Keep Your Head in an Emergency

Helmet review

by Weston Liu

If you fly aerobatics for a long time, you will eventually know someone who has had, or see a report of, an airplane broken in-flight and the pilot landing by parachute. Sean D. Tucker has bailed out a couple of times. Here in the Northeast United States I know a competitor who had his Yak tail taken off by another aircraft. One item that is often overlooked in the reporting is the head protection worn by the pilots. When Tucker spoke about his last bailout, he mentioned ducking down to release the canopy and still having it bump his helmet as it left. Our Yak pilot friend reported finding a ding in his helmet that likely occurred when the other airplane hit his. My takeaway has been that you aren't likely to bail out successfully if you are dazed or lights-out. Today's topic is head protection for aerobatic pilots.

What do we want for head protection in our airplanes? First, if we are pulling lots of *g*'s, we want light. Unlike those old bulky jet helmets that you see in the movies, there are lots of options today, and they won't give you a strained neck or have big knobs on top waiting to scratch your canopy.

Next we obviously want impact protection. How much? Aviation helmets aren't built to Department of Transportation specs. Motorcycle helmets are built to protect against dragging your head against the ground or bouncing off a guardrail at 60 or so mph. This and the customer price sensitivity have them built out of lower cost and heavier material. Military helmets are built to Department of Defense and NATO specs that cover impact from hostile fire debris as well as concerns about weight when the wearer is pulling *g*'s. Aerobatic pilots hope to not need to worry about the neighbors shooting. Skydiving helmets are built to protect individuals who bump into each other in free fall and hit their head on the ground during landings.

Bonehead Composites PilotX

As pilots, we want our comms to fit or at least be compatible with what we wear on our head. Many of us also want active noise reduction (ANR) to protect our hearing. And in the northern regions we might want some warmth in the winter but not a lot of heat in the summer.

And since there is a big difference in the room under a Pitts S-1T canopy versus the Extra's and Sukhoi's canopy, our choice of ride affects our choice of helmet. Friends have learned through experience that a lot of helmets just don't fit under the canopy in a single-seat Pitts.

From lowest cost to highest, here are some of the options.

Entry-level head protection can be found in the form of a U.S. Navy surplus flight deck cranial. About $35 on eBay. These are cloth, built around a David Clark style passive hearing protector, with ABS plastic shells over impact-absorbing foam, snapped on. If you own a traditional David Clark headset, you can remove the hearing protector that comes with the helmet and slip your David Clark's right in. I added a Headsets Inc. ANR kit and a quick-release plug on the cord to mine. The ANR works great in my Pitts. Note: If you have to go skydiving, the quick release plug lets you dive out of your broken ship without taking time to unplug anything. And you do not have cords trailing and trying to wrap around your parachute, preventing it from opening. This rig fits in all of the aerobatic airplanes.

Guner with Clarity headset.

Next up in cost are a couple of newer entries in the pilot helmet market. Bonehead Composites started out making skydiver helmets. The Guner model is very light, low profile, and works in the Pitts S-1 where surplus military helmets literally get stuck during negative *g*'s. The Clarity Aloft and QT Halo headsets fit right under a Guner and should slip right off without help if you have to dive out of the airplane. A number of Pitts pilots and I are flying with this helmet. The carbon fiber shell makes it very light. No strained neck at +6*g*. And the Clarity and QT Halo headsets weigh next to nothing. The earbuds block out noise as well as providing ANR. List price on the Guner is $230. For comms the Clarity Aloft is $525. If it is still available, the QT Halo is $359.

With pilots purchasing the skydiver Guner model, Bonehead developed a pilot-specific carbon fiber helmet with built-in comms. The PilotX moves upscale with built-in speakers in the ear cups, a boom mic, quick-release comm cord, more comfort padding, weight of 2.3 pounds, and a list price before adding ANR, earbuds/communication earplug protection (CEP), custom paint, etc. just north of $1,000.

If you fly an Eagle, Extra, or other ship with room under the canopy (not an S-1 Pitts), the last couple of generations of military jet helmets are options. The HGU-55 and HGU-68 are the latest U.S. lightweight helmets available. The 55 is available used on eBay or through surplus outlets for about $300 and up if you know what parts to mix and match. Looking at new or refurbished options, internet sources like Gibson & Barnes, AviationHelmets.com, and FlightHelmet.com have offerings starting around $800 without comms. Adding civilian comms, ANR, earbuds/CEP, etc. are extra cost options.

Less common, but available new, are the MSA Gallet helmets. These are used by foreign militaries and a few aerobatic pilots. My hangar neighbor flies with one. Starting price is about $1,700 including comms. Reported to be light and comfortable.

Visors — Most of the pilot helmets can accommodate a visor. Since sunglasses do the same job at less weight, adding a visor is mostly adding cool factor. But from a practical point of view, beware the visor options that use a center knob to move the visor up and down. In the up position that knob is just waiting for the wearer to push negative *g* so that knob can put an ugly scratch in your expensive canopy. Bungee visors are preferred.

Since most pilots are somewhat extroverts, I will mention that you can add custom paint to all of these helmets. The vendor or your local airbrush artist can apply any graphic from Maverick to Hells Angel.

And if you are trying to protect your hearing, ANR plus earbuds/CEP really keep the noise out. Most over-the-ear headsets, as well as helmets, can have earbuds/CEPs added.

With the wide range of cost, anyone who habitually flies their ship to the ±*g*-limits can wear head protection. We hope we never need it, but a helmet is one more safety item that might make a difference if the airplane decides to give up on us during a flight.

Fly safely. **IAC**