

EVOLUTION *owner's*

# newsletter

October 2011

## Information for the Evolution Owner and Builder

Redmond OR; October 19, 2011

### Catch Up

We've delayed sending this newsletter a few times because things are just always moving too fast and it seems like if we wait a bit, there will be more to say. The last few months have also been jam packed with events, shows, demo trips etc. But, enough of that, it's time to catch up on a few important items.

### Service Bulletin **SB 016-0009** Some background

This SB concerns the strengthening of the nose gear actuator mount and reducing the loads on the firewall in the event of an unforeseen stress due to a hard landing or off-pavement excursion. During such an occurrence, we found some damage to the nose gear actuator's firewall attach point. We approached the "fix" in two ways, one, to reduce the load to the attach point, and two, to strengthen the firewall where the attach point fastens. This affects S/Ns 1 through 35 as aircraft after that will incorporate the changes in the original construction of the kit. The tension strap serves to redirect loads into the engine mount structure and the composite reinforcement

creates a more robust attach point for the remaining loads. You have received email notifications concerning this, the final version of those will be going out October 19<sup>th</sup>. We have approached this improvement with careful analysis and engineering processes, which does take some time. We hope you will find the upgrade to be sensible, light weight, and fairly easy to accomplish.

### Garmin GFC7X Autopilot retrofit

Garmin will begin shipping autopilot components to us on schedule before the end of October. Pricing has been finalized for three stages of retrofit, those where aircraft were pre-wired in expectation of the GFC7X, those where allowances were made for the possible realization of this upgrade, and those where the GFC7X was never considered. If you have not already been contacted or have contacted Mike Fisher regarding your desire to purchase this upgrade (or not) and scheduled the work, you should do so as soon as possible. We will be beginning the first aircraft on 10/24. This upgrade can only be performed by Lancair. Garmin will not allow the installation to be done by, or the parts sold to, anyone else.



## HVAC system optimization

We've been working with several of the early aircraft where the builders have experimented with various methods of integrating the air conditioning with the bleed air heating. The challenge is being able to cool the hot bleed air enough to have a cool cabin during climb out on a hot day, while still being able to achieve a warm, de-humidified cabin at very low OAT's at altitude. Several methods have been tried. A few owners (and our own 927LE) have achieved this with a manual heat mixing valve to regulate the volume of intercooled bleed air going into the mixing box with the conditioned air. This is trouble free and effective but the system is intended to be automatic, so we have kept working to achieve that. Bob Wolstenholme's 698W shows this to be possible through the use of the kit supplied bleed air intercooler, the blocking of the flow-pack cool (plenum) air input, and the latest touchscreen software. We find this airplane responds logically to the temperature set-point inputs on the touch screen, to maintain a cool or even chilly cabin, yet also have a surplus of heat at altitude. We've operated it at -40C, FL270 at night and also at 85F in direct sun with 4 pax with a surplus of cool air. It is possible that in extremely hot OAT ground ops it would be helpful to leave the bleed air OFF until take-off to pre-cool the recirculating cabin air. In addition, we have found more than one aircraft to have had the cabin temperature sensor to be installed incorrectly under the floor beneath the copilot seat, instead of exposed to the cabin free air. In 698W it works well at the lower aft of the center console. Check yours. We are continuing to work on the optimum position for this sensor and will keep you posted on our findings. We are continuing our work in this area and will of course, keep you posted as to our findings.

## Door Fit

You may have found the lower forward corner of the door to have a large clearance between the door and the sill. Various methods have been used to reduce this gap including shims, bodywork, or tape. We have developed a composite fillet that can be bonded and body-worked to the door's frame which changes the curve to facilitate a closer, more consistent gap in that corner. Of course, on a finished door this modification requires removal of the seal to fit and bodywork the fillet. The door frame molds are being changed on future airframes (after #35) to incorporate this feature. This part will be made upon order and sold through KCI. Call for pricing.



## Center Console

The optional center console which provides a housing for the breaker panel and a mount for the Garmin Keypad will be available in kit form very soon and will be included with the optional GCU476 Keypad. We have been durability testing it in 427LE and 698W for some time. It incorporates a fixed breaker box, a 12 volt power point, a small storage box, and mounting for the GCU476 Keypad. It is hinged at the rear and folds up between the seats to permit sliding across to the copilot seat. You should be able to order this kit by Nov 1. The keypad with console kit is priced at \$8300. The keypad

has always been an optional part of the G900X and is not part of, or essential to, the GFC7X autopilot installation. For those not desiring the keypad, the center console kit is available separately at \$800.



## Keep those beautiful Frakes Exhausts shiny!

While attending the Goldenwest Fly In in Marysville CA, this summer, we were approached by a guy, who said he knew a guy, that could make our splotchy exhausts look like fresh plating. "Yeah, right....," we said. Well, the guy called the guy and in about 30 minutes Mike from Metalwax showed up ready to clean the exhausts. With

some skepticism we allowed him to continue, feeling a little like we were watching Vince from Sham-Wow. But miraculously, in about 30 minutes, and without a lot of rubbing, they did in fact look like freshly polished bright

stainless, and turned that beautiful gold again after being run. We purchased various Metalwax products and couldn't be more pleased with the results. In fact, after attending a weekend long event in Monterey, CA where the heavy fog was loaded with salty sea air and our exhausts actually looked brown, I was able

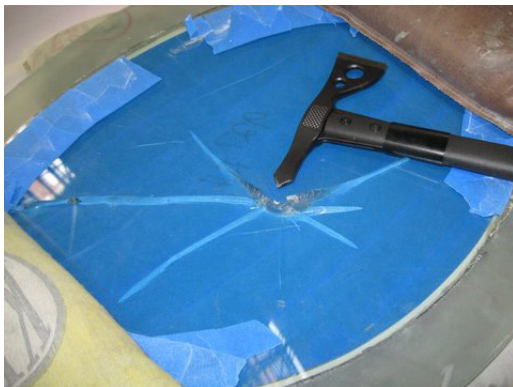


to accomplish the same results in less than an hour with very little effort. If this interests you, go to [Metalwax.com](http://Metalwax.com) and see what else they have to offer. We have had them make a custom exhaust cleaning kit for the Evolution with a mix of products they do not usually package together. This kit, Lancair kit part number LAK-HP1 which includes the High Performance Metal Cleaner, the Polishing Gel and the Aluminum Spray polish (for the spinner) will be in stock at KCI very soon. The kit retails for \$49.95 and is worth every penny. Feel free to call Doug Meyer at Lancair for more information if you have any questions about its use.



## If you ever need to break a window.....

We've found the perfect tool. You may know that Columbias and Cirrus' come equipped with a "crash axe" for emergency egress. The intended purpose is to enable the aircraft occupants to get out of the aircraft if the door(s) are jammed or blocked, such as they might be in



an inverted situation on the ground. While Flying the Evolution for the last couple years, I've felt a bit vulnerable not having the

perfect tool to get through the heavy duty Plexiglass on the Evolution, until now. When at the LOBO Fly-In in Branson I wandered into a great little knife store and saw the SOG FastHawkTactical Axe. This tool comes in two sizes, 19oz. and 32oz. and sports a very sharp point on one side, with a razor edge on the other. I purchased the smaller 19oz. example because, at only 13" long, it easily fits in my Brightline flight bag, and was only \$50.00. To evaluate its effectiveness I ran a test on an Evolution aft window. With what I would call a moderate velocity hit, much like hammering a 10p nail, it easily fractured the window. I'm pretty sure 4-5 blows would have the window cleared out, and am also confident that a windshield could also be destroyed. We expect to have these available from KCI soon. Watch for an announcement on Lancair.com .



## Latest Evolution Build Manual

If you have not downloaded your copy of the latest Evolution Build manual, Rev 4, is now available. For the PDF file, copy/paste the link below into your browser:

[http://www.lancair.com/?option=com\\_content&view=category&layout=blog&id=90&Itemid=316](http://www.lancair.com/?option=com_content&view=category&layout=blog&id=90&Itemid=316)

Due to the large number of additions, we recommend you download the entire manual (600 pages) at this time.

