



Zephyr

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TRANSFORMING UAS TRAINING WITHIN TEXAS DPS WITH ZEPHYR DRONE SIMULATOR



About Zephyr, by Little Arms Studios

Zephyr Drone Simulator is a full-featured drone training software for drone instructors, flight academies, professionals, and hobbyists.

Our advanced UAV simulator trains drone pilots to operate safely and efficiently according to FAA guidelines. Zephyr uses real-world physics and a constantly expanding library of training modules and drone platforms meticulously crafted with accurate flight characteristics for cutting-edge drone pilot training.

About Texas DPS UAS & Jason Day

The mission of the Texas Department of Public Safety is to protect and serve Texans, by preventing crime and terrorism, saving lives and protecting property, maintaining public order, and providing licensing services. Texas DPS serves almost 30 million residents across 268,000 square miles of rural and urban communities.

Bio

Texas DPS has one of the largest UAS programs in the United States, with over 300 remote pilots and unmanned aircraft.

In 2023, the program conducted over 50,000 flights during 12,000 flight hours.

Jason Day is the Director of Unmanned Aircraft at the Texas Department of Public Safety (DPS). Jason has worked in aviation for almost 30 years, in civilian, military, and public safety roles. For the past 8 years, he has worked with the Texas Department of Public Safety, beginning with the aircraft operations division maintaining tactical electronics on DPS's fleet of helicopters and airplanes. In 2017 as the department began utilizing unmanned aircraft, Jason split his responsibilities between manned and unmanned craft. As the unmanned program (UAS) expanded and evolved, Jason was promoted to Director. He works closely with Aaron Fritch, the Captain of UAS Operations.

"When you're looking at any type of simulator there has to be a lot of realism so when you transition from the simulator to actual stick time the learning curve is reduced. That's one of the things we liked about the Zephyr software - it allowed multiple scenarios that were very realistic, and we found it to be a really good analog for the real world."

JASON DAY

Director of Unmanned Aircraft, Texas Department of Public Safety



The Challenge

In late 2022, Jason Day and Aaron Fritch at Texas DPS began to explore flight simulator software that would help take their training program to a new level.

Due to the size and scope of the UAS program, they were grappling with the challenges of ensuring that operators were fully proficient in the basics of unmanned aircraft operation while finding ways to allocate more training time to the actual environments and issues their pilots would face. They wanted pilots to arrive at onsite training having completed some basic instruction so they could proceed more quickly to the NIST Open Lane Test and other mission-based training. Furthermore, they wanted a solution that was easy to use regardless of technical experience and would provide backend reporting for program administrators.



"We found that once we incorporated the flight simulator into our training, the amount of time it took to complete the NIST test was reduced by five minutes. The average flight time used to be right around 30 minutes to complete all five NIST tests. It has been reduced to 24 to 25 minutes for all of our pilots, and this has stayed consistent across three different RPIC schools. So we know this is working."

JASON DAY

Director of Unmanned Aircraft, Texas Department of Public Safety

The Solution

The UAS team began their search for a software solution by speaking with several agencies that had current experience with flight simulators to learn more about how this move might enhance their operations. By 2023, with a search for a software provider well underway, Day and Fritch learned about Zephyr and Little Arms Studios at an AUVSI conference, where they had the opportunity to engage in hands-on demos from multiple providers.

Zephyr Drone Simulator stood out as the superior choice as it was both controller and drone-agnostic while providing exceptional administrator tools for tracking.

With minimal hardware requirements, the software could run on standard department-issued laptops. Additionally, the software was highly versatile, allowing for simulations using various drones. The team was impressed that Zephyr also covered all of the NIST fundamentals, which comprised a significant portion of the UAS training requirements.

Texas DPS requested additional follow-up demos from the Zephyr team to find out whether they would match the training scenarios they wanted to cover and the types of drones they needed. Zephyr showed them the LMS/Data tracking and various scenarios including the NIST Open Lane Test and training. The team learned that the Zephyr simulator could cover the entire fleet and simulate environments that pilots would face in their daily work.

The UAS team trialed the Zephyr software with a small subset of pilots and quickly saw an improvement in preparedness at in-person training. Within weeks, the UAS team purchased the Zephyr Drone Simulator and began rolling out remote drone flight training to pilots across Texas.

Results

In the first 8 months since the rollout, the UAS team has been able to see clear improvements in their training outcomes.

Zephyr has created a faster learning curve for new pilots, who now arrive at in-person training more prepared and confident.

Since NIST fundamentals of drone safety and basic flight maneuvers are already completed, instructors can move more quickly to advanced training modules that allow pilots to get more real-world experience in the allotted training time.

Additionally, the built-in learning management system now tracks simulation and flight data that includes flight time, crashes, FAA Violations, scores, and positional data to help instructors evaluate student progress.

Zephyr flight simulator software has helped the UAS team meet its goals, including fast installation, ease of use for beginners, and better, more accurate reporting and accountability.

Jason and his team are now able to track operator growth, strengths, and weaknesses, and test them in difficult situations to shorten the time to proficiency.

Texas DPS has already seen time to completion for NIST Open Lane testing drop by over 5 minutes on average for new pilots, adding proof that Zephyr is improving pilot performance for the UAS team.

Other benefits of the Zephyr simulation software have included:

- Creating a remote training opportunity that did not exist before.
- Improving new pilot confidence and composure under pressure using an intuitive interface.
- Reducing risk to equipment and the public by allowing pilots to train in realistic scenarios and different environments where they can make mistakes without real-world consequences.
- Providing better learning opportunities by allowing pilots to review crashes within the simulator to identify areas for improvement.
- Delivering a learning management system for administrators that tracks both performance and engagement with the simulator. Admins can verify time spent on dedicated training for each module including above and beyond the basics.
- Allowing a shift to greater quality in training that was not possible before Zephyr.

Zephyr continues to be client and industry-focused, continually working closely with UAS teams and other clients to enrich its industry-specific simulations. Zephyr Drone Simulator is currently available for a wide variety of applications, including public safety and bridge and tower inspection. To learn how Zephyr can meet the drone simulation needs of your business, contact us today to get a demo.

<https://zephyr-sim.com/>