THE LEADING EDGE

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

June 1996

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News Briefs

Mark Tuttle

New members: Please welcome Mike Baxa, Richard Dix, Craig Maiman, and Robert Rafferty to the club. Mike is a private owner with a Nimbus II; and Richard, Craig, and Robert are training in the Blaniks, although Craig soloed 5 years ago at Salem, NH.

Soaring with the roosters: There seems to be a contest brewing among club members to see who can show up the earliest at the field in the morning. This old man has been showing up at 10AM to rig his glider, and been shocked to find the operation in full swing. It's great! So all you early birds, don't forget to claim your worm: two dollars off on every launch before 10AM.

Weddings: Steve Moysey and Sharon Grady were married on May 18, 1996. Congratulations to Steve and Sharon!

Roy Bourgeois: Roy announced via email that he is planning to take a sabbatical from the regular instruction rotation starting at the end of June. Roy wrote, "After 17 years of continuous instructing I feel I need a break and wish to focus on some of my personal goals in exploring some of the undeveloped wave sites in the White Mountains. I'd also like to get back into some of the long distance cross-country flying that I was doing in the mid-80s." The club itself and many, many students (including me) have benefited from Roy's leadership, advice, and instruction, so Roy will certainly be missed on the instruction rotation.

Reggie Gifford: Reggie Gifford has left the area and moved to Oswego, New York. Reggie has been an enthusiastic member and a reliable tow pilot for the club, so it is sad to see him go, and we wish him the best of luck.

Greg Ryan: For all us old-timers out there, I ran into Greg Ryan at Hanscom Field in Bedford one Saturday morning. He is teaching primarily aerobatics out of Executive Flyers at Hanscom. His email address is 75502.1757@compuserve.com.

Seneca sayonara: Peter Foley reports that the Seneca—the twin owned by a syndicate including Peter that was damaged during a landing and has been sitting near the helicopter pad—flew to Missouri the evening of May 30 to be rebuilt. "I watched it leave with a tear in my eye, but I will be glad that it will not receive any more admiring looks or questions."

Worlds video: Al Gold sent out by email a review of a video of the 1996 Worlds at Omarama, New Zealand. "It's by far the best soaring video I've ever seen. Very professionally done, I presume for New Zealand TV release. Lots of excellent in-cockpit camera shots. Runs about an hour. I'd be glad to lend my copy to members who'd like to view it, but suggest that you just order your own from Knauff and Grove via their web page. Price is $31, delivered."

Wednesday evening group: The Wednesday evening group that Steve Moysey has been organizing will be starting soon. As of email Steve sent out on May 14, the group was scheduled to start on June 5. Instruction capacity will be limited, and it looks like the list of students is close to full, so please contact Steve if you want instruction on Wednesday evenings. His home phone and email address are (617) 643-3107 and steven_moysey@gillette.com. That said, all members are welcome to turn up and participate, especially if they want to fly one of the single place ships, or just hang out and help launch a few gliders. Steve says there is always the prospect of a beer at the end of the evening ...

A mathematician decides he wants to learn more about practical problems. He sees a seminar with a nice title: "The Theory of Gears." So he goes. The speaker stands up and begins, "The theory of gears with a real number of teeth is well known ..."

15 Meter Nationals

Phil Gaisford

Phil finished in eighth place at the recent 15 meter national competition. —Editor

I recently returned from competing in the 15m Nationals at Mifflin County Airport, PA. Here's a brief report on the goings on.

Mifflin County is located in central Pennsylvania, about 50 miles north of Harrisburg, in the Pennsylvania Dutch country. The landscape is dominated by wooded mountain ridges, up to about 1,500 feet in height, oriented approximately southwest to northeast. In between the ridges lie broad cultivated valleys, many farmed by Amish folk. Since "Dutch" in this context is a corruption of Deutsche, the ability to speak German can still come in handy in this part of the world.

The soaring prospects for this site at this time of year are excellent. The ridge and wave flying exploits of Karl Striedieck over the years testify to that. Though the prevailing wind did not favor ridge flying for the period of the contest, we experienced some exciting flights in thermals as well.

We drove down on the Saturday before the contest through some of the worst weather I have experienced for a long time. Warm sunny and humid conditions in Massachusetts rapidly gave way to torrential rain with the approach of a very strong front from the north. A tornado watch was issued for eastern Pennsylvania that afternoon.

Things had cleared up the next morning, however, the front was gone and a good ridge day was in prospect. It turned out to be a very good ridge day indeed. It was one of those rare unproblematic days where you could cruise at any desired speed on the ridge—it simply effected your height by a few feet, and also the turbulence, of course. Although an official practice day, no task was set, so I spent my time familiarizing myself with the task area, since this was my first visit, flying well over 400km in the process.

The next day's practice task was set as Altoona-Nisbet-Carlisle and return for 250 miles. Winds were less and more westerly, so the ridge didn't work too well on the approach to Nisbet, so the trick was to get up in a thermal and continue from there. Trouble was that about 50% of the sky was obscured by snow showers by this time, so you had to pick you way through the showers with very poor visibility. It also got quite cold, since you could climb to about 8,000 in the polar air.

The first contest day dawned and for the most part remained mostly cloudless. Cumulus reached useful amounts for the last third of what turned out to be the longest task of the contest around Cumberland, MD, and Selinsgrove. Climbs to 7 or 8,000 were the rule. My average 69 mph compared not unfavorably with the winners speed of 75 mph.

The forecast for the next day called for rain encroaching from the southwest, so a task was set with turn points to the east—Nisbet, Woodward, Clark's Ferry, and home. An early start seemed essential to the successful completion of this enterprise, but was not possible since everyone else was attempting to cross the start line with the same idea. The bad weather seemed to be about three hours ahead of schedule, and the sun had already disappeared by the halfway mark. After that is was a case of take it as it comes. I climbed high near the last turn and got quite close to home, choosing to land at a convenient air strip rather than try ridge soaring in the rain. Apparently, the ridge worked quite well and several people used it to get into Mifflin, but then they didn't get to enjoy coffee and cookies with the owner of the strip like I did. About 10 finishers, the rest landed out.

The weather gods then stepped in and called a halt to activities for a couple of days whilst they turned the winds around to southwest and stabilized the atmosphere. When they were done, we proceeded with three windy blue days. The first was a triangle around Lock Haven and Altoona. I decided to chase some cumulus wisps down the Allegheny plateau some way off course to the right, which turned out to be the right thing to do. Those who stayed on course landed out immediately. I landed out too after diverting to find a few extra hundred feet to clear the last ridge into Mifflin—I didn't find it. However, the farmer and his family were very friendly. We saw the show goats and show pigs, played with the puppy, admired the kittens, drank cider, oh, and derigged the glider. About 10 finishers, the rest landed out.

The next day was similar, calling for a flight around Lock Haven and Mill Creek. The day started well, with one climb going to 6,000 feet. After that it was surviving on the ridge. I got a decent transition to the next ridge, and a good climb after the last turn to make a decent finish possible, which was most welcome to both pilot and crew after the landouts of the last two days. About 10 finishers, the rest landed out.

The third blue day arrived and the task was PST. If you flew in the right part of the sky, a fast flight was possible. I didn't manage to fly in all the right places, but I did get home. A couple more notables landed out, and that left me in 7th place overall.

Day 6 yielded the fastest flight of the contest, when Roy Cundiff averaged about 85 mph over a 240 mile task. Since it was felt that ridges would be only marginally working, the original task was changed on the grid to one where all the legs were across rather than parallel to the ridges, so as to avoid the embarrassment of having the entire fleet cruising at low altitudes in poor ridge lift. Thermals were good, however, and the new task meant that tracks and cloud streets were now in good alignment. Cloud base was at 7 or 8,000 feet, and with lots of wings-level cruising under the streets the countryside moved by at a considerable rate. I completed the course in about 3:20 for an average of 75 mph.

Day 7 was the final contest day, and inevitably a PST task was called. A mandatory first turn at Altoona was prescribed, with a three hour minimum. This was not a particularly easy day. A front approaching from the north was throwing overcast over some areas, whilst the remaining task area cycled rapidly between good cumulus and blue conditions. I didn't go badly wrong and finished 9th for the day, but this wasn't quite enough to stop Eric Moser displacing me to 8th in the overall and now final results.

The awards banquet that night was well attended, and concluded a fun and interesting contest. One of the things that make contest flying so enjoyable for me is the opportunity it offers to experience soaring in different parts of the world, and in this respect I can only recommend Pennsylvania in the Spring time. Contests are also fun for other reasons. Iris & Karl Striedieck, and their team, did a superb job of organizing at Mifflin County so that there was scarcely a dull moment—dinners, BBQs, the magician, tug of war (forty pilots versus two horses—who would you put your money on?), the piano breaking contest, and more.

300 Kilometers Without a Trace

Mark Koepper

Saturday, June 1, the soaring forecast looked good. Light winds aloft. Trigger temperatures for high climbs looked likely by 11:30. This was to be the day for a 300K attempted gold distance and diamond goal. The forecast I've used comes from soundings done at 8:00 the night before in Albany. Most reactions to this forecast have been scoff but so far in very limited use I've found it quite accurate.

Light winds aloft are important to me because of the way I plod along in my 30 year old wooden glider. Going into wind I like to see the ground go by from front to back instead of back to front. High climbs are important to me on this particular task because of a couple of stretches over unlandable terrain. I get nervous when all I can see are trees. When I'm nervous I'm not having fun. I think for some people it works the other way.

No barograph! I had planned to use one of the same club barographs I see in the office every time I'm there. One of the same barographs I used for my silver badge flight. After 20 minutes of scouring cabinets boxes drawers and bags I gave up. No barograph.

In the rigging area I received the kind offer of a loaner EW electronic barograph. I knew nothing of these but after the owner set it up and "turned it on" I wondered why the LCD display was blank. Assurances followed from the owner, and an owner of the same type, that all was well and it was doing its thing. I was uneasy about it but not enough for me to ask for the manual and take the time to figure the thing out for myself. My observer and myself filled out the declaration marked the canopy and photographed the declaration a few times.

At 11:45 I was off tow and moseying along course. I stayed really high over the large forested areas never outside a 20:1 glide to an airport or huge field in the Connecticut River valley. I photographed the first turnpoint Claremont, NH, twice and turned back to mosey south again.

Once south of Route 2 I felt more comfortable and sped up a little. This was good because I was running out of day. Approaching the second turnpoint, success seemed unlikely but I photographed Southbridge twice from about 1,500 feet above pattern altitude. I tried to reach the tow pilot in "094" back at Sterling to announce that the air was very smooth and I was well below glide to get home. An aero-retrieve from Southbridge seemed the best option but I could not reach "094" with the low condition of my battery.

At about 5:35 I began a slow climb in feeble lift just east of Southbridge. At first I hoped to get high enough for Spencer half way home to reduce the retrieve. The climb improved and at 5,000 feet I had a steady 2-3 knots up. What a great feeling when I knew I had height to get to Sterling very easily. Just after 6:00 I headed north for home with a 25:1 final glide. I will long remember that quiet glide in still air with the sun lowering.

At Worcester with 10 miles to go I was 2,000 feet above glide slope and pushed over to 100 mph feeling great. Even so my glide was so conservative that I went half way to Fitchburg and back at 100 mph burning off extra altitude before entering the pattern and landing. It had taken over 6 1/2 hours but I had done it; 300K in the slow pitch league.

Sunday I got the manual for the EW from its owner. It took 1 minute to read that in record mode the current altitude displays on the LCD and a small LED light blinks once per second. With great doubt I connected it to a printer and found what I had expected; no trace. Maybe I can fly the task a couple of hours faster next time.

Reports on Other Good Flights

Mark Tuttle

Phil Gaisford covered about 450km on Sunday, May 5—just before leaving for the 15 meter nationals—flying around Keene, Claremont, Springfield, Southbridge, Mansfield, Southbridge, and home in about 6 hours.

Todd Pattist, a MITSA member from days gone by, reported on the USENET newsgroup rec.aviation.soaring that he did a 1000K flight on May 12 on the ridges at Keystone and Mifflin County, PA, the site of the 15 meter nationals starting on May 14.

Steve Sovis had a great first flight in his new glider on Sunday, May 27. In fact, John Wren teased Steve by broadcasting the following message via email the next day: "Congratulations to Steve Sovis for his first flight in his new glider*. The flight went well and he was able to stay up for well over three hours. His son (Matt) said it was because he was afraid to land it. Very late in the afternoon 'US' did a gentle roundout and was back on earth or at least the glider was. Steve was still a mile high a few hours later. (*Actually it's Mark Tuttle's glider, Mark is letting him use it now and then, but don't tell Steve that.)"

Ira Blieden showed up one day to fly his glider, but decided around midday to come down and call his wife to bring out the kids. It was a quiet day on the field for the club, so Ira flew with his daughter Marissa for just over an hour up to 5,500 feet in a Blanik, and then flew with his son Ben for just over two hours up to 7,500 feet. The funny thing was that Ira was worried Ben would be upset that Marissa had gotten such a long flight, because Ira thought the day might be ending, but in the end it was Ben who got the longest flight. Now Ben and Marissa probably think that flying for hours at a time is the norm when you go soaring. Well, I guess it is when Ira does the flying. In the meantime, Larry Timpson had a nice flight in UC, flying for over three hours. (Ira says that his sister, Tara Rothman, can now keep tabs on his soaring adventures since the newsletter is on the web, so let's see how long it takes for her to discover her own name in the newsletter!)

Walter Sakowicz had a good flight on Saturday, June 1. It was a clear, blue-sky day. Walter writes, "The blue thermals were cooking. I managed 1 hour and 45 minutes and could have stayed much longer. I needed spoilers to come down from 6,200 feet."

Mark Koepper flew his 300K flight.

Jim Emken flew the L-33: "I had two good soaring flights. One to 7,600 feet and the other to 8,100 feet. I didn't have much time as other people where waiting but I used the altitude to make a few glides to experiment with the performance of the ship. Next I will want to put John Wren's cross-country class to some good use."

And my excitement for the day was climbing to 9,200 feet about five or six miles north of the Gardner VOR, and getting a great view of the jets every five minutes on that jet-superhighway into Logan via Gardner.

Bill Brine had a good flight on Sunday, June 2. It was another clear, blue-sky day. He flew to Mount Monadnock and Southbridge, and returned to Sterling with plenty of height.

Larry Timpson, on the same day, appeared to have a good flight in the 1-34, staying up forever in late-afternoon thermals.

Margaret Rappaport also had a great flight. She flew with Peter Foley in a Blanik for an hour at the end of the day, and then clawed her way down to the ground so that others could use the glider.

Mr. Wright Disparages the Glider

Orville Wright

An article by Phil Gaisford has described the glorious nature of a soaring contest. As a responsible newsletter editor, I am compelled to include the views of the opposition. In this article—discovered by my father, Morrie Tuttle, in The Literary Digest *for January 6, 1923—comments by Orville Wright underscore the damage done to the public perception of aviation by such foolish contests. —Editor*

Orville Wright rises to protest against "a very common misconception of the value of the soaring contests in motorless planes." Several of these flights, he says, have been so sensational as to mislead many into thinking that other means than a motor have been discovered for supporting and propelling an airplane from place to place.

The contests of the gliders are valuable as contributions to the science of flight, and are, Mr. Wright declares, a delightful sport, furnishing a safe and cheap means of acquiring skill in operating an airplane. But the scene must be set for a successful sailing flight. In an article in *The United States Air Service Magazine* upon the possibilities of soaring, the inventor says:

"The chief factors in soaring flight are the hill, the wind, the plane and the skill of the operator, ranking in importance about in the order named. The plane best adapted to one hill and one wind condition may be ill-suited to another hill and another wind condition. There is not now and probably never will be a type of soaring plane most suitable for all conditions of wind and hill, any more than there is a most suitable type of airplane for all conditions of speed and loading."

From 1911 to 1921, Mr. Wright held the world's record for soaring. In his gliding experiments at Kitty Hawk, North Carolina, in 1911, he hovered over the same sport for 9 minutes and 11 seconds. This record stood until 1921 when it was beaten in Germany by Herr Harth, who remained in the air twenty-one minutes in a plane without a motor. This year the world was astounded by the achievement of Hentzen, a German glider pilot, who maintained his flight for 3 hours and 6 minutes. Later, as reported in the London *Daily Mail*, Hentzen's record was broken at Lewis, England, by a Frenchman named Maneyrol, with a flight of 3 hours and 21 minutes. *The Mail*'s comment was that no new principle of flight was utilized that differed from Orville Wright's flights over the sand dunes of North Carolina, and the longer duration of the flight "was due in part to improvements in the glider itself, natural results of the progress made in aerodynamics in the last ten years; in part to the skill acquired in handling aircraft during this period; but especially to the more advantageous topography of the ground over which the flight was made."

Mr. Wright, in his article in *Air Service*, tells of encounters with winds and rising hot-air currents in the experiments he and his brother made with the motorless plane, which they were the first to operate successfully:

"Soaring in rising trends of air deflected upward by hills, trees, waves, etc., always occurs on windy days. But it is well known that over level ground, where there are no hills or other obstacles to deflect the air upward, soaring is done on comparatively calm days and not on windy days when the fluctuations in the velocity of the wind are greatest.

"I have seen thousands of buzzards in soaring flight over level ground on calm, sunny days, but I have yet to see one case of soaring over the same ground on a windy day with the sky overcast. If the bird depended on getting its support from the 'internal work of the wind' it would do its soaring on days when the fluctuations of the wind were greatest, instead of on days when they were least. My brother and I calculated many years ago the support to be obtained from gusts of greater intensity than those actually encountered in nature. I believe that any one who takes the trouble to make this calculation will be convinced that the explanation of soaring flight is not to be found in the internal work of the wind.

"On the other hand, it is well known that soaring can be done in rising currents of air produced not by objects on the ground, but by the difference in temperature of the air at the surface and that above. These currents of rising air are most frequent on calm days when the sun is shining. We see them in the whirlwinds which lift leaves and dust into the air. When you see one of these 'whirls' stirring up the dust on a country road, look into the sky, a little to the direction toward which the wind is blowing. You will often find a buzzard circling there. He circles to keep within the area of the 'whirl' which increases in diameter with heights.

"In calm air the buzzard is able to glide on a path descending about one foot in each eight feet forward. In other words, its resistance to forward travel is equal to one-eight of its weight, and its velocity when gliding on a horizontal course will be retarded at a rate equal to four feet per second.

"An aviator frequently runs into these rising currents and feels a slight 'bump,' but as the diameter of the 'whirl' is usually not much in excess of a hundred feet his machine is out of it in a second. With the lightly loaded, slow machines of ten to fifteen years ago, these 'bumps' were more pronounced and the distance the machine was lifted by one of them was much greater than that experienced by the fast machines of today. In 1910, while training some of the early aviators, I had an unusual experience of this kind near Montgomery, Alabama.

"I had ascended to a height of a little over one-half mile and was descending when at a height of about fifteen hundred feet I suddenly discovered that I was not able to descend further, although my motor was throttled to the limit and the machine was pointed downward as steeply as I felt it safe to point it. I remained at a height of about fifteen hundred feet for a period of five minutes without making any appreciable descent. Suddenly the machine again began to descend and was on the ground in less than a minute.

"The flight was made in an almost perfect calm. The descent was in a spiral of not more than five or six hundred feet diameter. This probably accounted for the long time the machine remained in the uptrend of air. No doubt, if I had steered out of the spiral into a straight course, I would have been out of the rising trend in a few seconds; but I did not think of this at the time. In fact, I was so astonished that I did not think at the time of any reason for the phenomenon. But it is evident the machine was in a whirlwind of unusual diameter, in which the air was rising as fast as the machine could descend. These whirlwinds and other rising trends of air are not present everywhere and on some days do not exist at all. We, therefore, can not hope to get much use of them as a means of travel.

"The news reports of the contests abroad have created in the public mind an exaggerated impression of the importance of this kind of flying."

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