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No. 11 | November

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Flying in the Totality

My excellent eclipse adventure

BY DAN GRUNLOH

MILLIONS OF PEOPLE may have watched the total solar eclipse live on August 21, 2017, and millions more watched it online as it traversed 14 states. Thousands of pilots flew to the zone of totality to see it. I met a Van's RV-8 pilot who was flying into the zone to watch it from 10,000 feet. And there were many others. People went skydiving, hang gliding, paragliding, and just about everything else possible during the eclipse. Everyone has a unique story to tell about his or her adventure.

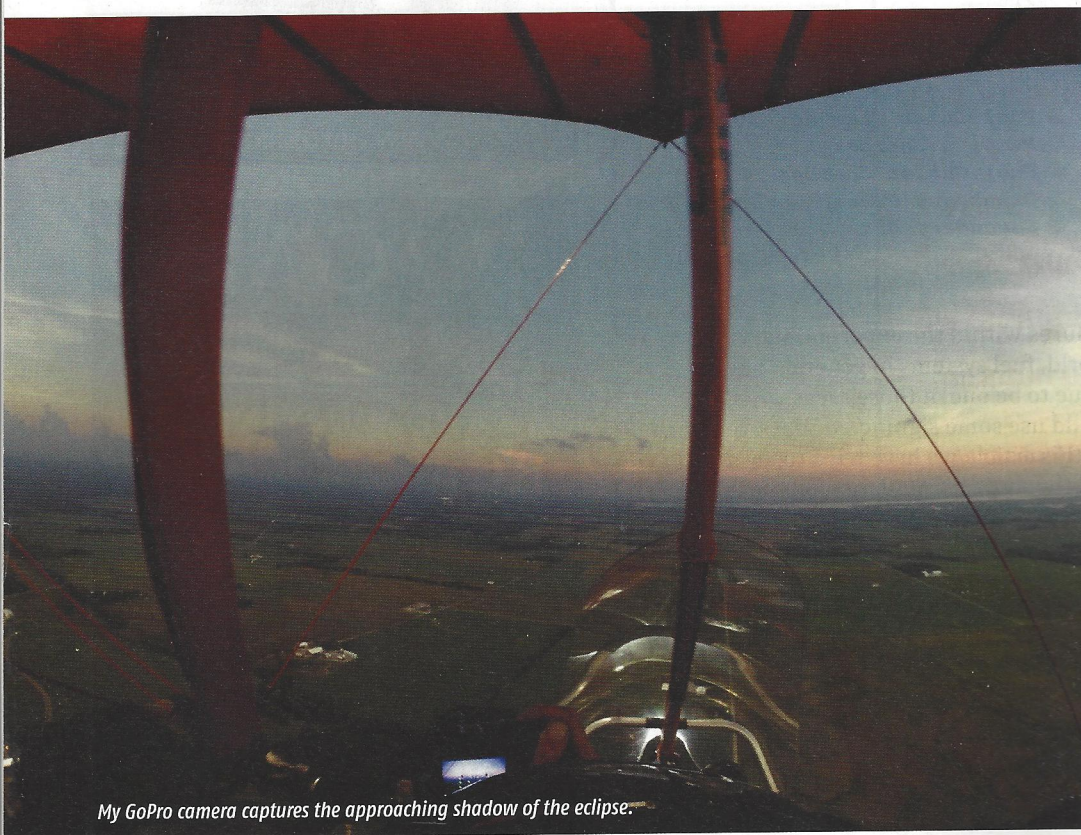
Because I didn't want anything to make me late for the 1:22 p.m. eclipse, I flew down partway the previous day taking advantage of tailwinds. That way, I could study the weather the morning of the eclipse and have time to fly to wherever there were no clouds. When eclipse watching in a plane, you can quickly and easily adjust your viewing location. Because my weight-shift trike is a high-wing, I knew it would be difficult to see the eclipse directly while in flight, but I was more interested in seeing the moon's shadow and watching the Earth turn dark below me.

The trip also supported my longtime goal of landing in every airport in Illinois by adding more airports to my list. There are more than 100 airports in the state and around 80 nontowered airports that are not inside a Mode C veil requiring a transponder. I have already been to 62 of them in my trike.

My overnight stopping point was the Mount Vernon Airport. The airport is the starting point for the EAA AirVenture Cup Race, the home of the Midwest LSA Expo, a training center for fire and rescue personnel, and a host of other community activities including Young Eagles and Boy Scout events. Airport Manager Chris Collins kindly located a spot inside a building where I could camp on a carpeted floor so I didn't need to unpack my tent.

Weather reports the next morning gave uniform results across southern Illinois so I flew to the little airport at Benton (inside the zone) to check out the conditions. I expected the larger airports in the area to be swamped with airplanes, and at least one was closed to arrivals by mid-morning.

The Benton airport was quiet. After I arrived about a half-dozen airplanes came in from as far away as Michigan. I sat on the ground with others and watched the eclipse until it went past about 50 percent coverage, but I had come to see it from the air.



My GoPro camera captures the approaching shadow of the eclipse.

When I learned the total eclipse was to occur in southern Illinois just 200 miles south of my location I knew this would make a fun flying adventure. It was a half day's flying time for me at 58 mph. Although there was much publicity about the crowds that would attend and a good chance the highways would become clogged, I could fly above the crowds and camp under my wing at some small airport.



Dan Grunloh at Mount Vernon Airport in Illinois the morning of the eclipse.



Lights of Benton, Illinois, 6 miles away during darkest phase of eclipse.

The plan was to fly westward toward the approaching darkness and perhaps see the arrival and movement of the moon's shadow on the Earth below. It was hot and hazy, and I stayed at 1,500 feet instead of going to 6,000 feet as originally planned to avoid tangling with other traffic.

My chosen position was east of the town and the 13-mile-long Rend Lake (second largest in the state) next to it, so the city and the lake would provide the background for my viewing. The moon's shadow moves across the Earth in this area at about 1,400 mph, which sounds like a lot but translates to 0.38 miles per second. It should take 15 seconds for the shadow to travel 6 miles from Benton to my position. Subtract several seconds on each end to recognize the change, and I have 10 seconds to see the elusive moving shadow!

Just before the shadow of totality was predicted to arrive, I turned on a GoPro camera taking time-lapse photos every half second, and began burst shooting with a handheld camera. As it turned out, I couldn't see the movement, but my cameras documented it. It got very dark, and it got dark fast! The landscape in my shots changed from light to dark in about 25 frames, but I couldn't see the movement with my eye, and here is why: I hadn't anticipated the width of the shadow line on a hazy day. It was at least several miles wide, and it seems the eye cannot see movement without a fixed point to mark it.

The first indication the total eclipse had begun came as a surprise. Suddenly my airplane was lit by reflections on the airframe from the flashing strobe under the belly, and my landing light (always on) was casting reflections on the windshield. It was normal to see them appear gradually when flying in twilight, but now they appeared suddenly like someone had flipped a switch.

Next I noticed the city lights in Benton had switched on, and Rend Lake was dark. That was the moment! I stopped watching the clock for a while and remembered I had barely a minute to

make a steep turn and try to catch a direct glimpse of the sun. My camera and my eye saw a fuzzy bright patch in the sky, probably due to high clouds and the muggy haze. During that turn I admired the red-orange streak of sunset color that went all the way around the horizon.

The first evidence the shadow of the moon had passed on also came as a surprise. High-wing ultralights and trikes with Dacron sailcloth tend to pass sunlight through the wing and bathe the cockpit in a glow of colored light. That color goes away gradually at twilight and is not noticeable on a dark cloudy day. Suddenly, while flying in the darkness, my wing lit up like a light bulb had been turned on inside it. I noticed it before the fields below showed any sign of sunlight returning. It startled me for a second.

After a few minutes, I realized my mission had been accomplished and turned northward to begin my four-hour trip home. A lot of airplanes were coming my way very soon. Cumulus clouds were popping up around the horizon, and a very tall one was growing rapidly up ahead. At this altitude I had a good cellphone signal. A check of the radar showed it was already raining up ahead and more cells were developing to the west. I diverted to Salem, Illinois, where I found the airport deserted, but not for long. I was soon joined by other airplanes. We all watched the radar, and gradually the planes departed as the storms moved away. By then it was too late for me to make it home before dark, and I had already arranged a car ride home.

The return flight two days later was sunny and fun, but with 20 mph headwinds. To add to the frustration, I could look down and see flags on the ground hanging slack. In disbelief, I turned around 180 degrees and watched the groundspeed go from 38 mph to 78 mph. When I passed a field of about 130 wind turbines (more than 300 feet tall) they were all motionless, and pointed in the wrong direction! It was truly bizarre. Later I was informed that they had been turned off temporarily due to bird migrations.