

Pilot's Roll Over Structure

The current VE/LEZ pilot headrest structure is too small and too weak to provide adequate protection in the event the airplane flips inverted as the result of an accident. Burt has designed a composite roll over protection structure and Mike has installed it on his own Long-EZ. The new composite rollover structure is designed to fit all canopies and to interface with the canopy frame and fuselage longerons.

Mike took a bunch of digital photos of the work in progress, and these, together with some words and sketches have been made into a 33-page set of plans.

Burt and Mike's basic concept for the composite roll over structure is this: your own finished canopy in its frame is used for a mold, and a glass/foam/glass sandwich structure is laid up into the inside of the canopy (after the canopy is carefully protected and released). There are 6 cure cycles required to complete this part, then it is popped out of the canopy/mold, and finished in whatever color takes your fancy. Then it is bonded into the canopy frame, using Hysol adhesive, where it is positioned between the front seat and the rear cockpit, somewhat like the glass structure that exists between the two canopies on a Berkut. The difference is that this one is inside the canopy.

There is a small gap between the roll over structure and the Plexiglas canopy, so it never touches your canopy at all. It becomes part of the canopy itself, and moves with the canopy when you open and close it. When the canopy is closed and latched, the roll over structure is firmly attached to the top longerons, and is designed to protect against an accident where the airplane may land in such a way as to end up upside down.

The down side is that there is some loss of the fabulous visibility that we have all come to enjoy in an EZ, but it is a small price to pay for the additional safety provided.

The RAF Composite Roll Over Structure plans are free to all owners of VariEze and LongEZs. You can download them here or request a mail order.

To receive the 33-page set of plans by mail send a 9x12 SASE with \$1.90 postage to Rutan Aircraft Factory. You will receive 10 pages of instructions, 14 pages of black and white photographs and 9 pages of Vellum drawings.

RAF has photographs available in color by mail order but must charge \$16 to cover the high cost of color printing. If you prefer color photographs please send a check or money order to RAF.

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If you don't have the inclination to build the composite structure, EZ builder Bill Allen of England is offering a second option for sale. Bill Allen's welded-steel tube roll over structure has appeared in the Central States Association Newsletter and on the web. Having made the jigs, run one rollbar structure through his engineering shop, and installed it in G-WILY, Bill plans to offer his

steel rollover structure to others as either an assembled structure or as a kit. Burt and Mike have looked over Bill's plans and approved the design. To see Bill's version on the web go to www.longeze.com/ then click on preparation and rollbar.

Questions? Contact Rutan Aircraft Factory at [**raf@antelecom.net**](mailto:raf@antelecom.net)