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MILITARY TANKERS KC-46

America's Next Tanker Is Finally Going to Fly

The sooner the better — the KC-46 is replacing a 60-year-old plane.



By Eric Tegler

328

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Boeing

America's new aerial refueling tanker, the Boeing KC-46A Pegasus, is set to make its first flight from Boeing's Paine Field in Everett, WA this Friday. It's about time: [America's existing airborne tanker fleet is stunningly old.](#)

Derived from Boeing's Dash 80 (the prototype of the 707 airliner), the KC-135 Stratotanker entered service with the USAF in 1957. The Air Force currently operates more than 400 of them as KC-135Rs or KC-135Ts. The newest KC-135 currently in the inventory was built in 1964, though it was upgraded along with the others to KC-135R configuration with new engines in the 1980s. Avionics and cockpit upgrades continued through 2014.

The KC-135Rs are expected to remain operational until 2040, nearly a century after they were first built. But even with the upgrades, keeping a tanker flying so long inevitably presents reliability and cost problems. So gradually replacing the KC-135 with a new tanker has been an Air Force priority for more than a decade.

It just hasn't gone very well.

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The long and troubled history of the tanker replacement effort stretches back to the early part of the last decade, when the Air Force announced the purchase of 80 Boeing KC-767 aircraft and the lease of 20 more. The Pentagon froze the contract in December 2003 and cancelled it in January 2006 following public revelations of corruption connected to the contract. A subsequent KC-X program selected the EADS/Northrop Grumman KC-30 (renamed the KC-45A for the U.S.) over the KC-767 in early 2008. Boeing protested that selection, leading to a new competition in 2010. This time around [Northrop dropped out](#) and the Pentagon chose Boeing's 767-based tanker design (KC-46A) in February 2011. Boeing is slated to build 179 KC-46As for the Air Force by 2027 at a unit cost of \$188.5 million (in fiscal year 2015 dollars).

OF ALL THE PEGASUS'S ADVANTAGES, PERHAPS THE MOST IMPORTANT IS SIMPLY THAT IT'S A NEW AIRPLANE.



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Boeing says the KC-46 "promises to revolutionize the air mobility mission." Setting aside that grandiose talk, what we know right now is that the airplane can refuel all U.S., allied, and coalition military aircraft compatible with international aerial refueling procedures. It also has the ability to play other roles for the military, such as carrying passengers, cargo, and patients. The KC-135R can do these things, too, but Boeing says the KC-46 offers room for three times more cargo pallets, up to twice as many passengers, and more than 30 percent more aeromedical evacuation patients compared to the KC-135R. The KC-46 can take off from shorter runways and is far more fuel efficient as well.

Of all the Pegasus's advantages, perhaps the most important is simply that it's a new airplane. The Pegasus' aircrew will enjoy improved situational awareness with a fully modern cockpit and refueling station, the former using 15-inch 787-style advanced electronic displays, redundant displays, and controls. The aircraft can refuel using both its fly-by-wire boom and wing-mounted hose-and-drogue systems. The Pegasus is designed to operate through a nuclear or biological attack, and is hardened against an electromagnetic pulse. According to Boeing, sections of the aircraft are also armored against medium-caliber gunfire though just where a KC-46 might encounter medium caliber gunfire (at low altitude/on the ground?) is an interesting question.

Those improvements come with a marginal increase in fuel delivery capacity. According to the Air Force, the KC-135R has a maximum transfer fuel load of 200,000 pounds (that's how much fuel it can give to other planes or UAVs). The KC-46's maximum transfer fuel load is 207,672 pounds—an increase of less than one percent despite the Pegasus' greater size, takeoff weight and thrust. The KC-135R can also carry more cargo (83,000 pounds) than the KC-46 (65,000 pounds) according to the Air Force.

Still, the KC-46's newness is crucial to Air Force tanker support. Boeing is required to deliver 18 operational tankers to the fleet by August 2017, a timeline that makes this Friday's first flight hugely important, particularly since Boeing was forced to postpone the

first flight earlier this summer after a problem with the aircraft's refueling line during testing. It's a tense time: Boeing is under pressure to deliver on schedule or risk losing the contract. Likewise, the [government risks breaching the contract](#) with a continuing resolution because it may then not be able to buy the contractually agreed number of airplanes in the first couple years.

In an interview with *Defense News* Air Force Gen. Mark Welsh said, "We're at a point now where we really need to see the first flight of this tanker."



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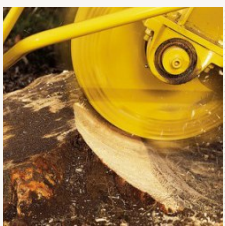
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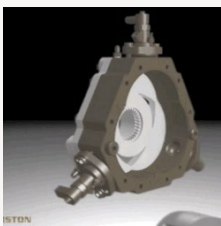
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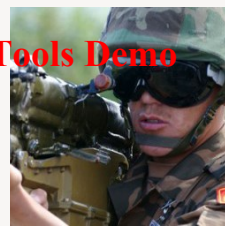
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