THE LEADING EDGE

The Newsletter of the M.I.T. Soaring Association, Inc.

May 1996

Contents

Awards to MacJarrett and Wren

Mark Tuttle

MITSA instructors Tom MacJarrett and John Wren were recognized with awards from the Boston FSDO at the Annual Aviation Safety Counselors Dinner on Tuesday, April 9, at Lantanas Restaurant in Randolph.

Tom MacJarrett was recognized as instructor the year for the Boston FSDO. This was the official presentation of the award trumpeted in the *Leading Edge* last winter. The presentation made special notice of Tom's dedication to sport aviation.

John Wren was recognized for his creation of the cable television show "Let's Talk Safety: An Aviation Forum." The first six shows have been shown in approximately eight towns in Eastern Massachusetts, including Bedford, Chelmsford, Lexington, Mansfield, Taunton, and several towns on North Shore. Another six shows are being produced this summer, and the Safety Counselors organization is trying to expand the number of towns that air the shows. Contact Nancy Risso at the Boston FSDO for programming information.

The FSDO presentation concluded its remarks with, "Often we become too focused on airplane-only section of aviation, and we are glad to have people like Tom and John to broaden our horizons."

Cross-country ground school

Mark Tuttle

John Wren held his annual cross-country ground school the first week of May, with the able assistance of Joe Kwasnik, at the New England Electric System headquarters in Westborough. In addition to survival tips on how to get up and stay up, the most spectacular parts of the course concerned field-landings and a Shirley-Fitchburg-Gardner-Orange Silver C course that John had chosen as particularly doable from both Sterling and Pepperell. John had taken slides from his Citabria to illustrate the process of navigating the course, and had taken pictures of fields along the course from many angles to give students in the class practice evaluating field conditions and approaches to fields they might encounter during the flight. The high-tech sophistication of John's course increases every year, and this year was a *tour de force*. John's slides so accurately described the Silver C course, than the very next day I was able to fly my first-ever cross-country flight covering 100K including visits to Shirley, Fitchburg, and Gardner.

This year's course was unusual in that students included members of both MITSA and the Greater Boston Soaring Club from Pepperell. MITSA students were Jim Emken, Charlie Friedman, Steve Glow, Matt Greenway, Carl Johnson, Joe Kwasnik, Margaret Rappaport, Mike Rudomin, Walter Sakowicz, Steve Sovis, Mark Tuttle, Michael Welles, and Terry Wong. GBSC students were Gary Helmstetter (who does the GBSC web page, by the way), Tom Matthews, and Nancy Peterson.

If you haven't taken John's course, I highly recommend that you do.

News briefs

Mark Tuttle

Peter Foley and Steve Moysey: MITSA is lucky to have a talented and enthusiastic group of instructors, but Peter Foley and Steve Moysey have particularly distinguished themselves this month by pitching in to instruct on a moment's notice, and saving the day for the students at the field. Say "thanks" to Peter and Steve the next time you see them. Say "thanks" to all of our instructors the next time you see them.

New members: MITSA has a long list of new members this month: Matt Greenway, Hans Joesph, Peter Kalmus, Jeff Landsman, Margaret Rappaport, Peter Stark, and Kate Thurston. Matt is a private pilot from MITSA days of old who has finished his undergraduate degree and is now working on an engineering masters degree at BU, and he must have decided that the BU masters degree isn't enough work, because he has taken up soaring again. I haven't had a chance to speak very much with Hans yet, but he is a gentleman at the field. Peter is working on his undergraduate degree at Harvard, and plans to spend three months this summer studying in India, and he is looking for information on soaring in India. Jeff is a student who was within days of getting his private pilot certificate before his work made him move, and he is starting up again. Margaret has 50,000 hours of clinical experience in psychiatry and is now writing on Cape Cod, she wrote the article "Fit to Fly" appearing about this time in *Soaring*, she is a private pilot with a glider rating and airplane ratings for both single-engine land and sea, and her primary glider instructor was none other than Doris Grove! Peter is a private pilot from Princeton who wants to add a glider rating, and he is an enthusiastic glider-pusher. Kate lives in Newton, and with luck I'll meet her at the field soon and be able to report more next month. Welcome to MITSA.

Women's Soaring Seminar: The Women Soaring Pilots Association will hold the 1996 WSPA Women's Soaring Seminar at the Hemet-Ryan Airport in Hemet, CA, on July 7-13. Gliders and instructors will be available, and guest speakers will speak on topics such as wave soaring, planning a 1000K, FAI badge requirements, Who's Who in American women soaring pilots, spin training, cross-country soaring, and more. All soaring pilots are welcome. For more information or a registration packet, contact: Elaine Cutri, 1430 La Solana Drive, Altadena, CA 91001; (818) 794-3358; evcutri@csupomona.edu.

Blanik competition: Blue Ridge Soaring Society is hosting a one-class design competition for the Blanik L-13, Super Blanik L-23, and the L-33 Solo. The competition will be held over a three day weekend (May 17, 18, and 19) to allow pilots a chance to match their piloting skills against one another in the Virginia countryside. For more information, visit the BRSS home page http://www.nrvcom.com/aviation/brss or contact the BRSS via email brss@nrvcom.com.

Region 1 contest needs help: The Region 1 contest organizers at Sugarbush are looking for help on weather and scoring. If you are interested in helping, in any way, please contact John Mahoney at (802) 496-4241 (day) or (802) 496-2891 (night).

Region 1 contest-before-the-contest: There will be an informal two-day, sports-class competition the weekend of June 15 and 16 at Sugarbush just before the Region 1 competition, with a contest seminar the preceding Friday evening to introduce pilots to competition. Again, contact John Mahoney for more information.

Wednesday evening group

Steve Moysey

I had hoped to start the evening group on May 22, but as I will be away on vacation I don't think this will work.

The scheduled start is now June 5 at 6:00 p.m. DO of the week should try and be at the field by 5:30 to check out the equipment. I'm hoping to have two instructor available, but with the current shortage of instructors, it may just be me. If we do have two instructors, we could handle 6-8 pilots. If there is only one, then 4 would be the probable maximum I would want to handle and ensure quality instruction. There is nothing to stop anyone who wants to fly solo from turning up, but those wanting dual will have to take pot luck, if not already part of the weekly group.

Joe Kwasnick, Paul Overy, and Steve Glow have expressed interest so far. Joe has volunteered to be DO, but I'd like to rotate the DO responsibility through the group, so that one person gets to do it each week. Anyone else interested, please call or email me. As with last year's sessions, please consider this an evening class, so if you sign up please try and come each week. With space limited, it'll be first come, first served for the remaining slots.

We had a lot of fun last year and some great flying.

Commercial pilots: Ride coaching

Steve Moysey

With the current shortage of instructors, the DO's are going to try and schedule commercial pilots to do demo rides on one of the weekend days. With this in mind, it may be beneficial to have a ride coaching session for those of you who want it. The topics to be covered will include: pre-flight briefing; in-flight patter; post flight debriefing; emergency procedures; dealing with nervous passengers; how to avoid a mess in the cockpit; what to say and what NOT to say if things get difficult; the subtle art of talking and flying at the same time; and back seat currency.

This will be a practical course, with some ground school. Tentative timing of this is Saturday, June 29, but I'm happy to time this according to demand — if any!

Please let me know if there is any interest in this session. Private pilots on the brink of taking their commercial rating may also be interested in this. I envisage some dual flying with me, or another instructor, and pairing up of participants, with everyone getting the chance to play passenger. Believe me, this can be a lot of fun!

The Leading Edge is the newsletter of the MIT Soaring Association, Inc. Send inquiries or material for publication to Mark Tuttle, 8 Melanie Lane, Arlington, MA 02174; tuttle@crl.dec.com.

90 MPH fastballs

Mark Koepper

(April 28) Things really started off great climbing to 6500 feet and then running straight ten or twelve miles up a cloud street. Then I went in to "round the turnpoint" at Tanner-Hiller. Lots of sink in that area and the clouds were decaying. Heading for the nearest smooth looking cloud I was dismayed as it too began to get ragged and then break apart. By this time I was really low and spent quite a time scratching at Spencer trying to climb in choppy broken lift. My low point was 1000 feet above ground but finally I gained enough height to get out of there. By this time the major leaguers in the club had covered about half of the 400K plus they flew that day. I guess that I was playing the same sport only more on the level of a Sunday picnic softball game.

I went to Sterling, "clicked a picture" there, and headed for Gardner. I had not had a decent climb since the first one off tow but finally hit a really good thermal between Mt. Wachusett and Gardner. Then a glide into Gardner and back home. Four turnpoints adding up to about 100K all within 15 NM of Sterling. Thinking back it was two good thermals at the beginning and end with a lot of poor climbs in between. But not a bad day for a slow pitch kind of guy.

A great start

Carl Johnson

The soaring season seems to have gotten off to a great start. The last two Sundays were classic early spring days. On the morning of April 21, I was returning home after a vacation in Washington D.C. Sharon was driving the final leg from Connecticut to Newton. As we passed through Hartford, I started driving her nuts with my running commentary on the cloud streets overhead. In every direction there were perfect cumulus as far as I could see. The cloud bases were obviously up there, so I asked her to speed up so she could make a detour and drop me at Sterling. After we crossed the ridge to the east of the Connecticut river, the streets fell apart, but the conditions still looked pretty good. She dropped me off at the field, and I was surprised to see that there was a limited operation that day. Here we had great conditions, but the lack of an instructor meant that all of the students had left early that morning. I helped several private owners launch, and then took the 1-34 up at about 3:00. I released at 1500 feet, and was immediately shot down. My flight was 7 minutes, and I beat the tow plane to the ground by a good minute or two. Very embarrassing. Al Gold consoled me by saying that at least my landing looked nice. Fortunately I had better luck with my second tow (to 2000 feet this time). The lift was excellent, and I managed to reach cloud base at 7900 feet. I used this to fly to Gardner, with a brief pause over Mt. Wachusett to regain altitude. Some haze at the end of the day began to shut things down, so I returned to Sterling and landed after about 1 1/2 hours. Many of the private ships had far more serious flights that day — I hope they write about their experiences.

The following Sunday was even better. I came to the field with my father to take him for a ride in the L-23. Unfortunately the other L-23 was at Plymouth being annualed and we had a long list of students waiting to go up with Ken Rosenberg. When Ken took a break I grabbed my chance and went up for a short ride. The conditions were very strong, and we immediately climbed from our release at 2000 feet to cloud base at 7900 feet. We didn't have time to go anywhere, but I think my dad got a good sense for what was possible on a good soaring day. He left to drive back to Connecticut, and then I dragged out the L-33. By this time, the winds had strengthened and the cumulus clouds were farther apart. The lift was still very strong, but broken up at the lower altitudes. Joe Kwasnik was shot down twice in his 1-26, unfortunately with more witnesses than I had the previous week. As I was readying the L-33, he was tying down his 1-26 in disgust and dejection. I tried to convince him to give it another try, but he had had enough. I took a tow to 2000 feet, and immediately discovered what Joe had run into. In what seemed like an instant, I had lost 500 feet. Fortunately, I then caught a 7 knot thermal which took me back up to 8000 feet. I explored around a bit, and managed to find another thermal which took me to 10,300 feet, the highest I have ever been in Massachusetts. At the top of the thermal, I was able to get above cloud base by flying figure eights upwind of the forming clouds. The wisps were swirling all around me, and several times a new cloud would begin to appear just below me or in front of me. This was definitely one of the prettiest flights I've ever had. (Joe, you should have given it another shot.)

After all that time playing in the thermal I had drifted downwind to the other side of the reservoir, and I was right on the edge of Boston's 30 NM veil. With all that altitude, I decided to head for Gardner again. The winds were so strong that I was below 5000 feet by the time I reached Mt. Wachusett. I managed to continue on from there about halfway to Gardner, but then it was starting to get late and I returned to Sterling. Another great spring day. It made we wonder what I was thinking when I took 10 years off from soaring. I'm glad I rejoined MITSA last year.

Speaking of rejoining MITSA, my family came along with me on one of those early days last year. While I was up getting checked out with an instructor, Sharon wrote this article. For those of you who didn't see it when it was published in Soaring magazine a few months ago, these were her impressions of that day.

Soaring Lesson

Even though it had been ten years since my husband and I had stepped foot onto a soaring field, it only took a quick glance at the group of pilots huddled in the corner to see that nothing had changed.

Grown men stood in a circle making swoops with their hands and arms. Some used their hands only, fingers together, palms cupped, to illustrate dives, turns and spins. Others employed their entire arm to demonstrate their maneuvers. The most enthusiastic used their whole body, legs apart in a stance, both arms moving wildly in a futile but no less entertaining attempt to recreate on land the maneuvers which come so easily aloft.

As these pilots opened their mouths to utter the expected “put-put-put” or “brrrrmmmm, brrrrmmmm” to mimic the sound of their airplane’s engine, the only sound that came out was a gentle “shhhhhhhh,” as soft and silent as a goodnight whisper.

It was a sound my children and I would hear repeatedly throughout the day, sometimes from the mouths of pilots, but mostly from the sailplanes flying overhead.

As my husband Carl became reacquainted with his much-loved sport, I passed the time with our two young children. At age six and three, Andrew and Madeline have energy levels befitting their youth. I’d been concerned how I’d entertain them for what I feared would be a long day. But I needn’t have worried. They quickly became attuned to the slowed-down rhythms which are inherent part of a day on the soaring field.

We sat cross-legged on the grass. I picked crabgrass and tickled their ears. From time to time we walked to the small airport restaurant for a snack. Andrew buddied up with the duty officer and rode on the golf cart to help retrieve gliders. At one point the duty officer let him hold the clipboard, a simple gesture which was a thrilling responsibility for our son.

Toward the end of the day I overheard an instructor discussing landing techniques with his student. “Patience is the key,” he said. “You don’t want to rush the landing. Look out over the whole runway to get the right perspective, then just let the plane float down. Gently, gently, until it just kisses the ground, then catches.” Almost as an afterthought, he added, “The best landings are the ones that you just let happen.”

Even though I was not the one taking the soaring lesson, those instructions were helpful just the same. With sailplanes, we know that with a decrease in speed, gravity will win out every time. So once we have done our job to a certain point, it is out of our hands. In fact, performance is better if we just step back, let nature do her thing and not get in the way of it.

In that simple lesson must be a part of the Zen of the sport. Something about the slow rhythm of a day spent outside, the quiet “shhhhhh” of the wind over a glider’s wings that acts as a sort of gentle lullaby and reassures us, no matter what is happening outside of the soaring field, that everything will be all right, if we just have patience, stay out of the way and let nature do what it does best.

Lots of flying at Sterling

Phil Gaisford

After a prolonged period of crummy weather, the last two weekends of April did finally allow lots of soaring.

Saturday, April 20, wasn’t a great day, with bases between 3-4,000’ AGL, and often rather cloudy, and rather weak thermals generally, but I utilized the day to get some weak weather thermaling practice, flying for about three hours within range of Sterling.

Sunday’s weather was a lot better. Though some time was lost whilst a battery was found to start the tow plane, I was in the air shortly after 12 and on my way to North Adams under a scatter of cumulus at around 6,000’ or so. Conditions were good, but I was forced to change my plan by the arrival of encroaching cirrus from the northwest. The best conditions appeared to be back east, and turning near Shelburne Falls I selected Marlboro a the new destination. Passing Sterling to the south, a particularly good climb took me to 7,500’. After Marlboro conditions to the south looked inviting. DJ (Doug Jacobs) also gave a good report from the southwest, so I determined that Mansfield should be the next turn point. Getting to Mansfield was easy, but the return was slowed by the moderate headwind. Further troublesome was the rapidly advancing cirrus, the effect of which was such that the last cumulus was already south and east of Worcester — time to get high and stay high. A last climb north of Woonsocket gained sufficient height for a final glide to Sterling, allowing a satisfactory conclusion to a four hour flight covering about 280 km.

Saturday, April 27, was again on the weak side, but this time the sky was cloudless, so it was possible to practice flying weak blue thermals — everyones favorite! 90 (Bob Fletcher) was also in the air, so flew around together for a while. We got one decent climb late in the day near Fitchburg that allowed us to venture out to Gardner. Here we met up with DJ and practiced our final glide technique on the way back to Sterling, landing after about 3 hours flying.

Sunday, April 28, was another cross country day, good bases and climbs, but windy. The fleet lead by 90 set off for North Adams. This leg went very well, with climbs to over 7,000 most of the way. From there we turned north and dropped down to the terrain, soaring the ridges in the strong westerly wind north past Manchester and towards Rutland. This was quite a rough ride, and I received several blows to the head from the canopy, so I kept the speed down to 90 kts. From here we retraced our steps south to the end of the usable ridge lift near Bennington where we climbed in the thermals back to cloud base before selecting Keene as a turn point. Passing Keene in no time (lots of tailwind component this time) we joined up with Bill Brine in YN for the rest of the trip around Monadnock and home to Sterling. This was the first time I had been ridge soaring out of Sterling, and was a very exhilarating flight. We covered about 350 km (probably) in something like 4 hours.

Training talk: Spinning

Steve Moysey

There are few topics more likely to raise the anxiety level of many pilots than spinning. The thought of deliberately causing a perfectly stable and friendly glider to hurtle earthward at an alarming rate of knots is, understandably, one that fills a lot of student pilots with fear and dread. Very often, this can be heightened by the clubhouse conversations of more experienced pilots, who are only too delighted to relate their own hair-raising spin stories to the ever more incredulous and terrified student. I've got my own spin story and have probably bored many MITSA members with it — but more about that later.

I have another confession — as a trainee pilot, I was absolutely terrified of spinning , and this was before I'd been in a stalled glider! My idea of spin recovery was a nice warm cup of tea and a sticky bun in the club house at Lasham. None of that nose down, whirling round and round stuff for me! But, with the patience of my instructors, I learned to control my fear and eventually to enjoy the sensation. That's the polite way of saying I was forced into a glider and made to endure — I wasn't watching, so I lost count of how many — spins and other unusual attitudes that would make even a harden aerobat turn a delicate shade of green. I have to say that my friendly instructor's technique of using a 'controlled fright' certainly worked in my case. I quickly came to terms with spinning after my enforced tango across, up and down the Hampshire skies over Lasham and now actually quiet enjoy the experience.

Stall and spin training is an essential part of learning to fly gliders. Maneuvers for this type of training, here in the USA, are normally initiated above 1,500' AGL. In England, it is not unheard of for instructors to do stall demonstrations at around 700' AGL. The sensation is a lot more vivid at the lower altitude. The trees look closer, the blades of grass look greener, the hairs on the back of the airfield dog look longer and the whole experience is a lot more real!

My spin story occurred during an air experience instructors course at Lasham. I was lucky enough to fly under the tutelage of a gentleman who we shall call, for the sake of this article, Fred. Fred had a reputation of having nerves of steel when it came to spin training. Convincing me we were about to carry out a full airbrake sideslip approach, on one of the last flights of the course, we turned finals at about 900-1,000' AGL. At this point the by now familiar "I have control" was heard from Fred, who promptly hauled the nose skyward, booted full left rudder and spun me!!!! Believe me, all I said about the trees and grass etc. is even more true when the glider is rotating earthward. Admittedly, I recovered the spin within half a turn, but the ensuing dive and pull out remain firmly etched in my mind. I can only assume that my brain believed this was the last thing it would ever have to process, before high speed impact with the ground ceased all cerebral functions.

All this brings me to the central point of this article. Why do gliders spin and why do we place such an emphasis on this type of maneuver during training? In the most simplistic terms, a glider will only spin if the wings are stalled. Most student pilots experience, either through practice or demonstration, several straight ahead and turning stalls before being exposed to a spin, so they get to know the sensations of pre-stall buffet etc. A spin will occur if the glider stalls asymmetrically due to yaw, turbulence or nonsymmetrical wing profiles — i.e., rigging, loose wing tape, lots of bugs or simply mishandled controls. This may cause one wing to stall before the other and start to drop. The down going wing experiences a couple of effects. It's angle of attack increase even more, causing a further reduction in lift and a corresponding increase in drag. The up going wing experiences the exact reverse of this, although will probably remain stalled. The increase in drag experienced by the down going wing will cause the nose of the glider to yaw and follow it downward, resulting in the lower wing going even slower and become more deeply stalled. Unless the glider is unstalled, this earthward spiral will continue with the glider simultaneously rolling, pitching and yawing. The technical term for this is *auto-rotation*.

Before starting a spin-training session, the instructor will brief the trainee on the objective of the flight, and talk through the expected maneuvers. I believe that parachutes should be worn for this type of training. Having flown the glider to release height and dropped the tow, check your position relative to the field and traffic pattern and carry out a HASSLL check. Don't know what a HASSLL check is? I'll run through it here. Instructors should get the trainee to sound this off as they go through the six stages:

Height: First, check that you have sufficient altitude to perform the maneuver and second, that you can get back to the field when you've completed it! Many maneuvers end with a climb to convert the gained kinetic energy back to potential energy, so the height required for a maneuver is often a lot greater than the difference between it's start and finish. This is a little academic with spin recovery, as the difference between start and finish is irrelevant if a perfect recovery is followed by a subterranean pull out. Set a minimum altitude for spin initiation and stick to it. This part of the check can be carried out on tow, by determining the height for release in conjunction with the expected maneuvers.

Airframe: Check that the glider is certified for the intended maneuvers and that the pilot is familiar with both the V_a and V_{ne} speeds for the glider. Instructors should ensure that the trainee understands the implication of these speeds and the possible consequences of exceeding them. By the way, V_{ne} does not stand for Very Near the End, but could if you don't understand the consequences of pushing the outside of the envelope.

Straps: Make sure that your straps are tight and that your instructor/trainee is also securely strapped in. It is extremely embarrassing, not to mention highly dangerous, to have the instructor or trainee pinned to the inside of the canopy through negative G. Make sure the strap mountings to the airframe are checked thoroughly during the daily preflight inspection.

Security: Have a good look round the cockpit and ensure there are no loose articles that could fly around in reduced G and damage the canopy or the pilots. Hand held radios are a particularly good canopy buster, if allowed to break loose from where they are stowed. It's a good idea to check the cockpit for potential projectiles during the DI and again before take off. Any lumps of mud or stones should be removed, as should any loose item that could injure someone or jam the flight controls.

Location: Have a good look outside to ensure you're not over the pattern or a built up area. Also make sure you can reach the field on the completion of your training exercise. Check to ensure you are not about to violate any airspace restrictions.

Lookout: Fly two well-banked 180 turns and have a good look above and below. Check to ensure that the area is clear of other traffic and is likely to remain so for the duration of your maneuvers. The 'S' turn will also signify to other gliders that you are about to 'do something' and that you are not just thermaling. I've adopted the view that just because a two seater is going round in circles, it doesn't mean it's in a thermal! So, if you do see a two seater making 'S' turns, give it a wide birth as it may be about to stop flying and drop out of the sky. If you are in any doubt while flying the 180's, do them again and repeat the process at frequent intervals during any prolonged stall or spin practice session.

So, HASSLL check completed, let's run through the typical straight ahead spin exercise. The glider would be brought to the point of stalling, by easing back on the stick and reducing the airspeed at about the rate of 1 knot per second. The idea here is not to haul the nose skyward, but to try and maintain a reasonably 'normal' attitude. If you are going to stall, close to the ground, chances are this is one attitude you could be face with.

Continue easing back on the stick until you start to get the first signs of pre-stall buffet. Just before the nose drops, apply full rudder deflection in the desired direction of spin, while keeping the stick coming back, if not already on the back stop. Be sure to try and avoid aileron input at this stage. The glider should drop the rudder induced yaw side wing, go nose down and start to rotate. Having fun yet? All thing being equal, the glider should now be in a spin and, depending on weight and balance loads, may stay that way until the pilot takes the appropriate recovery action. Some gliders, depending on the W and B, will be difficult to hold in a full spin and may progress to a spiral dive after about one turn. This brings me to an important point — never try spinning a glider if the weight and balance is in any way marginal. In some gliders, the position of the center of gravity is critical, so it is important not to fly with a below minimum pilot weight. This may move the C of G sufficient rearward to make recovery from a spin almost impossible. Conversely, two occupants of considerable bulk may move the C of G forward to the point where the elevator has insufficient power to hold the glider in a spin.

Having spun the glider, we should discuss the appropriate recovery action. Contrary to popular belief, the correct spin recovery is not:

1. Firmly close your eyes.
2. Let go of the controls.
3. Chant repeatedly 'you have control' to the rear seat dummy — there may not be one!
4. Glider flies itself out of spin and returns to level flight.

While it's true that many training gliders do fly a lot better without interference from the pilot, spin recovery is not a time to put this to the test! The correct procedure for all gliders is:

1. Apply FULL opposite rudder.
2. Centralize the ailerons.
3. Move the stick progressively forward until the rotation stops.
4. Centralize the rudder.
5. Ease out of the ensuing dive and return the glider to level flight.

I'll run through these steps and explain them as we go.

Apply FULL opposite rudder: Yaw helped to induce the spin in the first place, and the amount of yaw induce by a large rudder, or aileron drag, tends to speed up the rotation of the glider in a spin. This increase in speed will tend to flatten out the spin, making the recovery all the more difficult or lengthy, due to a couple of factor. Firstly, the increased speed will cause the nose to rise, through centrifugal force inducing a nose up couple. This also increases the angle of attack of the already stalled wings. Need I say more. Applying full opposite rudder will reduce the amount of yaw present, helping the nose of the glider to drop, thereby reducing the angle of attack and slowing the rotation of the spin. Some gliders will stop spinning when full pro spin rudder is removed, but it's vitally important to get the full opposite deflection habit and hold the deflection, as part of the recovery procedure, until the spin stops.

Centralize the ailerons: As mentioned above, aileron drag can further complicate the situation, so take it out of the equation. Trying to pick up a stalled, dropping wing with aileron input is not a good idea. The downgoing aileron will further increased the angle of attack of the already stalled wing, so it's important to centralize the aileron input during spin recovery. Talk to your instructor about the differing effects of inspin and outspin aileron.

Move the stick forward until the rotation stops: This should be regarded as a smooth easing forward of the stick, until the rotation stops. Many training gliders will stop spinning the moment the stick come off the backstop — but not all. So, keep the stick moving in a smooth progression forward, until you stop the spin. A rapid forward movement of the stick to the front stop is definitely not recommended, as the effect can be quite dramatic in some gliders, resulting in a 'tucking under' of the glider past the vertical in the ensuing dive. Some gliders will stop spinning on the application of full opposite rudder, so it's important to ease the stick forward to prevent another stall, with the glider going into a spin in the opposite direction.

Centralize the rudder: When the spin stops, get the rudder centralized. The speed in the recovery phase can build up quickly, with the risk of over stressing the fin if the rudder is still fully deflected.

Ease out of the ensuing dive and return the glider to level flight: While it's true to say that the recovery from resulting dive should be smoothly executed, watch the speed, as it can quickly get past V_a. Conversely, a rapid backward movement of the stick may result in an accelerated stall. A lot of gliders, due to their inherent stability, will tend to try and recover from the dive all on their lonesome. This will help the amount of pull force needed to return the glider to level flight. The Hollywood image of the pilot hauling for all he's worth on the stick, feet braced on the instrument panel, is really not the case here, although the force will vary with the glider type, trim situation and speed.

There is no substitute for training and experience, so the above should only be regarded as a supplement to any instruction or advice given by a qualified instructor. Before I close, I need to address the other central issue of this article. Why do we place such emphasis on stall and spin training?

The straight ahead stall/spin set up already discussed is a little contrived and is not the only spin training exercise student experience. In my opinion, one of the most life threatening situation for glider pilots is a shallow-banked/over-ruddered turn on to finals. Here's why. Pilot A finds himself a little low or too far out from the field as he contemplates a circuit and landing. He stretches the glide, ever so slowly easing up the nose and loosing valuable airspeed. He makes it to his final turn position, but the trees and ground look awfully close, so he starts a cautious turn on to finals not wanting that down-going wing to be too low. But, this shallow turn is not getting him round onto finals very fast. Pilot A attempts to get round the turn more quickly by steadily applying rudder in the desired direction. The nose starts to come round in response to the rudder input, giving the impression that the turn is in fact getting the glider round more quickly, but this is a temporary illusion. At this point, the nose starts to go down and the down going wing starts to feel a little mushy. The nose continues to go down, presenting pilot A with an ever improving view of the ground, which is getting closer by the second. Hauling back on the stick, in an attempt to stop the nose dropping further, pilot A does a 'proper' spin into the trees and kills himself.

The sad fact is that very few pilots recover from inadvertent spins close to the ground. The key thing is stall and spin avoidance. Training has to overcome instinct in this situation and the critical action is to move the stick forward and unstall the glider, before the situation develops to a point past the initial stall. This is despite the probable nose-down attitude of the glider, demanding that the pilot make a movement with the stick that is most certainly not 'instinctive.' The golden rule of Never Low And Slow needs to be emphasized to every glider pilots from their first instructional flight. If we avoid accidental stalls near the ground, we'll avoid the spin-in accidents that happen to a number of glider pilots every year. I had the task last year of talking to a couple of private rated pilots flying club ships, who made slow, under-banked, over-ruddered turns onto final approach. I don't like having to remind people of the dangers of such a maneuver, but I'd rather run the risk of upsetting a pilot than having to attend their funeral. This may sound a little dramatic, but the facts are that spinning accidents still happen.

If you feel you have a problem regarding spinning, or any other aspect of glider training, talk one on one with an instructor and discuss your concerns or fears. As in my own case, fear of the unknown can be far worse than the reality of the experience.

Thermaling in the pattern

Steve Moysey

There have been a couple of instances recently where pilots have been observed thermaling low down in the pattern. More specifically, in the final approach area! I know it's not easy to give up that last chance of staying airborne and that many pilots suffer from thermal constipation — they can't pass one — but the approach area is not the place for making low 360 degree turns!

For one thing, if it's windy and the thermal is not working out as hoped, the glider will drift down wind, possibly putting the pilot in a position where he can't safely reach the field. One recent incident involved a glider clipping the trees on approach, at the 16 end, after giving up a low thermaling attempt in the final approach area.

Second, it may confuse everyone else in the area, especially the early solo pilot who's workload is already high enough as it is, without being confronted by a glider circling where not expected.

Third, it disturbs the power contingent at the field, as they are not sure where the glider is going . They think we are crazy enough as it is, without us adding more fuel to the fire.

So, please avoid thermaling in the base leg and final approach area, at pattern altitude. We've all done it at some time, but that doesn't make it good practice and it sets a bad example to the student pilots. In fact, may I be so bold as to suggest that we don't thermal, in any part of the pattern area, at below 700' AGL? There is probably some ancient club ordinance about this, away, but comments on this are welcome.

Thanks for your cooperation in this.