FLIGHT LINE

THE PUBLICATION OF THE WINGS OF ROGALLO
NORTHERN CALIFORNIA HANG GLIDER ASSOCIATION
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I suppose I really should hook in this here carabiner... (photo by C Moreno)

In This Issue:

WOR Officers

President
Steve Rodrigues
831-476-2227
srskypuppy@aol.com

Vice President
John Wilde
650-556-1320 (H)
wildeblu@aol.com

Treasurer & Membership Services
Don Jones 510-793-3551
wort@aol.com

Secretary
Paul Clayton
408-246-2218

Flight Director
Mike Vorhis
(510) 744-1953
vorhis@corp.cirrus.com

HG Observer Coordinator
Dave Jacobs 510-651-6313

PG Observer Coordinators
Kathy Wilde 650-556-1320
Wildeblu@aol.com
Kim Galvin 510-748-0451
Kim_Galvin@mpsh.com

Editor
Paul Gazis
428 Madera Ave #1
Sunnyvale, CA 94086
408-736-0764 (H)
650-604-5704 (W)
pgazis@mail.arc.nasa.gov

Member Services

WOR Soaring Forecast
408-973-1976

Mt. Diablo Weather Robot
925-838-9225

Ed Levin Weather Robot
408-946-9516

San Jose Airport Weather NOTAMS
408-980-8459

WOR Business
PO Box 361885
Milpitas, CA 95036

WOR Web Site
www.wingsofrogallo.org

The Editor s Turn

As most of you must know by now, fellow club member and ex-club-president Mark Mulholland was seriously injured in a mid-air collision with a Russian pilot at the World Championships in Spain. We do not, at present, have any reliable details regarding the accident itself. Apparently the Russian pilot escaped with only minor injuries, but Mark was less fortunate. He is currently in a hospital in Sevilla, where his condition has been described as serious but stable. JB's early reports to the HG Mailing List suggested that Mark was conscious after the accident, and there is no evidence of neurological damage, but he does have broken bones and internal injuries, and as of this week he was still on a respirator.

Mary and Paul Mulholland have flown to Spain to be with Mark and they are sending back reports regarding his process. I am sure they would appreciate all of our support. Their address in Spain is:

Virgen de La Antigua N8 A4
Los Remedios
E.41011 Sevilla
Spain

(Note: they warn us that mail is somewhat slow.)

We are planning a **Fly-in** at **Ed Levin Park** on **July 14** as a benefit for Mark and his family. Details remain to be determined, and the date may change, so check the **Wings of Rogallo WWW Site** at http://www.wingsofrogallo.org, contact one of your club officers, or call Mission Soaring for details.

[*This article came from the* **USHGA** *Web Site and is used by permission. It seems particularly appropriate -- Ed.*]

Flying the Crowd-ed Skies

by Paul Klemond

Having a whole mountain to soar over by yourself can be a glorious solitary experience. Most of us prefer having at least a couple of flying mates up there with us. At the other extreme, some competition pilots actually love flying in a dense gaggle of gliders all sharing a thermal. But most of us don't really enjoy flying in a thick swarm of gliders.

Paragliding is becoming popular here in the Pacific Northwest and elsewhere. At my home site (Tiger Mountain in Washington) we're seeing some real problems from overcrowding. Some of the hang glider pilots have been flying here for decades, and sometimes they understandably feel invaded by the hoards of paragliders. Long term we need to open more flying sites, but meanwhile I think there are some easy solutions that will ease some of the tension. First let's look at some of the specific problems. Maybe these are familiar to you at your sites too:

Mid-air collisions become more likely as more aircraft fly in the same airspace. It's more tense and less fun.

Boxed-In: It's stressful when a bunch of other flyers "box me in" against the terrain.

Thermalling versus Ridge Soaring: Tension mounts as thermalling pilots and ridge-soaring pilots fly in traffic patterns that conflict with each other.

Hang Gliders versus Paragliders: Tempers flare as hang glider pilots and more and more paraglider

pilots of varying experience levels all share the air. Co-operation and harmonious flying is made difficult by differences between the mindsets of some paraglider and some hang glider pilots, but also by inherent differences between their respective aircraft.
Landing Squeeze: The LZ starts looking dangerously small when two, three or more gliders all descend to set up approaches and land at the same time.

Launch Etiquette: the wind dummy is "coring up" and twenty pilots all want to get into the air *right now* but some bozo has laid out his wing right in front on launch, and he isn't even clipped in!

Screaming and even violence in the LZ's and Launches: some pilots are used to crowded sites, but some are new to it and it sucks. Tempers flare as pilots blame other pilots. No one likes to take the blame. Egos butt heads. The resulting caveman behavior is just not acceptable.
Most of these problems and more are also happening at other sites all over the world. Besides making flying more stressful and less fun, some of these problems create dangers and may lead to injuries, fatalities and the loss of the privileges of being allowed to fly at a given site.

So, what do we do about it?

I have a few ideas. (I hope you'll write to this magazine to fill in the holes in this list!)

Attitude
Everyone is here to *enjoy* flying. We're not defending our country or our honor, we're *recreating*. So don't get too serious. Keep a light heart.

We all share the same privileges of flying at a site, no matter what kind of aircraft, and no matter how much or little experience. (Pilots must still meet sensible minimum requirements for some sites.)

Start with respect for your fellow pilots. Assume they care as much about safety as you do. Give the other pilot the benefit of the doubt, and stay calm as you discuss incidents. Confrontation closes minds, respect and cooperation open them. Becoming defensive loses a valuable chance to learn. Don't assume your point of view is the only correct one.

Wake Up! Go ahead and indulge those profound feelings you get from flying, but above all else stay alert and aware of everything in the air around you. You are flying, and flying demands your responsibility and awareness.

Never put your lust for lift ahead of safety.

Mental Preparation: challenge yourself to identify potential problems way ahead of time, and plan contingencies. This will help avoid panic when things go wrong fast. At every moment, ask yourself "What would I do if..." ("What would I do if the paraglider 30 feet above me hits big sink? Takes a left collapse? A right collapse?" "What would I do if that guy continues his turn without seeing me?" etc.)

Skills
Fly under the radio supervision of an instructor until you have the required minimum rating for the site you're flying. Don't jeopardize others by flying without this qualification.

Clear Your Turns. This means turn your head to look where you're going before you start to turn your glider. Looking 90-degrees to the side is not enough – you must look 135 – 180 degrees behind you to be sure your turn will not create a hazard — even if you have the right of way.

Learn and obey the rules: the cardinal rule, the rules of the ridge, and thermal rules. (See sidebar.)

Be Aware. Your life depends on knowing exactly where all the aircraft around you are at each moment — where they're heading, and how fast. Look around and tune in. Don't be caught off guard.

Make eye contact. Other pilots need to know whether or not you see them and are predicting their actions. Turning your head helps.
Respond Early and Obviously: If you don't have the right of way, don't wait until the last moment to begin your yield actions. Try to turn gradually not abruptly. Give others clues about what you're going to do, and time to alter their course smoothly. Hang gliders fly faster than paragliders — if we paragliders don't yield early enough when a hang glider has the right of way, the hang glider is forced to yield to avoid an accident. The hang glider pilot gets justifiably angry. Do your part and yield early.

Hang Gliders versus Paragliders
Hang gliders and paragliders often encounter some problems when they share the air together. This might be an understatement – sometimes the rift between the more hotheaded members of the "airbag" and "plumber" communities makes the feud of the Hatfields and the McCoys look like a group hug by comparison.

Understanding some basic differences and correcting some bad habits can reduce conflict and tension. The big differences between hangs and paras are speed, turning speed, aircraft size, and pitch control. Let's look at these.

Tandem and competition flying aside, most recreational paragliders generally fly at remarkably similar speeds with each other.

They have a relatively small range of speeds, and they rarely pass each other, so they often don't readily empathize with those who pass them.

Hang gliders generally fly faster than paragliders, forcing the hang gliders into a passing situation – all the time when flying with paragliders. Passing someone requires more care and responsibility than being passed by someone else.

Paragliders generally react slower to turn initiation, and rotate more slowly into the turn.

These speed and turning differences often result in a paraglider feeling like they can't react fast enough to stay out of the hang gliders' way, so some pilots sort of resign themselves to watching the hang glider do all the collision avoidance.

This isn't fair, it's just something I see happening. Paragliders need to understand this, to fly more courteously, to do what they can, especially initiating avoidance actions early. Hang glider pilots need to recognize these differences and not expect paragliders to do some things that only a hang glider can do.

The worst paragliders go so far as to blow off the right of way rules, partly because honoring them would require a lot of foresight and initiating yielding action much much earlier than they are used to. Some use this as an excuse to rudely hog the lift. This is unacceptable behavior and needs to change.

Next difference: hang gliders have pitch control, paragliders really don't. This gives hang gliders a bit more liberty and options (and therefore, responsibility) when sharing the air and avoiding collisions.

Last difference: when I fly my tandem paraglider, my aircraft is a whopping 33 feet tall. I've often seen hang gliders flying very close together in a thermal – they love it. There's just no way to put a 33-foot tall slower paraglider in there without causing some disruption. I'll avoid it if there's other lift to be had, and when I can't avoid it we both need to just calmly work around each other.

We have a choice: we can keep our "clan mentality" and complain about each other, or we can just adapt and go fly and make the best of it and enjoy it. If you really want to understand another type of aircraft, talk to someone who flies both and is passionate about it. I have a standing offer to give any rated hang glider pilot a tandem paragliding flight, free of charge. I hope we'll all benefit from more understanding and some courtesy.

Rules for Sharing the Air

Cardinal Rule:
Do not force another pilot to avoid a crash. Keep your options open and actively avoid the crash yourself, no matter who has the "right of way."

Rules of the Ridge:
The pilot with the ridge on his/her right has the right of way. Yield to any pilot turning away from the ridge.

Any pilot lower than you has the right of way. Yield to anyone below you.

Maintain at least 50 feet of separation in all directions from all other aircraft.

Passing: (*Warning:* This rule varies between sites and even between aircraft types! Learn the local protocol before flying any site!) At some sites, faster aircraft should pass on the outside (away from the ridge). Be prepared to yield in case anyone you're passing turns away from the ridge! It could happen suddenly! At other sites, faster aircraft pass on the inside (between the ridge and the aircraft you're passing.)

Thermal Rules:
Any pilot lower than you has the right of way. Yield to anyone below you.

First pilot in the thermal sets the turn direction — right (clockwise) or left (counter-clockwise). When people are turning in different directions (such as when separate thermals merge), be flexible. Try to do what the majority are doing, and don't switch directions often.

General Rules:
When your path crosses the path of another pilot, yield to the other pilot if he/she is to the right of your path.

If you're on a head-on collision course, break right (turn away to your right.) This is just like driving a car in the US – your "lane" is always to the right of oncoming traffic.

Note to Travellers: Some countries or sites use variations that differ from these rules. When in Rome, learn how the Romans fly...

Thermal vesrus Ridge Rules
When thermallers and ridge-soarers cross paths, who has the right of way? Some sites feature both thermal and ridge lift. If you enter a thermal and can safely 360 or S-turn in it without disrupting traffic, go for it. If it's too crowded, let it go. If other pilots are turning in a thermal, don't barge through in ridge pattern. Adapt to both the air and the aircraft around you. If it's too crowded at the "house thermal" or a known lift area, go check out someplace else. Sometimes it's better to explore an unfamiliar area and risk sinking out.

Launch Etiquette:

If others are waiting, choose a clear space well away from areas used for actual launching and top-landing to prepare your wing and clip in. Then carry your wing to where people are waiting to use the launch areas. (Paragliders: if needed, just ask others to help you lay out your wing after you're clipped in.)

If you don't intend to launch immediately after laying out your wing, honor others' request to "push": gather your wing and move aside.

If someone else is trying to top-land while you're setting up, try to use only space that isn't needed for their top-landing. (Sometimes top-landings are emergencies!)

Landing Tips:
Anticipate Rush Hour: if there are a lot of wings in the air, think how crowded (and scary!) a small LZ will be if every one gets "flushed" at the same time. Sometimes it's wise to leave lift early in order to "beat the rush hour" in the LZ.

Vertical Separation: As you descend, look around. If there are other gliders at or near your altitude, no matter how far away they are, you'll likely be squeezed as you converge on the LZ. If the other flyers don't beat you to it, consider increasing your descent rate to gain some vertical separation. Do this early! Talk to your instructor if you don't know how to safely descend quickly.

Share the LZ: It can be tense but sometimes you just have to land at the same time as someone else. If so, keep calm. Most sites have some standard landing pattern – if not, the "Aircraft Approach" pattern is strongly recommended. Look all around! Inadvertently cutting someone off can cause an accident! You will probably land side-by-side, so give your buddy room. Try to do a long straight final glide instead of lots of low late turns. (This is easiest when there is no wind-gradient over the LZ. Talk to your instructor!

Contingencies: In general, always try to land in the LZ, but if the LZ is looking really crowded, don't force yourself to land there if it's not safe! As a last resort, think about other places where you can safely land. Do this early while you're high enough to have options. Consider checking out other fields on foot beforehand so you know which fields are safe and unsafe. In an emergency, land where you can.
Clear the LZ: as soon as you land, secure your wing then immediately move to the side to maximize open LZ space for your incoming comrades.

These things are all worthwhile, but ultimately a site can really only host so many pilots at one time. If crowding brings on real accidents, it may become necessary to impose a higher minimum rating for flying there. This may seem unfair, but it is a practical way of dealing with a demonstrated safety problem and is common at numerous sites.

There is one more solution that we all should put effort into: opening new sites nearby. I'm working on two sites near Seattle Washington: Rattlesnake Mountain, and McDonald Mountain. More sites means less crowding, variety of scenery, and maybe the ability to fly in more kinds of weather such as different wind directions that render your home site unflyable.

Have fun and fly smart! I hope some of you wise birds out there will write a letter to the magazine and correct all the errors I've probably made in this article!

[*Paul Klemond is a tandem instructor in Seattle, Washington. He flies paragliders and usually learns a lot when he gets chewed out by his friends who fly hang gliders, especially the really crusty ones who hate airbags.*]

June 2001 Meeting Minutes

by Paul Clayton

NEW MEMBERS/GUESTS

Ken and Jackie. Watchers from Mission Peak wanted to see what flying
was all about.

GREAT FLIGHTS

Vince Entder had a 100 miler in his Atos for Memorial day weekend in the Owens. He also had a 50 miler at St. John.
Colin Perry took a screamer for a Tandem flight.
Wayne Michelson- did the Crazy Creek Aerotow. It was worthwhile.
Pat Denevan- Flew Funston for Father's day.
Tom Moock said flying has been good at Dunlap.
Paul Gazis had a good day @ Mission. To quote Paul, "It was like thermaling from another dimension."

PRESIDENT'S REPORT - Steve Rodrigues

A Bay Area club flyin is tentatively planned for Labor day at Dunlap. An earlier joint event was rained out.

VICE PRESIDENT'S REPORT - None

TREASURER'S REPORT - None

MEMBERSHIP COMMITTEE - Carmela Moreno

We have 485 paid members for 2001.
FLIGHT DIRECTOR'S

REPORT - None

MISSION PEAK SITE COMMITTEE REPORT - Steve Rodrigues

The widening of the gate is on hold. Some details of the construction need to be finalized before a budget can be presented to the club. The east launch proposal is under consideration. Flight parameters need to be presented to the Parks.

MT. DIABLO SITE COMMITTEE REPORT -

The weather robot has been repaired by a local fire department, while they were repairing their weather robot. It may be possible to combine our maintenance efforts with theirs. Mike Gomes offered to help with windtalker maintenance.

NEWSLETER REPORT - None

COMPETITION COMMITTEE REPORT - None

OLD BUSINESS

None.

NEW BUSINESS

Pat Denevan reported that there will be a Tandem clinic on August 18-19. An instructor certification program is also planned. Contact Mission Soaring for details.

Entertainment was Rick Nowack getting a flight in a B-17. Excellent footage.

30 people attended.

END OF MEETING MINUTES

My Best So Far

by Kevin Cameron

Here's the story of the best flight of my life so far. It's a little long but I felt compelled to write everything down. While there are probably plenty of people out there for whom a flight like this is not unusual, for me it was a life-changing event.

I decided to enter the *Wild-Wild West Regionals* just a week before the event. I hadn't given it a whole lot of thought or research but figured it would be nice to get a bit of competition practice before going to the nationals in Hearn in August. I called Paul Clayton since he has entered this comp several times before and he, Mike Vorhis, and I ended up driving to Nevada together. I'd never flown this comp or even gotten an XC in that area before so it was nice to get some advice from those guys as we drove.

The first day of the comp (6/22/01), I signed up, paid my money, and went up the hill (McClellan) like everyone else. I set up quickly since I was advised to get off and up before the strong winds kicked in. A bit later I was standing in the launch line waiting for the pilots in front of me who were (understandably) a bit reluctant to take off given the number of pilots who were scratching out front. As I got close to the front of the line, the meet organizer (Ray Leonard) said "You're not in this meet." I said "Yes, I am." "No, you're not" he said. "I paid my money" I said. "You'll get your money back but this is a flex-wing-only meet". All I wanted was to be scored with the others and have an externally provided goal to help focus me and tune me up for other comps. If, by some miracle, I'd placed in the scores, it wouldn't have bothered me to have been disqualified from the prizes because of the disparity in wing types. I'm more motivated by my own assessment of my performance anyway. So, I resolved to keep score myself and try to make a good showing.

I launched just as conditions were starting to turn on and found it easy to get up. On the third thermal, I passed through 9000 feet and committed to going over the back. Some of the early birds were on course and marking the lift in front of me. I got in with them and quickly climbed through 12,000 feet. I radioed to Mike "Woo-Hoo! 12,400 feet. That's a new altitude record for me". Mike radioed back "Woo-Hoo! I'm at 5,400 feet!" since he had landed short of goal (better luck next time).

I continued on and was soon at the top of the stack (that's one of the things I really love about my ATOS). I had been watching the distance on my GPS but was surprised anyway when I saw goal (about 28 miles east of launch on Hwy 50) and realized that it was within an easy glide. I was having a lot of fun and really didn't want to land yet. Then I noticed that Vince Endter was heading North toward I-80 on his ATOS. When I'd talked to him while setting up, he said that his goal was Lovelock. This seemed like a lot more fun than landing so soon. Unfortunately, Mike and Paul were still on the ground awaiting our driver (a local named "Jerry") and I had no idea how long it would be before they got picked up and could start chasing me. I really didn't want to lose radio contact and land without anyone knowing where I went. Since I was a couple thousand feet above Vince, I devised a cunning plan to stay with him and land close in order to (hopefully) get a ride back. However, before I caught him, I found a decent thermal and decided to climb in it while he was still in sink. While climbing, I noticed belatedly that Vince had caught some much stronger lift

and was up to my height already. So, I broke off from my thermal and headed off into the sink to give chase.

I found the lift that Vince was in and it was, indeed, strong. However, by the time I topped out at about 14,000 feet, Vince had departed to the north-east and disappeared into the haze and thin smoke from a fire near Truckee. Oh well, So much for my cunning plan. Next time, when I'm higher and decide to cover someone, I'll darn well *cover* him. By now though, the conditions were starting to look so good that the possibility of a night in the desert didn't seem like such a high price to pay. Besides, I'd recently been advised that, if I wanted to start getting long XC's, I had to stop worrying so much about how I'd get back and that it usually works out OK one way or another. So, I headed out along I-80 in the direction that I had last seen Vince. As it happens, Paul came on the radio about ten minutes later and said he was on the road to come get me.

I got over a nice-looking ridge to the north of the road but soon found myself in sink. I had a lot of height but the sink alarm kept blaring out for mile after mile. At about the 50 mile mark, I had run out of ridge. I crossed over to a much lower ridge to the south of I-80 and still didn't find anything. I went a couple more miles and reached the end of that ridge too. I was starting to consider where to land below but kept reminding myself not to give up. I was down to about 6500 feet when the sink alarm stopped. I slowed down and started searching. Sure enough I got a few beeps of lift indication from the vario. It was really light and broken up. I was flying slow and keeping a light touch on the bar in order to feel out where the core was. It was working and the vario started to beep more consistently. Then, *WHAM!* The right wing instantly rose to nearly 90 degrees and I was in a huge slipping dive. I recovered and considered my options. That thermal had definitely gotten my attention. I was still low. The odds of finding another thermal before I landed were slim. I still wasn't ready to land. So, I turned the glider back into it and steeled myself for the battle to come. During the next minute or two, I got dumped out several more times and was getting tossed about pretty good. I found myself making full scale control movements just to try and stay in the core. In the past, this would have scared me off. That day, though, it didn't bother me. In fact, I was having fun. I'd met the dragon on his own turf and was winning! It was this mental state that carried me through the whole day, in fact.

As I climbed, the thermal smoothed out and got bigger. The lift remained strong though and when I looked at my vario, I saw that the averager was pegged at 1500 fpm. I think that's the first time I'd ever seen it do that. I climbed past 16,000 feet and headed back on course along I-80.

There was lots more lift along the way and and cumies were starting to form. Before too long, I had made it to Lovelock (~90 miles). I looked around for Vince though I knew the odds of seeing him were low. I heard later that he landed where I nearly sank out. The lift over Lovelock was light, scattered, and broken up. I found a few very light thermals to work and slowly drifted over the town at about 9000 MSL. About the time I got there (3 1/2 hours into the flight), Paul and Jerry caught up with me. I thought that He, Mike, and Jerry (our driver) were in the car. I found out after I landed that Mike had gotten picked up by someone else and that the Jerry in the truck was Jerry Mahoney. This Jerry is a meet competitor whom Paul had picked up at goal because he needed a ride back to camp. It would turn out to be a long ride.

After about 30 minutes of drifting, I finally started finding some better lift. Before too long I was high again and heading downwind. While there were cumies present, they were fairly widely spaced and not all of them had lift under them. The air between them was filled with strong, turbulent sink. But when I did find lift it was strong (though often rowdy). In fact, it was undoubtedly the strongest air I've ever flown in. Somewhere around Mill City I reached 17,500 feet. Between thermals, the GPS was reading from 50 to 65 mph (~20 mph tail wind).

From Mill City, I continued north-east to Winnemucca. I got there at about 9000 feet. There weren't any cumies near the ridge that runs along I-80 (the East Range). I decided to go over the back to the east and try to reach the next ridge (the Sonoma Range) though I knew it would be stretching my glide capability. I was down to about 1000 feet AGL (5800 MSL) before I found some light lift over the center of the valley. I drifted with it until I got close enough to Sonoma mountain to jump to it and climb along its slopes. While doing so, I noticed the GPS indicate 150 miles from launch. It was around 6 PM and the lift was starting to get lighter and smoother.

It took about 30 minutes but I eventually got over the top of the mountain and continued to climb to 14,000 feet. At that point, I had a decision to make. I knew that the best route would be to continue to the north-east to not only follow the wind but keep launch directly behind me and thereby make the most of any distance I flew. On the other hand, I wasn't sure how to describe which road I was on to Paul and

Jerry. I decided to play it safe and stay on I-80.

The air was getting much smoother late in the day. I did find some light thermals and stretched my glide out for considerably farther than I thought I would. I ended up landing a few miles short of the town of Battle Mountain. Paul and Jerry drove up a couple of minutes later. The straight-line distance was 174 miles and flight duration was 6 3/4 hours. I was a bit slow to pack up since I was very tired and totally blown away by what I'd done. It took over 4 hours to get back to camp.

The flight was something I've dreamed about for years but wasn't sure would ever happen. Yet, as great as it was, it's strangely unsatisfying. I find myself thinking about the mistakes I made that cost me time and distance. I keep thinking that, if I'd headed downwind from Winnemucca, I would very likely have broken two hundred miles. I find myself daydreaming of other long flights I'd like to make more than ever. I wonder whether it wasa stroke of freakish luck or if I will someday improve on it. I hope I do.

Kev

PS Thanks to Paul and Jerry for chasing me so far out into the desert. Thanks to Ray for DQ'ing me from the comp. Thanks to Vince for leading the way.

PPS My previous personal bests were:
Distance:
13 miles (foot launch)
68 miles (tow launch)
Altitude: 11,600 feet
Duration: 5 1/2 hours

The Wings of Rogallo Soaring Forecast -- Part I

by Greg

Soaring Report? It has been a while since the club has had a weather seminar. Many newer pilots may not even realize that the club has a phone accessible weekend weather summary (408 973 1976). Many pilots have asked what all the numbers we report actually mean. This article is intended to give you some weather background and point out some of the resources you have available when making that go-no go flying decision. This won't be a Weather 101 course. I want to focus specifically on the weather behind our forcast numbers.

Once upon a time, weather data was a closely held taxpayer supported secret, shared only with a few private industry resellers (who were happy to share it with you, for a price) and those who could cajol the secret direct access number to a sympathetic meteorologist. We got the number, and the **WOR** forcast phone was born. It is still available if you want us to distill the info., but you now have abundant web access to the raw info. if you want to make your own assessment. Greg Knepp has kindly assembled weather info and links to usefull sites on the **WOR** website. One of the best starting points are the aviation weather pages on **NOAA**'s bay area website: www.nws.mbay.net.

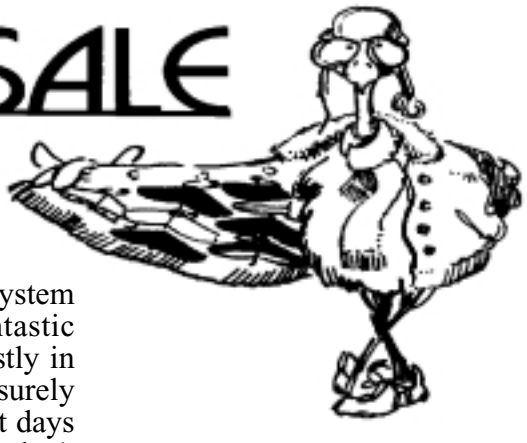
Assessing the potential at *Ed Levin*, *Mission*, or *Mt. Diablo*, starts with a profile of the atmosphere over the Bay. We get a snapshot several times a day from balloons released at the Oakland Airport. They report temperature, humidity, wind, and pressure as they rise. We are most interested in the change in temperature with altitude, for this determines the potential for thermal activity.

As the afternoon sun heats the surface, the air near the ground is heated. Hot air is light air, and begins to rise. As long as a bubble of air remains hotter than air surrounding it, it will continue rising. By studying the actual temperature at various altitudes, we can predict how well and how high that bubble can climb.

Barring outside influence, air will cool as it rises. Dry air cools at approximately 5.4 deg. F per 1000 feet. (That's why you still need a jacket at 15.000 feet, when launch is pushing 95 deg.). This is called the dry adiabatic lapse rate. Wet air cools more slowly (about 2 deg.F per 1000') due to the effect of condensing moisture into clouds (more on this later).

[*To be continued in the next issue of the* Flight Line*!*]

WINGS FOR SALE



Wings for Sale

(Ad policy: ads run for 6 months, then are cancelled automatically unless they are renewed. Ads are free to WOR members)

Flexwings

Aeros Stealth 2 151 (Fresno area) Excellent shape. 1 yr old. Pictures at: http://www.geocities.com/skygodmatt/stealth.html. $3000 obo. Call Matt Potter (559) 243-1831

Aeros Stealth 2 151 (late 1998), Matrix cloth, white LE, red and blue undersurface. Additional sail and 2 extra dtubes. $2900 obo. Call Reto at (916) 804-4063, reto_s@yahoo.com

Aeros Stealth 3 Combat 151. Late 2000, matrix cloth, incredibly fast, thermals like a dream too. Special comp mods make it easy to dial between world meet performance and stock config. Flown in Speed Worlds on gold medal team. 1/2 hr total time! Owner is getting out of comp flying. Get yerself the steal of the century! This won't last. Glider is in Cupertino. $3500 or best offer. Call Reto at (916) 798-7156 or Mike at (510) 744-1953.

HP-AT 145. Approx 150 hours Good cond. Orange-light green-white. 6 hrs airtime since last preflight. Spare dtubes. $800 obo. Call Weegie (510) 649-8181, weegie@lightroom.com

Sensor Production Slot available! Paid for over a year ago; this glider is ready to start building! First time ever to order a Sensor and have it started within a week??? Here's your chance, topless or kingposted. Offered for dealer's cost. Call Mike at (510) 744-1953.

Sensor. 1993 Custom flap system (better than stock). Fantastic shape; less than 200 hrs, mostly in Sunday air. Flies so well -- surely you don't think all those great days and miles were skill! And I don't remember it ever being whacked. Great colors. I'd either sell this or the production slot (listed above), and use the other for myself. Call Mike at (510) 744-1953 if interested, and tell me what it's worth to you. No wise-guys please, although I know that's asking a lot.

Wills Wing Spectrum 165. Excelent condition Includes UV bag, ladder rack, straps, etc. Great beginner/intermediate glider. $1950, Call Roger at (408) 882-0382 (w) (408) 224-1815 (h) rohang3@aol-com

WillsWing Sport AT 167. Florescent green LE, black, yellow. Good condition. $1000. Call Roy 408 985 2810 netedtec@pacbell.net

Wills Wing Super Sport 153. Very good condition. $800. Call Mercury, (408) 353.2383. MercuryFly@aol.com

Wills Wing Supersport 163. Original owner, mint condition, many extras. Asking $1200. Call Tom (408)747-0414 lv msg.

Wills Wing XC 155 Fair to good condition $400. Call Russ (408) 737-8745

Paragliders

FreeX Spear (L), violet/white. Approx. 150 hours. Still covered by FreeX 300 hours guarantee. One of the most responsive DHV 2 gliders around. $900 obo. Call Steve Thorpe (408) 435 2600 ext. 506 (w), (408) 260 7029 (h), thorpes@arklogic.com

Ozone Electron (L). DHV 1/2. Only 14 hrs. Perfect condition. Weight range 95-115Kg. Have dropped below the min. weight range. Great performance and handling. $2000 obo. Call Larry at 650-248-5873, larry@tmpartners.net

Equipment

20 gore H.G. parachute with swivel. Never used and in excellent condition. $100 or obo. Call Rick at (408) 224-4378, sport@onemain.com

Apco Top Secura Harness with kevlar backplate and CO2 air-bag protection. $200 obo. Call Steve Thorpe (408) 435 2600 ext. 506 (w), (408) 260 7029 (h), thorpes@arklogic.com

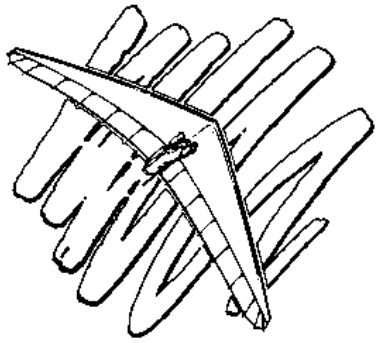
Tangent flight computer, $500, Call Reto at (916) 804-4063, reto_s@yahoo.com

Wills Wing cocoon HG harness, for pilot abt. 6'3". $10, **Open face helmet**, wht. $5, **Pacific Windcraft HG chute** $10. Call Paul (408)-246-2218.

Vehicles

1987 Chevy Suburban 4WD, 350 V8 1/2 ton, excellent cond. Comes with glider rack and 2m radio, $8000 obo. Call (408)-288-6607.

Wings of Rogallo
P.O. Box 361885
Milpitas, CA 95036-1885



Wings of Rogallo

FLIGHT LINE

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WOR member Mark Mulholland was seriously injured in a mid-air collision at the World Championships in Spain. We are organizing a Fly-In at Ed Levin Park on July 14 as a benefit for Mark and his family. Check the Wings of Rogallo WWW Page http://www.wingsofrogallo.org for details.

The next Wings of Rogallo Meeting will be held
Tuesday, July 17.
at the Summit Point Golf Club in Milpitas near Ed Levin Park
Check the Wings of Rogallo WWW Page
http://www.wingsofrogallo.org/meetings.html
for details and directions.