 18.5 | 12.4 | 13.8 | 12.9 | 14.5 | 12.1 | 84.2 | 60 | 14.03 |
| No Cause for Panic Ohio, Michigan, etc. Jim Handbury, Mike Arbour, James Carroll, Allen Gencarelle, Jay Augenstein, Roger Ponce de Leon, Ed Mosher, Mike Millhorn, Bill Sweeney, Roger Nelson, J.G. Hilden*, Otis Vanderkolk* | 16.8 | 15.2 | 12.5 | 15.5 | 13.8 | 11.7 | 85.5 | 60 | 14.25 |
| Unity Pope Valley, Calif. Robert Bonitz, Dan O'Brien, David Wallace, Bungee Wallace, Ernie Butler, Rom Piras, Jeff Barbani, Al Hawthorne, Ron Ardizzone, Mike Johnston, Vicki Christensen* | 18.6 | 16.5 | 14.2 | 18.5 | 15.0 | 13.5 | 96.3 | 60 | 16.05 |
| Kaleidoscope Spaceland, Tex. Ron Cox, Phil Mayfield, Ken Gillespie, Gregg Hackett, Phil Smith, Wayne Mosley, Robert Armstrong, DeWayne Bruette, Dane Nielson, Helen Sickler | 16.6 | 22.0 | 16.2 | 21.5 | 18.2 | 15.5 | 110.0 | 60 | 18.3 |

(continued on page 21)

10-Way Results (cont.)

| | | | | | | | | | |
|---|------|------|------|------|------|------|-------|----|-------|
| Focus DeLand, Fla. Scott Parker, Martha Scott, Mark Kilmer, Charlie Kenlin, Sheila Whitten, Kathi Embrey, Ron Johnson, Mike Cerasoli, Candi Prosser, Pam Fowler, Alex Perez* | 22.6 | 18.7 | 20.3 | 19.5 | 20.5 | 24.8 | 126.4 | 60 | 21.06 |
| F.A.T. Ohio Bill McKernan, Neil Callen, Bill Royer, Dave Crummel, Howard Linsenbigler, Chris Coteff, Bill Jancosko, Ward Peterson, Phil Younker, Jerry Mattison | 22.4 | 17.1 | 24.1 | 19.4 | 26.8 | 17.0 | 126.8 | 60 | 21.13 |
| Golden Knights Ft. Bragg, N.C. Patrick Van Bibber, Craig Van Camp, Mark Sheilds, Roger Jutras, Glenn Bangs, Fred Gerber, Mike Sweeney, Fred Wenger, Reed Robbins, Jerry Fry, Matt McManus | 17.3 | 19.8 | 23.5 | 24.7 | 28.1 | 17.7 | 131.1 | 60 | 21.85 |
| Spaced Rangers Stormville, N.Y. Joe D'Affusio, Ray Finneran, Kay Hoiby-Griep, Ken Griep, Al Jacobs, Al Jorgensen, Jerry Leener, Bill Richards, Wayne Schoonmaker, Niggy Zemantauski, Rich Hiatt* | 24.2 | 30.0 | 21.3 | 20.8 | 23.5 | 26.7 | 146.5 | 59 | — |
| Grits North Carolina Bob Bean, Ed Christy, Bill Harmon, Gary Holbrook, Mel Lyles, Mike Griggs, Lamar Mallette, Dave Mangis, Bill Mathews, Bob Surrells | 30.0 | 30.0 | 30.0 | 24.1 | 22.5 | 25.8 | 162.4 | 57 | — |
| Freefall Outlaws Michigan Sam Brown, Rick Highsmith, Rocky Evans, Van Wideman, Royce Wolfe, Connie Bushey, Frank Boutorwick, Al Kidd, Cliff Alfiche, Charles Greenfield | 21.0 | 19.1 | 25.5 | 20.2 | 19.9 | 30.0 | 135.7 | 55 | — |
| Greene County Bardstown, Ky. Bill Rhodes, Pat Stallard, Rusty Vest, Bob Boswell, Jill Brandon, Jim Fangmeyer, Joe Wichman, John Cheadle, Tom Shannon, Mike Kostra | 30.0 | 24.7 | 24.4 | 30.0 | 26.0 | 25.6 | 160.7 | 53 | — |
| Roller Ball Rules Pelicanland, Md. Joe Lagioia, Bob Waltzer, Paul Reed, Chuck Prody, Pat Davis, Phil Caputo, Butch Campbell, Bill Ottley, John Downing | 30.0 | 22.1 | 30.0 | 30.0 | 30.0 | 30.0 | 172.1 | 22 | — |

*Alternate

NTSB rules on San Diego mid-air

The National Transportation Safety Board said the "probable cause" of last year's midair between a Boeing 727 and a Cessna 172 over San Diego was "the failure of the (727) flight crew to comply with the provisions of a visual separation clearance, including the requirement to inform the controller when they no longer had the other aircraft in sight." Contributing to the accident, said the NTSB, were ATC procedure that authorized controllers to use visual separation procedures when the capability was available to provide radar separation. The board did not assign any blame to the Cessna.

FAA issues AD on Cessnas

The FAA has issued an Airworthiness Directive that requires relatively minor modifications to several models of Cessnas that are widely used as jump aircraft.

The AD became effective on May 29, 1979, and requires the installation of vented fuel caps or modifications of existing fuel caps in practically every model of Cessna's single-engine line of aircraft including the 172, 180, 182, 185 and 206.

The FAA said the AD is necessary because there have been several accidents resulting from loss of engine power when the fuel tank vent system became obstructed or malfunctioned.

This AD supersedes one dated September 26, 1978.

1979 U.S. Nationals — Results Style & Accuracy

| Women | | | | | | | Men | | | | | | |
|-------------------|----------|-----------|----------|-------|----------|-------|-------------------|----------|-----------|----------|-------|----------|------|
| Total Dist. | Standing | Ave. Time | Standing | Score | Standing | | Total Dist. | Standing | Ave. Time | Standing | Score | Standing | |
| Cheryl Stearns | 0.02 | 1 | 6.84 | 1 | 2 | 1 | | | | | | | |
| Raylene Wilson | 6.20 | 2 | 12.84 | 2 | 4 | 2 | | | | | | | |
| Diane Senkow | 6.44 | 3 | — | — | — | — | | | | | | | |
| Master | | | | | | | Senior | | | | | | |
| Dwight Reynolds | 0.02* | 1 | 7.42 | 3 | 4 | 1 | Cliff Jones | 0.08* | 3 | 8.45 | 2 | 5 | 1 |
| Danny Durden | 0.02* | 2 | 7.76 | 4 | 6 | 2(t) | Pat Quaschnick | 0.08* | 2 | 10.55 | 6 | 8 | 2 |
| Phil Munden | 0.04 | 4 | 7.31 | 2 | 6 | 2(t) | Rick Kuhns | 0.08* | 1 | 10.89 | 7 | 8 | 3(t) |
| Bob VonDerau | 0.03 | 3 | 7.82 | 5 | 7 | 4 | Chuck Schmutz | 1.44 | 7(t) | 8.22 | 1 | 8 | 3(t) |
| Maurice Fernandez | 0.10 | 7(t) | 7.19 | 1 | 8 | 5 | Dick Paoliello | 0.85 | 5(t) | 9.61 | 5 | 10 | 5 |
| Randy Matthews | 0.07 | 5 | 9.35 | 11 | 16 | 6 | Mike Horan | 1.44 | 7(t) | 9.11 | 4 | 11 | 6 |
| Mark Jones | 0.10 | 7(t) | 9.32 | 10 | 17 | 7(t) | Jerry Marklin | 10.20 | 11 | 8.87 | 3 | 14 | 7 |
| Tony Fugit | 0.14 | 10(t) | 8.35 | 7 | 17 | 7(t) | Bill Ottley | 0.85 | 5(t) | 12.29 | 10 | 15 | 8 |
| Bill Hayes | 0.08 | 6 | 10.69 | 15 | 21 | 9 | Steve Harvey | 0.15 | 4 | 14.35 | 12 | 16 | 9 |
| Vic DeVeau | 0.14 | 10(t) | 9.39 | 12 | 22 | 10 | Ted Strong | 2.31 | 9 | 11.23 | 8 | 17 | 10 |
| Tom Schapanski | 1.11 | 15 | 8.56 | 8 | 23 | 11 | John Higgins | 4.48 | 10 | 11.83 | 9 | 19 | 11 |
| Gary Finlen | 0.10 | 7(t) | 11.39 | 17 | 24 | 12 | Harry Belton | 11.87 | 12 | 13.75 | 11 | 23 | 12 |
| Bernie Dierker | 1.26 | 16 | 8.74 | 9 | 25 | 13(t) | Mike Schultz | 0.13 | — | — | — | — | — |
| Al King | 3.31 | 19 | 8.25 | 6 | 25 | 13(t) | King Forsyth | 0.23 | — | — | — | — | — |
| Denny Hayes | 0.38 | 14 | 10.30 | 14 | 18 | 15 | William Beaudreau | 0.27 | — | — | — | — | — |
| Bill Price | 0.32 | 13 | 11.85 | 18 | 31 | 16(t) | Jim Semmler | 0.41 | — | — | — | — | — |
| Hutch Kinsman | 1.53 | 18 | 10.14 | 13 | 31 | 16(t) | Dave Waight | 0.75 | — | — | — | — | — |
| Larry Caniglia | 0.19 | 12 | 12.17 | 19 | 31 | 16(t) | Mike Higgins | 0.76 | — | — | — | — | — |
| Mike Mangold | 1.27 | 17 | 10.95 | 16 | 33 | 19 | W. Deguenther | 2.16 | — | — | — | — | — |
| Ron Blackwell | 0.20 | — | — | — | — | — | B. Day | 6.19 | — | — | — | — | — |
| Tom Kowalick | 0.26 | — | — | — | — | — | T. Fuqua | 10.90 | — | — | — | — | — |
| Bob Chaffin | 2.24 | — | — | — | — | — | J. Thompson | 11.78 | — | — | — | — | — |

*Jump-off to determine final standings.

EDITORIAL...

Are Riggers Really Mushrooms?

The same technology that has permitted a tremendous improvement in skydiving gear in the past few years has made it nearly impossible for a rigger to practice his trade with confidence. Modern gear such as ram-air and ultralight round reserves and the containers that hold them are becoming increasingly complex, almost on a weekly basis.

And if anything should not work properly out on the field, the manufacturer, the wearer and the FAA simultaneously give the rigger a suspicious glare. Riggers, after all, have the responsibility for insuring that a rig is airworthy.

It's really not the riggers' fault if many are unable to keep up with today's gear in spite of their best efforts. Even very subtle changes to a bit of modern gear is apt to cause problems. Who would have thought, for instance, that *lengthening* the locking loops on a reserve would cause it to total? A rigger, in an effort to make a particular reserve easier to close, did just that, and it apparently contributed to a tragedy. Most riggers would have done the same thing without a second thought.

Manufacturers, acting by themselves and as a group through the Parachute Equipment Manufacturers Association, are finally beginning to take a greater role in insuring their products are used correctly, by both the owner and the rigger once they leave the factory.

Manufacturers, as a group, are working to standardize owner's manuals and are applying pressure on those few manufacturers who can't seem to provide adequate documents for their gear.

Some manufacturers are conscientious about publicizing modifications that should be done to their products already in the field. As with General Motors in Detroit and Cessna in Wichita, parachute manufacturers will never be immune to shipping defective or inadequate gear, but it is best for everyone involved to vigorously attempt to correct such problems in spite of the embarrassment or dollars it may cost.

Other manufacturers have even designed and given courses on how to properly pack and maintain their gear. Para-Flite, Inc., give such courses for its Safety-Flyer-ram-air reserve, and such efforts at educating riggers can only be applauded.

But riggers don't have to sit back and let the manufacturers take all the initiative. They should provide the manufacturers with accurate feedback on the field use of their products. Riggers should demand adequate manuals and wider circulation of "dealer bulletins," as defect or modification bulletins are usually called.

Finally, riggers should communicate more among themselves. Such an exchange of information will only help other riggers avoid the other riggers' mistakes and the sport as a whole will benefit.

All this enhanced communication between the three groups involved — the manufacturers, the riggers and the owners — can only be a good thing.

Some riggers say they're treated like mushrooms: kept in the dark and fed horse manure. Perhaps this is so. Perhaps they should do something about it.

M-F-T

LETTERS.....

Congratulations on the June 27 issue of *Skydiving*!

The format is terrific, the information is current and exciting.

I was flattered that you chose to devote a major portion of page 2 to our new SAC Reserve. I must, however, point out to you that the SAC is in no way a Tri-con. SAC stands for Security Aeroconical. The aeroconical shape and geometry of this canopy is taken directly from the GQ aeroconical which is the newest form of aerodynamic decelerator used in ejection seat technology. Its tall profile, low weight, strong zero porosity material and configuration of the apex vent make it the stablest and most efficient parachute that we know of.

All of the information and editorial that you gave it is much appreciated, however, the reference to this parachute 22/*Skydiving*, July 18 1979

as a Tri-conical design is damning with faint praise.

I would hasten to point out also that no other manufacturer offers a reserve which resembles this one in any way nor will they be able to.

We're looking forward to receiving *Sky living* and wish you success.

Alan Levinson
President

GQ Security Parachutes, Inc.
San Leandro, Calif.

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.

Using classified ads to buy and sell used gear is both popular and effective. A seller can offer his gear to thousands of potential buyers for just a few dollars; he is literally able to reach jumpers around the world. And buyers are at an equal advantage, since classified ads list a variety of offers and frequently contain a real bargain or two.

Buying and selling used gear by mail has a certain degree of risk to it, but the risks are more than compensated by the advantages mentioned above. Here are some tips for both parties that should be useful:

If you have something to sell:

1. Adequately describe the item in your ad. For instance, say "Wonderhog II" instead of just "Wonderhog," or "Lightweight Strato Cloud" instead of just "Cloud."

2. Include a telephone number in your ad. Including a mailing address will help bring in more responses, too.

3. Include an asking price for the gear you're selling. Such information will weed out those buyers who don't want to spend that much money. Or, if your price is comparatively low, that good price will generate responses.

4. Be prepared to run the ad more than once, perhaps lowering the price after the first few times if the responses have been light.

5. Guarantee your buyer's satisfaction. Since he's buying your gear by mail and can't inspect it first, give him the option of returning it within a few days if it is not satisfactory.

On the other hand, don't send the gear without first being paid, or send it C.O.D.

6. Don't try to sell unsafe or non-TSOed gear.

If you have something you want to buy:

1. Consider placing a "want to buy" ad. It will generate offers that will give you a greater variety of choices and prices.

2. It's usually a good idea to call the seller before sending your money. You can find out if the item is still for sale, how payment is to be made, etc. Find out what you're to do if you don't get what you expect to get.

Before any used gear is placed into service, have a loft or rigger thoroughly inspect it. Look for wear, damage or homemade "improvements" that may make the gear unsafe.

26' Navy conicals are excellent reserves, but those manufactured in 1966 and 1967 are especially susceptible to sunlight damage. Such canopies (and other older surplus reserves) should be carefully checked for such damage.

Greene Star Express harnesses have failed during actual use and should be purchased with caution.

A piece of gear with the serial number crossed out or missing frequently means the gear was stolen, although the present seller may not have been the thief.

What about price?

Here is a list of prices currently being asked for used equipment sold through classified ads. The information may be helpful to both buyers and sellers.

| Reserve Canopies | Condition or No. of Jumps | Where | Price (\$) |
|----------------------|---------------------------|-------|------------|
| 26' Navy | unk. | WI | 150 |
| Piglet block | like new | FL | 250 |
| 26' Navy | unk. | FL | 135 |
| Strong Lopo | unk. | ID | 255 |
| 26' Security 4-line | like new | FL | 225 |
| 26' Security 4-line | like new | CO | 275 |
| 24' Ripstop | unk. | ID | 45 |
| Main Canopies | | | |
| Cheapo (28') | excel. | CO | 100 |
| Thunderbow | unk. | FL | 75 |
| Para-Sled | unk. | FL | 200 |
| Comp. PC | good | FL | 130 |
| PC | excel. | CO | 175 |
| Sierra | unk. | ID | 100 |
| PC | unk. | FL | 100 |
| Piglet 21 | excel. | VA | 225 |
| Viking | new | ID | 450 |
| Strato-Cloud | unk. | WV | 500 |
| Strato-Cloud | 200 | VA | 500 |
| Strato-Cloud | unk. | TX | 650 |
| 252 Para-Foil | 50 | FL | 600 |
| Unit | unk. | UT | 650 |
| Cruisair | 100 | FL | 600 |
| Strato-Flyer | 60 | MD | 300 |
| | good | MD | 400 |
| | very good | TX | 325 |
| | "mint" | TX | 350 |
| | 100 | IL | 350 |
| | good | OH | 175 |
| | new | MI | 450 |
| | 100 | MO | 375 |
| | 50 | NJ | 200 |
| | 30 | KS | 475 |
| | 15 | UT | 275 |
| | unk. | TX | 375 |
| | 100 | ID | 375 |
| | 75 | OK | 325 |
| | unk. | TX | 420 |
| | 17 | MS | 400 |
| | less 50 | PA | 425 |
| | 75 | OK | 415 |
| | new | CO | 400 |
| | 3 | Can. | 450 |
| | 150 | FL | 325 |
| Strato-Star | good | MD | 325 |
| | 100 | TX | 330 |
| | good/125 | IN | 295 |
| | good | NY | 395 |
| | 90 | FL | 375 |
| | brand new | FL | 475 |
| | good | FL | 375 |
| | 125 | FL | 300 |
| | 400 | FL | 300 |
| | 1000 | FL | 300 |
| | unk. | WV | 200 |
| | good | OK | 200 |
| Rigs | | | |
| Centaurus | new | CO | 275 |
| Won. Hog | unk. | TX | 225 |
| Won. Hog II | unk. | IL | 250 |
| System | 20 | CO | 225 |
| Spanish Fly | 30 | KS | 200 |
| Crossbow | unk. | FL | 50 |
| Won. Hog II | 75 | TX | 325 |
| Won. Hog II | good | WV | 275 |
| Classifier | unk. | ID | 340 |

Strato-Cloud™



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.

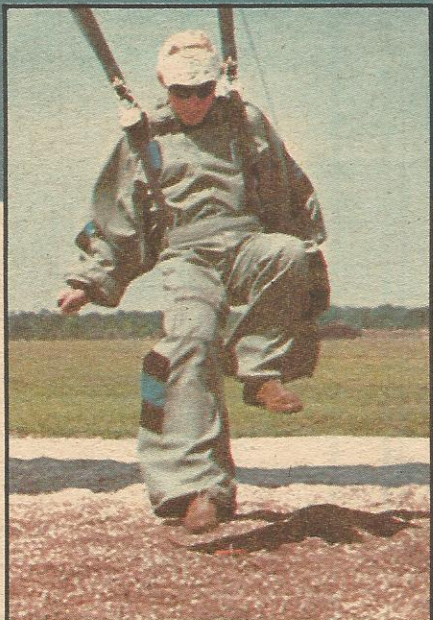
Improved for 1979

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.

\$749

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.



PARA-FLITE Incorporated

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