



Hangar Talk

The “Lightning” Newsletter

January 2010 - Volume 3, Issue 1



Tex Mantell’s Lightning of the Month

Please submit a photo of your Lightning for future “Lightning of the Month” consideration.

The newsletter goal 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.

HAPPY NEW YEAR!

Here's hoping that 2010 will be another great year for all of the Lightning community. If I might be so bold, I would like to recommend some New Year's resolutions for all of us. First, try to fly more often so that you get the max enjoyment from this fantastic airplane. Second, make an effort to take someone flying at every opportunity. It can be a Young Eagle or an old buzzard, just share the freedom of flight with someone. You may end up inspiring a future pilot, or convincing a neighbor of yours that flying is a great pastime, or even sowing the seed in another pilot for building a Lightning in the future. All of these are good things. Another suggested resolution is to join an EAA chapter if you are not already a member. If you are a member, get involved by presenting a program on the Lightning. Make some copies of our newsletter and take them to your chapter meetings to share or just leave copies around the lobby of your home airport. I might even suggest that you get your local EAA chapter newsletter editor to include a link to the Lightning web site in the chapter publication or their web site. All of these are good ways to spread the word about this great airplane that we all love to fly. My last suggestion for you is that you start planning now to attend as many Fly-Ins as you can this year. I hope to see each of you at Sun-N-Fun, Oshkosh, and of course, the 4th Annual Lightning Homecoming in Shelbyville. And if you are still debating whether or not the Lightning is the airplane for you, 2010 is the year to take that demonstration flight and order your Lightning. What could be better than that?

Starting the Newsletter's Third Year

For the first issue of 2010, we are going to, hopefully, start a yearly tradition of selecting a "Lightning of the Year" that will be chosen by the newsletter readers from the previous year's list of "Lightnings of the Month". This contest was announced in the December 2009 issue and was a suggestion made by Jim Langley and seconded by Nick Otterback. So to get the ball rolling, below are the photos of 2009's "Lightnings of the Month". All you have to do is send me an email (N1BZRICH@AOL.COM) telling me which airplane you want to vote for. Anyone that reads the Lightning newsletter is eligible to vote. Send in your vote now and look for the results in the February 2010 issue of our newsletter.

If you happen to own a Lightning, when you send in your vote, please help me update a database I have started for a possible future newsletter article – just let me know your N-number or country registration, your home airfield, and your aircraft's total flying time to date. You may also include any new photos of your "jet" and any other specific details that you want to tell other readers about your aircraft (for example, special features, why you chose your specific N-number or registration – anything you want to include). You might also want to include info on any other interesting facts or flights (for example, Earl would want to include that his Lightning has set a world record). I look forward to getting your vote for "Lightning of the Year" and hearing about your Lightning.

We might even convince Nick and the Arion crew to come up with a special award plaque naming the "Lightning of the Year" winner at the next Lightning homecoming and fly-in. Hint, hint, Nick. Send in your vote now for "Lightning of the Year for 2009". You can even include your vote for favorite newsletter article from the past year. That will help in selecting future articles.

Photos of Past “Lightnings of the Month” for 2009



January 2009 – Arion’s 2008 Lightning Demo



February 2009 – Jim Langley



March 2009 – Bill Hubbard



April 2009 – Ron Ritchie



May 2009 – Dick Cleavinger



June 2009 – Arion’s SLSA LS-1



July 2009 – Steve Biele



August 2009 – Dennis Borchardt



September 2009 – Prototype Lightning



October 2009 – Linda Mathias



November 2009 – Jim Goad



December 2009 –Pete Disher

Don't forget to send your vote for "Lightning of the Year for 2009" to: N1BZRICH@AOL.COM. The February 2010 issue of the Lightning Newsletter will have the results of your votes. You can also vote for your favorite newsletter article from 2009 in the same email. Vote now.....

Germany Gets Its First Lightning

Next is a great article about the very first Lightning to go to Germany. Last month's newsletter mentioned that **Gerd Nowack** was importing the first Lightning kit to Germany. Here, in the new Lightning owner/builder's own words, is the start of his Lightning story. We hope Gerd will continue to keep us informed of his progress in future issues of the Lightning newsletter.

Hi, Lightning community!

My name is Gerd, and it seems I'm building the first Lightning in Germany- as far as I know it's also the first in Europe. My age is 54, I live in Linden, a small city (Pop. 12000) near Giessen (Google Earth 50 32 16.2N, 008 40 59.3E) in beautiful



upper Hessen, 40 miles north of Frankfurt. I live together with my wife Ulrike (two daughters 25 and 23 have already left the nest) and two cats and I earn my Schwarzbrot and Bratwurst as a Lufthansa pilot.



In the recent years I became more and more interested in building an aircraft as a pre-retirement hobby and to provide me with my own post-retirement wings. I looked around a lot, internet and real world. Two friends build a RV 7A - really impressive, but he but they have been at it – bore, bore, bore, dimple, dimple, dimple, rivet, rivet, rivet - for 4 years now, and I couldn't see myself doing this.

After more looking I could see that the first decision would be about the engine. I have logged some time in a CT, a real nice flying and fast aircraft. But the Rotax, running along with 5000 rpm, sounding like a pimped sewing machine and almost shaking itself to death at every start and (even worse!) shutoff? Nah! And a Lycoming or such? With Avgas selling for 10 bucks a gallon in Europe? 100\$ per hour fuel cost including Eco-Tax? Nah! Car engine conversions - Diesel or Mogas? Heavy, liquid cooled and geared! And gears mean trouble- the German aviation diesels need new gears every 300 hours or so! Also a clear - No. So almost by default I came up with the Jabiru engine! Well, you all know why, don't you?

Somehow I don't like high wing planes, so I didn't look long at the Jabiru aircraft, and soon, among all the Jab powered planes, I discovered a real beauty- a Pulsar SP100! Sleek, fast looking, good specs - fits the bill nicely, I thought. Pulsars were at some time a very popular choice in Germany. A fellow OUV club member had his SP just finished and was enthusiastic about it, although not about the company as they had sold him two left flaps and ailerons and didn't offer any builder support! And, they were apparently almost out of business. The company, residing in El Salvador after changing owners, did not answer emails unless addressed in Spanish. Pete told me later that they have recently vanished from the US market. Alas, so no Pulsar!

Finally a colleague whom I told about my sorrows gave me the deciding hint - flylightning.net! That was when I discovered the Lightning! Even better looking, performance numbers that indicated it could run rings around a Cessna on 20 liters of Mogas per hour! Not too much building hours. It all seemed exciting!

Fortunately, I soon could arrange a stopover in Shelbyville, so in June 2009 I got to know the "Home Of The Lightning" and met Pete and Nick who turned out to be very friendly, even to me as an alien. They gave me a tour around the shop and let me and Uli trial sit in the Lightning cockpit. Next day, Nick took me up in one of the demonstrators, and that was when I became hooked! Well, you all know why! The fantastic handling, it flies (and feels) really fast and has very friendly stall manners- what else can one ask for?

Before signing a sales contract, I had to sort out the certification problems I would have to face in Germany with an absolutely new aircraft type. The certification in Germany is a lengthy process that accompanies the builder from start to finish. We face a lot more bureaucratic stuff here - anybody surprised? But we take it as it comes. Well, and it comes in three parts: a first, second and third / final certificate that are issued by a supervisor, who is usually an engineer. He is also a member of the "Building Project Board" of the OUV, the German equivalent of the EAA. Of course, they do their work supervised by the LBA, our FAA - for those who like those long German words: it's the Luftfahrtbundesamt.

Germany has a rich tradition in the building of experimental aircraft, and the OUV has been with us for many decades. It is a private association of aircraft enthusiasts who do all the work in their free time. As a member you really get a lot of invaluable assistance there!

The first certificate certifies the feasibility of a project, the ability of the builder and that he (or she, but it seems to be an exclusively male thing here) has the means, space and tools necessary. Since the process is the same for a kit plane as for a totally new experimental it asks for a very detailed description of the projected aircraft. I had to nag Nick a lot to get info's and details about the Lightning that my supervisor demanded, but had been apparently never asked before. Thank you for your patience, Nick!

Feasibility means not only that it can be done with existing plans, components and materials, but also that it will be certifiable according to one of the regular building rules, like FAR23 for example. They won't certify a space rocket-submarine-aircraft combo machine, although, they told me, somebody once applied for such a project.

My Lightning will comply with the European JAR-VLA: Two seats, 750kg max (my Lightning will have 650 kg MTOW = 1431.7lbs), +3.8g - 1.5g, no speed limit, but you still need a medical and a PPL to fly it. As a bonus: a simplified proof of stability. But I think I will tell you more about all this when the time comes. If anybody is still interested to hear about it then!

For professional pilots, they assume the ability to build an aircraft as a given, so my ATPL, plus my home tinkering and bike maintenance experience was considered good enough.

In the lower level of my house I have a room with a door large enough to wiggle a Lightning fuse and wings in and with space just big enough for the initial building phase. Later, I will move the fuselage to my garage, but till then I have a nice comfy, heated work room to do all the preliminary tasks. It has been re-named "Gerd Nowack Aerospace". I have all the metal tools, and since the bike I have maintained in the last years is a Harley (a black and chrome 2000 FXDL), I also own all those inch tools needed!

So everything was cared for, and after a lot of back and forth the supervisor declared, he had all the necessary data and that he would see no problems to give me and the Lightning the First Certificate, as soon as he would find the time to get it done. And so I could do the big step and go and order my Lightning.

Mark ordered the kit at Custom Fiberglass after the advance reached the bank in Shelbyville - which took weeks! Talk about bank crisis! Then the nice people in Weyauwega not only built the fiberglass parts but also one big Australia-type shipping crate in which everything was packed. They shipped it to Chicago O'Hare airport, and from where it was flown to Germany at an affordable rate, thanks to an employee discount.

Well, the building has started; I already made a few fuselage cutouts and holes and assembled the elevator bell crank. So far it's fun. I aim for a completion at spring 2011, but who knows...

By the way, good hints by more experienced builders - and I guess this means every one of you - are always welcome. You can reach me via email: NowackLinden@gmx.de.

I am happy to see myself now as a member of the Lightning community, and I hope to meet you maybe next year the fly-in in Shelbyville!

Best regards from Germany!

Gerd



The above photos show Gerd's "workshop" and him hard at work on his Lightning fuselage.

Great article, Gerd, and we certainly look forward to more updates on your project. Please keep the newsletter readers informed of your progress. And we certainly look forward to hearing all about the flight testing phase in Germany and what your fellow pilots think of the first Lightning in Germany.

News from the Factory

The big news from the factory for this month is that **Arion Aircraft** has a new **Lightning dealer in Florida**. **Max Voronin** is the head man at **Moonshine Aviation, LLC**, and will be serving Florida and the surrounding southern states. (Yes, Moonshine Aviation is really their name – just think "*white lightning*" and you will understand the connection. And no, *LLC* does NOT stand for *Lightning Liquor Club*).

Nick told me that Max picked up a Lightning kit at the end of 2009 and it should be flying as their demo aircraft by this spring. (Max indicated to me that his goal is to have it at Sun-N-Fun.) Max and his company are located at DeLand Municipal Airport. More info about Moonshine Aviation can be found below in the "News from the Dealers" section.

Next is a great “How To” article by Mark Stauffer on the Grand Rapids EFIS. I hope this will be the first of several articles by Mark on how to effectively use the Grand Rapids equipment.

How to Back Up and Restore Your Settings for Your Grand Rapids Technologies Sport EFIS

By Mark Stauffer

Grand Rapids Technologies (GRT) includes a USB memory stick with their display units so you can perform maintenance such as software updates, log flights, and backups of systems settings. Some people also know this device as a thumb drive. Here’s a picture so we’re all on the same page.



This memory stick is inserted in the back of the display unit (DU). There is a USB port on the upper left corner of the back of the unit (upper right corner if you’re looking at the unit from the front and reaching up behind your panel as most of us will have to do).

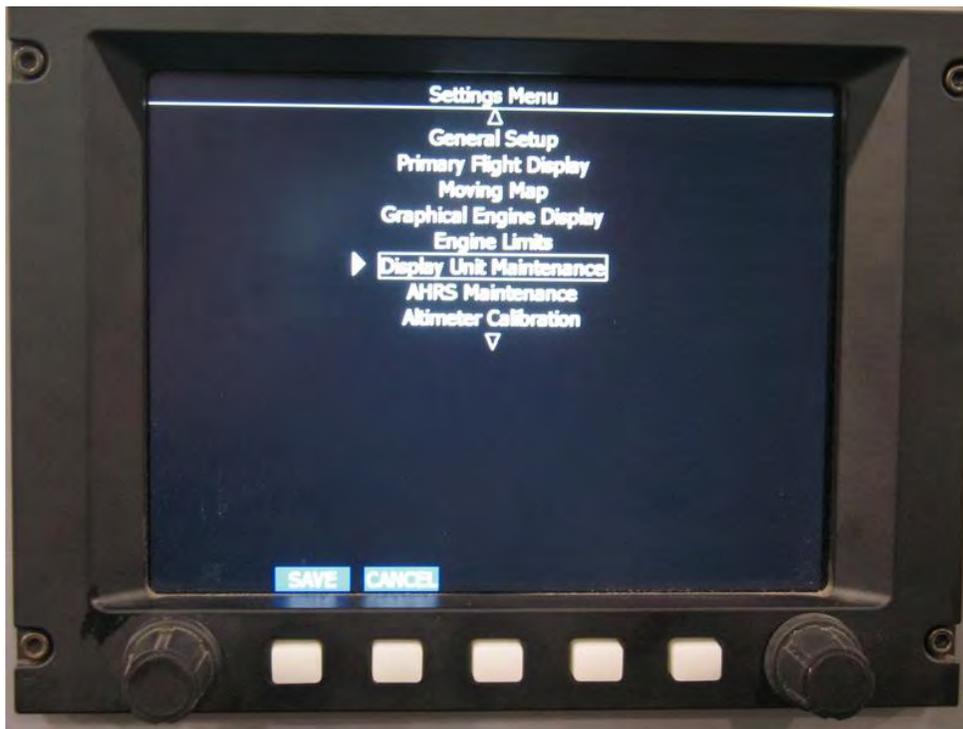
Go ahead and insert the memory stick into the DU. It will only fit one way. If it’s not fitting properly try turning the memory stick over.

Turn on the DU and let it go through its boot up sequence to where you get your usual screen with artificial horizon.

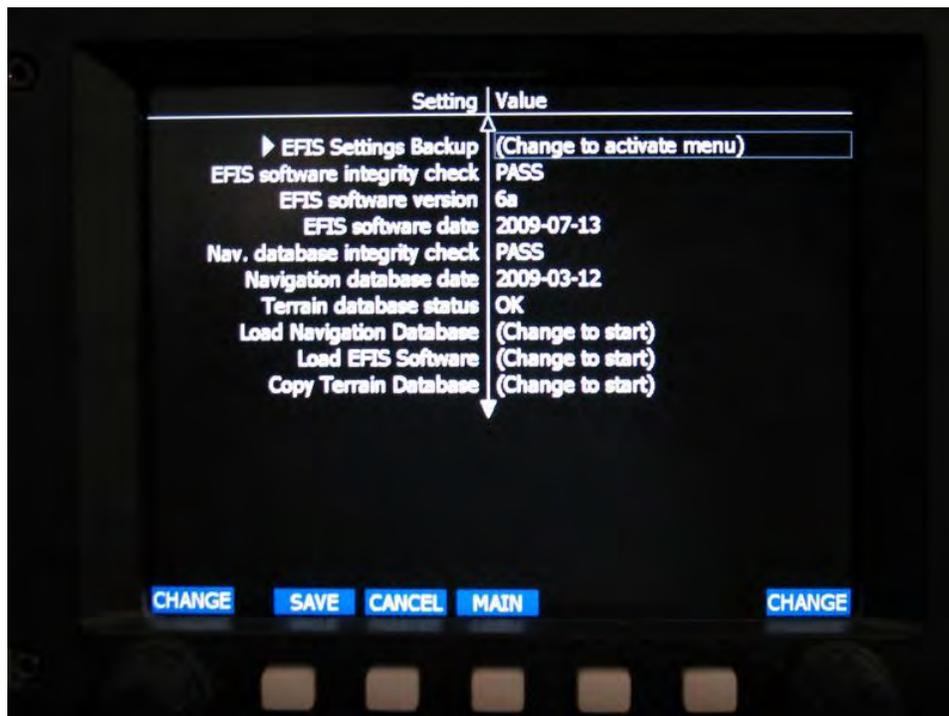
Press the white soft keys until you see “Set Menu” and then press that soft key.



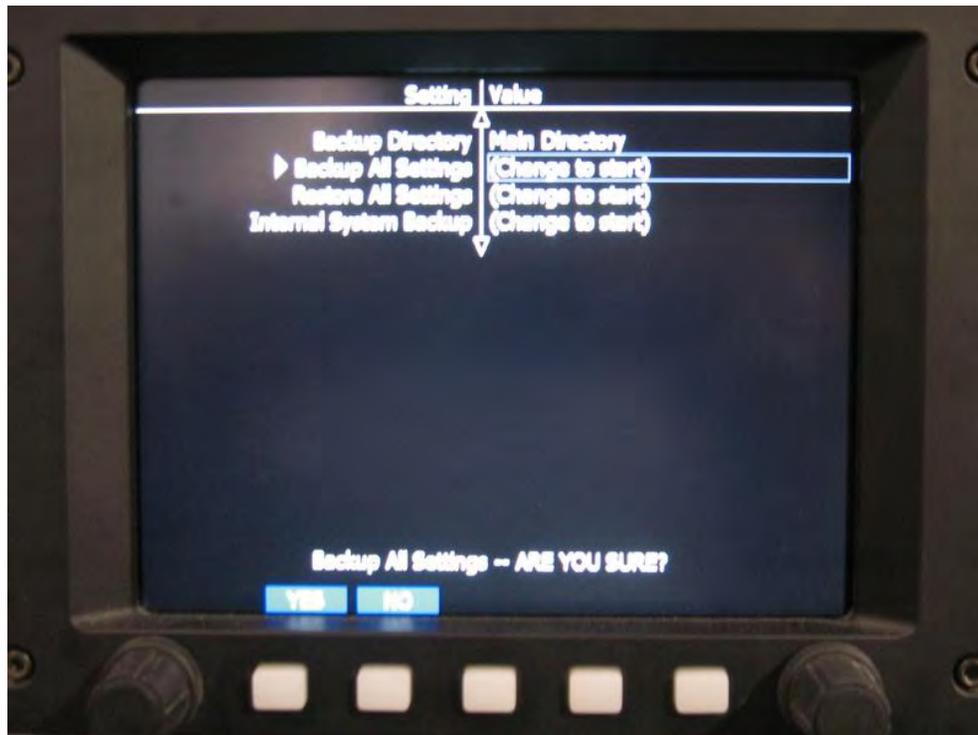
This will bring you to the Settings Menu. Once there, rotate the right knob until the box is around Display Unit Maintenance. Press the right knob to select Display Unit Maintenance.



The first item in the Display Unit Maintenance is EFIS Settings Backup



Press the left or right knobs (with the word “Change” over them) to activate that menu.



To back up your settings rotate the right knob to select Backup All Settings. Press the right knob to start the backup sequence. The system will ask “ARE YOU SURE”? Press the white soft key under YES. The system will backup your settings and place them on the memory stick that is in the back of the DU.

To restore your settings from a back up first make sure the backup files are on the memory stick you have in the back of the DU. From the above screen rotate the right knob to select Restore All Settings. Press the right knob to start the restore settings process. The system will ask you “ARE YOU SURE”? Press the white soft key under YES. The system will restore the backup settings from your memory stick. Press the white soft key under SAVE and you’re finished.

After you have backed up your files you may not want to keep them on that memory stick. If that’s the case simply copy them from the memory to your computer. Just remember where you saved them and remember to put them back on a memory stick if you need to restore your settings for some reason.

If you need more assistance call GRT at (616) 245-7799 and ask for Carlos.

Mark Stauffer
Production Manager
Arion Aircraft, LLC

Most of you know that in addition to Nick and Mark’s very busy daily schedule at the Lightning factory, they both are also heavily involved in building aircraft in their spare time as well. Past

issues of the Lightning newsletter have covered their other projects, with the most recent coverage being about Mark's successful first flight of his Zenith Zodiac 601XL, the "Canzer".

Below are some recent photos of Nick's project, a Steen Skybolt. Like me, Nick likes the open cockpit biplanes and has been working on his „Bdt for some time. His dad built a Pitts many years ago and Nick may paint his two seat Skybolt (room for Dana) to match the paint scheme that his dad used. The pictures below show his recent work on the wings. Nick says that it must be a composite aircraft because it has some parts made of steel, wood, aluminum, fiberglass, fabric and epoxy. That certainly covers all the possibilities.



Lightning Sales Update

Mark provided the information for the following sales summary for this issue of the newsletter:

Since Sun-N-Fun in 2006 when the Lightning's first sales contracts were accepted, they have sold a total of 85 kits and have delivered 82 of them so far. As of 21 December 2009, 49 of them are flying which equates to a 59.7% completion rate. I feel certain that no other airplane kit

manufacturer can match that amazing completion rate. Twenty-three of those kits were sold to Australia.

As we start a new year, 2010, Arion Lightnings are flying in the US, Canada, Australia, New Zealand, Brazil, and Russia. Additionally, as you read above, there is now a Lightning under construction in Germany. So the Lightning has certainly become an international success. Fantastic!



The prototype Lightning, N233AL, that started it all. Nick retired it in 2009.

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, LLC, Dave Jalanti, NY, 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. (www.moonshineaviation.com)

News from the Dealers

As mentioned above, there is a new Lightning dealer that will be serving Florida and the surrounding southern states. Below, in the form of several emails to me, is a short introduction from Max that tells a little about this new dealership and his personnel. We look forward to meeting them and hearing all about their operations in the future. Welcome aboard!

Good morning, Buz!

First of all - thank you very much for the great newsletter. Every single one of those is printed out and stashed in chronological order in a special folder that resides under the bed. Better half might have a thing or two to say about it, but for now it is safe there.

The news is - **Moonshine Aviation, LLC**, is proud to be the newly appointed dealer for Arion Lightning aircraft. We will be operating out of the **DeLand Municipal Airport** (aka KDED) and serving Florida and neighboring states. You might wonder why the company is called "Moonshine Aviation". We get that sometimes. The reasoning is - if they come up with a new Prohibition, we won't have to change the name, being in Florida and all.

I'll post a proper introduction for all the team members on our website (www.moonshineaviation.com) in the near future, but wanted to say that the bunch is fun and diverse with flying experience ranging from ultralights to airliners to jet fighters (the kind with red stars on it). Hands on experience doesn't fall short of that with an A&P of 32+ years leading that department. We will, by the way, offer maintenance and inspection services for the Jabiru line of engines and aircraft besides the Lightnings.

I'll be attending the Sport Aviation Expo in Sebring with the Arion guys and hope to say hi to many good people that I semi-know through the newsletter, and the plan is to have our Florida demo available in the Spring of 2010. For now there's just the good old' all original Luscombe 8A referred to by some as "The Adverse Yaw Demonstrator" in the hangar, but that's going to change soon.
Blue Skies,

Max Voronin

P.S. One of the ways the Russian pilots say "bye" to each other is to wish each other "Parity" - that is when your quantity of take-offs equals your quantity of landings.

Max sent the photo below with the following comment:

Buz, you've made my day.
Olena (my better half/co-pilot/cuter one on the attached picture) has meticulously reviewed all the paint schemes of Lightnings built, as well as a good share of similar looking Lancairs, and says that your jet is the best looking of them all. So there - unless we come up with something entirely different, our paint scheme might be inspired by yours.
Dosvidania, Max



Good evening, Buz!

Moonshine Aviation, LLC, is the newly appointed Arion Aircraft dealer for Florida and neighboring states. We will have a demo aircraft on site to offer demo rides and transition training, and the plan is to show it at air shows and fly-ins to spread the word about this great airplane.

We are located in the DeLand Municipal Airport – a place of history and abundance of interesting companies on the field - north of Orlando and a short hop west of Spruce Creek. **Olena** (the nice voice on the phone as soon as we get the land line going) and I will be at the Sebring Light Sport Expo with the Arion crew to meet and greet everyone who finds a moment to stop by the booth. Other people at Moonshine are: **Eugene**, an ex-military jet fighter pilot and airline captain, CFI, and airshow aerobatic glider flyer. **Gintas**, an A&P with 32+ years of experience (pretty sure he can build a turbine engine out of an old washer and some scrap metal). And **Bulat**, who runs a sizable crop dusting business.

We want Moonshine to be the one stop shop for the Lightning community - we'll be selling both the Experimental and S-LSA Lightnings, providing builder assistance, as well as service and maintenance for engines and airframes (that isn't limited to Lightnings).

The kit for our demo is being built as this Newsletter is released, and we are working hard to make it the best Lightning ever. Well, considering we are setting up a branch of Skunk works, "best Lightning ever" can have a few different meanings. Oh, since the N-number is reserved, I guess we can call the plane by name - N787FL - where FL stands for the state of Florida, and I'm pretty sure that I should leave it up to you to figure out what 787 stands for due to the registered trademarks and stuff. In any event, N787FL will feature a twin Dynon Skyview 10" installation (we are the local Dynon dealer). We will also have a go with that TBI-40 injection body (unless somebody talks us out of it), and lots of cool lights. Our Lightning should be bright. We are also working with MT Propeller to develop an electric constant speed prop for the Lightning/J3300 combination. We will see how that goes, how much it costs, and if it's a good thing, it'll be an option for the experimental version that we will sell.

The plan is to have N787FL flying by Sun-n-Fun, but we will be working on it on site starting in January, so whoever is in the vicinity is more than welcome to stop by the hangar to see the work in progress. Our address is 1360 Flight Line Blvd, DeLand, FL 32724, my phone number is 847-414-5928, website www.moonshineaviation.com and the best e-mail for now is voroninmax@gmail.com.

Best regards,
Max Voronin

Max's next email is in response to my request for some photos:

Thank you very much for kind words, Buz!

I don't really have that many photos at this time: me by our Luscombe (we do offer Sport Pilot instruction in the Luscombe).



Both **Olena** and I are from **Ukraine** (we've never been picky about the whole Ukraine/Russia thing though). **Eugene** is from **Belarus**, **Gintas** is **Lithuanian** (used to work together with Jurgis Kairys a while ago, they had a reunion this year I believe, after some 30 years), and **Bulat** is from **Tatarstan** - so you could say that we all are from "that part of the world", but yet quite far away from each other geographically.

As far as DeLand goes, last week there were half a dozen Russian pilots visiting. Our hangar is Mecca of a sort for them. We get a pretty big bunch of guys for every Sun-n-Fun and Oshkosh - Russian chapter of EAA at work - which is whole another story.



The above photo is from EAA photo galleries: <http://www.eaa.org/apps/galleries/gallery.aspx?ID=160>

On the right is Bulat, one of the Moonshine partners, and the one in the red is Dmitry Shapovalov, a good friend of mine and "papa Russian EAA" pretty much. We might bring Bulat's Yak-52 in, probably sometime in the spring of 2010, that's not much (definitely not a Pitts or a Sukhoi), but you are more than welcome to stop by for some inverted time when we have it.

Thanks a lot for making all the great Newsletters happen.
Looking forward to meeting you in person,

Max

I am sure we all wish Max, Olena, and their entire crew, a huge welcome to the Lightning community. They sound just like all the other Russian (and Ukrainian) friends that I have – full of knowledge and enthusiasm for life and fun. What could be better than that?

News from Builders and Flyers

The first builders and flyers article this month comes from Carl Beatrice. In previous newsletters you have all seen and read about his and Pat's Lightning that they built in 2009. It is a beautiful "jet" and I had the honor and privilege of making the first flight in it. Carl explains his decision process in choosing the Lightning and a little about the building process.



Carl and Pat Beatrice's beautiful Lightning.

WHY I CHOSE THE LIGHTNING

by Carl Beatrice

LSA has been with us for over 5 years now and it looks like its popularity is increasing. About 100 types are available and more and more people are showing interest.

I'm 76 years old, on special issuance medical and love flying (over 50 years) so LSA became of interest to me about 2.5 to 3 years ago, to allow me to continue to enjoy flying. I read about many models, went to look at quite a few and flew many of them. I wasn't overly impressed with what I'd looked at to this point for various reasons, (performance, quality, comfort, price etc.)

It was at Air Venture 2008, I met and sat down with Buz Rich who is a very knowledgeable individual in many areas of aviation including the Lightning and its performance. I asked where there might be a Lightning owner near me in New Hampshire, so I could perhaps get a ride in it and see how I liked it. I was told the nearest one is in West Virginia, or the kit manufacturer in Shelbyville TN, where the Jabiru is also assembled and sold.

So, in September 2008, my wife, Pat, and I flew South West Airlines to Nashville, rented a car and drove to Shelbyville. There we met Pete Krotje, Mark Stauffer, Nick Otterback and other wonderful

people, all of whom were friendly, helpful and no pressure. Pat and I both took a ride in the Lightning as well as the Jabiru 250. (Both are great airplanes!). Then it was a difficult decision just which plane to chose. After much thought and discussion, on September 16, 2008, we signed on the dotted line for the Lightning, with the builder assist program at Shelbyville.

We arrived in SYI on February 16, 2009, excited to start building our airplane. We would be working with Mark, Mike and Nick They are great people to work with. We spent a week there assembling the airplane, then flew our RV-6A home to Sanford, Maine, while the Lightning was sent out for paint, upholstery and wiring. We returned in mid March to finish the Lightning.

It s first flight was April 04, 2009. I flew off 20 hours of flight testing in the SYI area and then flew it to Sanford Maine where it is hangared and flew the balance of the 20 hours of phase 1. Now mid November 2009, we have over 90 hours of enjoyable flying in our Lightning. Our thanks to all the people at Arion for the great help in making this happen. I highly recommend the Builder Assist program at Arion. It is very worthwhile and money well spent.

We stayed at the Ramada Inn in Murfreesboro while building (17miles). They provide large comfortable rooms with refrigerator and micro and a great continental breakfast at a reasonable rate.

In conclusion, we are very pleased with our Lightning. It is built with quality, mostly American parts. The Jabiru engine from Australia is very smooth, quiet running, performs well, and is stingy on gas. The total cost of the Lightning is much less than most other LSA's and the quality is better.

The following photos came in from Ray Gage of Port Orange, Florida. Ray has an Esqual modified with a Lightning cowl and from the looks of the photos, he lives on a beautiful airpark. I'm envious. Ray, please send us some more information on your "jet" and let us know how you are enjoying flying it.



This next input comes in from a Lightning builder in South Australia. As you can see, it is a beautiful aircraft and is fitted with some interesting components and engine modifications. I certainly hope that Helmut will send future updates on how the aircraft is flying and how well the modifications work out.

Subject: Kit No 36 is finally finished.

We have finally finished this Lightning kit after two and a half years of work. There was a lot of frustration but also a lot of pleasure and the end result was very pleasing. The kit belongs to my brother John who did not have the confidence to build so I did the technical side of the work and my brother, the paint work and trimming. The reason for the extended build time was my limited time at my brother's place as he lives over 3 hours drive from my place, and we did all the work ourselves with no outside help. I have built 2 Jabiru kits before which are still in our family and used frequently.

I fitted a voyager EFIS into the panel, and the engine is fitted with electronic fuel injection using a Haltech ECU with Jenvey throttle body 2 RX7 injectors. This is the same set up I fitted to my Jabiru when I built it and has run over 350 hours without trouble.

We are currently doing high speed taxi tests to get used to the toe brakes. Then, we go into the test flying. I have attached a number of pictures.

Cheers Helmut (from South Australia)



Now that is one gorgeous jet. Super job! I'm sure it will fly just as well as it looks.



Engine, panel and interior photos. Looks like outstanding workmanship.

This next entry is from Jim Johannes:

Buz:

Kit 87 received its EXPERIMENTAL AIRWORTHINESS CERTIFICATE today : 12-16-09. Thanks are due to the Arion Lightning staff, Nick Otterback, Mark Stauffer, and “Moostang” Mike, and others, plus the Builders Assist program. Kit 87 is now in Phase I flight testing under the direction of Nick.

The Newsletters were a great assist and generated a number of good discussions regarding some of the experiences and suggestions from other builders. Pictures to follow later plus short write up. Keep up the good work.

Jim Johannes, Kit 87
Huntsville, Alabama

Pete sent the photos below that show Jim and his Lightning being inspected by Gary, the DAR who performs the airworthiness inspections in Tennessee. Thanks, Pete.



This next photo shows Nick at the controls of Jim's Lightning on its first flight.



Mark Stauffer also has recently flown Jim's Lightning and sent the photos below of the panel and the Grand Rapids EFIS set up. Jim has the regular size screens, but he does have the HX version (high definition) which has the faster processor (quicker refresh rate) and synthetic vision. They look great.



Reader Feedback

You have all read about Steven Hacker's Lightning building process, ably assisted by his two daughters, at the Lightning North Central build center in Wisconsin. This next section is an update on what Steve and his jet have been up to recently.

On the 4th of December Steve sent me an email saying that he and his Lightning had been blogged – favorably. Go to <http://hummingbirdhelicopters.us> and read the site's latest news – Lightning Arrives at Hummingbird Aviation. Steve went on to explain that Jeff Dalton, the chief instructor there at Hummingbird Aviation, will be his CFI. That blog, written by Jeff, is printed below along with Steve's message to me. Jeff also wrote me and said that he was impressed with the Lightning and would be writing more articles (blogs) as Steve's training progresses.

Buz,

Because I don't have my Private Pilot's License yet, I had Danny Jones of H&S Aviation ferry N335CE from the H&S Hangar at Brennand, 79C, in Neenah, WI, where we I built the plane, to its new home, KFCM - Eden Prairie, MN. *That's Danny in the cockpit.*

The plane arrived safely, but while driving Danny back to Neenah later that afternoon, we struck a deer and did \$1700 worth of damage to my front end of my car. I have the plane ferried, and I smash my car. And here I was worried about the plane and the weather! However this was not my first plane related mishap. While pulling 335CE into the H&S Hangar one afternoon, I struck the left wing tip on a refrigerator door handle. If you seen the hangar, and know how wide it is, I know you must be asking yourself how I managed to do that. All I can say is that I am blaming the incident on those extended wing tips.

But if my run in with a deer and a refrigerator door handle are my two worst mishaps as a new airplane owner, over the next 12 months, I'll take it.
Stephen Hacker

Lightning Arrives at Hummingbird Aviation

Posted by [Jeff Dalton](#)



Steve Hacker's Lightning

Steve Hacker's [Lightning](#) flew into Hummingbird Aviation this week. Steve is in the process of completing his [Private Pilot Certificate](#) in the Lightning and before I start his training, I needed to familiarize myself with his aircraft. My first impression of the Lightning as it pulled onto the ramp was how

fast it appeared. The airplane has a sleek design and gives the impression of an aircraft that will handle nice and be fun to fly.

Once airborne, my first thought was related to the great visibility through the bubble canopy. There were no obstructions to my view and on the bright sunny day it was a pleasure just being in the air. I then took the controls and made a few turns, climbs, descents, and some slow flight. I didn't need long to realize that it was an impressive flying aircraft without any strange flight characteristics, so we returned to the airport. Over the next week I will take some more flights in it to explore how the Lightning handles in various **configurations and speeds**. Once I know the limits of the aircraft, Steve and I will start his flight training.

I look forward to getting future blogs from Jeff and will print them in future issues of the Lightning Newsletter. Good luck on your training, Steve.

Upcoming Events

US Sport Aviation Expo, Sebring, Florida, 21 - 24 January, 2010

Sun-N-Fun, Lakeland, Florida, 13 - 18 April, 2010

AirVenture, Oshkosh, Wisconsin, 26 July to 1 August, 2010

4th Annual Lightning Homecoming and Fly-In, Shelbyville, ?? September 2010.

Safety

Over the holidays I took an Air Force Academy cadet flying in the Esqual. I have known him since he was a local high school senior and had also taken him flying numerous times in the past in both the Esqual and the J3 Cub. On his most recent flights he was more interested in actually learning something about flying, and more specifically, patterns and landings, instead of just sightseeing and getting the feel of the airplane. He had been getting some simulator time at the Academy and I think may soon start flying gliders and the Diamonds and T-41s that they have in their flying program. Anyway, we talked quite a bit about traffic patterns and landings and how to fly consistent patterns. This discussion with him got me to thinking that it might make a good review for the safety article in this issue of the Lightning newsletter. So here is basically what we talked about and hopefully a good review for all of you.

I know you have probably heard this before, but the secret to getting an airplane on the ground safely every time is to fly the same pattern every time. Be consistent, so that things look the same time after time. This helps to establish an awareness of appropriate glide angles and what the runway should look like from the various positions in the pattern. Once you have this

“sight picture” from every point in the pattern, it really doesn’t matter if you are landing at your home field, a strange airport, or even an off-field emergency landing. They will all look the same to you and that is the goal you are looking for. So plan and practice a standard pattern which you use every time.

Doing it this way provides two distinct advantages. First, a standard pattern allows the pilot to recognize the need to adjust his approach as he flies through lift and sink and changing winds. Secondly, it’s something you can practice on a regular basis, so you are more likely to be ready for any future engine problem or failure.

The standard pattern should start on downwind leg (you may have entered downwind on a 45 degree entry or a crosswind entry) and at the published traffic pattern altitude. **Note: What I am now going to describe is how I fly my standard patterns. Be advised, I fly pretty close in patterns because I want to be sure I can make the field if I have an engine problem.** Also, after flying a Pitts for almost 30 years (the Pitts has the glide angle of a brick), the close in pattern looks normal to me. It is my opinion that most of today’s flight instructors don’t teach patterns that will insure you can make it to the runway if something should happen. Your mileage may vary, but try flying the pattern that you were taught and pull the power abeam your desired touchdown spot and see if you can make the runway without adding any power at all. Don’t cheat, see if you can make the runway. If not, move your downwind in and don’t fly your base leg so wide. That is another area I feel needs work – base legs that result in finals that are way over ¼ of a mile out from touchdown.

The picture that I look for on downwind is to be close enough so that my desired touchdown point at about a 30 to 40 degree angle below my airplane wing. If you always fly the same airplane, this angle will be more or less depending on that airplane’s power off glide performance. But if you always do it the same, your patterns will be consistent and consistent patterns lead to consistently good landings. This will be closer than the typical landing pattern that most power pilots are accustomed to, but is more like what glider pilots fly.

Note: For actual emergency landings, it’s not critical to be at the same specific altitude on downwind as long as you set up the same angle out (30 to 40 degrees?) on downwind from your desired touchdown point. Your altitude will compensate for the distance. If you’re a little low, you’ll be closer. If you’re a little high, you’ll be farther out.

And speaking of glider pilots, at a recent EAA chapter meeting we had a program on flying gliders and how getting a glider rating was probably the best way to start your flight training. Even for current power pilots, I feel it is outstanding training, so I think every pilot should consider getting a glider rating added to your pilot’s license. Not only will your basic stick and rudder abilities improve, but if you are ever faced with a future engine failure, the glider experience will be a big help for any future off-field landing. Off-field landings are not uncommon in the glider world and are routinely done without any incidents. I got my commercial glider rating (and several diamonds) back in the early 1970s when I was instructing in the F-4 in Arizona. It was great fun and made me a better power pilot when flying my Pitts.





Lightning Skunk Works

Breaking News from Afghanistan: Nick recently notified me that an **Afghani** citizen had applied to become an **Arion Lightning aircraft dealer in the province of Kandahar**. Well, it turns out this individual, a local goat herder, is also a well known Taliban terrorist and drug trafficker. This person, **Haji Jeton Khan Mohammadhasni**, had previously announced to the local Kandahar press that he had studied all available new aircraft and decided on the Lightning because it was more beautiful than 77 virgins and “with a name like Lightning, it had to be very fast”. He also insisted that he wanted to look really cool, like an American infidel fighter pilot.

Haji Buzhir Noorzai, local economic developer and airport manager for the Kandahar Municipal Airport (dirt strip) and agricultural region, stated that he “hopes that **Haji Jeton Khan Mohammadhasni** (known locally as goat boy) and his very capable (for a woman) seventh of seven wives, **Fatima Carbot Gula**, will be able to procure a Lightning dealership for their area of Afghanistan. It will mean such a great economic boon (boom?) for our area, especially at the advertised price of one Lightning selling for five goats, one daughter & 50 kilos of opium (or 1 hectare of poppies).” Buzhir also said, “Finally having a locally based flyable aircraft will greatly increase the usage rate of our airport because at the moment the only regular users of our local airport are two turkey buzzards and an occasional blind bat. I only hope that **Haji Jet**, as he is called by the GHAA (Goat Herders Association of Afghanistan) will be able to learn how to fly. He does a good job of herding goats but has not yet been able to learn to ride a two wheeled bike.”



Haji Buzhir Noorzai



Haji Jeton Khan Mohammadhasni & Fatima Carbot Gula

In Afghanistan, the word **Haji**, when preceding a name, signifies that the person went on a religious pilgrimage, whereas the word **Kahn** is basically a rank among the locals, for example, goat herder, first class. **Haji Jet's** religious pilgrimage was to the shrine of **Porkus Swinus** while he was studying for his Associate's degree in poppy arranging.

Note: As a follow up to the above report, we just learned from intelligence gleaned from a Predator over-flight of the Kandahar area that **Haji Jet** and his instructor, **Haji Buzhir**, were shot down on **Haji Jet's** first training sortie in an old Russian **Antonov kukuruznik** when they accidentally flew over an Afghani wedding party celebrating the nuptials. Also, I was just advised that **Nick** and **Pete** have denied the dealership request.

Technical Tips

Tech Tip #1: Many Lightning owners are selecting the aluminum spinner option that Arion now offers. Other owners that have previously had a fiberglass spinner are switching to the aluminum one when they find it is hard to get the fiberglass spinner to run smoothly. I have had the aluminum one on my aircraft for over a year now and can attest as to how much smoother it runs. Even with lots of time spent trying to balance the fiberglass one I had before, as soon as I switched to aluminum, the engine was much smoother running.

The company that supplies aluminum spinners to Arion is Cummins Spinners. I recently visited their web site (<http://www.cumminsspinner.com/Information.htm>) and found the following hints from their manager, Tim Wilkie of Bendigo Electroplating, on caring for your chrome work. I suspect their hints will also work on the polished spinners as well.

- Chrome, it's great to look at, it's easy to clean, but it's also very expensive to produce. A great chrome job can finish a restoration or new project to perfection. It can be a huge investment or just great for the self esteem.

- What is chrome? Why do you have to treat it with kid's gloves?
"Chrome" is just a generic name for a lengthy process which involves 30+ stages of preparation and three of these stages involve the deposit of metals.

1. Copper
2. Nickel
3. Chrome

Stage one, the Copper (25 microns thick) acts as a primer and retards the formation of oxide (rust), it also acts as an adhesion enhancer for the second stage (Nickel).

Stage two, the Nickel (30 microns thick) acts as a further rust shield, but just as important it is also responsible for the brilliant shine that everyone recognizes in finished chrome.

Stage three, the chrome (2 microns thick) acts as a hard wearing, non-oxidizing finish

Contrary to popular beliefs, chrome is **not water proof**, and that is why it has to be treated with "kid gloves". Chrome, Nickel & Copper are all very porous.

The best way to look after chrome is to treat it like the investment it is.

Three easy steps:

1. Clean with warm soapy water
2. Dry thoroughly
3. Apply a good quality wax polish (the same as you use on your car or bike paint job).

Make this a regular part of your maintenance program and your chrome will last forever.

Tim Wilkie, Manager, Bendigo Electroplating

Tech Tip #2: This tech tip comes in from Bill Strahan (bill@gdsx.com).

I noticed recently that the braided lines going to my oil cooler were very close to one of the pushrod tubes on the rearmost cylinder. I made a note to check that next time the bottom cowl was off, and in doing so yesterday I was shocked to see that they had clearly been vibrating against the tube. The wear was not only visible, but could easily be felt with my fingers. I don't know the thickness of those tubes, but I'd estimate the worn depression was a few thousandths deep.

The lines are now secured from vibration. I know each plane is different, but since these lines are routed similarly on all the planes it's worth making a note and checking next time you have access to the engine. Bill

Tech Tip #3 is from Tex Mantell:

If you want a wheel chock that's easy to store, easy to use, and won't break the wheel pant if the tire goes flat, try this. Go to a home supply store or a boat store and get three feet of 3/4 inch rope. Just whip it around the tire and it works great. See photo:

TEX



This month's last Tech Tip comes in from Craig Sumner, and if you are having problems with your VHF radio reception in your Lightning or any composite aircraft, this tip might have some useful suggestions for you.

Buz,

Thanks for the knowledge and insight that you continue to address in the newsletter! We all benefit from your years of flying experience and just appreciate the personal time that you contribute to our sport!

I am chasing a noise problem with my King VHF radios. The problem/noise is mainly when I am receiving at some distance from an ATC transmission antenna. My transmission to the facilities seems fine, at least nobody has complained. I found the attached article and plan to follow the advice given for composite airplanes. Maybe others could benefit from the article as well!

Best Regards,
Craig

Jabiru J ALL Constructors Manual

Testing>Troubleshooting VHF noise issues

Objectives of this task: To offer solutions for various common noise issues that may affect VHF communications radios. In a metal aircraft the fuselage is usually earthed and thus it tends to shield the radios (VHF, HF) from induced noise, however with the Jabiru being constructed from glass fiber, other techniques must be employed to cure any unwanted electrical noise. This task will offer solutions for

common noise problems. Some aircraft will suffer no noise problems at all while others may have one or several noise problems, so use only what you need from this task.

Noise types

There are 2 types of electrical noise that can affect an aircraft radio:

DC Ripple refers to the quality of the power (DC = Direct Current) that is supplied to the aircraft radio. The power can be filtered with a suppressor type filter to reduce noise. **RFI** refers to radiated energy from various electrical sources such as the ignition or alternator that is induced into the wiring harness and then picked up by the radio. The most useful fix for this is to fit ferrite clamp filters, either as close to the source of the noise as possible or on the radio input coaxial cables.

Equipment

Suppressor type filters

An “alternator suppressor” filter, purchased from an auto electrical supplier and fitted behind the panel between the earth busbar and the avionics busbar, will often clean up any residual DC ripple noise in the power supply that has got past the standard power filter. Use this if you have a small but continuous background noise in your headset.

Ferrite clamp filters

These are readily available in various sizes at electronics supply shops and can be seen on computer monitor cables and some telephone cables. The filtering effect can be multiplied by looping the wire through the filter once (4x) or twice (16x) so if you have sufficient wire length then the more loops the better generally, up to a maximum of 2 loops.

Noise sources and solutions

Flap motor

The flap motor may start to become audible in your headset once it has some use and the brushes have started to wear. This will be heard as a harsh noise when the flaps are being extended and retracted. Fit a ferrite clamp filter to each flap power wire as close to the flap motor as possible and loop each wire through each filter once.

Magneto earth leads

A single wire from each magneto coil is routed back to each MAG switch and is connected to earth to stop the engine. Indication is a light “ticking” noise that speeds up when engine revs are increased. While the engine is running the wires are not earthed and they can radiate noise that can easily be stopped by clipping a ferrite clamp filter onto each wire just inside the firewall, before the multi-pin plug. If there is sufficient wire to loop it once through the filter then do so.

Alternator

The alternator wires will radiate a certain amount of noise, however if you have followed the instructions in the *Post-Paint>Electrical Wiring* task and twisted the pair over the full length, the effect of that twisting will be to cancel the noise at source. If not then unclip the wires from the wiring harness and twist them around each other for their full length.

Strobe

Test for strobe noise by turning the strobes off and back on. If this is a problem, use a ferrite clamp filter around the strobe power supply wiring. Route strobe wiring as far away from the rest of the aircraft wiring harness as possible to prevent induced or “spill over” noise.

Beacon

Test by turning the beacon off and back on. If this is a problem use a ferrite clamp filter around the beacon power supply wiring, with each wire looped through the filter if possible.

Transponder

The transponder sends out a strong signal from its antenna that the radio can sometimes “hear” and the effect is to make VHF transmissions weaker and produce crackling sounds with incoming VHF calls. This is often the cause of reduced VHF range or rapid drop off in quality with distance. Test by turning the transponder off and back on after several minutes. Route the transponder and VHF coaxial cables as far away from each other as possible behind the panel in the cable bundle from the panel down to the console, and fit a ferrite clamp filter over each coaxial cable (VHF, transponder) as close to each unit as possible. Hold the filter in place with a small zip tie around the cable to stop the filter from slipping down if required. Each coaxial cable must be free of any sharp bends because these can cause the earth

shielding in the cable to open slightly and reduce the level of signal rejection, so check your cable routing carefully and correct any sharp bends. In some cases the proximity of the VHF and the transponder units in the panel can cause signal bleed between the units. If possible locate the transponder as far away in the panel from the VHF unit(s) as possible. This signal bleed reduces at the square of the distance so a small change (movement away) is all that is usually needed. In rare but extreme cases relocating the transponder antenna towards the rear of the fuselage, well away from the VHF unit(s), has fixed the problem.

Electric turn and bank indicator (ETI)

The electric motor that runs the gyroscope in the ETI may return noise into the avionics – test for this by turning the ETI switch off and on. If this is a problem consider rewiring the ETI power supply away from the avionics busbar to a separate, different 5 amp circuit breaker.

Microphone noise

If you can hear noise in your headset each time that you press the transmit button, fit a small ferrite clamp filter to each microphone wire in each headset jack. In 4 seaters with 2 VHF comms and 2 antennae some noise will be radiated from the internal antenna in the empennage that may be picked up by the rear headset jacks. Ferrite clamp filters around the microphone wires, with each wire looped through the filter once, will usually clean this up. If the problem persists it may be necessary to make a small earth shielded cover for each set of headset jacks in the rear seats.

Other Items

MAYDAY, MAYDAY, MAYDAY. HELP. SOS.

As I hope you already know, I am always interested in having our newsletter readers submit articles for publication. Just about anything having to do with the Lightning (building, flying, or how you decided on the Lightning, maintenance or technical tips) or any other aviation subject that might be interesting to our readers, will be considered. Have you had a flight to an interesting location? Did someone you took flying really enjoy the experience? Did you have someone walk up to your Lightning and want to know what it was and how it flew? Any and all of this type of story will make great reading for the newsletter. Just sit down at your computer and send me an email telling your story. Some of our best articles come directly from our builders and flyers.

Here are some other suggestions to make your article really special:

- **You can write it as short or make it as long as you would like. And don't worry too much about spelling or grammar – Linda and I will edit.**
- **Send pictures with your article – as many as you like. Again, we can edit the photos.**
- **Add quotes if someone said something about your Lightning - they are pictures made with words.**
- **Give me as much lead time as possible, but I will try to get your article in the next issue.**
- **Remember the five "W's" and one "H" - Who, What, When, Where, Why, and How.**
- **Write your story as if you were talking to our readers. What would you like to tell them, and how would you say it? Write that "conversation" down. It really is that simple.**

For those 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.

Final Thoughts

During a commercial airline flight a commuting pilot was seated next to a young mother with a babe in arms. When the baby began crying during the descent for landing, the mother began nursing the infant as discreetly as possible.

The pilot pretended not to notice and, upon disembarking, he gallantly offered his assistance to help with the various baby-related implements.

When the young mother expressed her gratitude, the pilot responded, "Gosh, that's a good looking baby....and he sure was hungry!"

Somewhat embarrassed, the mother explained that her pediatrician said nursing would help alleviate the pressure in the baby's ears during descent.

The Pilot sadly shook his head, and in true pilot fashion exclaimed, "Wow, and all these years, I've been chewing gum."

And now you know the rest of the story.

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.)

And speaking of chewing gum PLEASE read this carefully and heed the warning.

GOVERNMENT HEALTH WARNING!

DO NOT CHEW AND SWALLOW BUBBLE GUM.

