

Highly Edited CP Corrosion References

October 1983 CP 38 page 4 Aluminum Corrosion out here in the desert is not a problem. Some builders do live in highly corrosive environments. Rodie Rodewald - Hawaii has found exposed aluminum parts, not anodized, will corrode.

October 1987 CP 53 Page 4 VARIEZE PLANS CHANGES carefully inspect wing attach fitting for inter-granular corrosion.

October 1987 CP 53 Page 7 CAUTION: CORROSION IN VARIEZE WING ATTACH FITTINGS
An east US VariEze, which was not on the coast, was found to have severe intergranular corrosion in the top plates of the wing attach fittings as well as in the two aluminum tubes between the top and bottom plates.

All VariEze owners should make a very careful inspection of the aluminum wing attach fittings, especially under the glass that laps onto the aluminum plates. *ED-The notice details methods, sources, procedures and cautions.*

April 1988 CP 55 page 8 Check wing attach fittings for corrosion. Remove both wings, clean and inspect the wing attach fittings on the wings and on the centersection spar.

April 1988 CP 55 page 5 We received a letter from a VariEze owner/pilot with corrosion in the WA-2-2 plate. This plate has one of the worst cases of intergranular corrosion we have seen. It is absolutely not safe to fly and must be replaced. Unfortunately, this is probably going to be very difficult, and we honestly do not have any simple fix for this. Just removing the WA-2-2 plate could do serious damage to the centersection spar. The UND wrap around the end of the centersection spar may have to be cut and removed. The foam under the WA-2-2 plate must be dug out, the 8 AN525 (or AN509) screws must be .

A replacement plate must be fabricated, duplicating exactly all of the holes in the plate. This is a difficult job and will require an expert machinist and a lot of patience. Brock will not be able to help you with this. Each case will have to be dealt with on an individual basis. The new piece should be alodined and then floxed and screwed back into place. If the UND wrap was damaged, it must be replaced, which requires cutting into the fuel tank (we did say it would be tough!).

This is major work, not anything that could not be done by a person who has built a VariEze, but very tedious, difficult work. And it must be done right. There is no short cut, no easy way. If you find more than simple white powder surface corrosion, stuff you can easily polish off with 320 grit sandpaper, you must ground your VariEze and replace the corroded parts.

A mandatory inspection is required before next flight for all VariEzes. Do not take this problem lightly, it could kill you and anyone who may be with you. Remove both wings. Clean all visible aluminum parts at the wing root and centersection spar. Look at the edges of all the WA plates on the centersection spar. Look for a thinner edge or a swollen appearance under the glass. Look in between these plates (where the WA-3 tongue slides in). A white powder appearance that can be completely removed and polished out with 320 grit is OK, but the plates should be very thoroughly cleaned and sprayed with zinc chromate. LPS or a good quality grease as used in marine applications should be generously applied everywhere before re-installing the wings. Check the WA-4 pins and the AN4 bolts and grease both thoroughly. Replace the AN4 bolts if they show any sign of corrosion.

New construction VariEzes, or anyone replacing wing attach fittings with new ones, should clean all aluminum parts with Alumiprep 33 or Metal Prep #79 then alodine them with Alodine 1201

which puts a tough, corrosion-resistant visible, golden finish on. We are reluctant to try alodining parts in place due to the acid etch (Alumiprep 33) possibly getting under the glass onto the aluminum.

When you inspect your VariEze, be very conscientious. Check very carefully, it is difficult to find, you may have to probe under the glass over the WA-2-2 plates. Look hard and long at it before you decide it is safe to fly.

Keep the aluminum parts clean, grease them often and you will have no problems. People who live far from the ocean may not see this problem but they must check for it just the same.

This problem is confined to the VariEze. The Long-EZ wing attachment is completely different and this same problem should not occur. Of course, all metal parts must be protected from.

January 1991 CP 66, page 3 ALERT! Possible Corrosion in Elevator Torque Tubes in EZs. Ohio VariEze noticed small bumps rising up on the top of each elevator along the aluminum torque tube. He could depress these bumps a little with his finger. He reports he found "severe corrosion pits where each bump was located. There is no corrosion at all on the exposed ends of the elevator torque tubes.

ALL EZ, Defiant and Solitaire flyers should inspect the leading edges, the tops and bottoms of both elevators for bumps such as we have described here, before the next flight. If any evidence of bumps or corrosion is found, ground the airplane and remove foam and glass locally.

The above report came of Ohio where it is hot and humid in summer and cold and damp in winter. Anyone who lives where there is much humidity and/or near the coast should be especially concerned and should check the area called out before each flight.

October 1996 CP 86 page 4 Corrosion Found in Brackets. Long-EZ pilot reported finding moderate to severe corrosion in the elevator hinge brackets on his GU canard. Every EZ and Defiant owner should make frequent careful inspections of these hinge brackets. Keep in mind that there was little or no evidence visible outside the canard. *ED: - The notice continues with procedures, materials and methods.*

January 1997 CP 87, page 9 Ft. Myers, Fla- VariEze sat under a flat metal shade with no walls. The hinge brackets started to corrode so replaced them with stainless steel ones. I now have a Long EZ and made its brackets out of stainless. However the canopy hinges on it started to corrode and I had to cut up the hinges to get the canopy off. I keep after the rudder and aileron hinges with WD-40 and have had no trouble with them.

January 2002 CP107 page 8— My EZ wing attachments are disintegrating, that is the aluminum is separating, that is flaking off. If so what was done, or can anything be done to stop this condition? Can the attachments be replaced or must I part my old bird?

Burt Rutan — This is a real tough one. As described in an early newsletter the aluminum components need corrosion protection for all but our dry desert environments. They are not easily replaced, since the units are jugged as a unit during construction. I have seen others resort to building new wings and center section to deal with wing attach corrosion. There may be a way to avoid this but RAF has never worked out or approved a repair procedure.