

Hangar Talk

The “Lightning” Newsletter

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Gary Bowser's recently completed Lightning on first-flight day.

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A New Lightning Builder and a New Lightning Dealer

Gary Bowser

Hi,

My name is Gary Bowser and I own Arion Lightning aircraft serial #121. We just finished the building process and Nick Otterback is completing its maiden flight. Now I have to drive home, go to work, and not see the plane for over a week. A little bummed, but excited to return.



I built the airplane through the builders assist program at the Arion Aircraft facility in Shelbyville, Tennessee. I've just had the time of my life.

I'd been contemplating a kit project for some time. I even attended a two-day RV builders workshop. It still seemed daunting to me and I was not convinced I could complete a build.

During my research, I discovered the Lightning. It immediately captures your attention. I read all the newsletters more than once (thank you Buz), studied the specs and performance constantly, then devised a way to approach my wife.

Finally, when I couldn't take it any more, I called Nick asking to come see the airplane. Unfortunately the weather wasn't good and I had to return at a later date for the demo ride. What a beautiful, fun, fast, and economical airplane.

When the opportunity came, I convinced my wife to accompany me to Shelbyville. She loved the Lightning! I was totally floored (maybe it was the threat of my getting a Harley that convinced her). I suggested to her, maybe I could start a business out of this. It seemed like it would integrate well with my UPS pilot job (23 years) flying Boeing 757 and 767s.



So I approached Nick with my idea. I'd seen that kind of skepticism before and knew I needed to prove it. Fortunately for me, Nick is a card carrying optimist. I paid my deposit in the fall of 2010 and started construction on January 10, 2011. I completed the kit and Nick flew it for the first time on June 9, 2011. I know the first flight could have come sooner, but my schedule is not as flexible as some. Thankfully everyone at Arion Aircraft were very accommodating. I wonder how far along I'd be with an RV right now—how many rivets do you buck?

I thoroughly enjoyed the Lightning build process. I arrived early Monday morning and we dug right in. The Arion staff members are all upbeat, diligent, “perfectionately” knowledgeable, and just plain fun to be around. The word "NO" was never heard unless I was holding a serious-looking tool. On a scale of 1-10, my skill level is probably a 5-6, although Jason (one of the buildmeisters) might argue that point. I am amazed what I learned and became competent in. The folks at Arion Aircraft bend over backwards to accommodate their customers. The FAA just issued me the repairman certificate.

Concerning the panel design, let Arion do your panel. It worked perfectly the first time it was turned on and is very aesthetic, even though I changed the design more than a few times. (Mark Stauffer was very patient with me.) I wanted the ability to fly light IFR and installed the following items:

- Single 8.4" GRT sport EFIS w/internal AHARS and GPS,
- GRT servos-2,
- GRT EIS,
- Garmin SL30 Nav/Comm,
- Garmin GTX 327 Transponder,
- Zaon panel mounted MRX for traffic info,
- Back-up A/S indicator and back-up TRU TRAK ADI w/GPS,
- The GRT EIS also had the ALT/VS option as back-up, and
- Groetz Aero heated pitot probe.

I left room on the right side of the panel to mount an iPad. I'll use the Bad Elf (Sporty's)

GPS antenna plugged into it, and install Wing X-Pro as my aviation app.



The name of my company is Sky's Open Sport Aviation LLC. I'll be the approved Lightning dealer for Ohio, Kentucky, and Indiana. I live in Louisville, KY and will be hangaring the plane at Bowman Field (KLOU). My web site will be up soon. Initially I will sell LS-1's, as well as kits. Eventually, I'll be able to do builders assist. If you live in any of these states and are contemplating a Lightning, call me for a demo. My E-mail address is gwbrowser@insightbb.com.

A Follow-up Tip for Jacking a Lightning

Carl Beatrice

Sometime ago Linda Mathias wrote a very nice article on her method of jacking up the Lightning wing. My method is similar and I'd like to share it here.

I started with a 1/2" by 2 1/2" hard steel bolt and an automobile floor jack (see pictures). A machinist friend then made me a custom steel rod 1/2" by 2 1/2". This rod or the bolt fits nicely into the inboard side of the main gear axle. Then you simply place the jack to jack the rod, hence the aircraft off the ground.



Caution Required while Working with Aircraft Wheels

Carl Beatrice and Selwyn Ellis

[In March, 2011, a spirited debate took place on the Matronics Lightning email list regarding problems associated with the Matco wheels and brakes used on Arion Lightning aircraft. Selwyn Ellis, Lightning builder and flyer in Australia, started the discussion by describing problems he associated with the equipment. His claims elicited some vigorous responses, essentially arguing that the aircraft owner/builder was at fault, not the company. Meanwhile, Arion's Mark Stauffer reviewed how the Lightning factory worked with the wheels and brakes and concluded any problems were the result of faulty handling of the wheels. In the process, Matco revised its manual to clarify how to install and operate their products. The email list discussion ended at this point.

The fact remains, however, that at least a few problems persist, due to undetermined causes. Thus it seems only reasonable that anyone working with wheels and brakes on Lightning aircraft should be familiar with the debate over this issue and then operate accordingly.

Two short accounts follow below that illustrate the importance and difficulty involved. First, Carl Beatrice describes how things played out for him. Selwyn Ellis reports continued malfunctions and suggests that a potentially more extensive and damaging "cultural" phenomenon may be also at work.]

Carl Beatrice Account:

If you are planning to remove the wheel, I suggest you let the air out of the tire first. Remove the three bolts that secure the brake disc to the wheel half. Then remove the axle nut and wheel.

When re-installing the wheel, there are some very important torque values to comply with. First install the wheel and tighten the axle nut only snug so the wheel rotates freely. Then cotter key the nut.

The 3 bolts securing the brake disc to the wheel need to be torqued to 80 inch lbs. If you changed a main gear tire remember to torque the 3 bolts securing the wheel halves to 99 inch lbs. I cannot over-emphasize the importance of the proper torque on the brake disc and wheel half bolts.

A personal experience that I encountered as well as a few others follows: During my phase 1 testing at SYI, with +/- 14 hours total, while taxiing out for takeoff I heard an audible clanking noise, which caused me to cancel my flight and taxi back to the hangar. I found two of the three bolts that secure the brake disc missing. What to do? Luckily Jason Biggs came to my rescue. No damage, thank God. These were the old style bolts (too long) with Nord-Lock washers, but they bottomed out before torque.

Another time at +/- 100 hrs total time I jacked the aircraft, planning to turn the tires inside out for wear. While removing the right axle bolt, I noticed that it was hard to unthread. But the problem didn't penetrate my brain. When the nut came loose there was a shotgun type explosion as the outboard wheel half and tire shot out toward the wing tip, glancing me in the chest (not hurt). Bottom line: 2 bolts broken, with the third bolt breaking the housing on the wheel half. The torque values came from George Happ, Matco owner, and he feels the reason the wheel half bolts broke was due to under-torque, allowing the wheel halves to slip and eventually cause the problem.

Selwyn Ellis Account Following the Email List Debate:

Following the debate on the list I noticed that nobody has addressed the information I supplied, which was that correctly torqued through bolts break and that the setscrews holding the brake disc to the wheel bottom out in the thread, leaving the joint under-clamped and allowing the disc to fret and possibly break the screws with the potential for nasty consequences.

Matco published a service bulletin on a similar wheel with different disc-to-wheel fastenings because it had bottoming out problems and both Matco and Arion said that the fault did not occur with the lock-wired set screw fastenings on the wheels supplied in the Lightning kit. That is INCORRECT because I know of two instances, in a small sample in Australia, where just this problem has occurred. There are other known instances as Carl's account shows.

I have become a little disappointed at the way the Lightning "community" reacts to identification of possible faults or problems. Unfortunately the way this topic unfolded on the list followed a rather typical pattern: deny the problem, attribute it to error, mention a modification, often without published details. and then hope the issue goes away. Product improvement and, more importantly, safety requires a willingness to objectively examine possible problems, provide information and enable appropriate decision making. This "move along folks, nothing to see here" attitude is worrying.

The flap motor stall issue is going through this process right now. It is through the "invisible modification" stage and is well into the "hurry up and go away" stage.

The Lightning is a fantastic aeroplane, I'm really enjoying mine, but let's not erode trust by pretending it is perfect.

Loss of a Friend: Jim Johannes

Friends,

The Lightning Community lost a great friend in the middle of May. Jim Johannes of Alabama passed away of natural causes. His Lightning N563J if you recall won reserve Grand Champion Light-sport At Sun n Fun 2010.

N563J also made its first flight on December 17th, sharing the same date as Man's first powered flight, something Jim was very proud of. The attached picture here is of the first flight celebration.



The Arion Aircraft family would like to extend our condolences to Jim's family and friend's, he truly will be missed.

Nick

[Nick also sent along photos of Jim with the DAR on inspection day and of Jim's beautiful completed Lightning.]



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