



# SERVICE BULLETIN

CK-SB001

Rev A

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**Cub Crafters, Inc. Considers Compliance Necessary for Continued Airworthiness**

**EFFECTIVE DATE:** This SERVICE BULLETIN is effective January 30, 2012.

**SUBJECT:** CONTROL SYSTEM UPGRADE.

**MODELS AFFECTED:** All CCK-1865 WITH FUSALAGE KITS SHIPPED PRIOR TO 2/17/2012

**COMPLIANCE TIME:** WITHIN 10 FLIGHT HOURS.

**PURPOSE:** TO INCREASE CONTROL SYSTEM SECURITY.

**WARRANTY:** ALL AIRCRAFT WILL RECEIVE PARTS (IF NEEDED) AT NO CHARGE.

**INSPECTION:** Inspect the torque tube before ordering parts. Using a flashlight inspect the torque tube thickness at the front mast. If it is determined that the torque tube thickness is .035", follow the directions in Section 1 and 2. If it is determined the torque tube thickness is .058", skip Section 1 and go directly to Section 2.

**PARTS LIST: SECTION 1**

PART NUMBER	DESCRIPTION	QTY
AN380-2-2	Cotter Pin, 1/2	3
AN380-2-3	Cotter Pin, 3/4	3
CR3243-5-4	Rivet, Cherry Max, 5/32 x 1/4	8
Loctite 680	Retaining Compound, 10 ml	1
SC31065-001	Grommet	1
SC31065-003	Grommet	1
SC92101-001	Torque Tube	1
TC9105-001	Snap Ring	2

**PARTS LIST: SECTION 2**

HDW-HIX-3/8	Heat Shrink	12"
HDW-HIX-1/2	Heat Shrink	5"
MS35489-35	Grommet	1
SC80005-001	Front Stick Reinforcement	1
VP6007-003	Solder Sleeve	6

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#### INSTRUCTIONS: Section 1

#### For aircraft with .035 wall torque tubes:

1. Remove the elevator inspection covers. Loosen the top elevator cable turnbuckle and remove the top elevator cable from the elevator horn.
2. Remove the triangular belly panel and teardrop cover panel on the boot cowl. Disconnect aileron cable from the bottom of the aft torque tube mast by removing the center fastener from the link underneath the floor, keeping the aileron cables connected.

#### NOTE:

If autopilot is installed, remove linkages connected to torque tube and cables.

#### NOTE:

Do not unrig the aileron.

3. Disconnect the front elevator cable pulley hardware and retainer. Remove the pulley.
4. Remove the front block bolts and slide the fairlead bracket aft until it can be easily handled. Remove the snap ring from the grommet and slide the grommet out of the bracket. Cut and remove the grommet. Slide the cable through the bracket.
5. Remove snap ring from the grommet installed on the aft torque tube mast. See Figure 2. Slide the grommet out, cut and remove the grommet. Slide the cable through the aft torque tube mast.
6. Disconnect the elevator pushrod from both the forward and aft control sticks.
7. Remove the elevator pushrod by sliding it out the aft end. Inspect and set the pushrod aside.

#### NOTE:

Elevator pushrod **MUST** be removed prior to the next step.

8. Carefully cut the torque tube by removing the rear block plate and top half of the block, sliding the bottom block forward and cutting close to the aft mast. Slide out both pieces and remove from the aircraft.
9. Remove the four rivets attaching the aft torque tube mast to the torque tube. Grind the rivet head enough to allow the lock ring to disengage. Knock the center pin out using a punch without distorting the fitting. Drill the head of the rivet off. Knock the remainder of the rivet through the hole with a punch.
10. Drill out the rivets on the forward torque tube mast using the same manner as described in Step 9. Discard old torque tube.
11. Set the new torque tube, the forward and the aft mast on a level surface outside the aircraft. The surface must be such that the masts rest squarely against the surface.
12. Assemble the new torque tube, the forward mast, and the aft mast as shown in Figure 1.
13. Match drill the torque tube to  $\text{Ø}.176\text{''}-.180\text{''}$  using the existing holes in the masts. Ensure the masts are 22.885" apart, edge to edge as shown in Figure 1.



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- 14. Clean the forward mast and the new torque tube with isopropyl alcohol.
- 15. Apply the retaining compound, Loctite 680, to the outer surface of the new torque tube where it will contact the forward mast.

**NOTE:**

The retaining compound has a 10 min. work life.

- 16. Install, as removed, the forward mast onto the torque tube by installing four (4) CR3243-5-4 rivets before the retaining compound dries.
- 17. Clean the torque tube of **ALL** retaining compound that squeezed out from the forward torque tube mast installation.
- 18. Apply grease to inside of blocks.
- 19. Install the torque tube into the aircraft, as removed, so the forward torque tube mast butts up against the forward block. Refer to Figure 2. Ensure both masts butt up against their respective blocks. Do not install hardware at this time
- 20. Remove the top half of the aft block. Slide the lower portion forward to gain clearance around the torque tube.
- 21. Apply the retaining compound, Loctite 680, to the outer surface of the new torque tube where it will contact the aft mast.

**NOTE:**

The retaining compound has a 10 min. work life.

- 22. Reinstall, as removed, the aft mast by installing four (4) CR3243-5-4 rivets before the retaining compound dries.
- 23. Clean the torque tube of **ALL** retaining compound that squeezed out from the aft torque tube mast installation.
- 24. Reinstall the top half of the aft block, as removed.

**NOTE:**

Reinstall blocks **ONLY** when all retaining compound has been removed.

- 25. Reattach the elevator pushrod and cables to the forward and aft control sticks, as removed, using one (1) each MS20392-3C19, AN960-416L, and AN380-2-2 at each location.
- 26. Verify the control sticks are parallel to each other; if they are not then contact Cub Crafters, Inc.
- 27. Feed the elevator control cable through the aft mast and attach the new grommet and snap ring, as removed in step 5.
- 28. Reattach the linkage to the aft mast, as removed, using the following hardware: AN23-10, AN960-10L (3X), AN310-3, and AN380-2-2. Refer to Figure 3.
- 29. Feed the elevator cable through the bracket and attach the new grommet and snap ring as removed in step 4.

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**30.** Reinstall the pulley, as removed; ensuring the control cable is pulled through the pulley cover. The hardware stack is shown below:

1. Bolt, AN5-13
2. AN960-516L (washer)
3. floor wall
4. inner washer stack
5. pulley
6. inner washer stack
7. floor wall
8. AN960-516L (washer)
9. Castle nut, AN310-5
10. Cotter pin, AN380-2-3

**NOTE:**

Inner washer stacks are equal.

- 31.** Reattach the elevator turnbuckle to the elevator horn, as removed, and tension the cable to 60 lbs. Remove all bottom inspection covers on the fuselage as the cable is tensioned; pay particular attention to the guide blocks aft of the bottom triangle panels. Ensure proper alignment of the cable within the guide block.
- 32.** Reinstall the torque tube clamp as removed (autopilot only) tighten it around the tube using AN3-3, AN960-10, and AN365-1032A hardware then match drill to the tube and rivet it using a CR3213-4-3 rivet.
- 33.** Reinstall all inspection covers that were removed.
- 34.** Wait 24 hours for the full curing of the retaining compound to occur.

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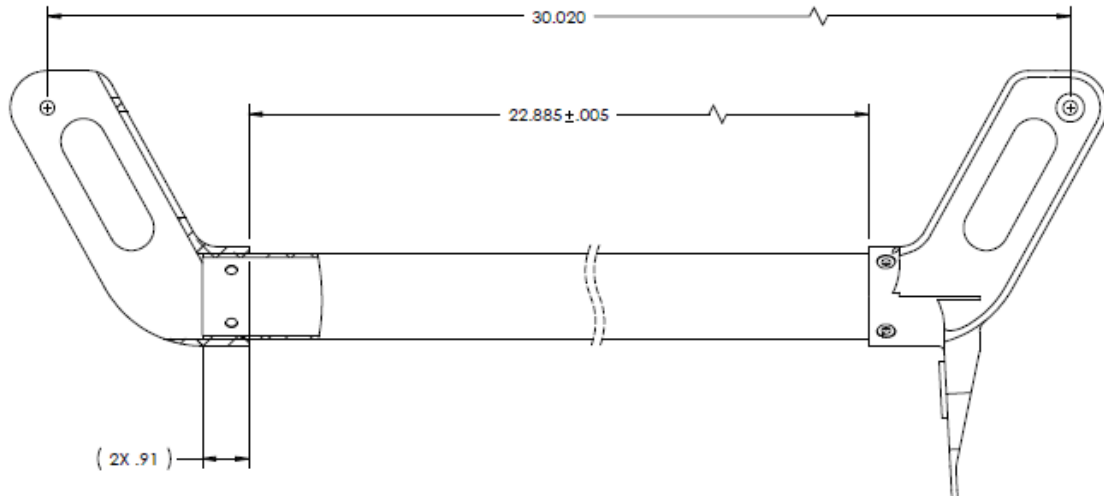


Figure 1 – Torque Tube Placement

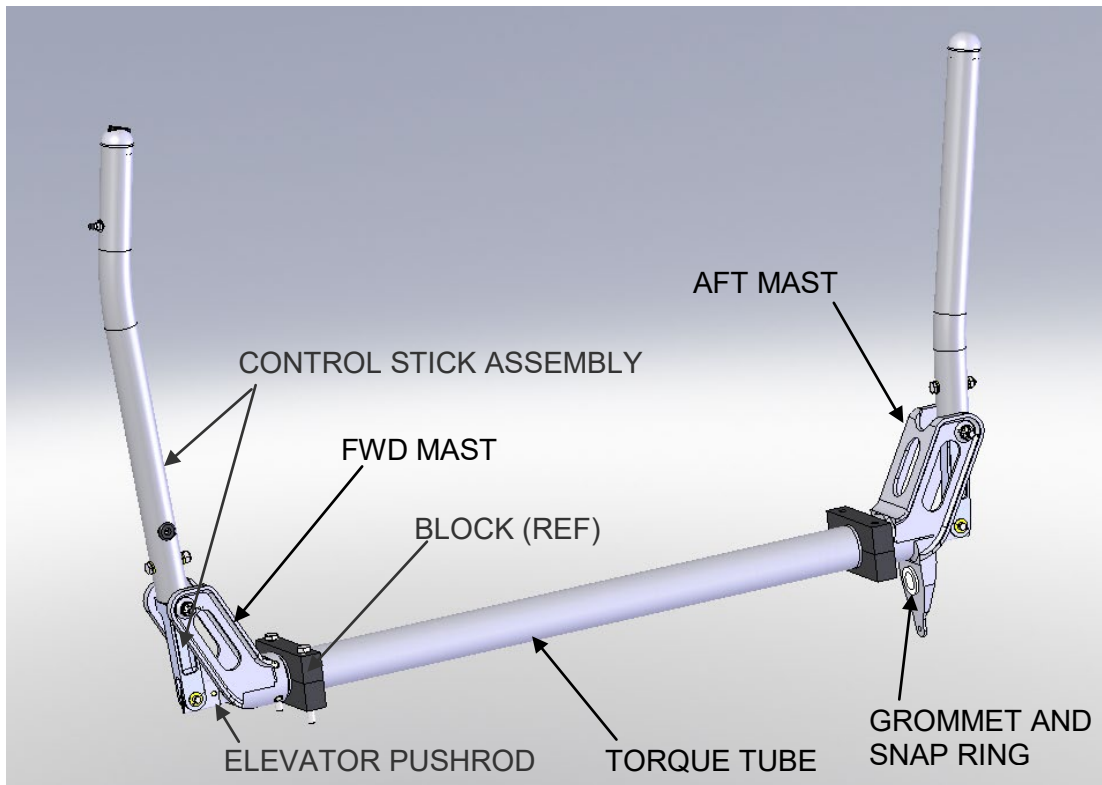
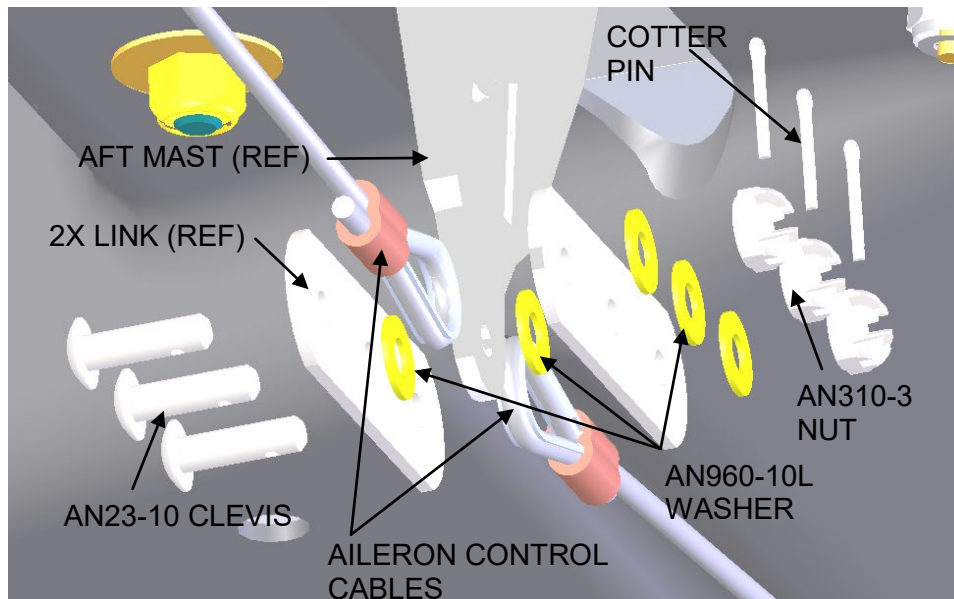


Figure 2 – Torque Tube Assembly

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**Figure 3 – Link Hardware**

35. Verify all control surface deflections and proper control surface operation per Section 40 and Section 63 of the Finish Manual prior to next flight.
36. Continue to Section 2.



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**INSTRUCTIONS: Section 2 (FOR ALL AIRCRAFT)**

1. Remove the bolt from the bottom of the front control stick and lift the stick off. Disconnect the electronic trim wires as described below:
  - a. Label the wires on both sides of the intended cut, then cut all six wires staggered (1 inch stagger) on the stick side of the connector or if there isn't one starting 1.5 inches past the seat base.
  - b. Feed the wires through the hole into the center of the control stick so that the wires do not protrude out the side of the stick.
  - c. Remove the grommet from the control stick.
2. Mark off the bottom four inches of the stick and tape the area above.
3. Sand the bottom four inches lightly until the stick reinforcement, SC80005-001, slides on. Remove as little material as possible.
4. Install the reinforcement onto the front control stick; ensure that the trim wire holes line up between the stick and reinforcement.
5. Feed the wires back through the stick.
6. Install the supplied grommet, MS35489-35, into the hole to protect the wires.
7. Slide on the heat shrink, leave off the ½" heat shrink if no connector present.
8. Install the solder sleeves, VP6007-003, and heat shrink per AC43.13-1. The 3/8 inch heat shrink covers the solder sleeves and if present the ½ inch heat shrink covers up the connector.
9. Reinstall the control stick in the same manner it was removed.
10. Make a log book entry "Complied with CK-SB001".

If you are no longer in possession of this aircraft, please forward this information to the present owner/operator and notify Cub Crafters, Inc. Contact the Customer Service Department at:

Cub Crafters, INC.  
1918 S 16th Avenue  
Yakima, WA 98903

1-(509) 248-9491 or 1-877-484-7865  
support@cubcrafters.com

Please include the aircraft registration number, serial number, current name, and address of the owner and/or operator.