Aileron/Rudder Hinge Repair Kit Information

The purpose of this kit is to effectively prevent additional wear on the hinges and thereby circumnavigating a time consuming hinge repair down the road. Several years ago Mike Melvill (and others) noticed the hinges were getting loose and sort of rattled. They discovered the hinge hole was wearing and not the pin that holds the two halves together. It was obvious the hinge would fail altogether sometime in the future; therefore a fix of some sort was needed.

To make a long story short, Mike found some Teflon tube the same diameter as the hinge pin and a very thin rod to fit in the tube, this combination was then placed in the hinge hole. The bottom line is that there has not been any additional wear on Mike's hinges for the last several years.

This Hinge Repair Kit will work in an already worn hinge, but just how worn out (larger I.D. of hinge hole) remains a question we can not answer. We believe the Teflon tubing supplied to you will wear proportionally to the amount of space between the tube and the hinge. In other words, the larger the hinge hole, the sooner the Teflon will wear out. After more than 17 years there has been only 2 aircraft with approximately 2,000 flight hours where new kits had to be purchased.

However, the hinge will not continue wearing as long as the Teflon is intact, but, there is a point where the hinge is TRULY UNSAFE and it should be replaced.

If you are in doubt about the health of your hinges, please call or write your aircraft designer or condition inspector for further guidance. Please don't take any chances - these aircraft may be difficult to fly without one of the ailerons.

The Hinge Repair Kit is intended for use in the following part number hinges:

MS20257-P2, -P3, -P4, -P5	looped Al piano hinge
MS20001-P2, -P3, -P4, -P5, -P6, -P9, -P10	extruded Al piano hinge

These hinges are called out for the following aircraft:

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rev F Oct/25/20

A/C	S/N effectivity	Location(s)	Notes
AeroCanard SB/FG/SX	all	ailerons, rudders	
Berkut 360/540	all	ailerons, rudders	
Cozy III	all	ailerons, rudders	
Cozy Mk IV	all	ailerons, rudders	
Defiant	all	ailerons, rudders	
E-Racer	TBD	TBD	
Europa Classic	all	ailerons, rudders	D
Europa XS	all	ailerons, rudders	D
Glasair TD	all	ailerons, elevators, rudder	B
Glastar	all	ailerons, rudder	
Lancair 200/235	all	ailerons, elevators, rudder, gear doors	C
Lancair 320/360	all	ailerons, elevators, rudder, gear doors	C
Long-EZ	all	ailerons, rudders	A
Pulsar	all	ailerons, elevators, rudder, gear doors	
Solitaire	all	ailerons, rudders	
VariEze	all	ailerons, rudders	E
Velocity XL	all	ailerons, rudders	
Velocity 173 LW	all	ailerons, rudders	
Velocity SE (FG & RG)	all	ailerons, rudders	
Velocity XL (FG & RG)	all	ailerons, rudders	

Notes:

A The kit is supplied with enough material to repair either the High Performance or the standard rudder hinges.

B Flap hinges are not included in the standard kit, order additional material for them.

C Lancair Mark II Tail models don't use MS hinges on the elevators or rudder.

D Both Trigear and Monowheel versions.

E This assumes the RAF VariEze plans addendum (April 1977) to install ailerons has been complied with.

NOTE: This repair can be used for any MS hinges that are installed: gear doors, drag brakes, oil check doors, etc. Installation on certificated aircraft (for oil check doors only) may be classified as a "minor repair" or a Form 337 may be required.

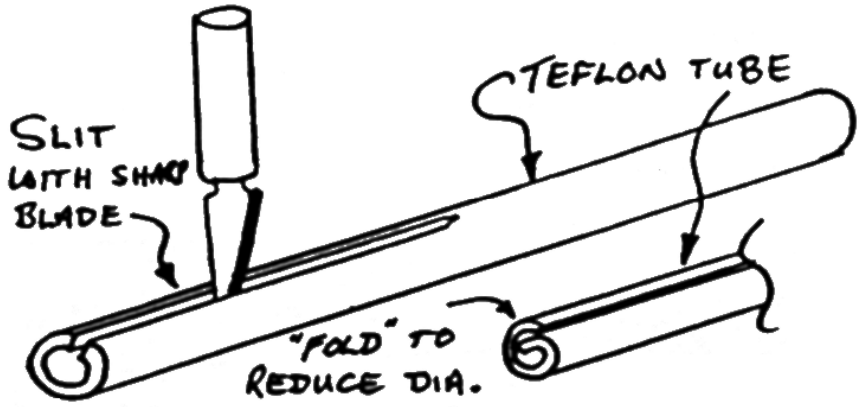
From *The Canard Pusher*, number 39, page 7 (January 1984):

BUILDER HINTS

VariEze and Long-EZ - Aileron hinge pin wear. This problem still has not gone away, even with the "bent" hinge pins. Rodie Rodewald originally suggested a modification, and Dick Kreidel has had it installed for 125 hours with "zero slop". It consists of a piece of thin-walled Teflon tubing inserted through the hinge, with a piece of stainless steel welding rod 1/16" dia. for a hinge pin.

The Teflon tube makes an excellent tight fitting 'liner' for the hinge pin that does not allow any rattling or looseness, yet allows smooth pivoting action.

The only drawback is that it is tricky to install. You will need a piece of Teflon tube a little more than twice the length of each hinge, for each hinge. Use an X-ACTO knife to slit the tube for half its length.



Now fold it up to reduce its diameter, and push it through the hinge. When you have it all the way through, (the unslit half is not into the hinge yet) now insert your welding rod hinge pin into the unslit half of the Teflon tube, then pull the whole works through the hinge until your new hinge pin and Teflon liner are properly aligned in the hinge. Trim off the "slit" portion of Teflon tube and discard.

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