

FTHI Revisited

Failure To Hook In

Ever since the day someone realized that a carabiner would be a quick and easy way to connect and disconnect a harness to a hang glider we have had the potential to send glider and pilot off of cliffs on quite different paths. For over a third of a century we have very effectively exploited this potential with the results being that the pilot's path almost always ensures that he finishes second best.

Leg Loops

In order to have a good shot at landing with and in control of one's glider, it's a good idea to have at least one leg through a loop.

Leg loops, relative to the connection itself, are a good news / bad news issue.

The good news... A pilot who misses the leg loops often still has his arm pits going for him and is often able to kick into the harness boot, prone out, and proceed in normal enough fashion.

The bad news... A pilot who gets spit out of the harness immediately leaves his parachute - which may open above him if he has enough air below him or serve as chest padding if he doesn't - behind.

Partial Hook In

The phenomenon of a carabiner with its nose resting on the middle of the suspension webbing with its partially closed spring loaded gate holding things together is rare but potentially more deadly than that of one left dangling. The former can escape detection during a cursory check and can allow one to get well clear of launch before there is an abrupt indication of a problem, whereas the latter may still give the pilot an opportunity to abort.

The First Great Disaster - Assume You're Hooked In On Launch

In the Beginning there was the Assumption. The strategy was to set and suit up and run off the cliff with total confidence in one's reliability in flawlessly executing tasks, following procedure sequences, and blocking out distractions. It worked so well that it remains a common practice to this very day.

The Second Great Disaster - Hang From Your Suspension Then Assume You're Hooked In On Launch

The next well intentioned but deadly strategy devised to deal with the issue was the hang check. Prior to each flight the harnessed and connected pilot, almost always with the aid of an assistant at the front holding the nose down or at the rear holding the keel up, suspends his full weight in the harness. This ensures that, AT THE TIME OF ITS PERFORMANCE, the pilot is connected to SOMETHING which will at least temporarily support him at up to 1 G of acceleration.

The hang check is, of course, necessary for verification of basetube clearance on a new glider/harness combination - ONCE - but some of the more astute early observers soon noted that it was somewhere between fairly and worse than useless as a strategy to keep oneself alive. They realized that it entailed an inherent delay and thus a reliance upon a human's notoriously fallible memory of an action. A lemming has an infinitely better instinct for self preservation than does a hang glider pilot on the verge of stepping off a cliff with a MEMORY having done a hang check fifteen seconds prior.

The Solution (Mostly) - NEVER ASSUME YOU'RE HOOKED IN ON LAUNCH

By at least the late Seventies the independent thinkers had figured out how to completely eliminate the delay and confirm the existence of some sort of connection and leg loops engagement all with the same stone. All that was required was that AT THE INSTANT of one's decision to launch, one lifted the glider until it stopped rising and felt the tugs on the leg loops which were the elements which limited the connected glider's upward travel.

Interestingly, this resistance check is done by EVERYBODY anyway. It's just that it is done by the vast majority of people just after they leave the ramp, rather than immediately prior to the rest of the launch sequence.

Problem almost completely solved. There remained a level of vulnerability with respect to partial hook in and other areas of creativity and sloppiness but it drove a stake through the heart of the overwhelmingly more dangerous killer of simply being mistaken about one's on/off status - the garden variety failure to hook in accident. People who incorporated this practice immediately vanished from the annual tragedy summaries. It was such a blindingly obvious and stunningly effective solution that it only took USHGA several years and the odd needless death here and there to incorporate it in all of its pilot rating requirements.

The Fumbles

But as much as hang glider pilots profess devotion to the K.I.S.S. principle, they universally ADORE complexity. Can't get enough of it in their kites, harnesses, instruments on the plus side and, on the minus, required actions in critical phases of their flavor of aviation - preflight, launch, release, landing.

So when USHGA made the relevant changes to the Pilot Proficiency System and announced them, articulated the intent, and suggested four options for compliant procedures in the 1981/05 edition of Hang Gliding magazine it made a few catastrophic mistakes.

The stated goal was that the practice MUST be made subconscious. But the suggested methods ALL included complexities which made this difficult or impossible to achieve. They at least were a move in the right direction, starting and ending with the pilot on his feet. But the objective was to remedy the big killer of one falsely believing himself to be connected at launch and the effectiveness of these checks was watered down by gearing them for the job of preflight inspection.

THREE of the methods end with the glider still parked on the ramp and still in need of lifting and trimming.

ALL of the methods require turning and looking.

Another deadly mistake USHGA made was the actual wording of the revised requirement.

"With each flight, demonstrates method of establishing that pilot is hooked in just prior to launch."

"Yeah, I've ALWAYS done that. I ALWAYS do a hang check just prior to launch. I do it just off the back of the ramp, wait for the glider in front of me to launch, pick up, move to launch position, park while I catch my breath and brief the crew, pick up again, trim, wait for a good cycle, get a couple of neutrals from my wires, check traffic, and shove off. What could possibly go wrong with that approach!"

And, of course if that interpretation of "just prior" is valid, what could be the possible harm in extending it to two or three or six gliders back in line? Might as well make some use of the time being eaten up by the usual chronic potatoes.

"With all flights, after gaining footing at launch position and within three seconds of launch, the pilot must tension his suspension to the point at which resistance is felt at the leg loops."

Perhaps something like that would be an effective antidote to our self destructive creativity.

The Third Great Disaster -

Enter Your Harness ONLY When It Is Secured To Your Glider Then Assume You're Hooked In On Launch

And then in the mid Eighties the Aussie method reared its ugly head and was released on the rest of the planet as revenge for rabbits and cane toads. As it is nowhere properly defined or encoded into regulations - including those of the national organization of its home country - all that can be said with some degree of certainty is that it requires that the harness be secured to the glider before the pilot suits up in it, the concept being that if the pilot is in his harness he is, by definition, safely secured to the glider.

Upon first hearing of it many pilots, yours truly amongst them, vowed to never even consider using it, as getting into the harness was enough of a royal pain as it was. Time went by and few of us eventually gave it a shot and were amazed to find that it was actually a lot EASIER to get in with it partially raised and supported by the glider.

And it was a great way to preflight the glider/harness combination and connection.

And its popularity spread.

So what's wrong with the Aussie method?

There are many very legitimate reasons for not using it, some related to convenience, others related to safety. And any time you have a conflict between convenience and safety you've got a built in problem.

Schools running large classes have large incentives for having a student suited up and adjusted in a harness for the duration of the class. Time is money for all parties involved and typically everyone wants to get in as many flights as possible without adding extra demands to an already physically taxing session. Fatigue is not without its safety downsides.

Speaking as a former dune goon I would be sorely tempted to give a Dennis Hopper salute to anyone who insisted that I unsuit between each of a series of fifteen four or five pass flights.

To properly adhere to the Aussie method a practitioner must exit the harness to deal with any problem - such as a misrouted suspension line or a basetube clearance problem that might be remedied with a wrap of the hang strap or a clip into the next rung of a ladder suspension - that cannot be handled while connected. This approach discounts the factor that the more times a person has to perform a complex task, the more opportunities he has to screw it up. Twice as many suit-ups, twice as many opportunities to miss the leg loops.

(One wonders if there is an analogous Aussie glider setup and preflight procedure. To be morally consistent the discovery of the absence of a safety ring securing the speed nut on a downtube/basetube junction bolt at the end of the preflight inspection should necessitate the glider being broken down and bagged so that the whole process can be repeated from Square 1 - properly this time.)

Being connected to an intact glider almost always increases one's odds of survival aloft but, on the average, decreases them on the ground. There have been people on ramps who would have given the farm to be detached from the glider at a particular moment. There can be situations in which the safety margin for all involved, pilot and crew, goes up if the glider and suited up pilot arrive at the ramp separately and the exposure time is minimized.

But the biggie here is that the strategy of the Aussie approach is to maintain the discipline to the point that at the edge of the cliff the harnessed pilot can ASSUME and has his brain hard wired to believe he is secured to the glider under which he is standing because there are simply no other conceivable explanations for that set of conditions.

One of the problems with this is that it's a communist sort of approach. It operates on the principle that people are responsible, disciplined, focused, and noble - the way we lazy, lying, airheaded scumbags like to believe and portray ourselves to be. If we're given enough of an incentive to cheat, we will.

No True Aussier will EVER launch unhooked. If a proponent does then he obviously wasn't a True Aussier. Kinda like that riddled corpse over there with the Sacred Shirt obviously wasn't a True Believer because if he had been the bullets of the Infidels wouldn't have penetrated it.

And, of course, the Aussie Corollary is that one must NEVER perform a hook-in check "just prior to launch" as this is a sure sign of weakness and doubt and will reveal him to be an Infidel and thus deserving of immediate death by stoning.

The Gun Is ALWAYS Loaded

The hang check and Aussie method are PREFLIGHT PROCEDURES.

The hang check is a fairly useless preflight procedure because it rarely tells the pilot anything more and often less than a walk through will and imbues him with a false sense of security.

The Aussie method is a very good setup and preflight procedure.

Both of these approaches are EXTREMELY dangerous when misused as confirmation that a pilot standing on the edge of a cliff is connected to his glider because both rely on memory and assumptions.

Unloaded guns and loaded gliders kill people all the time because the status of both is based upon memory and

assumptions.

Launching a glider off of anything from a cliff to a dry lake bed and lots of stuff in between can get your life suddenly permanently altered or ended if your glider isn't securely loaded with you as effectively as the gun that is presumed not to be loaded with a round.

Stepping off the cliff with the glider is totally analogous to pointing a nine millimeter at the side of your head and pulling the trigger. It's dangerous no matter what. So you do everything you can to make it as safe as possible. You clear the chamber, dump everything out of the clip, secure the rounds separately, and make sure the safeties are on and functioning. But IMMEDIATELY before you put the muzzle to your temple you aim it at the ground and pull the trigger - just to make sure. An extra step with a negligible cost.

If you delay five seconds before going back to the temple you again aim at the ground and squeeze.

You Are NEVER Hooked In

The less confidence in your connection status at any given instant prior to moving a foot you have the less will be the likelihood that you will be dangling from the basetube a few seconds later.

Friends

Friends don't let friends violate critical safety procedures.

Anyone who's got some stupid reason for eschewing the final check or tells you that the trigger pull at the back of the ramp thirty seconds ago was good enough is not your friend.

If you see someone squeeze the trigger with the gun at his head without trying to kill an earthworm within the previous couple of seconds and do and say nothing, you are not his friend.

If you didn't learn this procedure in your firearms safety course then your instructor is not your friend and needs to have his license suspended or revoked.

A person who sees someone pointing a big gun at another person's head in addition to his own without doing the two second squeeze test and has the permit suspended immediately is the friend of both.

Memories Of Events And Assumptions Versus Motor Skills

Decisions based on memories of events and assumptions are very prone to error. Many pilots realize they hadn't actually strapped down their gliders only when they accelerate past 55 miles per hour. That's why it's a real good idea to raise a windshield wiper any time an unsecured glider is resting on the racks - even for "just a moment" while...

Using a hang check and/or the Aussie method as confirmation of being connected at launch relies on a memory of an event and/or an assumption and we've seen the results. The no frills lift-and-tuggers learn a hard wired motor skill that becomes an unforgettable component of their launch sequence. Their brains are physically altered. They are no more likely to omit the check than they are to forget to stuff the bar and get to the low side when the bottom drops out or stomp on the clutch pedal when the light turns green. These kinds of actions and reactions are automatic and require neither discipline, focus, nor anyone to think about them or remember how to respond.

Towing

Foot launch towing from flat ground is a lot more dangerous with respect to fthi incidents than is probably believed.

The pilot hooks onto the tow line and clearly remembers hooking something (quite possible even a carabiner) into something.

There's always more gear around to complicate things and distract.

Pilots tend to have a reflexive response to hold onto the glider when they sense a problem and often find themselves well above a good option level for letting go once they realize that's what they should have done in the first place.

Platforms and dollies make fthi incidents virtual impossibilities and solve a lot of other launch problems to boot. Use them if at all possible, if not don't fall into the trap of thinking that because the terrain in front of you bears no semblance to the Grand Canyon's North Rim that you can't get killed. Nobody touches the gas until a double lift and tug - the universal ready signal - is executed and observed.

Equal Opportunity

Yeah, I know, smaller folk tend not to match control frame geometry as ideally as larger ones and may have undue difficulty lifting and tugging.

The proper approach would be narrow shoulders option gliders - shorten the basetube, extend the side wires. But failing that...

A bit of breeze will float the glider up, regardless of your size, and do the job for you.

A wire crew can take the place of the breeze.

People have impairments of vision and hearing which may cut their safety margins a bit behind the wheel but we make adjustments and allowances. A pilot can tilt her head back and confirm the presence of a carabiner in the right place by a tap with the helmet or turn her head to see it. She can squat or do a walk through to confirm connection. But the goal is to minimize the delay, effort, and complexity of the check and establish it as a motor skill that is incorporated into the sequence of every launch.

But that action cannot and must not be a hang check.

Chicks and Dudes

I've been watching FTHI incident reports for most of the history of hang gliding and I just can't ever seem to find incidents of chicks being involved in them EXCEPT in cases in which they were untrained tandem passengers AND it was the responsibility of dudes to handle the connections.

Some small portion of this discrepancy can be explained by their much lower proportional representation in the sport.

The rest probably has something to do with some sort of corrosive effect testosterone has on neural pathways.

Lucky break 'cause the folk least likely to be able to do the lift and tug check also seem to be the ones for whom it is least needed.

Experienced Crews

There doesn't seem to be much advantage to having large numbers of talented pilots on crew and/or around launch. High concentrations of sky gods tend to dim the vigilance of and foster complacency within groups. The individuals comprising them fall into the trap of assuming that, with all that expertise around, if anything were seriously wrong somebody else would surely have picked up on it by now.

The Buddy System

The buddy system works great for scuba diving because it's an easy matter for two participants to go over the side at precisely the same instant, stay close for the duration, and physically assist each other should problems arise in their fluid medium.

Hang gliding is just the opposite. Forget about it.

We must watch out for each other as much as possible at all times but the buddy system can only work prior to launch and only if the partners alternate flying days.

Negative Reinforcement

The hang check and Aussie method are both very dangerous when accepted as clearance to launch.

The hang check is dangerous because it fails to work on frequent occasions. I strongly suspect that it kills more people than it saves. They tend to be really good at remembering doing the hang check but much less proficient at recalling unhooking shortly thereafter to deal with a radio or camera issue. Even the hang check performed the previous weekend tends to leave the brain signal stuck on green. But on rare occasions someone will go down for a check and end up a lot lower than he anticipated.

The Aussie method is dangerous because it works really well ALMOST all of the time. It works so well that people can see no value in the lift and tug check whatsoever. (There's no freakin' way that gun could POSSIBLY be loaded at this point! I checked the hell out of it thirty seconds ago. Just to show you how confident I am I'm gonna point it at my head and pull the trigger.)

We pick up the wrong messages from the success stories and discount and/or are completely unable to see the failures.

Gadgets

Much as I love gadgets and respect and admire the gadgeteers who selflessly devote untold time and resources to their development, they tend to introduce problems and dangers of their own. Example: If the absence of an alarm tone is an indication of a dead or missing battery rather than of a completed circuit, a pilot who has come to think of silence as being a green light may be in more danger than the folk without the wires.

Cut out the middleman. Do the check yourself.

The human brain is an electronic device which is easily hard wired for very reliable operation with respect to this operation. And it's got a great dead man switch - if there are no electrons moving the glider doesn't get picked up and moved to launch position.

Don'ts and Dos

Do not EVER ask someone if he's HAD a hang check. A person can answer yes mistakenly because he believes he has or correctly because he actually has. His answer will tell you nothing about his connection status or his likelihood of still being alive five minutes after the exchange.

Do not EVER ask someone if he NEEDS a hang check. Rarely does a pilot NEED a hang check. His clearance probably hasn't changed since last time and nobody ever died as a result of a twisted or misrouted suspension element. Use the amount of breath you'll save to ask him if he's checked his side wires. A failure in that department IS very likely to kill him.

If you want to help, look at his suspension to check his status.

In the unlikely event you notice his connection status is not what it should be DO NOT say anything about a HANG CHECK. Ask him to lift the glider as high as he can. This will scare the hell out of him - especially if he's on the ramp - and help teach him the proper diagnostic procedure.

Don't just lift and tug prior to your own launches. Make sure all of your fellow pilots lift and tug prior to your THEIR launches.

We all agree that a pilot who launched unhooked on a low shallow training hill was, for the purposes of the exercise, killed. Extend that approach to the pilot who launches on the shallow training hill - or anywhere else - without lifting and tugging immediately prior to moving a foot.

Philosophies Of Life

Hang checkers and Aussiers have conviction, discipline, and faith. They all have their acts together to the point that by the time they've completed their preflight procedures and checks and get up on the ramp they are confident that they are properly and safely secured to their gliders - and are almost always right.

Lift and tuggers are careless, soulless atheists who believe in nothing which they're not seeing with their own eyes at any particular instant and are deeply suspicious of that. They are quite sure at all times that - despite whatever care they may or may not have exercised prior to launch - they are NEVER hooked in except MAYBE when they're actually feeling leg loops tension - and are almost always wrong.

If a lift and tugger is wrong, he's wasted all the effort that may have gone into lifting his glider several inches.

If a hang checker or Aussier is wrong he'll immediately be getting a feel for just how steeply his glider dives while he's hanging from the basetube and thinking about his options.

Distractions

Everybody recognizes that new sites, new toys, competition pressures, interesting conversations, unnerving gusts, Turkey Vultures going up like rockets, friends in need of assistance, and unavoidable disruptions of routine procedures can be deadly distractions. But also...

You're WAY better off launching stoned out of your mind and half drunk in fifteen gusting to thirty with:

a dry Camelbak;
a camera pointed straight up at the undersurface;
a dead vario;
a radio locked onto the pizza delivery frequency with the volume turned way up;
the primary suspension a foot too long and twisted and the backup webbing fluttering in the breeze;
all of your safety rings missing;
half a dozen untensioned battens;
a slightly bowed downtube;
flat tires;
an unbuckled helmet sitting on the passenger's seat along with the tip fairings;
the parachute pins out and an active Deer Mouse nest in the container;
the VG full on;
the starboard outboard luff line hooked under a batten tip;
an aluminum carabiner unlocked and backwards;
a moderate left turn in the glider; AND
an unzipped and unbuckled harness with suspension webbing twisted, support lines misrouted, a leg loop missed, and a medium sized Timber Rattler in the boot

than you are with everything just hunky-dory and your carabiner dangling behind your knees. With all those downsides someone who's never been anywhere near a hand glider before is still in much better shape than a Hang Five accelerating towards the rocks at 32 feet per second squared.

Once on the ramp DON'T SWEAT THE SMALL STUFF. And pretty much everything other than your suspension status is small stuff. If you MUST skip checks prior to getting in the air skip all you want EXCEPT lift and tug.

Launch position is the place at which distractions are most lethal and PREFLIGHT check issues at this point are DISTRACTIONS. The cost benefit ratio graph takes a sharp downturn at the edge of the ramp. Many people have gotten themselves killed worrying about issues which at worst would have been mere annoyances had they gone unremedied.

The best defense against distractions is to minimize the window in which they can wedge themselves in between final verification and launch - and a hang check will never fit that bill.

Full Circle

George Whitehill's article in Hang Gliding magazine announcing the rating requirements revision was titled "Just Doing a Hang Check is not Enough" and went on to explain why just doing a hang check is not enough.

For over a decade's span of his reign as Accident Review Committee Chairman, between 1981/04 and 1991/11 Doug Hildreth, operating under the delusion that the flight schools were actually making the slightest effort to implement national policy, made plea after plea to the stone deaf hang gliding community to adhere to USHGA's requirements and lift and tug immediately prior to launch, but the crushed bodies continued stacking up at the usual slow but steady rate.

By the 1994/01 issue Dennis Pagen is writing of his little tumble down the hill and suggesting that people adopt "Pat Denevan's" method of supplementing the sacred hang check with a lift and tug just prior to launch.

By a broken pelvis reported in the 2007/05 issue we have "Lesson learned: HANG CHECK, HANG CHECK, HANG CHECK!"

IT NEVER EVEN HAPPENED! Twenty-six years to the month of the announced Pilot Proficiency System revision and nobody's even heard of our most fundamental safety requirement. So much for self regulation.

Doug was a great Accident Review Committee Chairman but he was never gonna be a match for a huge flock of instructional infrastructure that was gonna go on doing whatever the hell it felt like without ever having to answer to anyone.

Now, after well over twenty-eight years since the rating requirement revisions the suggestion that they be implemented is typically met with total indifference or, most often, open and intense hostility.

Implementation

Obviously, no amount of logic, reason, or discussion ever has or ever will put the slightest dent in this problem. So what will work?

Whenever I hear of a pilot's flying career being abruptly terminated after launching with his carabiner dangling I know that he didn't do a lift and tug check immediately prior to launch.

The reason he didn't do a lift and tug check immediately prior to that launch is because he never in his shortened life did a lift and tug check immediately prior to any launch.

The reason he never in his shortened life did a lift and tug check immediately prior to any launch was because his instructors signed him off on all of his ratings and let him skip the really vital stuff.

An Instructor who tells a student that a hang check at the back of the ramp is verification that he is connected to the glider should not be a USHPA Instructor.

An Observer who observes a pilot launching without verifying his connection just prior to launch should not be a USHPA Observer.

An instance of a pilot launching without verifying his connection just prior to launch must be regarded as the dangerous violation of protocol it is by anyone aware of it.

A pilot who footlaunches without verifying his connection after arriving and standing at launch position within a

couple of seconds of launching is not demonstrating the knowledge, skills, experience level, judgment, and level of maturity commensurate with his rating, is not following the most critical safety rule applicable to his flying, and is jeopardizing himself and the site.

That pilot should have his rating suspended and every Instructor and Observer whose signature ever appeared on that pilot's ticket should have to explain how it got there.

And, just to make it interesting, the controllers and owners of public (national, state, and county parks, forests, and lands) and private launch sites should be advised that pilots holding ratings required for flying privileges are probably holding them as a result of having slipped through huge dangerous cracks.

After over three decades worth of doing the same things over and over has produced the same results it may be time to try something different.

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