

The Combat-ready KC-46 Pegasus Brings More than Fuel to the Fight

The 21st century battlespace requires agile, adaptive platforms primed to serve multiple roles, including the ability to connect and protect crucial assets. As the all-domain force sets its course for data-centric operations, Boeing's KC-46A Pegasus is evolving the strategic role of tankers to meet this new reality.

Beyond its refueling and cargo, passenger or aeromedical transport missions, the KC-46 is opening a revolutionary concept in which tankers provide mission-critical data to the fleet, explained Mike Hafer, Boeing's senior manager for KC-46 business development and a former active duty Air Force mobility pilot for 26 years.

"The KC-46 can communicate securely with assets as close as its wing tip and as far as space to relay battlespace information throughout the fleet," Hafer said. "You've got a plethora of communications options available for secure, seamless data and voice connectivity via the KC-46 including line-of-sight communications, beyond line-of-sight communications, SATCOM, and other means of communication."

The KC-46A is capable to serve as a communications node in the sky—even in contested environments.

"With the KC-46A's defensive systems and ability to access forward airfields, you always have tankers somewhere near the battlefield, on the edge of or even into the threat space," Hafer said. "That makes it an ideal platform for hosting these communications and connectivity capabilities."

Combine that with the KC-46's onboard Tactical Situational Awareness Suite (TSAS), which provides an entire theater battlespace picture for the crew that's overlaid with terrain and weather data. An operator then has all the info they need to operate the platform effectively in the battlespace environment — and they can share that information with the rest of the joint force.

"The Air Force is really starting to push the limits on



The KC-46A is already delivering more capability and agility than any tanker to date. The Pegasus—shown here landing at an austere airfield in Guam during the day and at night—delivers more fuel at all ranges and from shorter runways than the KC-135 it is replacing. It also accommodates three times more cargo pallets, up to twice as many passengers and 30 more aeromedical evacuation patients than the KC-135. Unlike tankers of past, however, the KC-46A also serves as a critical communications node in the sky. *(U.S. Air Force photos)*

what a tanker has traditionally done and the role of tankers throughout the operational theater,” Hafer said.

As an example, Hafer noted that during a recent wargaming scenario, the KC-46A crew spotted a threat coming from an unexpected vector with the TSAS and alerted friendly fighters, directing a simulated air-to-air kill. Hafer said the demonstration showcased the unprecedented ability of the combat-ready Pegasus tanker to capture and relay decisive battlespace information to the joint force.

This capacity to share data to the fleet will expand as the KC-46A integrates the first implementation of the Air Force’s Advanced Battle Management System (ABMS). ABMS is a top modernization priority for the Air Force and a critical piece of the Department of Defense’s broader goals under the Joint All-Domain Command and Control (JADC2) effort to build a more connected fighting force for decision-making advantage against peer adversaries. The KC-46 is poised to serve as a key platform for ABMS integration, revolutionizing the connectivity and information

exchange between warfighters on the tactical edge.

“That’s one of the joint force connections that has been missing in the past, a persistent presence at the edge of the tactical environment that allows communication relays between different platforms,” Hafer said. “With ABMS, the KC-46 becomes a relay station to connect multiple nodes and then send that information over to the tactical forces at the forward edge. That data connectivity can be especially crucial if one of the other communication links is missing or jammed.”

The KC-46 is designed for mission expansion, offering extra capacity for size, weight, power and cooling that allows flexible operational evolution as the Air Force assesses new capabilities, such as ABMS, that could be integrated on the aircraft. The aircraft’s rapidly increasing operational employment over the last year highlights its ability to take on critical missions.

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Boeing has delivered more than 60 KC-46As to the Air Force—including 12 to Pease Air National Guard Base where it performed a Pegasus Walk in 2021. The tanker is approved for worldwide deployment, including combat operations. The proven refueling platform is now flying hundreds of sorties and delivering millions of pounds of fuel every month for the Air Force. *(U.S. Air Force photo)*



refueling platform is now flying hundreds of sorties every month for the Air Force, delivering millions of pounds of aviation fuel to receivers around the globe.

The Air Force is continuing to demonstrate the potential of the KC-46A, with employment exercises proving out the platform's multi-mission readiness. For example, in the spring of 2022, several KC-46A tankers provided support for air policing actions in eastern Europe. During the exercise, the KC-46A successfully refueled Spanish C-15s at Morón Air Base outside of Seville, the first refueling of an international receiver for the U.S. Air Force KC-46A. The European exercise ran for over seven weeks and also demonstrated the reliability of the aircraft, operating at a 98% mission capable rate over that time. This major KC-46A milestone sets the path for increasing interoperability opportunities with allies and partners; already the Pegasus has been approved for refueling receivers from a growing number of countries.

"The KC-46 is performing in real-world operations around the globe," Hafer said. "It is performing beyond expectations, in its capabilities and in its mission

capable rate."

Providing persistent connectivity at the tactical edge requires a combat-ready platform hardened with robust defensive capabilities to ensure survivability. Today, the KC-46's protective systems and countermeasures far exceed the capability of any other existing tanker. The KC-46A's onboard Large Aircraft Infrared Countermeasure systems, flight armor, and nuclear, biological and chemical hardening ensure the aircraft can thrive in its role as a critical communications node.

"The KC-46 is armed and protected," Hafer said. "It's designed to survive."

As the future of combat continues to evolve, the KC-46A Pegasus is poised to help make ABMS and other emergent technologies a reality with its survivability and versatility to expand its mission portfolio.

"We're excited about the platform's capabilities and how the KC-46 is making the warfighter stronger," Hafer said. "The KC-46A is the most advanced multi-mission aerial refueler in the world today and for the future."

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