



Spring
2015

NSM NEWS

The National Soaring Museum preserves and presents the heritage of motorless flight, and promotes through education, a greater knowledge of soaring, aeronautics, and related physical sciences for everyone.

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Closed Thanksgiving, Christmas Eve and Day, and New Years Eve and Day

NSM News is a quarterly publication by the National Soaring Museum for all Members and Friends of the Museum.

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The Hütter-17, originally built in Saskatchewan, now greets visitors as they enter the National Soaring Museum.

"Wonderful! Something to tell your friends about!"
-Tom and Heather of Swedesboro, NJ

Community Events at the NSM



Santa Claus, Mrs. Claus, and a Minion bring holiday cheer.

On Sunday, December 8, the National Soaring Museum hosted its second annual “Cookie Time with Mrs. Claus”. What an afternoon! Over 250 visitors enjoyed the festivities, including cookie decorating as well as visits and photos with Santa. Nearly 50 letters to Santa were placed in the North Pole mailbox, and all were answered. Education Services Coordinator Kaye Norton demonstrated the museum’s 3D printer and made snowflake ornaments for families to take home. There was plenty of activity for all ages, and the event gave visitors a chance to explore the museum.

Mickey Mouse, *Despicable Me*’s Minion, *Frozen*’s Elsa, and Elmira Jackals mascot Blade stopped by with holiday greetings. Support from other area organizations joining us for the day came from the Chemung County Historical Society, the Chemung County Library District, the Family Reading Partnership, Happy Hippo Cottage Gift Shop, the Elmira Piece Quilters, and Wild Birds Unlimited. The SPCA brought cats from their shelter, all of which were later adopted. Once again, the Horseheads High School choir added to the festive spirit by singing Christmas carols.

Local businesses also supported this event, such as the Community Bank, N.A. Lights Bakery and Turtle Leaf donated sweet treats for guests to enjoy. H.L. Stephens Furniture provided a couch for Santa.

No event would be complete without the help of our volunteers. This year we would like to thank Guerry Howard; Tom Berry; Mark, Tammy, and Justin Schoonover; Emily Morey; Jeane Callahan; Sue Ungvarsky; Beth Dano; Sarah Pounder; Jessica Rynders; Mohammad Abrar; Norm Smithers and Pat Holstrom.

The National Soaring Museum was invited to participate in Bookfest, sponsored by the Family Reading Partnership of Chemung Valley and hosted at Diven School in Elmira. Lisa Bartlett and Pat Holstrom greeted around 160 families, and three high school volunteers were introduced to the art of making paper helicopters. Glider bookmarks and temporary tattoos were distributed to the kids, and many parents asked about the Eileen Collins Aerospace Camp and other education programs the museum offers.

The event was well-attended, with around 300 families throughout the day and filled with non-profits and special activities: storytelling, crown making, storybook characters, therapy dogs, local authors, and more. It was a pleasure working with the Family Reading Partnership, and we look forward to doing so again in the future.

For the second year, the National Soaring Museum hosted a photography show for local artists. After some small hiccups, the museum opened its doors for the Shutter Gals photography exhibit on Sunday, March 8. Founded by Rita Rhodes, the Shutter Gals are a group of ten local female photographers, with 36 photos on display. The warmer temperatures and sunny skies welcomed the photographers and their guests, and a table full of goodies and coffee rounded out the reception. The photo exhibit will be at the museum until April 10, so if you’re in the area, stop in and check out the great photographs! Thank you to Tom, Diane, and Norm for helping prepare the NSM for the reception. ■



The Shutter Gals, from left to right: Rita Rhodes, Susan C. Larkin, Gretchen Halpert, Marcia Tinker, Madison Chalfant, Eva Seward

U.S. Soaring Hall of Fame



Dr. John M. Glendening

The United States Soaring Hall of Fame honors “individuals who have made the highest achievements in, or contributions to, the sport of soaring in the United States of America.” This year, Dr. John W. Glendening, better known as “Dr. Jack”, will be inducted as its newest member. Dr. Jack is best known for creating BLIPMAPs (“Boundary Layer Information Prediction MAP”). These detailed forecast maps cover large geographical areas and are easy to understand. Dr. Jack produced the first BLIPMAP in 2000, at a time when pilots had to rely on local soundings, which were expensive, if available at all. BLIPMAPs provide sailplane pilots with valuable weather information, showing thermal height and strength, buoyancy/shear ratios, and cloud base/cloud presence. BLIPMAPs also show overdevelopment, and the possibility of thunderstorms, alerting pilots to safety concerns in the area. Originally available at a low cost, the maps most pilots use are now free.

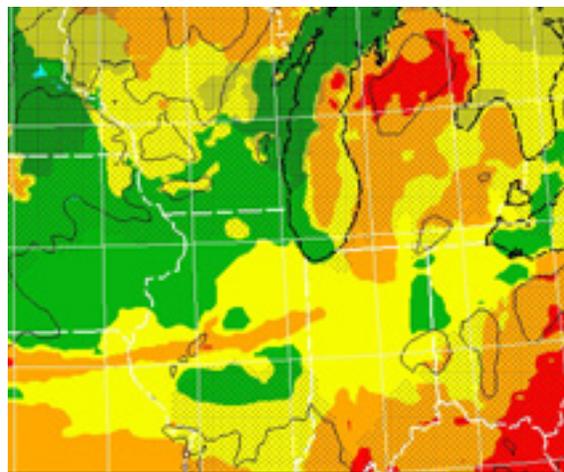
Sailplane pilots are not the only ones who benefit from Dr. Jack’s work. The maps are also used by hang glider, paraglider, R/C glider, and power plane pilots, bird watchers, and even meteorologists. His contribution to the sport of soaring has given pilots the ability to plan their flights several days in advance, resulting in more cross-country hours and miles.

Dr. Jack got his meteorological training first at MIT, then Colorado State University, and finally a PhD at the University of Washington (1985), studying the atmospheric boundary layer - the layer resulting from surface-induced mixing, i.e. “where glider pilots normally fly”. His soaring experiences started with early solo flights at Plymouth, MA (1970), a private license

at Fremont, CA (1986), and later flying at Minden, NV and Hollister, CA. He developed the BLIPMAPs initially for his own use in 1997, needing to forecast mountain wave before making the long drive from Monterey to Minden, then in a public forum to support the soaring pilots investigating non-local thermal soaring areas near Hollister, his home airport.

Dr. Jack started from simple text and sounding-based forecasts, the norm at the time. Step-by-step additions eventually culminated in the first graphical BLIPMAP of soaring-specific parameters in 1999, first for his local area, then for California, and thereafter for the entire US. Initially using data from just a single NWS forecast model, separate results from a second model were later also produced so pilots could assess the “forecast uncertainty” for themselves.

All those forecasts relied upon data produced by government-run weather models and so were limited by their internally-specified resolution, which in many cases did not represent the complexity of local terrain. The RASP (“Regional Atmospheric Soaring Prediction”) forecasts were then developed to provide higher resolution data, which necessitated running its own weather prediction model. The first RASP forecast was made in 2004, also to support efforts exploring lift around Hollister. RASP was later made publicly available for others to run for their regions. Since it can be started from data available globally, around 30 sites provide local RASP forecasts world-wide currently. Dr. Jack has also helped our feathered exemplar, the California Condor, collaborating in a research article about soaring influences on condor nesting and participating in condor releases. ■



A BLIPMAP showing thermal strength.

Women in Soaring



Anne Burns

As March is Women's History Month in the United States, we would like to honor a female glider pilot with considerable achievements not only in the sport of soaring, but also in the study of aircraft engineering and aerodynamics.

Anne Burns was born on November 23, 1915 in Yorkshire, England and became the second woman to study Engineering Sciences at Oxford University, graduating with first-class honors in 1936. During her time at Oxford, she worked in the university's engineering lab and helped to produce one of the earliest papers on Rayleigh-Benard convection. Following the outbreak of World War II, Burns's experience as an engineer led her to joining the Royal Aircraft Establishment in 1940. There, she studied the impact of structural loads in flight, and the impact of those loads on lifetime aircraft fatigue. Burns also became a flight test observer and made test flights in many military aircraft, including gliders. She continued her career as a flight test observer after the close of the war and went on to investigate airline crashes, at times risking her life in the process.

In 1954, a Comet jetliner traveling from Elba, Italy to London, England suffered explosive decompression above 25,000 feet, and crashed into the Mediterranean Sea, killing all the passengers and crew onboard. Burns investigated the crash, flying an unpressurized Comet up to 40,000 feet. She received a Queen's Commendation for this work the following year.

Burns began flying gliders in 1954, and took her first cross-country flight in 1955. The 134 mile

flight from Lasham, Hampshire in England to RAF Turnhill, Shropshire took her 4 hours and 55 minutes to complete, setting an new British women's distance record. The next year, she set a new United Kingdom record for altitude gain following a bungee launch, and became the first woman to cross the English Channel in a glider in 1957.

Burns's achievements in soaring continued through the 1960s. By 1961, she held 10 of 11 UK women's records for gliding, including altitude gain, when she soared up to 34,610 feet in South Africa. She broke five other British and world records in South Africa, and she and her husband (and fellow pilot) Denis Burns were jointly awarded the Royal Aero Club's trophy for their achievements. In 1966, Burns became the first woman to hold the title of British Glider Champion, and was awarded the Fédération Aéronautique Internationale Lilienthal Gliding Medal. Burns received multiple awards for soaring, including the Jean Lennox Bird Trophy for the years she spent dedicated to aviation, and the Brabazon Cup for her soaring achievements. She received a second Queen's Commendation for Valuable Services in the Air in 1963.

In 1977, Burns was forced to bail out of her glider after a bird damaged the aircraft, and she gave up gliding thereafter. She died in 2001, at the age of 85. ■

From Our Members

It's nice to hear from members what experiences led them to their membership in the Museum. This is from David DuBois (included with permission). We enjoyed it because it invokes memories we share of flying over the Susquehanna Valley and it calls to mind our late and lamented friend Clarence See. David writes:

Dear NSM:

I thought I would let you know why a Falls Church gilder pilot would be supporting the NSM, well at least why I support the NSM.

I have been in the DC area for three years and before that, two years in Dayton, OH. I was a member of Caesar Creek Soaring Club while I lived in Dayton. What a great club...as I see NSM is aware of.

(...continued on page 5.)

(...continued from page 4.)

Except for the last five years, I lived in Binghamton, NY and was a member of Triple Cities Soaring Club. My first glider log book entry for my first training flight was entered May 17, 1986 from TriCities Airport. I had 30 flights my first season. I missed the next few years but was examined and licensed by the famous Clarence See on June 25, 1990, using only three flights.

Now for the exciting part. My first cross-country flight was on June 6th, 1991 from TriCities Airport to Harris Hill. The first cross-country flight was also my first for: needing to read a map accurately! I knew where Harris Hill “should be”... First time to 9,000 feet altitude – wow you could see both Cayuga and Seneca lakes at the same time! First time I needed to work really really hard for a save at 2,000 feet, thankfully over Blue Swan so the pucker factor was “low”. After 25 minutes or so and a few good thermals and I was back up to 9,000 feet.

I landed at Harris Hill at 4:15 PM as I had gotten a late start out of TriCities. I had taken a long time in each thermal on my way down, “milking” each cloud for as much elevation as I could get so my trip took 2.5 hours. This was flying west so it was against the wind also. I also had Clarence See sign my barograph trace when I landed, which I still have.

Second cross-country flight: I then took a tow from one of Harris Hill’s tow planes, which was MUCH faster than ours (and a big surprise), and flew back to TriCities Airport. I again got very low over Elmira but managed to find enough thermals to again get back up to 9,000 feet.

I had a field already picked out, that is how close I was to landing. I found myself over Owego, NY at 6,000 feet and no clouds between me and TriCities Airport. I worked the last thermal for an extra “5 feet of elevation” and then set my “final glide” from Owego and pointed the nose of the glider to the familiar bend in the Susquehanna River for TriCities Airport. I made the trip back in 1.5 hours with the tail wind and without the conservative approach I took on the way out and was at 3,000 feet when I arrived at TriCities Airport.

What an exciting day: two cross-country flights, two big saves, needing to read a map, getting up to 9,000 feet, all in a SGS 1-26.

So that is my story and my connections to Harris Hill and the NSM. Thought you might find this interesting. I remember this like it was yesterday! ■

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2015 Wish List

We seek funding to:

1/Expand and improve our capability to provide educational services to students in our core service area (the Twin Tiers of New York State and Pennsylvania) and eventually beyond --\$100,000

2/Purchase and operate another “three-dimensional printer” for educational and commercial purposes--\$3,000

3/Increase the number of historic soaring films we can make available digitally as a benefit of membership--\$1500-2000/film for at least 10 films

4/Enhance our membership development efforts by allowing representatives of the Museum to travel to soaring sites around the country during contests and similar gatherings--\$5,000

5/Remove and replace flooring throughout the Museum, particularly in the lobby and hallways--\$25,000

6/Purchase a vehicle such as an SUV or van to allow us to move displays and educational goods to schools on demand and to transport gliders to and from the Museum as needed--\$20,000

7/Restore our curatorial-archival function primarily through hiring a professional--\$50,000/year

8/Complete the restoration of the “Mystery Mural”, frame it and re-hang it in the gallery area--\$15,000 ■

Traveling Exhibits

The National Soaring Museum has an opportunity to host two traveling exhibits this year from the International Women’s Air and Space Museum located in Cleveland, OH. Both educational exhibits revolve around women in aviation. The first is about Katharine Wright, sister of the Wright Brothers and her role in their activities. Exhibit two is Rocket Girls, which focuses on female pilots, astronauts and the space shuttle program. Elmira’s own Eileen Collins is featured in this exhibit.

These exhibits are scheduled for one in the spring and one during our Eileen Collins Aerospace Camp in July. NSM is looking for financial sponsorship help. Each exhibit will cost \$500 which includes shipping and handling and also some advertising. The exhibits will be part of the regular admission rates. Both of these special traveling exhibits are great educational opportunities for the National Soaring Museum. They will each be here for one month. If you are interested in donating please contact the museum. ■

Donor Recognition

The National Soaring Museum's End of the Year Campaign during the holidays was hugely successful, attracting the generosity of 82 donors who gave us a total of \$13,545.00 to support the general operations of the museum. While the number of donors was slightly fewer than for the 2013 campaign, the total given was greater. The average gift was \$169.00 and ranged up to one gift of \$1500.00

All of us associated with the Museum would like to express our gratitude to:

Alan Angell & Beth Dollinger
Andy Frechtling
Archer & Ellen Martin
Arie & Clare van den Blink
Barbara Cantrill
Becky Feher
Bernard Paiewonsky
Bill Schweizer
BL Leslie
Bob Jackson
Brian & Heidi Weaver
Bruce G. Bottoms
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Robert Gibbons
Robert McKinnon
Robinson Lapp
Ron Schwartz
Scott & Kate Calvert
Stephen H. Parker
Steve Sliwa
Ted Bennett
Thomas C. Jones
Tim Welles
Timothy King
Tom Beltz
Tom Berry
Walter B. Cannon
William Feldbaumer

And the giving has not stopped. Since the first of the year we have received nearly \$1,200 in gifts from eight donors. We will list all in our next newsletter. ■

Save the Date!

Upcoming Events at the National Soaring Museum

Piece Quilters Quilt Show

April 23 - 26

Soaring History Symposium

May 1 - 2

Presenters include Jim Short, John "Corky" Gill, Simine Short and John "Dr. Jack" Glendening. \$25 registration fee includes 2 lunches and reception.

Hall of Fame Banquet

May 2

Honoring John "Dr. Jack" Glendening. \$50 fee includes reception and dinner. For reservations call 607-734-3128.

Eileen Collins Aerospace Camp

Boys' Camp

Girls' Camp

July 6 - 10

July 13 - 17

Summer Soaring Academy

August 10 - 14

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