



# The “ *Lightning* ” Newsletter\*

**The voice of Arion Aircraft and its Lightning Aircraft builders and flyers.**

**\*Official name of the Newsletter to be determined later.**

**March 2008**

**Volume 1, Issue 2**

Welcome to issue # 2 of the Lightning Newsletter. Apparently the first issue of the newsletter has been well received based on the number of positive comments. However, to be successful we will need the inputs from Lightning flyers and builders in order to meet the goal that has been established for the newsletter. The goal for this newsletter is twofold; first, to be a way to “get the word” out on happenings at Arion Aircraft, and second, to give a “voice” to Lightning builders and flyers as well. So it is both the factory’s and your newsletter, and as such its success will depend on you getting involved to spread the word and to help other builders and / or flyers with their project airplanes. So think of this newsletter as an “exchange of information publication” just as it will be a way for Arion Aircraft and its dealers to get the word out on new developments.

## **Contents in this issue:**

**Arion Lightning History** - “The Early Days” of Arion Aircraft and how this fantastic aircraft got started.

**News from the Factory** - Update on the new 2008 factory demo aircraft.

**News from the Dealers** –

**Current Lightning Dealers** -

**News from Builders and Flyers**

- Reports from Tex Mantell, and Earl Ferguson.

**Upcoming Events** - Sun-N-Fun is next, 8 to 13 April at Lakeland, Florida.

**Lightning Skunk Works** –

**Update on Naming the Newsletter** - No name yet, so keep your suggestions coming.

**Other items** - Look for a flight report on the new 2008 demo in the April issue of the newsletter.

**Final thoughts** -

**And now, the rest of the news:**

## Arion Lightning History:

The history of the Lightning airplane or Arion Aircraft company is really several stories. How the airplane came about is certainly the big story, but how the company got started, how the airplane developed, and how they ended up in Shelbyville, Tennessee, are all parts of the total picture. I will try to cover some of the above stories so that you can understand the “big picture” and hopefully appreciate the dedication and work that the Lightning Team has put into this “magnificent flying machine”. Much of the history you will read below comes from an article that Pete has written for a future issue of Sport Aviation, EAA’s official magazine.

The story starts back about 2003 in Wisconsin when **Pete Krotje** and his son **Ben** were importing Jabiru engines and Jabiru aircraft kits from Australia. Both the engine and airplane sold well, but they wanted to be able to offer an airplane with a little more speed and sporty performance. They searched the sport aviation market throughout the world and found a sexy looking little Spanish hot rod that promised great flying with speed and agility combined with great efficiency. The “Esqual”, which

apparently is a Spanish word for a shark that is found in the Mediterranean, was a natural fit for the Jabiru engine and the fiberglass construction method was similar to the Jabiru aircraft kit they had been selling. This new airplane initially sold well for them, but it was kind of hard to get people to come to Wisconsin in the winter time for their builder’s



assistance program. This is the part of the story that explains how they moved to Shelbyville. Looking at a map of the U.S., Tennessee seemed to be about half way between the big EAA convention and airshow at Oshkosh and the Sun-N-Fun event at Lakeland. As I recall, they completed this move in late 2004. And now you know that portion of the story.

Before the actual move to Tennessee, the original Spanish designer of the Esqual lost his life in an accident and the rights to the Esqual and its factory supplies in Spain were sold to a new European owner. Without going into a lot of explanation, support for the Esqual to the North American dealer (**Pete**) began to slide, so much so that **Pete** began to worry about the Esqual’s future, particularly in the U.S. Several Esqual kits that **Pete** ordered were never delivered and several others were delivered missing major parts and components. Heck, I never got all of my kit. More on that later.

Now some more background information. **Pete, Ben, and Nick** were members of an EAA chapter that met at the Brennand Airport which is about 12 miles north of the Oshkosh airport. The chapter members often sat around an evening campfire with beer and brats and of course the talk was about flying and airplanes. With support of the Esqual going downhill fast, talk soon turned to designing an airplane of their own that would have the good looks like the Esqual had, but eliminate its weak points and deficiencies. The idea was to create a new sport airplane that would “look like a million bucks”, be safe to operate, quick and economical to build, with outstanding yet economical performance. Once the basic design goals were set, actual planning and drawings began in earnest.

**Nick Otterback**, **Ben’s** friend and a flight instructor at Fox Valley Technical College, was an experienced experimental aircraft builder, as were **Pete** and **Ben**. **Nick** quickly demonstrated a flair for turning an idea for an aircraft part into a free hand drawing. **Pete, Ben, and Nick** began to scrutinize different aircraft designs. They liked the way Lancair hinged their elevators and that method was adapted

for their new design. Sturdy canopy supports like those found on the WT 9 found their way into **Nick's** drawings. Other bits and pieces of many different aircraft were modified or adapted to this very rough design that was partly on paper and partly still in their heads. They soon became convinced that they actually could design and build an aircraft that would fly reasonably fast, be stable yet responsive, look great, and build quickly for a modest amount of money – exactly the design goals they were aiming for.

Now the designers were ready to find out if their plans and dreams could be turned into reality. Enter another EAA Chapter member, **Rick Discher**, who owns and operates a fiberglass molding business in Weyauwega, WI. **Rick** flies a Maule and produces molded fiberglass parts for several kit manufacturers as well as FAA certified snow skis of his own design for Maules, Cubs, and others. **Rick** spent countless hours looking over several fiberglass kit aircraft and calculating how many layers of fiberglass it would take to make strong but light aircraft components. As a side note, I have had the pleasure of visiting **Rick's** factory and I am pleased to report that he uses the latest high tech procedures and ovens to produce his fiberglass parts. Since he produces parts for several aircraft kit manufacturers, he could build any kit of his choice. Guess what airplane **Rick** is building – yep, a really nice looking Lightning that hopefully will fly soon.

**Pete, Ben, and Nick** now turned their attention to wings. Where would they find a wing that would maximize performance from the 120 hp Jabiru 3300 engine? **Nick** spent hour after hour poring over the airfoil books comparing low speed performance vs. high speed performance, coefficients of lift, stall characteristics and more. Little by little the group narrowed the choices and decided on a modified NACA 6200 series airfoil wing with large flaps. It was their hope that they would achieve a cruise speed of about 175 mph but still land at 50.

Springtime 2004 found the group at Sun-N-Fun where they would leave the Jabiru and Esqual booth to get first hand looks at how other aircraft designers had attached ailerons and flaps to wings and how control surfaces were actuated. They sought advice from Jabiru Aircraft on design of control surfaces and studied a CD-Rom course on aircraft design and testing. The group was learning a great deal and parts and pieces of the design began to solidify farther.

By the time of Oshkosh 2004, talk around the campfire really began to heat up as some of **Nick's** drawings were scrutinized for ease of manufacture and effectiveness. The collective knowledge and experience of the chapter members around the fire was an immense help in optimizing the design. It became clear to the camp fire group that the last year of talking and dreaming was rapidly heading toward a real airplane. That was a scary thought to some but an exciting, stimulating concept to others.

After Oshkosh the design group began to finalize plans for making molds, huddling with **Rick Discher** to solidify mold design and tooling costs, production costs, and possible timetables. **Greg Klemp**, another local EAA Chapter member who owned Specialty Welding, was brought into the group to estimate metal and welded parts costs. By late September the plans were all together and it was time to face the reality of going into the business of producing a kit aircraft.

There is one big hurdle when going into any business - money. It was going to take money and lots of it to build molds and fixtures. Then it takes more money to build prototype parts just so they could test them to destruction. Finally, if they got past the testing stage there was more money required to build a prototype aircraft and then even more money required to fly that aircraft, correct deficiencies, make changes to molds and fixtures, and ramp up to produce parts.

Back at the campfire in October the design group presented the production plan to the EAA members. As you can imagine, between the brats and beer the enthusiasm began to build as the plans were fleshed out in the flickering light of the blaze. Someone rounded up some more wood as it became clear that the campfire would be burning late this night. Questions were posed and answered, details were explained, liabilities were evaluated, and potential explored as the fire burned brightly. Finally as

the flames died to glowing embers the EAA'ers headed home to consider participating in a new company to manufacture and sell a new kit plane design.

In the days that followed, eight EAA members committed funds for the company start up. Arion Aircraft, LLC was formed and the kit airplane design, now named "Lightning", was born. **Rick Discher** and his crew were given the go ahead to start making molds and **Greg Klemp** began building fixtures for the fabrication of Lightning metal parts. Now the real fun was about to begin.

The first part the new company made was a wing spar. The spar was tested by hanging weight on it and documenting the deflection. Next, they turned that spar into a wing as ribs and skins were completed and bonded in place. A test stand was constructed and in early November they all gathered for the big day: load testing the wing! They had a goal of a 9 G load before failure as they began to load bags of barn lime onto the wing. 2Gs and no problem. 4 Gs resulted in some deflection at the wing tip but no failure. Six G's and still everything was OK. Then 6.5 Gs and disaster – the wing failed. What a disappointment but what a learning experience as well.

Back to the drawing board. They added some carbon fiber reinforcement in areas where they saw stress and where the spar failed. Another spar and wing were built with the new design. Anxiety was the prevailing emotion as they began loading the wing once again. 2 Gs, 4 Gs, 6 Gs and again no problem. Then they added a half G worth of weight at a time, soon passing 8 Gs, then 9 Gs. The design goal was met so now what? They decided to keep going until the wing failed. 10Gs and the wing tip deflected nearly 20 inches but did not break. 11Gs and all was still OK. 11.5 Gs and still no break but another problem; they ran out of bags of lime. They decided that an 11.5 G wing was adequate! Taking it a step farther the crew unloaded the wing, turned it over in the fixture and loaded the 11.5 Gs negative and the wing still did not fail. What a great day! What a hell of a wing!



The crew then built three wings to test and all three were loaded to 11+ Gs without failure. Load testing of tails, elevators, ailerons, and flaps soon followed and all the components passed the test. Momentum was building through the spring of 2005. They didn't have a plane yet but went to Sun N Fun with some brochures and drawings and were amazed at the interest. And that is when and where I first met **Pete, Ben, and Nick**. A week before, I had sold my past Oshkosh and Sun-N-Fun Champion Vintage Bonanza and obviously needed a new traveling airplane. I had flown my J3 Cub (past Antique Champion) to Lakeland with the idea of finding a new airplane to build. The Esqual they had on display looked good, as did the information they had on the future Lightning. Since I needed an airplane before the Lightning would be available, I ordered an Esqual kit with an expected build period starting in September.

Late spring and summer of 2005 saw the prototype aircraft beginning to be built and the first flight test of the new Lightning wing. In typical "get'r done" fashion, they fitted a new Lightning wing to an Esqual fuselage (they called it a "Frankensqual") and, with this hybrid airplane, began some basic flight test of the new wing's performance and stall characteristics. I was lucky enough to fly this airplane several times, both with and without Vortex Generators on the wings which they were testing for possible future use on a light sport compliant Lightning. Although this hybrid Lightning only had an 80 HP Jabiru 2200 engine, it had amazing performance. In my estimation, it had to be the fastest 80 hp airplane around.



During this same period, wings, tails, flaps and other parts for the prototype Lightning came together without too much trauma. A few dimensional problems with a few parts were soon resolved. **Nick** would draw a part on graph paper and then **Ben** would convert it to a CAD drawing. Drawings and dimensions were tweaked as the plane came together. By Oshkosh 2005 they had an aircraft on its gear with engine on and wings and tail complete. Cowls and canopy were still in progress.

The canopy proved to be a vexing challenge. The crew had little knowledge of canopy manufacturing and turned to an acrylic business who said they could do the job. After three months it was clear they could not. They went to another acrylic molding company with bigger equipment. They needed a \$15,000 mold so the group scraped up the money. Four months later the company admitted they could not fit the canopy into their oven so on to another company with a larger oven. Three months later and \$1700 worth of cracked Plexiglas it was clear that this company was not up to the task. Finally at the Copperstate Fly-In, **Nick** met the owner of Aircraft Windshield. It was clear that they had the expertise to do the job. The mold was shipped to the company in California so canopy production could begin. But wait a minute! Close inspection by the experienced Aircraft Windshield crew revealed that the \$15,000 mold was not up to optical quality and was nothing more than a 400 lb piece of scrap aluminum. There was no option except to make another mold. Finally in February 2006 an exceptionally clear canopy arrived, and final assembly on the Lightning prototype could continue.

I will inject a little info on building N31BZ at this point as it kind of has a minor role in the Lightning history. I mentioned above that my kit was missing many parts and components when it arrived from Europe. However, my timing was good in that by the fall of 2005 some of the initial Lightning welded parts were starting to arrive in Shelbyville. Thankfully, **Pete** helped me to adapt all of the early Lightning welded parts to my Esqual. I also threw out the brakes and wheels that came with the Esqual kit, and used the type that had been chosen for the future Lightning. About that time the first Lightning cowling showed up and I immediately started “bugging” **Pete and Nick** to let me use it on my Esqual. It was such a more modern looking cowling with LoPresti inlets and NACA ducts, it just had to be faster (and it is by some 12 to 15 mph over the stock Esqual). **Pete and Nick** decided it would probably be to their benefit to let me use it, as 31BZ would certainly fly before the prototype would, so they would find out sooner if the new cowling would cool the Jabiru engine properly. From that point on, everything we did firewall forward on 31BZ, to include a stainless steel firewall, became the initial Lightning firewall forward set up. So now you know that all the welded parts on 31BZ are adapted from the Lightning, the firewall forward is a Lightning set up, and I also used the Lightning parts for gear leg fairings and wheel pants. All of the above is why I call N31BZ an Esqual LS (for Lightning Stuff). N31BZ's initial flight was 7 December 2005.



First flight of N233AL – the Prototype Lightning.

Over the winter months of 2005 and 2006 the rest of the prototype was completed and within days of the canopy installation the prototype (N233AL) was inspected and **Nick** was in the air for the initial flight on 5 March 2006. Flight testing began in earnest. Test flights went well as **Nick** expanded the entire envelope – velocity, G loading, handling, stalls, flutter, engine performance – everything was [thoroughly checked out](#).

Flight testing was going very well when disaster struck without warning. **Nick** was 7 miles east of the Shelbyville airport at 3500 ft when the spinner and prop exploded. The aircraft vibrated so violently that **Nick** could not see the instrument panel before he could shut down the Jabiru engine. The plane had hit a turkey buzzard right on the spinner, destroying the prop and spinner and putting a small dent in the leading edge of the wing from the impact of a large chunk of the Sensenich prop. **Nick's** admiration

for the plane increased immensely as he was able to glide the seven miles back to the airport and still have enough altitude to fly a normal pattern. The biggest problem turned out to be getting the students doing touch and goes in the Diamond DA20's out of the way. After a thorough post flight check out and a new prop installed, high speed flight tests continued with **Nick** looking for any sign of flutter as he continued to open the Lightning's envelop. These tests culminated in a dive test to 271 mph true airspeed with no sign of any flutter or other anomalies. That certainly gives the Lightning a wide margin of safety over the published never exceed speed.

With the 40 hour flight test period out of the way **Nick** flew the prototype Lightning (N233AL) to Sun-N-Fun in April 2006. Response to the aircraft was very gratifying with several orders taken at the show. At about this point, **Pete and Nick** knew they needed to spend the money to build a demonstrator aircraft. Because of insurance restrictions, the prototype Lightning (because it is a proof of concept prototype) can only have one person on board. But before the company committed the funds to build a demonstrator aircraft, **Pete** thought it would be beneficial to get a "second opinion" on how the prototype flies. I feel fortunate to be the one he chose for that task. Because of my past experience, the insurance company added me to the prototype's policy with no additional cost and I made my first evaluation flight on 7 July 2006. To say that I was impressed is an understatement. You can still read the flight report I wrote about that flight on the Lightning Website on the "support" page. Just click on "Download Lightning Prototype Flight Review". That flight review was put out on the Lightning list and I feel certain it resulted in more Lightnings being sold. To this day, **Nick** and I are the only people that have flown the prototype Lightning.



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Oshkosh 2006 brought more orders and it was time to get down to the serious business of organizing the hundreds of parts in the kit, writing construction manuals, and coordinating delivery. The group thought they would be lucky to sell 10 kits in the first year. Twelve very busy months later they looked back to see 40 kits sold and 14 completed aircraft flying. That has got to be some kind of kit aircraft completion record. Early 2007 saw the first Demo Lightning being built and **Nick** took it on its initial flight on 1 April 2007. Many of you have flown this airplane (N323AL) and can attest to its great flying qualities.



Now, 18 months after the delivery of the first kit and four years after the initial dreams around the Friday night embers the crew can look back in amazement at the whole process. "We could not have done anything like this without the encouragement, experience, and enthusiasm of the EAA members around that campfire." said **Pete Krotje**. "Their willingness to commit to a dream and add their knowledge, experience, and money to the project is a testament to the EAA spirit and willingness to try to do it better"

From this point on, the early Lightning dealers and builders are part of the Lightning history. In fact all of you that have built or are building Lightnings now are making Lightning history. **Earl Ferguson**, with his record flight in his Lightning is a good example, and I will include **Earl's** record flight story in a future issue. So all of you, keep building, keep flying, keep making history, and send me your stories.

## News from the Factory:

**Nick** has finished flight testing the prototype with the new servo driven trim tab in the elevator and it will now be installed on the new 2008 Demo. It is more of a conventional trim system and has better response to trim inputs and is more accurate at getting the trim feel you are looking for. The end result of the new trim systems is that the aircraft is much easier to trim and it will hold a trimmed airspeed much better and therefore will be easier to fly on long cross countries. **Nick's** comment was, "Results were without a doubt outstanding and worth the effort."



The system can be retrofitted to any Lightning currently flying or in the build process. They will be working on a price for the kit, or for those who are building but have not yet flown their airplane; a price for exchanging the old unused trim motor for the new trim kit is also in the works. By the way, the old trim motor is the same motor used as a flap motor.

As a tease, here are some early photos of the **new 2008 Demo** as it came out of the paint shop. As you can see, it is not going to be the standard white Lightning.



2008 Demo Photos

## News from the Dealers:

**Ryan Gross at Green Landings in West Virginia** reports that they now have completed 3 Lightnings that are currently flying. Two others are in the shop and should fly in about a month. Number 6 will be starting the build process very soon. Green Landings has recently made great improvements in their facility with a new shop that can hold two Lightnings and is heated and air conditioned for your year round building pleasure. They have also recently changed to a new custom painter who will be able



to produce more advanced paint schemes. They also have a local interior shop that offers complete interior packages that are made to your specifications and custom fitted to your aircraft. **Ryan** says that having these types of quality resources makes their customers feel more at ease when making the decision to buy a Lightning and follow on decisions about completing their aircraft. Green Landings strives

to make each Lightning a truly custom one-of-a-kind aircraft. They hope to have some of their customers fly their Lightnings to Sun-N-Fun. Note: Green Landings also sells the Sky Ranger aircraft.



Ready to fly at Green Landings.



Jim Langley's fuselage.

**Green Landings Flight Center**, Ryan Gross, Hedgesville, WV, 304-754-6010, [www.greenlandings.com](http://www.greenlandings.com)

**G'day from Down Under! My name is Dennis Borchardt**, the Australian LIGHTNING dealer. Together with my wife, I own and operate **LIGHTNING AIRCRAFT AUSTRALIA** and our mantra is quite literally "from little things, big things grow".

My initial contact with Arion was in 2003 during the building of my Jabiru J200. After finishing, then selling this aircraft, I moved on to my next project - an Esqual. This was where Arion's assistance became invaluable. My Spanish was nonexistent so I was in desperate need of help when it came to translating the build manual! After some not insurmountable problems, this aircraft was completed and went on to win *Recreational Aviation Australia's* "Grand Champion Homebuilt" award at NATFLY 2005. (See more about NATFLY later).



During the building of the Esqual, I was aware that Arion was in the process of developing and testing their own aircraft so I maintained contact with them. A little further down the track this led me to enquire if I could become their Australian dealer and this came to fruition in 2006 – so you can see that persistence really does pay off! I also have to say that from my perspective it has been a very successful arrangement.

Our first 3 kits were delivered in January 2007 – 2 to Perth in Western Australia (consult your maps) and the third was designated to be my demonstrator aircraft. This demo plane had its inaugural flight on 27<sup>th</sup> October that year – the very first Australian built LIGHTNING to fly and the 20<sup>th</sup> overall. It too has won an award – The *Sport Aircraft Association of South Australia's* trophy for "Most Outstanding Aircraft of 2007".



To date we have sold/ordered 17 kits with the 18<sup>th</sup> to be secured soon. The containers that we use for shipping have a capacity to carry 3 kits, and we endeavour to fill each one in order to keep the transport costs to a minimum. The container is shipped directly to our new hangar at the local airfield where we conduct a complete inventory on the kits before they are freighted off to the

clients. Our builder assist program is also carried out here at Kingston in the South East of South Australia (back to those maps). We're just a small town of about 1600 people situated right on the coast

but we are fortunate to have a 970 meter bitumen runway with an excellent grass cross strip and a PAL system.

As a Dealer and on behalf of our clients, we're really pleased to see the team at Arion continuing to make improvements to the aircraft. The updating of the Build Manual is a task that deserves recognition – it's certainly cutting back my telephone time answering queries about building procedures!! So thanks and well done Nick – keep it up. Thanks also to Mark for his assistance – well done too!



At Easter, *Recreation Aviation Australia*, the Aussie governing body for sport aviation will hold its major annual event - NATFLY - at Narromine in New South Wales (for the last time, back to the maps). Several hundred aircraft, their pilots, passengers and scores of interested onlookers converge on yet another small town to celebrate Australia's booming sport aviation industry. Our Aussie built LIGHTNING will make its national debut here and it's guaranteed to attract more than a little interest!! Watch this space.....

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## Current Lightning Dealers:

**Arion Lightning, LLC**, contact Nick Otterback, Shelbyville, TN, 931-680-1781, [www.flylightning.net](http://www.flylightning.net)

**Lightning Southwest**, Greg Hobbs, Marana, AZ, 520-405-6868,

**Green Landings Flight Center**, Ryan Gross, Hedgesville, WV, 304-754-6010, [www.greenlandings.com](http://www.greenlandings.com)

**Lightning North Central**, Tom Hoffman, Neenah, WI, 920-836-2318

**Sport Plane Dynamics**, Ed Ricks, Glendale, AZ, 623-695-9040

**Lightning Australia**, Dennis Borchardt, Kingston SE, South Australia, 08-8767-2145

**Lightning Brazil – Cimaer Ltda**, Claudio Nunes, Brazil CEP 24 900-000, 21-2637-3605, 21-9451-9700

## News from Builders and Flyers:

**Tex Mantell** (from New York) has the distinction of having the first Lightning kit “out the door” from Arion Aircraft. All kits before his were built with the builders assist program, but his is the first one that went to a builder to be constructed at home. Tex reports that he is slow in doing things and has been dragging his feet a little to see if he wants to incorporate any of the new features. He says he has almost everything done, and the airplane has been together once. It is now apart and ready for painting which he hopes to complete this summer. His plan is to do final assembly, wiring, and upholstery next winter. Here is a photo of the first two airplanes that **Tex** built – a Kit Fox with a Jabiru 2200 and a Pitts “Pedal”.



**Tex** plans to use a paint scheme on his Lightning that is very similar to **Jim Langley's** design, but with different colors. Enclosed is a picture of his panel which is done and you will notice the autopilot from Trio. I have selected their system because of all the features, and the servos have clutches on the drives so that when it's not in use there is no load on the flight controls.



As I put it all back together I will send pictures of a few changes I have made to decrease some drag and such. **Tex**

**Earl Ferguson** reports: I first saw the Esqual at one of the first EAA Light Sport expos in Florida in October of 2004. Prior to that, **Pete** had stopped in for fueling at LaGrange, GA in a Jabiru and done a demo ride. I liked the engine, but the wings were in the wrong place (too high). So when I saw the Esqual with the Jab 3300, I was interested. At the time, I was just starting Chemo treatment for colon cancer, and wasn't feeling well. In fact, the day after the Lakeland trip I was in the hospital back here in Atlanta. At the time, I wasn't sure I would be able to climb into an Esqual I was so weak.

But things got better. By January of 2005 I was feeling well and confident enough to place a deposit with Pete for an Esqual. As you know, the factory in Spain shut down, and deliveries to the US stopped. With my \$28,000 deposit in Europe I was sweating out the possibility of no money and no airplane. Meanwhile, the Hybrid was flying and the Lightning project was progressing. I was greatly relieved when Pete told me that my deposit could be transferred to a Lightning. What **Pete** did not tell me until last summer, was that he had not been able to recover my deposit. Shelbyville ate that loss, to my benefit. Needless to say, I was, and am impressed with the integrity of the Shelbyville organization; they're not just good folks, they're fantastic.

My kit came in April of 2005, and is serial #5. The first demo and **Greg Hobbs'** west coast demo were finished ahead of mine, so N17EF was the 3rd Lightning to fly. We built my Lightning before **Mark** and **Mike** arrived. There was no builder's manual at the time as **Nick** was writing that based on **Greg's** and my builds. But there was **Nick**, and a succession of helpers, none of whom were around for long. So mostly, it was **Nick**. When I finished a chore, I asked **Nick** what was next and how to do it. I'm an airplane flyer, not a builder. If I can do it with the factory assist program, anybody can.

After my Lightning came back from the paint shop, I got a call at home from **Pete**. He explained that there had been a redesign and they were going to replace my fuselage. After I recovered from the shock, **Pete** explained that they would take care of the labor, and expenses. I didn't even have to come up. However, I did go to Shelbyville for the event and spent about an extra week. As you know, I was sweating the empty weight, and the new fuselage was certainly lighter.

The build progressed. The DAR airworthiness inspection occurred in August. Shortly after that, Nick did the taxi tests and the first flight. Then I started the fly-off and spent the 40 hours around Shelbyville, sorting things out. Since I'm flying Light Sport, I spent a lot of time calibrating airspeed in the stall range. I spent probably 15 hours trying to get the required LSA stall speed, but lacked about 2 knots. I finally put the vortex generators on, and the next flight produced the necessary no flap, power off stall speed. That was also the 40 hour mark, so I flew 17EF home to Atlanta in October. A total elapsed time of about 5 months to build and fly off the 40 hours. That was quick compared to my friends who spent years building an RV. Now, with **Mark** and **Mike** and a Builder's Manual, it takes 6 weeks to first flight. Compared to other Experimental aircraft, that is an amazing accomplishment.

Since I'm convinced the **Pete & Co.** can walk on water and leap tall buildings in a single bound, I was looking for something I could do to help them. That is part of the motivation for the record flight. OK, it's a big ego trip for me too. The draft press release I'll send you will have more details on the record trip, so I'll stop here. I am attaching my favorite photo, crossing the Mississippi River at 700' on one of the aborted attempts. I ran below a cloud layer all the way from Savannah. After the Miss crossing it improved for a while, but I ran into a wall of clouds at the Miss/Texas border and had to turn around. Funny thing about crossing the Mississippi - Every time it occurred to me to get out the camera. Unfortunately, I missed several other



photo ops later on. Wish I had some pix of the CBs at Guadeloupe Pass but I was too busy looking for a passage through the weather.

## Upcoming Events:

**Sun-N-Fun is 8 – 13 April at Lakeland, Florida.** As mentioned in the first newsletter the Lightning team will be at the same location they have had for the last several years. Be sure to stop by and say hello. In previous years we have had a small informal Lightning get together for current owners and potential customers to exchange information. I feel certain we will do the same this year and as soon as a date, time and place are known, I will get the word out. So plan on being at this year's Sun-N-Fun and bring your Lightning.

**Virginia Festival of Flight is 14-15 June** this year and will be **at Suffolk, VA.** The new location for this Regional Fly-In will allow the event to continue to grow. No event was held in 2007 because of the planning process for the change of location, but in years past this regional fly-in has been attended by Green Landings, the Lightning dealer from West Virginia. Hopefully they will be there again this year with their demonstrator Lightning.

**Oshkosh is 28 July to 3 August.** Several of you have indicated to me that you are planning on attending Oshkosh with your recently completed Lightning this year. I am hoping that we have between five and ten Lightnings attending, so start your planning process now. As I mentioned in the first newsletter issue, Bill Hubbard was at Oshkosh in 2007 and that qualifies him and his "jet" as a part of Lightning history, as his Lightning was the first Arion customer aircraft to attend Oshkosh. I have not heard yet if Nick or Pete plan on giving a Lightning Forum at Oshkosh, but I certainly hope so. Pete normally gives a well attended forum on the Jabiru engine, so I am sure a Lightning specific forum would be well received by many attendees hoping to learn more about this great aircraft.



## Lightning Skunk Works:

This following information actually comes from the Australian detachment of the Lightning Skunk Works, so I guess that would make it the **SkOZnk Works**. **Pete Disher** sent some photos showing how he closed up the gap between the wing and the flap and a flap hinge fairing. It looks like great solutions and should result in lower drag in cruise and thus some more speed. He has completed his panel and is settling down to those never-ending tasks of electrical wiring, upholstery and finishing touches. Pete reports that it has been a long haul but very rewarding. He also added that he is sure the next one will be much quicker to build. **Pete**



## Update on Naming the Newsletter:



There is still no clear winner on the “name the newsletter” contest, so you can still send in your suggestions or vote for one of the previously suggested names. The only new suggestion is “The Arion Discharge”. Well, lightning is an electrical discharge, but somehow “The Arion Discharge” sounds like some kind of medical problem to me. Other suggestions are listed below:

*Arion’s Voice, Lightning Flash (2 suggestions), Greased Lightning, Extra Marital, Arion (something), Lightning Bolt, Lightning Strike (3 suggestions), Lightning Extra, Lightning Leader, Lightning Gazette, Electric Lightning, Thunder & Lightning, Thunderclap, Flashpoint, The Arion Authority, and Thunder Rolls.* Send in your vote or suggestion.

## Other Items:

I am going out to Shelbyville in late March to do some more test flying in the prototype and to also fly the new 2008 Factory Demonstrator. If the timing is right and I get back from Sun-N-Fun in time, look for a flight report on the new 2008 demo in the April issue of this newsletter.

## Special Feature:

### Serial Numbers and Owners of Lightnings Sold

As a special feature for the newsletter, **Nick** and I thought it might be interesting to include a list of Lightning kits sold to date, the owners name and location, and its flying status, if known. This type of list might also be helpful for potential customers as they might be able to find a flying Lightning or kit near their location. We have **Dana Otterback** to thank for this effort. She put the list together for us and also had a great suggestion to include N numbers. So I am adding the ones I know or have photos of. If you owners think this might be helpful, send me your N number and I will add it to the list. **Dana** also reports that the total number flying is off slightly because some dealers have not reported recent flights yet. We do know from Nick that there are at least 22 Lightnings currently flying. The newsletter will not include this list in every issue, but periodically will publish it as the numbers increase.

#### Serial & N #

#### Owner

#### Location

#### Status

1 -N233AL	Prototype, Arion Aircraft 2005	Shelbyville, TN	Flying
3 -N430GH	Greg Hobbs	Marana, AZ	Flying
4	Green Landings	Hedgesville, WV	Flying
5 -N17EF	Earl Ferguson	Atlanta, GA	Flying
6	Rick Discher	Weyauwega, WI	
7	Jerry Van Heeswyk	Tucson, AZ	Flying

8 -N155AL	H&S Aviation	Neenah, WI	Flying
9	Tex Mantell	Fairport, NY	
10	Duane Sorenson	Pisgah Forrest, NC	Flying
11	Charles Dewey	Green Landings	Flying
14	John Davis	Crossville, TN	Flying
15 -N727RB	Rick Bowen	Colonial Beach, VA	Flying
16 -N396JC	Joe Cooper	Green Castle, IN	Flying
17 -19-4692	Dennis Borchardt	South Australia	Flying
18	Tholhuesyn	Australia	
19	Dunbar	Australia	
20 -N59JL	Linda Mathias	Windsor, VA	Flying
21	Charlie Keith	Green Landings	
22	Albert Wachtmeister	Green Landings	Flying
26	Johnny Thompson	Greg Hobbs	
27	Bill Hubbard	Kokomo, IN	Flying
28	Ernie Pritchard	Payson, AZ	
29 -N323AL	2007 Arion Demo	Shelbyville, TN	Flying
30 -VH-PDI	Peter Discher	Australia	
31	Keen	Australia	
32	Dennis Borchardt	South Australia	
33	Fry	Australia	
34	Chesbrough	Australia	
35	Belie	Australia	
36	Grubb	Australia	
37	Dennis Borchardt	Australia	
38 -N730AL	Jim Langley	Green Landings	
39	H&S Aviation	Neenah, WI	
40	Claudio Nunes	Brazil	
41 -N166JG	Jim Goad	Punta Gorda, FL	Flying
42	Richard Cleavinger	Louisville, CO	Flying
44 -N838BF	William Fisher	Greg Hobbs	Flying
45	Ed Ricks	Glendale, AZ	
46	Ron Ritchie	Hamilton, New Zealand	
47	Claudio Nunes #2	Brazil	
48	Steve Sundquist	Yakima, WA	
49	Bill Applegate	Tucson, AZ	
50	Bill Browns	Neenah, WI	
51	Buddy Carlisle	Green Landings	
52	Colin Kennedy	Owasso, OK	
53	John Eynon	Carbondale, IL	
54	Fred Peters	Greg Hobbs	
55	Walt Mefford	Greg Hobbs	
56	Borchardt #3	South Australia	
57	Borchardt #4	South Australia	
58	Borchardt #5	South Australia	
59 -N324AL	2008 Arion Demo	Shelbyville, TN	by SNF
60	Your Name	Your Town	Call Dana now.

## Final Thoughts:

I think it might be interesting to provide some insight on how the Lightning kit is being accepted by the homebuilt community, and the completion rate that Lightning builders have achieved thus far. I have mentioned before that in the approximate year and a half that the Lightning has been on the market that the 55 kits sold and 22 already flying must be some sort of record for completion rate versus kits sold. Until just recently I really had no numbers to base that thought on, but now Sonex has reported that in the last ten years over 200 Sonex Aircraft have been completed and flown in the worldwide fleet, and they

have sold over 1,300 Sonex Aircraft plans and kits since 1998 (ten years). Now using these numbers for comparison we can take a look at how Arion's Lightning is measuring up with the several different models that Sonex sells. They have 200 aircraft flying of the 1300 sold and that works out to a completion record of 15% (in 10 years). With 22 Lightnings flying out of 55 sold, the completion percentage is 40%. That is amazing to me. I wish I had some numbers for other kits, but for now, the above certainly shows that the Lightning's completion rate versus kits sold is much better than Sonex who has been in business for many more years and seems to get lots of good press from EAA. I think the fact that their business is located on the Oshkosh airport may have something to do with that.

And one other final thought. Most of you know I am not a computer whiz, but I do understand this comment – the original point and click interface was with a Smith and Wesson. And to me gun control means using two hands to aim.

Blue Skies,

*Buz Rich*

[N1BZRICH@AOL.COM](mailto:N1BZRICH@AOL.COM) (Contact me directly for newsletter inputs)

PS: My gracious thanks to **Linda Mathias** for proof reading the last two issues of our Newsletter. Without her hard work and diligence you would be reading a lot of gibberish and typos. And no, gibberish is not some new Australian aircraft engine. It is gibberish spelled with a "J" in another one of my late night weak attempts at humor. Cleared in hot!