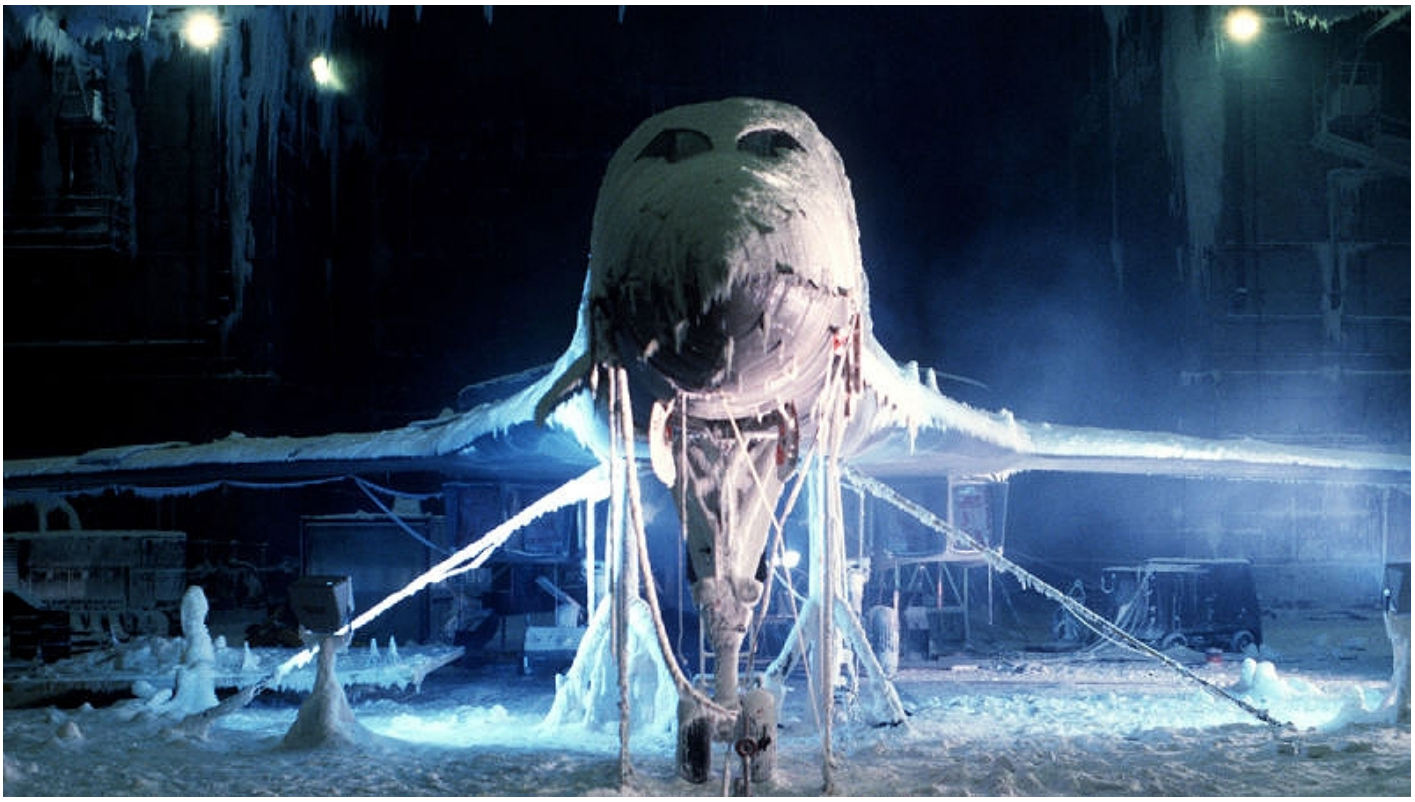
THIS IS HOW THE PENTAGON KNOWS ITS COMBAT AIRCRAFT CAN WITHSTAND A BLIZZARD

News / Manufacturer



While the East Coast turns into a less-than-wonderful winter wonderland, the Department of Defense can rest assured that even their most advanced and finicky aircraft left out in the cold will be just fine. This piece of mind comes from testing done at the U.S. Air Force's one-of-a-kind torture chamber: the McKinley Climatic Lab.

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This huge testing facility was built in 1947 as part of a World War II-era initiative to take cold-weather aircraft testing away from the control of mother nature in Alaska and into a scientifically controlled environment. Oddly enough, the facility was built in one of America's warmest climates at Eglin Air Force Base near the beach city of Destin, Florida. The facility is named after the person who proposed building it, Colonel Ashley McKinley.

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Within its first 50 years, the McKinley Climate Lab—which is the largest insulated hangar in the world—had tested 300 different aircraft from the B-29 to the F-22, as well as 2,000 other pieces of equipment, munitions and vehicles. Next year the facility will celebrate its 70th year, and it is in as high demand as ever.

Foreign military customers have also tested their aircraft designs at the McKinley Climatic Lab, and so have some commercial and private aircraft companies. In the last decade, the 787 Dreamliner and the Airbus A350 have been put through climatic torture tests there.

The 55,000-square foot insulated main chamber has an array of cooling and heating components available including mechanical cooling towers, large heading arrays and a steam plant. All types of conditions can be tested, from deep freezing to blowing rain to high humidity conditions to dust storms.

Also, different aircraft operations can be performed there, like running the aircraft under extreme thermal loads to test environmental control systems and cooling capacities. In all, the facility can provide testing environments with temperatures ranging from -70 to +180 degrees Fahrenheit.

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As part of the six chamber facility, there are also a large engine test cells and smaller climatic chambers that the main hangar that are often used to test vehicles like tanks and trucks, as well as munitions, and components of larger systems in extreme climatic conditions.

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The McKinley Climate Lab is just one more star in a constellation of elaborate and often massive facilities that allow the U.S. to remain the producer of the most capable weapon systems in the world, ones that can operate in a wide range of environments reliably.

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So the next time you land at an airport where an Air National Guard wing is located, or drive by a Air Force Base and see the aircraft sitting outside on a wintry or rain-soaked evening, remember that the Pentagon knows from testing at the McKinley Lab that they can withstand horrible conditions and live to fight another day.

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