Hangar Talk

The "Lightning" Newsletter

August 2009 - Volume 2, Issue 8

Dennis Borchardt's – "Lightning of the Month"

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

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

Contents in this issue:

And now, the rest of the news.

Oshkosh Photo Coverage

This year's AirVenture turned out to be one of the best ever. Overall great weather combined with lots of fly-in aircraft and lots of drive-in attendees resulted in large crowds on the flight line and at the display booths all week long. The new Lightning and Jabiru booth location was apparently a great decision as they seemed to have many people stopping by to talk airplanes every time I was able to get by for a quick visit. If you missed Oshkosh this year, start planning now for this premier event in 2010. Note: My thanks to Rick Bowen's "bride" for many of the photos below.

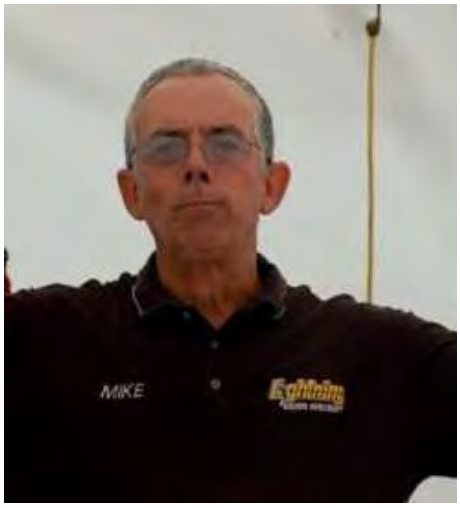
Early in the morning on opening day, the Lightning and Jabiru booth in the main display area already had several potential customers visiting.

Over in the Light Sport Mall these four intrepid aviation gentlemen were ready to answer any question on the Lightning or Jabiru that any potential customer might have. From left to right are "Moostang" Mike Jones, Mark "Possum" Phillips, Dave "Kline Kill" Jalanti, and Dean "Green Landings" Gross.

The First Lady and President, Barb and Pete Krotje.

Greg and Crystal Hobbs, the Arid Zonians.

Dana and Nick Otterback - Ma and Pa Lightning.



Moostang Mike – Ford driver.

Tom Hoffman "selling" a Lightning.

Wisconsin Tom and Arizona Greg – Lightning dealers.

Photos of Pete and Rod Stiff (Mr. Jabiru) briefing the audience at the Jabiru Engine Forum.

The Lightning Forum on Wednesday evening was well received by those attending. On the right, Nick introduces Tom Hoffman, Ryan Gross, and Mark Stauffer (seated).

The Lightning enthusiasts' gathering on Friday was well attended.

Rick Bowen, Nick, and Carl Beatrice.

Ryan talks to Tom Nash from Alabama.

The Buzman.

Mark and Rick – happy to be at OSH.

The Lightning choir warming up just before the tent revival.

Some Lightning flyers:

Buz, Carl & Pat Beatrice, Rick Bowen, and Jim Langley: also happy to be at OSH.

Some Lightning dealers:

Doug K-berg, Tom Hoffman, Greg and Crystal Hobbs, Mark and Nick, and Ryan Gross: also happy to be at OSH.

News from the Factory:

I stopped by Shelbyville on my way to Oshkosh and was able to get the latest news on what has been going on there recently. Below are several short capsules of news to let you in on the latest.

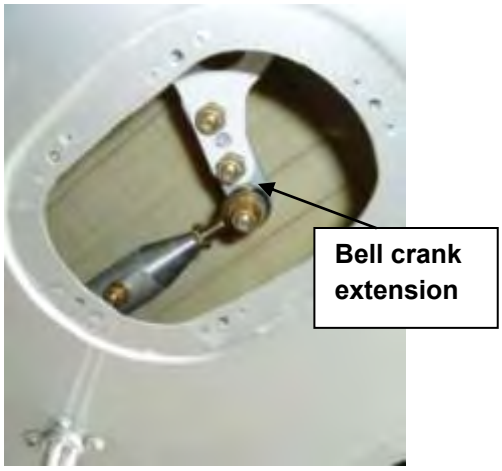
Long time Lightning "employee" retires – One of the original workhorses at the Lightning factory officially retired on 16 July 2009. A retirement ceremony was held at the Midway Café on Friday morning, 17 July, to honor this extremely dedicated and hard worker. This employee served the entire Lightning community by being involved in the original flight test program and then in helping to evaluate all later changes to the design. Overall, we can safely say that without the work and dedication of this pioneer, none of us would have had the pleasure of enjoying any of the great flying Lightning aircraft that have followed this dedicated Lightning celebrity.

Yes, **Nick** has decided to retire the Prototype Lightning, N233AL. It has certainly served its purpose with honor in the past, but as a research and development aircraft, the insurance cost required to keep it flying was huge. Besides, being an R&D-only aircraft, it was by regulation a single seat aircraft, so the money saved can be used to build another aircraft to demonstrate the outstanding flying capabilities of the Lightning design. In any aviation flying program there can only be one first prototype and, as such, it will always be part of the history of the design. **Nick** and I both feel honored to have been able to fly N233AL on so many occasions as part of the Lightning operational test and evaluation program. It remains in my mind as one of the best of the best of all the 100 plus aircraft that I have had the pleasure of flying over the past 43 years.

The Prototype Lightning's engine has been removed and will be sold to raise money for the next Lightning demo aircraft. However, N233AL will be kept on display as an airworthy airframe in case it needs to be recalled to active testing duty. One day, I think it will be in an aviation museum.

N324AL, the current Lightning demo, SOLD – Another piece of Lightning history, the current silver demo aircraft that won Best Composite Aircraft at Sun-N-Fun 2008, has been sold to a new Lightning customer in Kansas. Richard Edzel will be the new proud owner of 324AL and is probably getting his checkout by Nick at I am writing this. Welcome to the Lightning world, Richard. You are going to love your new "jet". It was the second ever demo Lightning and as such was the first Lightning that many of the current builders and flyers were able to fly.

Want to lower your aileron deflection force? – Some recent builders with the long wing tips have wanted to slightly lower the stick force required for roll at the higher airspeeds. Below is a photo of the simple solution that Nick came up with. It is an easy modification to the aileron bell crank and gives the aileron push / pull rod a slightly increased mechanical advantage thus lowering the stick pressure required for roll. In the photo you can see the original holes in the bell crank where the push / pull rod has several positions so you could adjust the roll forces required. By making the extension to the bell crank that bolts to these existing holes, a new connection position is able to provide more mechanical advantage, thus lowering the pressure required for roll. It is an easy and simple solution.



New landing, navigational and strobe lightning – While I was in Shelbyville Nick and Mark showed me the new line of aircraft lighting that they now have available for both kit built and the SLSA Lightnings. The new lights come from AeroLEDs, a company based in Boise, Idaho. As you can see from the photos below they are great looking products and according to their brochure, which I picked up at Oshkosh, they claim to have less drag, less current draw, use only LED "bulbs", and have a 50,000 hour service life. For more info go to: www.AeroLEDS.com

Factory Build Assist Updates:

Congratulations are in order for **John Krizman** of Sacramento, California for having the 43rd Lightning to fly. **John's** Lightning, N104KJ, took to the air on 10 July with **Nick** at the controls. **Nick** reported that with a carbon fiber prop and no wheel pants or gear leg fairings, an RPM of 2850 yielded a true airspeed of 140 MPH.

I remember taking John for a demo flight in 324AL during the Second Annual Lightning Fly-In last year. **John** flew the demo very well and I think decided to build one soon after that flight. John got his inspiration for his Lightning's paint scheme from **Jim Langley's** jet. Another beautiful Lightning.

N104KJ taxiing out for the first flight.

On takeoff roll.

On final approach after another successful first flight. Congratulations, John.

Other News from the factory:

Next build – With the Prototype officially retired and the current silver demo sold, Nick, Mark and Mike will soon start another build. When I first asked if it would be a "go fast" EAB or another SLSA, Nick thought it would probably be an EAB. However, while at Oshkosh he seemed to be leaning towards building a second SLSA LS-1. Could that mean the first LS-1 might be sold? We shall see. But what we do know at this time, regardless of EAB or SLSA, the next demo Lightning will be painted like 325AL (the current LS-1, N325AL) but with blue instead of maroon and the N number will be N326AL.

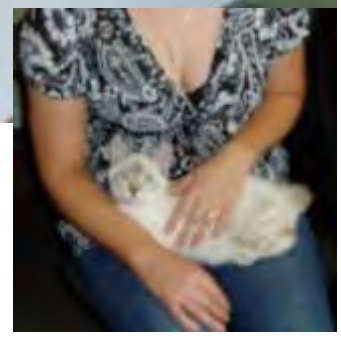
Flight Report on 325AL – I flew a complete evaluation flight on the first LS-1 while I was in Shelbyville on the way to Oshkosh. This flight evaluation also included testing of a new manual leaning mixture system that Nick recently installed on N325AL. I had intended to include this flight report in this issue of the newsletter but because of just getting back from Oshkosh and the time crunch in writing the newsletter you can expect to see it in the September Lightning Newsletter. You can read about the new manual leaning system later in this issue.

Update on Mark's 601XL – The photos below will give you an idea of just how close **Mark** is to taking his airplane project to his hangar at Shelbyville for final assembly. By the time we get to SYI in September for the Third Annual Lightning Fly-In, he should be getting really close. Take a look at his project in person. You will be impressed with the workmanship and attention to detail. Super job, **Mark**.

Panel with wiring in progress.

Beautiful paint scheme, beautiful colors, and another example of outstanding "paint gun" workmanship by Chad.

Lastly – Cleco the office cat was one year old at the end of June.



News from the Dealers:

While I was on my Oshkosh trip I was able to once again visit Lightning North Central at the Brennand Airport in Neenah, Wisconsin. I actually visited the airport twice while I was in Wisconsin – once to meet Stephen Hacker and see his ongoing Lightning project and then again on Friday night before AirVenture started to attend a hangar party that Tom Hoffman hosts annually for his airport buddies and Lightning friends. Sorry, I forgot to take my camera to the party, but I do have some photos of Steve's project which are shown below. Steve has turned his build into a family project and has been ably assisted by his two daughters, one of which, Lesley, is shown below. In a future issue of the newsletter I hope to have Steve write an article about his build process and perhaps also an article by one or both of his daughters, Lesley and Laura, to give a feminine perspective on a family aircraft building project. I think it is wonderful that the family has worked together on their Lightning.

Lesley

Steve's panel ready to install.

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

Dominion Air Services – LS-1 sales, Skip Hartman, Gordonsville (KGVE), VA, 540-832-5515

News from Builders and Flyers:

I received the following excellent article from Bill Browns on 28 June, 2009. Bill built his Lightning with the Lightning North Central team in Wisconsin and it is a beautiful example of an excellent airplane with a super instrument panel.

Here is Bill's very informative article.

I think from a prior correspondence you may have been aware that I have been having problems with the TruTrak autopilot in my Lightning. Well I'm happy to say I finally got the autopilot working. It was something of a long drawn out process involving inputs from a number of Lightning owners, along with some interesting twists and turns, so I decided write down what happened (with pictures) and pass it along for the newsletter.
Bill Browns brownsw@att.net
N716MZ

TruTrak Digiflight Configuration – by **Bill Browns**

I have a TruTrak Digiflight II VS autopilot installed in my Lightning. The VS allows me to dial in a climb or decent rate in addition to altitude hold. I can also slave the autopilot to my GRT Sport EFIS systems for lateral control (but not vertical). By default this autopilot will immediately invoke its altitude hold function when the autopilot is engaged.

For safety purposes I have a separate autopilot ON/OFF switch on my panel, an autopilot circuit breaker on the panel, and a switch on my control stick. The control stick switch allows me to disconnect the autopilot temporarily (hold down the switch, change the direction I'm flying, release the switch and the autopilot takes over again), or tap the switch to release the autopilot permanently. If the autopilot is not engaged holding the control stick switch down for a few seconds will engage the autopilot.

The roll servo is mounted just in front of the spar box and connected to the right side push/pull rod connection using a short push/pull rod. I believe this is the standard installation location for the roll server in a Lightning (left or right side).

The pitch servo was originally installed under the baggage compartment floor behind the passenger seat slightly to the passenger side of the elevator push/pull rod to allow for the bungee cords to be installed for pitch trim. A short push/pull rod was connected from the servo to a bolt passing through the elevator pushrod. This original installation has been significantly modified.

In conducting the initial flight testing with the autopilot (after checking the flight control surface movements on the ground and that the autopilot ON/OFF switch actually turned the autopilot off) I experienced a number of problems with the autopilot holding altitude consistently. I found that the airplane was "porposing" up and down significantly. In smooth air the plane would hold altitude with a slight porposing motion for extended periods of time but would not hold altitude in a turn past 20 – 30 degrees.

I talked to **Mark** at Arion and he gave the name and number of a person at TruTrak who had stopped by the Lightning booth at Air Adventure and looked at a Lightning. I got in touch with him and we talked about the installation of the servos and the configuration of the controller. The first issue he identified was the use of a Pitot/Static tube combination. The pressure sensors in the TruTrak Digiflight II controller are apparently very sensitive and the use of a static port mounted on the wings cause to the controller to sense a change in altitude when the wing moves up or down in a turn.

Another modification TruTrak recommended was changing the attachment of the push/pull rods on the server arms. In order to get more torque and provide more incremental adjustments to the flight surfaces the TruTrak technician recommended the attachment point for the servo push/pull rods be moved to the hole on the servo arm closest to the pivot point.

I also contacted a number of other Lightning owners (**Wayne Lenox and Linda Mathias**) in addition to **Mark Stauffer** at Arion and **Tom Hoffman** the Midwest dealer to compare autopilot experiences. **Linda** and **Mark** had Lightnings flying that flew well with the autopilot engaged for altitude hold (holding altitude through 180 degree turn with no porpoising and with less than 25 ft altitude gain or loss). **Wayne** had the same type of problems I had.

Between the five of us we had four different models of the TruTrak Digiflight II autopilot (II, II G, III VG, II VSG). We began collecting information on the configuration and pitch servo installation of each autopilot. **Linda's** airplane is an early installation where the pitch servo was mounted in front of the wing spar with the pitch servo push/pull rod attached to the control stick assembly at the same point as the elevator push/pull rod. The other four planes had the pitch servo behind the passenger seat attached to the elevator push/push rod.

Wayne and I reconfigured our autopilots. We both disconnect the static line from the controller behind the panel (and blocked it off to maintain the static system for the other instruments). I installed an isolated

static port (this turned out to be a big mistake). We also both moved the attachment point of the servo push/pull rods.

Changing the roll server attachment point was fairly simple with servo mounted in front of the spar box in front of my passenger seat.

The pitch servo on my airplane had been mounted assuming a bungee cord pitch trim system using aluminum rails bonded to the fuselage. A pitch trim tab has subsequently been installed. I decided to move the pitch servo over more in line with the elevator push/pull rod. TruTrak now provides a clamp that goes around the elevator push/pull rod to avoid drilling a hole though the push/pull rod for a bolt which is how the server push/pull rod was originally installed. TruTrak is also providing two fiber pads for bonding to the fuselage to mount the servos.

Since autopilot installation's on Linda's airplane and the Arion demo Lightning were holding altitude well we also looked at their controller configurations. They were very similar. **Wayne** and I reconfigured our controllers to match these configurations. [Table attached below]

Setting	Current	Proposed	Comments
LAT ACTIVITY	3		
LAT TORQUE	12		
BAUD	9600		
BANK ANGLE	LO		
MICROACTIVITY	0		
GPS GAIN	16		
YAW DAMPER	N		
MAG CAL?	N		
PITCH AXIS	ON		
VRT ACTIVITY	4		
VRT TORQUE	12		
MIN AIRSPD	70		
MAX AIRSPD	170		
STATIC LAG	0		
MICROACTIVITY	0		
HALF-STEP?	N		

Wayne and I tested these changes and found little if any improvement in the performance of the autopilot to hold altitude. Very discouraging. At this point there had to be something we were missing. Same servo installations and controller configurations but **Wayne** and I were still having problems.

OK, the next step was to get some pictures on the way the pitch servos were installed. Maybe there was something in the dynamics of the pitch servo installation that was the problem. Was the way the servo push/pull rod installed jamming or twisting the elevator push/pull rod? I received some pictures from **Wayne** and noticed right way that his pitch servo was mounted off to the side similar to how my servo was originally mounted. But my servo had been remounted to align it with the elevator push/pull rod and I was still having a problem.

Wayne decided to install a longer bolt and a bunch of washers on his pitch servo control arm to move the server push/pull rod over to align it with the elevator push/pull rod to see what would happen. The next email I got from a very excited **Wayne** was to inform me his autopilot was holding altitude straight and level and through turns. Wow, great news.

But why was my autopilot still having problems. What was going on here 1) servo push/pull aligned with elevator push/pull rod, 2) same controller configuration, 3) servo push/pull rod moved to the hole on the servo arm closest to the pivot point, 4) static port disconnected from Pitot tube – wait a minute – static port. I had installed a separate static port for the autopilot.

Next trip out to fly, I disconnected the autopilot isolated static port. I took off and got out away from traffic around Chicago. Leveled off and trimmed up the airplane in smooth air and engaged the autopilot. Eureka!!!! Straight and level and turns with no significant porpoising. Unbelievable. And in hindsight the way **Linda's** pitch servo was installed avoids this problem.

Now that I have a working autopilot I have found that the VRT Activity and Static Lag setting seem to have the most obvious impact of the performance of autopilot's altitude hold. Setting the Static Lag to 1 and reducing the VRT Activity seems to reduce the stiffness of the ride with the autopilot engaged. I have also moved the server push/pull rod attachment to the middle hole in the servo arm. This appears to have improved the performance of the autopilot in light turbulence.

Well this has been something of a long story but with a happy ending. Hopefully this information will help other Lightning owners in installing and configuring TruTrak autopilots.

Bill Browns brownsw@att.net

This next message came in from Carl Beatrice on 16 June, 2009.

Saturday, June 13th was a picture perfect day for the semi-annual EAA Chapter 146 pancake breakfast at beautiful Kline Kill Airport (NY1). It is about 24 miles south of Albany, New York, where **Dave Jalanti** has his Lightning and Jabiru dealership. Chef Dave and the rest of the volunteers were working in overdrive mode. He cooked huge, delicious pancakes while others prepared scrambled eggs, sausage, juice, coffee and soft drinks. At last count more than 60 airplanes flew in and it seemed there were at least that many cars, if not more.

Pat and I flew our new Lightning to NY1, where it received many viewers, admirers and questions. I believe ours is the only flying Lightning in New England at this time. We won the prize for flying the

furthest distance (143.5 nm). The weather was ideal, sunny skies temperature upper 70's with light winds.

Kline Kill airport is a really neat very smooth turf runway, 4000 feet long and plenty wide. The surrounding countryside is also very beautiful. If you get up that way be sure to stop in and say "Hello" to **Dave**, the new Northeast Lightning and Jabiru dealer.

Carl also mentioned that the next pancake breakfast at Kline Kill is scheduled for 12 September, 2009. If you are in the area, it looks like a great event to attend and you will see some great aircraft. Notice the antique maroon and gold cabin Waco in the photo above. It reminded me that Joe and Linda Mathias are in the process of restoring a cabin Waco and just returned from the national Waco fly-in. Below is a cabin Waco photo that Linda took at the fly-in and it is a model just like theirs, a Waco YQC-6.

Waco YQC-6 like Joe and Linda are restoring.

The following came in from Paul "Bear" Bryant.

Buz, how have you been? Things are going well here in Clearwater, Fl. Still learning a lot about GRT and the navigation software. The "Jet" is flying great. Still working on a fuel pressure display issue (Nick's helping me), but everything else seems to be working fine.
I thought I'd share this photo with you...
Hope all is well. Take care and fly safely...
Bear
N82PB

Bear cut out a photo of his Lightning and pasted it on a Sun-N-Fun poster. Bear's caption for the poster is "Bear in the Air at SNF", or "Check six, Lightning in the area." I like it.

Flight Safety:

This month I am going to once again "harp" on something that I feel is a real safety of flight situation for many of the pilots that I see on almost a daily basis - large traffic patterns. Heck, make that HUGE traffic patterns. Without pointing a finger or trying to second guess any recent accidents before the final report is out, I think that many power out landing accidents would have had a different outcome if the pattern had been flown close enough to make the runway when the engine quit in the pattern for whatever reason – too low an idle, jerking the throttle back, or fuel starvation in the selected tank, etc. Point is, when you are in the pattern you should be able to make the runway if something happens. If there is any doubt, fly a pattern that is closer to the landing runway. I have suggested in the past that you should practice engine outs by pulling the power to idle from where you normally fly your downwind. If you have to add any RPM at all to make the landing, your pattern is too big. Move your downwind and/or base closer to the runway. And if you happen to fly different aircraft on a regular basis, I suggest getting used to flying the pattern that works for the aircraft with the worst engine out glide performance. Practice this simulated engine out and give yourself the best possible chance for a good outcome in case of any emergency.

Upcoming Events:

11 - 13 September – Jabiru Engine Seminar at SYI.

25 - 26 September - Lightning Fly-In at SYI.

-Note: 25 Sept is Dana's birthday.

13 - 15 November – Jabiru Engine seminar at SYI.

Technical Tips & Engine Clinic:

This month I am going to combine the Technical Tips and Engine Clinic sections into one article as the info covered actually fits in either section as you will see below. In the past several engine clinic articles Pete has covered the Bing carburetor and the automatic mixture leaning capability. As many of you know, Nick and I found out some time ago, through many hours of flight testing and measuring fuel flows at various altitudes and then graphing the results, that the altitude compensating leaning system that the Bing uses works great as long as you are at medium to low altitude (say 5,000 to 6,000 feet and below). However, above that altitude, the automatic leaning is not as efficient and the higher you go for cruise, the less efficient the leaning system works. In an effort to correct this situation, Nick has been studying various methods to correct this and at the suggestion of Bill Strahan, he recently installed a HACman mixture control system on the new LS-1 Lightning, N325AL, after trying that system that Bill had installed on his Lightning, N197RW.

This photo shows Bill Strahan in N197RW. Bill installed the HACman mixture control system in his jet and let Nick try it out. Nick has since put the system in the LS-1.

HAC stands for high altitude compensation and man stands for manual.

Below are Nick's comments and some photos we made of the system components. I will have additional comments on this system next month when I find the time to write the flight evaluation report on the LS-1 that I flew recently while in Tennessee.

We recently got a chance to play with the **HACman** mixture control system from **Green Sky Adventures, Inc.**, that allows manual mixture control of the Bing carb. The unit consists of a valve body with adjustable knob, some plastic line and various barb fittings. It takes vacuum pressure from the vacuum port on the bottom of the carb thru an adjustable valve into the balance tube from the carb to the airbox. The balance tube from the airbox to the carb allows the pressure in the carb to be at the same air pressure as the air coming into the carb. If you can change the pressure in the carb bowl you can change the mixture. This is evident if you forget to hook up the balance line from the carb to the airbox and will cause the carb to run very rich. Using this valve you can introduce a vacuum into the bowl to make it harder for the venturi effect to pull fuel out of the bowl. With the knob adjusted all the way in, the Bing works as it normally does.

System components and hookup diagram.

On the test flight I leveled off at 3,500 MSL (with a DA of 5,000) and set the RPM at 2850. I flew around for 5 minutes to let everything stabilize with the control full rich, or in the normal Bing operating condition. The EGTs were around 1300 degrees. I then turned the knob out a turn or so and the EGTs (in about 30 seconds) came up to 1350. I then fine tuned the mixture knob to get about 1375, so the system was working perfectly. To make sure it wasn't a fluke, I turned it back in and the EGTs all dropped back down to 1300. Great! Then I went up to 9000 MSL (DA of about 11500), again set the RPM to 2850 for about 5 minutes. The EGTs up there were about 1230-1250. I then turned the knob out the same and got them up to 1300; then out a little further resulted in EGTs of about 1350-1375. Impressive. Then, turning it in caused all to go back to 1250 or so. This thing really does work. The fuel flow in this aircraft is not accurately calibrated yet, but the fuel flow definitely did go down as the system was "leaned". I will have to say that at WOT in climbs the system does not do a lot, as would be expected. I think the venturi in the carb is too much for the amount of vacuum you can introduce to compensate. It will only lean about 50 degrees or so at WOT. So I would say get the main jet set right for WOT and then get the needle jet

close for cruise, and then this system will work to fine tune your mixture when you are cruising at the higher altitudes.

Above photos are the system as installed in the LS-1, N325AL.

This thing really works in cruise and that is where you need it. I think I will be getting one to have in our lightning.

Nick Otterback, Arion Aircraft, LLC

Note 1: The HACman Mixture Control System cost is approximately $180.00 and is available from Green Sky Adventures, Inc., 326 Melrose landing Blvd., Hawthorne, FL 32640. Their phone number is 352-475-5625 and the email address is: mail@greenskyadventures.com http://www.greenskyadventures.com

Note 2: If you install this system, be sure to richen the mixture prior to reducing power to descend or closing the throttle. Failure to do so may cause the engine to shut down due to the vacuum increase when the throttle is closed.

Lightning Skunk Works:

As you know the Lightning skunk works team has been tasked with working on advanced or secret (at least initially) projects that are formally called Advanced Development Programs (ADP). We are given a high degree of autonomy and are not hampered by any undue bureaucracy requirements. However, you may not know that we also often have inputs from our own black world intelligence operatives (both overt and covert) that attempt to keep us up on what other ADP teams may be working on. So yes, we do have spies.

Our spies are particularly busy during the Oshkosh convention trying to keep an eye out for any new developments that perhaps we should also be looking at. This year at Oshkosh was no exception and one intelligence report in particular came in to our ADP operations center that had us really wondering what this new development might be. Below are some initial spy photos that show the mysterious "thing" that really had us concerned as to what the competition might be up to. The first photo shows the "thing" still under wraps. The second photo is a little more revealing, but even though you can kind of guess what has been unwrapped, we had absolutely never before seen one of these at any large aviation event and we were concerned that perhaps some new aeronautical capability had been developed for the "thing".

First photo – still under wraps.

Second photo – partially revealing a casket????

What the heck is a casket doing at Oshkosh? Does that thing fly? Is something secret inside?

Oh, now that the casket is open, it makes perfect sense. It is full of ice and beer. Super idea. And you thought some aviator was having his last request fulfilled by making a final trip to Oshkosh.

Other Items:

Do you know where the word "Pitot", as in Pitot tube, comes from?

Wikipedia says that **Henri Pitot** (1695 – 1771) was a French hydraulic engineer and the inventor of the **Pitot** tube. He became interested in studying the flow of water at various depths and was responsible for disproving the prevailing belief that speed of water increases with depth. He developed a tube with a 90-degree bend so that when it is placed in a flowing liquid vertically with the open end directed upstream, the rate of flow could be calculated based on the height of the liquid filling the vertical part of the tube. The height of the fluid column is proportional to the square of the velocity. This discovery led to **Mr. Pitot's** appointment to the French Academy of Science. And now you know why the word **"Pitot"** should always be capitalized! It is a person's last name.

Final Thoughts:

First Thought – If you missed Oshkosh this year, you missed a great chance to see and learn all that this wonderful world of aviation has to offer. One of my observations from this year was that there really were lots of kids in attendance; and I am talking kids of all ages - teenagers to toddlers. It did my heart good to see them walking around or being pushed around in strollers and looking at airplanes. I even heard a young boy say, "When I grow up I want to fly like that". He was watching the afternoon airshow. Overall, I would be willing to bet that no one there was thinking "I really wish I had not come to Oshkosh". So start planning now to be there next year. Better yet, plan to go to Sun-N-Fun in April and then Oshkosh in July.

Second Thought – Maybe it is because I am a veteran (one with combat experience) but I get a warm feeling or even have the hair on the back on my neck stand up when I see our flag, hear the Star Spangled Banner, or watch a missing man formation while taps is playing. It is just who I am and the proud feeling I have for the country we live in. Am I different from other Americans? So, why is it that every year at Oshkosh when the airshow is starting and the jumpers have a huge American flag flying and the Star Spangled Banner is being played, and people are standing with their hats removed, why is it that I always see several people just continuing to walk around as if nothing special is happening? I just don't understand who they are and I want to kick their alpha.

Third Thought – Yes, I do have some hair on the back on my neck.

Final Thought – I really hope to see all of you at the Third Annual Lightning Fly-In this September.

Blue Skies,

Buz Rich

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