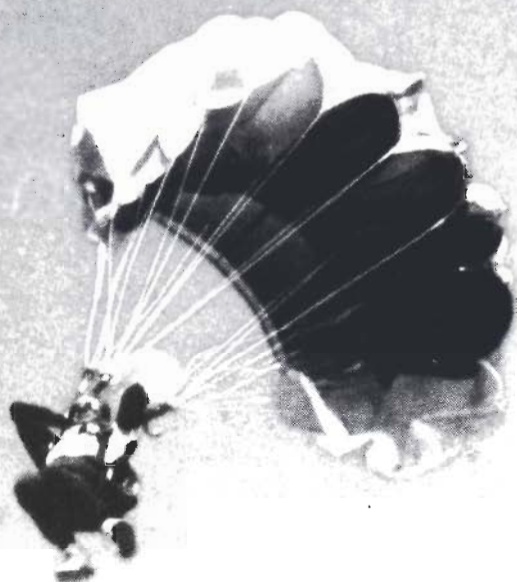


The FIXED OBJECT JOURNAL



Volume one, Number four

OFF

ABOUT THE COVER

Ready or not BASE 107 is "Going Right!"

Photo by Nigel Slee

THE LEDGE

A lot has happened since our last issue. The best of which is nobody's been killed! This is the first issue we've run without a "Black Box Anatomy of an Accident." Keep up the good play.

Two new magazines have appeared called *The Rigger* and *Paraglide USA*. Both should be of interest to BASE jumpers. *The Rigger* is for people who have dynamic new ideas in the field of parachute inspection, maintenance and repair. *Paraglide USA* is about paragliding. While these foot-launched brothers of ours may not free fall, they have a lot of the same problems we do. Both magazines are good reads!

BASE gear is in the news. Tailored For Survival has introduced its third BASE rig called, The Blade.

Billed as, "The low profile rig for those high profile jumps," it is virtually undetectable when worn under almost anything.

This October also marks our one year anniversary. To everybody who sent articles, photos and letters, thank you. I must ultimately thank all those with the

faith to blow off twenty bucks to some post office box and a guy they never heard of.

As a kind of birthday present to ourselves we've brought on board master rigger Moe Viletto as our technical adviser. Moe is the type who just doesn't tell you things... he stands there and prompts you... he makes you come up with the good stuff!

Nigel Slee has penned a thoughtful article called "Saving Your Life" that may change the way you teach or approach BASE jumping. Mike Allen shows you how to take photographs at night without using white light, a good thing to know when trying to avoid detection. *The BASEment Rigger* looks at some new ideas including the exciting rocket deployed reserves. The article is called "BANG, Your Alive!"

There is a piece called "Splash & Dash" that deals with, you guessed it, water jumping. And a selection of newspaper clippings that chronicle some early BASE jumps. We get our first taste of The ParaPak BASE rig in the review section and a discussion of the "Perfect Gear" for BASE jumping by Andy Calistrat.

This issue's *Last Off*, called "Slow Down" reminds us that although BASE jumping is becoming safer it still has that element of rolling the dice.

C-YA at the rail!
Nick Di Giovanni
Editor

Air Mail...

LIFE GOES ON

Here's a photo of my 37th BASE jump. This was my 14th jump from the Viaduc des Fades bridge. Many people around now since the accident here. But with friends we have adapted to the situation and now only jump from the bridge undercarriage. It's 362-feet. We only jump in the early morning or late evening. We are waiting for your nice JOURNAL and hope to come for Bridge Day '90.

LAURENT LECLEACH
NEVERS, FRANCE

BIG GUNS

I really like your magazine. I have the first issue which was given out at Bridge Day '89. I'm interested in getting involved in BASE jumping as soon as I can. Please send along any information on back issues along with subscription.

CHARLES RAMSAY
FLEET POST OFFICE
NEW YORK, NEW YORK

Lt. Ramsay is currently "somewhere" in the Gulf on board the battleship, U.S.S. Wisconsin.

ED

BACK ISSUES

Enclosed please find my check for a subscription to The JOURNAL. Can you start me with the first issue or give me info on back issues.

JOHN BATTALIO
BRYAN, TX

Sorry it took so long to get this subscription to you. Please send all back issues I may have missed. I wish you the best of luck with The JOURNAL and if I may be of help please let me know.

BLUE SKIES/NO COPS
JAY SMITH, YSA #11
MOBILE, AL

Sorry guys, we're completely out of back issues. As soon as possible we'll make them available again.

ED

"AYE, MATE!"

Thanks for your correspondence, enclosed is my subscription which I trust will cover overseas postage. I'll send more info next month on some ambitious projects we have planned.

NIC FETERIS
BASE 71
AUSTRALIA

I hope this is sufficient to cover a subscription to your JOURNAL. I'll try to contribute some future articles.

ROB "SKYPUPPY" PRICE
CANADA

The foreign subscription rate is \$28.00.

ED

HEY MOE!

Here are some pics from the Bungee trip. If you need more or the negs let me know. Thanks again so much for allowing me to be part of the adventure with such good people! I know you know better so I guess it was just a typo but in your article "Direct Bag, Useful Tool or Carnival ride (Vol 1 # 3), you said tying the rear of your slider down will only allow the risers to be pulled down the chord or width of the slider. Chord is *length* and span is *width*.

MOE VILETTO
TAILORED FOR SURVIVAL
MORENO VALLEY, CA

SLAM

I have been interested in BASE jumping for sometime now and would like to learn as much as I can. There were several people at the drop zone where I used to jump who were involved in the sport. But seeing as I'm in the Indiana Department of Corrections at this time, I find it hard to ask detailed questions about BASE jumping through the mail. Could you please send me a copy of your JOURNAL.

JOHN MEYERS
#894743

We can do better than that John, you're down for a complementary subscription. What floor you on?

ED

THE ONE "JAKE"

Please send The JOURNAL to my friend Harry. I hope you're doing ok, the magazine looks great. Hope to meet you sometime.

"JAKE"
EAST COAST

I really enjoyed issues #2 and #3. The Matt & Lane interview was outstanding. I just made a great cliff jump with Moe Viletto. Keep up the good work!

ALF HUMPHRIES
DENVER, CO

EJECT!!

Hi, by now you should have received a copy of our film "Stealing Altitude". I'm always having to explain BASE jumping to curious members of some audience now. The questions are getting old. I guess you guys would call them whuffo questions.

Incidentally, my older brother is a Naval Aviator. He told me that 80 percent of Navy ejections are successful. That means a 20 percent mortality rate for career pilots.

Now, I'm not an expert on BASE jumping but I think I've learned enough to suggest that BASE jumping would have to kill an additional fifty to sixty people a year to fall to Navy standards. What, in your best estimation, really is the survival rate in BASE jumping?

JOHN STARR
LOS ANGELES, CA

Statistics are tricky, you can slant them to mean almost anything you want. We don't know how many jumpers there are or how many BASE jumps they make. The only thing we could say for sure is people who make BASE jumps must feel it's safe enough.

ED

Like the magazine! Absolutely first class! I hope you enjoy putting it out as much as I enjoy getting it.

MARK WORTHEN
MEMPHIS, TN

Greetings from the Northeast. I would like to start a subscription to The FIXED OBJECT JOURNAL. Thank you.

GERALD HARENDZA
BASE 75
NRGB 1989-#1

NAKED BASE!

Just to keep you updated I would like to tell you that I've made my first BASE jumps on what I thought was just another visit to the wind tunnel in Tennessee. I met up with Naked BASE number 1 and 2. I can't thank Mark and Marta enough for a really great time.

I started with Mark on a 1500-foot antenna. A couple of mistakes I made were going off head low, taking too long a delay and shredding my Racer on the climb. But these things aside it was very exciting!

JIMMY WENDT
YORK, PA

SOF

We will be publishing a story on BASE jumping in the U.K. in our October 1990 issue. Accompanying the story will be sidebar briefly outlining who American parachutists should contact for more information on BASE jumping in the U.S. We would like to list your address if it is still valid.

TOM SLIZEWSKI
ASSOCIATE EDITOR
SOLDIER OF FORTUNE

TALL STORIES

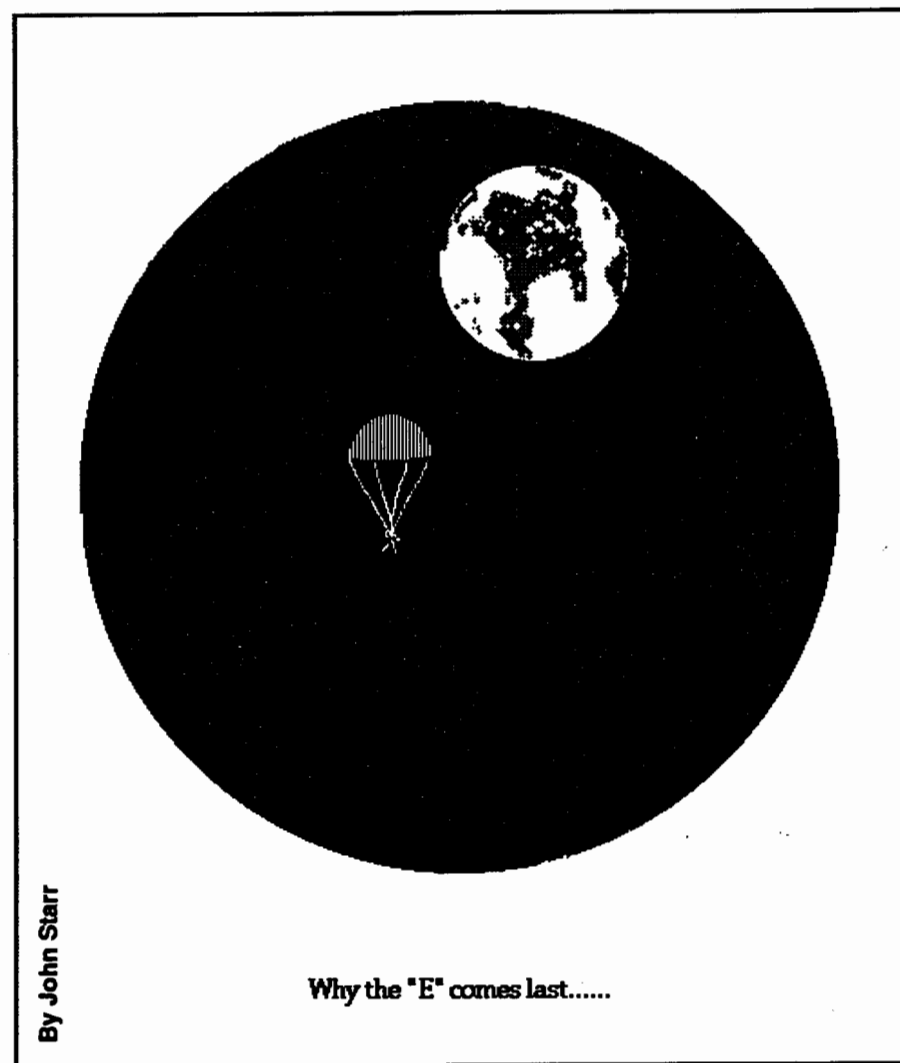
Here is a finished copy of the audio tape "Tall Stories." Basically it's a collection of jump stories and interviews mixed with some action

and atmosphere from the exit. (Bridge Day '88).

To maximize the effect I would recommend playing the tape late at night with the lights down low, or even better, listen in your car on one of those late night journeys...

I can offer the tape for \$7.00 U.S. funds plus \$3.00 airmail.

NIGEL SLEE
70 CHANTRY ROAD
BISHOP'S STORTFORD
HERTS CM23 2SG



By John Starr

Why the "E" comes last.....

Around The BASEs

"I didn't go out of my way
trying to make the flap peel."

GET YOUR KICKS ON ROUTE 66

Don Boyles, the first person to jump the Royal Gorge bridge in 1970, celebrated his 500th parachute jump recently with a BASE jump from an 85-foot ship channel bridge. The "Get Your Kicks on Route 66 Bridge Boogie" also involved some other milestones. Ed Beaver made his 200th and first BASE jump, Jim Rice made his first bridge jump and "Larry" made his first jump ever. The jumpers were supported by Cole Sexton's rescue boat and Arby Cox who shot video.

BASE RIG COVER-UP

Nigel Slee, editor and publisher of the British BASE magazine "JUMP" has developed a fabric cover for Velcro closed BASE rigs. Nigel says, "It's a simple bit of rigging but it takes a lot of the worry out of hiding and protecting your rig."

FILM GOES TO NATIONAL COMPETITION

A film about BASE jumping, called *Stealing Altitude*, was selected by the University of Southern California to compete at the national level for student made films. The film was reviewed in the last issue of The Journal. If it does well, *Stealing Altitude* could wind up on cable TV and be shown nation wide.

BASE JUMPER FOR HIRE

The October 1990 issue of *Soldier of Fortune* magazine contains an article on British BASE jumping. Written by one of SOF's foreign correspondents, Peter Douglas, it is titled OUT-LAW JUMPERS, "The Moment of Living Dangerously."

The seven page article features 12 color photos of mostly dated static line jumps but the author explains the story is based on early BASE jumping in England. The article does a great job of explaining BASE jumping although it does play up the danger angle a bit.

AERODYNAMIC DECELERATOR SYSTEMS TECHNOLOGY CONFERENCE

This 11th meeting will be held in San Diego at the Princess Hotel during April 9-11 1991. The purpose of the conference is to present new advances in the field of aerodynamic decelerator technology. Exhibit space is available. The conference will cover such topics as dynamic load prediction, computer aided implementation, decelerator design, materials and structures, general personal parachuting, and manufacturing.

BE IN A BOOK

Author/Jumper/Rigger, Jim Bates, is preparing *Parachutes, Their Many Uses* for publication. Mr. Bates has

published several popular books on parachutes and skydiving. His new book, which will be a definitive work, will contain a section on BASE jumping. He has shown a genuine interest in getting it right by attending Bridge Day '89 and talking to both experienced and novice BASE jumpers. He is looking for equipment and technique articles as well as jump stories and photographs. For more info contact Jim Bates at: 25 Whiton Street/P.O. Box 283, Windsor Locks, CT 06096

BRIDGE DAY 1990

Bridge Day 1990 is October 20th. New this year is the closure of Canyon Rim Park and the moving of the meeting/packing area to the opposite side of the bridge. Chief Ranger Bill Blake is also spreading the word that anybody caught bandit landing on Park Service property prior to Bridge Day will be excluded from the waiver issued to the USBA. For up-to-date Bridge Day information and pre-registration contact: Jean Boenish, 12619 S.Manor Dr, Hawthorne, CA or phone (213) 678-0163.

THE RIGGER

Published by George Galloway and edited by Michael Bradford, *The Rigger* is a quarterly communication source for rig-



BASE rig cover designed and built by Nigel Slee.

Photo by/By Nigel Slee



Moe Viletto and the ParaPak™ Velcro closed BASE rig at terminal velocity.

Photo by/Tom Lebus

Jacobson, formally of Classi Cloz is working with Viletto to integrate a Nomex suit into the rig. Viletto soon realized that The Blade was applicable to everyday BASE jumping as well. To prove the stealth aspects of the rig, BASE jumper Lane Kent wore the rig to a BASE jumper party and walked around without anybody noticing he had it on.

NEW BUNGEE VIDEO

"Bungee Adventures" of Northern California, offers a new video which is a compilation of two and a half years of bungee jumping. The tape includes the controversial Reebok T.V. commercial and the indoor bungee jump of Atlanta's CNN building. Also included are jumps from the company's tethered hot air balloon. The tape is \$25.00. Mail to Bungee Adventures, 2218 Old Middlefield Way #G, Mountain View, CA 94043. Phone (415) 903-3546.

GOLDEN GATE JUMP

A 37 year old Coast Guardsman became the 885th person to commit suicide from the roadway of the Golden Gate Bridge. Motorists crossing the bridge report seeing the man jump. Of 931 attempts, 46 people have survived the 200-foot fall into San Francisco bay.

BUNGEE BOUNCE

Last year's Miss Australia went in from 130 feet while bungee jumping in Australia. No other details were available except sources say, "The bungee failed." The woman survived with multiple broken bones because the jump was over water.

TEXAS ACCIDENT

Nobody except a whuffo

gers and people interested in the technical aspects of parachute inspection, maintenance and repair. The spring 1990 issue managed the difficult task of delivering technical information in a way that was both useful and entertaining.

One section, called Open Forum, is made up of monographs written by people who have innovative ideas in the rigging field. One such piece was written by master rigger and BASE jumper Moe Viletto. The work is titled, *BASE Rigger, is that an Oxymoron?* It addressed the fact that riggers in the field are starting to see customers with rigging requirements related to BASE jumping.

Viletto explains the basics of BASE jumping and suggests that riggers who take in such work should be familiar with BASE jumping essentials. The Rigger costs \$12.00 for four issues and is available from P.O. Box 241, Dunlap, TN 37327 or phone 1-800-222-3933.

CRASH KILLS BASE JUMPER

John Carta, BASE 118, was killed in an airplane crash early this October in California. The crash of the WWII Seaplane carrying 10 passengers occurred during an airshow. Airshow officials said the plane, which was not part of the show, made several low passes before it started doing aerobatics. Officials were about to call the FAA when the intruding plane rolled over and dived into a lake. There were no survivors.

John Carta was a veteran BASE jumper who made several high profile BASE jumps during his career. These included jumps from the George Washington Bridge and The World Trade Center in New York. Carta also rode a motorcycle off Northern California's Auburn Bridge and attempted a series of batwing jumps in Yosemite Valley.

YOSEMITE SKYDIVING ASSOCIATION

The YSA will have its third court date on October 16, 1990. On that day it's possible that Magistrate D. Pitts may hand down a decision on the discrimination case presented by the YSA. YSA membership has topped 400 but more financial support is needed. Contact the YSA at: P.O. Box 9681, Canoga Park, CA 91309.

VILETTO BUILDS NEW STEALTH RIG

Tailored For Survival's Moe Viletto has introduced a new Velcro closed BASE rig that is virtually invisible when worn under almost any type clothing. Called "The Blade" it is three quarters the length of a conventional BASE rig and uses a wedge shape that wraps a jumper's kidneys.

Rig number one went to Hollywood stunt man, David Nunn, who'll be using The Blade in an upcoming television special. Edna

ground crew witnessed the jump, when John Earl Jones Jr., launched off the Jersey Village water tower. "He hit before his parachute was all the way open!" is what sources in Texas say the ground crew said.

Jones is in a Texas hospital and is not expected to fully recover. The Jersey Village water tower is 150-feet tall and was first jumped in 1982 by Andy Smith. Early speculation that Jones' jump was an attempted hand held direct bag was disputed by the ground crew who said Jones climbed the structure alone.

A fellow jumper in Houston, who wished to remain anonymous, said, "I think he either static lined himself or tried to do a freefall." The Houston source also said doctors had to treat Jones for an excessive amount of alcohol in his system. Jones, depending on who you ask, had between 30 and 50 BASE jumps at the time of his accident.

CONTEST

Like the Pop Top on a Racer, the flap on a Velcro BASE rig is a blank canvas for the creative BASE jumper. "Flap Art" is now the subject of The FIXED OBJECT JOURNAL's first contest.

Send us a picture of your "Flap Art" and if chosen by our staff as the best we've seen, that person will win a brand new complete BASE rig from the manufacturer of their choice! No, wait a minute, that's too expensive. . . ok, the winner will receive their choice of Zoo type toggles or direct bag from either T&T Rigging or Tailored for Survival . . . yea, that's it!

Second place will receive

a Rapid Grip from Tailored for Survival and third place will receive a years subscription to The FIXED OBJECT JOURNAL.

The three winning "Flap Art" photos will be published along with any deemed worthy of honorable mention. Deadline for entry is December 15th, so send in your photo now!!

BASE RIG GETS

TERMINAL TEST

Moe Viletto, of Tailored For Survival which builds The Edge, The Blade and The ParaPak BASE rigs, has begun conducting tests which included taking his design to terminal velocity. The first test jump using the ParaPak BASE rig was a complete success. How the terminal free fall was conducted is not being revealed, except in response

to queries, Viletto says, "How do you think!"

Testing the integrity of the harness and confirming the Velcro flap would stay secure at terminal velocity were two of the test objectives. The jump concluded with a no bag, free tailpocket terminal deployment of a slider up Super Raven II canopy. The test was fully documented on stills and video.

Viletto says the actual live jump was made only after extensive ground and BASE jump testing. Asked why he didn't carry a back up canopy, Viletto answered, "I bet my life on my gear, and I wouldn't sell or expect people to buy equipment that hasn't been tested in every conceivable envelope. To me it was just another BASE jump."

Viletto also said that this

test was only the first of a planned series. The idea of Velcro pack closure, at terminal velocity, is not without precedent. Jerry Bird at one time marketed a chest mounted reserve that was deployed by ripping up a Velcro flap.

A crucial part of the test was the Velcro flaps ability to withstand the peeling effect of the sustained high speed free fall. A premature "peeling" could have left Viletto with a horseshoe malfunction and possibly a jammed main pilot chute.

"I didn't go out of my way trying to make the flap peel," Viletto offered, "however, that will be part of a later test. I remained face to earth for the majority of this first test." Viletto went on to say that engineering a Velcro flap that deploys after a short BASE jump at low airspeed, plus stays closed at high speed, takes some thought. "Not just any configuration works equally well in both cases," said Viletto.

PARAGLIDE USA NOTABLE FLIGHTS

In the July 1990 issue was the following about FOJ Publisher Ralph Mittman.

Total days in sport: 10

Flying days in sport: 4

Total flights: 9

Notable flight: Ralph wowed us all by taking off on Sunday, July 1, at Soboba in Southern California and flew over 3 hours - a paragliding record at this site.

Paraglide USA, \$25.00 for four issues. Mail to: Paraglide USA, 12650 Softwind Dr., Moreno Valley, CA 92388. Phone (714) 924-5229.



Send us a photograph depicting your "Flap Art."

Photo by/Nick Di Giovanni



SPLASH & DASH!

By • NICK DI GIOVANNI

With the USPA not requiring live water jumps for the D license anymore, we may start to see more people making a first water jump after a BASE jump. In some cases after a first BASE jump. How to look out for yourself and your gear is something jumpers won't automatically know about anymore.

Because the jump and water landing are hopefully separate events, they should be manageable by correctly trained novice BASE jumpers. However, concentrating on the jump and not paying enough attention to saving themselves in the water, can cause problems.

One type of bridge utilized by novice jumpers is the ship channel bridge. These "low salt water jumps" may not measure up to a full blown Bridge Day but they can serve the purpose. In addition, they may offer some extra advantages.

Channel bridges can be found in most any city that has navigable waterways. They are usually easy to access and if jumped discreetly, the chance of interference is slim. If you go with the concept of less time-less mistakes, the lack of altitude can be a blessing. Channel bridges can range in height from 70 to 300 feet or better.

On the other hand, the hazards of channel bridge jumping can be amplified by darkness, ship and barge traffic, cold water and poor preparation or coordination between jumpers and ground crew.

When a chosen span has a guaranteed water landing or just the potential for one, it's up to the jumper to protect himself.

It's important not to take these jumps lightly. Don't allow the low altitudes and water fool you into considering these jumps goon proof. An unbroken free fall of 3 or

4 seconds can result in a 50 to 70 mph water impact. Unless you Tarzan the entry, that water can feel like concrete. A streamer entry could conceivably leave a person stunned and unable to tread water.

The dozens of suicides being committed from these bridges every year illustrates the danger. This is also the reason most get posted against foot traffic. *Shucks, can't commit suicide here, might get a ticket.*

The initial hazardous part of these jumps may be the practice of being dropped off at the launch point by automobile. Other drivers won't be expecting a stopped vehicle on the roadway. Be careful here, as you are putting not only yourself but also innocent whuffos at risk. If the actual jump is from the bridge undercarriage, check for a way onto it without using the roadway at all.

BASE coaches advising jumpers through a first water landing must assume these jumpers are operating on what little they remember from a first jump course, or if they had some, wet water training.

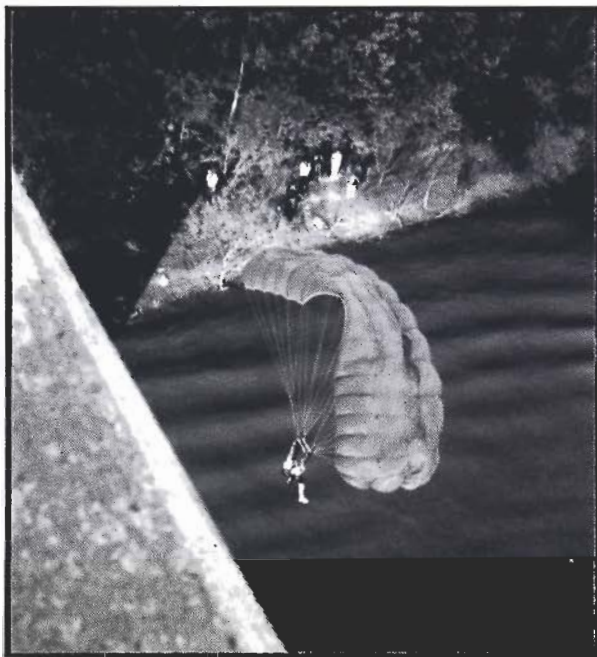
Parachutists encountering water have been drowning since day one. The introduction of ram air canopies reduced the problem, but only by allowing the jumpers to avoid unintentional water landings in the first place. Jumpers should keep in mind, all water landings, including intentional ones, are potentially dangerous.

The situation for a jumper in the water can go from good to bad in just a few



Jacques Elzea makes her second BASE jump from a ship channel bridge.

Photo by Pam Picker



Don Boyles checks his Unit IV after a direct bagging an 85-foot bridge. This was was Don's 500th parachute jump!

seconds. Reports of accidental drowning often include a phrase like, "He was doing fine, then he just disappeared!"

On bridges with short duration canopy flights, the jumper should be physically and mentally prepared for the water while standing on the bridge. If you're behind the jump, you can be in the water before you realize it. This can be the first event, in the chain of events, that leads to your friends divvying up your gear.

Wearing a flotation device is the simplest way to protect yourself. Even if your water landing is supported by boat or ground crew, you're taking a big risk going without it.

It can be bad news if a member of the ground crew has to go in after you. Water rescue personnel can tell you, when an untrained person enters the water to help a panicky swimmer, he stands a good chance of losing his own life as well.

Flotation gear gives you the time and the confidence to work

out any difficulty you may be having. Added insurance comes from the ground crew having something to throw you that floats, something attached to a rope for pulling you toward boat or shore.

The two basic categories of flotation devices are the inflatable and vest types. Para-Gear sells three different models that inflate using CO-2 cartridges. Of these, the better ones can be orally inflated as well. Vest types worn by boaters and water skiers, although

bulkier, may be better if you get in trouble right away. Stay away from that wrist mounted flotation device you've seen advertised, it's junk, and will only allow rescuers to find your body.

If you wear the inflatable type under your harness be careful about inflating it with your chest strap still fastened. For water jumping you can configure the chest strap for easy release by putting the running end through the buckle a third time so it's facing outboard. Pulling on this free end and spreading the main lift webs will usually clear the chest strap.

Helmets can catch enough water to hurt your neck as you go under, especially if you streamer, spiral or otherwise hit the water hard. This goes especially for helmets that aren't form fitting or too big for you. Leaving the helmet unbuckled is a good idea. Shoes should be worn if there are rocks to climb over when leaving the water, or in case you have to flee.

On the actual jump, there are

two things to think about. Make it to the water and make it to the shore. Don't spend the entire canopy flight heading away from shore or boat. Walk out on the bridge only far enough to avoid hitting the shore with a malfunction. Although some bridges are higher in the middle, that extra altitude may not be worth the hassle of being in the ship and barge traffic lanes. In the water even the smallest vessel can look like the Exxon Valdez bearing down on you.

On low water jumps where major maneuvering isn't essential, it may be a good idea to leave your brakes stowed and rear riser yourself into the water. The logic here is the same that suggests on ultra low land jumps, like sub 200 feet, it's better to riser land at half brakes, rather than unstow at an altitude too low to deal with a toggle problem. It's a personal decision, but at a certain altitude, you should hold what you've got. Also, with the brakes stowed, it's that much less mess in the water to get entangled with.

Once in the water hold your elation in check because the most dangerous part may still be ahead of you. If you just start paddling for shore the canopy will inflate with water and act like a big sea anchor impeding your progress. It also will carry you along with whatever current there is, the drag produced can be incredible. If things get dicey, it is easy to imagine the canopy is pulling you down, then you panic, then you drown.

Canopies will inflate in water as readily as in the air. (Put on scuba gear and a couple hundred pounds of lead and do a direct bag jump out of a boat into 100 feet of water. If you have a malfunction and can't jettison the lead, you'd better be carrying a teresh.)

With a round parachute, take hold of the the apex, and tow it behind you as you swim. On a square, grab the bridle attachment point or center of the trailing edge.

This may be a good place to emphasize, you can always get another canopy, you'll never get another you. If you feel you're losing control of the situation, **DITCH YOUR GEAR.** Don't even think twice about it.

Once you've made it to safety, it's time to think about your gear. You need to be careful when parachutes are wet, they are very susceptible to damage because the fabric is weaker. Pulling and tugging should be avoided. Try to gather up the parachute and remove it from the water all at once, it's heavy, so you may need assistance.

Watch out for snagging the canopy and lines getting into or out of the boat or climbing onshore. **DO NOT WRING OUT THE CANOPY.** This can cause damage to the fibers due to their weakened condition. Also, left in that condition, the colors may bleed from panel to panel.

Place the canopy in a plastic bag for transport back to where you can work on it. The water in these channels contain who knows what and the effect it may have on your parachute is hard to determine. The nylon used in parachute manufacture is pretty tough, not much besides acid or sunlight will hurt it, but you should be prepared for some work. When you get the canopy somewhere with access to fresh water you can begin the process of cleaning it.

The best method involves using clean trash cans to immerse the canopy. I don't know about you, but I never seem to have a clean garbage can around when I need one. A bath tub works great. It's best to separate the canopy from

the harness and wash separately so as not to snag the canopy on the harness hardware.

Avoid using the shower head or a water hose out on your front lawn, the strong spray can hurt the material. Rinse the canopy two or three times in **WARM** fresh water (soft water is best) or until the water runs clear. Gently push down on the material to remove the excess water and let it sit a few minutes to drain.

Place the canopy in a dryer and if you're really hard-core, throw in a sheet of *Bounce* fabric softener. Yes. I'm kidding! The best way to dry a canopy is outside in the shade or in a breezy room without direct sunlight. Don't use the "shake and bake" method. This is you and a friend flaking it like a bed sheet outside, in direct sunlight. The material is still weak, and the extra exposure to direct sunlight is a parachute killer. You see a lot of that at Bridge Day.

If you see salt or hard water deposits on your hardware, it can be removed with a soft brush. And spray it with silicone. If the cadmium plating used on the hardware was previously scratched, rust will develop. This corrosion may cut into suspension lines and webbing so those pieces of hardware should be replaced. Look for this on connector links that have impacted with slider grommets.

Keep in mind that no matter how well you treat your canopy after a water jump, it does add to the wear and will shorten its useful life. Water will increase the permeability of the nylon and will cause the canopy to open slower and descend faster.

You may consider using your "B" canopy for water jumps or using a round parachute. If you have no round canopy experience, make sure you're with someone who does. Don't try to pack a round canopy by yourself if you've never done it before. There are some tricks you'll need to know that can make them open faster.

Lastly, after jumping off ship channel bridges, don't swallow any of that water and go home to an hour shower!



If done correctly a first BASE/water jump winds up like this.

Photo by Karen Dodd

Saving Your Life!

BY • NIGEL SLEE

Nigel Slee is the editor/publisher of the British BASE magazine JUMP. In the United Kingdom Jump is the sole voice for BASE jumpers because of strict sanctions imposed by the British Parachute Association. With BASE jumping in the U.K. conducted strictly underground, information, for people who desire it, is hard to come by. Each issue of JUMP is committed to getting out as much information as possible and Nigel is to be commended for presenting articles that almost always carry an important safety message. The following is a thought provoking piece that may change the way you teach or practice BASE jumping.

Lying in the hospital I had plenty of time to think about why I'd had a cliff strike. Overconfidence and poor technique finally got me. My overconfidence came from having made a whole bunch of jumps in the past six weeks, combined with the adrenalin of having made two jumps that day. Up until then my natural fear of getting hurt kept me safe.

My blind spot though was off-heading openings. Before the cliff strike I had a good record of on-heading openings. It wasn't skill, just luck at having been shown a good pack job.

The trouble was that with all these good openings, I'd never learned how to make, "Save your life" heading corrections. I just used to reach up for the toggles - without even looking. So when I was rudely spun around to face the wall - after a hasty pack job - I just started grabbing for one brake...

Today, I'm a reformed person. I've had to totally re-think my BASE emergency drills and as a

result I'm no longer afraid of off-heading openings. In fact I quite enjoy the occasional 90 off. It's a chance to keep my reactions sharp.

I've tamed my canopy's surge with a deeper brake setting and I finally learnt to use rear risers. Now I don't think about toggles until I'm happy that my canopy is flying in the right direction. But this got me thinking about other situations and a few other things started to become clear. Here are some things I came up with.

It's funny how you just crack one problem and the next one crops up. I borrowed a rig at Bridge Day - yes, I know that's a mistake in itself. I hadn't intended to jump but it was too good an opportunity to miss.

The canopy was the same as my own - except it was rigged with deeper brake settings and had no Zoo toggles. While packing I didn't set one of the brakes correctly and it came off on opening. No problem, I know how to deal with this - just bury the opposite riser. I caught it at 90 degrees, except it wasn't coming back. All I could do was stop it

turning or fold it up.

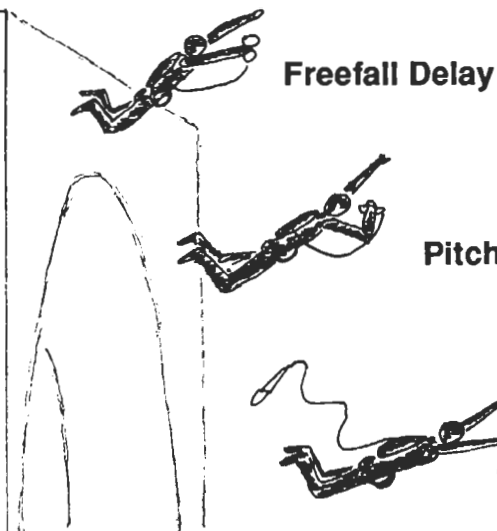
After stalling the canopy a couple of times it was obvious I needed a new idea. I'm flying parallel to the bridge, trees and rocks and black vertical lines coming up in my peripheral - the climbers ropes! The old gray matter stumbles into action.

What's going on here? Canopy looks ok. I could see the stowed toggle on the free riser - I couldn't see the other toggle was released because I had the rapid link pulled down in front of my face. Problem: canopy won't turn left? Solution: fire the other toggle. And that was it! I could now turn back towards the landing area steering with the rear risers.

So that became my next lesson. Preparing your reactions to any given malfunction is only half the job. You also need to be prepared to think, This isn't working, what do I do next?"

This ties in with another observation - keeping your hands (and mind) free while waiting for opening shock. It's a skydiving reaction to pitch and go straight for the risers. This is an unhealthy

Continued on page 13



Freefall Delay

Pitch

"No Man's Land"

"Save your life" time

Keep hands free and be prepared for anything. It's unwise to reach for risers until you checked your canopy. Keeping your hands - and mind - free, you're ready for three emergency options:

- Riser/s - Haul down to correct heading.
- Toggles - Fire & release to clear line over, (Brake Mod).
- Tersh/Reserve handle - Throw/pull in case of total or high speed malfunction



Off Heading Opening

Two types: turns off or opens off, (turns while lifting off back). Use rear risers to correct heading, (see turning circles). If canopy still turns/won't turn back, check for brake release, broken brake line, brake line entanglement or line over. You may need to fire other brake to stop turn if using deep brake settings. If object strike unavoidable use your best PLF position.



On Heading

Check canopy and fire brakes. Quickly decide if you can reach landing area. If no, set up for the best available space - good job if you did a thorough recce beforehand. If one toggle won't release do the best job you can with limited options. If you can't release either toggle, (borrowed gear), check where you're heading and use the rear risers.



Line Over

Look at, fire and release brakes. Line over clears. If toggle jams on line over side or won't clear, throw tersh or try a canopy transfer. Steer and flare with rear risers. Be careful with rear riser flare, a few inches of riser equals a lot of brake. If brake lines not routed outside keeper you're in trouble. Do what you can, throw tersh or deploy reserve.



Canopy Damage

Canopy flying seemingly ok but trailing suspension lines, flapping material or bottom surface is split. Brake pressure may seem soft, (blown cells). You probably over delayed or had a pilot chute snivel, (small pilot chute/short bridel). Decide if safe to land. If no, throw tersh or canopy transfer.



Twists

Riser Twists

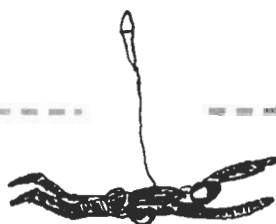
Usually the result of head down/unstable opening. Canopy may be flying off heading toward object while you are facing forward or vice versa. Unlike higher line twists you should be able to reach up above twists and help clear them.

Line Twists

Bad news. Two options. Kick out twists, (slow), or try to correct heading by hauling down a riser. Not a good idea to fire a toggle - risk of steering line staying locked in twist causing radical spiral. Kick out twists

Minimum Reserve Altitude, (MRA)

Before jumping any object figure out the absolute minimum amount of time/height you need to get a reserve out. This is your MRA. Now you can figure out how much time you have between throwing your pilot chute and your last chance to get a reserve out. To keep track of time some jumpers keep counting after pitching i.e. "7" when "9" is impact.



Attitude

Over confidence is easy to spot in other people but less so in ones self. A good run of trouble free jumps can lull you into a false sense of security and your relaxed attitude might suck you into a nasty situation. It always works?

No Canopy

If two seconds from throwing your pilot chute you have a high speed malfunction. You need something over your head - fast and before you reach MRA, (see below). Options depend on gear. If you have a reserve or tersh use it. Choice of right equipment in the first place will minimize the risk of ending up in this situation.

Continued from 11

habit to bring to BASE jumping. You've just drastically cut down your options if something goes wrong with your deployment.

In a high stress situation - "function junction" - there's a tendency to stick with your first reaction. (Right or wrong.) For example: Bridge Day and a skydiver exits with a small pilot chute, pitches and reaches straight back for the risers - he wants to be ready to react quickly in case of an off heading opening.

The pilot chute fails to catch enough air. Two seconds later he's getting concerned. He tightens his grip on the risers and he'll probably keep gripping for a few more seconds before he begins to think about his reserve. At New River he should just have time to save his life - unless his reserve snivels. Get the idea? Keep your options open, after pitching keep your hands free and you're ready to go for risers (off-heading opening), fire toggles (line-over) or go for tersh or reserve (total).

Another similar scenario to this could be the slider hang-up. How long would you fight the risers before you opted for the tersh? That's another problem with entering the function junction - time becomes elastic, your awareness of time passing, and of time left, goes out the window. And this isn't the moment to start thinking what do I do. Your brain can't cope. But you can act instinctively if you've prepared yourself before hand.

Finally, preparation. This needs to be done well before you make your jump. Last minute emergency "dirt dives" as you stand with pilot chute in hand, are bad news. You're just going to clutter up precious short term memory space - space needed to remember wind line, canopy flight plan and LZ hazards.

Emergency drills should be stored in your long term memory, (along with all your other BASE and skydive experience). From there they can be recalled instantly when appropriate. In a high stress

situation - i.e. function junction, your thinking area can only handle one "thought process." Overload it and it will jam up and brain lock. So keep the space clear, practice your emergency drills at home on a rainy day.

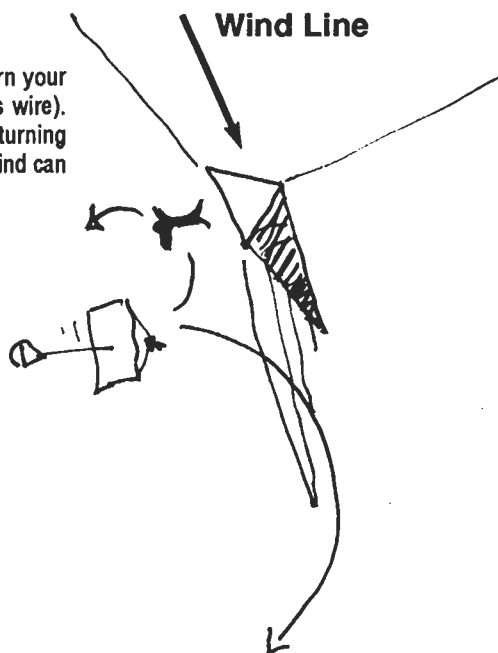
Right, long enough on that. You've seen I've included a diagram. This is the way I sorted things out for myself. I find it helps to see a picture to get things clear in my mind. It's not such a bad idea to sit down with a blank sheet of paper and list every BASE malfunction you can think of and list your response options.

If this is all new to you then I suggest you track down an experienced BASEr and quiz them about their drills. And don't just automatically copy them - ask them why. Yours may be different depending on your gear. It's a shame to wait until you get hurt before sorting out your "Saving your life" techniques. Think like a BASE jumper!



Turning Circles

On towers it sometimes pays to think about which way you'll turn your canopy to avoid striking a guy wire, (when wind line down towards wire). Correcting an off heading opening in the seemingly logical way i.e. turning back the way you turned, may not be your best option. Turning up wind can be safer - slower ground speed/less distance covered.



SHOOTING IN THE DARK

A Primer on Infrared Night Photography

BY • MIKE ALLEN

Wouldn't it be great to take along your camera on high-security night jumps and take pictures in total darkness? There have probably been a lot of times when you would have loved to have had a camera along, but could not risk jeopardizing your operation with flash photography. Well, with an ordinary 35 mm camera and flash unit and about \$20.00 in raw materials, I'll show you how to take night shots, just like the surveillance experts do.

You'll need to purchase only two things. The first item is an infrared #87 acetate filter to tape over your flash unit. This filter is a dark black, almost opaque piece of plastic, that allows only light from the infrared spectrum of your flash to pass through. A 3x3 size #87 infrared filter will run you about \$11.00 and is available mailorder through Calumet Photographic 1-800-CALUMET.

The only other item you'll need is the 35 mm infrared film itself. It is called, Kodak High Speed Infrared Film and costs around \$7.00 a roll (36 exposure). It is also available mailorder through Porters Camera Store at 1-800-553-2001. It is a B&W film that

produces a grainy looking, almost eerie effect. You artists out there will love the look. But the first thing you'll notice is that there is no ISO film speed rating to be found on the box. That's because this film records reflected infrared light only, and therefore cannot be rated as if you were using normal light. And an important note: INFRARED FILM MUST BE LOADED AND UNLOADED IN TOTAL DARKNESS. OK, if you've followed me this far, I'll now delve into the ways you can test out this film.

First, make sure that you set the flash sync speed on your camera. On some cameras it is set automatically for you if you have the dedicated flash for that camera. If not, it's usually the number highlighted in red on your shutter speed control. If you are not sure what it is, just set your shutter speed to 60 (1/60th of a sec.), and that ought to work.

Next, with the flash attached, and the #87 filter taped completely over the unit (use black photographic or any opaque tape), set your flash to the manual mode.

Now, you must determine what

aperture (f-stop) to set your lens at. Here's where it gets a little technical. Look up the BCPS output rating of your flash on the specifications page of your flashes manual. If you can't find it, either check with the manufacturer, or, if it is a fairly current model, call Porters Camera Store's technical desk at 1-319-268-0104, and they might be able to help.

Now with the BCPS rating at hand, refer to the table below, and find the guide number for your flash. After you have found that, write it down and tape it on to the back of your flash as a reminder.

Now, estimate how many feet away your subject is, or refer to the distance scale on the lens. Divide the guide number by the subjects distance, and that will give you the f-stop to set your lens on for an approximate exposure.

Example: The guide number for my flash is 60. The distance from my subject is 7.5 feet. So that's 60 divided by 7.5 = 8. So I set my lens to f 8. If you have any doubts, be sure to bracket your exposures, 1 stop over, and 1 stop under and that ought to cover you.

The only other thing you need

BCPS OUTPUT #	500	700	1000	1400	2000	2800	4000	5600
GUIDE NUMBER	24	30	35	40	50	60	70	85



The BASE "missionaries" from Homestead, Florida. An example of infrared nighttime photography.

Photo by Mike Allen

to do is focus your camera. It can be a little tricky, since infrared rays do not focus on the same plane as regular light. Most lenses have a tiny dot on the focusing scale, to indicate the infrared focus point. In that case, focus normally, then twist the focus on your lens to line up with the infrared indicator. That's slightly closer than what the normal focal point would be. So, in a nutshell, focus slightly on the near side of the subject. Once again, if you have any doubt, try a couple of shots and vary the focus a bit to see what gives you the best results.

Another tip as far as focusing is

concerned is to use a wide angle lens (such as a 28mm). Wide angle lenses are less critical as far as focus is concerned and if you use the tightest aperture possible (the higher f-stop numbers) that will help maximize the sharpness, as well. In other words, f 8 would be much better than f 3.5, and give you more depth of field. Also, a more powerful flash would also help in this regard, allowing you to use the tighter f-stops. So, the more powerful the flash, the smaller the aperture that can be used, and therefore the more depth of field (margin for error) can be achieved.

After exposing your roll of

infrared film, you can develop it yourself, if you have the equipment, using the development tables that come with the film. It uses standard B&W chemistry. Or, you can send it to any good commercial lab that does B&W film. If worse comes to worse, give me a call. I might be able to locate a lab or other resources for you, and I'm always happy to answer any other technical questions. (305-232-3845). Good luck, stay undercover, and I know you'll get some great nocturnal BASE shots!





Para Pak



**Pack it all in...
Para it all off...
Pack it all out!**

**Moe Viletto
Tailored For Survival
23480 Gerbera St.
Moreno Valley, CA 92388
Voice: (714) 656-1314
FAX: (714) 653-0474**



Historical BASE

The story of modern BASE jumping, what historians will look at decades from now, is being preserved on the microfilms of major newspapers. These accounts are written from a whuffo point of view, and in some cases offer an interesting perspective.

FLEETING FAME THE NEW YORK TIMES FEBRUARY 15, 1976

Eluding guards in the north tower of the World Trade Center, an unemployed Queens construction worker, Owen J. Quinn, parachuted last July more than 110 stories to a plaza. Only slightly bruised, he was packed off to Beekman-Downtown hospital for psychiatric examination. He had jumped, he said, to draw attention to the worlds poor.

Mr Quinn who is working today, says the mental screening "Took about 10 minutes," and he was ruled sane.

Aside from a flurry of congratulatory letters, some with donations for CARE and one from the Lieutenant Governor of Ohio, "All I got was a lot of hassle from the Port Authority," he reports. He is accused by the Trade Center's operators of reckless endangerment.

"They've had me in court eight times already," Mr Quinn says, "they're looking to make an example of me. They don't want any more people jumping off that building."

JUMP OFF TOWER FOILED NEW YORK TIMES NOVEMBER 16, 1977

A 21-year old parachuting enthusiast was foiled in his attempt to jump off the south

tower of the World Trade Center, the same tower climbed by George (Spiderman) Willig.

The parachutist, James Richard Campell of Oakland, New Jersey, had one leg over the edge of the building when a police officer of the Port Authority of New York and New Jersey yanked his parachute harness and toppled him back onto the roof.

The young man, who told Port Authority police that he is a member of the United States Parachute Association, was charged with reckless endangerment, criminal trespass, resisting arrest and disorderly conduct.

CHARGE OF ILLEGAL PARACHUTING THE NEW YORK TIMES SEPTEMBER 15, 1981

Richard Nordli, 41, of Westport Conn. was taken into custody outside the World Trade Center by Port Authority police. According to officers, Mr Nordli said he had tried, along with two other men, to parachute from a plane and land on one of the towers. He was wearing a red suit and carrying his parachute in a chute bag.

Port Authority officials said Mr Nordli was charged with unlawfully parachuting over the city, a misdemeanor subject to a fine of up to \$50.

No trace was reported of

the other two jumpers, and a spokesman for the Police Department expressed doubt that Mr. Nordli actually jumped from a plane.

PARACHUTIST IS ARRESTED THE NEW YORK TIMES FEBRUARY 18, 1987

A California man was arrested after he parachuted from a small plane to a landfill near the World Trade Center yesterday. The man, John Carta, 41 years old, of Sacramento, jumped, "Apparently because he has not jumped in New York before," a police spokesman said. Mr Carta was arrested shortly after noon and charged with reckless

endangerment, a misdemeanor.

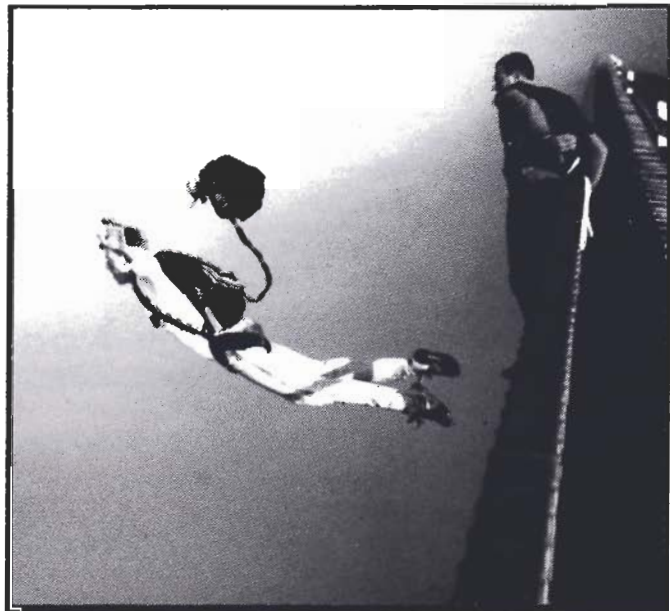
BOAT RESCUES CHUTIST AFTER HIS LEAP FROM BRIDGE

**THE NEW YORK TIMES
MARCH 16, 1987**

A California man backflipped off the George Washington Bridge early yesterday into the Hudson River before he was picked up by a motorboat.

The man, John Carta, 41 years old, who is a helicopter pilot from Sacramento, said he jumped more than 130 feet for an autobiographical video tape he was producing called "Jump!" Mr Carta, who was not injured, said he hoped to sell the program for television syndication.

A spokesman for the Port Authority said, Mr. Carta stepped out of a car traveling east toward New York City on the upper level of the bridge about 8 A.M. Mr. Carta, wearing a wetsuit and a parachute pack, "Jumped up to the south rail and parachuted over," the spokesman said.



Jerven Karstens jumping the 412' Mosellrail viaduct in Germany.

Subterminal...

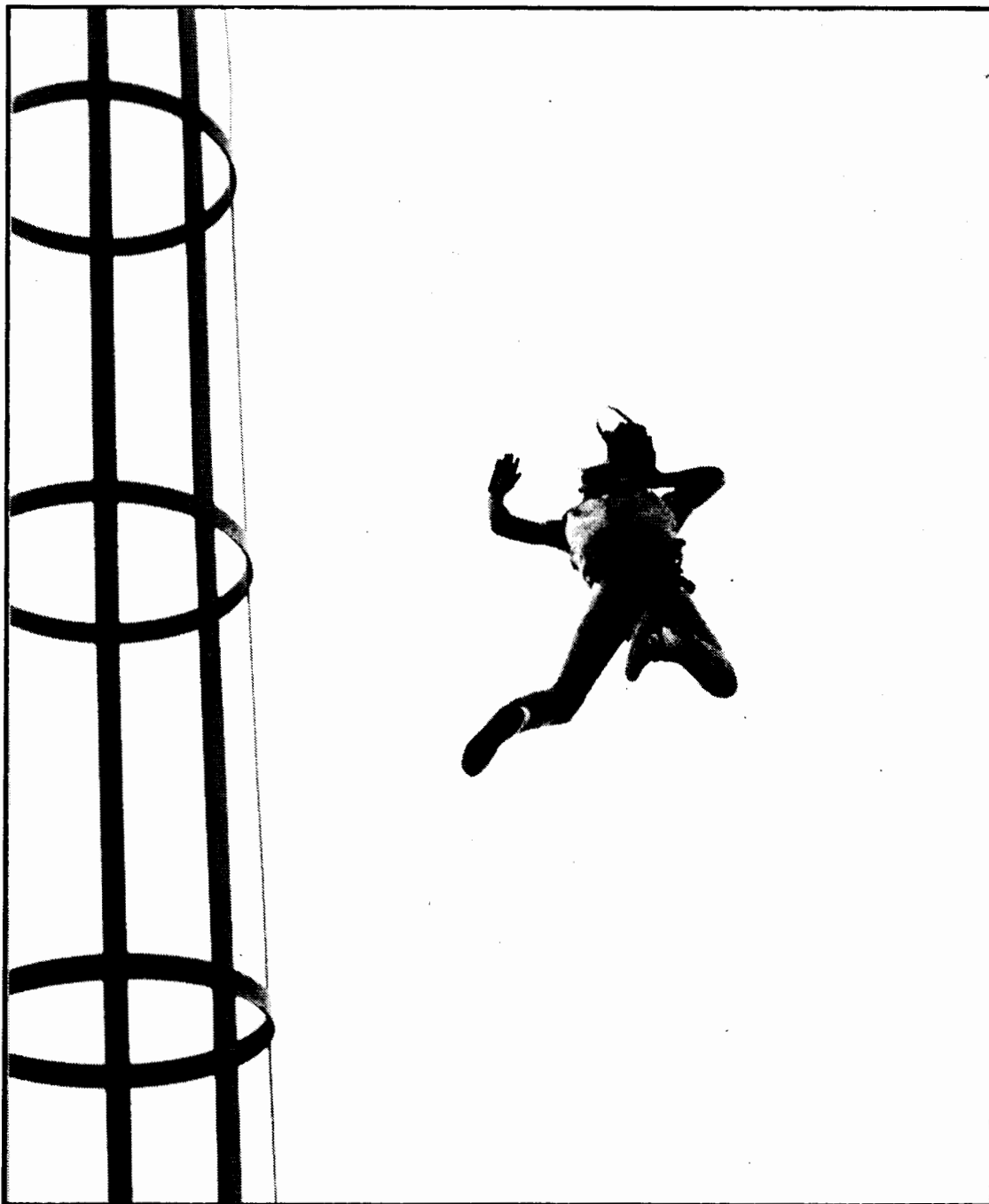
Photos from the field



"Moe Viletto, testing a prototype 'Rapid Grip' from a Californian train trestle."

Photo by Nick Di Giovanni

Subterminal...



"Tim Sell, freefalls from the undercarriage of a Northern California bridge."

Photo by Mike Allen

Subterminal...



"Nick Di Giovanni, launches from a 600'
antenna tower."

Photo by Todd Shoebottom

Equipment Review...

ParaPak

Manufactured by Tailored For Survival

By • NICK DI GIOVANNI

"THE RAIN CAME down in cold sheets along with wind that caused our carefully packed parachutes to be dumped and used for shelter. It was that or freeze in the bone chilling downpour."

"As the three of us huddled together for warmth, we realized why manufactures don't include insulation ratings in their performance figures."

"To make matters worse, just a few yards away we had to watch the warm glow of a camp stove reflected on the walls of the tent in which cozy and dry, Moe Viletto was on his second cup of hot chocolate."

"There is no reason to be up here unprepared!" Says Moe. "People should realize that this is a mountain wilderness, and the weather can turn nasty in just minutes. Being miserable may make a good jump story, but I'd rather be ready for the elements."

Being ready for the elements means having a few extra items besides a BASE rig. A first aid kit, a one man tent, stove, flashlight, basic survival kit, sleeping bag, food, a change of clothing and a book or two.

"If you haven't been to a really good outfitter store lately, you'd be surprised at the weight and size of extreme camping equipment." Moe said. "The new sleeping bags roll up to the size of a rather fat WDI. I add a liner I make from round SAC reserves. (The best use

Moe says he's found for rounds)! "All this stuff is so small and light, there's just no reason to not have it with you."

This is in contrast to the jumpers who bring themselves and their rigs along on the 6-7 hour hike. Sometimes it works out and sometimes...

"We were standing there, still chilled from the wet night, flaking soaked canopies in the wind. As we flapped in the breeze, we watched a dry and happy Moe Viletto wave good-bye and disappear over the edge. While he was having breakfast below, we'd be looking for the one pull-cord we hoped we had."

Some BASE jumps involve more than walking a catwalk, humping a stairwell or climbing a ladder. A long uphill hike can be the only thing you remember about your jump or a pleasant jaunt in warm-dry duds on a full belly. It just depends on how prepared you are.

In years past being prepared meant having a selection of Glad garbage bags, white for winter and green for summer, to crawl into if the weather went sour or to stash your gear. "Shelter is the main thing," Moe says, "you need to be out of the cold and wet."

Ok, even though this stuff is small and light, you still need to carry it somehow. Getting it up there is easy enough, the problem becomes jumping it all off. Moe solved this problem by designing

what he calls the *ParaPak*. "You can *Pak* in everything you need and *Para* it all off with you!" Says Moe.

The *ParaPak* includes a standard *The Edge* BASE rig designed to stand off the jumpers back. The design works well because of the already thin profile of *The Edge* BASE rig. This configuration allows the space between the rig and your back to be used for storage. The amount of space can be adjusted from full to empty by an ingenious use of draw-cords. The amount of room in there is amazing.

Moe went on, somewhat miffed, "On my last trip, I even jumped somebody else's garbage off the cliff. I was a quarter mile behind this jumper on the trail and every few hundred yards I'd find a empty Coors Lite can he'd just toss. I found out his address and mailed the empties back to him! I'm not a flaming environmentalist, but he really pissed me off!"

The *ParaPak* is comfortable when fully packed and functions like a regular BASE rig only with a trunk. If camping or survival isn't a concern, photographic equipment or just about anything else the situation called for could be transported.

The *ParaPak* comes complete with pilot chute & bridle, throw out leg strap pouch, *ZooMo* toggles, (these toggles use the *Zoo* principle but are specifically designed for BASE jumping), risers and a light functional low volume back pack to carry it all. A full complement of custom options and colors are also available. One mainstay of Viletto's gear is it comes complete, just like a Vector or Racer.

For more information contact master rigger Viletto at: Tailored For Survival, 23480 Gerbera Street, Moreno Valley, CA 92388 Phone (714) 656-1314, FAX (714) 653-0474.

BANG, YOU'RE ALIVE

BY • TFOJ STAFF

SOMETIMES A NEW idea can come from outside the sport of BASE jumping. For instance, Second Chantz, a company in Nevada has developed a line of rocket reserve deployment systems that may have applications to BASE jumping.

"Pocket Rockets" were originally designed for use by hang glider, ultralight and paraglider pilots. Rocket deployment differs from ballistic deployment in that they launch a self propelled projectile which is faster. Tailored For Survival has been chosen by Mr. Dunham, President of Second Chantz, to aid in the BASE design application.

"A rocket on a harness being incorporated into a BASE rig is what we're looking at." Said TFS's Moe Viletto. The device fires a small rocket connected to the reserve bridle and gives the jumper almost instant line stretch. Of course, many details need to be worked out, but it's believed this system could allow a BASE jumper a viable reserve option. Viletto will have a prototype at Bridge Day '90.

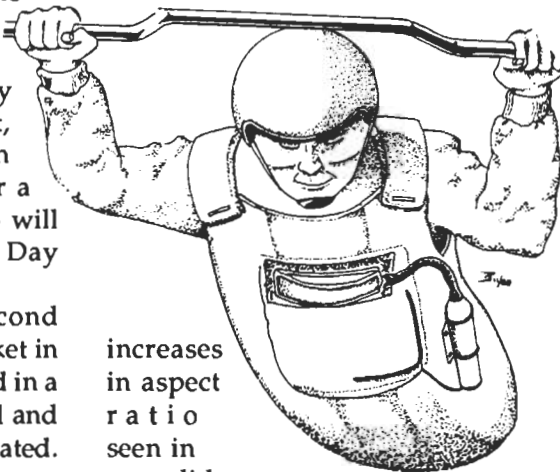
A video produced by Second Chantz shows the Pocket Rocket in action. The canopy is deployed in a number of tests on the ground and in all cases the parachute inflated. There is also a breath taking save

where Mr. Dunham himself had to resort to a back-up pocket rocket.

During a test while flying a hang glider he fired a pocket rocket which deployed normally. The plan was to release the parachute and go back to flying the glider. It was then an unrelated piece of release hardware failed to function and left him with a canopy that could have separated at any moment. Mr Dunham fired his back-up pocket rocket which caused the first canopy to release. Somewhere in the process the right wing of the glider failed and folded up but Mr Dunham landed safely.

Another sport to keep an eye on is parapente or paragliding. These folks are pushing the design of square canopies into the next century. Keep in mind, the current

increases
in aspect
ratio
seen in
paragliders



may not be of use to BASE jumpers who need increased opening reliability and flight stability. However, sometimes one idea will lead to another and so on and so on.

Dennis Pagen, author of the book, *Walking on Air*, offers the following improvements he sees to the present day paraglider.

Pagan states, "This creature would be about 40 feet in span with 145 square feet of area with a rigid spanwise cross-tube. With five ribs (battens) in the center and the rest of the sail inflating like a paraglider. A wing of such configuration would better the sink rate of any hang glider. It would out-glide the best if the drag of the suspension lines could be controlled, (a reduction in the number of lines may be possible by virtue of the partially rigid structure.)"

The leading edge spar that Pagen describes would make the wing impossible to pack but short rigid battens in the ribs are an interesting possibility.

Here is another idea being kicked around. Incorporation of a number of mesh covered vents in the top and bottom skins of ram air canopies. This may reduce the forces associated with slider down, bottom surface inflation. This would require a delicate balance between the amount of venting and the necessary internal air pressures but the concept is worthy of investigation. These vents could be covered for slider up delays. The success of such an idea could mean practical slider down delays of longer than 3 seconds.

PERFECT GEAR

BY • ANDY CALISTRAT

What is the perfect gear for BASE jumping? Most of those with any amount of experience in this sport each think they know the right answer to this question. Those without much experience wish that the rest of the folks would make up their minds about what the right answers are!

So, at the risk of offending the sensibilities of both camps, I would like to postulate what I'm sure is bound to be an unpopular position: I don't think there is a right answer! Just about any combination of gear will work. The important point is that every combination also won't work.

You see, there are very few gear choices that are outright dangerous. If you use a 24-inch pilot chute and free fall from a 100-foot building, then I hope you have written me into your will. Beyond this (and a few equally ludicrous examples), BASE jumpers have managed to successfully use every conceivable combination of gear, equipment and techniques known.

Could deciding on BASE gear be as simple as picking and choosing what you like best from each category? To illustrate a point, consider the case of a scared little skydiver at that overwhelming moment when he

first realizes that he is forever addicted to the sport of parachuting: namely me, after my very first jump.

Having placed some importance on gear that would be conducive to my longevity, I set out early one Saturday morning to do a little research at the DZ. As my luck would have it, a 20-way was packing in the hanger.

Now keep in mind that this is a Twin-Beech-and-Cessna drop zone, so a 20-way was hot stuff. It required a formation load of three airplanes. Yes, these were definitely the 20 hottest skydivers on the drop zone. THE SKYGODS! Surely, if anyone knew the perfect gear for skydiving, it must be them.

So I was more than a little surprised to find that none of them could agree on the best container. Some had Vectors, others had Racers, and some had other rigs yet. And each person seemed to be brimming with reasons for justifying their choice as best.

I finally managed to convince myself that maybe the container was not so important. After all, it is just a passive receptacle the parachute is placed in for free fall. Surely, it's the parachute itself that is the important factor. After all, the canopy is what gets you safely to the ground.

Well, I was again distressed to

find that there was no consistency here, either. Some jumpers had seven cell, others had nine, and yes, there were even some five cells on the load. Even among those jumpers who had the same number of cells, they each owned different brands. Every one of them had a different way of packing.

I finally decided that maybe the container, main parachute and packing method weren't all that important - it's the reserve that really counts. After all, this is the parachute you go to after all else fails. As you may have guessed, each jumper on that 20-way had a different reserve: some round, some square, and all different brands, diameters and square footages.

I finally began to wonder if this was really a group of 20 experienced jumpers. Maybe they were complete geeks? Maybe the 20-way wouldn't build? Maybe I was about to see a mass bounce?

It was with some trepidation that I watched the airplanes turn on jump run. I was then treated to a beautiful, perfectly timed exit. The 20-way built smoothly. It turned a second point. The jumpers each tracked into their

own airspace. Every canopy opened perfectly. All the jumpers made soft, stand up landing in the packing area!

Could deciding on gear *really* be as simple as "pick-and-choose?" My first instincts told me I preferred the Vector container. I was preferential to 7-cells and round reserves. The side packing method seemed best to me. Well, I'll have you know that my 7-cell main, Vector container, round reserve and side packing method has done me just fine for my last 1,000 jumps. I have every confidence in them for my next 1,000! (Knock, knock).

Yes, most combinations of gear will work. More importantly is the scary converse: every combination *won't* work. This point is illustrated in the sport of BASE jumping by the various methods people use to set up their equipment.

Some bag deploy while others free pack. Packing in the bag offers a cleaner deployment and arguably less chance for a line over. Unfortunately, bags have the chance of turning or spinning during deployment. Free packing helps to eliminate this factor although they do offer a less-clean deployment, and possibly more of a chance for a line over.

Two BASE fatalities last year are a case in point. Two jumpers were using packing methods at opposite ends of the scale: free packing and bag deploying. Both methods have been successfully used by BASE jumpers for years. One jumper was killed after his bag spun and caused numerous line twist that he was unable to clear before impact with a gorge wall. The other jumper was free packing and had a 180 that was followed by a building strike.

As jumpers we want to desperately believe that it was

somehow their fault. Things just don't "happen" in this sport. If they had a 180 or line twists, if something went wrong, then there must be an explanation. If we can't find one, we casually pass it off as the gear not being perfect. "Someday someone will develop a canopy just for BASE jumping," we keep saying.

It's easy to understand why we think this. After all from the first day you walked onto the drop zone, your instructor handed you a parachute that he said was right for you. It was the right type. The right size. It had the right reserve. It was correctly packed. All the first jump student had to do was put it on and go out the door!

Skydivers entering BASE jumping probably have the same expectations. After all, to the casual observer, BASE jumping has its own exclusive set of gear. Buzz words abound, "tail pockets," "line-mod," "tershes," and so on. Skydivers arriving at bridge day for the first time probably expect to bring their gear, slap it down, and have all the necessary modifications made to it, and be ready to go.

Unfortunately, they are faced with a confusing sea of inconsistencies and conflicting advice. Staff member "A" recommends going slider down, "B" recommends going slider up, "C" recommends going mesh slider.

Jumpmaster "1" recommends a 52-inch pilot chute, "2" recommends a 42-inch and "3" compromising at 48-inches. So - which is correct? All are! Pick and choose whichever you like the best, whichever makes more sense to you, whichever you're most comfortable with. Whatever you end up choosing, keep in mind there will be a time the system *won't* work, and be prepared for it!

Will the "perfect" BASE gear ever be developed? I think not. To understand why, simply look at modern equipment. Parachutes have been around for a lot longer than anyone reading these words, and the technology advances from the silk canopies to the modern-day squares have been astounding.

Yet, in all this time and with all these advances in technology, you still see cutaways at the drop zone on a regular basis. Federal law still mandates that you wear two parachutes for skydiving. Yes, lines still entangle, sliders hang up and a variety of other problems can occur.

Does this mean that skydiving is not survivable on a long term basis? No, it just means that you must keep all the bases covered. Here is where the fact comes to light that in BASE jumping you can't keep all the bases covered. Most skydivers I talk to still consider BASE jumping to be a one-parachute leap, and if you open with a 180 on a building, you're dead.

Many BASE jumpers help to perpetrate this image. Too often I've seen a fellow jumper standing on an edge of an 800-foot object with only one parachute, declaring, "It's a one-parachute leap!" They then proceed to take a six second delay, of *course* that's a one-parachute jump!

Wouldn't it be a little more prudent to take a two or three second delay, wearing a tersh or a square reserve set-up? From line-release modifications to tertiary reserves to deep brake settings, mesh sliders and a dozen other innovations, the technology is there to deal with gear *when things go wrong*. Remember, until someone develops the "perfect gear for BASE jumping," there will always be the potential for things to go wrong.



SLOW DOWN

BASE JUMPING IS exciting, fulfilling and addictive. Yet there's a price to pay and to often that price is human life.

Worldwide, since October of 1989, there have been four BASE fatalities reported. This is in sharp contrast to the two fatalities per year that seemed the average. Four dead in just 12 months.

This brings the total since 1981 to a reported 18 dead, plus one jumper who is permanently injured. When you consider there are probably less than 300 hardcore BASE jumpers globally, even two fatalities per year is excessive.

Veteran BASE jumper Mark Hewitt, recently reported his 400th BASE jump and we congratulate him. It's truly a remarkable accomplishment. Because of his experience, Hewitt, is one of maybe twenty or thirty people spread across this country who are truly expert BASE jumpers. These are the folks who can BASE jump on the fly. They can walk up to a site cold, accurately size things up, and jump relatively safely.

The problem is with the rest of us. The dangers inherent in BASE jumping seem obvious to people who don't BASE jump. It's low, the

landing areas are messy and most leaps are one parachute jumps. To BASE jumpers, especially new BASE jumpers, the dangers may seem more elusive.

A person can too easily start BASE jumping and make 20 or 30

"Numbers just aren't that important and chasing a logbook is certainly not worth your life."

jumps without incident and think, "Hey, this is fun and it all works just like they say!" The true fact is, BASE jumping is very very dangerous.

Sometime, probably within the next five years, someone will make a 1000th BASE jump. That person will deserve all the honor that goes with such a feat. It will show that with enough attention to detail, the impossible, is indeed possible. The only hazard here is people getting the idea that BASE jumping is a numbers game.

For the majority it may be far better to take it slow and savor each jump. When meeting another BASE jumper for the first time don't automatically ask, "How many BASE jumps ya got?" Numbers just aren't that

BY • NICK DI GIOVANNI

important and chasing a logbook is certainly not worth your life.

Carl Boenish always made a point of telling people how few BASE jumps he had compared to

the sizable amount of time he spent doing it. Was he really trying to tell us BASE jumps weren't meant to be approached casually or racked up like skydives?

BASE jumping is a young sport. There is much to learn and we are all still test jumpers. Gear is just staring to come into its own. But the safety cushion, that comes from really knowing what you're doing, isn't there for most of us. Each BASE jump still has that element of rolling the dice.

We are still at that stage where you can do everything right and still get seriously hurt or killed. The sport will no doubt become safer as time goes by, but it is important to realize we aren't there yet.

What can you do? You can live to learn and pass on your knowledge to the rest of us. A live jumper with thirty BASE jumps is worth infinitely more than a dead one with a hundred.





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