ALPHA Trainer, ALPHA Electro, ALPHA Club Airbrake retrofit Procedure Instructions

The technical content of this document is approved using Pipistrel internal procedures covering the respective regulatory requirements.

List of issues and alterations

ISSUE	REASON FOR REVISION	AFFECTED PAGES	DATE OF ISSUE
A00	Initial issue	All	24.07.2025
A01	Updated procedure and list of required materials	5,6,8	20.02.2026

Table of Contents

1. Referenced documents

Ref. No.	Document name
[1]	AMM-100-00-60-001 LSA Aircraft AMM
[2]	AMM-160-00-60-001 ALPHA Trainer and ALPHA Club AMM
[3]	AMM-167-00-60-001 ALPHA Electro AMM

NOTE: Always use the latest revision of the documents specified above.

2. Introduction

This PI outlines steps to be followed for replacing airbrakes with linear actuators and respective control unit for Alpha Trainer aircraft.

3. Required equipment and materials

List of required equipment:
- Standard workshop equipment (metric and Allen key set)
- Wing trestles 2 pcs

List of required materials:
- Electric airbrakes replacement kit, P/N 1615700 (one per aircraft) which includes:
    - RH Airbrake assy P/N 1615770200 1 pc
    - LH Airbrake assy P/N 1615770100 1 pc
    - 4x16 INOX screws P/N 5010294 32 pcs
    - Airbrake control PCB P/N 1159606 1 pc

4. Personnel requirements

Properly authorized mechanic/avionic technician.
- For U.S.-registered LSA aircraft: Aircraft Maintenance Technician with appropriate airframe (A) rating
- For Australia: Level 2 maintenance authority or Licensed Aircraft Maintenance Engineer (LAME)
- For New Zealand: AMEL, category; aeroplane
- For Chile: Aircraft mechanic
- For Brazil: Aircraft Maintenance Technician with appropriate airframe (A) or powerplant (P) rating, or both

5. Procedure

Follow the steps detailed below.

1. Make sure master switches are switched off.
2. Pull battery disconnect ring on switch panel (if installed).
3. Disconnect all electric cables in the cabin as well as pitot-static lines. (As applicable.)
4. Remove the wings from the aircraft as per procedure 2.1.1. of chapter 57-10 of [1] or [2] or [3] (as applicable).
5. Place wings on trestles.

6. Remove cover at each wing root by using Allen key. See Figure 1 for reference.
7. Pull out the cable loop and cut the cable-ties.

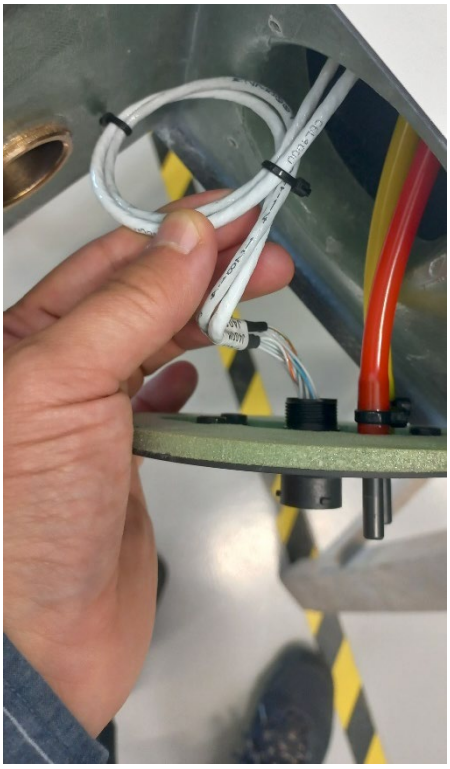

Figure 1 - Cable loop in RH wing (LH similar)

8. Remove airbrake cover from each wing as shown in Figure below.

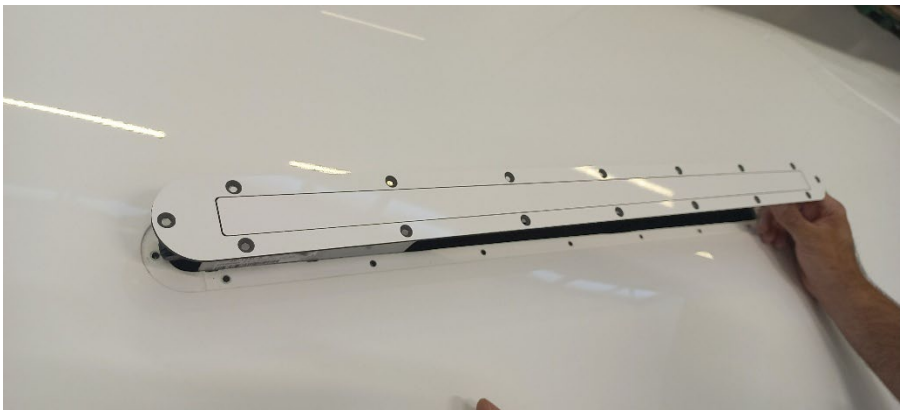

Figure 2 - Airbrake cover removed

9. Disconnect airbrake cable of each wing. Cut the securing cable tie (if installed) and pull the two parts away. See Figure 3 for reference.

NOTE: Do not drop the cable end into the wing, use tape to fix it temporarily to the wing outer skin.

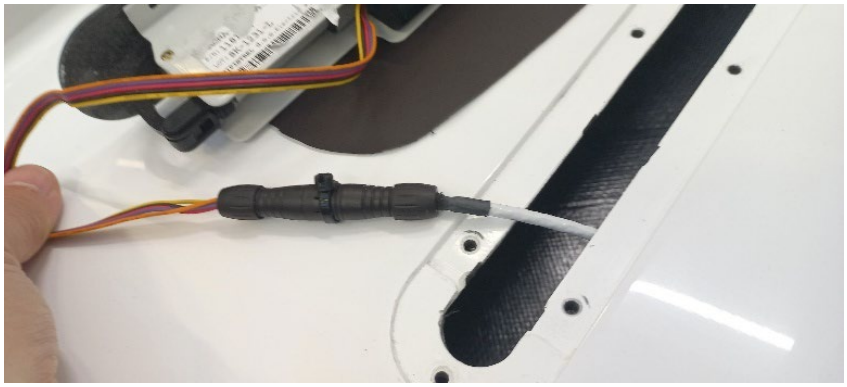

Figure 3 - Airbrake cable

10. Remove speed brakes from aircraft.
11. Remove right-hand seat from aircraft as per 2.1.1. of 25-10 of [1] or [2] or [3] (as applicable).
12. The airbrake control unit can be found on the inner skin, below the roll servo. Disconnect the cables of the control unit and remove it from the aircraft skin. (See the circled area in Figure 4).

NOTE: The control unit is mounted with Velcro. Replace Velcro if necessary. Pay attention to not to damage control unit.

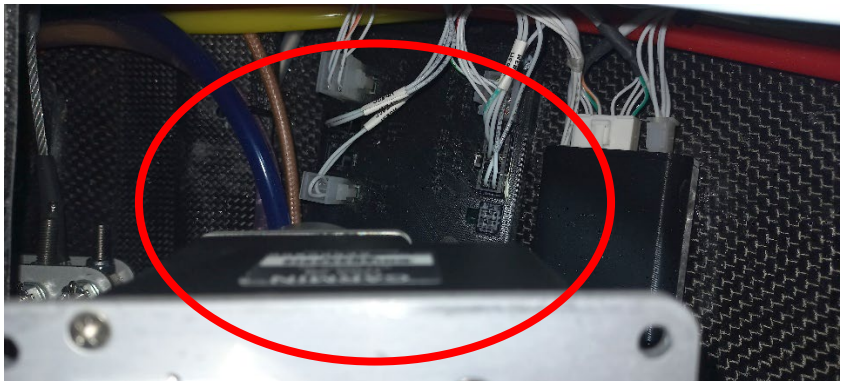

Figure 4 - Position of airbrake control unit

13. Open the airbrake control unit by removing the Philips screws of the cover.
14. Remove Philips screws holding the PCB.
15. Replace the PCB to P/N 1159606 and secure it with Philips screws removed in previous step.
16. Close airbrake control unit with Philips screws removed in step 13.
17. Re-install airbrake control unit into its position with Velcro.

18. Connect the new airbrake units into each wing connector as shown in Figure 5.

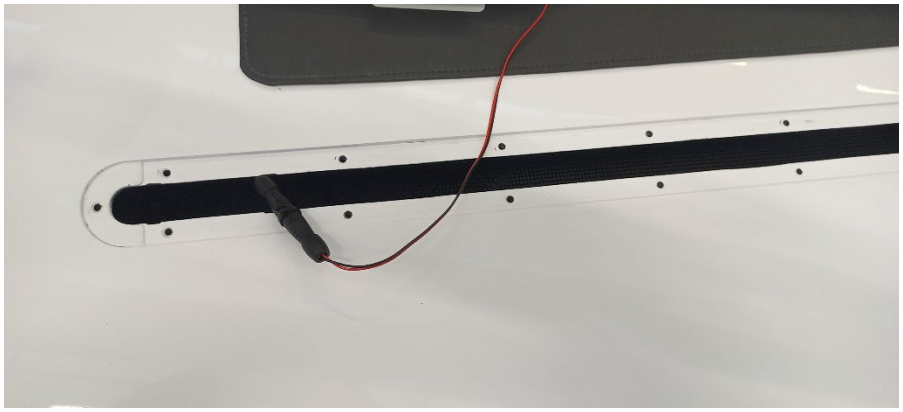

Figure 5 - Attachment of airbrake cable.

19. Secure connection with cable tie.
20. Push the airbrake unit gently into the cutout hole. If it is too tight, abrade a few mm from the edge of the cutout hole of the wing with sandpaper.
21. When the airbrake cover contacted the wing surface, mount it with the Allen screws removed in step 8. Pull gently the cables to the direction of the wing root. Make an ample service loop as per Figure 6. When a loop is made, secure it with cable ties. (2x, as shown in Figure 6)

Figure 6 - Installation of cable ties before closing wing root cover

NOTE: When an ample service loop is made, wings won't needed to be removed at next airbrake service and/or replacement.

22. Close wing root cover by using the Allen screw removed in step 5.
23. Repeat the steps 18-21 above with the other wing.
24. Re-install right-hand seat as per 2.1.2. of chapter 25-10 of [1] or [2] or [3] (as applicable).
25. Re-install wings as per procedure 2.1.2. of chapter 57-10 of [1] or [2] or [3] (as applicable).
26. Perform post-installation checks, check for loose items.
27. Re-connect battery switch (turn reconnect lever) on the firewall electric board.

CAUTION: Check for magnetos are off. Do not rotate propeller.
CAUTION: When testing airbrakes, do not grab the airbrake cutout!

28. Test the airbrakes. Engage master switches.
29. Switch airbrakes switch from “AUTO” or “RETR.” status to “EXT” status.
30. Check all airbrakes are deployed and “STATUS” led is not blinking.
31. Move switch back to “AUTO” or “RETR.” status.
32. Check all airbrakes are retracted and “STATUS” led is not blinking.
33. Move switch to “AUTO” status.
34. Move flaps to “+2” position.
35. Check all airbrakes are deployed and “STATUS” led is not blinking.
36. Move flaps back to “+1” or “0” position.
37. Check all airbrakes are retracted and “STATUS” led is not blinking.
38. Disengage master switches, ensure all lights are off.

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