



Hangar Talk

The “Lightning” Newsletter

December 2010 - Volume 3, Issue 12



Bill Beasley’s Lightning of the Month

The goal of the Lightning newsletter is **to get the word out** on happenings at Arion Aircraft, and **to give a voice** to Lightning **builders and flyers**. To be successful we need your inputs. So it is not only a way for the factory to provide Lightning news, but it is your newsletter as well, and its success will depend on you getting involved to spread the word and to help other builders and flyers. So think of this newsletter as an “exchange of information publication”. Send your inputs directly to: **N1BZRICH@AOL.COM**.

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And now, the rest of the news.

December 2010

Hopefully everyone has had a wonderful Thanksgiving and you are now getting ready for more quality time during the upcoming Christmas holiday season with your family and friends. A suggestion for the upcoming Christmas season; why not give the gift of flight to some special friend or family member? Take them out to your local airport, show them your beautiful Lightning, and take them for a fun local flight. And make sure to take the time to do it right. Give them a good briefing before the flight, and then, after the flight, be sure to ask if they have any questions. Of course, during the flight, find some nice smooth air and let them feel what it is like to fly the airplane themselves. You will both get a wonderful feeling from sharing the gift of flight.

Now, some **Lightning newsletter business**. At this point, we still don't have anyone that has agreed to take over the leadership of the newsletter. Remember, that as of the January 2011 issue, I will have completed exactly 3 years or 36 issues of our newsletter. I hope most of you will agree that, overall, the newsletter has been a tremendous asset to the Lightning family and it is well worth continuing the effort required to put it out on a regular basis. So, for one more time, who is going to take up the challenge and keep the Lightning newsletter alive? In order for the newsletter to continue to be an interesting and helpful asset for the entire Lightning community, it is time for someone else to take command of the newsletter in order to provide new energy, a possible new approach and direction, and to give Ol' Buz a rest. Who will it be? If you are at all interested in continuing the newsletter for the future, please let me know. Your efforts will be appreciated.



Give Buz a rest! We need you to take over as "pilot in command" of the newsletter.

And for those of you who have written articles in the past – thanks so very much. You are the reason for the newsletter's success and usefulness for our other readers. Please keep up the great work and keep those submissions coming to the future newsletter leader.

But it is now time for the newsletter to be taken over by someone that actually has a Lightning. So to all Lightning owners and/or builders, we need a new newsletter "pilot in command". We need one of you to take control and re-energize the newsletter for the benefit of all.

The December Lightning newsletter will start out with some great photos and a write up by Bill Beasley on his Lightning of the month. I think you will enjoy Bill's explanation on how he chose the Lightning and how he is enjoying "living with his plane".

Next in this issue will be the annual year's end contest to choose the Lightning of the year. I'll post all the past Lightning of the Month photos and all you have to do is send an email directly to me with your choice of which monthly winner you think should be chosen as the Lightning of the Year. It's that easy. So drop me a message with your vote to: N1BZRICH@AOL.COM

Bill Beasley's Lightning of the Month



Hi Buz,

I live in a Pecan Plantation a gated community in Granbury, Texas about 20 miles southwest of Fort Worth, with two airparks (0TX1 & 66TE) two golf courses and much more. You can't beat having your hanger in the back yard. I started flying about 30 years ago, but had to give it up for financial reasons before I could get my license. I got back to it a little over four years ago. First I bought a 152 Cessna to build some hours while I was trying to decide what I really wanted. Then I bought a 2008 Cirrus SR20 GTS, very nice aircraft, but after about a year and a half I decided I wanted a light sport so I could drop my medical and I wanted something more fun to fly. After looking for over a year I found the Lightning on the Internet. I wanted a low wing composite plane with a glass panel. Not too many options at the time, but the Lightning had the looks and design I was looking for. So I went to Florida to take a look at Sun-n-Fun last March. After talking to Mark about the builder assist program I decided on the Lightning as I could build the aircraft with the options, interior and paint I wanted as well as the overall looks and quality of the aircraft.

Until I talked to Mark about the builder assist program building an aircraft was something I had never considered as everyone I know building kit planes spends three to six years, my attention span is not that long. But when I was told I could be completed with one in three months (even though I was skeptical) I thought this would be something I really would enjoy as I like building things, even if it would have taken four or five months. I was amazed at how fast the build process was and how each segment was nearly always on schedule. Their paint shop did some excellent bodywork and the paint scheme that I designed with the help of Nick came out very good.



I started my first week in Shelbyville on June 28th of this year. I had read the builders manual before getting there, which I would advise everyone doing the builder assist to do as it will give you some idea of the process. I was told the plane would be ready for the paint shop at the end of the week that seemed to me a lot to do in five days. But with the help of Mike and Mark cutting holes, sanding and laying fiberglass, installing the spar box, wings, brake pedals, firewall, motor, opera windows, wing tips, and finally the cowling it was ready for the paint shop on time.



I returned to the factory five weeks later on August 11th as they were finishing the bodywork and paint. The following two weeks were full putting the parts together, fabricating pieces, aligning this, adjusting that, running wire, installing cables and getting everything to fit in the panel. I decided to go with the Dynon Skyview 10" displays after convincing Mark two of them would fit (Just Barely). Dynon has not finished all the software for the Skyview, but the GPS, auto pilot, synthetic vision, terrain and the basics are up and running and work very well. Hopefully within the next 12 to 18 months traffic and weather will be ready to install. I spent many late nights at the plant working on some extra things I wanted in the plane, such as parking brake and extra compartments behind the seats. And as planned on Thursday August 26th the plane was certified by the FAA and was ready for its first flight. The next day after finishing a few small things, making some adjustments and a good preflight Nick took it up for its maiden flight. With no major problems just some small adjustments needed, I went back to Texas, while Mike would finish installing the auto pilot servos and B&B Trim would be making my interior.



On the 12th of September I returned to Shelbyville to do some final installation on the interior and to start flying off time so I could bring it home. On Sunday the 19th I flew my new Lightning back to Texas, great flight home. I am now finishing my leg fairings, wheel pants and intersections. Hope to get them painted soon.



I would just like to thank Mark, Mike and Nick again for their help and patience before, during, and after the build. It's always good to know they are there any time to answer question and give advice. I would also like to thank Steve at B&B Auto Trim Shop for the excellent job he did on my interior.

Thanks, Bill Beasley

P.S. Buz, the Corvettes are a 2008 LS-3 and a 93' Anniversary Edition. Attached are some pictures after finishing the fairings.





Below are a few more thoughts from Bill on his beautiful Lightning and his build experience. I think it is one of the best ones I have seen. Congratulations on a super job, Bill.

Hi Buz,

N226WB first flew on Aug. 26th. This Lightning was built with the help of Mark, Mike and Nick in Shelbyville using the builder assist program. I would recommend this program to anyone who has three or four weeks to spend in Shelbyville. The advantages of having their level of knowledge and all necessary equipment and tools saved countless hours of work and confidence that the construction was being done correctly. I would also like to thank Steve at B&B Interior for the excellent and prompt work on my interior. Still have to finish fitting the intersections for the leg fairings, can't seem to stop flying it long enough to finish fitting them.

Thanks again to all the guys in Shelbyville for all the effort you put into making sure your customers have all the help and assistance they need during and after the build program.

Thanks, Bill Beasley - bez@lakegranbury.com

Lightning of the Year for 2010

Below are all the past Lightnings of the month for 2010. Please send me your vote for the Lightning of the year for 2010 directly to N1BZRICH@AOL.COM. I will compile all the votes and announce the winner in the January 2011 issue of the Lightning newsletter. And remember, unless someone volunteers to take over the newsletter editor duties, the January 4-1 issue will be the last. One other thought, along with your vote for Lightning of the year, send me your nomination for who you think should take over the newsletter. Maybe a little pressure from the readers will convince someone that their Lightning community needs them. Uncle Buz wants you.

Photos of Past “Lightnings of the Month” for 2010



January 2010 – Tex Mantell



February 2010 – Lynn Nelsen



March 2010 – Carl and Pat Beatrice



April 2010 – Dave Stanley



May 2010 – Bill Browns



June 2010 – Jim Johannes



July 2010 – Greg Couchley



August 2010 – Dave Jalanti



September 2010 – Steve Hacker



October 2010 – Paul Bear Bryant



November 2010 – Moonshine Aviation



December 2010 – Bill Beasley

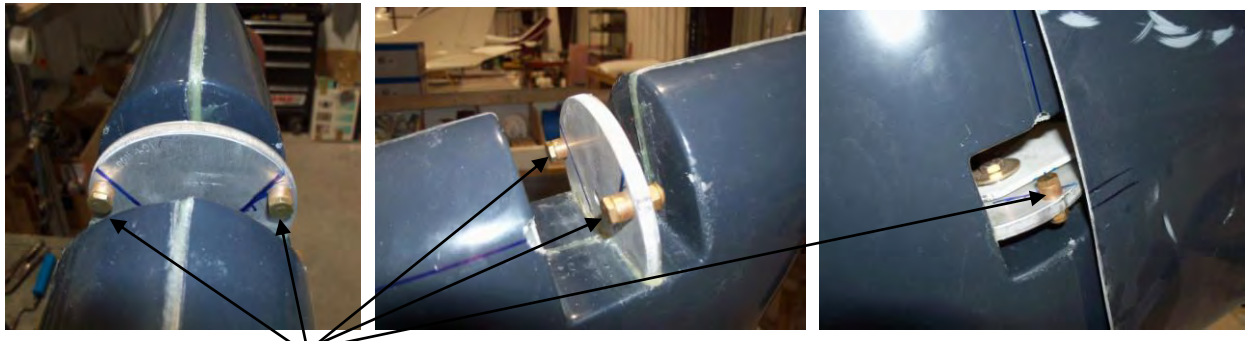
Please don't forget to send your vote for "Lightning of the Year for 2010" directly to Buz at: N1BZRICH@AOL.COM. The January 2011 issue of the Lightning Newsletter will have the results of your votes. Vote now.....



Jim Langley's N730AL was the Lightning of the year for 2009.

News from the Factory

Nick sent the photos below describing the latest change to the Lightning. He reported that they are incorporating rudder stops into the lower hinge of the rudder and also said this change will become standard on all future Lightning aircraft. Two correctly placed holes with bolts and bushing will provide a positive stop against the steel rudder hinge on the fuselage. Nick also said that they will be making the change in the drawings for the part, and that he will also put together a write up for a future newsletter on how to retro fit to a currently flying Lightning or kit.



New rudder stops provide a more positive way to control total rudder displacement.

Another Lightning flies

On 18 November Nick reported that Lightning serial number 107 made its maiden flight. Serial # 107 is an LS-1 and is owned by Bill Allen. Nick said the flight went well with no problems. The aircraft is equipped with the large screen GRT Sport EFIS, a GDU375, which is like a Garmin panel mount 696, and a Tru Trak autopilot. As you can see by the photo below, the paint colors and design look very much like their last demo Lightning.



LS-1 Lightning, serial number 107, owned by Bill Allen.

Factory Fuel Recommendation

Many of you will have read the information below from Nick on the Lightning email list, but it is of such importance that I wanted to include it in the newsletter so that future newsletter readers will have the information available to them. Using 100LL aviation fuel will prevent these problems.

Group,

Recently I have been doing a good bit of research and study on Auto fuel with ethanol. This comes from some problems with the Kreem fuel tank sealant we had used in earlier airframes.

We have recently become aware of two tanks which are having sealant issues due to other than a manufacturing defect. They are both related to the use of auto fuel. In no cases have any issues with 100LL and kreem been noted. One of the tanks has been using auto fuel with ethanol, the other auto fuel from a known source with no ethanol added. In both cases the sealant appears to be deteriorating. Having said that, we were very careful in the selection of the product being used, Kreem. This was advertised to be safe with methanol, ethanol, and gasohol, all of which are one form or another of an alcohol blend.

After searching on other internet groups like this one, specifically other aircraft types with fiberglass tanks that are sealed, I believe that there is more to the issue than just the ethanol. Other types of aircraft with similar tank designs have been exhibiting the same problems that these two tanks have. Those aircraft are in some cases using the Kreem, and in others a different type of sealer. One case with personal experience is a Jabiru here in the hanger with tank sealer problems, that aircraft and its tanks were built overseas with a different sealer. There has been much discussion of other additives used for the increasingly strict emission requirements imposed by the EPA. Also about seasonal blends that are typically harsher in the winter months than summer.

On a completely unrelated issue to fuel tank sealant, but involving the use of auto fuel, an engine had to have its complete intake system including heads rebuilt due to a varnished like substance which gummed up all valves and coated the intake pipes. This aircraft was using auto fuel with no ethanol but was from a trusted source and was not old, no reasonable explanation for this to occur.

We have switched to, some time ago, a different type of sealant in an effort to be proactive about the Kreem product, however, it seems to be clear that the problem was not the Kreem but the auto fuel itself and additives in it. The sealant now being used is called KBS coating systems. It, unlike the Kreem, chemically bonds to the tanks instead of an elastomer like skin. If anyone would like know the serial numbers we can provide about when the change took place, however it is easy enough to tell by looking in the tank. If your tanks are white, it's Kreem, if they are silver is the KBS system.

Just to recap, there have been no issues or problems at all with the use of 100LL in the Kreem sealed tanks, only those using auto fuel. And in no cases have we had or heard of any issues with either fuels in the KBS sealed tanks.

I would strongly recommend the discontinued use of auto fuel in the Lightning tanks until we can further understand just exactly what is going on. I know that there are many out there who prefer the use of auto fuel for its cost but until we are, and I am, satisfied with answers about what is possibly going on in Auto fuel than I would have to say don't use it.

Nick Otterback
Arion Aircraft, LLC

Current Lightning Dealers



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



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



Green Landings Flight Center, Ryan Gross, WV, 304-754-6010, www.greenlandings.com



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



Lightning Northeast - Jabiru Power Solutions, Dave Jalanti, NY, 518-929-4307,
dave@jabirups.com



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



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



Russia and CIS – AVIA-NIANIA, Moscow, Russia, + 7495518-62-75, avianiania@mail.ru



Lightning Florida, Max Voronin, DeLand Airport, FL, 386-873-9995, www.moonshineaviation.com

News from the Dealers

The following information was provided by Ryan of Green Landings.

Congratulations to both Stuart Reed and Don Shaffer! Within the past week and half both aircraft had successful first flights! Stuart Reed - N9779N (White, Blue and Maroon), and Don Shaffer - N270J (White, Green and Gold).

Ryan Gross
Green Landings Flight Center, Inc



Stuart Reed and his Lightning, N9779N.



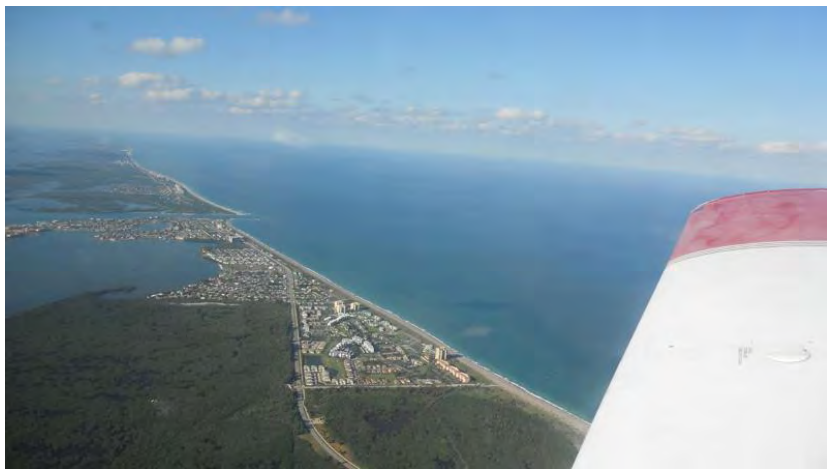
Don Shaffer's Lightning, N270J.

News from Builders and Flyers

The first two entries this month are from Philip Beeson of the Florida "Lightning Squadron".

I have officially survived the Customs and Border Patrol inspections for re-entry into the US, and didn't even get a strip search. Although I did not fly my Lightning for my first trip I did take a group of pilots in two aircraft to Paradise Cove in Freeport Bahamas. We flew a Piper Arrow PA-28R and a Piper Apache PA-23 with a total of 7 people, me included. I flew in the PA-28R for the trip and even though it is heavier and handles the turbulence a little better than my Lightning I can tell you it is not nearly as much fun to fly.

We filed our e-APIS with Customs and our flight plan with 800-Wx-Brief. When we filed our e-APIS we completed both our Departure and Arrival Notices at the same time. Once we had our Arrival Notice completed we contacted Customs at our AOE (Airport of Entry) and informed them of our approximate arrival time. You must notify customs at least one hour in advance when returning to the US. If you do it this way you notify them of your arrival time and get your code prior to departure. This eliminates the need to contact Customs from the Bahamas. Just make sure you depart when you are supposed to so you are crossing the ADIZ when you are expected. I would hate to look off my wing and see F-16s flying in formation with me like Lynn does. Lynn hasn't equipped his Lightning with missiles yet so I don't mind him there.



We departed KGIF at 6:30 a.m. and headed for 7,500'. Since the pilot of my aircraft has more acronyms after his name than Carter has liver pills, we did a little IFR through the clouds, flew VFR on top and got an IFR clearance for descent into the Bahamas. Not the way I would have flown being a Sport Pilot and

all but great training never the less. Once we were airborne we activated our flight plan with Miami Radio and initiated Flight Following with Miami Approach. Once we broke through the clouds at 4,500' we had beautiful vistas and enjoyed a wonderful sunrise atop the clouds. We cruised at 160 mph and started our descent about 25 miles out. Freeport is a controlled field with a Class D airspace and landing at MYGF is relatively simple, but sitting on the water you can expect a little bit of wind. We landed on runway 6 and were fortunate enough to have winds of 050 @ 9 knots. With a runway measuring 11021 X 150 you have lots of landing room to play with, you just have to watch for vortices if any commercial jets have landed before you. Coming in as early as we did we had the whole airport to ourselves.

Other than all the paperwork you need to fill out clearing Customs and Immigration is a piece of cake. We parked the aircraft in front of the Customs / Immigration office on the GA ramp, unloaded our luggage and proceeded inside with the doors and luggage compartment remaining open. We completed our paperwork ahead of time which speeds up the process considerably. You will need your Passport, completed Immigration Card, (3) C7 Declaration forms, Passenger Manifest and an Arrival Report if you land at a towered field or fly a twin engine aircraft. Customs may or may not check your bags and they may or may not look in your plane, just depends on who you get and how busy they are. We got a young hotshot Bahamian Customs Agent and we were the only aircraft there so we got the full treatment, body cavity search excluded. They checked in all our bags and climbed in the plane to ensure we brought everything in and had our required life vest per person. Once cleared, we were escorted through Customs and off the field to our awaiting shuttle.

We made previous plans to spend the day at Paradise Cove and they informed us they would shuttle us from the airport to the resort. Our shuttle was right on time and the driver was outstanding. I am surprised he didn't make me get out and walk since I kept telling him he was driving on the wrong side of the road. Good thing we took a shuttle and didn't drive, I would have gotten lost with all the turns or taken someone out on the roads. Paradise Cove was wonderful with the entire staff being very nice and helpful. They offer snorkeling and kayaking and have a grill for lunch if you like. The snorkeling was OUTSTANDING with a 30' deep reef that housed a large assortment of different fish species including Sgt Majors, Barracuda, Sting Rays, Moray Eels and all the usual tropical fish you can find surrounding the reef environment. The visibility was probably 60 - 70 feet and the water was calm. Since it was low tide the visibility was a little less than perfect but outstanding none the less. We snorkeled first thing in the morning and spent a couple of hours out on the reef. After spending some time with the fishes we decided to break for lunch. Lunch was, well, let's just say they will not be putting Mickey Ds out of business any time soon. You have limited options including Hotdogs, Hamburgers, chips, etc. and the hamburgers are not on the large side at all. The food wasn't bad it just wasn't enough to fill up a hungry man, so I ordered seconds. After lunch we decided we would kayak for a while and head out on the reef again. The kayaking was a blast, the water was beautiful and it wasn't so much work that it would wear you out where you needed a nap before flying home. Overall Paradise Cove was a huge hit with my group, everyone had a ball and some of the guys even went back for a second dip in the water with their snorkel and fins.



Departing the Bahamas is easy enough with you paying a \$20.00 departure tax, turning in your Cruising Permit, complete (1) General Declaration, surrender your Immigration Card and file your flight plan. If you did not contact Customs ahead of time you will need to notify them 1 hour in advance of your arrival to your AOE. We completed this at the time of our filing so this was taken care of. Once airborne we activated our flight plan with Freeport Radio, cleared their airspace and contacted Miami Radio for our ADIZ entry squawk code. We were able to contact Miami Radio just off the West End and then contacted Miami Approach for Flight Following. We returned home with clear skies at 6,500' and enjoyed a beautiful view of the ocean the entire trip.

Land Ho thar she blows calls out Chief as we approach the coastline. Chief is the Chief Flight Instructor at Tailwheels Etc. where I learned how to fly. He is the old salty dog in the yellow kayak and rode in the back seat of the PA-28R with John and I. We landed at KFPR (Ft. Pierce) as our AOE and proceeded directly to Customs. Clearing US Customs was even easier than clearing the Bahamas. We took all our bags out of the plane, left the doors and baggage compartment open for viewing and proceeded into the Customs office. We filled out (1) Customs Declaration for each person, presented our Passports and were on our way. Our total time in the US Customs office, 3 minutes. We loaded back up again, climbed to 4,500' and headed back home to KGIF. We landed at 6:00 p.m. unloaded the plane and had time to get home for dinner.

My Bahamas trip was a huge success, a wonderful learning experience and it opened a new gateway for flying destinations. I had an outstanding time and will definitely be planning more trips in the future. If you are interested in flying to the Bahamas I would recommend getting the Bahamas & Caribbean Pilot's Guide, it tells you everything you need to know. Next time I visit I will be doing so in a Lightning LS-1.

Philip

Another input from Philip on 25 October

Do you know what you get when you have clear skies, calm winds and three Lightnings in the air? A WONDERFUL day! Sunday 10/24/10 offered up those conditions with a little added surprise. We had an aviator show up for our breakfast that had yet to join our morning fly-outs. Paul "Bear" Bryant strolled in the door of the Pyper Kub at 9:00 and was a very welcomed part of our Sunday morning ritual. We were also joined by another visitor this week that was on leave from protecting our great Nation, Joel Lynn's grandson got to ride shotgun in the Lightning before heading back to duty next week.

Lynn and I departed KGIF at 8:45 with clear skies and a nice 74 Degrees in the cockpit at 2,500'. We had a marvelous flight with small patches of fog covering some areas and the colors in the sky from the newly rising sun offered magnificent views. We made the flight to Williston in 45 minutes (flight time) and landed on runway 5 with a short taxi to the FBO.



The service is always OUTSTANDING at the Pyper Kub and the owner is a hoot. We enjoyed our breakfast and had an opportunity to catch up from the previous week since we didn't fly out anywhere because someone was off playing in the Bahamas. After breakfast we all headed out to the ramp to admire our beautiful birds, as usual, and enjoy the weather we were blessed to have. Bear's jet is no exception to the rule and is a BEAUTIFUL piece of machinery, GREAT JOB Bear, she looked wonderful.

As we all saddled back up again for our flight home Lynn and I waved bye to Bear and headed south towards KGIF. The weather continued to cooperate with us and gave us clear beautiful skies. The wind had picked up slightly but nothing our jets could not handle with ease. We made our way back at 3,500' with a very cool 68 Degrees in the cockpit, now that is what I call wonderful flying weather. Much higher and I would have kicked on the Cabin Heat, LOL. Lynn and I flew the entire trip in formation with Lynn breaking off just before KGIF to head to KBOW (Bartow) for some cheap Avgas. I made my way to runway 11 and parked her out front of the Flight School. I just love parking her on the ramp and watching the lookey loos huddle around her. It still amazes me that I have had her here since 05/23/10 and she is still drawing attention from the regulars at the airport. You just gotta love a plane that commands that much attention. It appears I may have two more gentleman that are seriously considering a Lightning purchase in their future, I believe a demo ride may be the next order of business at KGIF.

Have a great week and I look forward to seeing you in the air soon. If you have any suggestions for this Sunday's destination please submit it to me by Wednesday, if not I will be sending out an e-mail with my pick. No Mark, we are not flying to Key West although I feel a trip to Marathon is coming in the very near future.

Philip Beeson
N897PR



The next input is from Bear.

Nice write up and pictures Philip. I'm glad I surprised you. It was finally great to see another Lightning flyer face to face. You are correct it was a beautiful morning with light winds and beautiful wx aloft. I departed KPIE right at 8:05. there was a Pilatus on the take off roll just ahead of me. After he lifted off, I got clearance to take off and the controller said ..."caution wake turbulence of the departing aircraft". I kind of smiled. At the same time, there was an MD-80 almost to the end of taxiway alpha getting ready for his take off too. Tower told me to turn 30 degrees left of runway heading...Oh yea that boy would surely eat me up...then, just as I got airborne, I heard the MD-80 pilot call the tower ready for takeoff. Get this...the controller came back and cleared him for takeoff..with the "caution of wake turbulence of the "jet" which just departed the runway" -- hey, that would be ME...the grin got bigger! Sometimes the controllers ARE really cool. It was :45 en route. Nice work with the Tampa class B controllers. They gave me direct to X60 and alt right off the bat. Kicked on the auto pilot and monitored the next 101 miles. I heard you and Lynn announce your arrival on the common traffic freq and figured you were about 15 minutes ahead of me. (glad you saved me a seat). I too enjoyed the breakfast and the camaraderie. Williston is a nice little airport and the early Sunday morning arrival added to a very tranquil setting. I got my gas there since it was only 3.95 compared to the outlandish cost at KPIE. I watched a pair of Lightnings take off and they really looked cool. Homeward bound I flew to the coast and turned south. It was another good flight with good visibility. About 30 miles NW of KPIE I dropped down to 1000' over the gulf and had the coast off to my left. Some beautiful beaches along the west central coast of FL. Called ATIS and confirmed what I had been experiencing aloft. the winds had picked up a little, but were almost down the runway. Solid landing and another entry into the log book.

Great to finally meet up with you and looking forward to another Sunday when I "just drop in"..
Regards to all.
Bear, N82PB

This next input is from Benardo Melendez who is building his Lightning at his home. Benardo has previously built an aircraft, so is comfortable working alone and is also making some interesting changes to his Lightning. Hey, that is what homebuilt aircraft are all about – have it your way.

Hey guys,
What'cha think of my new and improved rudder shape? I think the lines flow smoother. Comments?
Regards,
Bernardo Melendez



Hi Bernardo,

Looks pretty good to me. Was there any other reason for making the change other than it looked better to your eye? Just wondering.

Buz

Hi Buz,

Just for looks. I wanted the lines to "flow", especially under the fuselage. and I like a more rounded rudder top. Just my preference.

Regards,
Bernardo

Well, it looks great. How about sending some more photos of your build as you make progress so that I can put them in the newsletter?

**Thanks,
Buz**

Buz,

Roger that. I've got a couple of other mods and I'll send you some pictures when I get to them. Remember when I asked you about the wingtips, similar to your Esqual? That's one mod. The other, and I have not figured out yet how to do it right (but I will), is to extend the ailerons out 8" or 9" to make them longer. They're too small for my liking and I'd like more roll authority. I know it won't roll as quickly as my Starlet, but It will help, I'm sure.

I'm also thinking of a slider canopy.....nah, just kidding! But wouldn't that look cool?

Wish my project would progress a little faster, but running a business and doing all the "honey-do's"

around here take their toll, as you can imagine.

Thanks for your words of approval, and many thanks to you for all the work you've done on the newsletters. They've been very helpful and are a joy to read.

Regards,
Bernardo

Hi Buz,

I talked briefly with Nick a while back too about extending the ailerons outward some 8" or 9", simply because the aileron force seemed excessive to me by *my* standards. He told me about extending the throw on the aileron bell crank and I agree that that would help. A little more roll rate would be nice too. When I get to that stage in construction, I will look at it more closely on how to do it. I'm not 100% sure that I will do it, though.

I'd love to have a rearward sliding canopy, but I realize the complications in design and building. Simple mods like changing the rudder shape take very little time and work, so that's no big deal, but canopy design changes, that's a horse of a different color, though I do feel capable of doing it. A sliding canopy would look good, especially with me hanging my elbow over the edge as I taxi by, but we'll see, we'll see. I will send you and the guys at Tennessee more pictures as any changes I make take place.

Regards,
Bernardo

Hi again Bernardo,

Some time ago Nick and I talked about increasing the aileron size for the long wing Lightning by extending the aileron outboard about 9 inches. We had figured we could do that much of an increase without having to change the outboard aileron hinge location. In other words, that was the easiest way to make the change. However, we finally decided that the real concern for us was not so much the aileron roll rate, but rather the aileron roll force. So a simple change to the aileron bell crank, giving the aileron push rod more force with slightly less movement, lowered the overall aileron force at the stick. This also helped to make the pitch and roll forces more balanced - more like the original prototype Lightning.

Yea, the slider canopy would probably look cool, but to my way of thinking, only if it was an aft sliding canopy. I don't like the look of the forward sliding canopy like on the Pulsar (or at least some of them). The aft sliding canopy would require a two piece canopy - a windshield forward portion and the overhead aft sliding portion. More parts usually equates to more cost, more weight, and more build time. But it would look cool and being able to "build it your way" is what building experimental aircraft is all about.

Don't forget to send some more build photos as you progress with your project.

**Blue Skies,
Buz**

The last entry for the Builders and Flyers section for this month comes from Gerd Nowack. Gerd imported the first Lightning kit to Germany and is building it at his home. The January 2010 newsletter (issue 3-1) has a write up about Gerd's project.

Hi Buz,

In the recent weeks I started to write something for the next Newsletter, but time is running out, so it won't make it in time for the Dec issue. But I promise to send you my contribution for the Jan edition, with a lot of news and pictures.

As I understand, the January issue will be your last one, and I hope my stuff will make it easier for you to compile it. You mentioned once, your activities have been "thankless" - don't ever think so! If people didn't thank you, it was only because they didn't even know where to begin! I gobbled up every issue as soon I could get it and received always a lot of useful info's and entertainment. So here are my heartfelt thanks for an important task well done! We will all greet your successor warmly, I guess, but you sure set high standards!

For now all the best, and I hope we will meet in person at some future occasion in SYI.
Gerd

Hi Gerd,

Great to hear from you. How is Germany's first Lightning coming along? I certainly look forward to getting your article and photos for the newsletter. And I really appreciate your comments about the newsletter. Your thanks means a lot. Over the years I have gotten some "thanks" from some of the readers, but what I really needed was more feedback on the newsletter itself and of course, more articles from the builders and flyers. To my way of thinking, those are the "meat and potatoes" of the newsletter.

Indeed, I also hope to be able to meet you at some time in the future - either SYI, OSH, or maybe Sun-N-Fun.
Blue Skies,
Buz

Jabiru Engine Clinic Information

If you have not attended one of the Jabiru engine seminars in Shelbyville, I highly recommend that you do so. The information presented on engine installation, operation, maintenance and overhaul is well worth the cost of attending the class. The cost of the seminar is \$300 and it begins with lunch at Jabiru USA at noon Friday and runs through noon on Sunday. Class limited to 12, so register early! Call Jabiru USA to get scheduled - www.usjabiru.com, email: info@usjabiru.com, phone: 931-680-2800 Below is the seminar schedule of events.

SCHEDULE:

1:00PM Jabiru Engine Overview.

General Design Goal
History & Development of the Engine

2:00PM Identification of Engine Parts & Systems

3:00PM - 5:00PM Installation Section

Cooling Ducts and Cylinder Head Cooling Considerations
Intake Air and Carb Heat Installation Systems
Cooling the Oil
Ignition System Installation & Cooling
Electrical System Installation Concerns & Cooling
Crankcase Ventilation & Oil Recovery

Saturday 8:00AM - Noon Engine Operation Section -- How the Parts Work

A. Ignition System

- 1. Spark Generation**
- 2. Spark Distribution**
- 3. Timing**
- 4. System Maintenance & Schedules**

B. Lubrication System

- 1. Oil Types and Oil Functions**
- 2. Oil Pump**
- 3. Filter**
- 4. Oil Cooler**
- 5. Temperature**
- 6. System Maintenance Requirements & Schedules**

C. Electrical System

- 1. AC Generation**
- 2. AC Rectification**
- 3. DC Regulation**
- 4. Alternator Maintenance**
- 5. System Maintenance & Schedules**

D. Induction & Carb Heat System

- 1. Air Source**
- 2. Filtration**
- 3. Carb Heat Source & Control**
- 4. Air Flow Considerations**
- 5. System Maintenance & Schedules**

E. The Bing Carburetor

- 1. Overview of Function**
- 2. Jets & Jetting for Jabiru Engines**
- 3. Adjustment – Float, Idle, & Mixture**
- 4. Disassembly & Reassembly**
- 5. Maintenance & Service**

F. Exhaust System

- 1. Overview**
- 2. Muffler -- Function & Necessity**
- 3. Maintenance**

Noon - 1:00PM Lunch

1:00PM - 3:00PM Maintenance

Break In Maintenance & Adjustment

Heads -- Torque - Intervals, Specs, & Techniques

Valves --- Adjustment - Intervals & Technique

This section is a "Hands On" session adjusting a 3300

Saturday 3:00PM thru Sunday 11:00AM

Overhaul - Disassembly, Parts, Service, & Reassembly procedures & Techniques This section is a "Hands On" session reassembling a 3300.

Each participant will get the chance to build a cylinder from crankshaft out.



Upcoming Events

US Sport Aviation Expo, Sebring, Florida, 20 - 23 January, 2011

Sun-N-Fun, Lakeland, Florida, 29 March - 3 April, 2011

AirVenture, Oshkosh, Wisconsin, 25 - 31 July, 2011

Annual Lightning Homecoming and Fly-In, Shelbyville, ?? September 2011

Safety

Several of our Lightning builders and flyers have experienced a potential safety hazard when they left their canopy open on a bright sunny day. Tex and Selwyn both have experienced this and have descriptions of the situation below.

Buz, I think this can't wait till the next newsletter:

Today I had a great day of flying and just came in from a three hour flight and pulled up to the gas pumps. Got 8.6 gallons and went into the FBO to pay for it and someone came in and said my plane was on fire. Smoke was coming from the cockpit and the instrument panel cover was burning.

What had happened is that it was a great day here in New York with bright sun and no wind. I had left my canopy up and the sun was directly behind the aircraft. The canopy was like a big parabolic reflector and focused the sun to a nice small spot on the dash - thus the fire. Not too much damage for it was noticed quickly.

This happened here in New York, so down south of the Mason-Dixon line or in warmer areas it could be more of a problem.

Tex

Hi Tex,

Good that this was caught right away or the results could have been much worse. And thanks to you for posting it. Very likely your notification on the list will keep someone else from having the same problem. In fact, this is not the first example of the sun using this canopy as a magnifying glass to heat up the glare shield over the instrument panel. It actually happened one year at Sun-N-Fun to one of the Lightning aircraft on display. Nick or Mark can cover the specifics, but at least someone was standing close by and noticed either the smoke or smell before it got out of hand.

Blue Skies,

Buz

From Selwyn

I notice on another thread that someone has asked if this can happen with the canopy closed.

My thought is that this can't happen with the canopy closed because it is not a "magnifying glass" effect from sun through the canopy but rather a focused reflection from the inside surface of the canopy. It occurs when the canopy is up and the sun is in a sector over the tail.

I have had a similar thing happen to me although only to the extent of melting patches of the synthetic covering I have over the glare shield, I didn't actually achieve ignition.

I feel a bit bad about not posting a warning on the subject, although I have included it in an article I am writing for the newsletter, but I'm also irritated that the factory have experienced this behavior and not passed on a warning.

In speaking to others I have found out that the effect will also occur in Esquels under the right conditions.

The moral of the story is to try and avoid parking your aircraft with the sun behind it any time you are have the canopy open. In my location (Australia) the glare shield fabric can reach melt temperature in a very short time (1-2 min). Probably a good idea not to leave paper on the glare shield either. I've also done a bit of experimenting and found that I can't achieve any sort of focus on the panel itself so instruments and screens are not at risk.

Cheers, Selwyn
Kit 66

Selwyn, I also am disappointed that the factory was aware of the possible problem and did not put something in the newsletter. It is so important that any problem big or small be put in the news for it could save someone the expense and down time on their airplane. It just shows everybody how valuable the newsletters are.

We are real lucky to have people like Buz and others that manage the news for us.

Tex

Hey guys, blame it on me for not remembering to put it in the newsletter. Actually, if my memory serves me correctly the incident at Sun-N-Fun happened before I even started writing the newsletter. I should have remembered the incident and put it in one of the early issues, but didn't remember to do that. Just too much on my mind, I guess.

Sorry about that, but I will put it in the December issue (the next to last one that I will write) so that future readers will have that info available.

**Blue Skies,
Buz**



Lightning Skunk Works

Some of you may be aware that the Army has some specially qualified snipers that are extremely accurate firing out of helicopters and other slow moving aircraft.

Below is the latest Air Force answer to that capability.



Technical Tips

Good tech tips below from Bill Browns and Max Voronin.

Hi Buz,

I have been following your comments with Dave McCorkdale on the Matronics forum and became interested in what Dave was describing as a fix for the EGT spread at high RPM problem that we see with the Jabiru 3300 and Bing carburetor. I have built some "drop in" splitters to test with. I talked to Nick last week and sent him a couple prototype splitters (see attached picture) but have not talked to him since (something about a blown transmission in Oklahoma).



Earlier this week I dropped a splitter into my air box. WOW - what an impact. Attached are two graphs - before and after. I have a 250 main jet in the Bing and a silicone hose between the air box and the Bing.

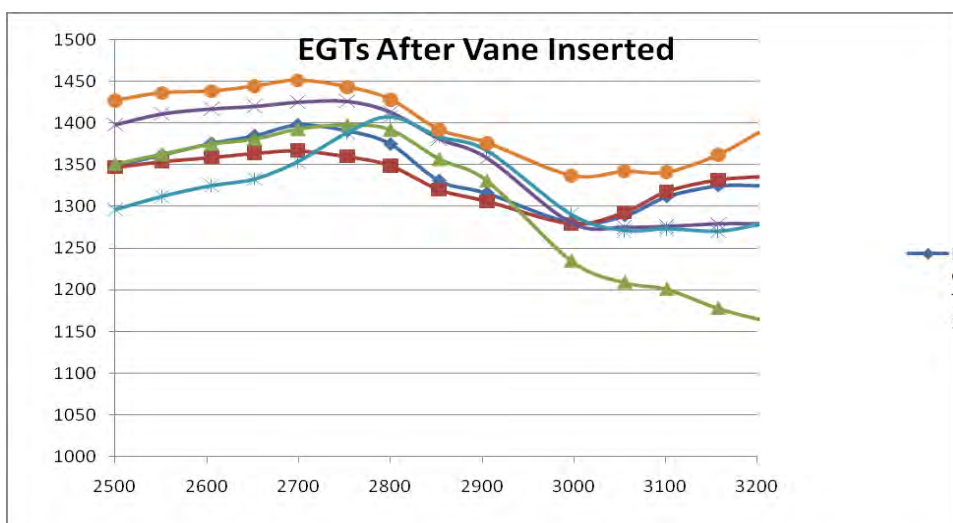
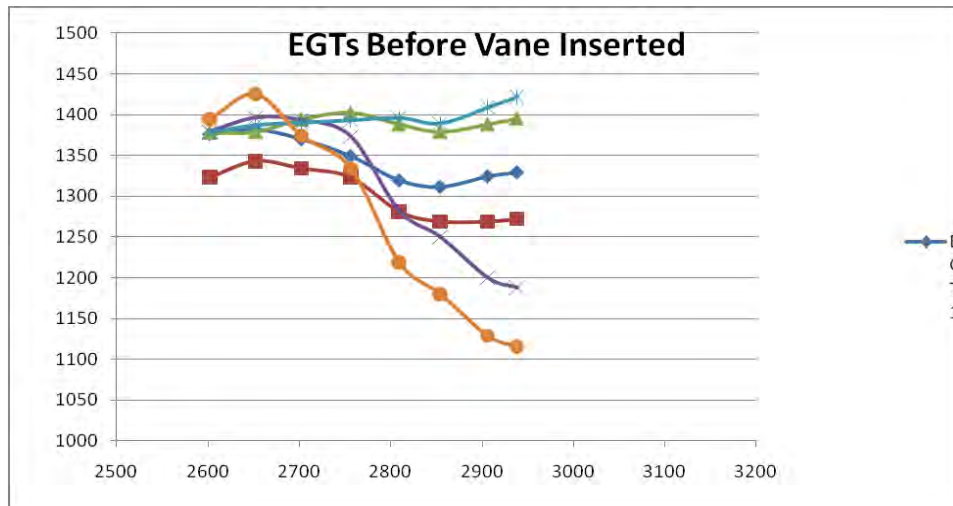
The before graph ends at 2950 because the engine was running rough above that RPM although I could get to 3150 at WOT. I did not have that problem after the splitter was installed and reached 3250 at WOT. I think my results confirm what Dave McCorkdale was finding in his Esqual.

I have a couple more (refined design) splitters if you would like to try one (send me your address). If these results hold up I think we can point to the air box design being the problem not the carburetor. And the fix would be fairly simple - bond a splitter into the air box pipe.

I would like to have several owners use these splitters and see if my results hold up. Also not sure if we could refine the design - shorter vane, maybe a cross + or X style vanes, carburetor jetting for best fuel economy, etc. I'm not sure what impact having a smooth hose like I have between the air box and carburetor improves the situation. Maybe everything works just as well with a SCAT hose.

Anyway, the more testing, the better.
Bill Browns

Below are the two graphs that Bill sent. His results are similar to the improvement that Linda Mathias had on her Lightning when we added a splitter to the inside of the air box outlet. Bill has sent me one of his splitters that we will try on Linda's airplane. Results to follow. Thanks, Bill.



In late November Wayne Patterson (Wayne@lpwa.net) from Western Australia sent the below question to the Lightning group. Max Voronin, the Florida Lightning dealer, replied to the list with a good answer. I have added some photos so everyone knows what they are talking about.

I am trying to source a flush latch for the dipstick access cover as an alternative to using camlocs. I would like to make checking the oil as quick and easy as it is on a 172 (no screwdriver needed) to encourage regular dipstick reading. Anyone used anything other than camlocs to fasten the access cover?

Wayne P in Western Australia

Hi Wayne,

We went with the hidden hinge and Cessna-style camloc on the N787FL. I got the parts from this place <http://www.nonstopaviation.com/door-hidden-hinge-p-14565.html>

Now, they used to have the camlock in stock too, and at a very reasonable price (I believe I paid something like \$55 for both the hinge and the latch at the time, Cessna camlocs tend to be expensive - something like \$30-35 each).

Also be prepared to use some Force getting the whole set up working on the Lightning cowling - complex shape of it doesn't really help.

But, I am happy with how the end result turned out.

Max



Hidden hinge



Hartwell flush latch



(top and bottom view)

The Hartwell H-5000-2 flush latch is spring loaded, trigger action latch designed for cowling and access doors. They are available at most aircraft hardware supply stores. Try Aircraft Spruce.



As long as we are talking about flush mounted hardware, the 1" diameter spring loaded access door shown here can be riveted into your wheel pant. It opens inward making it easy to check or add air pressure to your tire without removing the wheel pants.

Other Items

I would be willing to bet that at least 75% of the time that most homebuilders spend “building” their aircraft is really not building at all. What I mean by this is that even if they are in the shop and involved in the project, they are not actually building anything that will be on the airplane when it is completed. So what is all this other involved time? Well, it is doing things like studying plans, getting organized, ordering parts or supplies, making work benches or jigs, finding the right tool, cleaning the shop or tools, asking questions of other builders, etc. All these things are required, but really don’t accomplish any real progress on the airplane itself. So how can you be more efficient with this extra involved time?

The answer is easy. Just use the builder’s assistance program that the Lightning team provides at either Shelbyville or at one of the dealer’s locations. When you are working under the experts’ supervision there, following their direction and guidance, using their tools and jigs, all your time will be spent building. They know in what order the building steps must happen, they know how to properly accomplish each task, they have all the right tools and jigs, and they have all the required parts and hardware in stock. That really saves a ton of time.

I realize some people want to build at home in their own shop and maybe even have built other aircraft before. But if you are a first time builder and are even a little bit concerned about your abilities, using the builder’s assistance program will greatly simplify your job, remove all your concerns, and insure efficiency so that your project is completed in minimum time.

Final Thoughts

Since it is almost the end of another year, you will probably be thinking about New Year’s resolutions. Below are some flying resolutions for you to consider for your 2011 flying season.

Take someone flying every chance you get this year.

By doing so you not only help spread the word on aviation, but you get to show off your Lightning and what a great flying airplane it is. So get on board with spreading the good news of aviation and get involved with both Young Eagle flights and old buzzard flights as well. Offer flights to other pilots and the non-aviation public as well. Have your neighbors been with you to the airport? Have you taken them flying? It will put a smile on your face as well as theirs. Share the Lightning laugh.

Improve your flying and landing skills with practice and currency.

Of course, that is kind of a catch-all comment, but here is what I am talking about:

Keep the ball centered. Relearn what your feet and rudder pedals are for in all phases of flight. When doing stalls, it is imperative if you want the break to be straight ahead. For slow flight, where you need to work the Lightning rudders for coordinated flight, put the “ball” in your cross check until you develop the seat of the pants feeling that tells you when you are not in coordinated flight. Slow flight is one of the best ways to practice accurate aircraft control.

Practice landings, and by, I mean both the pattern and touchdown. No one makes a greaser every time, so a little practice is always in order. Work at flying a smaller pattern. Way too many pilots fly such a wide downwind and base that they have no chance of making the runway if they should have an engine problem. Fly final at 1.3 Vs and then shoot for a full stall landing at your intended point of touchdown. By doing this, you greatly improve your chances of a successful engine out landing should that situation arrive.

Practice good radio discipline. Have you noticed the great amount of non-professional radio transmissions on the Unicom frequency? Have you noticed the rambling wording in many transmissions? My suggestions are simple – engage the brain before you engage the microphone button. Keep radio chatter to a minimum by keeping your transmissions brief and informative. Remember, even when as low as pattern altitude, your transmissions are heard over many hundreds of square miles. The Unicom frequencies are already very busy on weekends, so be efficient in your radio calls. For example, if no one else is in the pattern or taxiing out why transmit that you are “clear of the runway”? There are many other examples of wasted calls. For example, just the other day I heard someone call, “Franklin traffic, Cessna N---- is ten miles out.” – Nothing else was mentioned. It sure would have been good to know that they were ten west or east or whatever. OK, off my soapbox.

Get involved with a local EAA chapter. Hopefully all of you are national EAA members and understand all they do for our rights to build and fly experimental aircraft. Well, get involved with a local EAA chapter to help support aviation in your local area. Why not fly your Lightning to an EAA breakfast and take a friend? Others in attendance will enjoy seeing your beautiful “jet”. Also, offer to give a presentation at a local EAA chapter meeting on what it was like to build and fly your Lightning. I guarantee it will be well received and will help spread the word on what a great aircraft it is. And while you are at it, make copies of the Lightning newsletter for your EAA chapter to read or even leave a copy in your airport’s terminal area or pilot’s lounge.

And lastly, **Plan on attending Sun-N-Fun and Oshkosh.** You will be glad you did. Attend the Lightning forums and the Lightning enthusiasts’ gathering at the Arion booth. And while you are doing some planning, also plan to attend the next Lightning Fly-In at Shelbyville this coming fall.

Blue Skies,

Buz Rich

N1BZRICH@AOL.COM (Contact me directly for newsletter inputs – I need your help to keep this newsletter both interesting and informative.)