

Flying Toward Excellence: An Inside Look at the Fuse Flight Test Squadron

“We’re not building software in a vacuum. We are, no kidding, strapping it to an airplane and testing it.”

This remark from a team member at San Diego-based **Fuse Integration** accurately sums up the benefits of the company’s Fuse Flight Test Squadron. Building on years of naval aviation experience, Fuse established the squadron to accelerate the development of its warfighter-focused communication and networking products by adding vigor and in-house demonstration. The squadron appeals to partners, customers, and team members of Fuse alike, adding a certain “cool” factor while contributing to their noble cause.

Taking Flight to Accelerate System Design

Fuse develops technology products and systems that improve the sharing of information, video, text, and voice among our nation’s military forces—and our allies—in the battlespace. Their tactical edge networking solutions are built to be reliable in rugged conditions across airborne, maritime, and ground environments.

In 2019, Fuse expanded its capabilities to include organic flight testing. The Fuse Flight Test Squadron embodies the company’s commitment to a rapid prototyping and agile test methodology that underpins constant innovation. Getting the systems flying in a relevant environment accelerates the build-test-build cycles with real data collected from flight activities, enabling the company to mature systems and capabilities faster.

A Cessna O-2 Skymaster With a Special History

The Fuse Flight Test Squadron makes use of a Cessna O-2A Skymaster aircraft. This unique and storied airplane provides a flexible platform for network and communications systems testing. Standard configuration supports two wing-mounted



Fuse CEO and former naval aviator, Sumner Lee, in flight

pods, each of which may carry various payloads. The O-2A has seating for the pilot and up to three crew members.

Fuse’s Cessna Skymaster has its own special history. It is a former military aircraft that has seen combat time in Vietnam, and it even has bullet holes to show for it! Though originally a U.S. Air Force aircraft, Fuse repainted the O-2A with Navy markings to better represent the experience of the company’s CEO, **Sumner Lee**, and numerous other former naval aviators in their ranks.

Benefits of Organic Flight Testing

Instead of relying on someone else for flight assets, Fuse brings its own. The Skymaster serves as a surrogate test platform. Outside of planned maintenance cycles, the aircraft is available whenever it’s needed to support multiple levels of testing with various configurations.

Having an aircraft that can fly with test equipment and pod-based integrated systems allows Fuse to demonstrate the feasibility of airborne connections and systems while still in development. Data collected from incremental test flights inform development, so the systems can quickly advance to more robust testing scenarios with more fully developed architectures.



further in fidelity and readiness for our military customers,” says Lee. “It’s incredibly rewarding.”

For Fuse, the ability to rapidly test its integrated system solutions in an airborne environment is one more step the company takes to ensure that it delivers systems that resonate with the warfighter. The **Flight Test Squadron**, “Just makes sense,” emphasizes Lee. “Plus, it’s a ton of fun, too!” ■

When Earning “Wings,” Safety and Training Prevail

Fuse Flight Test Squadron pilots have thousands of hours of **military** aviation experience. They also have intimate knowledge of flight testing with agencies such as the U.S. Navy, U.S. Marine Corps, NASA, and the U.S. Customs and Border Protection, among others.

In order for Fuse engineers and other non-pilot team members to fly in the aircraft, they must pass both a written and practical test. Safety and training are paramount. Fuse ensures that team members learn about general maintenance issues and troubleshooting, what to look out for when in the air, as well as concepts of flight, navigation, and emergency procedures. This preparation puts the flight support team members in the right mindset to go out and execute while following time-tested aviation protocols and putting safety first.

Celebrating the Cool Factor

In addition to southern California, Fuse has conducted flight tests from coast to coast across the U.S., from Alaska to Patuxent River (“Pax River”) in Maryland—and other locations in between.

To celebrate the Fuse Flight Test Squadron, its members, and the many successful flights, the company created a special commemorative patch. The patch sports the tagline, “Auxilium Bellator,” which roughly translates from Latin to “helping the warfighter.”

“The best moments are when we finish a test or demonstration knowing we have met our carefully planned objectives and have advanced a system