THE LEADING EDGE
The Newsletter of the M.I.T. Soaring Association, Inc.
December 1996

Contents

News briefs

Mark Tuttle

Elections: The election for the next board of directors is coming up. This newsletter contains a nomination form that you can use to nominate yourself or others for board positions. Your nomination form must be signed by you and everyone you nominate (to confirm that they agree to being nominated), and must be received by Mark Tuttle before January 4. The ballots will go out with the January newsletter. The coronation of the winners will be at the club's annual meeting. The annual meeting is scheduled for sometime in February, so be sure to block off your entire social calendar for February until the date is fixed, because the MITSA annual meeting is one swinging party, and you're going to be pretty disappointed if you end up cat-sitting for your favorite aunt the night of the party!

New ratings: Say congratulations to Eric Hostage, our newest commercial pilot. Eric added a glider rating to his commercial certificate between snow storms at at Wurstboro, NY, the weekend of December 7. Congratulations, Eric!

New members: Please welcome Greg Childs and Jim Tsillas, our newest club members.

Greg (rchilds737@aol.com) will be a junior at Worcester Polytechnic Institute studying economics and business management starting next semester. Greg lives in Sterling just a few miles from the airport, and does everything from scuba diving to rock climbing to skiing and snowboarding (excellent hobbies to have after last week's snow).

Jim (jtsilla@ccs.neu.edu) was introduced to the sport Jim Emken (who, by the way, surreptitiously purchased a Janus this summer with a friend in the Long Island Soaring Association on, well, Long Island). Jim says he was hooked after a couple of rides, and decided to make some time for gliding. Jim has flown mostly 2-33s out of Wurstboro, NY, and says he is looking forward to flying the club gliders and getting to know the club members.

Departing members: Hans Joseph and Richard Dix are moving on.

Hans Joseph (joseph@elaine.crcg.edu) wrote: "I don't know, if you remember me (but at least you should find me in the records). [Of course we remember Dr. Hans!] I was at the field at Sterling a couple of times before the summer vacation and I was really eager to learn to fly gliders. Actually I got six flights in. Right after the summer break it became clear that I will leave the U.S. for good on December 15. Fortunately or unfortunately, my power plane instructor talked me into finishing the instrument rating by that time (the written is done, checkride will hopefully be early next week). Therefore, I needed the weekends to get the 50 hours cross-country time and the lessons in. That is why I didn't show up after August. I won't give up gliding (it is the only affordable way to fly in Germany). I had a really good time with MITSA. All the best to you and MITSA! Merry Christmas and a Happy New Year."

Richard Dix (dixrichard@email.averydennison.com) has moved to El Paso, and this newsletter contains the story of his first solo flight out there. Richard soloed in a 2-33. "Since then I have progressed to a 1-26, a really a nice ship. It was completely refurbished last year, new interior and stripped and painted wings. They really did a nice job with it. Apparently it cost around $5,000 to do, but it really puts life back into the old ships! I am not planning to return to the Boston area in the near future. Unfortunately, my job requires a transfer every 6 months, and it has taken me to a factory located in Juarez, and I commute from El Paso every day. I very much miss the club, and all of my friends. I look forward to someday returning to fly with MITSA in the future. My new mailing address is: Richard Dix, 945 Mesa Hills Dr S. #3015, El Paso, TX 79912, (915) 581-2503."

So long, guys, come back when you are in the area again.

Soaring "The Ridge"

Michael Baxa

In early November, I took a few days off to go fly at Tom Knauff and Doris Grove's Keystone Gliderport in Julian, PA. It is a very impressive operation with a Grob 103, a couple of Blanik L-13s, single-place ships, Pawnee tow planes, etc. The grass strip is more than 3,000 feet (815 MSL), level and easy to fly in and out of. They have an on-site bunkhouse with shower facilities, a very good A&P (Paul Weeden) who specializes in sailplanes with a shop next door, a glider hangar, and the Knauff & Grove glider pilot "shopping center." Both Tom and Doris are genuinely nice people and make an effort to welcome everyone. Oh yeah, I left out one small detail. They sit adjacent to the 500-mile Bald Eagle Ridge.

I arrived and was greeted by seven friendly Canadians who were down for the weekend. They had brought their club Grob 103 along with partner ships. Although it is a six-hour drive for them, I learned they came down regularly. I thought this a bit odd until I learned in chatting with a couple of them that one had done his 1,000km and the other his 500km on this ridge. When the winds and conditions are right, this is the place the experts go for time and distance records. Several years back Tom Knauff flew his then record 1,000 mile (1,647km) flight on Bald Eagle Ridge in 10 hours and 30 minutes. I was there, of course, to break Tom's record, assuming I would be able to get the Nimbus assembled and didn't run out of granola bars.

After assembly, I took the mandatory ridge check ride with Tim, the CFIG, who was most knowledgeable on the ridge hazards, and caught up with the Canadians. Canadians never travel light on the "liquid supplies" and I didn't want to miss out. That night Tom and Doris graciously invited all of us up to their house for Tom's homemade pizza. It was a very nice evening and fascinating to listen to Tom.

The next morning those of us who could think clearly, after many cups of coffee, began brushing the snow off the ships. The ridge was working with a weak to moderate 8 to 12 knot westerly wind. The ridge works best between 15 and 30 knots. I launched at 10:30 to 2,000 feet AGL (tows are only $25). I made a pass down to Karl Striedieck's Eagle Field gliderport (about six miles south) and back to get a feel for the ridge and day. It was a gray overcast day with a 3,500 foot ceiling and occasional snow showers.

I initially flew 60 knots (slow for ridge flying) to achieve the highest altitude possible, a couple of hundred feet above the ridge crest. Because the ridge is only 1,200 feet AGL as an average, you have to be continually "looking down the road" for your landing field in the event the wind dies down or shifts unfavorably. Once you get a few hundred feet below the ridge it is unlikely one can maintain altitude, so you are going to land somewhere very quickly. Fortunately, the landable fields abound. There are a few gaps in the ridge — for example, four miles at Altoona, PA — and they can, and did, present a challenge in crossing with heavy sink and no thermals on that day.

After my pass to gain a comfort level, I put the nose down to 80-90 knots (flying level with the ridge crest in the best lift) and merrily skipped my way down past Altoona, PA and back (100 miles round-trip). Upon returning to Keystone, I kept going north and flew another 50 miles. It was here the ridge makes a gentle turn to the northeast. It was here the wind direction became unfavorable. It was here I landed. In very short order I was on the ground in a large cut cornfield facing the Susquehanna River still going through my prelanding check list. I had opted to do a downwind landing parallel with the corn rows because of the proximity to a service road. I hiked to a farmhouse and was so successful in convincing them I was not out poaching deer, they felt guilty enough to give me a ride to town. "Town" was South Avis, PA, which is not on any map (I don't think they are too proud of it).

I got to meet some other very nice people from Pennsylvania including a retired Methodist minister and his wife who gave me a ride back to the airport after a two-hour enroute shopping trip to buy Christmas gifts (to be honest, I can't complain: if I saw me standing by the road, I not only wouldn't stop, I'd swerve to do humanity a favor). I also met "Elwood." Yes, the profile fits the name, but for $20 who are you going to find to stomp around a cornfield for disassembly at 8 o'clock on a cool moonless night? He actually enjoyed it and I made a friend for life! The only problem we had was actually finding the sailplane in the field. Being originally from Nebraska, I knew the likelihood of sinkholes in a cornfield was remote, but Elwood and I were getting close to that conclusion. Once back at Keystone the weather turned poor, so I packed it in for the season.

I am planning a return trip this spring and would like to coordinate a safari. Anyone interested should give me a call or email. This is great cross country flying. However, one needs to do two things first: call Jo, a very nice and helpful lady at Keystone number (814) 355-2483 or at tomknauff@aol.com and order Tom's book "Ridge Soaring the Bald Eagle Ridge" (it tells you everything to know and plan your flying); then get Elwood's name and address from me. He needs a new pen pal.

Holiday cheer: A man wearing dentures goes to his dentist for his regular checkup. The dentist took one look at his teeth, and said, "I've never seen such badly ruined dentures in all my life. What on earth are you eating?" "Nothing terribly out of the ordinary," the man answered, "although I do have a sweet spot for Hollandaise sauce." "That must be it," replied the dentist. "I'm going to make you a new set of dentures, but this time I'll make the new ones out of chrome plating." "Chrome! Why chrome?!?" "Well, you see," replied the dentist, "there's no plates like chrome for the Hollandaise."

First solo flight

Richard Dix

I am happy to say that yesterday, November 10, I soloed in a Schweizer 2-33. This came two days after joining the El Paso Soaring Society. I had three flights with an instructor, and he jumped out and said, "Those guys at MITSA taught you real well, it's more than time that you went solo!" The flight was a staggering 18 minutes. Nothing fancy: up, down, and in one piece at all times. I would like to brag and boast that the flight was flawless, but it was my worst takeoff roll in at least 10 flights. The instructor said the take-off was "riveting" to watch. The rest of the flight was very smooth, landing was very little problem. Flying a 2-33 is easier than flying a Blanik! The last bit of excitement came as I entered the pattern. I had to make the radio call "West Texas Airport, Glider 7588 entering right downwind leg for runway 26" Simple! Well, I was so nervous about landing, and never having used a radio before, it came out something like this:

"West El Paso Texas Airport, Runway 26 entering downwind for runway, oh shit, glider 7588 entering runway 26!" in a distinctly strained voice!

When I rolled to a stop in front of the main hanger, where they have the radio frequency on a loudspeaker, about 10 guys were howling their brains out about the radio call! I didn't care.

I was so nervous the stick had to be surgically removed from my death-grip on it, and my smile had to be alcoholically removed.

I would like to thank the instructors at MITSA, and everyone else that at MITSA that made this possible. I had great instruction, and am proud to say that I was, and still am, part of MITSA. Thanks again!

The development of the 1-26

Paul Schweizer

This article was originally printed in the newsletter of the 1-26 Association *(http://www.serve.com/126ASSN), but it has circulated around the Internet several times, and Jim Emken was the one who brought this to my attention again. The article talks about the one-design concept that motivated the design of the 1-26. Remember that our L-33 was the Blanik entry into the one-design contest for the World Class that was eventually won by the PW-5. It is interesting to hear (a rumor) that Paul Schweizer is now a big supporter of World Class one-design concept and the PW-5. —Editor*

It's hard to tell just when we got the idea of a one-design sailplane. The seed could have been sown in the middle 20's when the editor of a boating magazine had a flat tire by our home in Peekskill, New York. Joe Heimer, my father's handy man, fixed the tire but refused payment. Instead, the editor sent him a subscription to his boating magazine. Since Joe had no interest in boating, he turned the magazine over to us boys: Ernie, Bill, and me. This got us interested in boating and sailing and we started going to the annual New York Boat Show where we were attracted to the sleek sailboats and where we learned about the one-design concept.

Our sailing activity came to an end when Lindbergh flew to Paris and we switched our interest to flying. We built model airplanes for two years and, then, when we saw the June 1929 issue of the *National Geographic* with its famous article on Soaring in Germany, we became interested in gliders and sailplanes.

During the latter part of World War II, we were looking forward to what type of sailplanes we might build once the war had ended. The idea of a one-design class sailplane occasionally surfaced and, when Ben Shupack and Gus Raspet requested a paper for the SSA Technical Soaring Conference at Brooklyn Poly, I agreed to write a paper about the one-design concept. In order to get more information on one-design sailboats and sailing, I contacted the editor of *Yachting* magazine and the manager of the Skaneateles Boating Company that was producing a popular one-design sailboat.

The paper was presented at the Conference and was printed in the November-December 1944 issue of *Soaring* and was titled "Adapting the One-Design Class to Gliding and Soaring." In the same issue an article by Parker Leonard projected a possible one-design class sailplane called the Sailfly which, incidentally, looked somewhat like the 1-26 would look, but had a span of 46 feet and was to be made of wood. Once the war had ended we concentrated on building trainers which we felt were needed first to get the soaring movement going again. When National Contests started again in, 1946, interest in a high-performance competition sailplane developed. Ernie designed the 1-21 and Dick Comey won the 1947 National Soaring Championship in the prototype a few weeks after it was completed.

The 1-21 was a fine sailplane but at $3500 it was too expensive and we only sold two of them. We then developed the 1-23 which was smaller, simpler, and lower in price and this ship proved to be more popular. After selling about twenty-five of these over the next few years the sales dropped off primarily because of price. We realized that a lower-priced sailplane was desirable but that it would be difficult to make any large reduction in cost over the 1-23 standard, so Ernie up with a new design that would be suitable for home building from a kit. We reasoned that to be successful the kit should be able to be completed in less than a year's time, that all parts and material should be supplied, and that critical structure should be factory assembled. Through the use of questionnaires we learned that the majority wanted a small, easy to fly sailplane with Gold "C" potential in a kit that cost $1,000 and as a complete ship at $1,500. We made a lot of design and cost studies and we finally came up with the 1-26. The best we could do in price, however, was a basic kit for $1,465 and a complete ship for $2,150. These prices assumed that we would have good sailplane and steady production. Sufficient interest was shown to warrant going ahead and building the prototype in the fall of 1953. It was completed on January 16, 1954, and I had the honor of making the first flight.

The history of the 1-26 from that point is pretty well known. We produced 700 (including 200 kits) of four versions: the 1-26, 1-26B, 1-26D, and 1-26E. Our theory on the kits was correct for every one sold was completed and certified and many were built in less than a year. One-design competitions became popular and started with the first Regatta in 1955. The 1-26 Association was formed and the Annual 1-26 Championships has become a very competitive contest.

We decided to stop production of the 1-26 in 1979 at ship 700. The increased cost of production and the reduced number of sales made it uneconomical to continue. Some felt that this would be the end of the 1-26 movement. This was not the case for the 1-26 continues to offer top competition in an affordable sailplane. New sailplane prices are escalating (there are no new sailplanes much under $20,000) and other used sailplane prices are in the $10,000 to $20,000 range. Alternatively, used 1-26s are usually under $10,000 and are an excellent buy for those that want fun and competition at low cost.

It would appear that competition will develop between those who want to get a 1-26 for one-design competition, and the clubs and commercial operators who find it an excellent sailplane for building up experience. This will put pressure on price and make the 1-26 an even better investment if prices continue to rise. If a shortage of 1-26's developed, it might justify production in a foreign country where costs are lower. The membership in the 1-26 Association is at an all time high. With over 600 1-26s in the country the 1-26 Association has room to grow. There are some who feel as I do that there is more "status" to doing a good job of flying in a 1-26 one-design competition than flying aimlessly about in a much higher performance sailplane. It is excellent training for those who later may want to move ahead to a higher performance sailplane. I foresee the 1-26 Association continuing to grow as a class and that it will encourage other new one-design classes to form. There are benefits to all 1-26 enthusiasts to have a stronger 1-26 Association — it will be more fun and more satisfying for all members.

Two cows are standing in a field somewhere in England. One cow looks upset, and asks the other cow, "Aren't you worried about all this mad cow disease stuff we've been hearing about?" The other cow says, "No, it doesn't affect me, I'm a duck."

The MITSA Board of Directors

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For more information about MITSA, you can contact the club by email, visit our web page, or contact Joe Kwasnik, our director of membership listed above.

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A newspaper clipping from an unknown source, submitted by Morrie Tuttle (tuttle@zeus.unl.edu). —Editor

Rochester, NY — For their required student design projects, five seniors at the Rochester Institute of Technology (RIT) took a step back in time to honor American aviation pioneer Octave Chanute. One hundred years ago, along the sand dunes of Miller Beach, Indiana, Chanute accomplished on of the first American flights, in a biwing glider made of wood and muslin. Using aluminum and carbon fiber, the RIT team made a replica. "We could have made the plane even lighter and more aerodynamic, but we wanted to maintain the aesthetic and structural integrity of the original aircraft," said team member Peter Karpinski. Faculty advisor Kevin Kochersberg, a licensed glider pilot, used the replica this summer to reenact Chanute's historic but often overlooked flight.

Bruce Miller

Julie Boatman

The following article appearing in the December issue of AOPA Pilot *published by the Aircraft Owners and Pilots Association (http://www.aopa.org). The same issue includes an article about getting checked out to tow gliders at Dillingham Field on Oahu by Barry Schiff (the same field where Mark Koepper flew and wrote about back in the February issue of this newsletter), and an article on flying out of Franconia by Basil Mott. —Editor*

When you first hear what Bruce Miller does for thrills, you'll think he's out of his mind. After all, flying into blossoming thunderstorm clouds is an activity that most pilots avoid. And every time he enters a towering cumulus, he's the first one to agree. But he continues to punch into them, and he's doing it for you. Bruce flies the glider *Explorer* for the National Center for Atmospheric Research (NCAR), helping the center to figure out how storms develop into the monsters we know and dodge.

Bruce discovered aviation in a way familiar to many of us. In 1964, he took a trip with a friend to Hole in the Rock, Utah, in a Cessna 172. "I was overwhelmed by the point of view possible from an airplane," Bruce remembers. The friend happened to be a glider CFI, and Bruce started his glider training at the Longmont, Colorado, airport.

Back then at Longmont, gliders were launched by means of a winch tow. For those who have never witnessed this feat, the glider is attached to a mile-long cable hooked to a winch mounted on a truck or trailer. The cable is reeled in at 50 mph, and the glider lifts off in a few seconds. The pilot aims for 30 to 45 degrees of nose-up pitch to gain as much altitude as the wire allows, then releases from the cable. "I would spend the weekend (out at the airport) and maybe get four or five five-minute flights." He completed his private glider certificate in 1966, with his commercial and CFI ratings coming the next year.

In 1978, Bruce launched Cloud Base, which offers glider instruction and rental at Boulder (Colorado) Municipal Airport. He works as a CFI, designated examiner, and general handyman. He also does his share of aerotows in a 180-horsepower Super Cub or a Cessna 180. The area is known for excellent mountain wave soaring and has an established "wave window," allowing gliders to ride the wave up into the flight levels without an ATC clearance. On a good day, Bruce will tow through rotor clouds to find the smooth-as-silk wave from sunrise to sunset. And once every year or two, depending on government budgets, his telephone rings with a call from NCAR.

Bruce lucked out on the *Explorer* pilot slot through the time-tested combination of experience and being in the right place at the right time. In 1970, he had a friend who worked for NCAR, and the center was in the process of developing a new camera setup for the *Explorer* that significantly changed the aerodynamics of the aircraft. The new system consisted of a black airfoil-shaped panel mounted on struts on top of the camera. Strobes were timed with a motorized 35mm camera inside the glider. The strobes illuminated whatever dust or ice-crystal particles were between the glider and the black panel, and the camera took a photo.

The *Explorer* started out as a stock Schweizer 2-32. Bruce, at this point, had more than 1,000 hours in 2-32s, so his friend called on him to do the flight tests at the Denver-Jefferson County Airport (Jeffco). When the original *Explorer* pilot, Dutchman Vim Toutenhoofd, was unable to continue flying the research missions, Bruce took his place.

His first mission was for a Colorado State University cumulonimbus experiment in 1977. Since then, he's traveled to Montana, New Mexico, and Florida on hops with the *Explorer*, which NCAR makes available to various universities for data collection.

A typical flight begins on an IFR flight plan, as Bruce needs the flexibility to rise in the cloud as much as he can, into the flight levels. The glider comes equipped with two coms, a transponder, a telemetry channel for data transmission, and an open mic, so that all cockpit conversations are recorded. The *Explorer* flies on tow until the pilots spot an area of congested cumulus clouds: the potential thunderstorm.

Because the rope tethering the glider to the tow plane is 200 feet long, the glider can't be towed into a cloud. "We wouldn't be able to see each other," notes Bruce. Flying on tow requires visual contact between the two aircraft. Instead, Bruce releases under the cloud and waits outside to see where the *Explorer* will need to land. ATC hands him a block of altitude, and Bruce climbs with the updrafts into the cloud, circling to stay in the strong thermals. "In a good cloud, I'll be going up at 3,000 feet per minute."

The *Explorer* is reinforced to withstand the stresses of flying inside a growing cumulonimbus. In fact, the glider can withstand more Gs than the pilot.

Once Bruce is committed to the cloud, he begins data collection. Lately his missions have focused on the electrification of clouds, more commonly known as lightning. The scientists at NCAR discovered that lightning depends on the presence of ice crystals in the cloud. The crystals rub together and separate, in a sense, to create an electrical charge.

And what happens when lightning does strike? "It's time to get out, mostly because of the shutdown of data transmission." Once hail gets larger than pea-sized, it's also a sign to leave the cloud.

Pilots who wish to "ride along" can catch the latest IMAX movie, *Stormchasers*. The filming took place in September l994; although not an ideal time of the year for big boomers, the footage is excellent.

When asked how it feels to challenge the worst weather, he answers, "There's a time during every flight that I think, 'Why am I here?' But the next time I have a chance, I'm up there again."

Nomination Form
MITSA Board of Directors

- President:
  - Phil Gaisford
  - Nominee: ______________________ Nominee's signature: ______________________
- Vice president:
  - Carl Johnson
  - Nominee: ______________________ Nominee's signature: ______________________
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  - Jim Emken
  - Nominee: ______________________ Nominee's signature: ______________________
- Operations:
  - Al Gold
  - Nominee: ______________________ Nominee's signature: ______________________
- Logistics:
  - Bruce Easom
  - Nominee: ______________________ Nominee's signature: ______________________
- Membership:
  - Joe Kwasnik
  - Nominee: ______________________ Nominee's signature: ______________________

Your name: ______________________ Your signature: ______________________

The members explicitly named above have already agreed to run for the indicated positions. Feel free to nominate yourself or any number of other club members for board positions. Each person you nominate for a position must sign your nomination form to indicate that they agree to run for the position. You must also sign your form.

Your nomination form must be returned to Mark Tuttle, 8 Melanie Lane, Arlington, MA 02174 before January 4, 1997.