



Second Quarter 2019
 Volume 12, Issue 2
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Letter from the Editor:

Hi folks,

Turns out, I am always busy, so getting things done when I want doesn't always happen. I am putting this together while sitting in the hotel in Dayton, OH. Donna has a conference here and I am tagging along because, well it's Dayton. We went to the Air Force Museum yesterday and will be doing some more aviation sightseeing tomorrow. The Air Force Museum is amazing and I will post some pictures in this issue.

Sun 'n Fun was just that, really fun. We had mostly really good weather and lots of people turned out. Nick had a little trouble getting down because of a front that was going through, but he got there on Tuesday afternoon. People were swarming the plane before we could get it parked in the booth. The new demonstrator shows really nice and yes, we still get the questioning looks and then the question, "Is this a Light Sport?" Explaining the different models of the Lightning opens eyes and then they can see the options available. The LS-1 factory built aircraft, the E-LSA, then there are all of the other experimental versions. The XS with the Jabiru. the XS versions with the UL engines, the XS with the Lycoming 320, and the XS with the XIO-340 from Continental Titan. Did I miss one?

The picture on the right is the new XS Demonstrator aircraft with the Titan XIO-340 engine all ready to go to Sun 'n Fun.

Blue Skies,
 Dennis W. Wilt
dwwilt@aol.com

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Ready for Sun 'n Fun

Sun 'n Fun 2019 (Lakeland, FL)

Article by Dennis W. Wilt



The New XS in the Booth

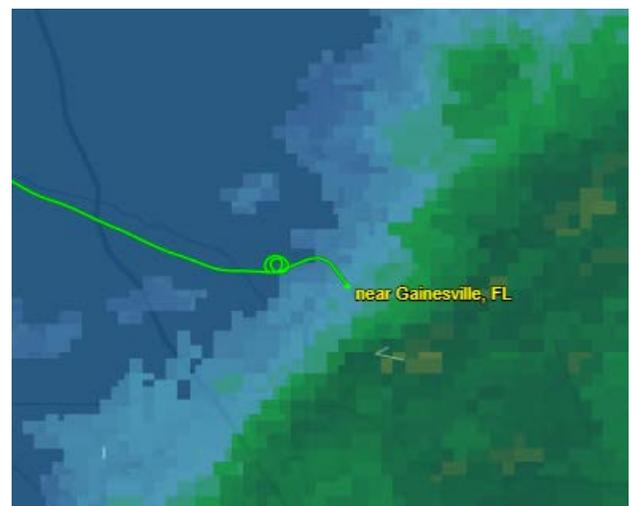
So, Sun 'n Fun 2019 is history. It seemed to be a pretty good show. There was a lot of interest in the Titan XIO-340. Of course there were even more questions about performance, but the plane had only been flying a short time, the ground adjustable prop is set on climb, and the engine is still being broken in. We can speculate based on earlier Lightning XS that have the same engine, but each is different. I think the final cruise at 75% will easily make 170 knots true. We can only wait and see. With the optimal propeller (maybe a constant speed), we will see a really fast Lightning XS.

As I said before, people were crawling all over the plane before we had it parked on Tuesday afternoon when Nick was finally able to get into Lakeland. Monday and early Tuesday had lots of weather issues, but Nick finally got in and all was well.

I hoped to see a picture of the weather from the cockpit, but I think Nick was busy trying to get into Florida. To the right is a Flight Aware screen shot of Nick circling to get wait out the weather so he could get set into Gainesville, FL on Monday. He had to spend the night there and then wait for weather to clear on Tuesday before he could leave Gainesville.

There were some interesting aircraft at Sun 'n Fun 2019. The P-82 was amazing to say the least. It flew every day and sounded like two P-51's flying

information. The F-35 was there and did some flights but not a lot. This was the Blue Angel's show. They flew a really nice routine as always. And the F-16 Viper demonstration pilot performed a great routine as well. Even though the military teams are amazing, I like the smaller aircraft doing aerobatics much more. They are so much more maneuverable. They pilots are really great aviators and are able to show what aerobatics are to those of us that normally fly straight and level. Julie Clark in her beautiful T-34 began her farewell season at Sun 'n Fun. She is retiring after many years on the air show circuit.





Julie Clark at Sun 'n Fun



The XS 340 in the Booth



The XIO-340 Opened Up to See



A Garmin Cockpit in a Grumman Tiger



How About a Balloon Launch?



The F-35 Lightning II



A Really Cool Paintjob on an AirCam



How About a Corsair?



The Blue Angels



The Night Air Show



The P-82 Above and Below



Another Julie Clark Picture



News from the Factory

After Sun 'n Fun, Arion hosted a Jabiru Engine Seminar on April 26 – 27. As always these events are well attended. One day, maybe I will get a chance to attend one, too. Below are pictures of Jason Biggs providing the instruction and information to the folks that attended this seminar.



Jabiru Engine Seminar

The factory is pretty busy and it always isn't just the Lightning builds. Arion also puts the new Jabiru Light Sports together for delivery to the dealer or customer. Below are pictures of one ready for delivery and one just in for assembly.



Two New Jabirus, One Completed, One Ready for Assembly

Then there is the transition training for new builders or owners. Below is a picture of Mitch (don't have his last name) training in the new Demonstrator. Looks like he is having a blast. But, why wouldn't you? Always get transition training when flying a new airplane. This is a must unless you are really a professional test pilot. This training can save your life.



Mitch During Transition Training

Below are some picture of the XS going back to Shelbyville after Sun 'n Fun. It seems like Nick is always chasing the weather or trying to out fly it. Not sure which.



On the Left, Weather Ahead - On the Right, Racing the Weather into SYI



Home from Sun 'n Fun

Lightning Fast

Article by Dan Johnson

Now, ultralight pilots (me, for instance) will go on enthusiastically about the beauty of flying slowly, of drifting leisurely over the landscape at a “human speed” that allows enough time to enjoy the expanse of an aerial view of your surroundings. Open cockpit flying adds to the joy facilitated by low airspeeds.



Yet the allure of going fast is great, zipping over the countryside. I get that and when contemplating a cross country trip of any real distance, fast cannot be too fast. In addition to a higher TAS, we all yearn for a tailwind that will raise our speed by another 20 mph.

Arion Aircraft boss Nick Otterback also feels that desire to fly fast. Along with his since-retired but longtime business partner Pete Krotje, Nick created the dashing, sleek and smooth Lightning, first offered as a kit and a compliant Light-Sport Aircraft.

Lightning has enjoyed and continues to execute a good run but like many designers,

Nick felt the design could handle more speed. He set out to bump the numbers by installing a Titan X340 with 180 horsepower. This triggered other changes such as a new cowl to accommodate the powerplant.

“Our Lightning XS kit has a redesigned forward fuselage structure that gives the builder the option to choose engines up to 180 horsepower,” said Nick. “Taller landing gear for bigger props, bigger brakes, and 20 gallon fuel tanks are among some of the features of this new kit.”

How fast does Lightning XS go? Testing is not complete yet; it recently took to the air. However, Arion is calculating 165 knots (190 mph) TAS at 8,500 feet density altitude at full gross. Climb is a stunning 2,000 fpm.

Of course Lightning XS is not a Light-Sport Aircraft and will require a Private or better certificate plus a medical.



News from The Dealers

No News From Lightning Aircraft West:

Unfortunately, I have not been able to get any news from Lightning Aircraft West. I am sure they are busy and have not been able to get back with me. So, below there are some pictures of the Air Force Museum.



On the Left the Memphis Bell and on the Right a P-47 Thunderbolt



Two Versions of the P-51 - The A and D Models



Donna in Front of a PBY

Current Lightning Dealers or Representatives



Arion Lightning, LLC, contact Nick Otterback, Shelbyville, TN, 931-680-1781,
www.flylightning.net



Southwest: Geronimo Experimental Aircraft, Greg Hobbs, 18750 West Avra Valley Rd, Marana,
AZ 85635, 520-405-6868 www.lightningaircraftwest.net



Russia and CIS, AVIA-NIANIA Ltd, Moscow, Russia, Phone: + 7495518-62-75, Mobile Phone: +
7925518-62-75, avianiania@mail.ru or avianiania@aol.com



The Sun 'n Fun Booth at Night

News from Builders and Flyers:

First Scandinavian Lightning is Flying (Also Pilot Spotlight and Lightning of the Quarter)

Article by Per Pfeffer (edited by Dennis W. Wilt)

I received my private pilot license in 1982 after training at Norway's biggest airport outside Oslo. Through the years I have used single engine club planes most of the time, which especially during the winters were not readily available. Cold climate, bad weather, few planes, and many members lining up for a flight on short weekends was the routine much of the time. Later I became co-owner of a single engine six seated Piper Lance and flew down through Europe every second year on family vacations. Various countries within short reach with very different cultures, food and historic architecture made traveling especially interesting.

In 2012 I was ready to retire from the health sector at the age of 67. A very busy professional life with a lot of night duties and long working hours was coming to an abrupt end. While my wife would continue to work, I had to come up with a plan to fill my coming days. Six months before I retired, I flew to Arion Aircraft in Shelbyville. Building an aircraft and ending up with a private plane and being able to go flying whenever I wanted was a very motivating factor.

The local EAA had a lot of experience with RV's of different types, but I wanted an aircraft suitable for going on longer trips, as I had done before. It should be relatively fast to build, have good cruising speed and modern aerodynamics and looks.

The American dollar had a very favorable exchange rate to the "Norwegian crown" and looking through the Internet I found that Lightning had the latest looks, was a fast build kit, and had favorable evaluations. It was a new aircraft to Norway, as a matter of fact only two had been built in Europe before, first by the German Lufthansa pilot Gerd Novak and then by a Russian, as far as I understand, a military pilot.

The visit to Arion Aircraft was an opportunity to try out the aircraft, learn something about the building process, eventually order the fast build kit, and sign a contract. My trip to Shelbyville took place in February 2012, half a year before my retirement. Unfortunately neither Nick nor Mark were present but had arranged for me to join the

guy's in the workshop for two days. They were all very friendly and I got the opportunity to observe Lightnings in different stages of construction. Good explanations and hands on experience made the days very valuable. It was also arranged for me to get a test-flight with a previous builder of a Lightning, Gary Bowser, a commercial pilot, who took me for a flight in his own aircraft. His Lightning handled very well, but I found it hard to keep the exact altitude. That was later significantly improved with the new horizontal tail, the MK2.

The two days ended with a signed contract and scheduled transfer of the kit with all parts except the engine. I had already been put in contact with Gerd Nowack, who managed to convince me to go for a six cylinder UL 390 engine (Belgian) with FADEC and fuel injection, which can also run on MOGAS.

Half a year later a large container arrived at Oslo harbor, less than one week after my retirement, at which time I was already getting tired of too much coffee and newspapers. Living in an apartment, I had arranged for a corner in a workshop, where I could just fit the hull, other parts, and myself. The moment I managed to open the side of the crate, I just had to jump in and get the feeling of how this would be one day in the future.



Per, Sitting in the Crate

My English is pretty good, but obviously not especially attuned to flight technical manuals. My controller suggested that I should read the whole

build manual a couple of times to get a good overview of the stages I would have to go through. Frankly, a couple of pages at the time and then some careful building was what kept me going, beside over 1000 very detailed pictures from Gerd's process of building his Lightning. One picture says more than thousand words and is independent of any language. My local controller and some phone calls to Nick at Arion sorted out the rest. *(I believe that the "controller" is a person from the EAA chapter that helps the builder with technical issues. The other translation would be "supervisor". I think this is the equivalent to our Technical Counselor.)*



My Wife, Anne Hedvig's First Reaction

A different engine than the Jabiru required some adjustments, like engine mount, carbon fiber fortification of the attachment of the engine mount to the hull, the exhaust system and all the parts that belong on the firewall. The engine was also somewhat larger than the original and to avoid extending the prop-shaft too much, I had to construct two "cheeks" on the sides of the cowling to make room for the two front cylinders. The engine also has a large oil-cooler that makes approximately 60% of the engine cooling. For this I also had to construct a large nozzle in the front of the lower cowling. For cold winter days, this can be made smaller.

Gerd generously sent me his old winglets after the accident of his first Lightning. He has previously written about how he shortened the parts that were originally for the LSA. With a little adjustments, they improved looks and possibly aerodynamics of my aircraft. Later Arion made these shorter winglets commercially available for the experimental version.

My Lightning came with the original tail, which during the building process was changed to the

new MK2 horizontal tail. I first tried the carbon fiber sleeves on the already attached old tail, but that did not work out well in my hands.



Per in Gerd's Workshop

Half way through the building process, I got the opportunity to move into a proper mechanical workshop, with all the most modern equipment one could dream of. This made it possible for me to construct a new throttle handle and brake unit between the two seats and other mechanical parts. The air inlet to the air filter and engine was modified according to Nick with the large NACA scoop that came with the parts from Arion. If this really increases the air pressure (poor man's compressor), has not been verified by me. Somebody asked the question: what happens if the air filter freezes over? Good question considering that this is Norway. Solution: a self-constructed carbon fiber tube, which is integrated in the air inlet hose under the cowling. The tube has a spring-loaded door, which opens under negative pressure and draws air from the heated engine



The Spring Loaded Alternate Air

compartment. It will stay closed when the air pressure is positive.

The canopy frame turned out too soft for the canopy to stay properly closed during flight with only the top lock. Arion solved the problem by two extra hooks on the sides that hold the canopy down. The problem is that these cannot be opened from the outside during an accident/ emergency. I therefor constructed some locking mechanisms on the side with a wire going behind the flange of the hull right behind the canopy and over the top to the other side. Both hooks can then be moved from one side. On the left side is also an axle that goes through the wall of the hull and is attached to a handle on the outside, which allows the unlocking in an emergency. Even with these hooks, the frame expands halfway up on the sides. This was solved with two pins on the sides of the canopy frame and two guides on the hull. You might not think too much about these problems, but with -10°C, it comes to one's mind and will not be compensated with the present heating system!

After painting the aircraft, it was time to move everything to a large hangar at the military airport Kjeller. It is discussed if this airport is the oldest or second oldest airport in the world, which has been continuously active since its start in 1912.



The Colors of the Norwegian Flag

It was time to put the wings on permanently and continue with all small and big details. Another winter went by in an unheated plastic hangar, in which I had a small tent with a little bit of electrical heating, but definitely no room for a whole plane. I was dressed for a polar exertion and also had thick well insulated gloves that had to come off when attaching screws and bolts. Well, all parts were properly attached and all fingertips are still accounted for.

After everything was approved by my controller, the local EAA and then the Norwegian Civil Aviation Authorities, it was time for some test-flying. An immediate problem was a result of the original pitot-tube/static from Arion being replaced with a Dynon heated pitot / angle of attack indicator that did not have a static port on it. To find a neutral location for the static was not an easy matter. First I tried a location on the sides of the hull approximately 20 cm behind the firewall. Each time I would take it for a flight and compare indicated speed to the GPS values. The best positions for the static ports I found to be on each side of the hull, halfway between the cabin and the tail, in an area that is relatively flat. The indicated air speed is still approximately four knots above true speed, but that is as good as I could get it with a separate position for the static port.



Before Wheel Pants

Planning of instruments was delayed as long as possible, as modern instruments are developing



Instrument Panel

fast. I finely settled for iEFIS from MGL on the left side and an iPad with SkyDemon on the right side, backed up by mechanical instruments.

Electronics was a challenge and Gremlins were having a good time. A so-called intelligent radio under the luggage compartment was controlled from the iEFIS. No manuals would tell you that intelligent radios and intelligent headsets together turn out really stupid and unpredictable. It took me a year to find a solution. I finally found some advice in a discussion group that told me to turn off all the automatic adjustments on the radio, when using noise canceling headsets.

As the engine was 10 kg heavier than the Jabiru, I tried to save weight in the front with a carbon fixed pitch propeller from Helix and two Aerovolt Lithium Batteries on the fire wall that I understand also have been tried out by Arion. These batteries are small in size and only weigh 1,3 kg each.

Everything worked out well with fully charged batteries. After not flying the aircraft for 4 months in the winter, the backup battery had unexpectedly uncharged, while the main battery was still fully charged. That the backup battery was empty was one problem, but the big mistake was made while starting up the engine with the main battery and charging both batteries with the “unintelligent” generator of the engine. Luckily, this was a ground test in front of the hangar. After 20 min. the battery exploded and caught fire. Never has a pilot left an aircraft faster in the desperate search for a fire extinguisher. The result under the cowling was not beautiful and required a major make over. I was very happy this did not happen in the air and decided to change to lead acid batteries and not challenge the faith further.

The total building time was 3.500 hours! Considerably more than the 2-3 weeks with the build assist program of Arion. All sort of small and large modifications took considerable time and problems with the electronics even more, but it gave me the opportunity to learn new and challenging things.

The test flying has otherwise been a very positive experience. The proof of the building procedure is in flying the aircraft. It annoyed me somewhat that my Lightning had a mild tendency to drop the left wing in cruise. Having a pilot in the right seat made the airplane fly straight and level. After 25 hours of test flying and another inspection by the Civil Aviation Authorities the Permit to Fly was finely granted. So from now the sky is the limit and my plans unlimited.

A Little E-Mail Traffic About a Technical Question:

Hi Dennis, can you tell me which bi-directional fiberglass is used to build the aircraft structure, is it 7725?

Thank you.

Rob Miller

Rob,

I will defer to the experts, Nick Otterback and Gary Smrtic. I have copied them on this reply. (I sent the question to Nick and to Gary Smrtic.

Regards,

Dennis

The Arion does not use the 7725 “Rutan” Cloth for its structure.

It is a more complex laminate structure than just 7725, engineered so for not only performance, but for how it works in a production process as opposed to a “mold less” process. There are several types of both fiberglass and carbon fiber used in the Arion flight critical structures.

Coming from the aerospace industry, frankly, I’d never used 7725 until I started “playing” with it a few months ago. It works fine a some things, not nearly as well as the materials we already use on others.

We are back in KY now, with twice the area we had before, but planning a 40K s/f new facility in Bowling Green later this year. We’re on FB as Factory Ten Composites, our new company name.

Gary

For Sale:



N335CE

\$59,900 OBO located at Arion Aircraft

2009 Light sport Compliant E-AB, 433 hrs. TT, GRT EFIS, EIS6000 EMS, Garmin SL-40, Garmin GTX-327, Autopilot, MK2 tail upgrade. (This is a great deal folks.



N214DG

Experimental – Light Sport Compliant, Located at Geronimo Experimental Aircraft, in Marana, AZ

Asking \$87,000



Contact Lightning West for details and more information. They also have a Jabiru aircraft for sale.



N1XF

\$81,000 Call Val Albert (571) 232-9174

Airplane located at KSYI – Shelbyville, TN (Arion Aircraft); Aircraft Make: LIGHTNING AVION EAB, LLC. Aircraft Model: ARION LIGHTNING; Aircraft Year: 2012; Aircraft Serial Number: 114; Hobbs: 186.4 HRS; Engine 5 HRS

Aircraft is equipped as follows:

- **NEW** Jabiru 4th Generation Engine Serial Number 33A2847
- Two Dynon Skyview SV-D1000 10" Displays (PFD & MFD)
- Titanium Main Landing Gear
- Blue and Grey Cloth Interior
- Dynon Skyview SV-XPNDR-261 Mode-S Class 1 Transponder
- Garmin SL40 VHF Comm Radio Transmitter/Receiver
- Vertical Power VP-X Pro Electronic Circuit Breaker System
- Dynon Skyview Autopilot Servos
- More information available on request.

Propellers for Sale at the Factory:

(Low Time - Used for Flight Testing at the Factory)

Sensenich W64ZK51 wood composite for Jabiru 3300, \$500

Sensenich W64ZK54 wood composite for Jabiru 3300, \$500

Sensenich W64ZK55 wood composite for Jabiru 3300, \$500

Sensenich W60ZK53G wood composite for Jabiru 3300, \$500



Can You Believe First Flight 1997?- Air Force Museum Exhibit

Upcoming Events

The Great Tennessee Air Show – Smyrna, TN



[The Great Tennessee Air Show Web Site](#)
SMYRNA/RUTHERFORD COUNTY AIRPORT (KMOY)

AOPA Fly In – Livermore, CA

June 21 – 22, 2019



[Fly Into Livermore](#)
LIVERMORE MUNICIPAL AIRPORT (KLVK)

AirVenture – Oshkosh, WI

July 23 - 29, 2018



[EAA AirVenture 2019](#)

Airport Identifier – KOSH



The Very First Successful Unmanned Aircraft
On Exhibit at the Air Force Museum – Dayton, Ohio

Lightning of the Quarter and Pilot Spotlight Guidelines and Question

The following questions are to be used for your submittals of the Lightning of the Quarter and Pilot Spotlight articles. Every single Lightning out there deserves to be in the Lightning of the Quarter. Every single pilot has a story to tell. I hope you take some time and used these questions and guidelines to tell your story for the rest of us. Although similar, the stories for a Lightning of the Quarter and the Pilot Spotlight are just a bit different.

Before publishing any story, I will likely make some edits for spelling, punctuation, and clarity. So, with these guidelines, I hope I get a lot of input for future issues of Hangar Talk.

Lightning of the Quarter Questions:

If you are interested in submitting your jet for the Lightning of the Quarter, just use the questions below and submit some nice pictures of your plane. A picture of the panel is also interesting, at least it is to me. Take a look at the prior Lightning of the Quarter articles and use them as guidelines when you put your story together. Your story will be great - they all are.

Questions for Lightning of the Quarter.

1. Do you have an online build log? If so, and would like to share it, provide the URL.
2. Where did you get your interest in aviation and what are your earliest memories of wanting to fly?
3. Does your spouse share your interest and does he/she fly as well?
4. What made you choose the Arion Lightning for your aircraft?
5. Did you build it or buy it?
6. Is it an S-LSA, E-LSA, or E-AB? If it is an experimental, does it meet Light Sport requirements?
7. If you built your plane did you build it at the factory, a dealer, or at home?
8. How was the build process?
9. What type of flying do you do with your jet?
10. Have you flown it to a major fly-in? Which ones?
11. Finally, include some (3 or 4) nice pictures of you and your plane and some captions for each picture.

Pilot Spotlight Questions:

If you would like to be highlighted in the magazine, we do that in a Pilot Spotlight article. Each of us have unique stories about our aviation interests, careers, and/or hobbies. Each story deserves telling and they are all interesting to me.

1. Where are you from? Hometown? Current residence?
2. How did you get started in aviation? When did you begin being interested in flying? Why did you want to become a pilot?
3. What were the circumstances for your first airplane ride? Explain in detail.
4. What was the first plane you flew / soloed?
5. What is your favorite aircraft to fly?
6. Did you have to pay for your flight lessons yourself? If so, how did you do that?
7. Tell about your education. If you have a college degree, where did you go to college? What did you study? Do you have any advanced degrees?
8. Did you work in the aviation industry? If so, what was your occupation? If not, what was your occupation?
9. Did you fly commercially? Explain who you flew for, what aircraft you flew, how long did you fly commercially?
10. Were you in the military? Which service, when, how long? Did you fly in the military?
11. When did you meet your spouse? Was she/he supportive of your flying?
12. Have you owned an airplane before the Lightning? How many? What models? How long have you owned them? Which ones did you like best and why? Worst?
13. Have you ever built an airplane? What model(s)? Why did you choose that / those model(s)?
14. What are your favorite aviation events?
15. Have you attended AirVenture or Sun-N-Fun? How many times?
16. What are your other hobbies? Tell about them in some detail.

Final Thoughts:



A Picture of My Home Airport X26 – Sebastian Municipal

Over the past two weeks, Donna and I went to both the Air Force Museum in Dayton, Ohio and the Naval Air Museum in Pensacola, Florida. I got to see some amazing historical aircraft. I have placed pictures of the Air Force Museum exhibits throughout the magazine. Donna and I went to Dayton because Donna was going to an Aviation Psychology conference (basically aviation human factors). I tagged along to go to the museum and see some Wright Brothers history. The trip to Pensacola was for a 99's Section meeting. We flew there and back in the C-152 IFR. We had good weather both ways. The 99's had tours of the museum all set up and it was really nice.

I intend to go to the airport this week and take some aerial pictures with my Unmanned Aerial System. The airport manager wants some new pictures. He is having a new taxiway put in for Runway 5 – 23 and he had some shade hangars installed. One of our EAA chapter members already has a spot in them. He has purchased an RV-12 and will take delivery this summer. I told him he owed me a flight since I took him for a ride in my Lightning. That should be fun.

So, I hope I see some of you folks at AirVenture - Oshkosh. I will be there Tuesday through Saturday. I usually work in the Society of Aviation and Flight Educators (SAFE) booth in the mornings and then go to the Arion booth in the afternoon. Come by and chat at either place. It should be fun.

Have fun! Go flying!

Blue Skies,
Dennis W. Wilt
dwwilt@aol.com



On the Way Back from Pensacola – Early Morning