



www.flylightning.net email: info@flylightning.net phone: 931-680-1781
2842 Highway 231 North, Shelbyville, TN 37160

| SAFETY ALERT | |
|----------------------------|----------------------------|
| Aircraft Safety Alert # | AASA-01-3-2010 |
| Superseded Alert # | N/A |
| Issue Date | 3-20-2010 |
| Effective Date | 3-20-2010 |
| Limitations for Completion | Before next Flight |
| Make & Model Affected | Lightning LS-1 SLSA & ELSA |
| | SN78 thru SN96 |
| Page 1 of 3 | |

1. Applicability:

This Service bulletin applies to all Lightning LS-1 aircraft manufactured by Arion Aircraft, LLC. It also is strongly recommended to builders and owners of EAB Lightning's as well.

2. Background:

Attached are 2 photos. These pictures are taken of the lower control sticks output arms. Specifically, the photos are of the joint where the rod-end bearings from the long aileron pushrods and the mixer rod between the two sticks attach to each stick. We have noticed that in some aircraft the geometry of the lower stick attach location for the push rods will cause the rod-end bearings themselves to bind and not swivel when at full travel. This does not affect controllability of the aircraft, but will cause the push pull tubes to rotate instead of the rod-end bearing. This then may cause the jam nut to back off. The jam-nut loosening and backing off is the issue, not any type of control system lock up or binding.

This potential situation is most apparent in the full aft stick (or full up elevator) position of the stick. The rod-ends themselves are designed to swivel about 12 degrees, but with them bolted to the output arm directly, and with large area washers right next to them to hold the assembly together should the bearing itself fail, this limits the rod-end to only being able to swivel a few degrees. Thus the push pull rod will then turn and possibly loosen the jam nut.

3. Compliance with- Implementation Schedule.

An inspection must be made before the next flight. If the aircraft does not exhibit the problem explained above than no other action is needed. If however the problem exist than compliance with section 4 is required. Notification to Arion Aircraft, LLC before beginning the service is required for the SLSA Lightning LS-1.

Note: It is recommended that after the service has been preformed a periodic inspection of all rod-ends and jam-nuts be done at annuals.



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4. Procedure:

To remedy the issue it will be necessary to use a longer bolt, AN4-16A, to accommodate the two push pull rod end bearings and the washer arrangement shown in the photos. By adding 2 AN960-4 washers (AN4 standard washers) between the rod-end and the output arm, the ball is allowed to move its full range. Also you must always use a washer larger enough to capture the rod-end in the event of a bearing race failure (as mentioned above), so in this case also use a washer between the large area and the rod-end to allow the ball full range on the other side. Note that the front pushrod is attached in the same fashion.

- a. Remove the AN4 bolt that is currently installed using 7/16" wrenches. Make note that the pushrods are connected to the lower hole in the output arm.
- b. Install the AN4-16a and associated hardware in the following order; AN4-16A bolt, AN970-4 washer, AN960-4 washer, push rod end, 2 of AN960-4 washers, stick output arm, 2 of AN960-4 washer, stick mixer rod, 1 AN960-4 washer, 1 AN970-4 washer, AN365-428 elastic stop nut.
- c. Complete for opposite stick assembly.

If this does not remove the rod end binding, than it may be necessary to also put 2 washers between the rod-end and bell-crank at the aileron as well.

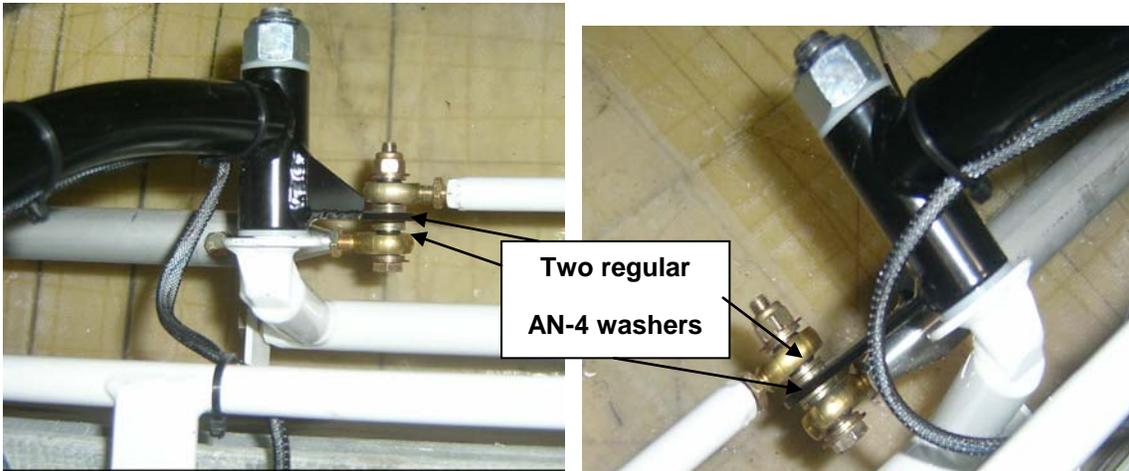
Once finished check for binding by moving the stick to all "4 corners" of stick travel and wiggle the tube by hand while doing so to check for freedom of movement.

5. Level of certification required for SLSA Lightning LS-1.

Any work called for by this letter must be carried out by personnel holding a Light Sport Repairman / Maintenance rating or a licensed A&P mechanic. On completion of the work, the authorized repairman must note the completion of the actions required by this letter in the aircraft's maintenance logbook. This note should specify what work was carried out, reference this Notification, indicate the date of the work and the identity (including license number where appropriate) of the person carrying out the work.

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Note that there are two regular AN-4 washers on the inside of the rod end bearings next to the stick lower push pull tube attach point. Then on the outsides of the rod end bearings, there is one regular AN-4 washer and one large area washer.