

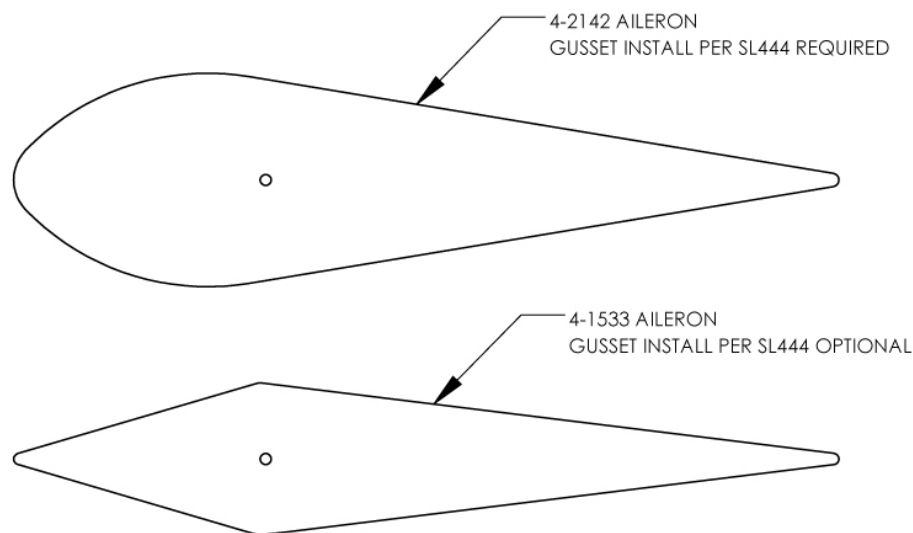
Service Letter: 444 Initial Revision

Date: August 18, 2017

Title: Installation of Aileron Hinge Reinforcement

Models: 8KCAB serial numbers 1116-2012 to 1120-2012 and 1122-2012 to 1170-2017  
8KCAB any serial number with wings manufactured prior to 2017 and 4-2142  
exposed balance ailerons

Description: This service letter provides instructions for the installation of an aileron hinge reinforcement kit. The service letter also provides instructions for the continued airworthiness of wings modified with the reinforcement kit. Affected airplanes can be identified by visually comparing the installed aileron to Figure 1.



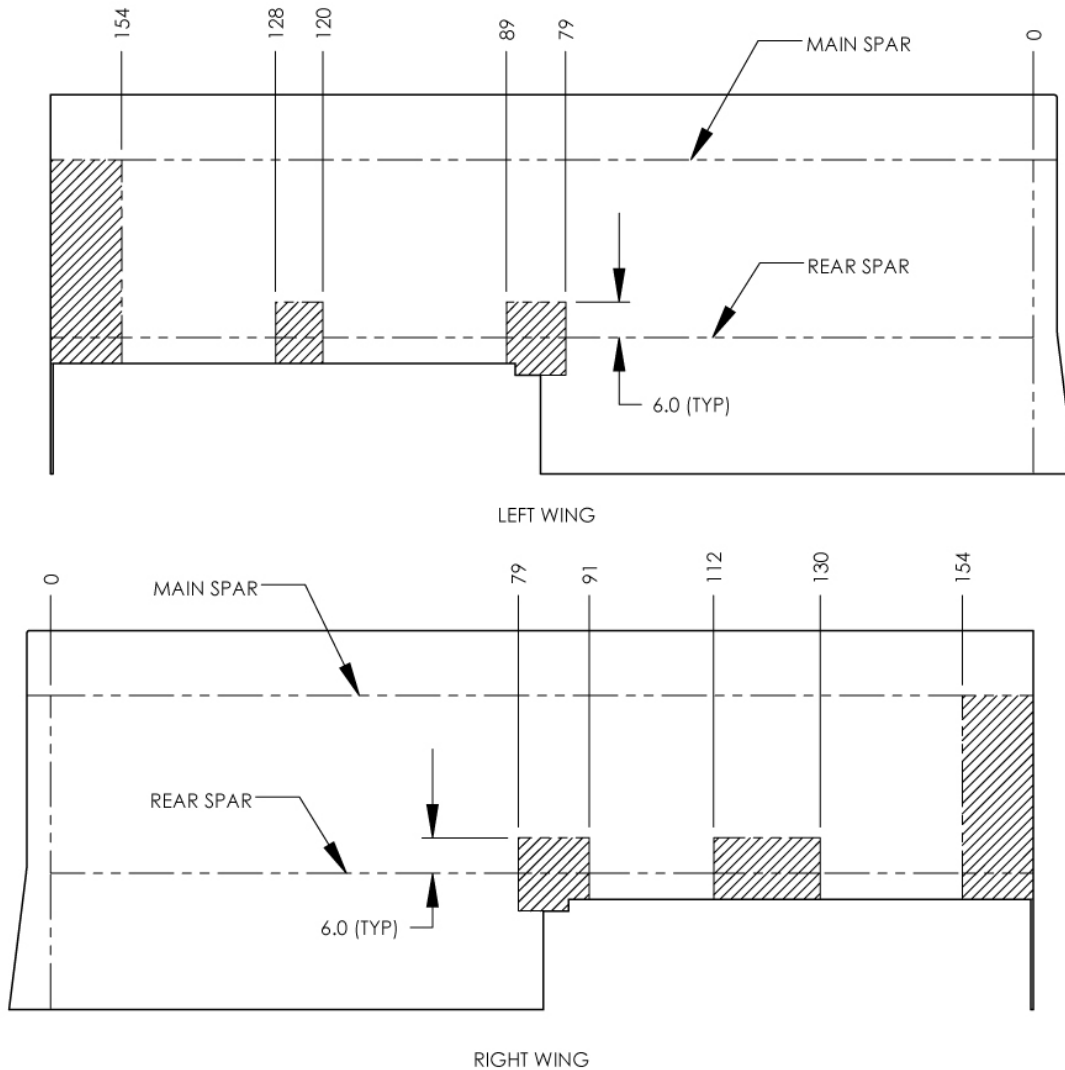
**Figure 1, Aileron Part Numbers**

The inspection procedures described herein are not intended to be a substitute for a properly performed 100 hour / annual inspection. Refer to Advisory Circular (AC) 43.13-1B: Acceptable Methods, Techniques, and Practices: Aircraft Inspection and Repair.

Procedure: Within 400 hours (100 hours for aircraft used for competition type aerobatics) install Service Kit 444 using the following procedure. Several steps refer to specific part numbers, reference the wing frame and installation drawings to identify parts.

1. Remove ailerons per section 6.2 of Service Manual SM-601, rev. A, dated 11-29-2012 or later approved revision.
2. Remove wings per section 6.3 of Service Manual SM-601 rev. A, dated 11-29-2012 or later approved revision.

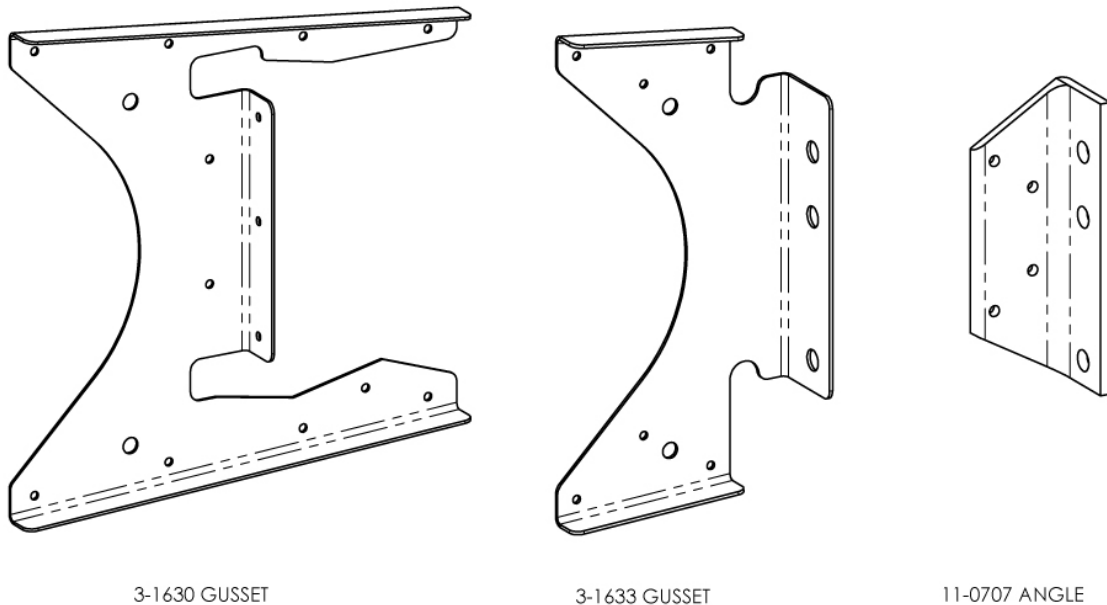
3. Remove fabric covering from wings to gain access to locations shown in Figure 2. Review section 14.2 of Service Manual SM-601, rev. A, dated 11-29-2012 or later approved revision to plan for the required fabric overlap. Alternately the fabric can be removed outboard of station 83 or removed from the wing entirely. To remove fabric, lift finish tapes and remove fabric rivets using #30 drill bit (use drill stop in fuel tank area to avoid damaging the tank).



**Figure 2, Areas that Require Access**

4. Remove 3-1603 bay skin (top and bottom at wing tip) using #30 drill bit. Use a drill stop to avoid damaging spars.
5. Remove 2-1973 hinges and 4-1529 aileron hinge bracket from wing (retain bolts from hinge bracket for installation).

6. Remove and discard 3-1630 gusset, 3-1633 gusset, and 11-0707 angle at locations shown on drawings 4-2183 and 4-2184. Use #30 drill bit or grind the rivet head (or tail) and press the remaining rivet from the rib. Use care to avoid damaging the wing rib and spar.



**Figure 3, Components to Remove and Discard**

7. Install Service Kit 444 components and hinges per drawing 4-2183, Installation - Gussets Left Wing, initial rev., dated 6-19-17 or later approved revision and drawing 4-2184, Installation - Gussets Right Wing, initial rev., dated 6-19-17 or later approved revision. Cleco and/or clamp components during assembly. Pilot holes in new parts are provided. If holes do not align with mating parts, replacement parts without holes are required. Contact the parts department if additional parts are required via email to [aca-parts@tds.net](mailto:aca-parts@tds.net) or phone 262-534-6315.
8. Install 3-1603 bay skins (top and bottom) per drawing 7-1535, Assembly - Wing Frame, rev. N, dated 10-18-07 or later approved revision.
9. Patch or replace wing covering per section 14.1 and 14.2 of Service Manual SM-601, rev. A, dated 11-29-2012 or later approved revision.. Reference drawing 7-1521, Covered Wing, rev. K, dated 9-20-07 or later approved revision for detailed instructions. If recovering entire wing the use of other approved covering systems is acceptable - refer to approval holder for installation instructions.
10. Install wings per section 6.14 of Service Manual SM-601, rev. A, dated 11-29-2012 or later approved revision.
11. Install ailerons per section 6.16 of Service Manual SM-601, rev. A, dated 11-29-2012 or later approved revision. Rig ailerons per section 7.8 of Service Manual SM-601, rev. A, dated 11-29-2012 or later approved revision.
12. Record installation of gussets in the aircraft logbook and on a FAA Major Repair and Alteration Form 337. Sample entries are provided below. Update weight and balance information. Installation of the service kit adds 3.0lb at fuselage station 41.0.

Sample Aircraft Logbook Entry:

- *Installed aileron hinge gussets per SL444, initial rev., dated 8-18-2017 or later approved revision. Reference FAA Form 337 dated \_\_\_\_\_. Complied with AD \_\_\_\_\_, next inspection due at 100-hour/annual inspection.*

Sample 337 Text:

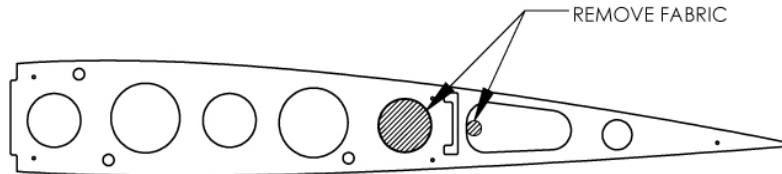
- *Installed aileron hinge gussets in left wing per approved drawing 4-2183, Installation - Gussets Left Wing, initial rev., dated 6-19-2017 or later approved revision.*
- *Installed aileron hinge gussets in right wing per approved drawing 4-2184, Installation - Gussets Right Wing, initial rev., dated 6-19-2017 or later approved revision.*
- *Covered wings per approved drawing 7-1521, Covered Wing, rev. K, dated 9-20-07 or later approved revision.*
- *Applied ESSS series finish to wings per approved specification CF-4, rev. U, dated 10-1-15 or later approved revision.*
- *Installed wings and ailerons per approved drawing 7-1520, Installation Wing and Struts, rev. H, dated 7-15-03 or later approved revision.*
- *Rigged ailerons per Service Manual SM-601, rev. A, dated 11-29-2012 or later approved revision.*
- *Weight and balance updated \_\_\_\_\_.*
- *Instructions for Continued Airworthiness:  
Inspected hinge and hinge components per SL444 initial rev., dated 8-18-2017 or later approved revision.*

**Table I: Parts and Drawings Required**

Part Number	Description	Quantity
SK444	Service Kit	1
4-2183	Drawing -Installation Gussets Left Wing	1
4-2184	Drawing - Installation Gussets Right Wing	1
7-1520	Drawing - Installation Wing and Struts	1
7-1521	Drawing - Covered Wing	1
7-1535	Drawing - Wing Frame	1
CF1-1	Specification - Covering	1
CF-1	Specification - Finish	1
-	Cover and Finish Supplies	A/R

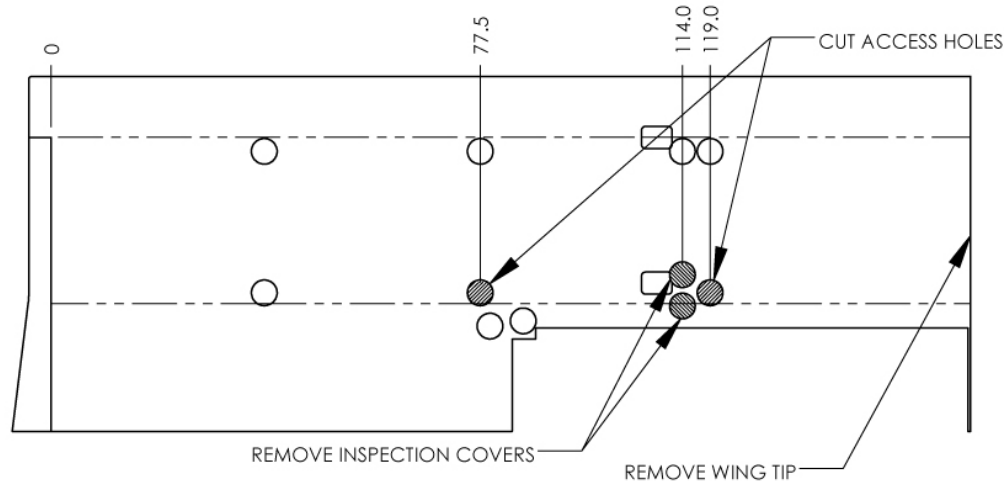
Inspection: Inspect every at every 100-hour or annual inspection

1. Remove left and right wing tips.
2. If not previously opened - remove fabric from the wing tip ribs as shown in Figure 4 (use a soldering iron to open a 1.0 inch diameter hole aft of the rear spar, use a razor blade to open other holes).



**Figure 4, Wing Tip Fabric**

3. If not previously opened - open access holes on the bottom of the wing at stations 77.5 and 119.0 as measured from the wing butt rib (2 locations per wing). The access holes are shown in Figure 5. Opening the access holes is optional provided an equivalent inspection can be conducted (i.e. borescope).
4. Remove inspection covers located on the bottom of at wing station 114.0 per Figure 5.



**Figure 5, Wing Inspection Locations**

5. Visually inspect hinge support, hinge gusset, hinge ribs, rear spar, and spar-to-rib gussets for damage and fastener condition. Use a mirror as required to view opposite side of all components. Inspection of the middle hinge support is difficult but possible by locating the mirror above and immediately outboard of the support.
6. If no damage is found. Reinstall wing tips and install 3-639 covers where access holes were opened or covers were removed. Record satisfactory inspection to SL444, initial rev., dated 8-18-2017 or later approved revision in the aircraft logbook. If access holes in step 3 are not opened also record the method used inspection.
7. If damage is found repair or replace damaged parts. Report the service difficulty via email to [aca-dmir@tds.net](mailto:aca-dmir@tds.net) or phone 262-534-6315.