

Advisory

Date: March 17, 2013
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Subject: Mandatory Modification
CX4 Rudder Cable Replacement

Thatcher Aircraft, Inc.
1020 E. Jordan Street, Unit A
Pensacola, Florida 32503
850.715.4539
thatchercx4@cox.net

Overview:

The rudder push pull cable, part number A-920, also known as a Teleflex cable, broke at the end of the aft flexible joint of the sleeve due to the work hardening of the cable strands due to the back and forth action of the rudder. This is a safety of flight issue, and the cable must be replaced with a new designed rudder control system as follows:

Parts required:

28 ft.	Stainless Steel Cable, 1/8" 7x19 (Aircraft Spruce Part # 05-04300)
4	Thimbles, AN100-C-4 (AN100-C-4)
4	Wire rope Nico sleeves (MS51844-44)
21 ft.	3/8" OD nylon tubing, NNR-6-075 (05-01012)
2	Bolts, AN4-7
2	Nuts, AN310-4
2	Bolts, AN4-7A
2	Nuts, AN365-428A
2	Springs, 1/2" x 9" x.054 (Local Hardware Store)
A/R	Angle, 6061T6, Rear Rudder Stop, 1-1/2" x 1-1/2" x 1/8" x 5"
A/R	Bar, 6061T6, Cable Extension, 1/16" x 3/4" x 1-1/2"
4 pcs	Heat Shrink Tubing, 1/4" x 2-1/2"
1	Swaging tool (12-12000)

Instructions:

1. Drill off the left fuselage side panel from F10 to F8, remove all 4 of the inside side panels and the front rudder pedal inspection plates if installed, or the fuel tank. The elevators and the stabilizer may need to be removed if you can't get to the nuts that hold the Teleflex cable clamps.
2. Secure the rudder pedals in the neutral position, and secure the fore and aft movement of the pedals before removing the old control cables in order to end up with the same pedal angle position.
3. Remove the Teleflex cables and keep the hardware.

4. Locate the approximate position of the long brake pedal pivot bolt on the outside of the plane. Secure tape at that point and tape a straight line to the rudder horn on the outside of the plane.



5. Using that line as a reference, drill 7/16" holes in the fuselage bulkheads keeping in mind that a straight shot to the rudder horn is what you want. Try to hold all bends to about 3 degrees.

6. Cut the opening in the skin aft of F10, and install the nylon tube through the fuselage from F5 to F10.

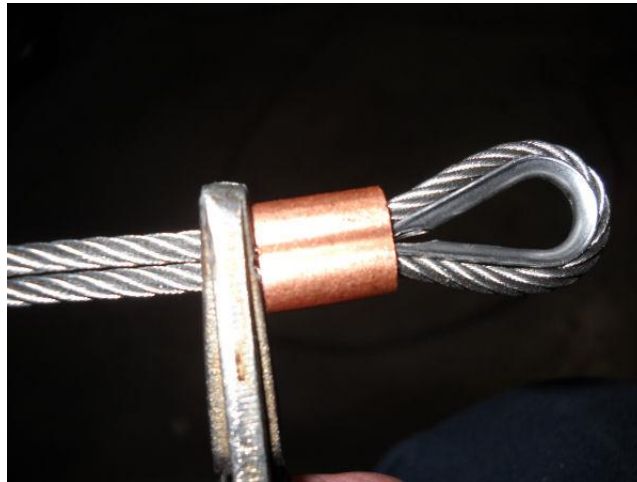


7. Using the old rear Teleflex cable clamp, secure the nylon tube as shown aft of F10.



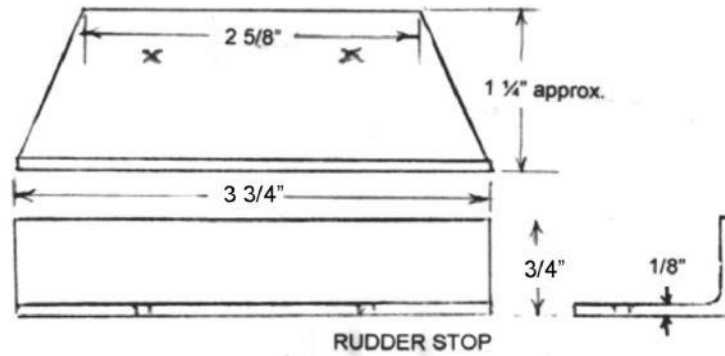
8. Cut two 1/8" 7x19 cables 166" long. Use masking tape over the cut to keep the cable from coming apart, and cut with a Dremel tool with a cut off wheel attached. Slip a piece of 1/4" heat-shrink tubing over the cable.

9. Make up one end of the cable as shown in the photos below. A cable swager can be bought at Aircraft Spruce for about \$19.00 (P/N 12-12000). Make three swages per Nico sleeve.

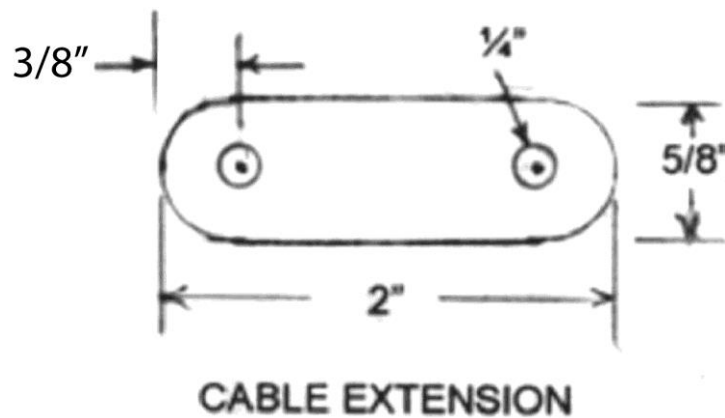


10. Attach the cable at the rudder pedal brake pivot bolt and thread it into the nylon tube until it comes out the rear.

11. Make the rudder stop from the drawing below, and install using the two bolts that secure the tail wheel spring or tail skid. Adjust the stop for 25 degrees left and right.



12. Make four 2" cable extensions from the drawing below using 1/16" 6061T6. Install as seen in the photo with AN4-7 bolts at the horn and AN4-7A bolts at the thimble. Note: The extensions may be made longer or shorter as necessary.



13. With the aft cable end assembled and clamped with vice grips, check for neutral rudder and neutral rudder pedals. Swage the sleeves three times each.

14. Install the springs on the brake pivot bolt on the outboard side of the rudder cable. Attach to firewall angle.



15. Repeat steps to replace opposite rudder cable.