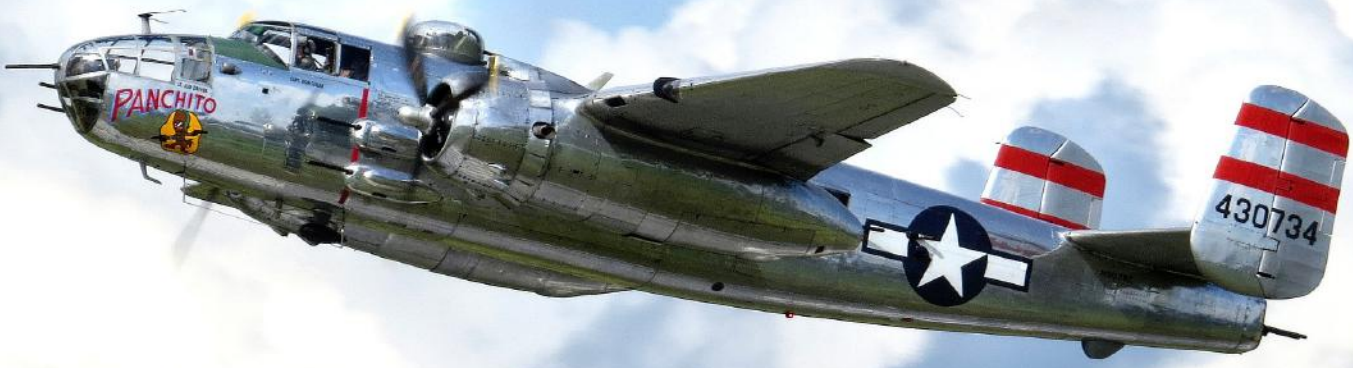
July 2025

Corey J Beitler's

"Distelfink Airlines"

An Online Aviation Newsletter

Mid-Atlantic Air Museum's World War II Weekend



The Delaware Aviation Museum's restored North American B-25J Mitchell "Panchito" takes to the sky for an airshow demonstration on Saturday afternoon at the 2025 Mid-Atlantic Air Museum's World War II Weekend. "Panchito" is an regular attendee at the event each year, with the bomber offering warbird experience flights and flying in airshow demonstrations daily.

FROM THE EDITOR'S DESK

WWII Weekend, H155/EC155 B1 Helicopter, Il-2 Shturmovik, Nose Art Photo Shoot

Greetings Everyone:

Welcome to the July edition of "Distelfink Airlines" The summer is here in Pennsylvania and the surrounding region and with it the height of the airshow season for me and my aviation photojournalism efforts. There are a lot of great aviation events upcoming, and I just covered the Mid-Atlantic Air Museum's World War II Weekend, which was held for the 34th year in 2025. Despite challenging weather conditions, including rain and thunderstorms, it was great to see so many friends and colleagues at this event.

The featured content for this edition of "Distelfink Airlines" is a photo feature about the Mid-Atlantic Air Museum's World War II Weekend. Once again, this event had a great selection of aircraft in attendance, and the photo opportunities at this event are endless. For this newsletter, the coverage is focused on the airshow and flying portions of the event. This is to keep the content manageable on my end and to keep the newsletter an acceptable length for reading. Some more content from the Mid-Atlantic Air Museum's World War II Weekend may run in a future edition of this newsletter. I would like to thank the Mid-Atlantic Air Museum and the World War II Media Coordinators, Dave and Christina Brown, for allowing me to cover World War II Weekend as credentialed media. It is truly an honor to cover such a unique event that honors our Greatest Generation.

The "Aviation Sightings" section of the newsletter highlights the Airbus Helicopters H155/Eurocopter EC155 B1. The helicopter featured is operated by Penn State Life Lion Emergency Medical Services, and its flight crew performed an excellent demonstration of the helicopter's capabilities at the Central PA Airshow back in May.

The "Aircraft of Special Interest" section this month features the Northrop/Northrop Grumman B-2A Spirit bomber. Popularly known as the "Stealth Bomber", the B-2A Spirit is designed to penetrate heavy anti-aircraft defenses undetected using stealth technology to drop conventional or nuclear ordnance. The B-2A was a late addition to the newsletter, being substituted in place of the original aircraft I planned to feature in this section since the B-2A was heavily involved in the recent Operation Midnight Hammer air strikes on Iran's nuclear enrichment facilities. The write-up has a technical and design look at this unique bomber.

The "Aircraft of the National Air and Space Museum" has a feature about the museum's Il-2 Shturmovik. The Il-2 was used as a close support aircraft throughout World War II and played a pivotal role in the Soviet Union achieving victory on the Eastern Front.

Finally, the "One Last Thing" section has some special photographs. Last year, the Mid-Atlantic Air Museum's Northrop P-61B Black Widow had nose art and a name painted on its nose. The wonderful artwork featuring a pin-up girl sitting in a crescent moon surrounded by stars was painted by automotive pinstriping and nose art artist Jennifer "Hot Rod Jen" Thomas. Members of the America's Sweethearts girl group joined the P-61B Black Widow with its new nose art for some special photos. I want to thank the Mid-Atlantic Air Museum for permission to do the photo shoot with the Black Widow and the America's Sweethearts for being willing to do the photo shoot in rainy conditions.

Thank you again for supporting my aviation photojournalism efforts and "Distelfink Airlines" this year. Please feel free to share the newsletter with whoever you wish and invite them to join the newsletter's official social media pages listed below.

Regards,
-Corey

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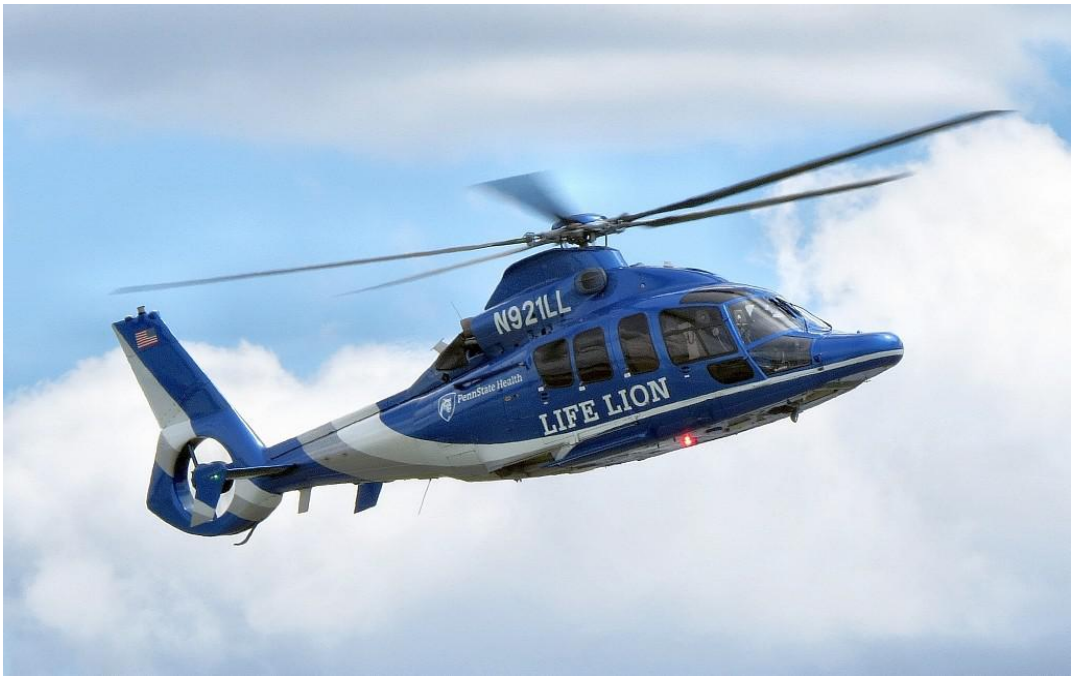
What's Inside:

Airbus Helicopters H155/Eurocopter EC155 B1



An Airbus Helicopters H155/ Eurocopter EC155 B1 operated by Penn State Life Lion Emergency Medical Services performs a flight demonstration at the 2025 Central PA Air Show held at the Harrisburg International Airport in May. The H155/EC155 B1 is used worldwide by civilian operators in passenger transport, VIP corporate transport, offshore drilling support, and casualty evacuation roles.

The Airbus Helicopters H155/Eurocopter EC155 is a long-range, medium-lift, twin-engine passenger helicopter developed from its Dauphin family for civil aviation use. The aircraft can carry up to 13 passengers along with one or two crew members, depending on configuration. The helicopter is marketed for passenger transport, offshore drill support, VIP corporate transport, and casualty transport duties. Designated the EC155 in the late 1990s when designed by Eurocopter, the helicopter was renamed the H155 in line with Eurocopter's rebranding as Airbus Helicopters in 2015.

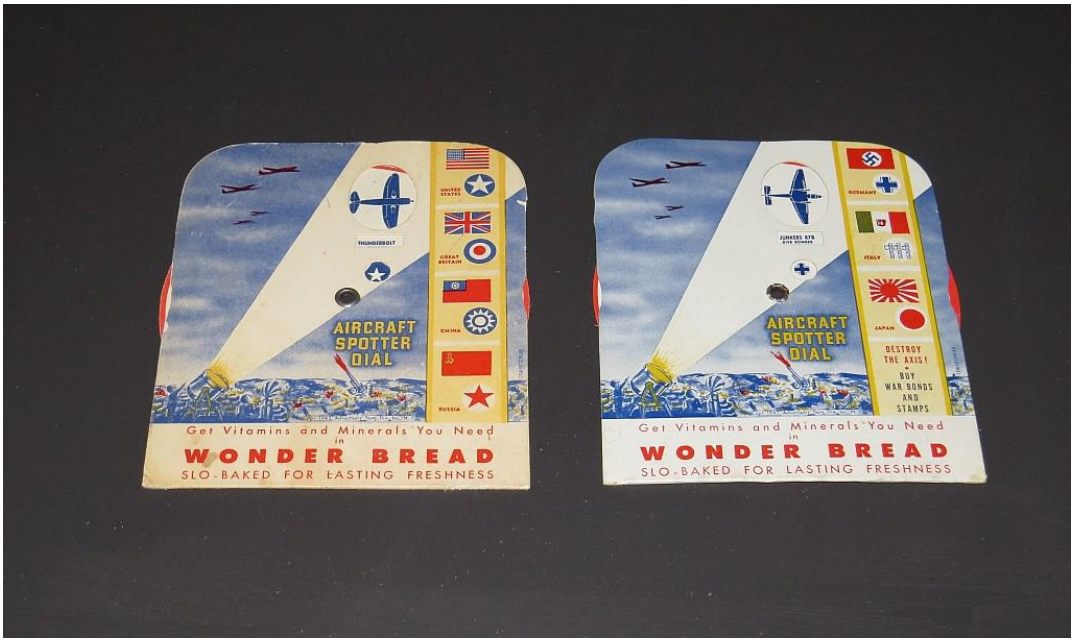
The H155/EC155 was developed by Eurocopter in the late 1990s with the goal of significantly increasing the cabin space of the smaller Dauphin design. The first EC155, a modified Dauphin airframe, flew for the first time in 1997. Deliveries of the first production version, the EC155 B, began in 1999. In 2002, the EC155 B1, a variant with uprated engines for improved performance at high altitudes and temperatures, entered production and became the primary production variant. The EC155 B1 is powered by two Turbomeca Arriel 2C2 turboshaft engines, which feature a Full Authority Digital Engine Control System (FADECS). The helicopter features an all-glass cockpit, an anti-icing system for operating in cold weather, a digital autopilot, and a Health and Usage Monitoring System (HUMS) that monitors the aircraft's systems. The helicopter is fitted with a five-blade Spheriflex composite main rotor and a shrouded Fenestron tail rotor, which reduces vibration. The H155/EC155 is available in several configurations, including passenger transport with seating for 12 passengers, a VIP transport version with seating for eight passengers, and a casualty transport version which can carry two stretchered patients and four seated medical staff or four stretchered patients and two seated medical staff. The H155/EC155 can also be configured with equipment by customer request for missions such as law enforcement and search-and-rescue.

This H155/EC155 B1 is one of four medical helicopters operated by Penn State Life Lion Emergency Medical Services. Penn State Life Lion serves six medical centers in Central Pennsylvania and averages over 1,100 flights a year. Since 1986, Penn State Life Lion has transported over 40,000 patients of all ages needing emergency medical care or critical care transport.


LIFE LION


LIFE LION

1943 Wonder Bread Advertising Aircraft Spotter Dial

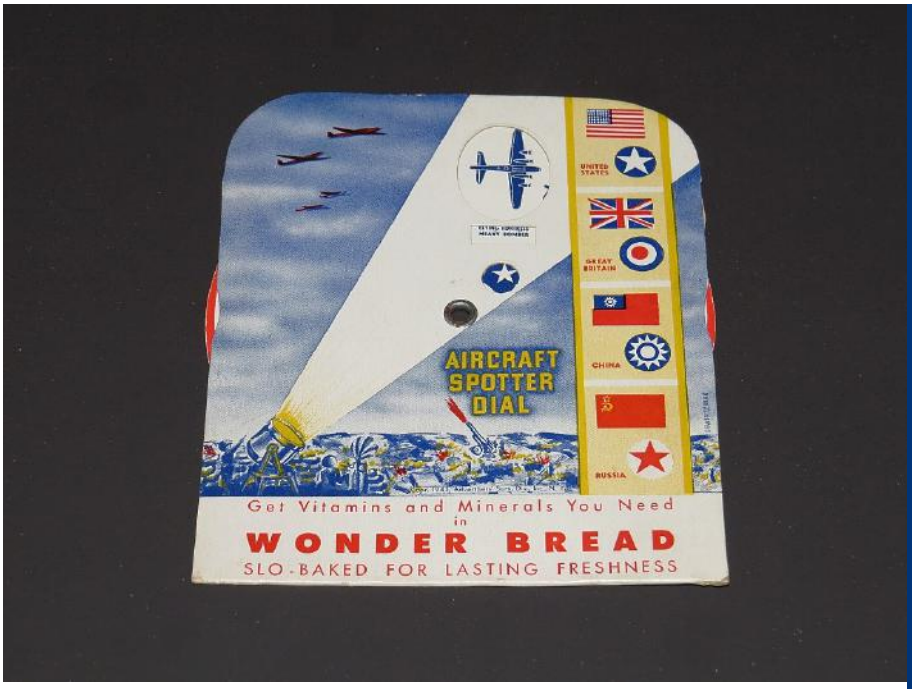


In 1943, Wonder Bread issued this Aircraft Spotter Dial as a promotional item to its customers. The dial featured Allied and Axis aircraft and included illustrations of their silhouettes and the insignias of the countries they represented. As an item constructed of cardboard, many of these were used and wore out over time. Common issues with surviving examples of this item are yellowing, the wheel being loose or getting stuck, and soiling on the cardboard.

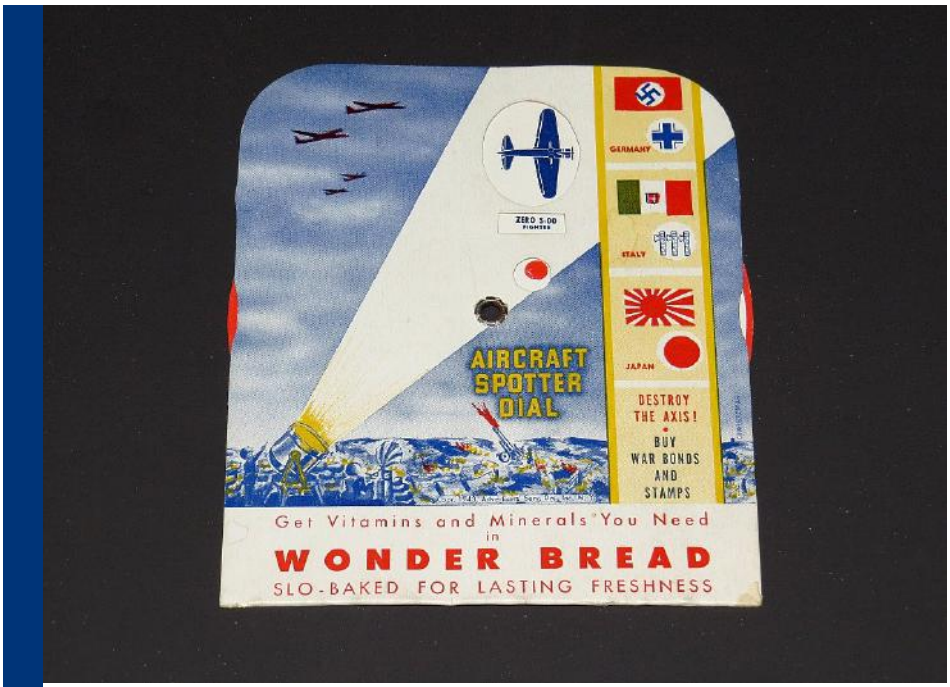
Wonder Bread is an American brand of sliced bread available for purchase in supermarkets and grocery stores nationwide. The bread is known for its soft and fluffy texture and has been a staple in many American kitchens since its introduction, especially for making sandwiches. Introduced by the Taggart Baking Company in Indianapolis, Indiana, in 1921, Wonder Bread was one of the first brands to sell sliced bread in the United States, doing so nationwide by 1930. Ownership of the Wonder Bread brand has changed several times during its 104-year history. The brand is currently owned by Flower Foods, which acquired it from Interstate Bakeries Corporation in 2013. Throughout its history, the Wonder Bread brand has been well-known due to its colorful logo featuring red, yellow, and blue balloons and its extensive use of advertising and promotional materials in marketing campaigns.

Advertising dials were promotional items given away by companies to promote their business and products. The dials were constructed of either cardboard or plastic and featured one or more wheels that rotated around a center core. These wheels were sometimes enclosed in plastic or cardboard sleeves. The dials or sleeves had openings on them, and when the wheels were turned, these openings aligned to reveal information or images. Dials were popular as advertising items from the 1930s until the late 1970s. They were especially popular as advertising items with gasoline and oil companies, which often gave away dials that presented information about gas mileage in relation to speed and distance driven. Unlike some advertising pieces given away by companies, such as rulers and ink blotters, dials were not nearly as popular because they were expensive to produce and print.

In 1943, Wonder Bread produced this Aircraft Spotter Dial as a promotional item for its customers to advertise the brand and promote the war effort. This dial was most likely available in a store merchandise display or given out by grocery stores with a purchase of Wonder Bread. This advertising promotional item was one of thousands produced by American companies during World War II to promote the war effort and advertise their brand or product. The dial features information about aircraft used during the war by both the Allies and Axis countries. Turning the dial's wheel reveals a silhouette of an airplane, its designation and role, and the insignia of the country of origin. One side of the dial features select Allied aircraft, and the other features select Axis aircraft. The outer portion of the dial features color illustrations of the aircraft markings used by the countries at war, an illustration of an air raid taking place, a reminder to buy stamps and war bonds, and advertising for Wonder Bread.

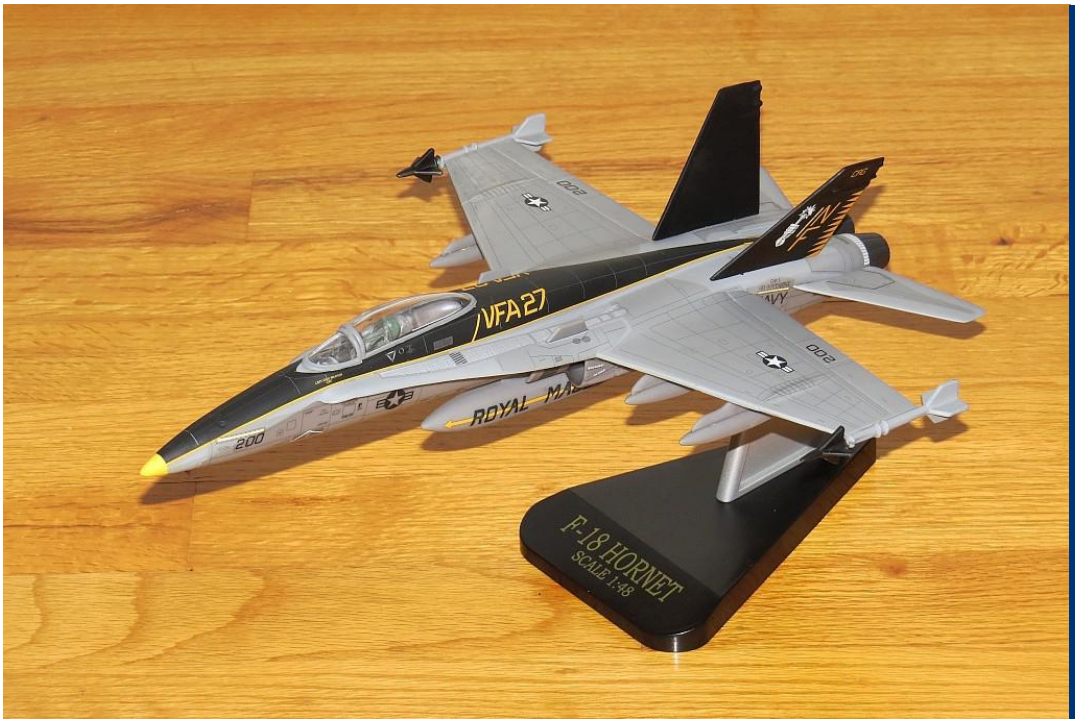


On one side of the dial, Allied aircraft illustrations are featured. The illustrations include a selection of fighter, bomber, and transport aircraft from the United States, Great Britain, China, and the Soviet Union. Both sides of the dial feature an illustration of an air raid taking place and advertising for Wonder Bread.



The other side of the dial features illustrations of fighter, bomber, and transport aircraft from the Axis nations of Germany, Italy, and Japan. Unlike the side that features aircraft from the Allied countries, this side of the dial also has messaging about buying war bonds and stamps to help destroy the Axis.

Toy Zone 1/48 McDonnell Douglas/Boeing F/A-18 Hornet



Toy Zone made this excellent entry-level, affordable model of a McDonnell Douglas/ Boeing F/A-18 Hornet fighter and strike aircraft in the mid-2000s. The model was sold at big box retailers such as Toys R' Us and Walmart. The model is finished in the colorful markings of U.S. Navy Strike Fighter Squadron 27 (VFA-27) "Royal Maces". VFA -27 flew the McDonnell Douglas F/A-18 Hornet A/C from 1991 to 2004. The squadron now flies the Boeing F/A-18E Super Hornet and is stationed at Marine Corps Air Station (MCAS) Iwakuni in Japan.

The McDonnell Douglas (later Boeing) F/A-18 Hornet is an all-weather, twin-engine, carrier-capable, multirole combat aircraft designed to perform both fighter and attack missions. Designed initially by McDonnell Douglas and Northrop, the F/A-18 was derived from the YF-17, a concept fighter designed in the 1970s for use by the U.S. Navy and Marine Corps. The Hornet was also purchased by the air forces of several nations and for several years, was the aircraft of choice for the U.S. Navy Flight Demonstration Squadron, the Blue Angels, in airshow demonstrations.

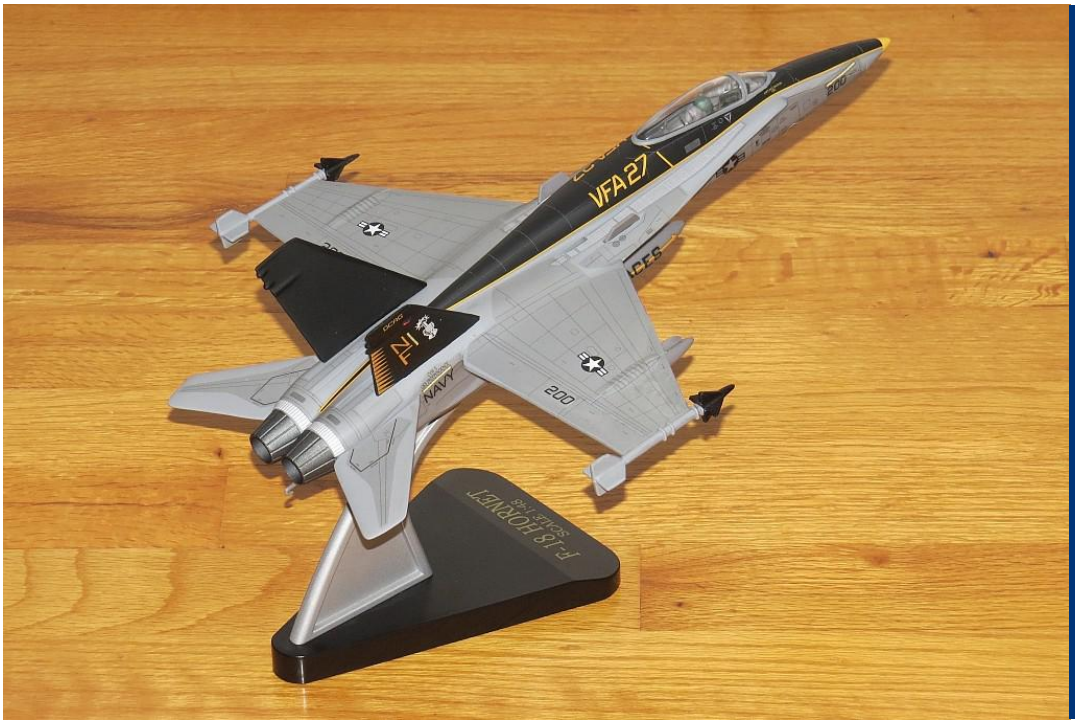
The F/A-18 Hornet was designed in the 1970s in response to a request by the U.S. Navy for a lower cost and smaller alternative to the Grumman F-14 Tomcat, which was expensive to operate and maintain. Working in partnership, McDonnell Douglas and Northrop developed the smaller Hornet, which was designed to perform both as an air superiority fighter and an attack aircraft. The smaller F/A-18 Hornet had a length of 56 feet 1 inch (17.1 m), a height of 15 feet 5 inches (4.7 m), and a wingspan of 40 feet 4 inches (12.3 m). The F/A-18 was also lighter than the F-14, with a gross weight of 36,970 pounds (16,769 kg) and a maximum takeoff weight (MTOW) of 51,900 pounds (23,541 kg). Powered by a pair of General Electric F404 turbofan engines, the F/A-18 Hornet had a top speed of Mach 1.8.

The F/A-18 Hornet featured several technological innovations. The Hornet was the first production fighter aircraft to use a digital fly-by-wire flight control system with quadruple redundancy. This fly-by-wire flight control system, combined with the Hornet's excellent thrust-to-weight ratio, gives the aircraft superb maneuverability. The canted vertical stabilizers, one of the Hornet's distinctive features, trailing-edge flaps that operate as flaperons, oversized stabilators, and full-length leading-edge slats allow the F/A-18 to remain controllable at high angles of attack, even at low speeds. The Hornet was also one of the first fighter and attack aircraft to make extensive use of multifunction displays in its cockpit. These multifunction displays allowed the pilot to switch between fighter and attack roles in the F/A-18 Hornet simply by pushing a button.

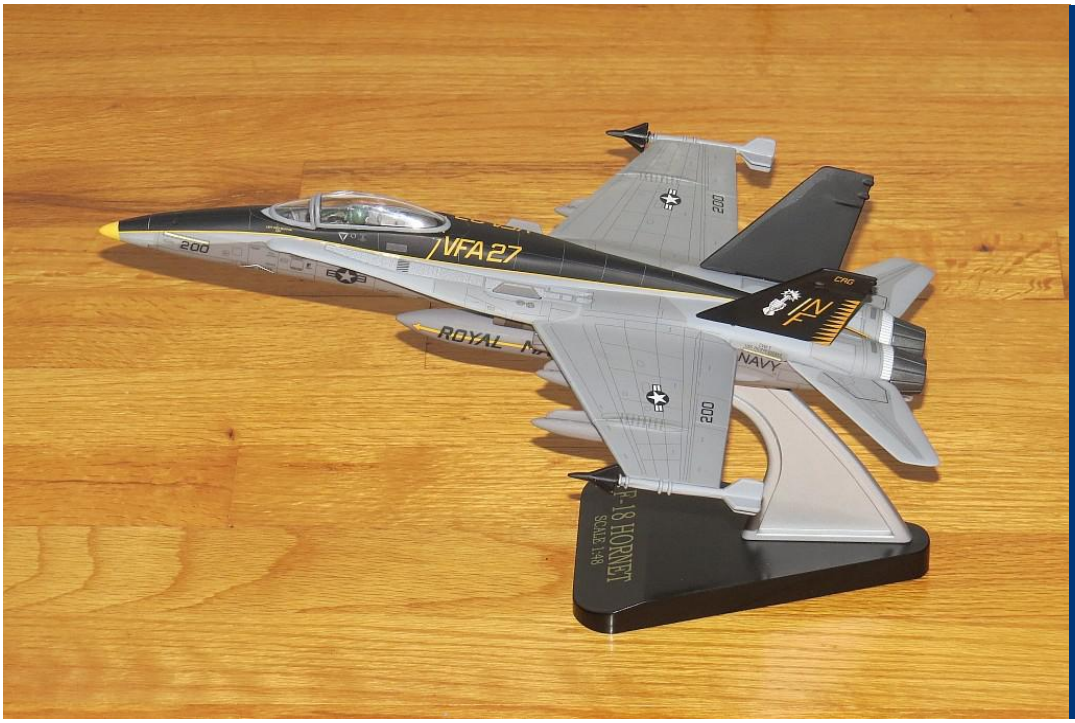
The F/A-18 Hornet first flew in 1978 and entered service with the U.S. Marine Corps in 1983. The U.S. Navy version of the Hornet entered service in 1984. Initially, the Hornet was produced in two versions, the F/A-18A single-seat version and the F/A-18B, a two-seat version that retained the combat capability of the single-seat version but used primarily for training. In 1987, an improved version of the F/A-18, the F/A-18C, was introduced and became the standard production variant. An improved two-seat version with night attack and forward air controller capability for the U.S. Marine Corps, the F/A-18D, was also developed. In the F/A-18D, the second seat is configured for a Weapons and Sensors Officer who assists in operating the weapons systems.

The F/A-18 Hornet's first combat operations took place in 1983 when F/A-18s were used to suppress Libyan air defenses during Operation Prairie Fire and later during the attack on Benghazi as part of Operation El Dorado Canyon. The F/A-18 Hornet was used extensively during the 1991 Gulf War, where military commanders praised the aircraft's versatility, reliability, and capabilities. During Operation Desert Storm, the F/A-18 set records for tactical aircraft in availability and reliability. F/A-18s were also used, along with the newer F/A-18 Super Hornets, during Operation Iraqi Freedom in 2003. After many years of reliable service, the U.S. Navy officially retired their last F/A-18C Hornets in 2019. The U.S. Marine Corps plans to continue operating their F/A-18 C/D Hornets until the early 2030s.

In addition to the U.S. Navy and Marine Corps, the F/A-18 Hornet was purchased by the air forces of several other countries. Outside of the United States, the Royal Canadian Air Force was the largest purchaser of the F/A -18 Hornet. Other nations that purchased F/A-18 Hornets for their air forces include Australia, Spain, Malaysia, Kuwait, Finland, and Switzerland. During a production run that lasted from 1974 to 2000, a total of 1,480 F/A-18 Hornets were built by McDonnell Douglas, Northrop, and Boeing when it bought out McDonnell Douglas in 1997. Boeing used its experience building the F/A-18 Hornet to design a derivative, the larger and more advanced F/A-18 Super Hornet. The Super Hornet is available in single-seat F/A-18E and two-seat F/A-18F variants and is in service with the armed forces of the United States, Australia, and Kuwait. A specialized electronic warfare version of the F/A-18F, the EA-18G Growler, has also been built for the U.S. Navy and the Royal Australian Air Force.



This angle of the Toy Zone 1/48 scale McDonnell Douglas/Boeing F/A-18 Hornet illustrates the colorful markings and decorations throughout the model. Toy Zone did an excellent job picking a colorful paint scheme that would stand out well on a bookshelf or desk, in this case, the Commanding Officer's aircraft from VFA-27. Most of the squadron markings, and even some of the panel details, are decals rather than pad-printed graphics.



The Toy Zone 1/48 scale F/A-18 Hornet does have some shortcomings as a model. The model, despite its large size, has limited detail and no moving parts such as landing gear or an opening canopy. The paint and marking details are simple, and the colors of the ordnance are inaccurate. Perhaps the most significant shortcoming of the model is Toy Zone omitted the missile rails on the wingtips, one of the distinguishing features of the F/A-18 Hornet. Instead, ToyZone directly attached the AIM-9 Sidewinder missiles directly to the wingtips, which is incorrect.

Today, the variants of the F/A-18 Hornet remain in service with the U.S. Marine Corps and the air forces of several other countries worldwide. Canada, Switzerland, Spain, Finland, and Kuwait still operate single and twin-seat variants of the Hornet. Unfortunately, age and airframe fatigue are becoming a factor, and the Hornet's days are numbered in military service. All the countries mentioned expect to phase out their F/A-18s by the 2030s if not sooner. Some of these countries plan to transition to the Lockheed Martin F-35 Lightning II stealth fighter. Kuwait is in the process of replacing its F/A-18 Hornets with the newer and more capable Boeing F/A-18 Super Hornet.

This 1/48-scale die-cast and plastic model of a U.S. Navy McDonnell Douglas F/A-18 Hornet was made by the toy manufacturer Toy Zone in the early-to-mid 2000s. Toy Zone produced and distributed die-cast toy vehicles to big-box retailers and toy stores, including Toys R' Us and Walmart. When sold at Walmart, some of Toy Zone's products were packaged under the name Motorworks, the in-house, generic brand name Walmart uses for some toys sold in their stores.

The F/A-18 Hornet die-cast and plastic model was part of a line of die-cast toy aircraft Toy Zone made called the "Air Power Collection". These models were designed as entry-level, affordable die-cast replicas for older children and adults. The F/A-18 Hornet model was released in two color schemes, a F/A-18 in the colors and markings of U.S. Navy Strike Fighter Squadron 195 (VFA-195) "Dambusters", and a F/A-18 flown by U.S. Navy Strike Fighter Squadron 27 (VFA-27) "Royal Maces". The model included a display stand, which needed to be assembled using the screws provided with the model.

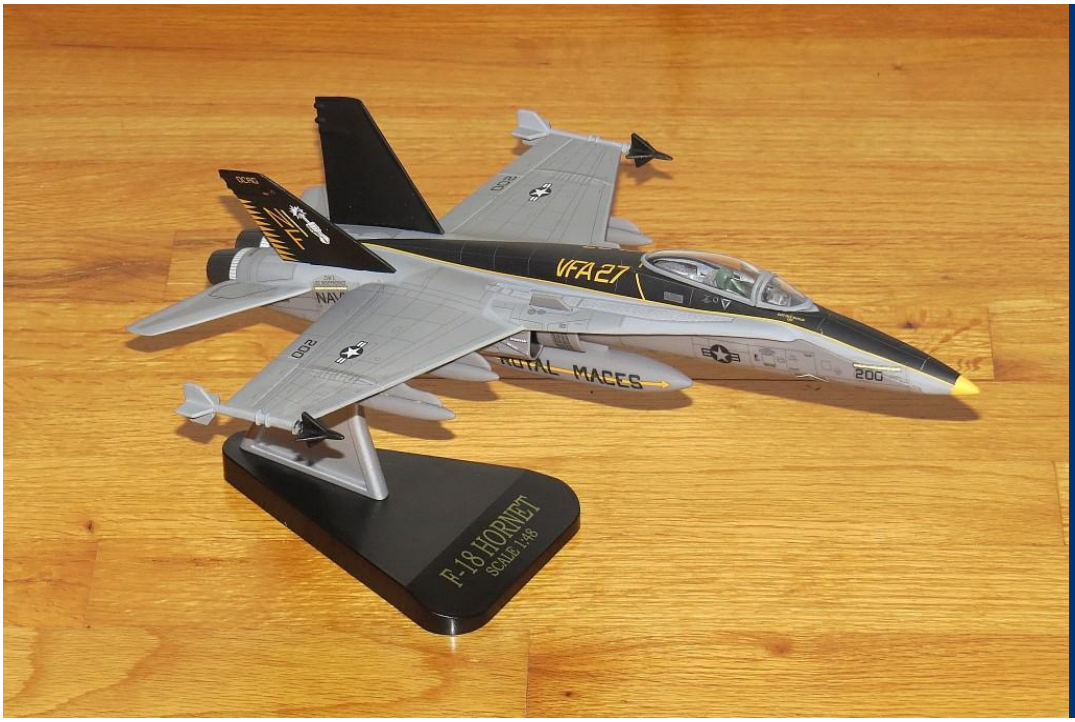
The Toy Zone F/A-18 Hornet model featured excellent details for a model geared toward entry-level collectors. The colorful squadron markings represent the commander's aircraft from VFA-27, which are decals. Decals are also used to represent some of the vents, access panels, and stenciling that would be found on the F/A-18 Hornet throughout the model. The model also has a low-visibility gray paint finish, with some panels painted a slightly different shade of gray to represent weathering. The F/A-18 is also equipped with a pair of AIM-9 Sidewinder missiles mounted on the wingtips, four all-purpose bombs mounted on the underwing pylons, and an external fuel tank mounted on the fuselage pylon. The model also features a plastic figure representing the pilot seated in the cockpit.

Toy Zone manufactured the F/A-18 Hornet model in the "in flight" configuration, and there is no landing gear to open and fold down or plug into place. As a result, the model included a stand, and it must be used to display the F/A-18 on a desk or bookshelf. The stand consists of a sturdy plastic base and a metal arm. Two screws are included to attach the metal arm to the plastic base. As the F/A-18 model is primarily made of die-cast metal, it is quite heavy. The large base of the stand and the metal arm support the model's weight with no issue.

This F/A-18 Hornet was an entry-level model available at an affordable price point, so a lower level of detail is expected. Unfortunately, Toy Zone made some printing errors when producing their F/A-18 Hornets. The stand identifies the aircraft as an F-18. Although this identification is often used informally as the Hornet's designation, it is not officially correct. On the "Dambusters" version of the F/A-18, Toy Zone identified the Hornet as being from VFA-309. The correct designation for the "Dambusters" squadron is VFA-195. The pilot names on each aircraft are also incorrect as to who flew them based on research photos of the actual F/A-18 Hornets these models are supposed to represent.

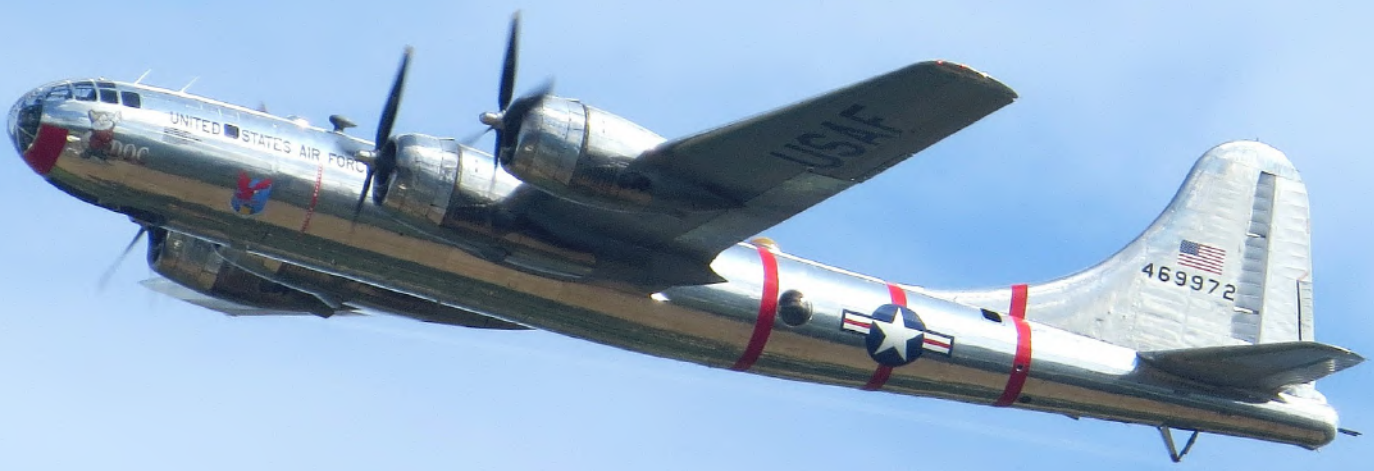
The other significant issue with this model has to do with the wingtips. For unknown reasons, Toy Zone mounted the AIM-9 Sidewinder missiles directly to the F/A-18 Hornet's wingtip. This is incorrect, as the F/A-18 is has rails installed on its wingtips so missiles can be carried at this position. This was a significant error for Toy Zone to make on this model. Finally, the colors of the missiles and bombs mounted on the F/A-18 Hornet are inaccurate and lack any type of paint detail, such as stenciling, which would add to the model's realism.

For an entry-level model that was available at an affordable price point when it was released 20 years ago, Toy Zone's F/A-18 Hornet is a simple model of the fighter and attack jet for anyone who wants something to display on their bookshelf or desk. The model's large size and simple construction make it ideal for display in the room of an airplane-loving child. Aviation enthusiasts will probably want a higher-quality model for their collections. Despite its shortcomings, Toy Zone's F/A-18 Hornet holds a unique place in the collecting world, as it is one of the few models of an F/A-18 Hornet available in die-cast in 1/48 scale. It is also a model that is perfect for entry-level collectors who want to have a model of the fighter and attack jet but do not want to pay the expensive prices premium die-cast models now retail for.



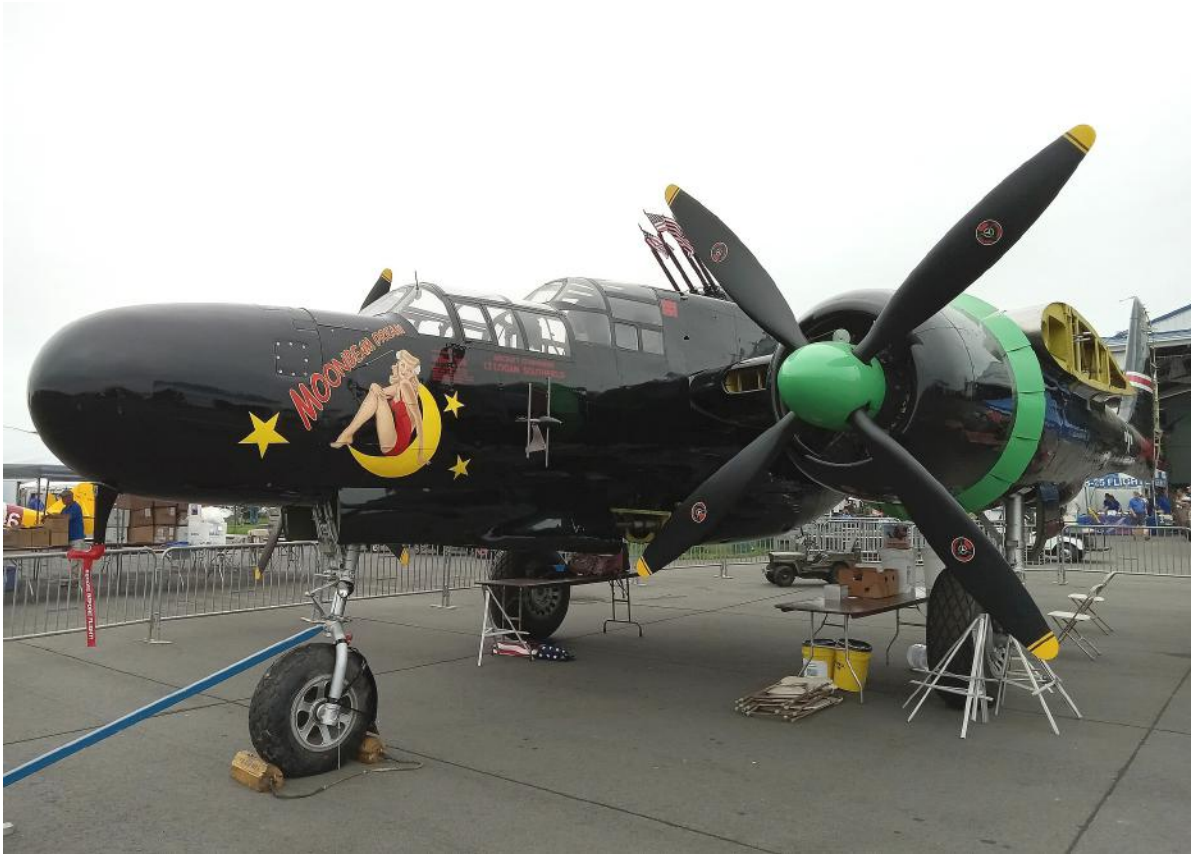
Despite its shortcomings, the Toy Zone 1/48 scale die-cast F/A-18 Hornet model is a nice addition to any bookshelf or desk and an excellent choice for anyone looking for a large and affordable model of the fighter and attack jet. The model features quality die-cast construction and a sturdy display stand. The model is a nice complimentary piece to the company's 1/48-scale Grumman F-14 Tomcat die-cast model, which features the same level of detail. Both models can still be found with time and patience on the secondary market for reasonable prices.

Mid-Atlantic Air Museum's World War II Weekend



The 34th edition of one the nation's largest living history events and airshows dedicated to the World War II era battled challenging weather but drew large crowds to the museum located at the Reading Regional Airport near Reading, Pennsylvania.

The restored Boeing B-29 Superfortress "Doc" operated by Doc's Friends Inc. flies high overhead at the 2025 Mid-Atlantic Air Museum's World War II Weekend held in June. This was the first year "Doc" visited the Mid-Atlantic Air Museum's World War II Weekend since the bomber had made a non-flying appearance at the event back in 2018.



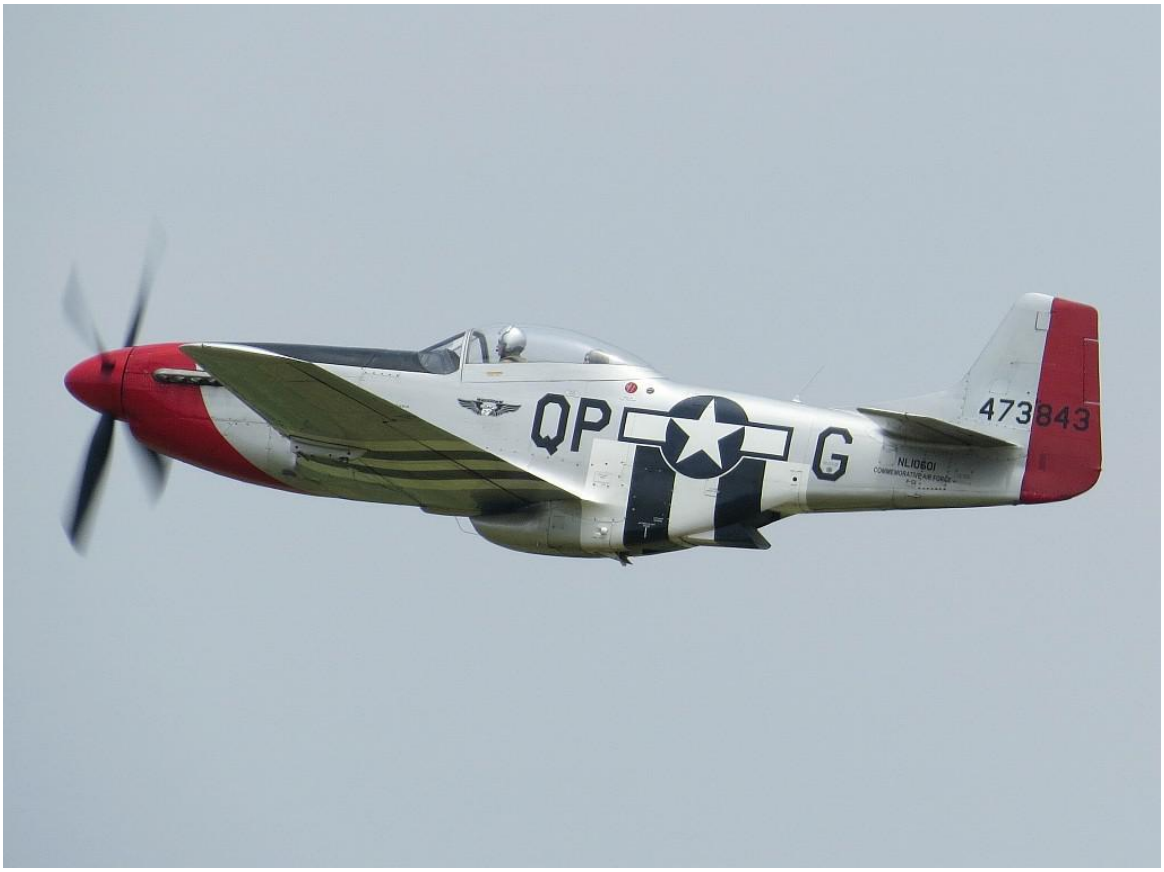
One of the things to check out at the 2024 Mid-Atlantic Air Museum's World War II Weekend was the progress made on their Northrop P-61B Black Widow night fighter restoration project. Museum volunteers have been slowly restoring this aircraft since it was recovered from Indonesia in 1989. This year, the P-61B had new nose art and a new identity, "Moonbeam Dream".

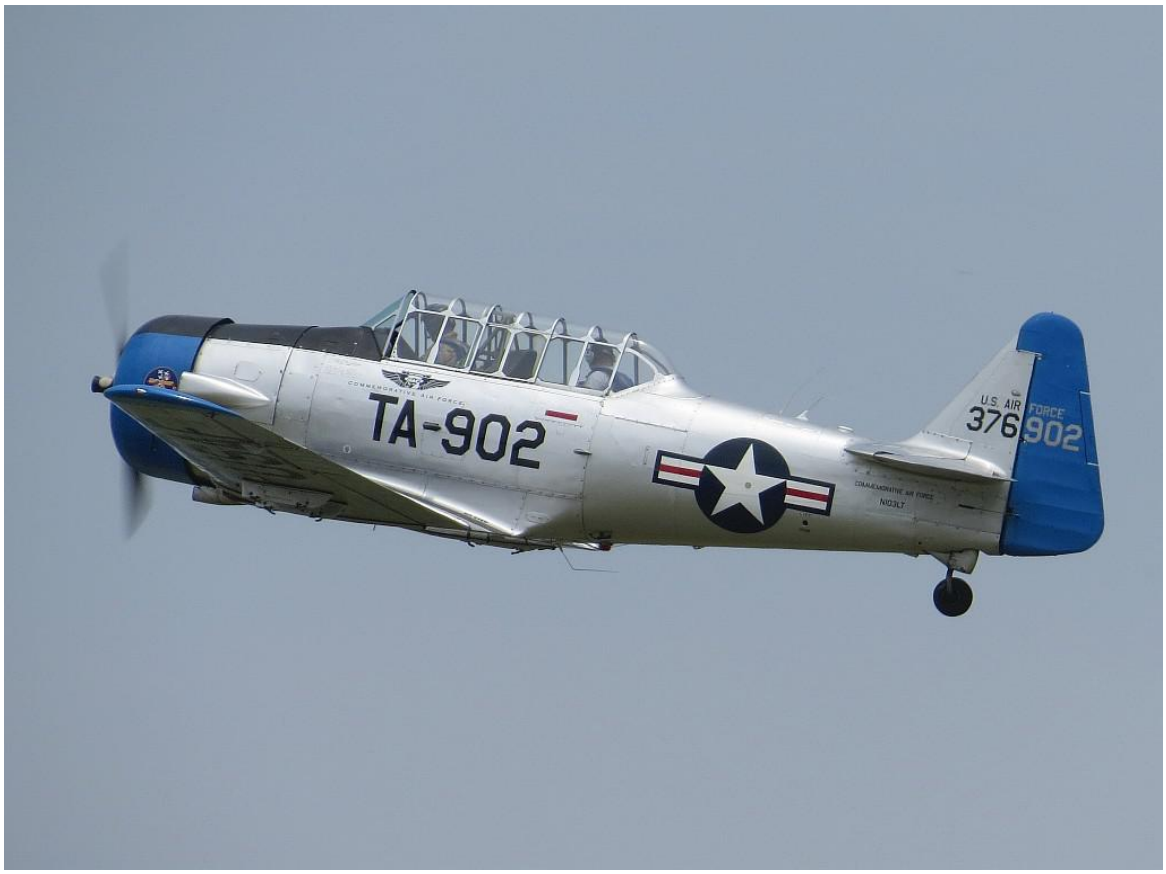
For the 34th year, the Mid-Atlantic Air Museum, based at the Reading Regional Airport in Reading, Pennsylvania, held its annual World War II Weekend living history event and airshow on June 6, 7, and 8. World War II Weekend captures the essence of these pivotal years in world history with an event that has grown into one of the most popular airshows in the United States showcasing restored World War II aircraft. The event is also one of the largest living history reenactments in the nation, featuring hundreds of restored military vehicles and over 1,500 reenactors portraying all aspects of life during the war. World War II Weekend also features live entertainment appropriate to the era, special guest speakers, and World War II veterans as distinguished honored guests. The event has become a wonderful living history tribute to the men and women of the "Greatest Generation".

This year, World War II Weekend featured over 30 restored World War II-era fighters, bombers, trainers, and transports. Two aircraft visiting the event for the first time included the North American P-51C "Thunderbird" from the Dakota Territory Air Museum and the Military Aviation Museum's rare Messerschmitt Me-262A, a replica of the world's first operational jet fighter. Returning to the event for the first time since 2018 was the Boeing B-29 Superfortress "Doc" operated by Doc's Friends Inc. Also returning to the event after being absent for a few years was the Curtiss SB2C-5 Helldiver operated by the Commemorative Air Force West Texas Wing. Also attending the event was an annual favorite, the North American P-51 Mustang "Red Nose" from the Commemorative Air Force Airbase Georgia. In addition to the daily airshow, World War II Weekend once again featured live entertainment, battle reenactments, warbird flights, and a military vehicle parade.

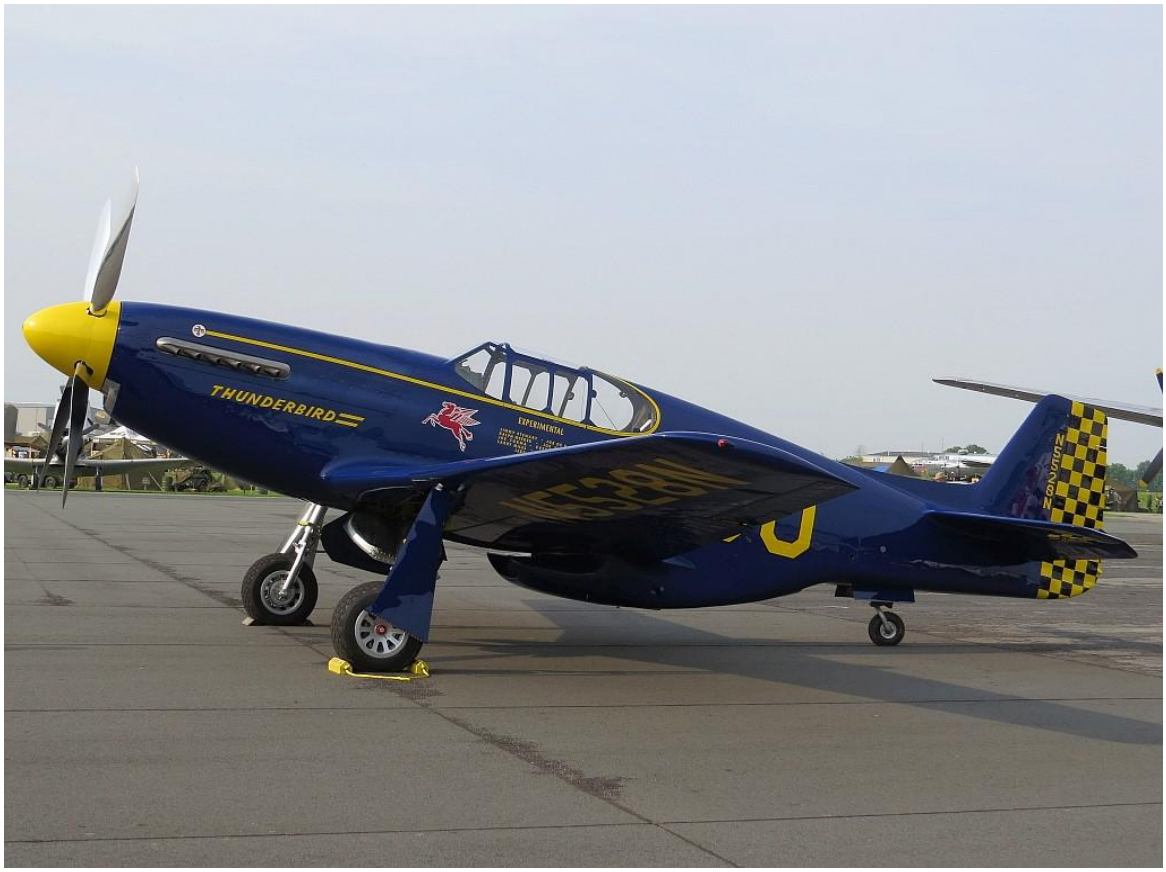
Despite challenging weather that delayed and canceled some of the airshow flight demonstrations each day, World War II Weekend was once again well-attended by aviation, military, and history enthusiasts of all ages. The following photographs showcase some aircraft and airshow highlights from the 2025 Mid-Atlantic Air Museum's World War II Weekend.

Aircraft attending the Mid-Atlantic Air Museum's World War II Weekend began to arrive mid-week, depending on how far they have to travel to get to the event and pilot availability. Some of the early arriving aircraft offer warbird experience flights starting on Thursday afternoon. These ride flights bring additional revenue to the museums that operate the aircraft for maintenance. This is the Commemorative Air Force Airbase Georgia's P-51 Mustang "Red Nose" departing on a ride flight.



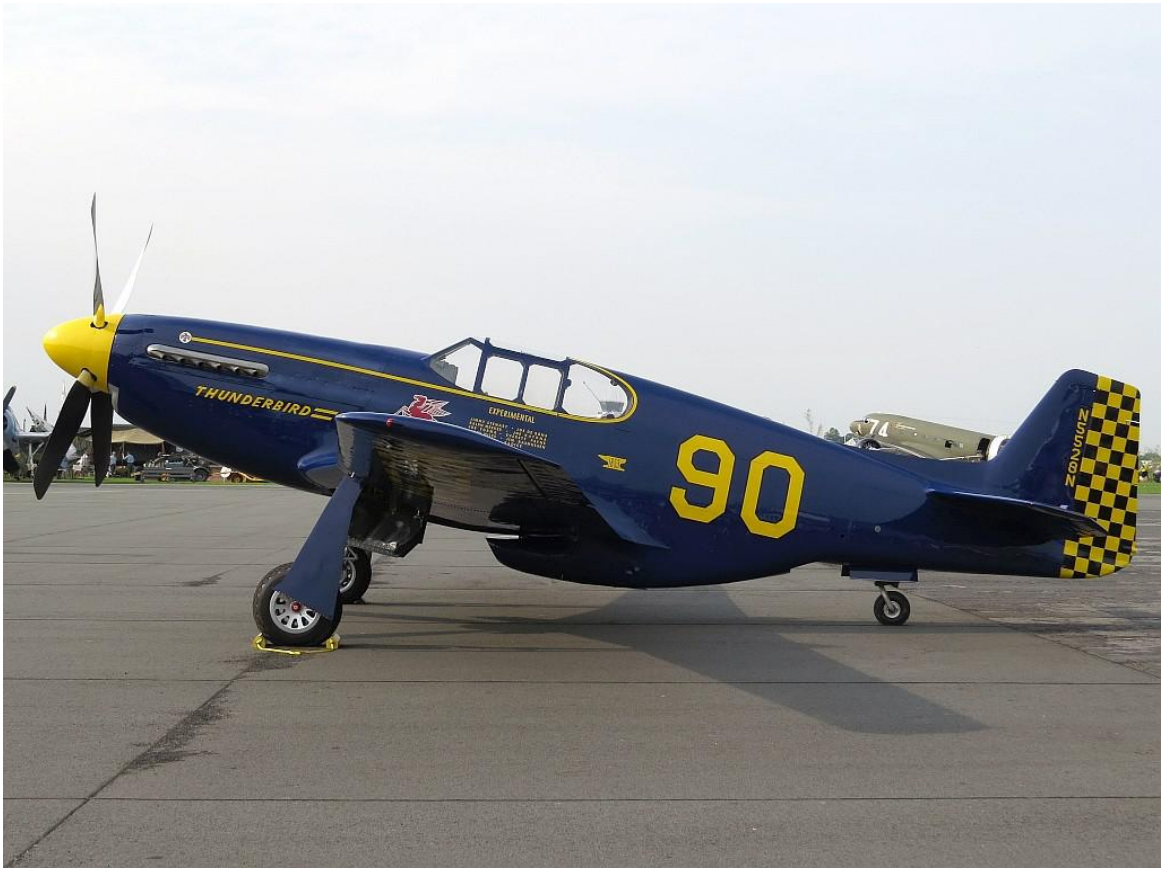


The Commemorative Air Force Airbase Georgia is an annual supporter of the Mid-Atlantic World War II Weekend and usually sends several aircraft to the event each year. An early arrival at the event this year was their North American LT-6 Mosquito, which the organization offers ride flights in. The LT-6 Mosquito was a version of the famous AT-6 single-seat, single-engine advanced training aircraft converted for use as an airborne forward air controller. LT-6s were used extensively during the Korean War.

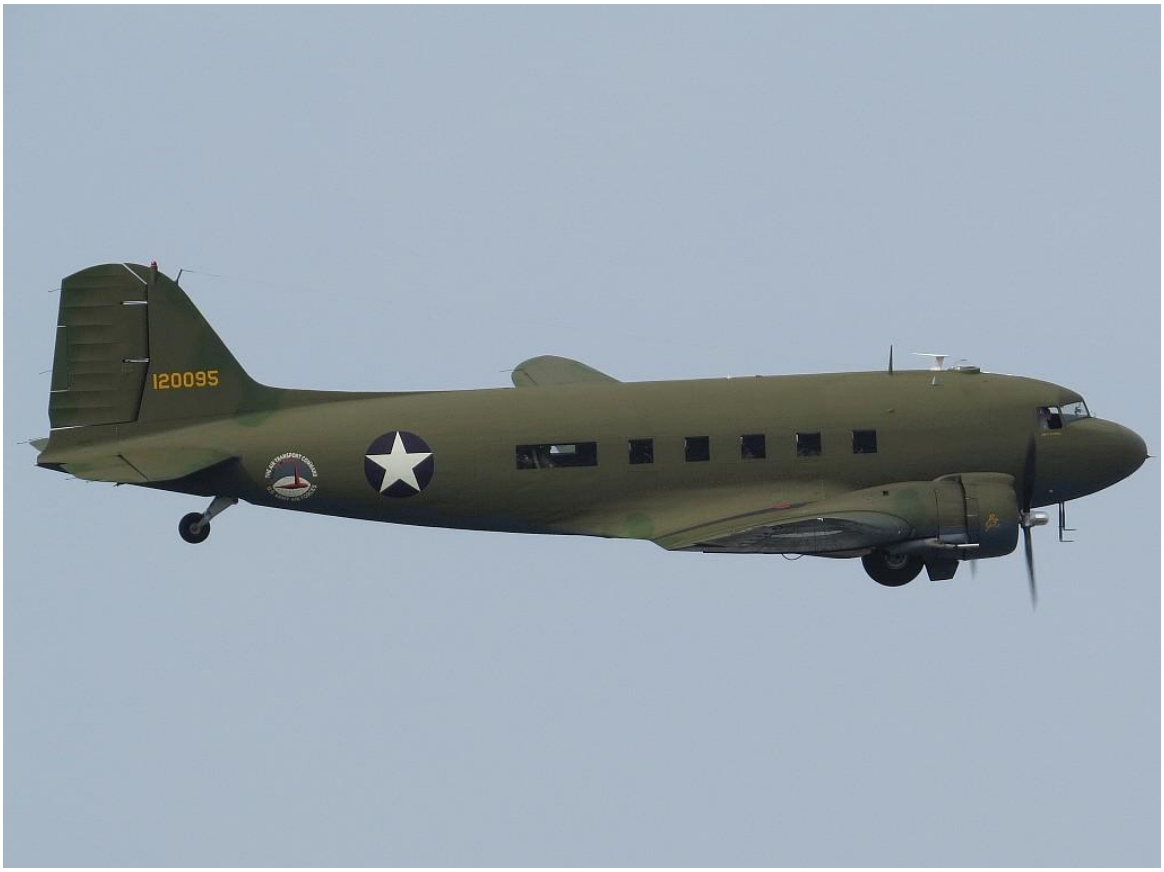


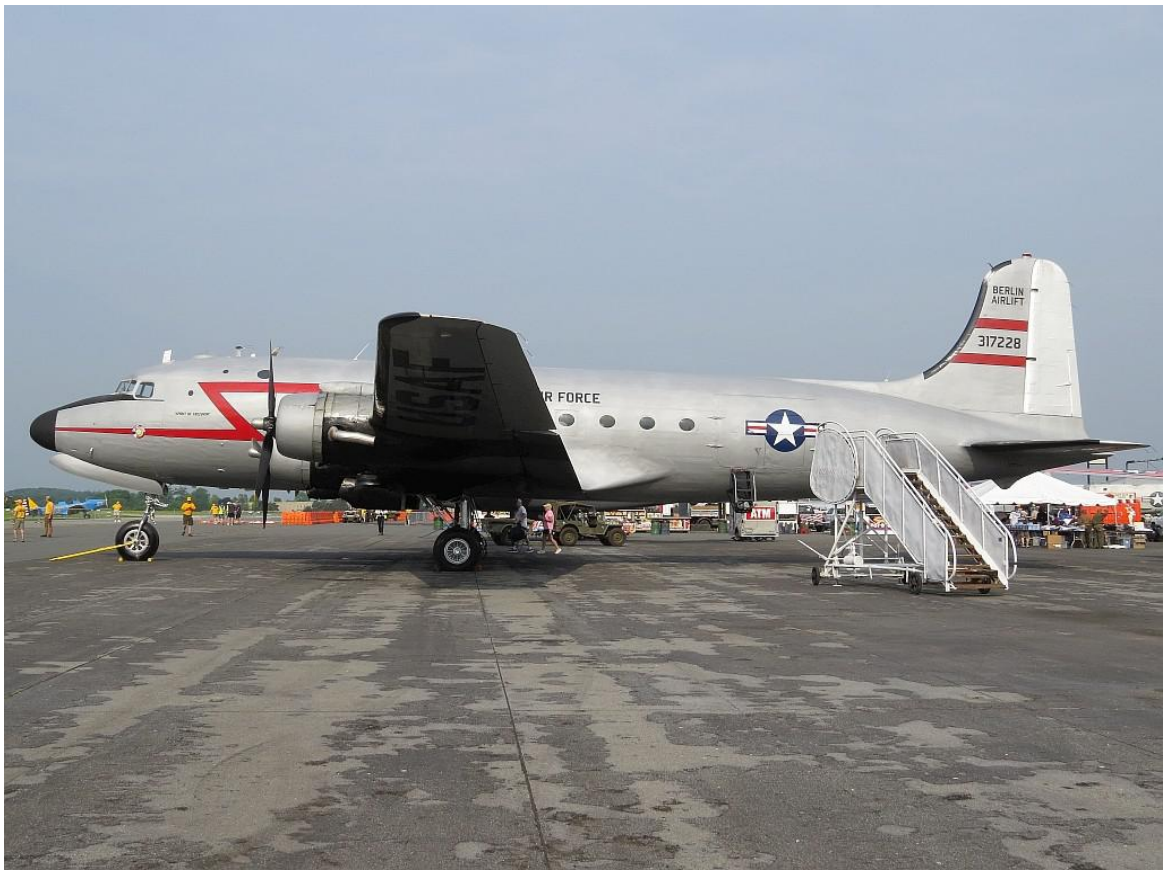
The Mid-Atlantic Air Museum's World War II Weekend opens on Friday and early arrivers to the event on Friday morning often have the opportunity to get photographs of the aircraft on static display without any people walking around them. A new airplane in attendance this year was the Dakota Territory Air Museum's restored North American P-51C Mustang "Thunderbird". "Thunderbird" was once owned by World War II B-24 pilot, Brigadier General, and film actor Jimmy Stewart.

Another early morning photo at World War II Weekend of the Dakota Territory Air Museum's gorgeous North American P-51C Mustang "Thunderbird". This modified P-51C Mustang won the 1949 Bendix Trophy Race flown by pilot Joe DeBona, averaging 470 miles per hour and setting a speed record for piston-engine aircraft event. "Thunderbird" was later owned by Jacqueline "Jackie" Cochran, who was the director of the Women Airforce Service Pilots (WASPs) organization during World War II.

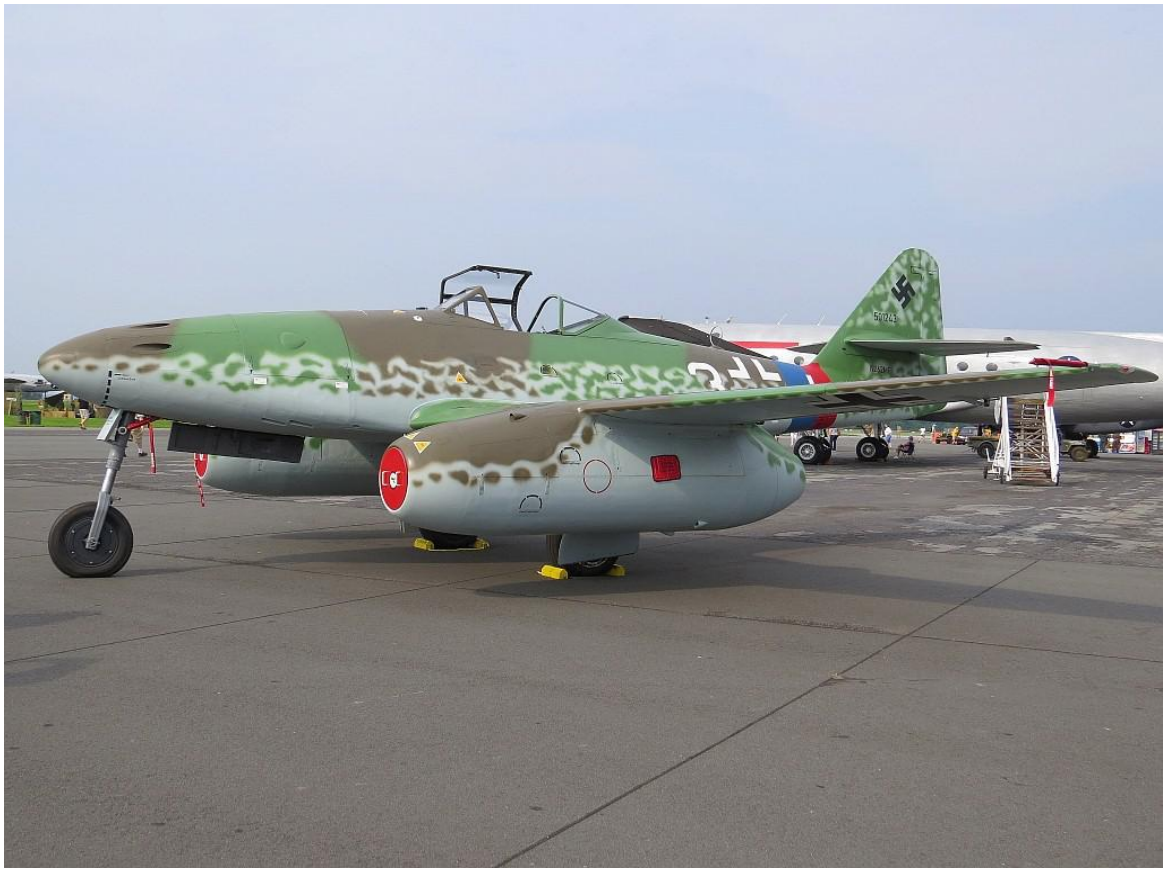


Aircraft attending the Mid-Atlantic Air Museum's World War II Weekend arrive throughout the day on Friday, and sometimes Saturday morning if they have weather or mechanical delays. Vintage Wings Inc. arrived at World War II Weekend on Friday morning with their Douglas C-53 Skytrooper "Beach City Baby" from Franklin in Western Pennsylvania. In this photo, the pilots of "Beach City Baby" perform a flyover of the event grounds before setting up to land on the Reading Airport runway.



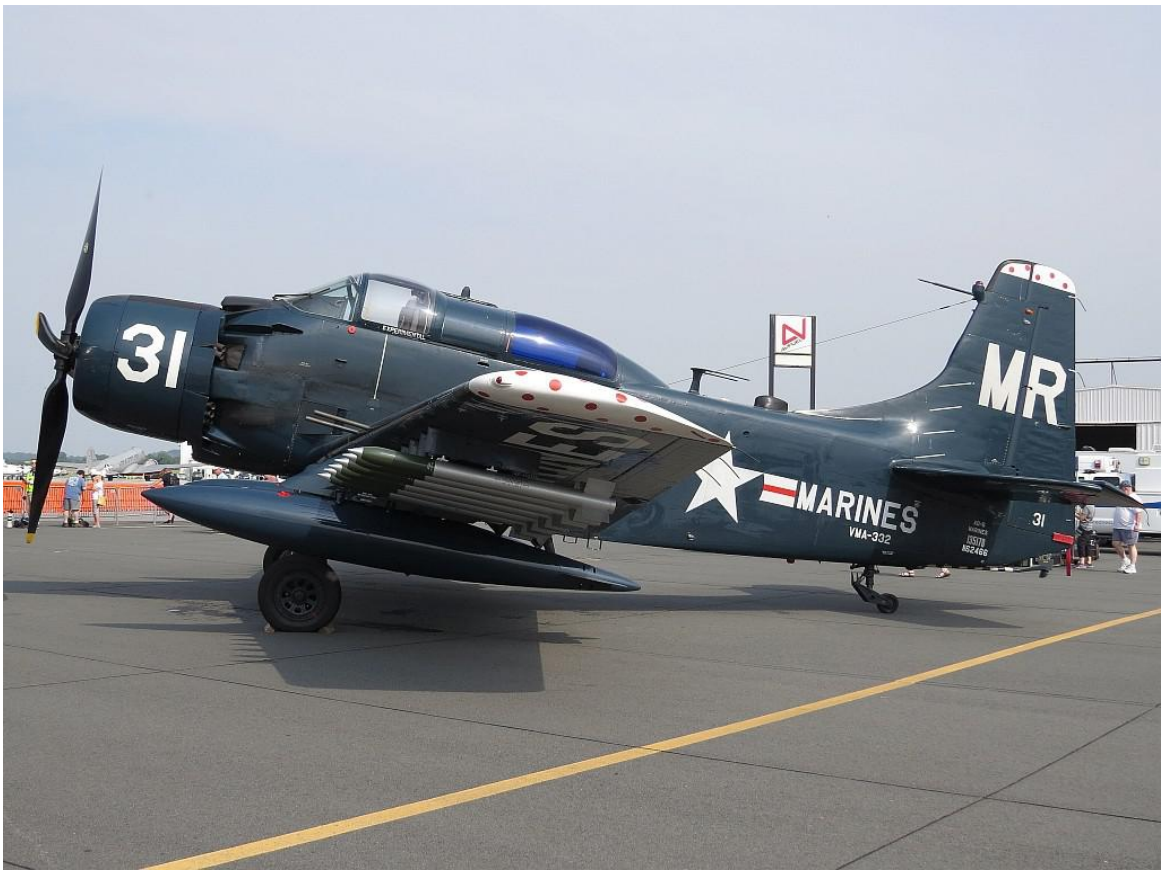


The Berlin Airlift Historical Foundation has been a longtime supporter of World War II Weekend. The foundation operates this restored Douglas C-54D Skymaster nicknamed "Spirit of Freedom". The C-54 was one of the most commonly used long-range transport aircraft by the United States during World War II. Over 300 U.S. Air Force C-54s and U.S. Navy R5Ds were used during the Berlin Airlift in 1948-1949. The "Spirit of Freedom's" interior features exhibits and artifacts about the history of the Berlin Airlift.

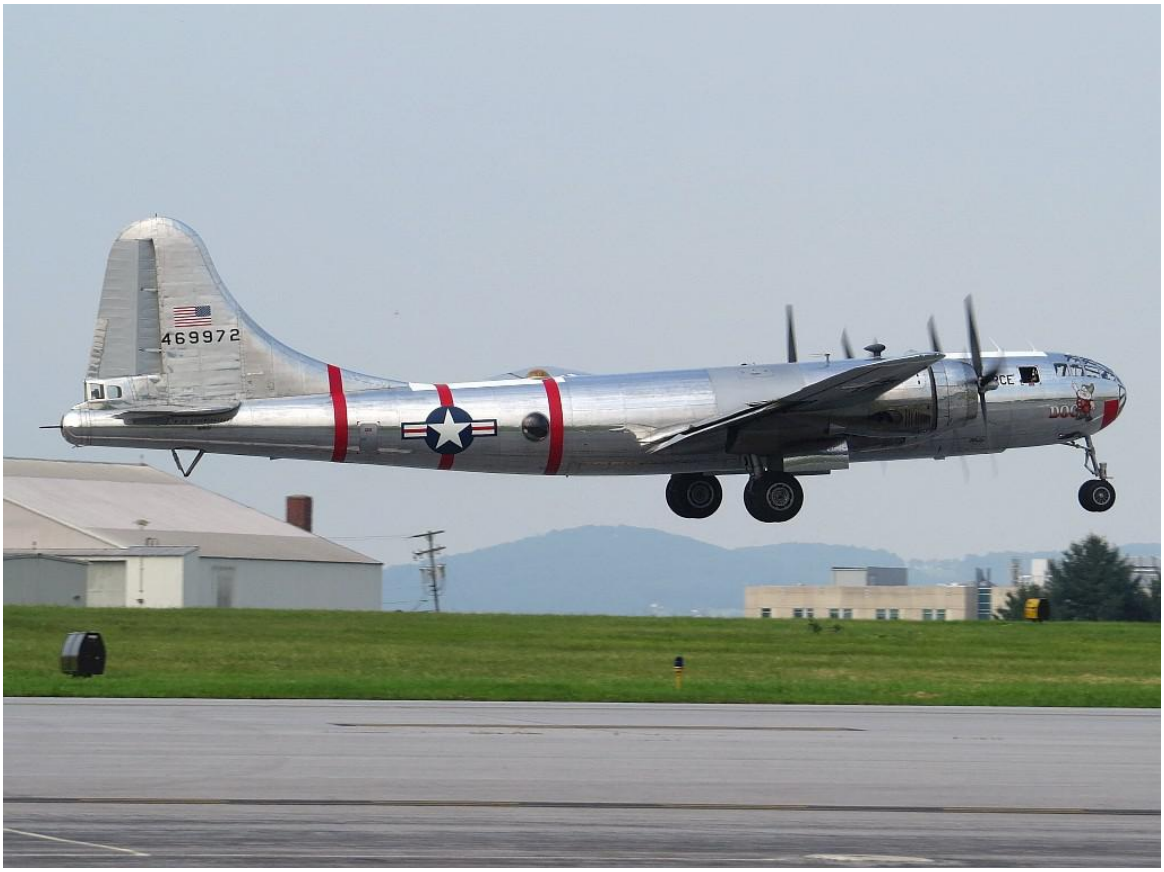


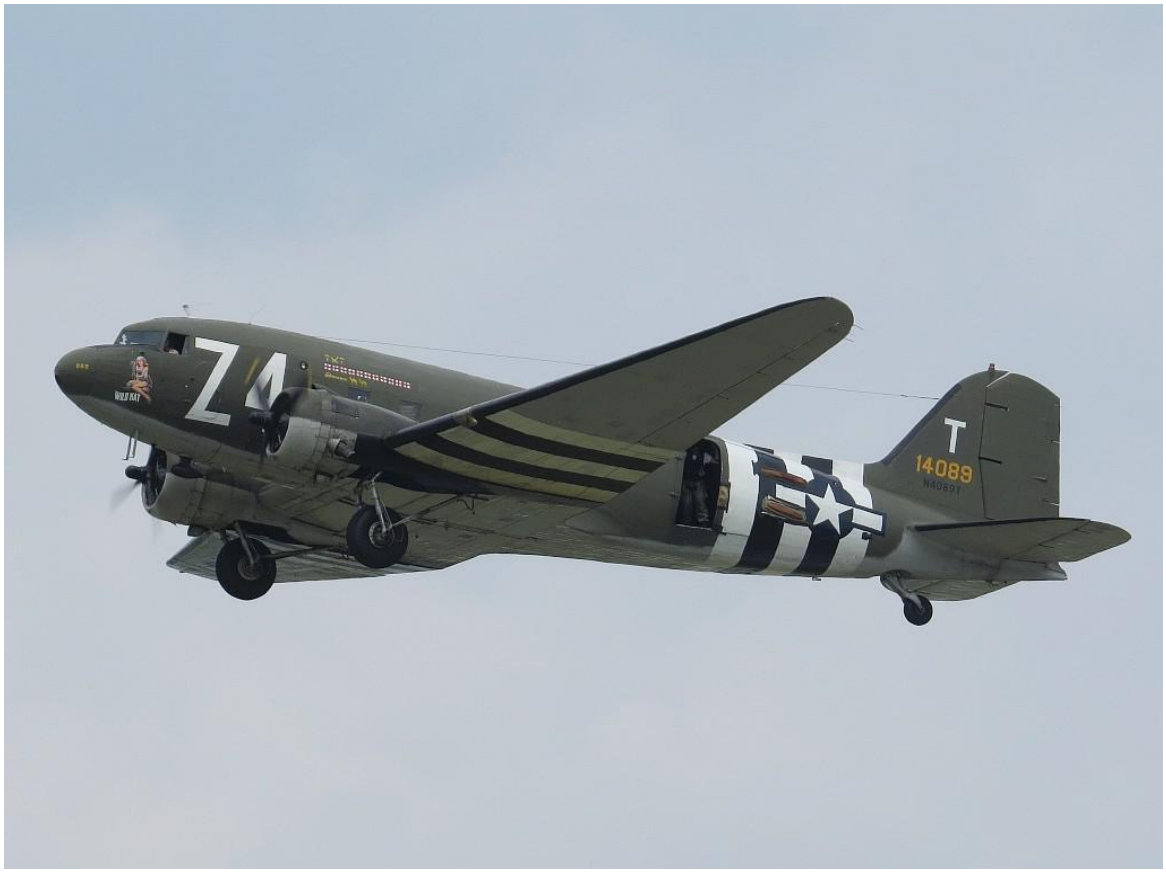
The Military Aviation Museum, based in Virginia Beach, Virginia, showcased several aircraft from its collection at World War II Weekend, including their Messerschmitt Me-262A replica. The Me-262 was the world's first operational jet fighter when it entered service with the Luftwaffe in 1944. Fortunately for the Allies, developmental problems with the engines and fuel shortages kept the Me-262s and its pilots from being able to change the outcome of the war in the skies above Germany.

A last-minute addition to the World War II Weekend aircraft lineup for 2025 was this Douglas AD-5W Skyraider from the Vintage Flying Machines collection. Initially designed as a single-seat attack aircraft at the end of World War II, the Skyraider would be developed into a multi-seat aircraft to perform electronic warfare and anti-submarine warfare roles. Even in the world of jet aircraft, the Skyraider had an unusually long service life, with the last examples being retired from U.S. service in 1973.

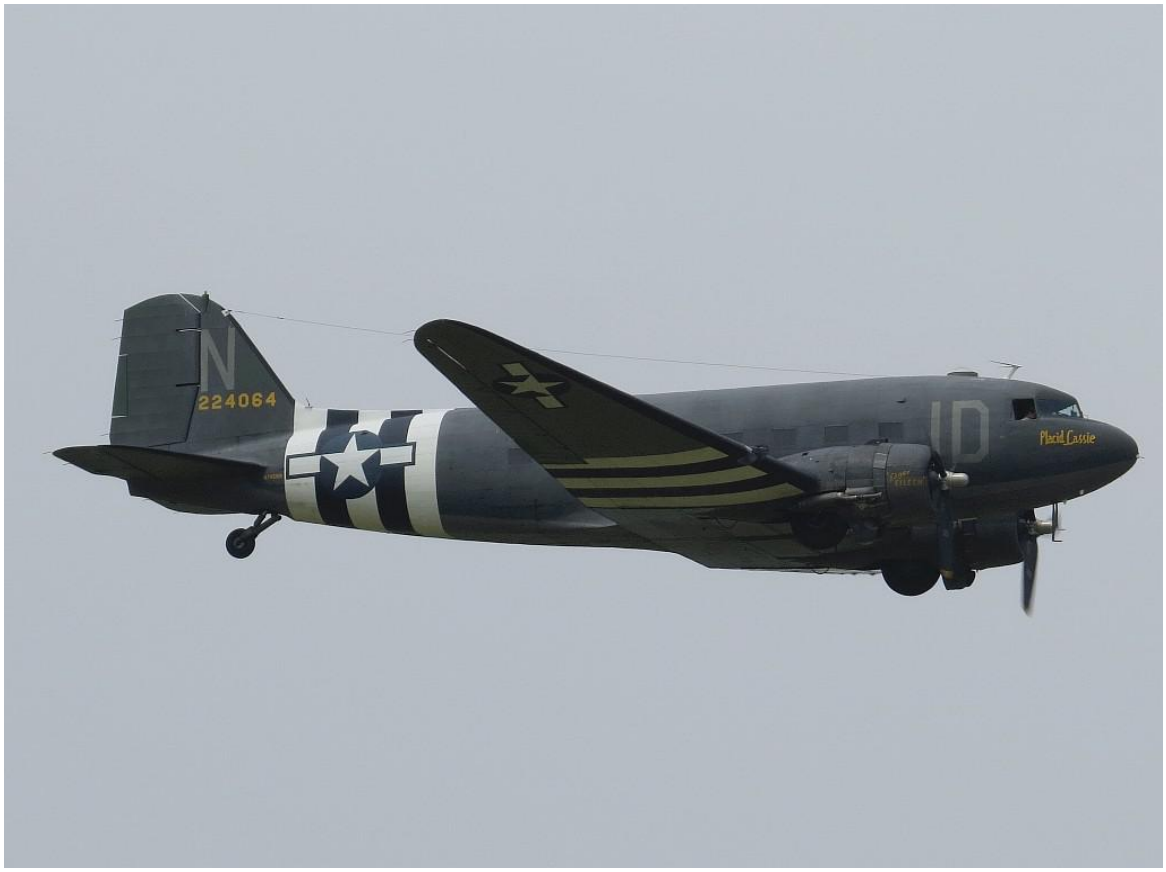


The warbird experience flights, or warbird ride flights, are a significant part of the flying action at World War II Weekend each year. Visitors to the event have the opportunity to book rides in a variety of aircraft, from small trainers to a large bomber like the B-29 Superfortress "Doc" seen here taking off on a ride flight Friday morning. Although these rides are expensive, they can be a once-in-a-lifetime experience for an aviation enthusiast or the family member of a World War II veteran.



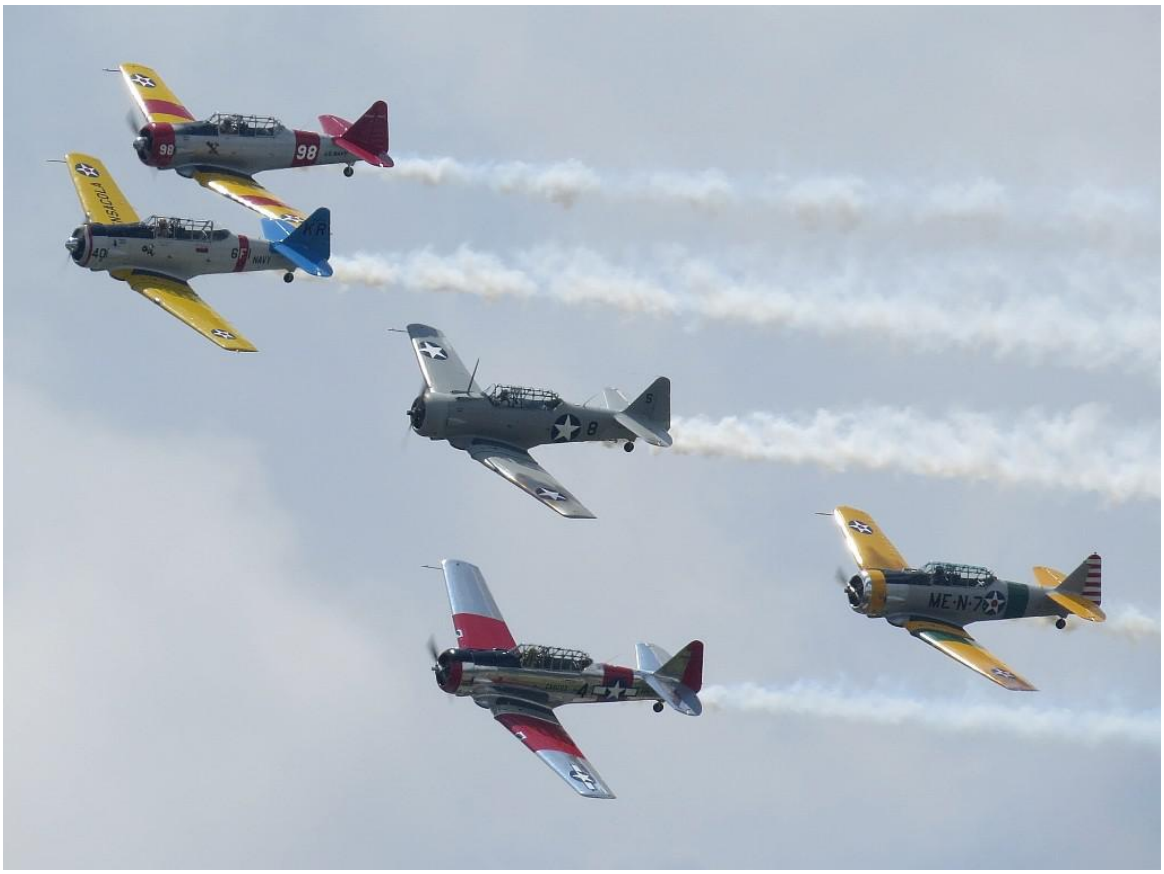


On Friday, as a tribute to the anniversary of D-Day at the event, the WWII Airborne Demonstration Team performed a parachute jump demonstration. The team dresses in World War II-era gear and uses parachutes similar to those used during the war. The team jumps from their own Douglas C-49 transport, "Wild Kat". The C-49 was the designation for civilian Douglas DC-3 airliners with single-row, Wright Cyclone radial engines that were impressed into military service at the start of the war.

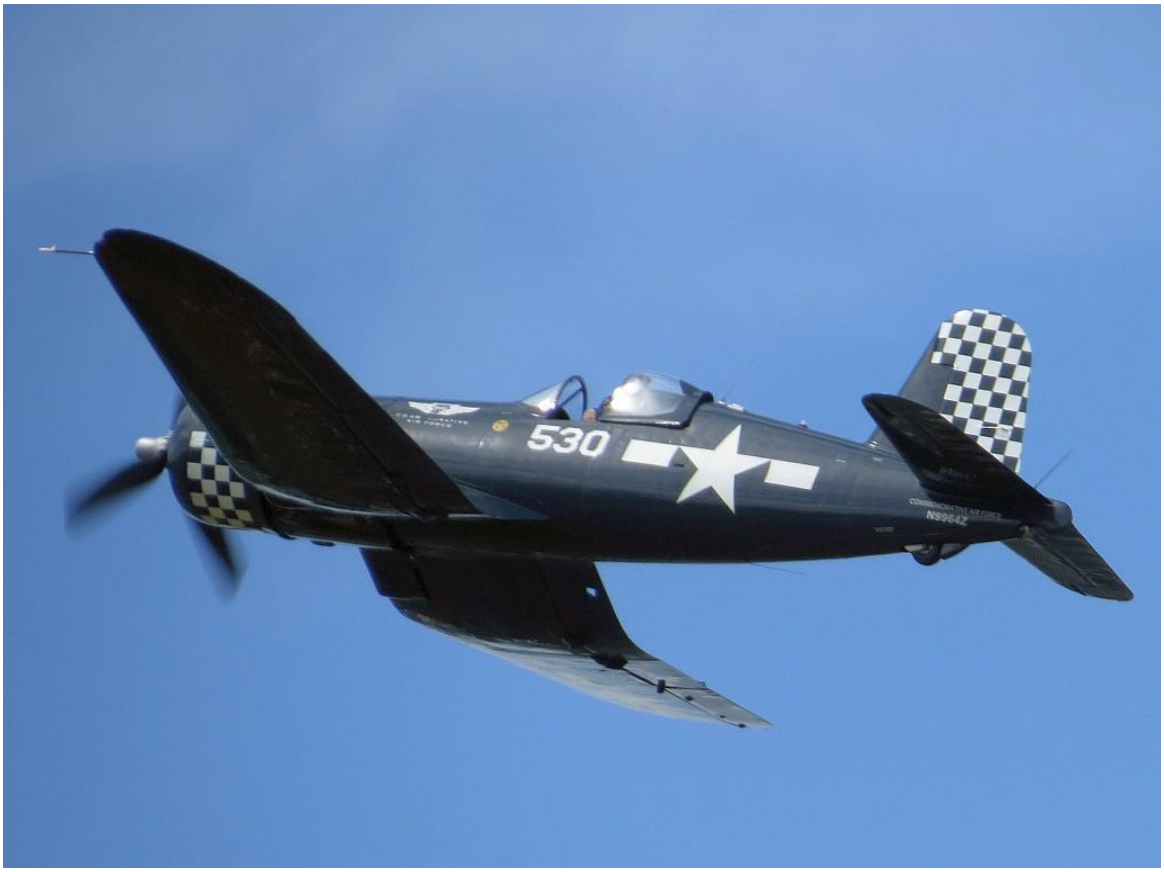


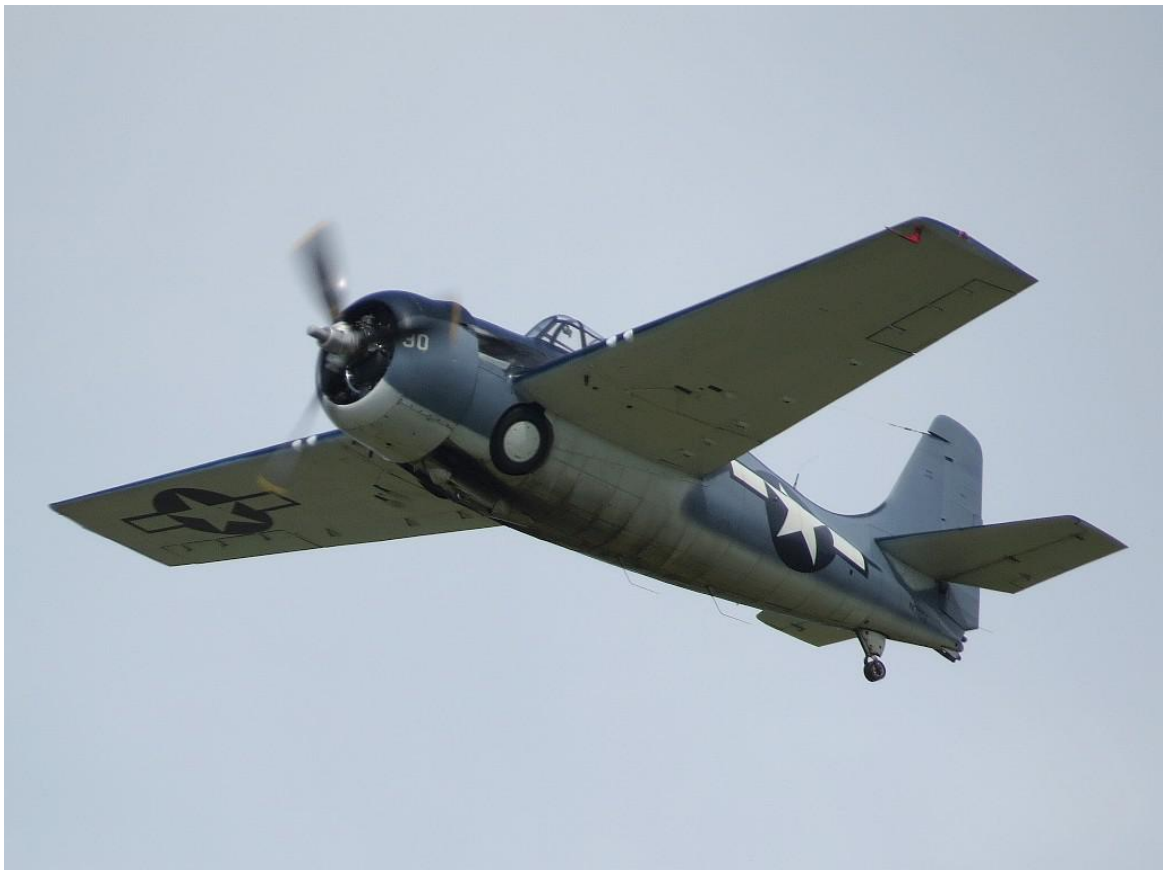
"Placid Lassie", a Douglas C-47 Skytrain transport operated by the Tunison Foundation, is another aircraft that regularly attends World War II Weekend. "Placid Lassie" is noteworthy as being a D-Day veteran, having flown missions during the operation in support of Allied forces. "Placid Lassie" later flew missions in support of Allied forces as they liberated Europe. The C-47 was one of the workhorses of World War II, moving people and supplies for the Allies in all theaters of operation.

The Jersey Jerks Airshow Team battled the weather all weekend to perform at flight demonstrations at World War II Weekend. This demonstration, flown on Saturday afternoon, was shortened due to morning rain which delayed the start of the airshow. The team flies examples of the North American Texan/SNJ advanced training aircraft from World War II. Over 15,000 of these advanced training aircraft were manufactured during the war and thousands survive in airworthy condition today.

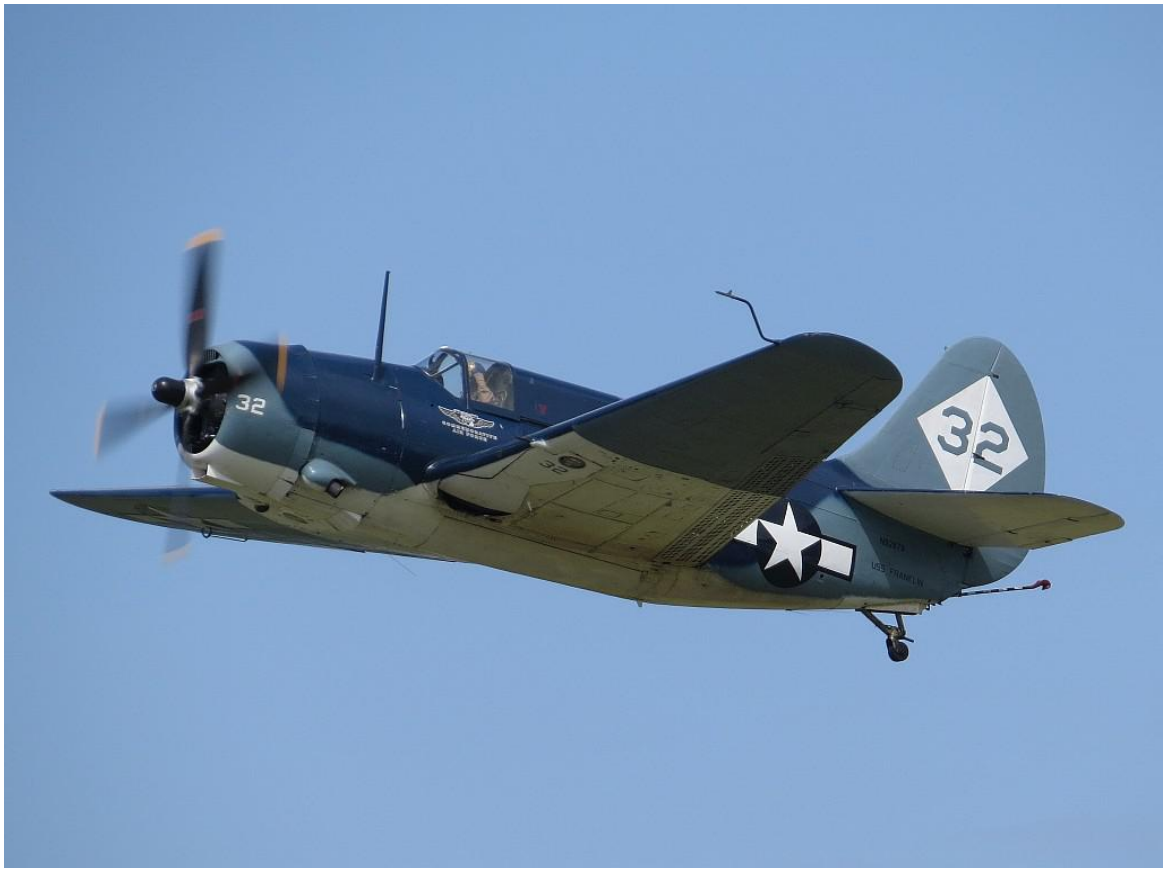


Unfortunately, Saturday at World War II Weekend began with persistent rain showers that fell most of the morning hours and into the early afternoon. The rain caused a few of the airshow demonstrations to be canceled. Fortunately, the skies opened in mid-afternoon just in time so that most of the airshow flying could take place, including the naval aircraft flight. The first aircraft in this group to take off was the Commemorative Air Force Airbase Georgia's beautiful Goodyear FG-1 Corsair fighter.



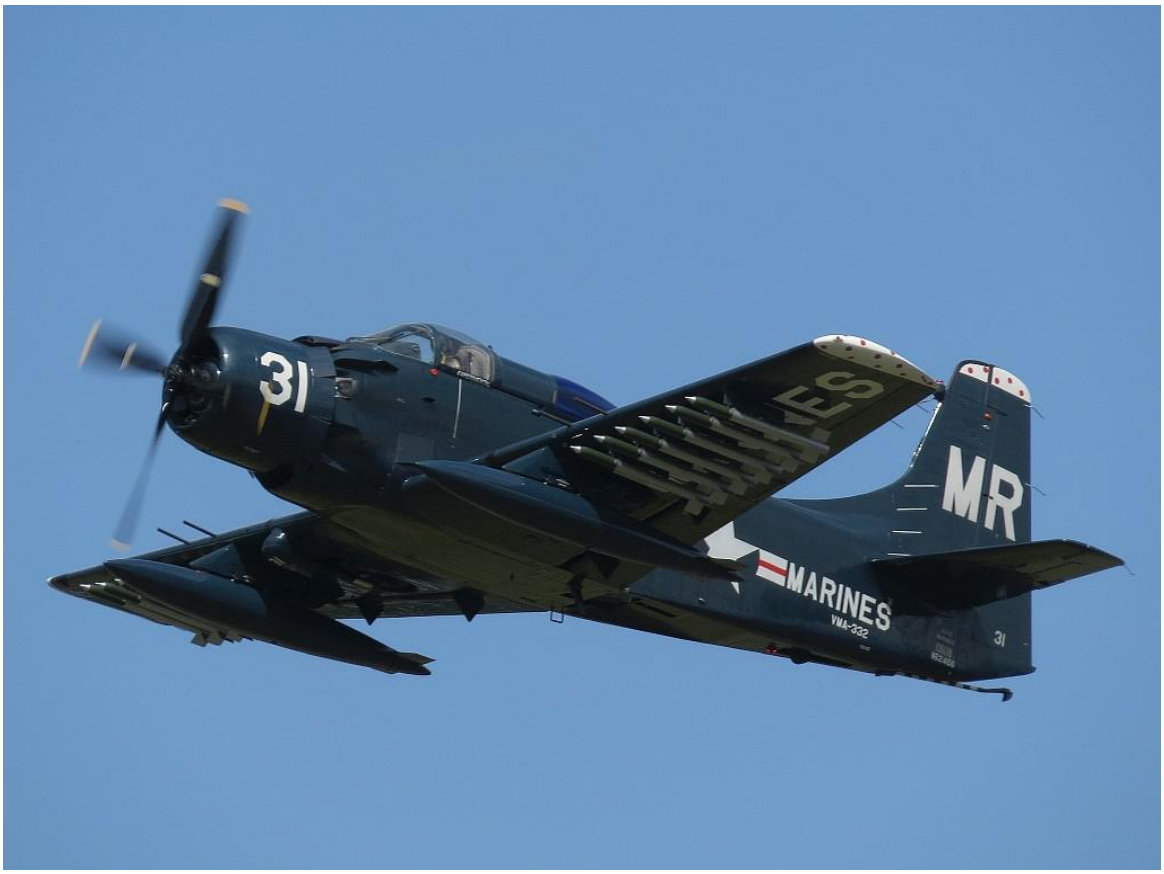


Joining the parade of naval aircraft was the Military Aviation Museum's General Motors FM-2 Wildcat. Initially designed by Grumman, the Wildcat was a carrier-borne fighter aircraft that entered service in 1940. The Wildcat was the only effective naval fighter available to the U.S. Navy and Marine Corps early in the war. Later in the conflict, more powerful versions of the Wildcat were built by General Motors and used on escort carriers where larger and heavier Corsair and Hellcat fighters could not be used.

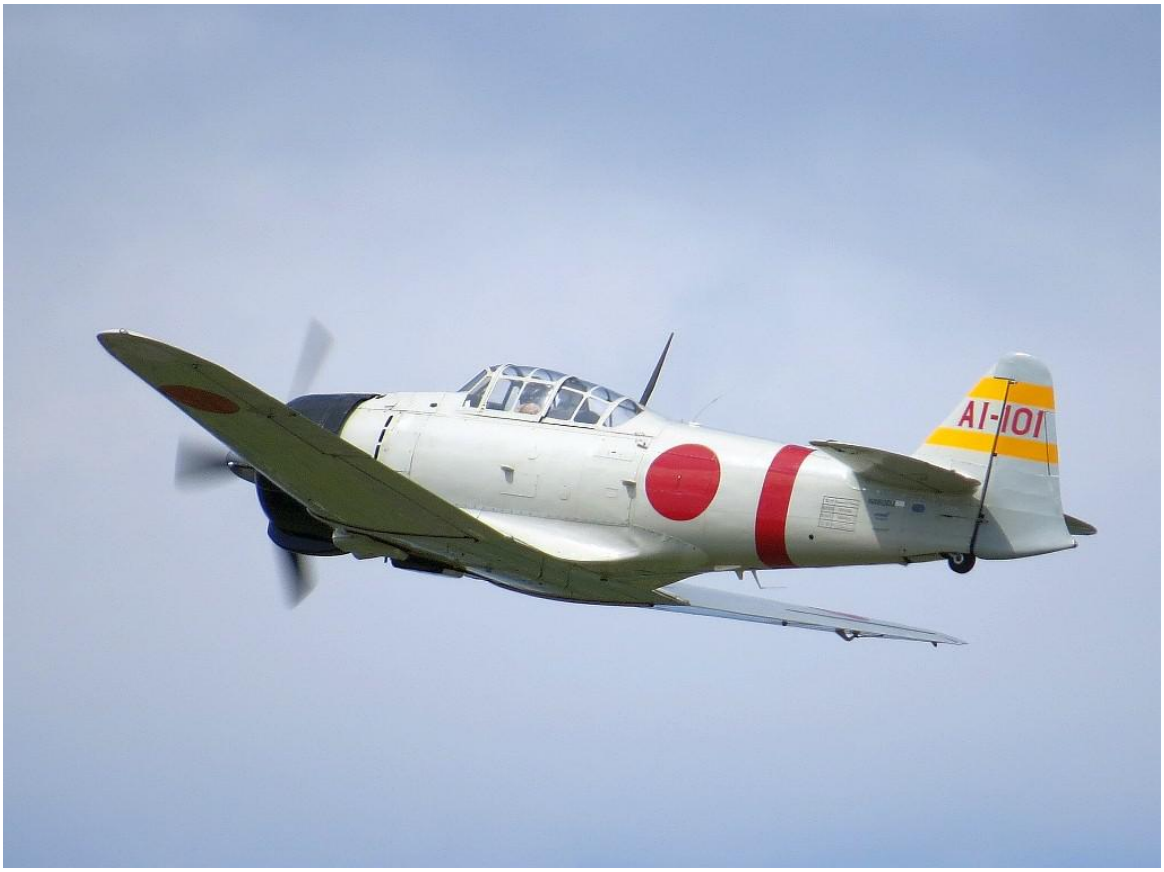


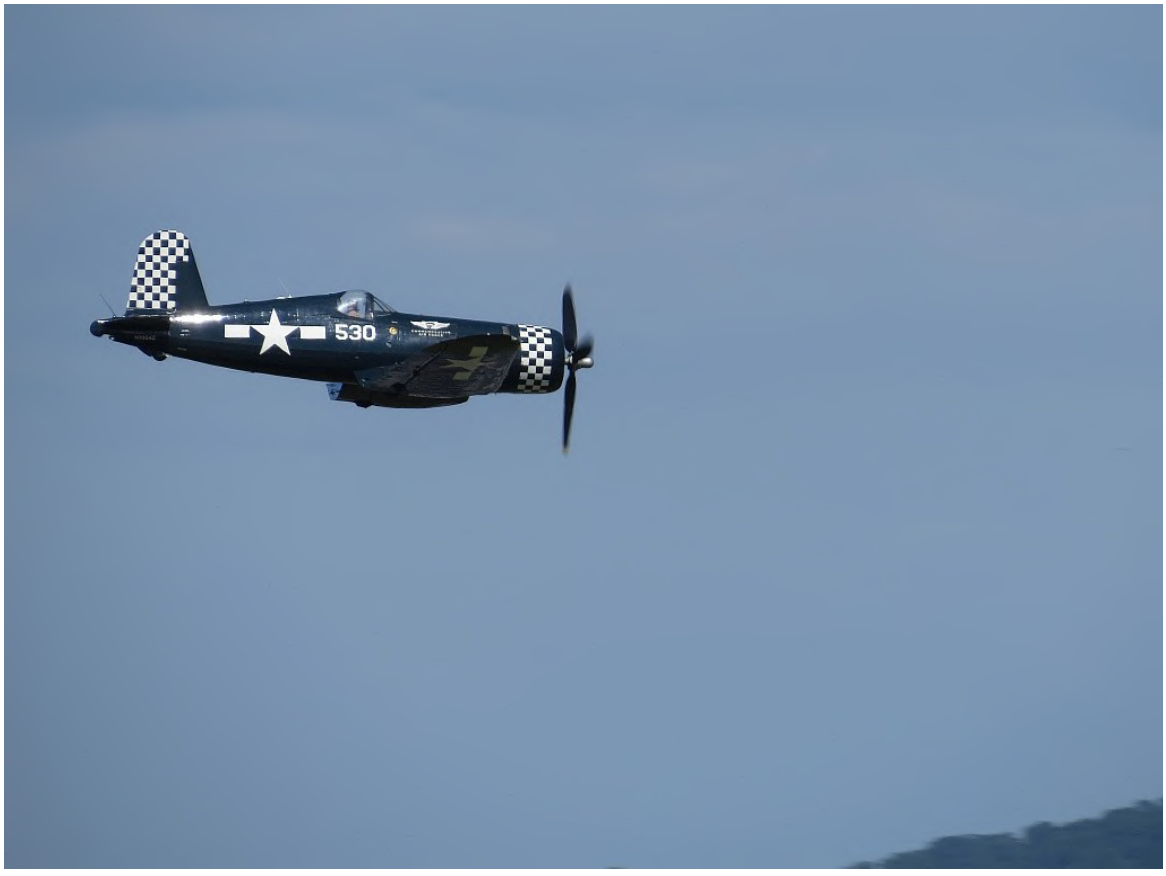
Joining the parade and representing bomber and strike aircraft was the Commemorative Air Force West Texas Wing's Curtiss SB2C-5 Helldiver. Designed as a replacement for the Douglas SBD Dauntless, the larger and more powerful Helldiver was plagued with technical problems during its development, which delayed its entry into service until late 1943. The Helldiver had the distinction of being the last purpose-built dive bomber ever put into production and operational service for the U.S. Navy.

A surprise addition to the naval aircraft parade was the newly acquired Douglas AD-5W Skyraider operated by Vintage Flying Machines. The Skyraider was initially designed as a single-seat strike aircraft that could drop both bombs and torpedoes. The Skyraider entered service too late to see action in World War II but served in the Korean and later the Vietnam War. The Vintage Flying Machines Skyraider is a later production variant designed for anti-submarine warfare.

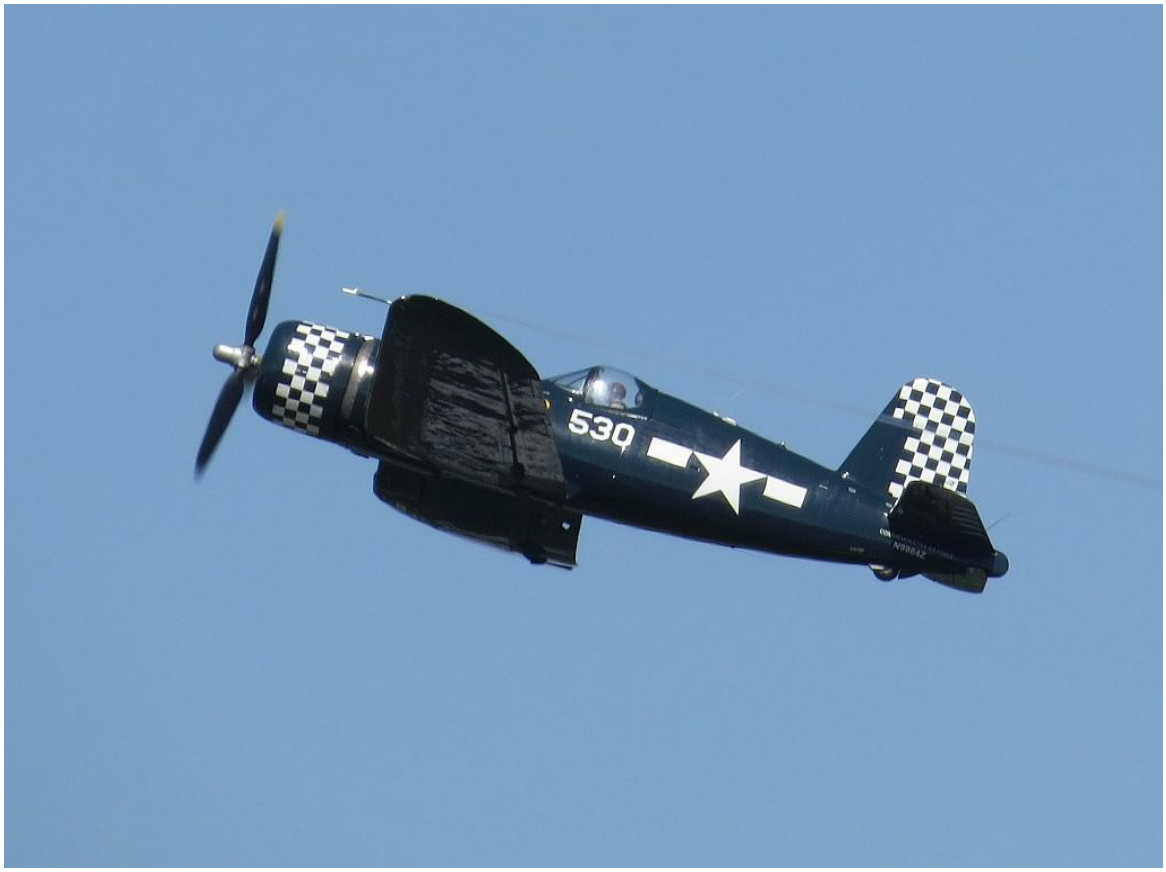


Returning to World War II Weekend for a second year in a row was The Warbird Factory/Prescott Foundation's replica Mitsubishi A6M2 Zero "Tora 101". The Zero was Japan's best fighter aircraft in the early stages of World War II and was blessed with excellent range and outstanding maneuverability. When Japan's fortunes in the war changed, the Zero was used as a kamikaze aircraft against Allied ships. This replica was built using the airframe of a North American Harvard advanced trainer aircraft.



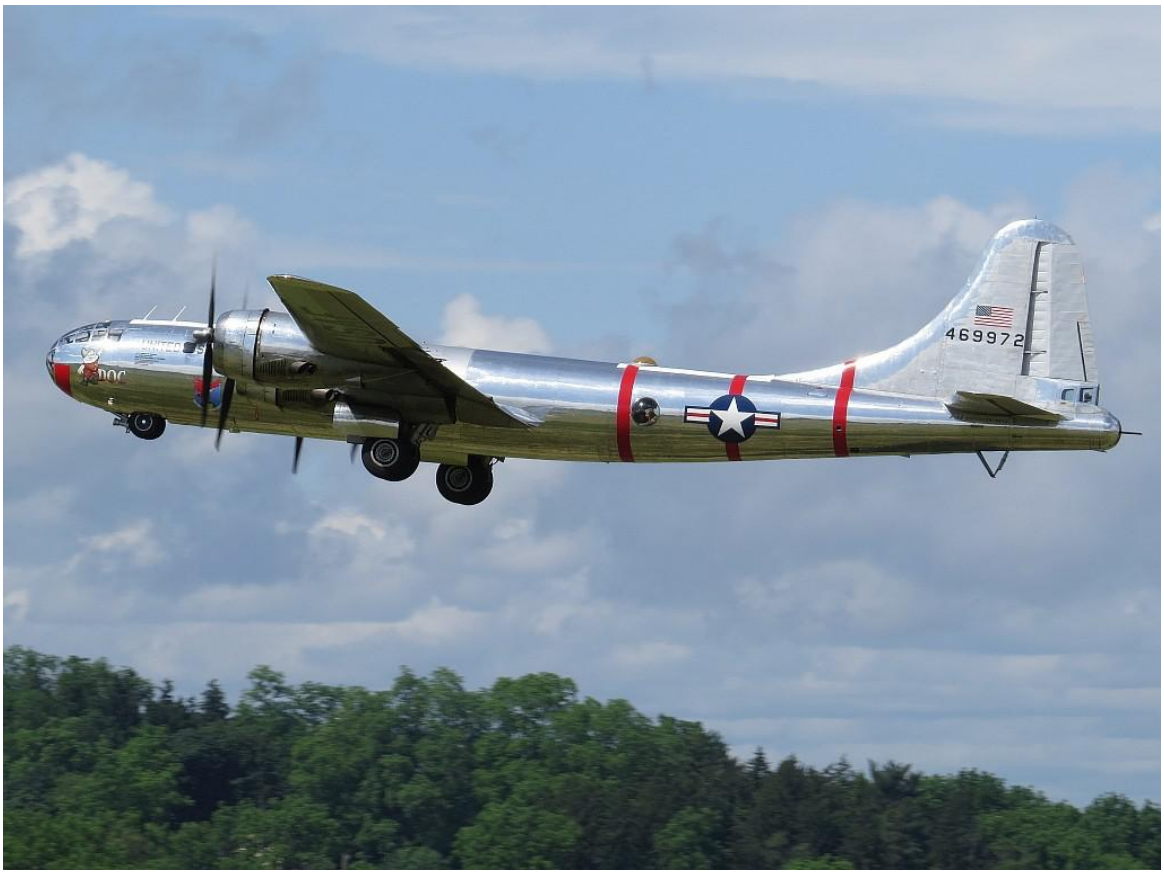


Following the parade of World War II naval aircraft, airshow attendees were treated to an aerobatic demonstration from Mark Todd in the Commemorative Air Force Airbase Georgia's Goodyear FG-1D Corsair. Initially designed and built by Vought, with many examples later license-built by Goodyear, the Corsair was one of the most capable carrier-based fighter-bombers of the war. Improved variants of the Corsair also saw service with U.S. Navy and Marine Corps squadrons during the Korean War.

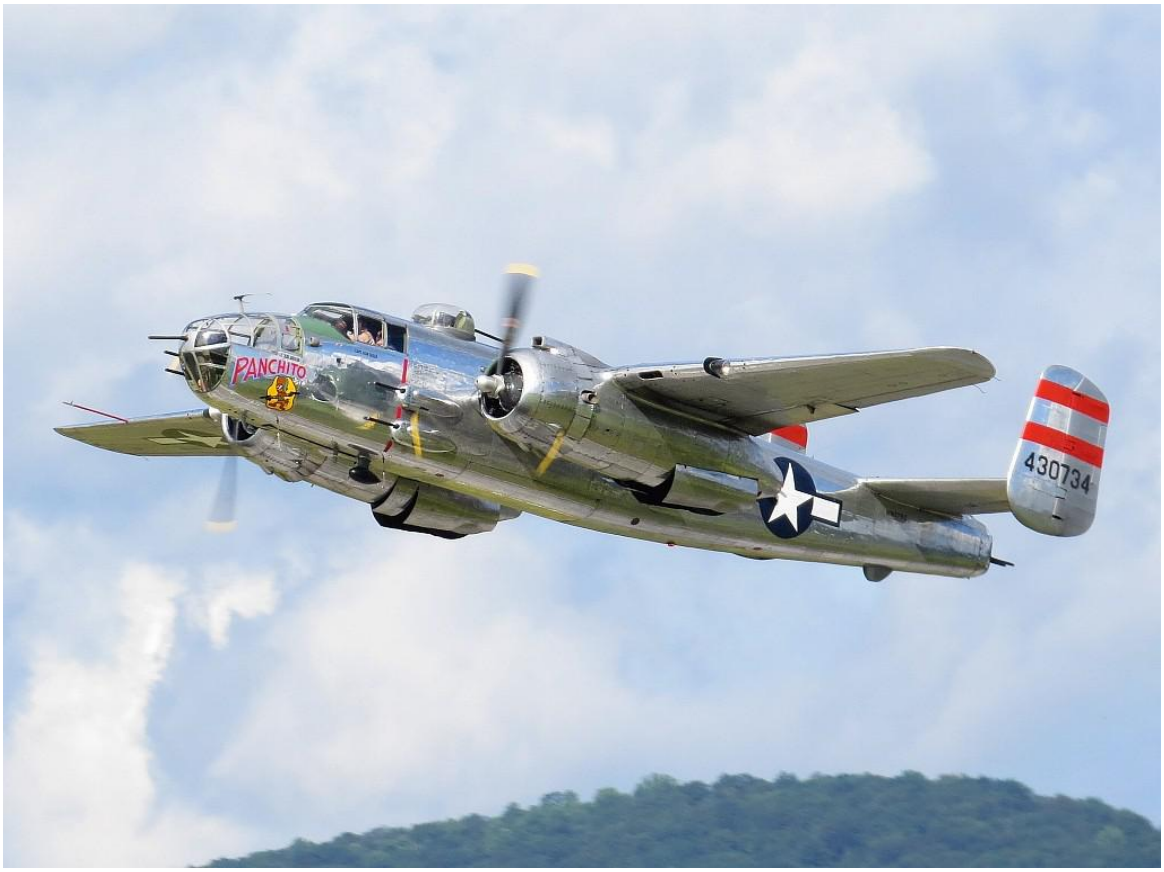


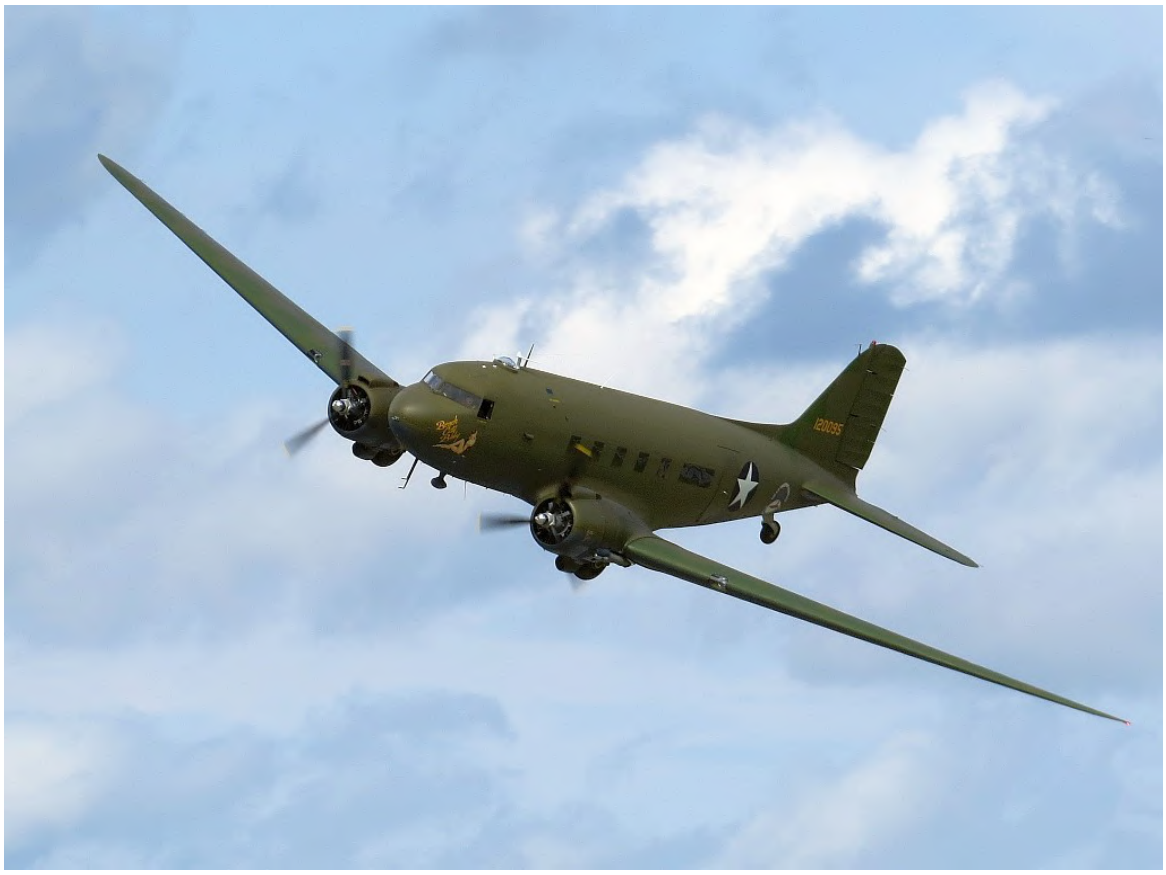
Mark Todd pulls the Commemorative Air Force Air Base Georgia's Goodyear FG-1D Corsair skyward during an aerobatic demonstration Saturday at World War II Weekend. Early problems with the Corsair being operated from aircraft carrier flight decks due to its stiff landing gear slowed its entry into service. Once those problems were remedied, the Corsair became one of the most formidable fighter aircraft in the Pacific theater. Over 12,700 Corsairs were built in several production variants from 1942 to 1953.

The rain on Saturday at World War II Weekend canceled the early morning warbird experience flights, forcing many of them to be rescheduled whenever time permitted on Saturday afternoon. These flights resulted in a bonus airshow for World War II Weekend attendees as these aircraft departed the airport regularly to complete ride flights. Here, the B-29 Superfortress "Doc" is using a break in the airshow action to depart the airport for one of the bomber's warbird experience flights.

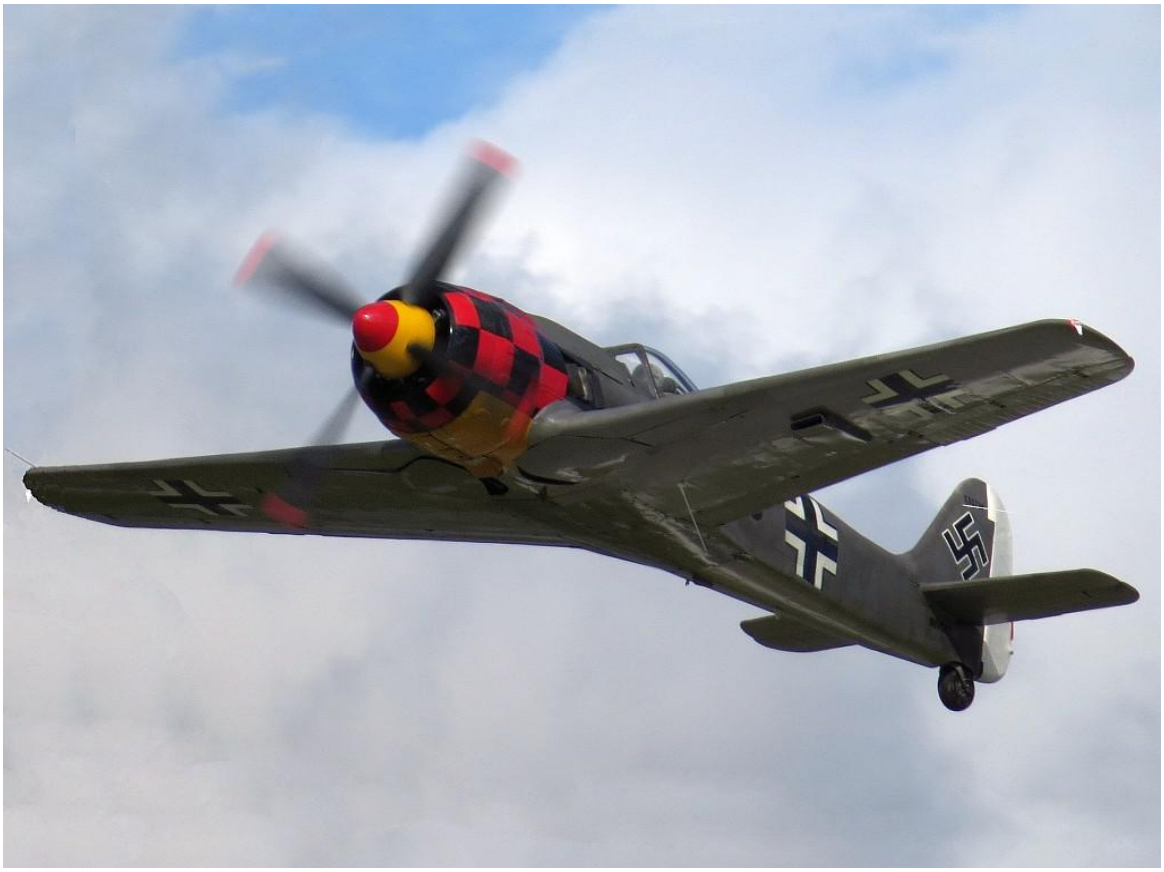


Bomber and transport aircraft took center stage at World War II Weekend, with the North American B-25J Mitchell "Panchito" from the Delaware Aviation Museum leading the group. Introduced in 1941 and built in several variants, the B-25 was one of the most popular medium bombers used by the Allies during World War II. In addition to its use as a bomber, variants of the B-25 were also used as a VIP transport, gunship, anti-submarine warfare aircraft, and reconnaissance aircraft.



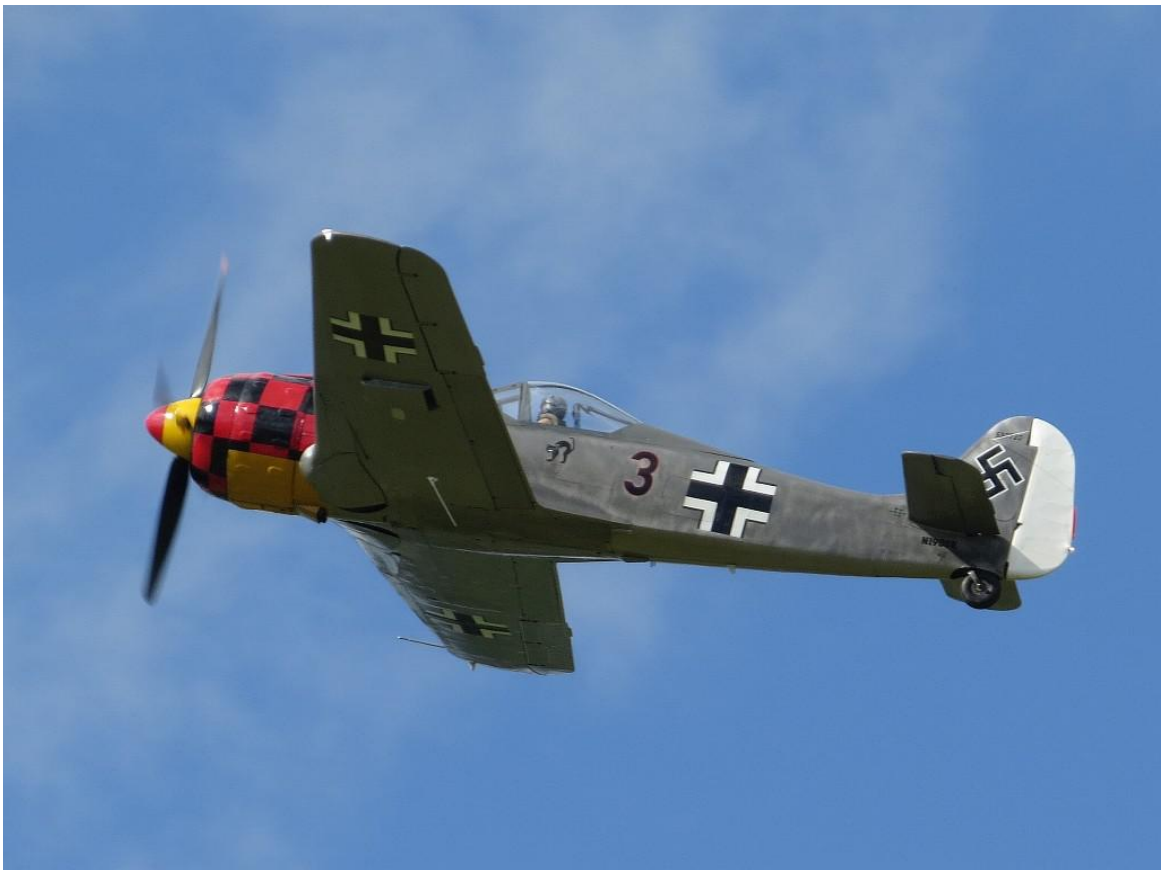


Joining "Panchito" in the flight of bomber and transport aircraft was Vintage Wings Inc.'s Douglas C-53 Skyttrooper "Beach City Baby". The C-53 Skytrooper was a Douglas DC-3 specifically designed for military service. The C-53 did not have the large cargo doors, reinforced floor, or strengthened landing gear of the C-47 Skytrain designed specifically for military service. During World War II, C-53s were used for a variety of missions, including personnel transport, paratroop drops, and towing gliders.

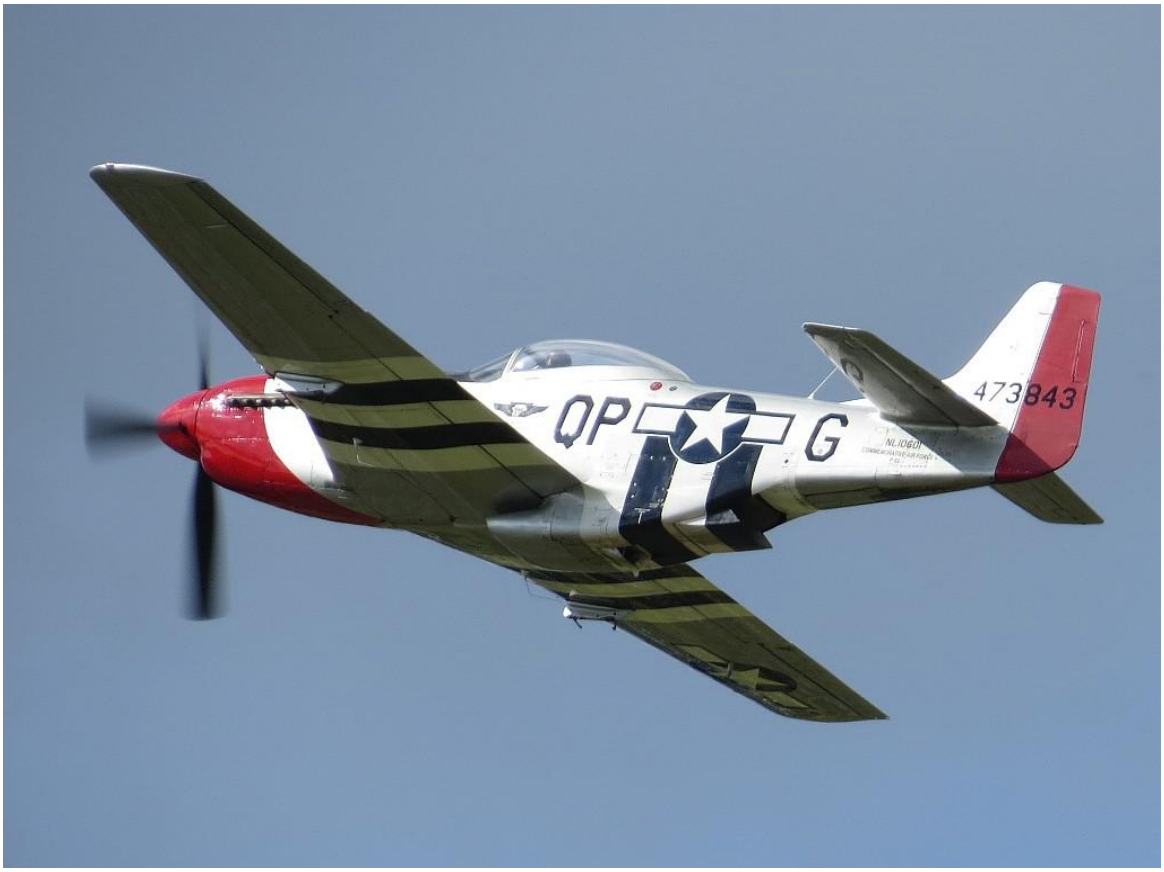


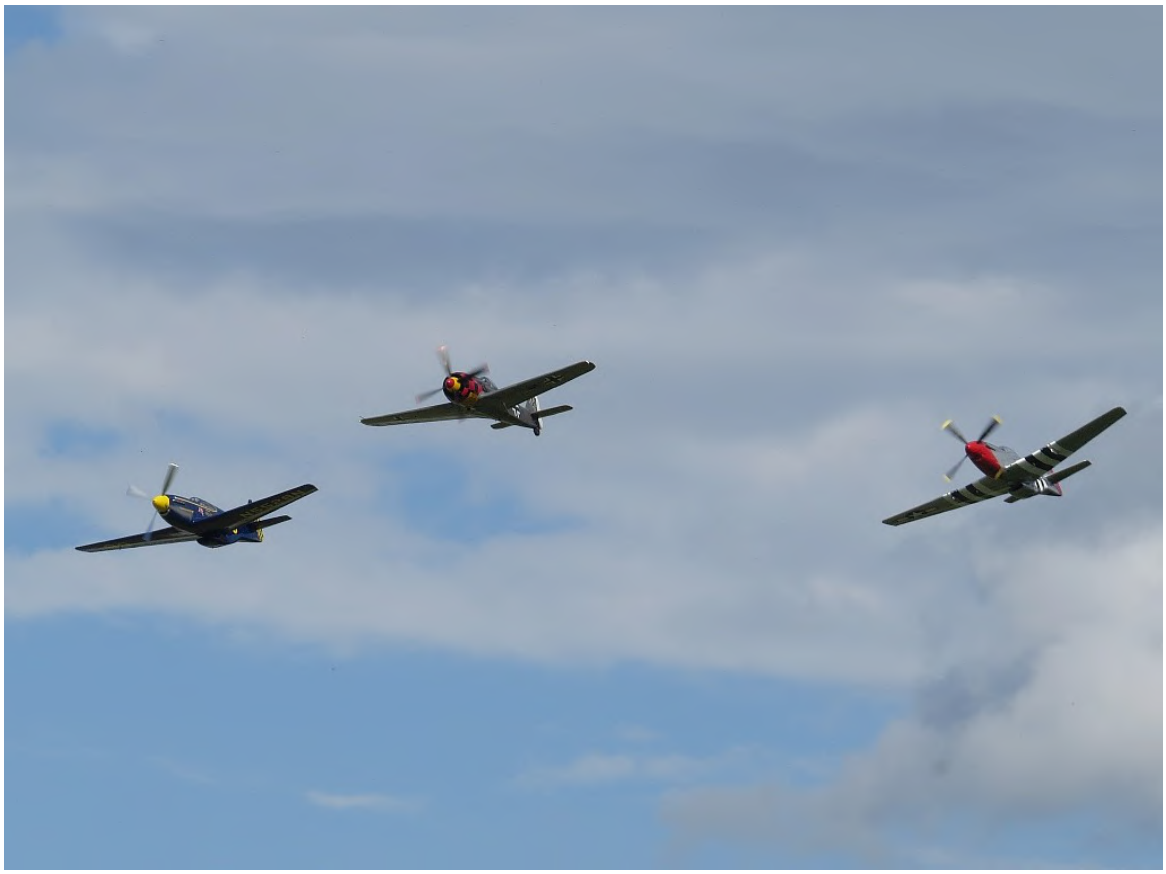
The highlight of World War II Weekend every year is the demonstration of the fighter aircraft, and the 2025 edition of the event did not disappoint. One of the anticipated aircraft flying in the fighter demonstrations was the Military Aviation Museum's Focke-Wulf Fw 190A replica. This Fw 190 replica is one of 21 built by Flug Werk for aviation museums and private collectors worldwide. This replica is powered by a modern Russian radial engine and features modern avionics in the cockpit.

Nicknamed the Würger (Shrike), the Focke-Wulf Fw 190 became the backbone of the Luftwaffe's Jagdwaffe (Fighter Force) during World War II. Unlike most German fighters, most variants of the Fw 190 were powered by a BMW radial engine, which allowed it to lift large loads and be used in the attack and night fighter roles. The Fw 190 is considered one of the best fighter aircraft of World War II and was well-liked by its pilots. Over 20,000 were built in several variants during the war.

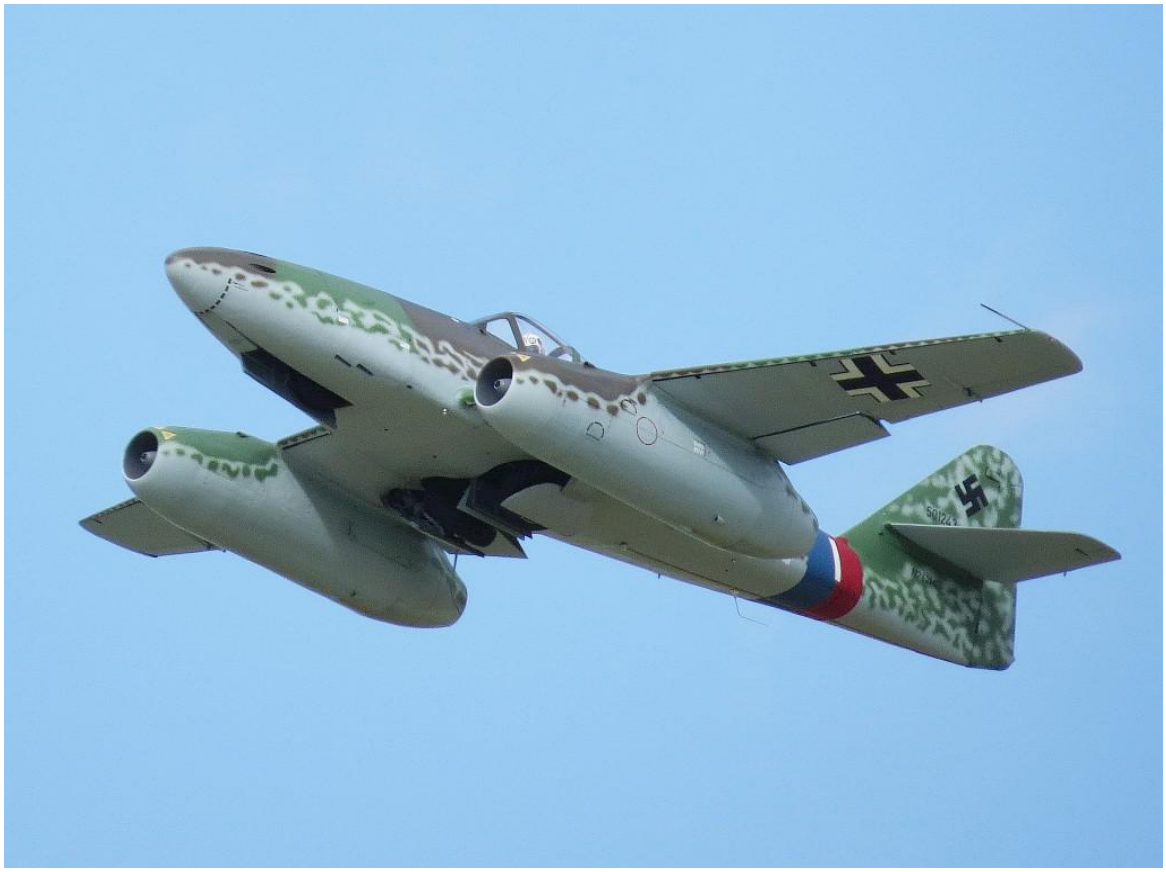


For many aviation enthusiasts, the North American P-51D Mustang needs no introduction. Entering service in mid-1944, the P-51D variant finally provided the U.S. Army Air Forces with a fighter capable of escorting bomber formations all the way to Germany and back. In addition to its role as a long-range escort fighter, the P-51 was also used for ground attack and photo reconnaissance missions. The P-51, designated the F-51, also saw service in the Korean War in the ground-attack role.



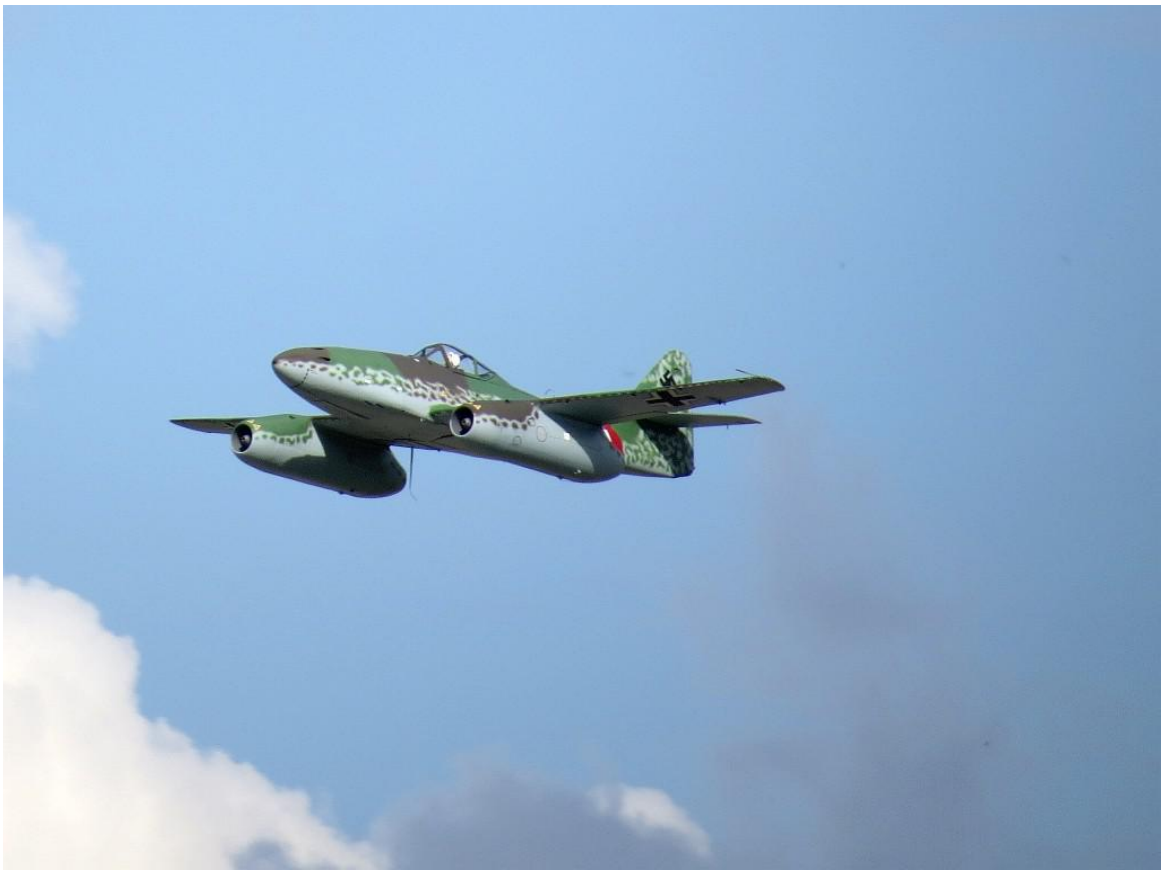


Also joining the fighter aircraft for their demonstration on Saturday afternoon at World War II Weekend was Warren Pietsch with the North American P-51C Mustang "Thunderbird" from the Dakota Territory Air Museum. During fighter demonstration, Pietsch joined with up for a formation flyby with Kevin Sinbaldi in the Military Aviation Museum's Focke-Wulf Fw 190A replica and Mark Todd flying the Commemorative Air Force Airbase Georgia's North American P-51D Mustang "Red Nose".

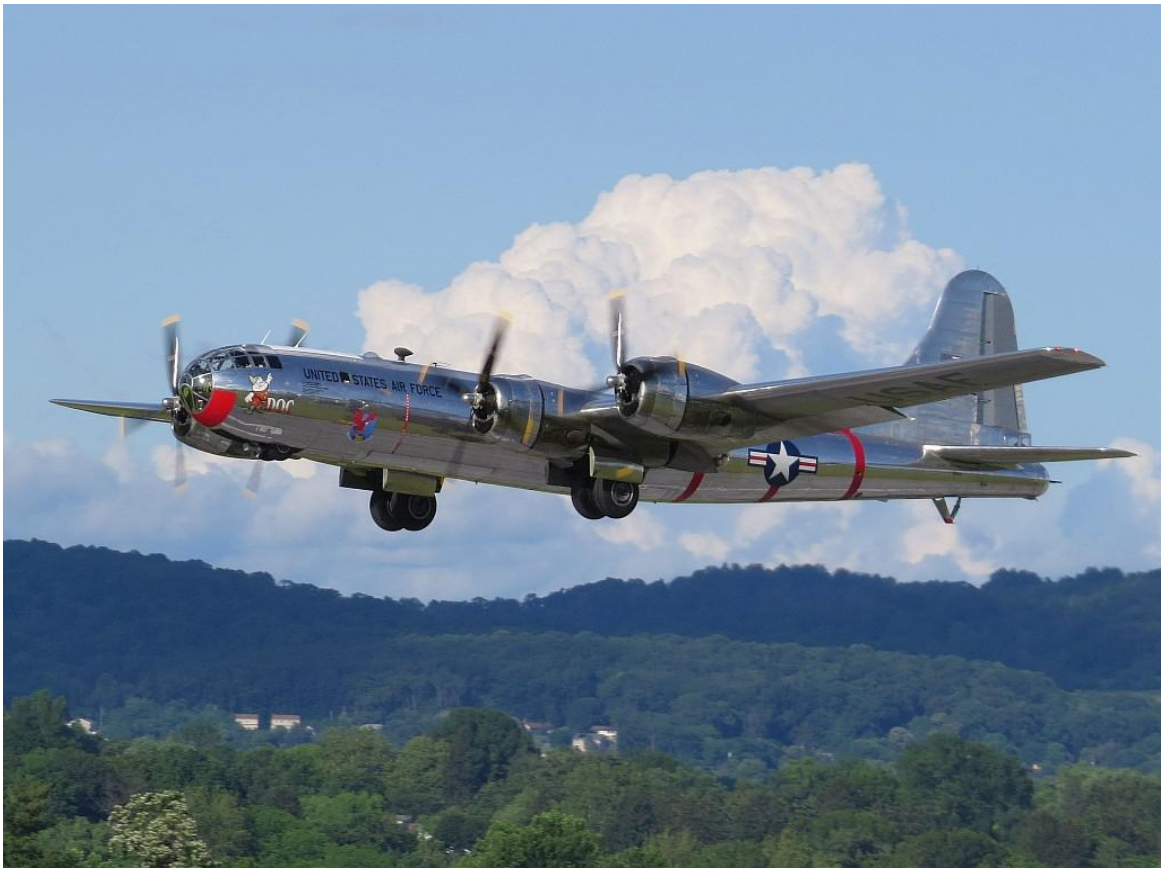


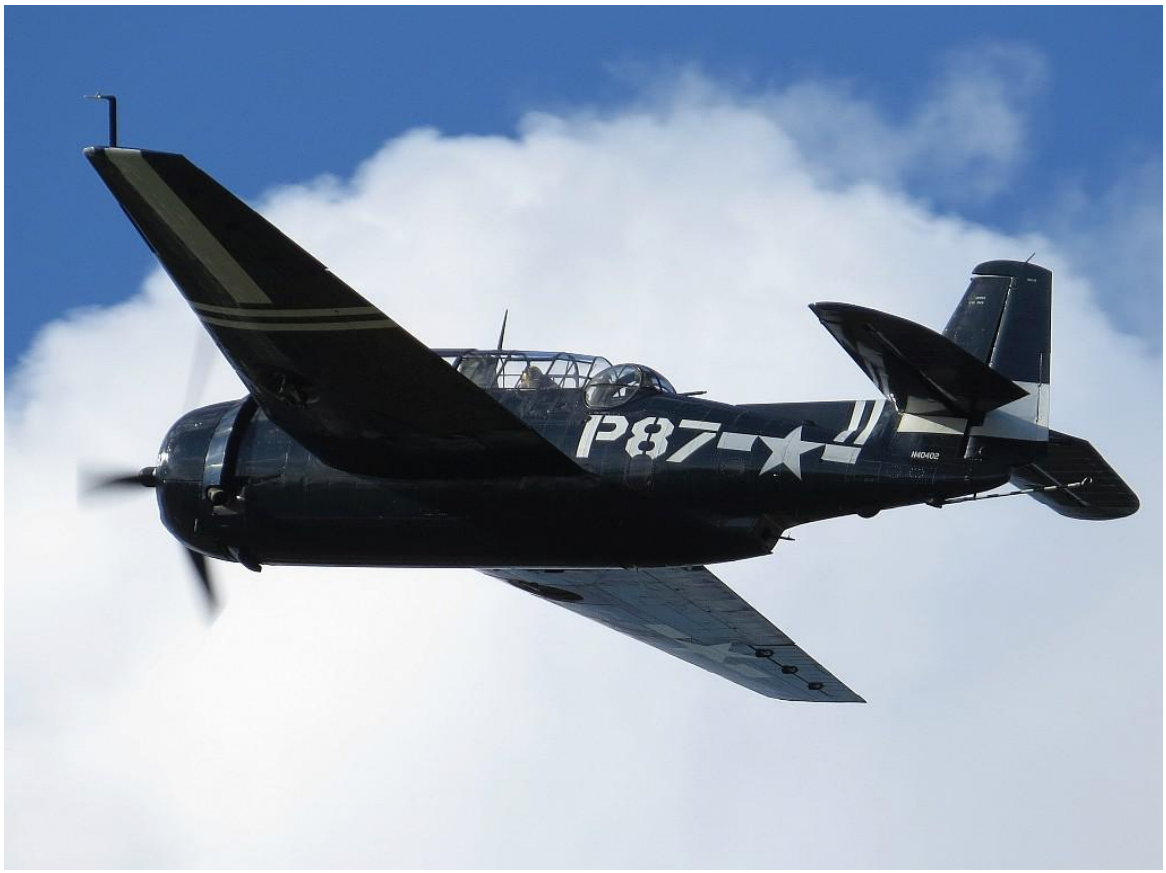
The highlight for many at the 2025 World War II Weekend was seeing the Military Aviation Museum's Messerschmitt Me 262 replica take to the skies. This was one of five replica Me 262s built using a surviving example belonging to the National Museum of Naval Aviation in Pensacola, Florida as a pattern. For improved reliability and safety, the Me 262 replica uses modern General Electric CJ610 engines. These engines are commonly used on Learjets and are reliable and simple to maintain.

Military Aviation Museum chief pilot Mike Spalding flies the Me 262 jet fighter replica on Saturday afternoon. One of the most advanced combat aircraft of the war, the Me 262 was produced in fighter, light bomber, trainer, and night fighter variants during the last months of the war. Although the Me 262 was an effective dogfighter, the lack of strategic materials led to reliability problems with its engines, and fuel shortages limited the number of combat sorties that could be flown.

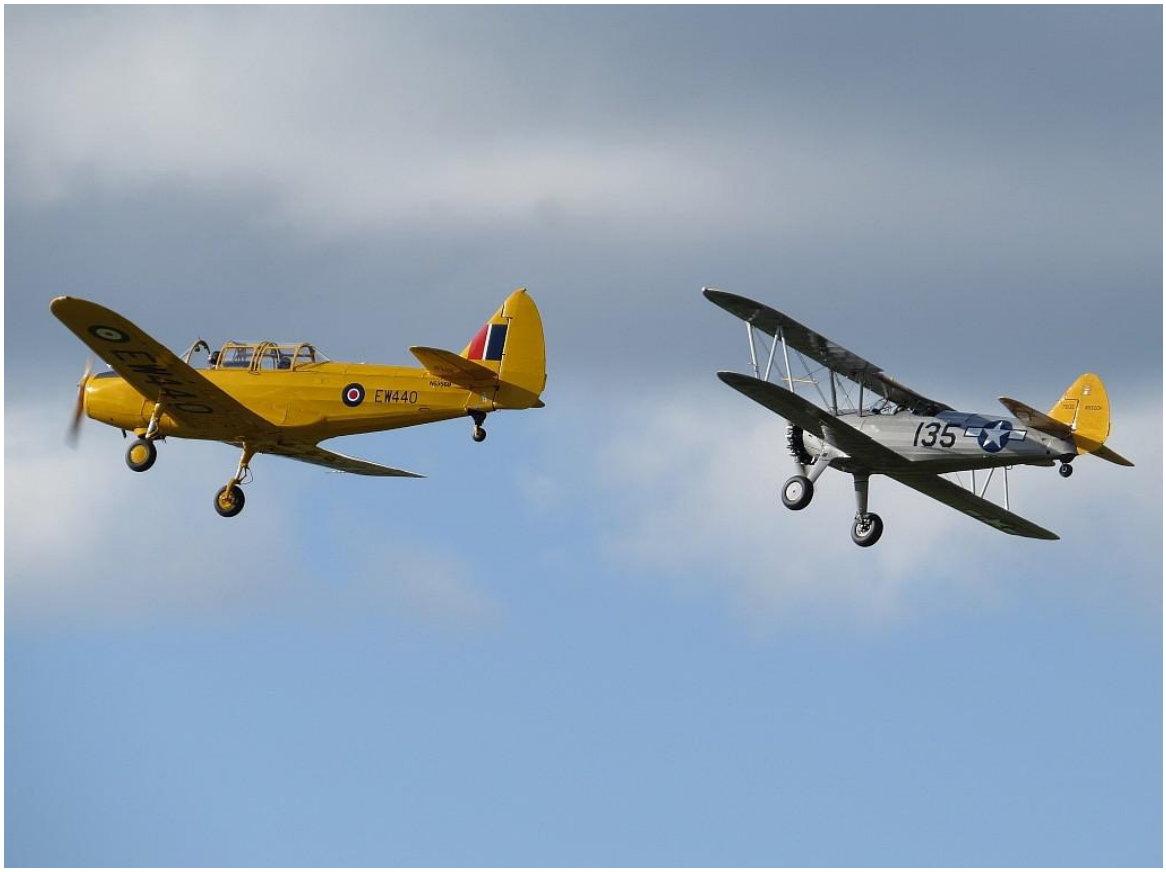


The B-29 Superforess "Doc" departs the airport on Saturday evening for another ride flight. The B-29 Superfortress was one of the most advanced bombers in the world when it was introduced into service. Some of the design advancements included a computerized fire control system, a pressurized cabin, and a separate crew station for the flight engineer to monitor the aircraft systems. The B-29 Superfortress holds the distinction of being the only aircraft to drop nuclear weapons in combat.



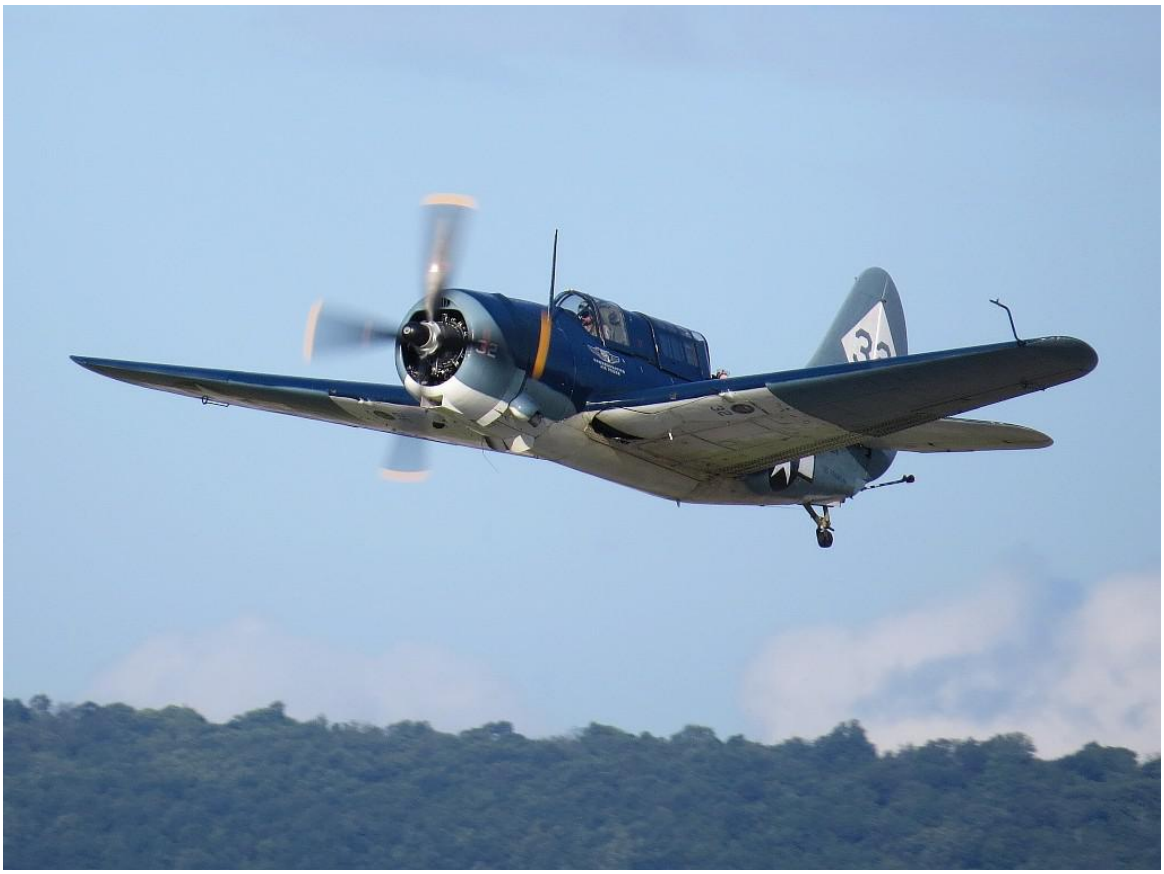


A surprise visitor at World War II Weekend on Saturday was the Commemorative Air Force Capital Wing's General Motors TBM-3E Avenger "Doris Mae". The Avenger was one of the finest torpedo bombers built during World War II, serving with distinction in the last years of the war. Designed by Grumman, many of the Avengers produced were built under license by General Motors. "Doris Mae" is seen departing for home in Culpeper, Virginia, on Saturday evening after spending the day at the event.

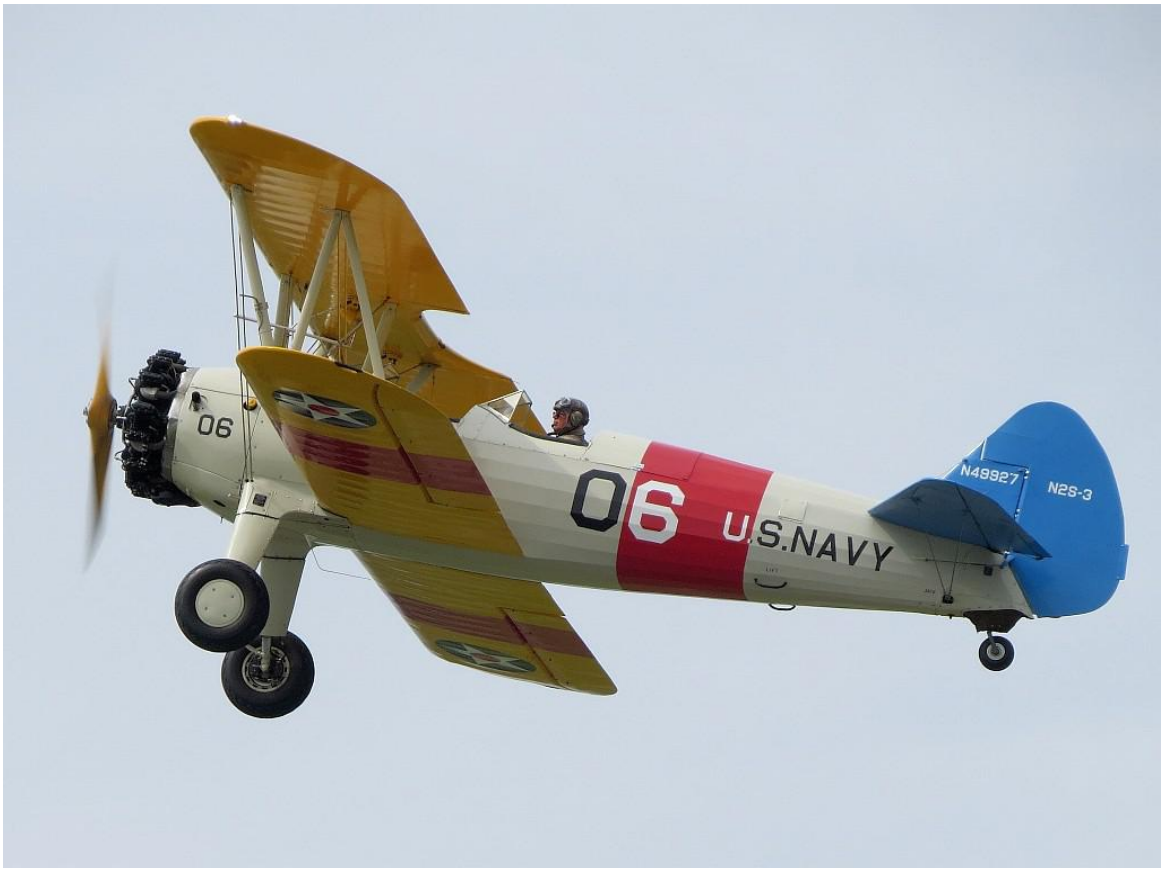


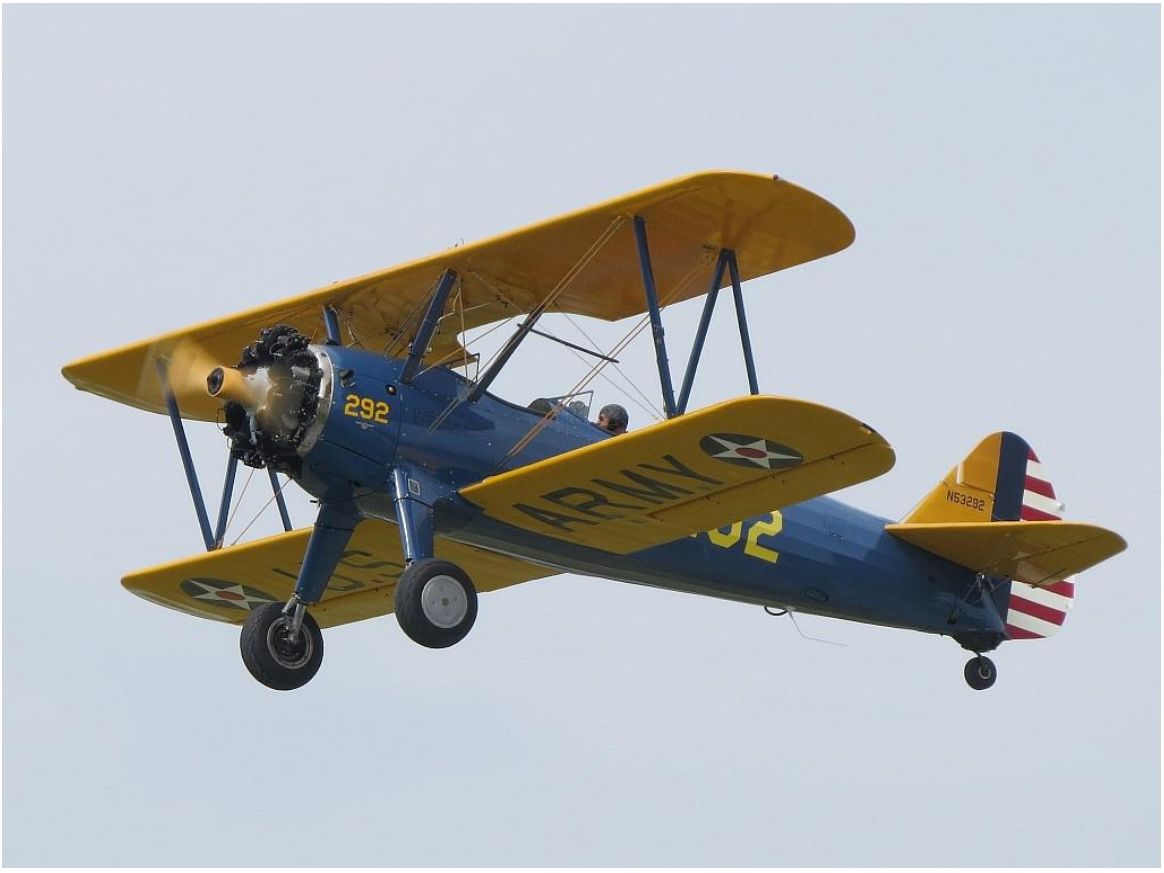
On Saturday evening, a special flight took place at World War II Weekend. Two World War II veterans were taken on a short flight in two restored World War II training aircraft. Pilots Mark Denest and Neil Baughman were the pilots for the veterans, using a Fairchild PT-26 Cornell and a Boeing PT-13 Stearman Kaydet biplane for this special honor flight. It is these types of special moments with veterans that make World War II Weekend such a special event that honors our Greatest Generation.

Ed Vesely takes off with the Commemorative Air Force West Texas Wing's Curtiss SB2C-5 Helldiver with a lucky rider in the rear gunner seat for an evening warbird experience flight. Although the Helldiver was tricky to fly and maintain, the aircraft compiled a useful war record in the last years of World War II. Notably, Helldivers were used in battles at the Marianas, Philippines, Taiwan, Iwo Jima, and Okinawa. The dive bombers were also used in tactical attacks on the Ryukyu Islands in 1945.

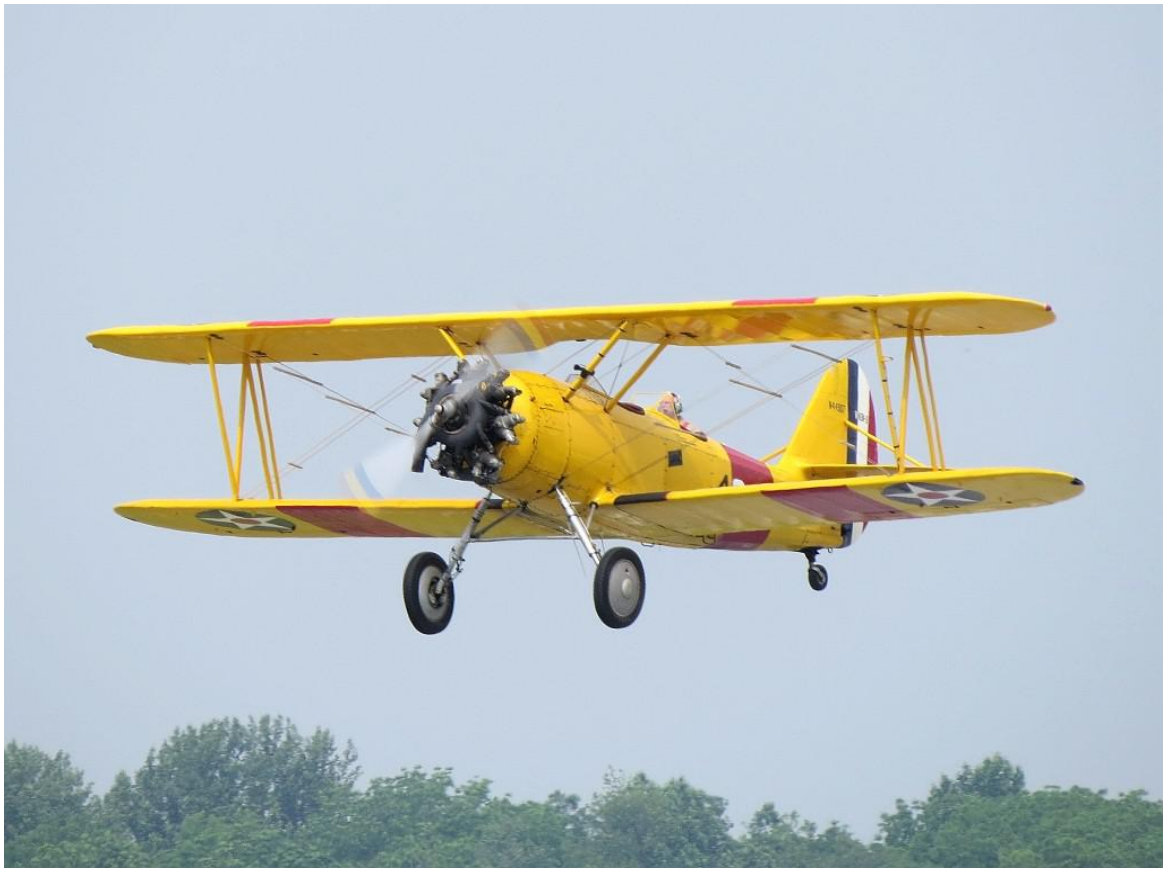


Usually, Sunday morning at the Mid-Atlantic Air Museum's World War II Weekend is quiet with flight activity. That was not true for the 2025 event, as incoming rain prompted a large number of departures from participating aircraft and their pilots so they could get home before the weather arrived. Early arrivers on Sunday morning had the opportunity to witness a mini airshow as several of these aircraft departed for home, including this Boeing N2S-3 Stearman Kaydet.



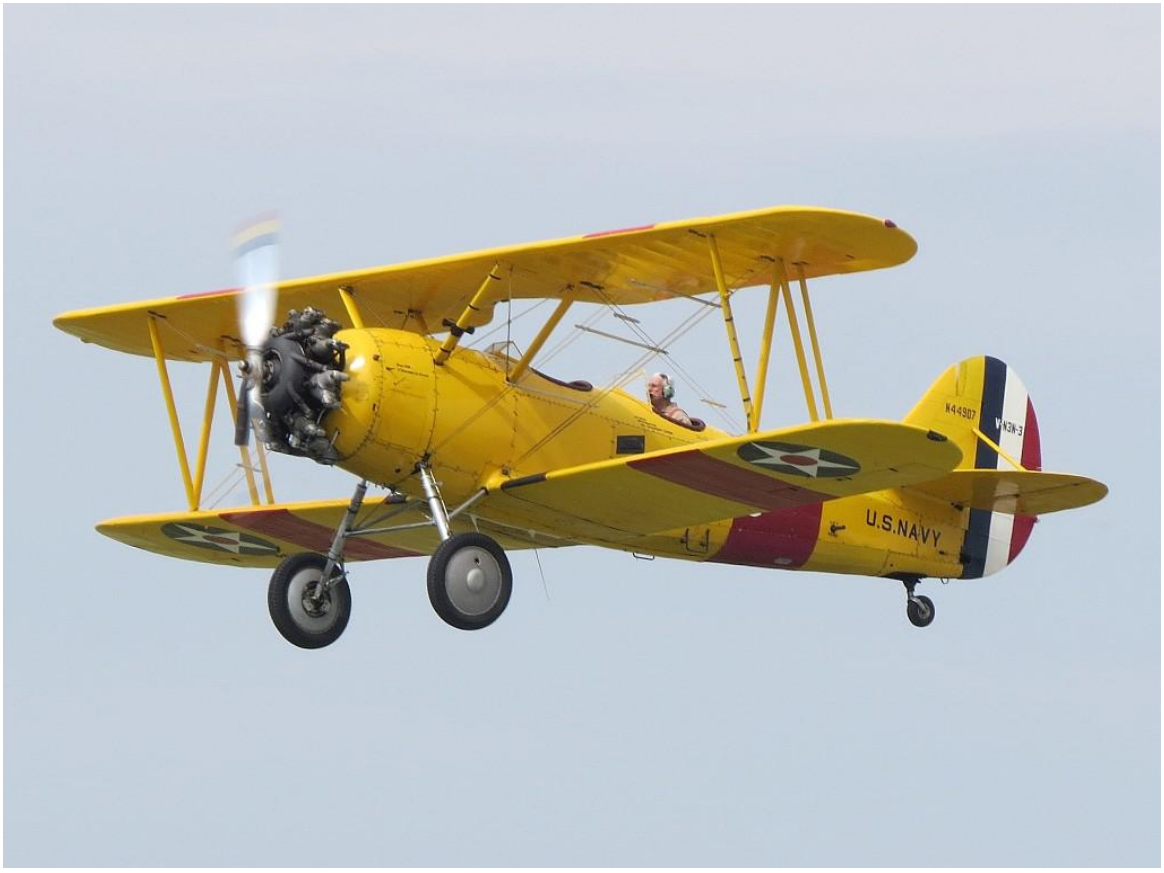


The Boeing Stearman was built as a primary trainer before and during World War II. During the war, the Stearman was used by the U.S. Navy, U.S. Army Air Forces, U.S. Marine Corps, and the U.S. Coast Guard. The Stearman was also used by the Royal Canadian Air Force. During World War II, the U.S. Army Air Forces gave 300 Stearmans to the Royal Canadian Air Force under Lend-Lease for training purposes, designating them PT-27s. This Stearman is a rare surviving example of one of those PT-27s.

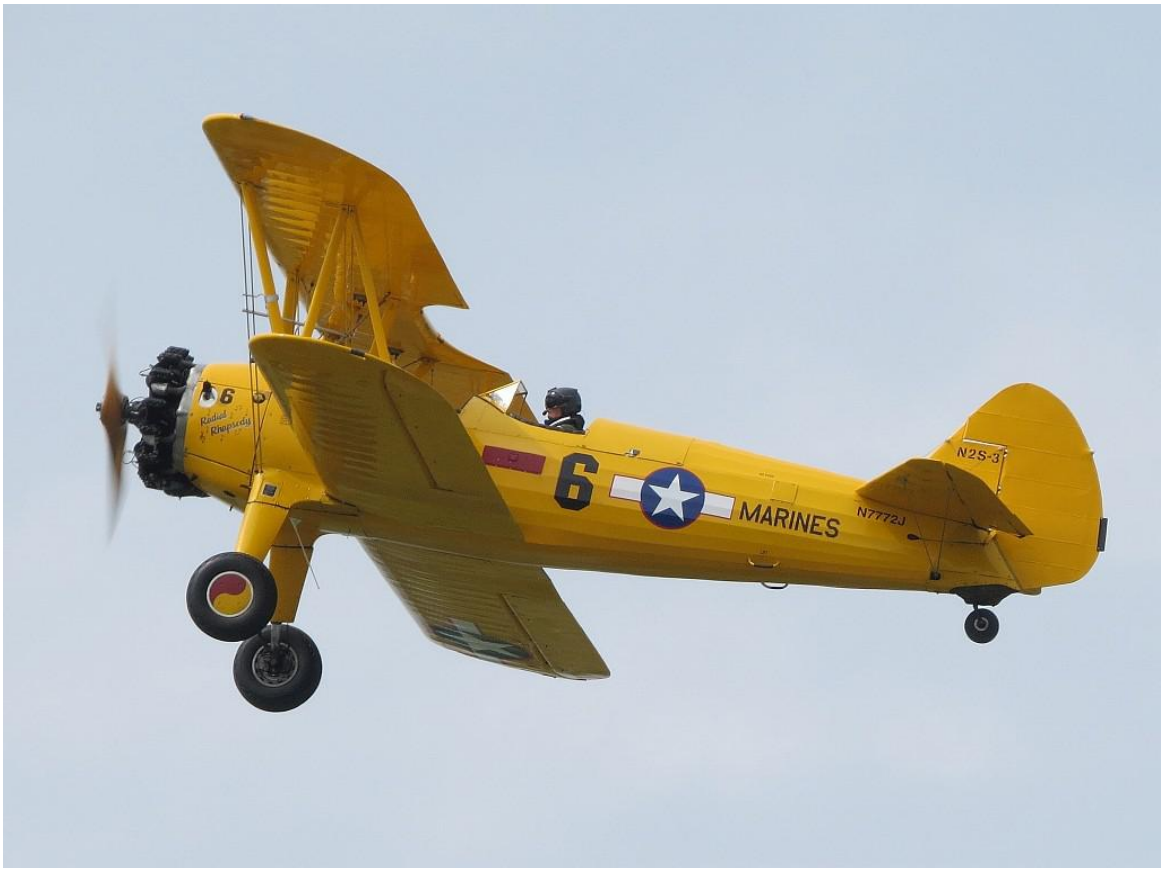


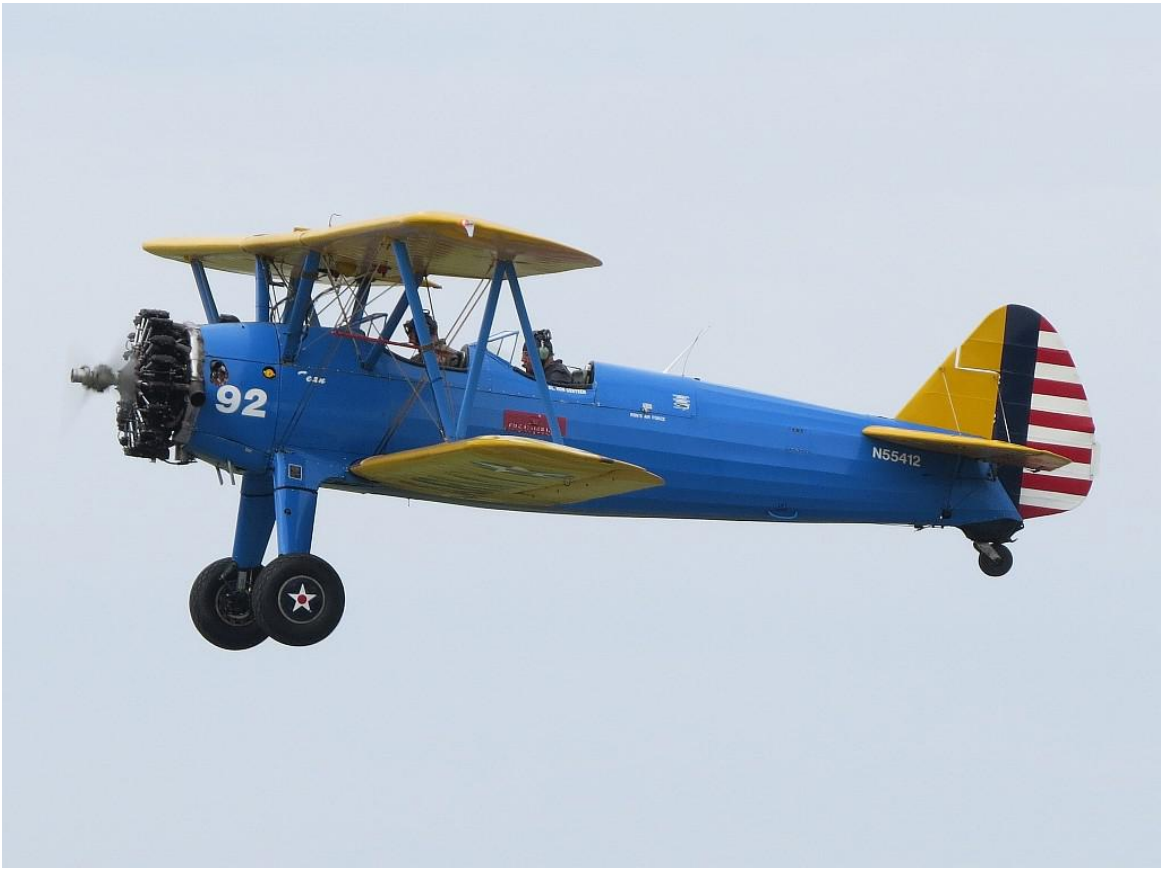
One of the more unusual training aircraft to depart on Sunday morning was this restored Naval Aircraft Factory N3N-3. This primary training aircraft was built by the Naval Aircraft Factory in Philadelphia, Pennsylvania, from 1935 to 1942. Unlike the iconic Stearman, the N3N was built in far fewer numbers. Less than 1,000 examples were built in two main variants, the N3N-2 and the N3N-3. Both variants looked similar, but the N3N-3 had a more powerful engine installed and other minor design changes.

The N3N was a rugged and reliable training aircraft for student pilots. For a training aircraft of its era, the N3N had some innovative design features. The N3N could be fitted with either wheels or floats as landing gear for operations off either land or water. The biplane was constructed of aluminum for strength and fastened together with bolts and rivets. The fuselage featured easy-to-remove access panels, so inspections and maintenance on the airframe could be completed easily.

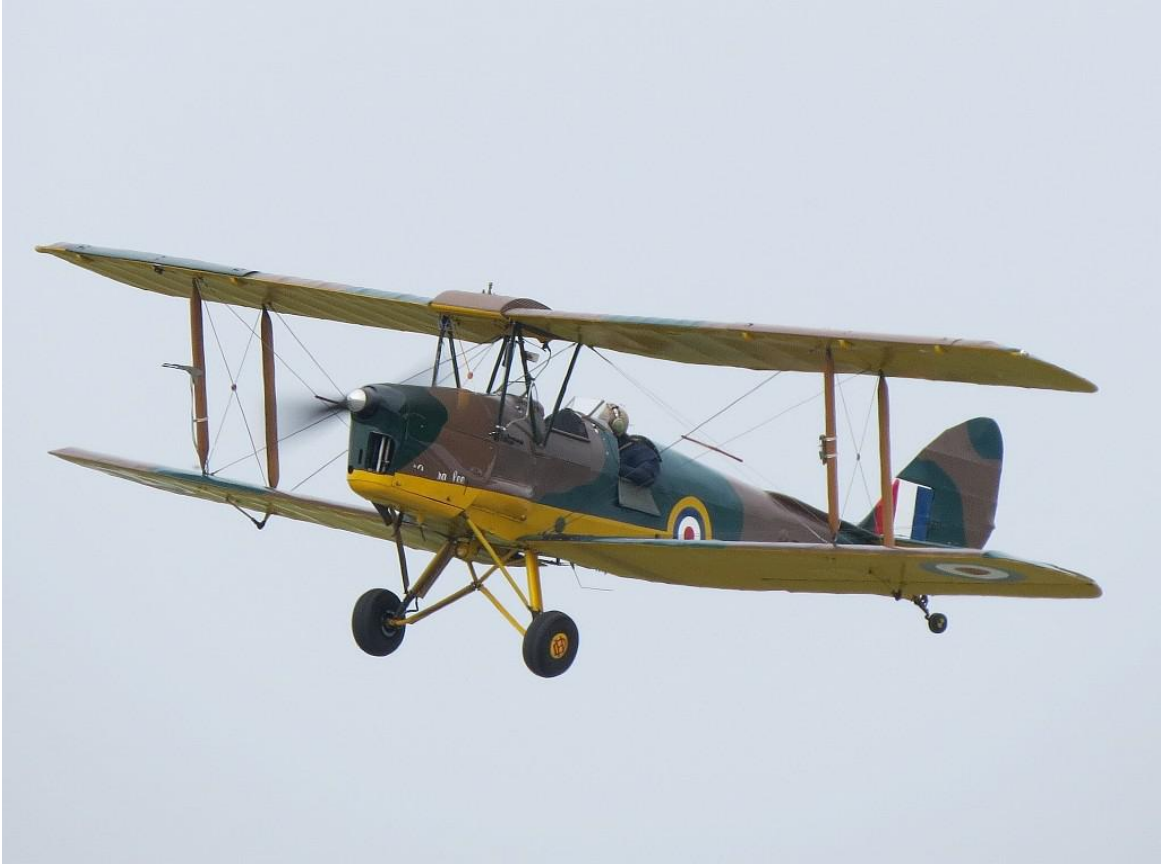


The Stearman remains a popular vintage aircraft in the United States, and due to the large numbers that have been restored and remain airworthy, it is a certainty that at least one will show up at any fly-in or airshow being held if the weather is favorable. This year's Mid-Atlantic Air Museum's World War II Weekend featured several Stearmans in a variety of color schemes and markings. This Stearman is restored as a U.S. Marines N2S-3 and was photographed departing for home on Sunday morning.



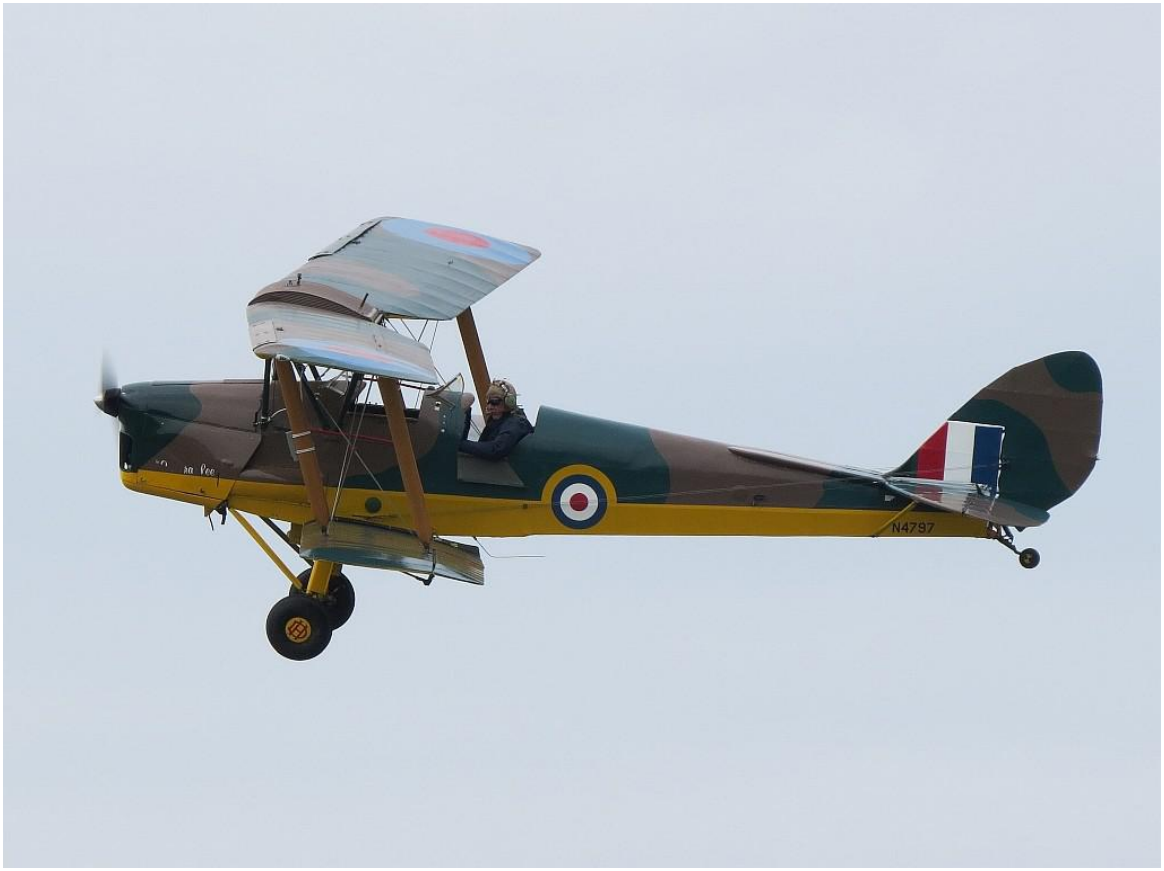


The Mid-Atlantic Air Museum's World War II Weekend always attracts a large number of restored Stearmans to the event. Unfortunately, since these aircraft are antiques with open cockpits and limited instrumentation, their owners generally do not like to fly in poor weather. With rain in the forecast for later on Sunday and skies quickly becoming overcast, the pilots of this Stearman joined the group of other aircraft departing for home before the weather moved into the area later in the day.

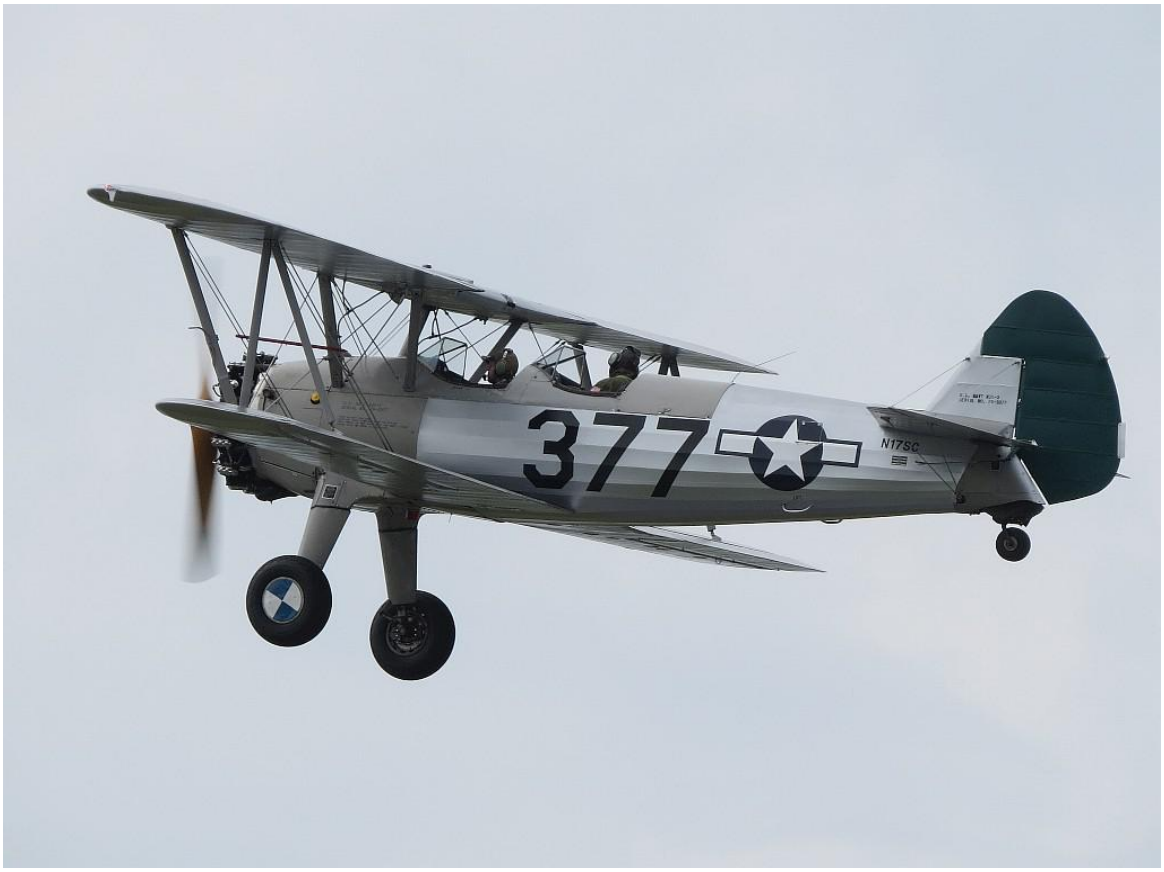


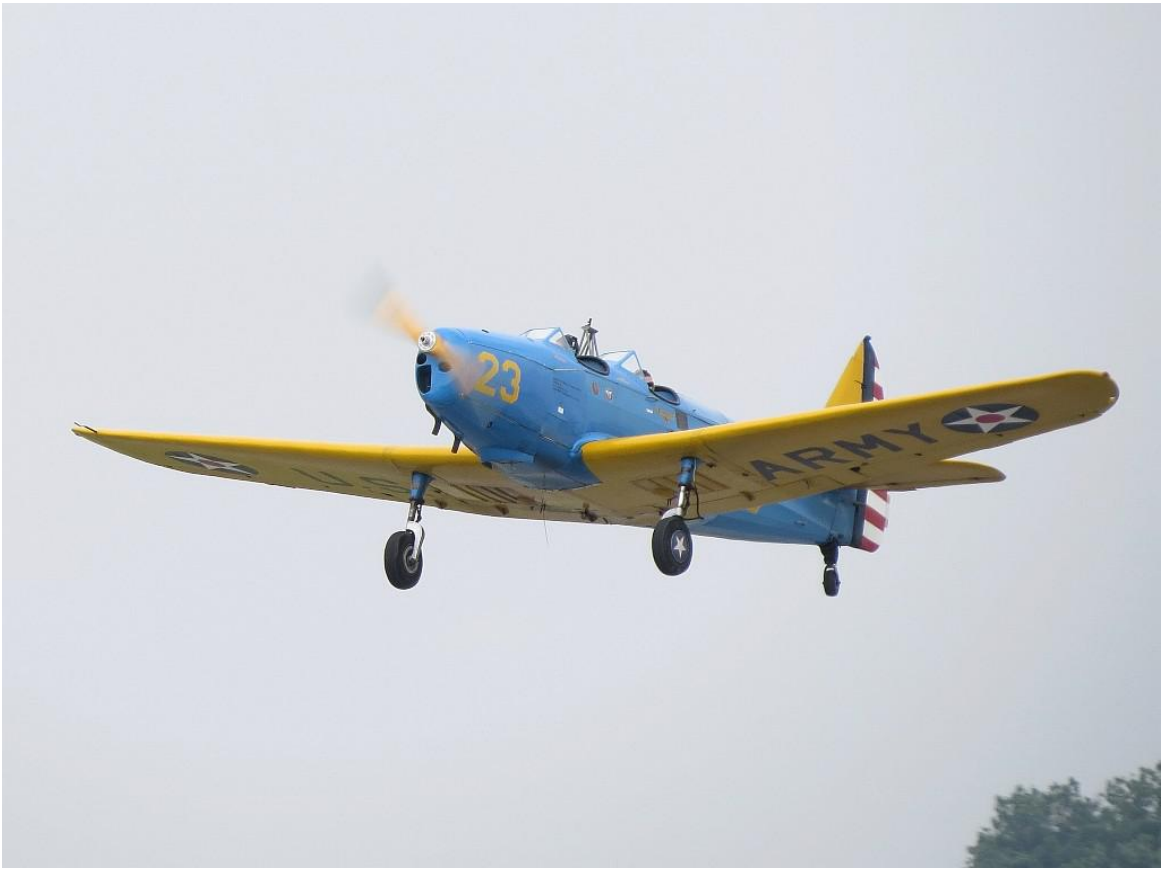
An unusual training aircraft on the field at the 2025 Mid-Atlantic Air Museum's World War II Weekend was this restored de Havilland D.H. 82 Tiger Moth. The Tiger Moth served as the primary training aircraft for the Royal Air Force throughout World War II. In addition to the Royal Air Force, the Tiger Moth was used as a primary trainer by the British Commonwealth countries, including the Royal Canadian Air Force, the Royal New Zealand Air Force, and the Royal Australian Air Force.

The de Havilland D.H. 82 Tiger Moth is a simple biplane with forgiving and pleasant flying characteristics. Over 8,800 examples of the Tiger Moth were built from 1931 to 1944. After Tiger Moths began to be phased out of service in the 1950s, many were sold as surplus to flying clubs and private civilian operators. Tiger Moths remain popular with vintage aircraft collectors. A Tiger Moth club, formed in 1975, is now an owners' association offering a mutual club and technical support to Tiger Moth owners.

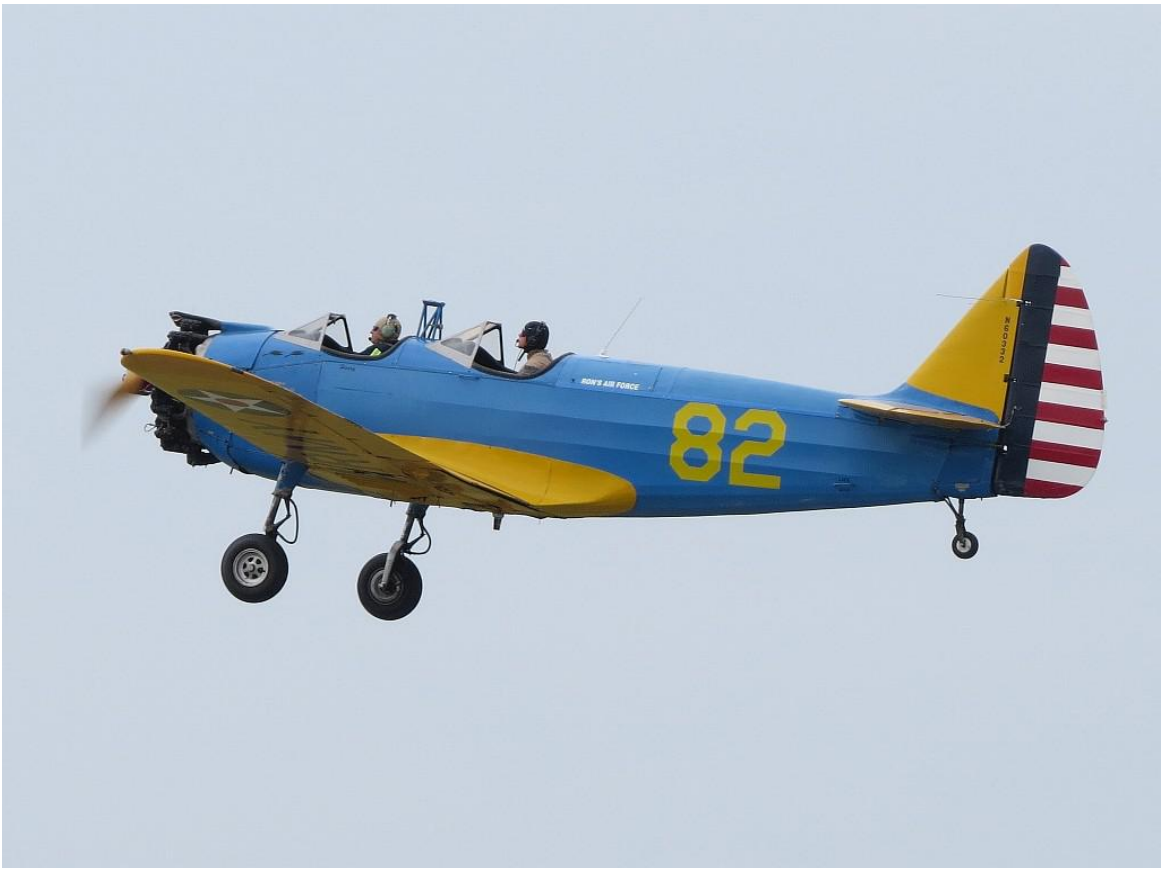


Although most aviation enthusiasts are familiar with Boeing Stearman biplanes in bright, easily identifiable training colors and markings, that was not always the case in service. Towards the end of World War II, most military training aircraft adopted aluminum finishes, such as the restored N2S-3 Stearman shown here, departing World War II Weekend for home on Sunday morning. The large "buzz numbers" on the fuselage were designed to quickly the aircraft being flown from the ground or tower.



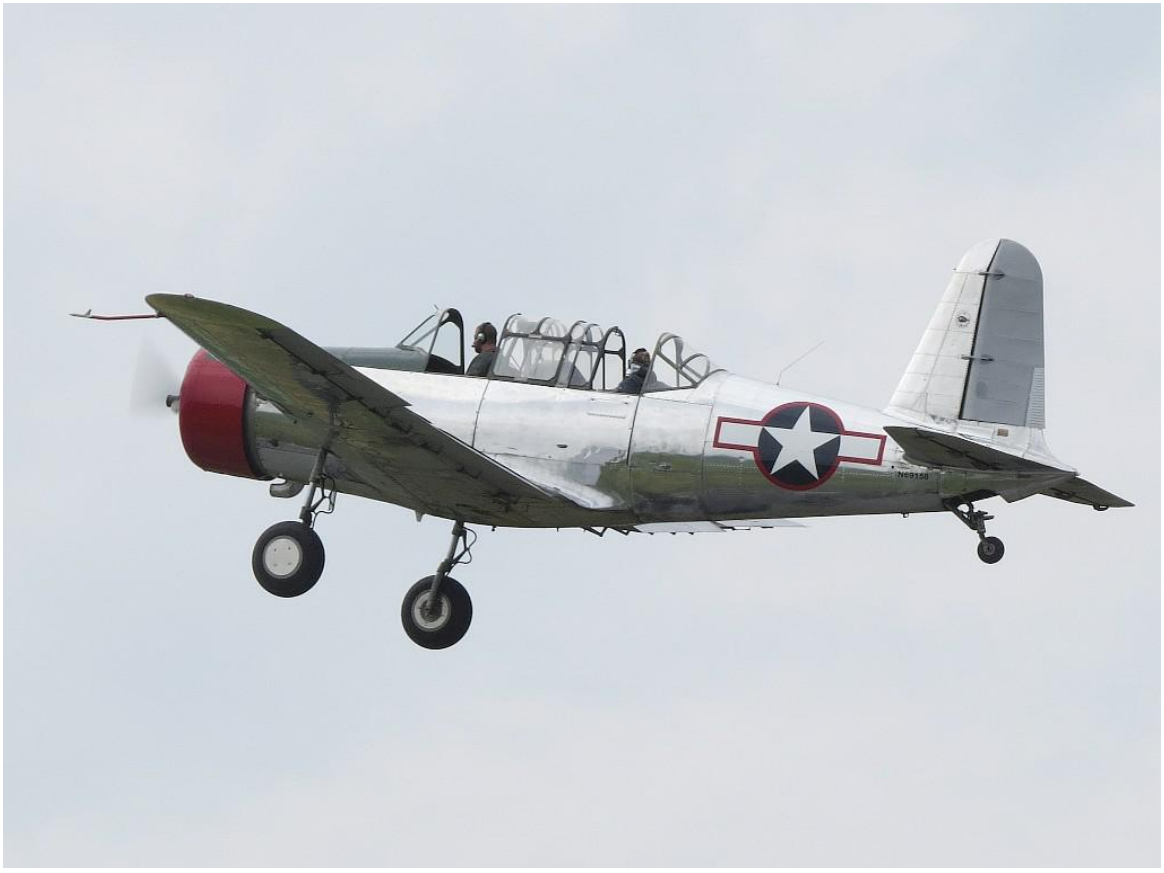


The Fairchild PT-19 Cornell was a primary training aircraft that served with the U.S. Army Air Forces, Royal Air Force, and Royal Canadian Air Force during World War II. The PT-19's design was contemporary of the Boeing Stearman, being a low-wing monoplane instead of a biplane. The PT-19 proved to be simple to maintain and inexpensive to operate. Over 7,700 PT-19s were built during World War II. The type was responsible for training thousands of Allied pilots during the war.

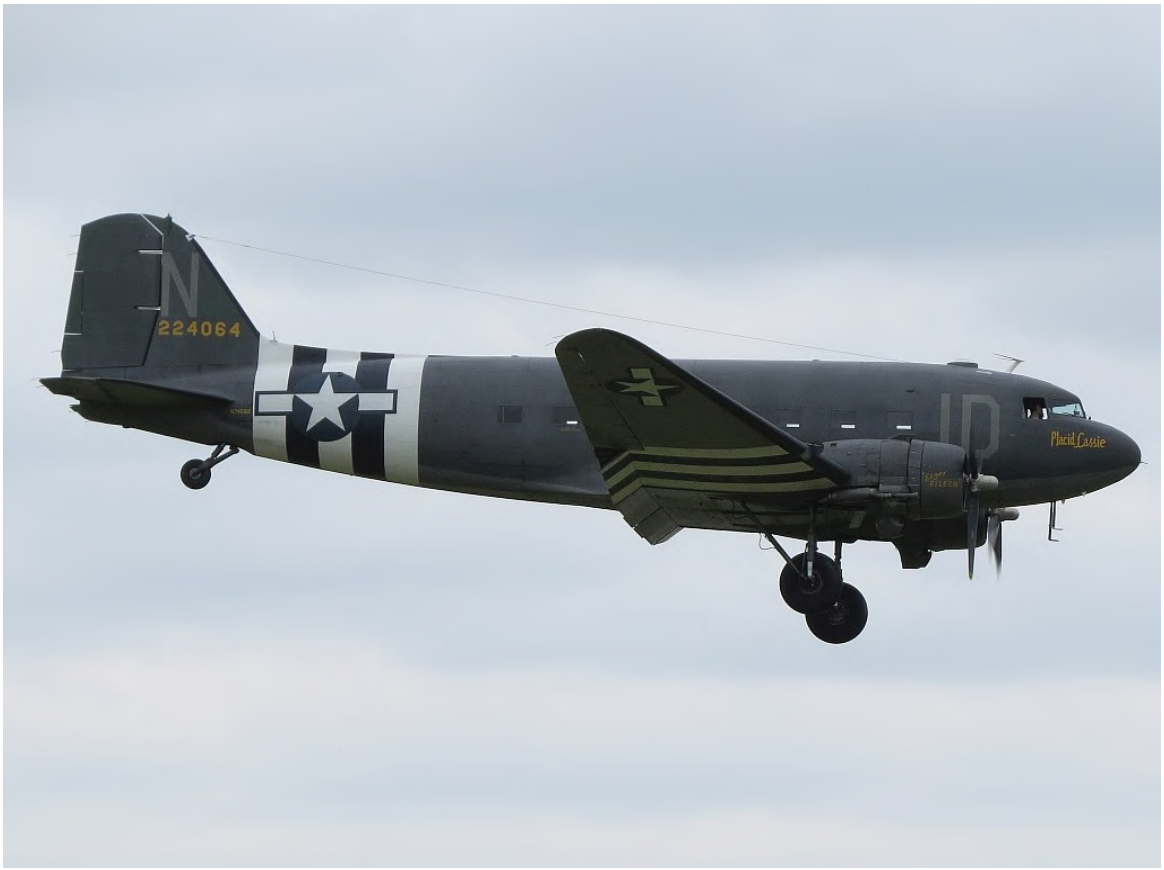


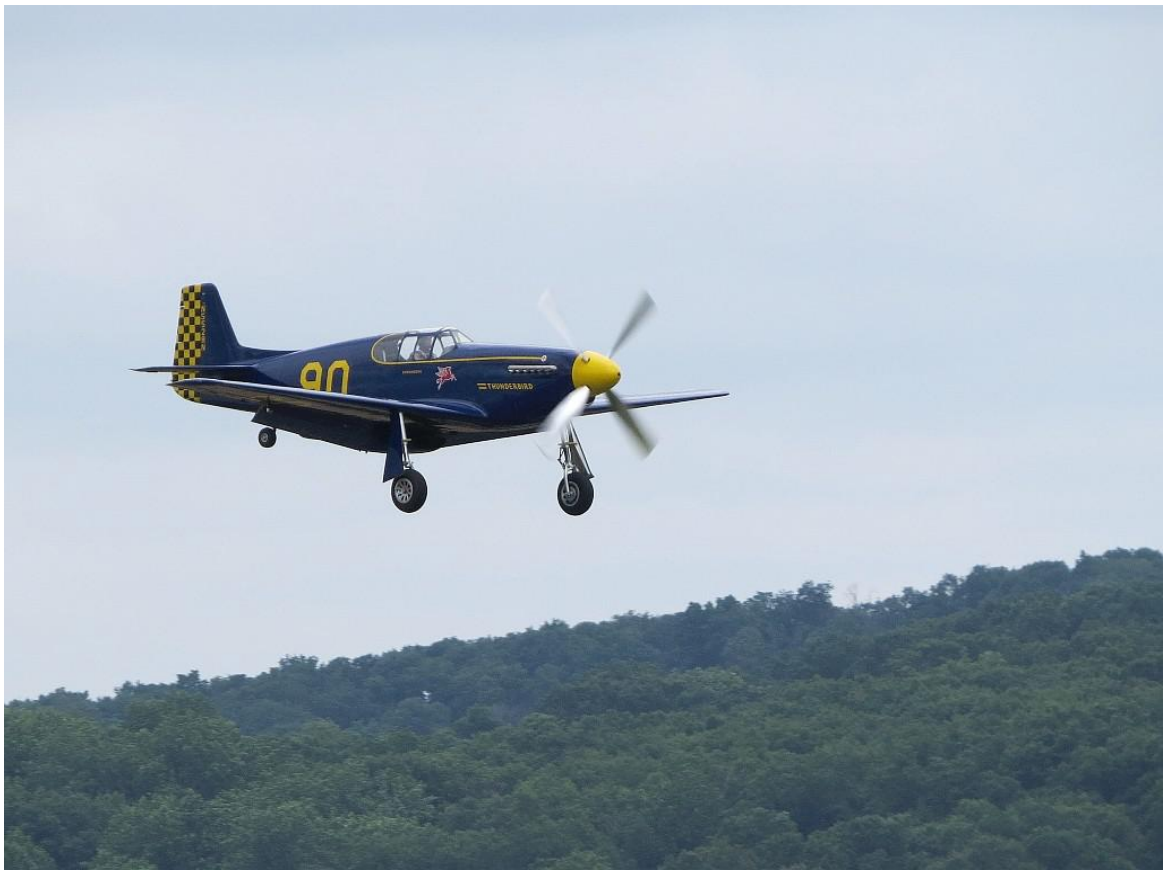
The PT-23 was an unusual development of the PT-19 Cornell primary training aircraft. As PT-19 Cornell production rates increased, Fairchild Aircraft suffered shortages of the Ranger inline engine used in the aircraft. As an experiment, a 220-horsepower Continental R-670-5 radial engine was tested on a PT-19 airframe. No unusual handling difficulties were reported, and over 770 PT-19s were built as PT-23s with radial engines. Another 256 were built as PT-23A instrument trainers.

The Vultee BT-13 Valiant was a basic training aircraft built during World War II. The aircraft was known as the BT-13 or BT-15, depending on the engine installed, in U.S. Army Air Forces service and the SNV in U.S. Navy and Marine Corps service. American pilots learned to fly the Valiant during the basic (category between primary and advanced) flight training. The Valiant was used to teach pilots skills such as using a radio and operating flaps. Almost 10,000 Valiants were built during the war.

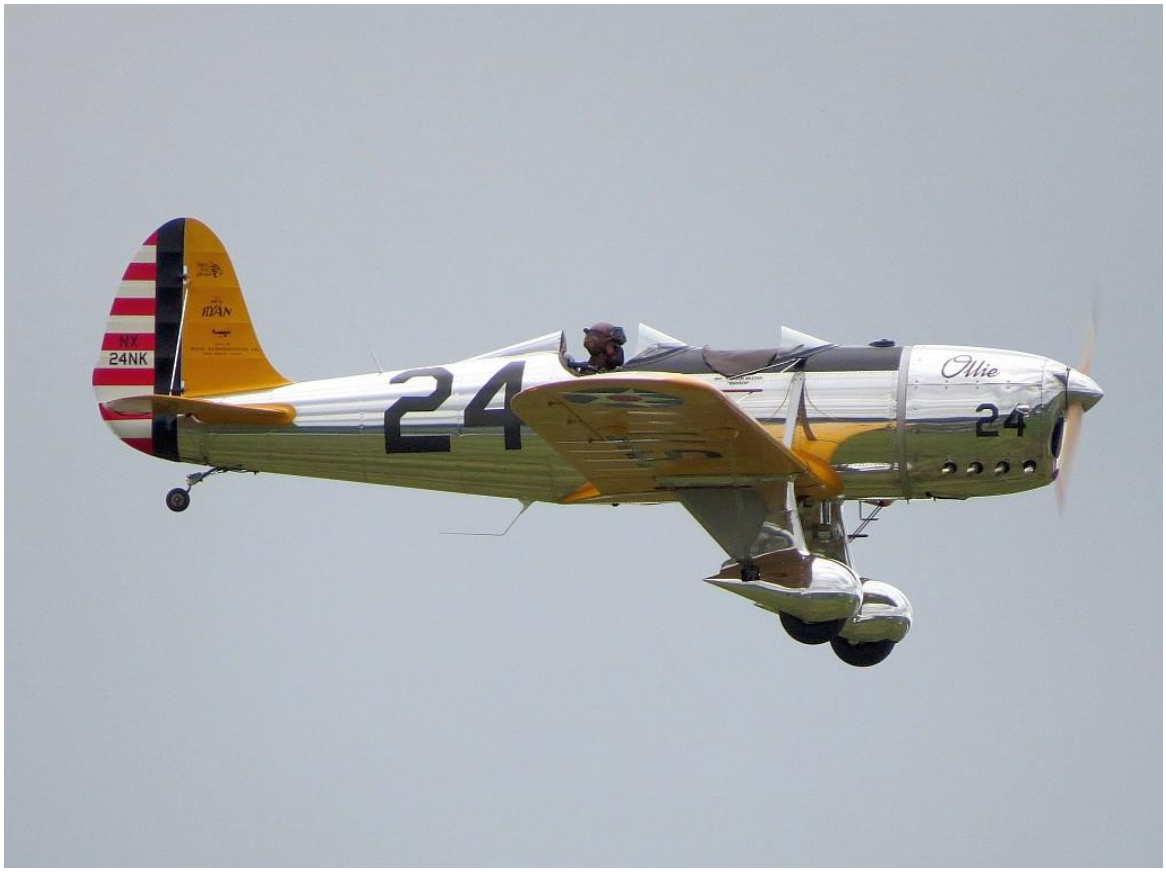


Despite the weather situation, the Mid-Atlantic Air Museum and all the aircraft operators should be commended for doing everything possible to have as much fly as possible for the event attendees. Despite the cloudy conditions and the threat of rain approaching, the WWII Airborne Demonstration Team was able to perform their parachute jump on Sunday. This is the Tunison Foundation's Douglas C-47 Skytrain "Placid Lassie" coming in for a landing following the team's jump on Sunday afternoon.



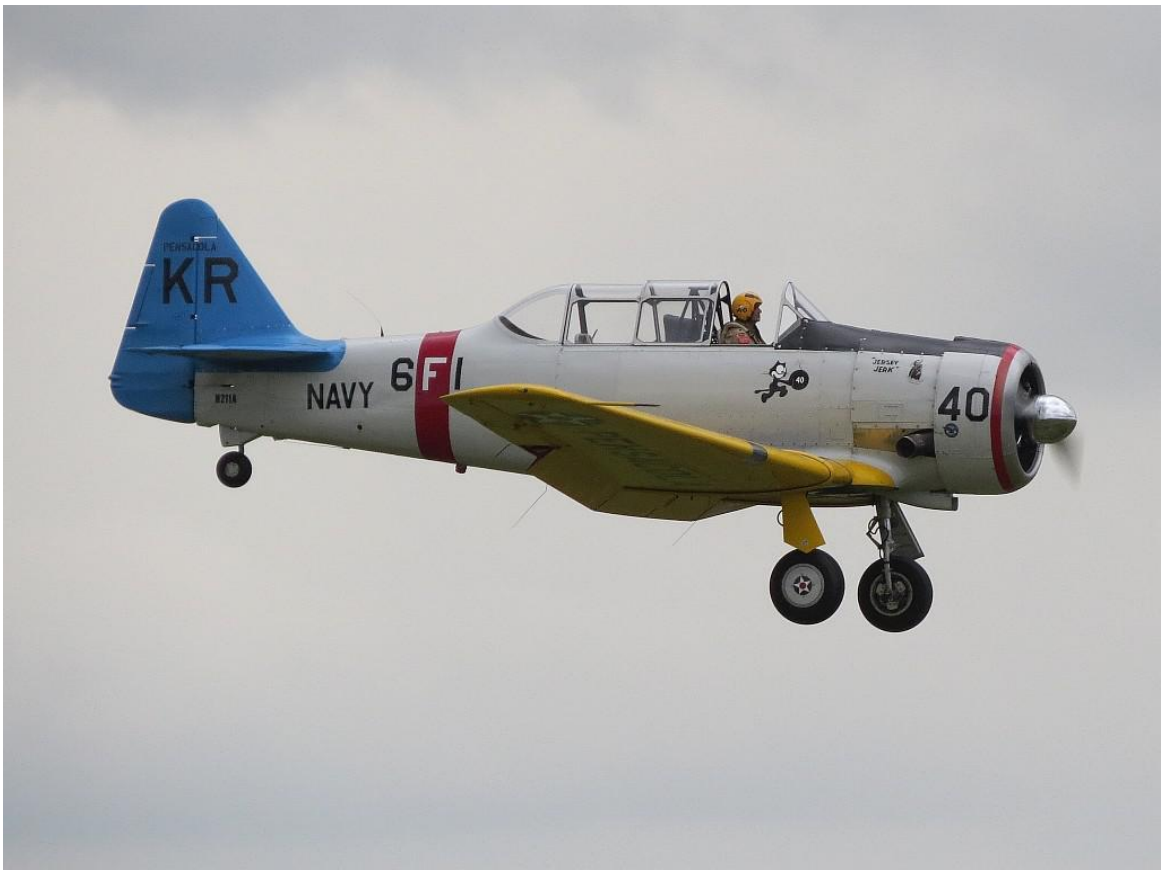


Warren Pietsch also took advantage of the gap in the weather to fly a demonstration with the Dakota Territory Air Museum's beautiful North American P-51C Mustang "Thunderbird". After World War II, many P-51 Mustangs were sold as surplus and purchased for air racing purposes. Sadly, many P-51s and other rare World War II fighters were destroyed in air race crashes and mishaps. "Thunderbird" is a rare air racing survivor and is an incredible restoration of a late 1940s air racing aircraft.

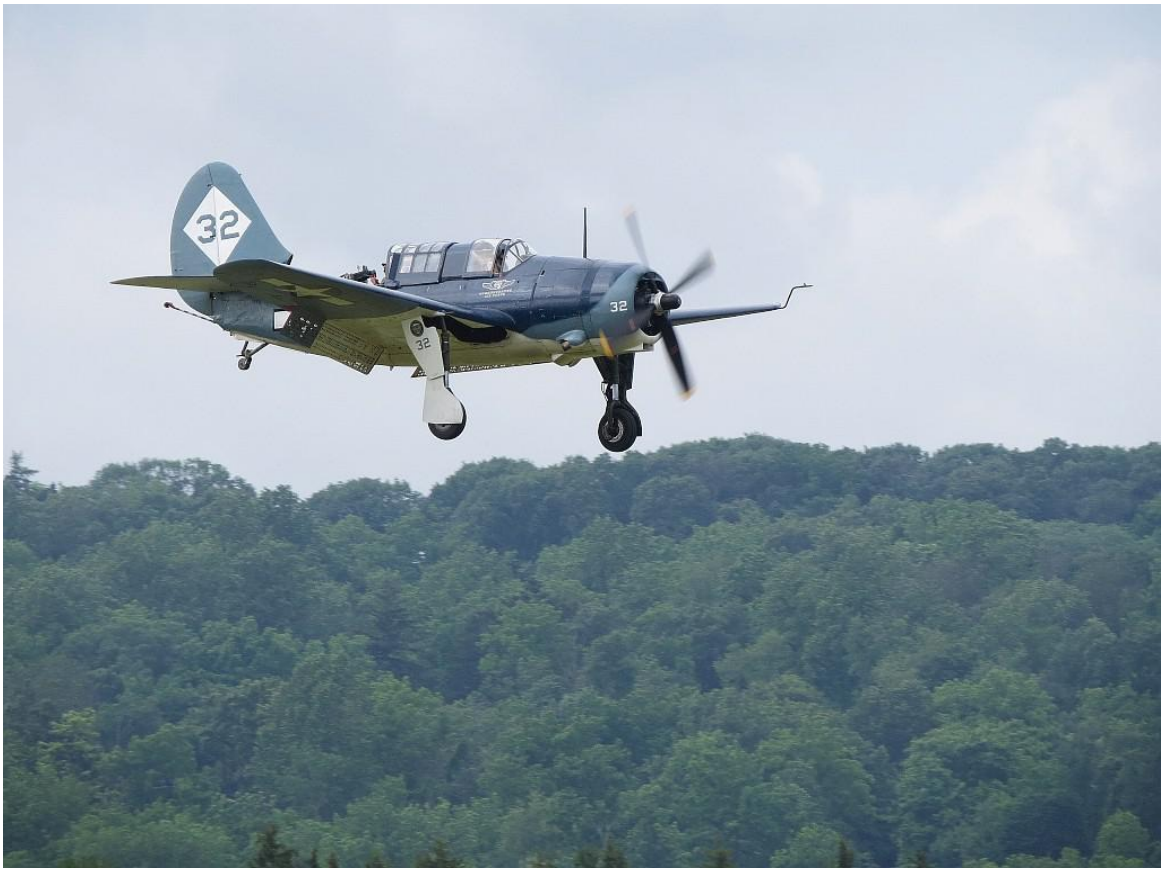


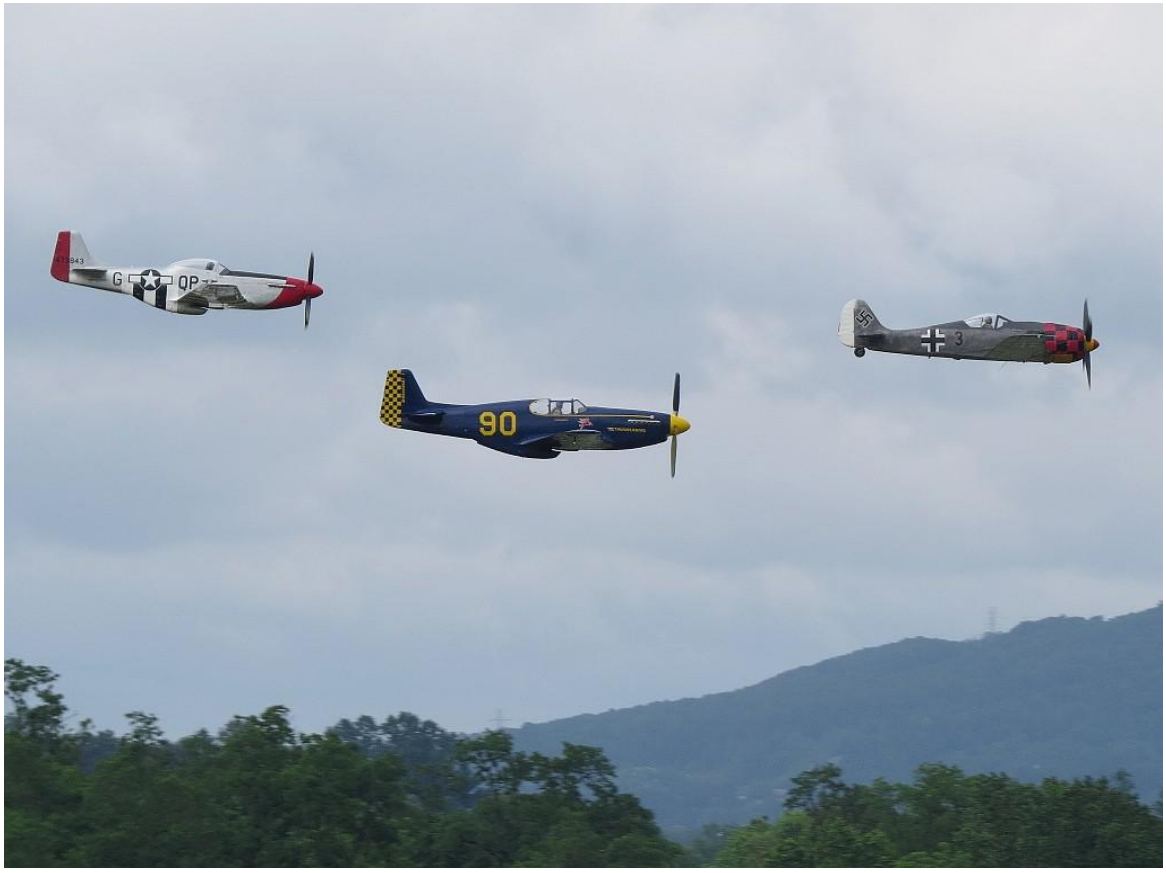
Jeff Deaton flies his Timber Tiger Ryan ST -L "Ollie" during the airshow on Sunday afternoon at World War II Weekend. The Timber Tiger Ryan ST -L is a 95% scale replica of the Ryan ST sport plane and trainer from the 1930s. The Timber Tiger ST-L allows pilots to build a modern replica of the classic Ryan ST series with a more modern engine for improved reliability and ease of maintenance. "Ollie" looked right at home at WWII Weekend and was enjoyed by the event attendees on the field and in the air.

Longtime attendee at World War II Weekend, Kevin Russo, brings his North American SNJ advanced training aircraft in for landing following a flight demonstration on Sunday afternoon. The SNJ was designed as an advanced training aircraft and had handling qualities similar to the fighter aircraft student pilots would transition to once their training was complete. The SNJ was fully aerobatic, and this capability continues to make the design a popular airshow aircraft.

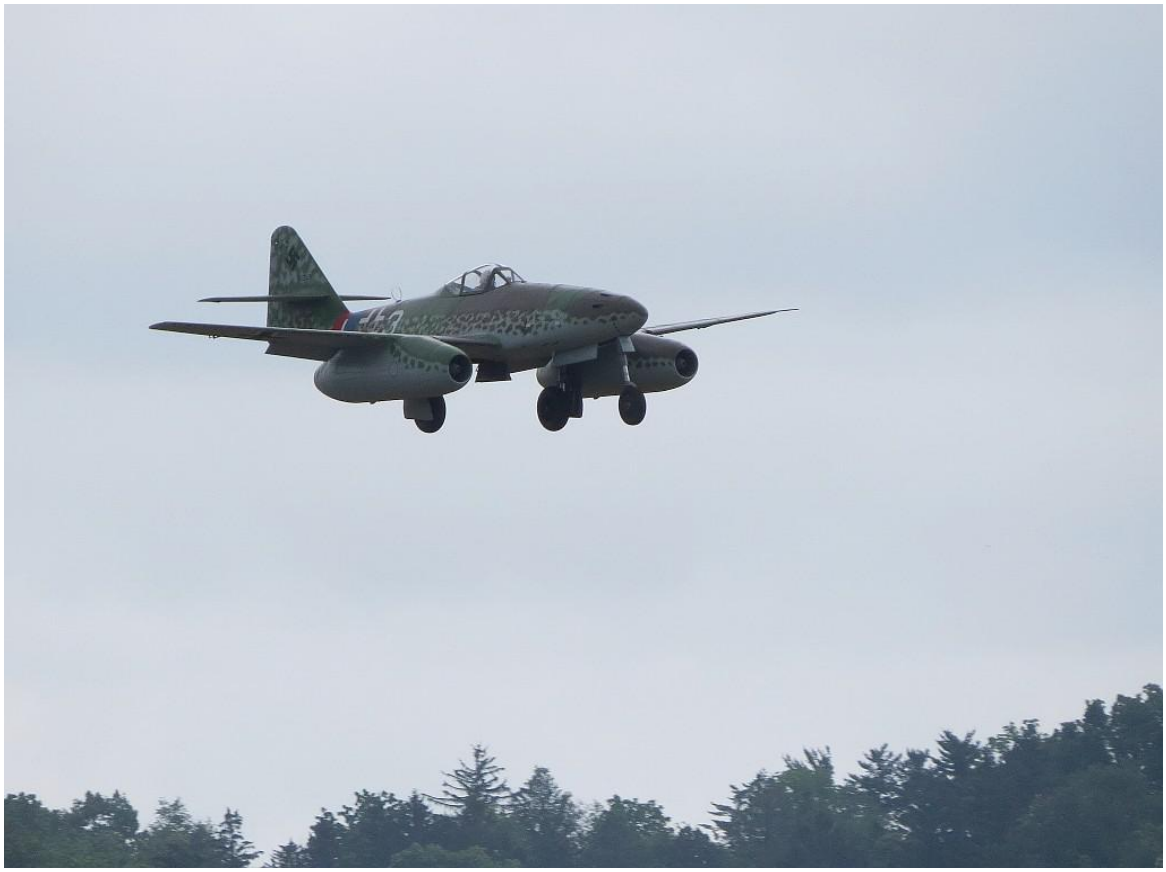


Unfortunately, similar to Saturday, rain and thunderstorms moved into the area, delaying the airshow portion of the event nearly two hours. The lengthy rain delay resulted in the cancelation of the naval aircraft flight and the bomber and transport flight. The weather finally cleared later in the afternoon, and the airshow flying could resume. Here, the Commemorative Air Force West Texas Wing's Curtiss SB2C-5 Helldiver is returning from a warbird experience flight after the weather has cleared.



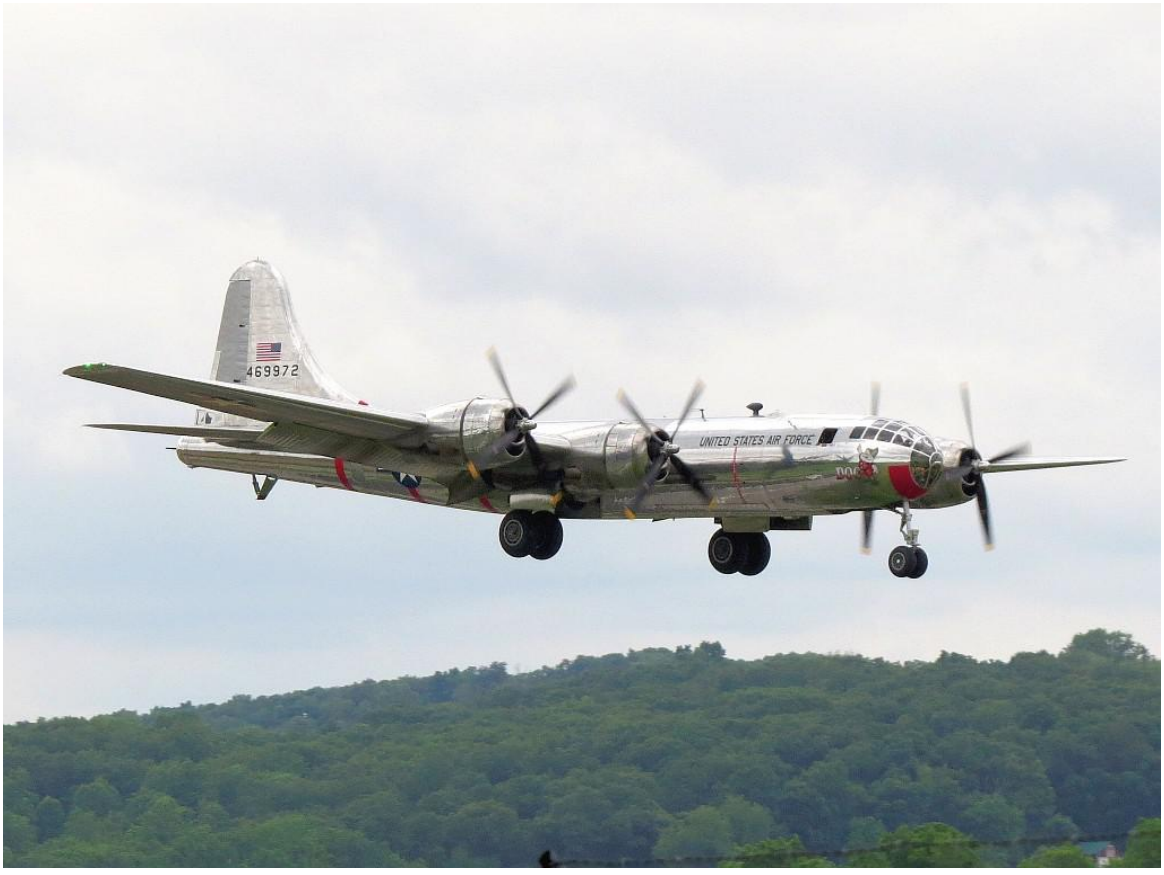


The rain cleared just in time on Sunday, so the fighter aircraft could fly a final time. Similar to Saturday, Warren Pietsch in the Dakota Air Territory Museum P-51C "Thunderbird", Mark Todd in the Commemorative Air Force Airbase Georgia's P-51D Mustang "Red Nose", and Kevin Sinbaldi in the Military Aviation Museum's Focke-Wulf Fw 190A replica linked up for a three-ship formation photo pass. The event attendees who waited out the rain appreciated the effort of the pilots to create a memorable display.

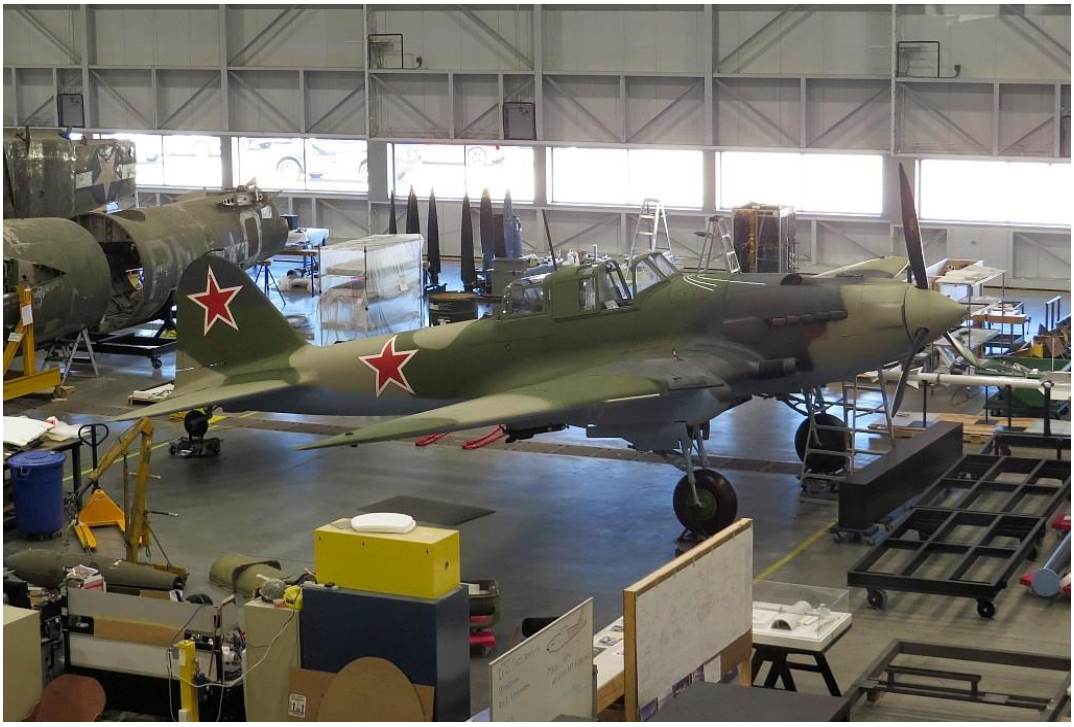


Despite the weather conditions, Mike Spalding also took the Military Aviation Museum's Messerschmitt Me 262 replica up for a flight demonstration on Sunday afternoon. In this photo, Spalding is setting up the Me 262 for a landing in the overcast skies. The Me 262 was one of the highlights of the Mid-Atlantic Air Museum's airshow roster this year for World War II Weekend. The Me 262 generated a lot of interest among event attendees, and hopefully, it can return to the event in the future.

The B-29 Superfortress "Doc" comes in for landing after flying a flight demonstration on Sunday at the Mid-Atlantic Air Museum's World War II Weekend. Despite weather challenges, World War II Weekend was once again a successful event for the Mid-Atlantic Air Museum. The event drew large crowds despite the weather and several new aircraft were featured at the event for the first time. With the event concluded, I am sure the Mid-Atlantic Air Museum has already begun plans for 2026.



Ilyushin IL-2 Shturmovik



The National Air and Space Museum has had this Ilyushin Il-2 Shturmovik in storage for 26 years. Recently, National Air and Space Museum curators restored the aircraft in the Steven F. Udvar-Hazy Center's Mary Baker Engen Restoration Hangar in preparation for display in a new World War II aircraft exhibit in the museum's National Mall location. The Il-2 was a ground-attack aircraft used by the Soviet Air Force during World War II. The Il-2 played a pivotal role in helping the Soviet Union achieve victory on the Eastern Front.

The Ilyushin Il-2 was a symbol of Soviet air power during World War II. Ilyushin built more Il-2s than any other airplane of any wartime nation. The Il-2 was designed following the Soviet emphasis of building ground-attack aircraft to closely support friendly infantry and armored forces on the battlefield. The Il-2's use during the war had a long-lasting effect on Soviet doctrine regarding aircraft and their use in combat. The word "*shturmovik*", the generic Russian term for a ground-attack aircraft, became synonymous with the Il-2, where it is sometimes spelled "Stormovik" or "Sturmovik" in English references about the Il-2.

Design work on the Il-2 began in 1938 when the Soviet Air Force requested a heavily armed and armored aircraft that could provide close air support to ground forces. Sergey Ilyushin and his design team built the TsKB-55, a two-seat aircraft with an armored shell weighing 1,500 pounds (700 kg) that protected the cockpit, engine and oil cooling systems, and fuel tanks. The armored shell amounted to about 15% of the aircraft's total gross weight. The TsKB-55 had an armament of two 23 millimeter (0.91 in) armor-piercing cannons, twin machine guns and could carry 880 pounds (440 kg) of bombs or rockets. The aircraft's armor was designed as a load-bearing part of the monocoque structure, saving considerable weight. To save weight, the rear fuselage of the TsKB-55 was constructed of layers of plywood. The TsKB-55 flew for the first time in 1939, and soon after, Ilyushin was awarded a production contract for the aircraft, now designated the BSh-2.

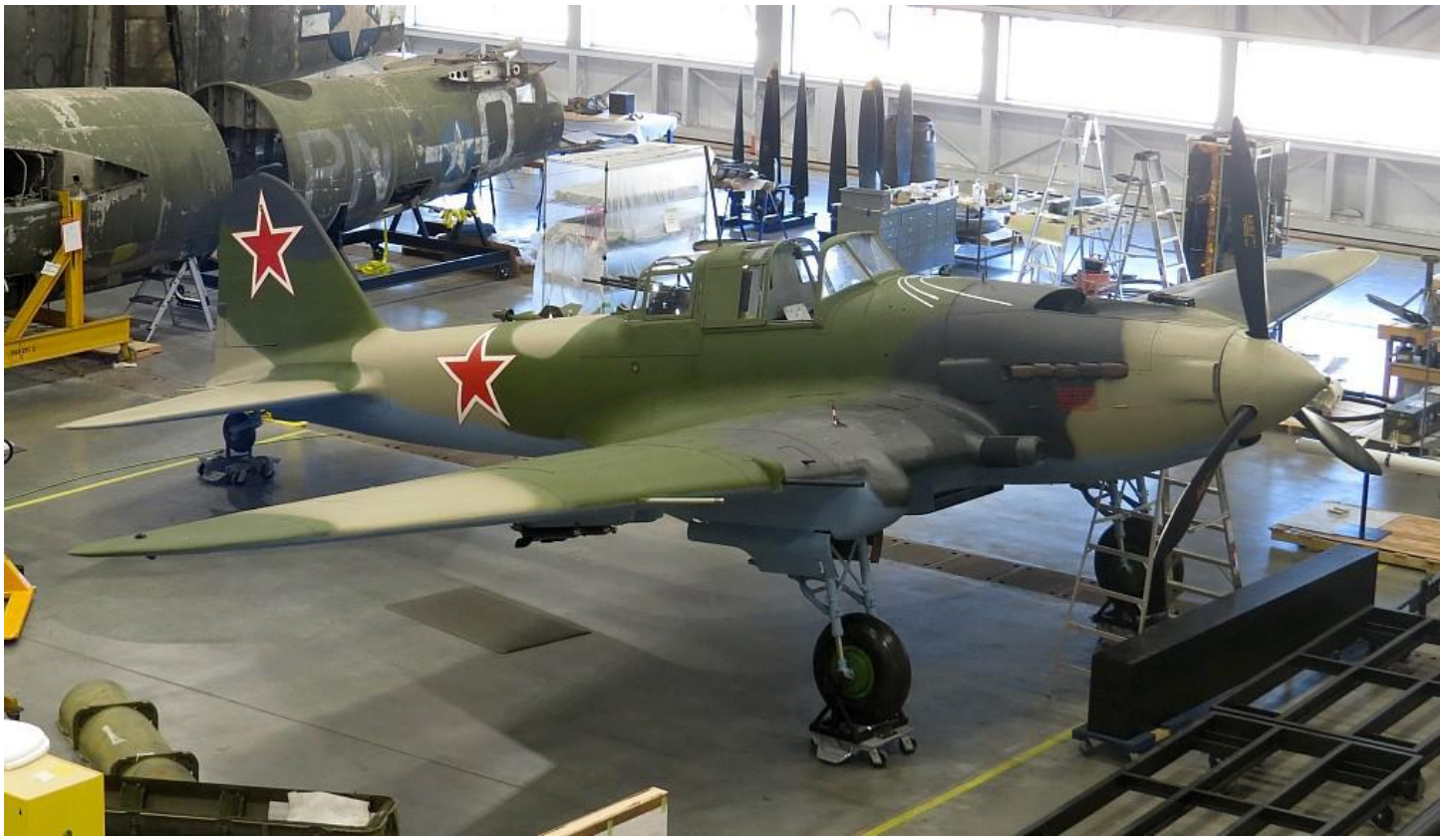
Early examples of the BSh-2 were overweight and underpowered. The engine used on the BSh-2, the Mikulin AM-35, generated 1,371 horsepower but was designed to give its maximum power output at high altitudes. Ilyushin redesigned the Bsh-2 as a new prototype, the TsKB-57. The TsKB-57 was a lighter, single-seat design with the more powerful Mikulin AM-38 engine, generating 1,673 horsepower, designed for high performance at low altitudes. The TsKB-57 passed State Acceptance Trials in March 1941 and was redesignated the Il-2 in April of that year. Deliveries to Soviet Air Force units began in May 1941.

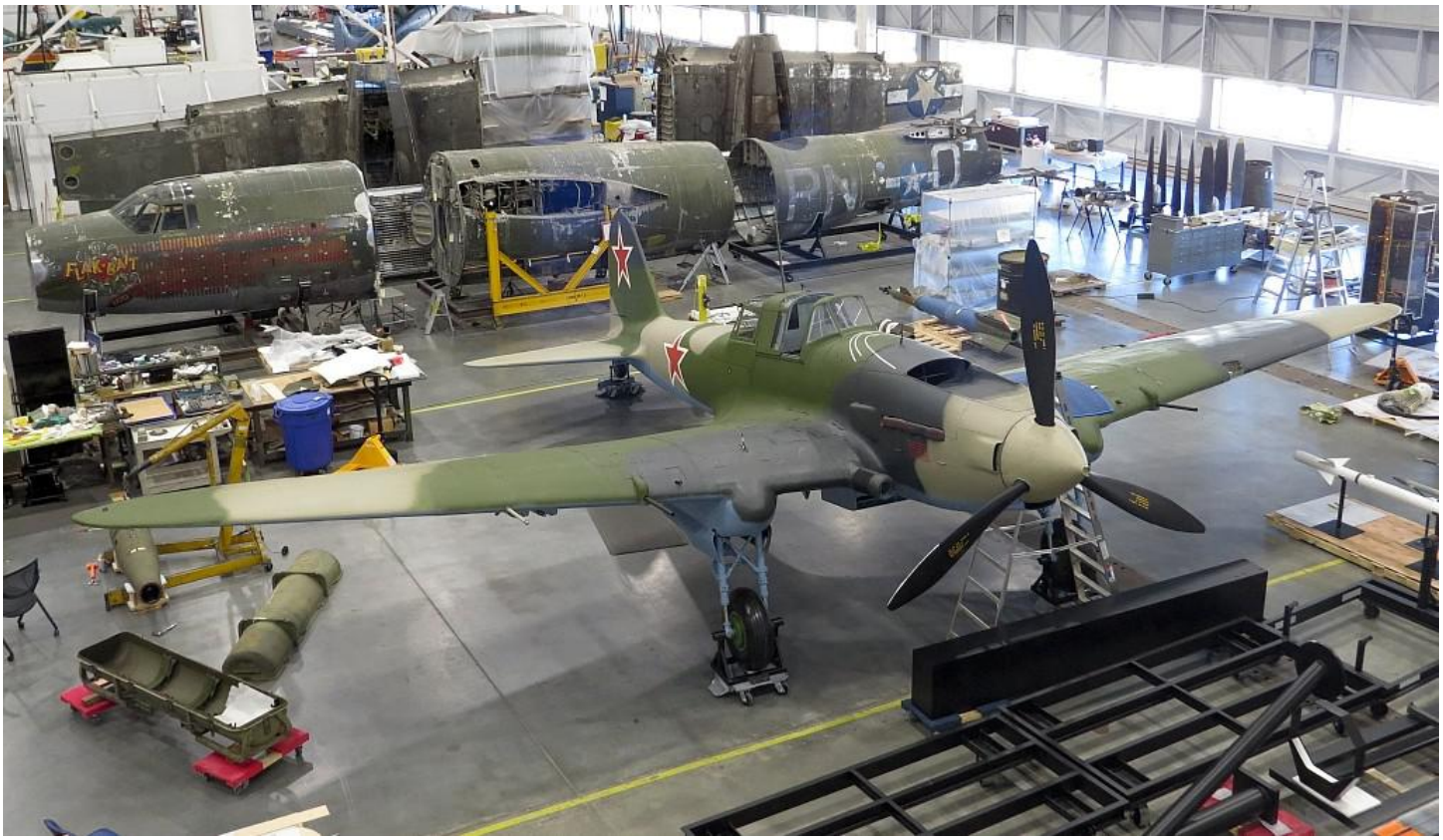
The Soviet Air Force (VVS) had 249 Il-2s on strength when the war started. Aircraft factories producing the Il-2 and other Soviet aircraft in the Urals had to be quickly relocated to escape German bombing. As a result, production of the Il-2 was initially slow. Soviet Premier Joseph Stalin, recognizing the importance of the Il-2 in helping stop the German advance, was furious at the slow pace of production. Stalin appealed to Ilyushin and the factory workers that the Red Army needed the Il-2 just as much as it needed bread and air.

The appeal inspired factory workers and production of the aircraft became a national priority. In appalling winter conditions and sub-zero temperatures, workers completed Il-2s on open-air assembly lines while laborers built factory walls and roofs around them. Production rates improved as the factories were completed, and at one point, workers were turning out about two Il-2s an hour at some production plants. Eventually, four aircraft manufacturing plants were involved in Il-2 production, and by the war's end, they turned out over 36,100 examples of the aircraft.

The first production Il-2s were flown directly from the factories to the front lines without any test flights. In service, the Il-2 quickly gained a reputation for being easy to fly, having powerful armament, and being invulnerable to ground fire with its armor protection. The Il-2 gained the nickname "Ilyusha" from its pilots and ground crews and the nicknames "The Flying Tank", "Hunchback", and "The Flying Infantryman" from ground forces. As experience with the Il-2 grew and its strengths were understood, tactics improved. Il-2s were used in groups to attack German infantry and armored positions, often with devastating results.

Despite the successes, Il-2 losses were extremely high due to the Il-2 being used at low levels and in areas with German anti-aircraft defenses. The Il-2 also suffered heavy losses to German fighter aircraft. In 1942, heavy losses to German fighters necessitated a redesign of the Il-2 so the aircraft could once again carry a rear gunner. The Il-2's fuselage was lengthened, and a more powerful engine was installed to compensate for the weight of the gunner.





Despite the addition of a rear gunner and upgrades to the Il-2s engine and armament during its production run, the ground-attack missions were still extremely dangerous. The Luftwaffe formed specially trained fighter groups to target the Il-2s. Il-2 pilots received the Hero of the Soviet Union after completing only 10 combat missions. Normally, 100 missions were required before a Soviet pilot received this award for valor. Although pilots were protected by the Il-2s armor, the rear gunners were only protected by light armor designed to deflect small arms fire. Pilots often outlived six or more gunners in combat operations. Although the Il-2 could take considerable punishment and was easily repairable, most aircraft only lasted 50 missions before being shot down or damaged beyond repair.

The Il-2 played a crucial role on the Eastern Front during World War II. In addition to being used as an attack aircraft, the Il-2 was sometimes pressed into service as a fighter. Large numbers of Il-2s were used extensively during the Battle of Kursk to stop the advance of German tanks against Soviet positions. As the Soviets advanced into the Third Reich at the end of the war, the Il-2s were used to support the ground advance and destroy German defensive positions and artillery batteries. Due to incomplete records and exaggerated claims, the effectiveness of the Il-2 is difficult to determine. It is known the Il-2s and their crews suffered tremendous losses during the war. Between mid-1943 and 1944, over 14,000 Il-2s were lost due to either enemy ground fire or being shot down by enemy fighters.

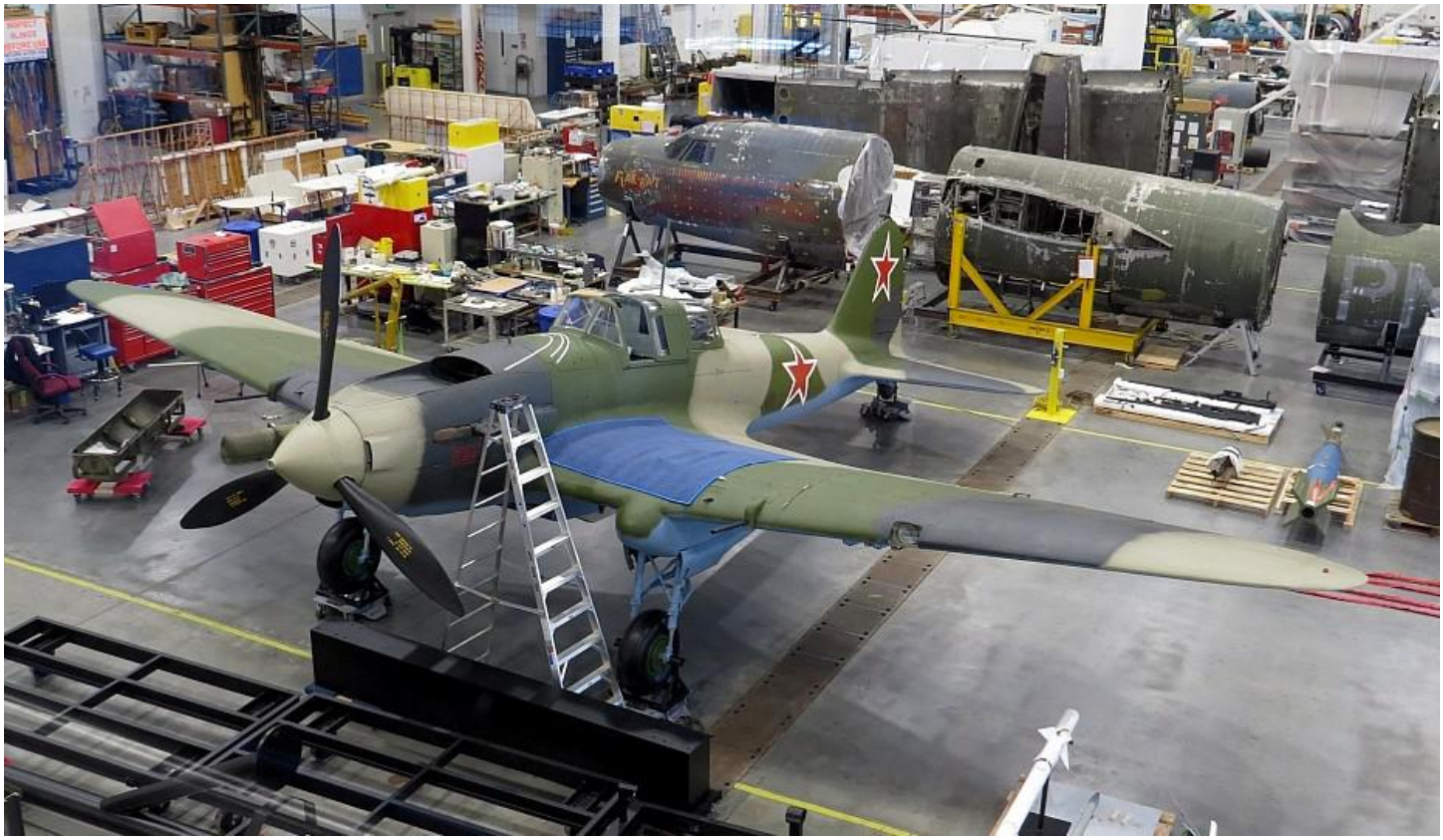
The Il-2 was flown by several notable Soviet pilots. These pilots included Senior Lieutenant Anna Yegorova, who flew 243 Il-2 missions and was decorated three times for valor, and Lieutenant Colonel Nelson Stepanyan, who flew 239 combat missions in Il-2s and was credited with destroying 80 tanks, 600 armored vehicles, and 27 aircraft. The Il-2 was also flown by Cosmonaut Georgy Beregovoy. Beregovoy flew 185 sorties in the Il-2 and was awarded Hero of the Soviet Union in 1944. He was the only cosmonaut to be awarded the Hero of the Soviet Union for an earlier achievement that was unrelated to space travel.

In addition to the Soviet Air Force, the Il-2 was used by the Air Force of the Polish Army, the Yugoslav Air Force, the Bulgarian Air Force, and the Hungarian Air Force. The Il-2 served as the design basis for the Il-10, a similar-looking but improved aircraft that incorporated many lessons learned from combat operations with the Il-2, including a more powerful engine, increased armor protection, and more powerful armament. The final Il-2s in military service were retired by the Bulgarian Air Force in 1954. Combined with the production totals from the Il-10, over 41,000 examples of both aircraft were produced.

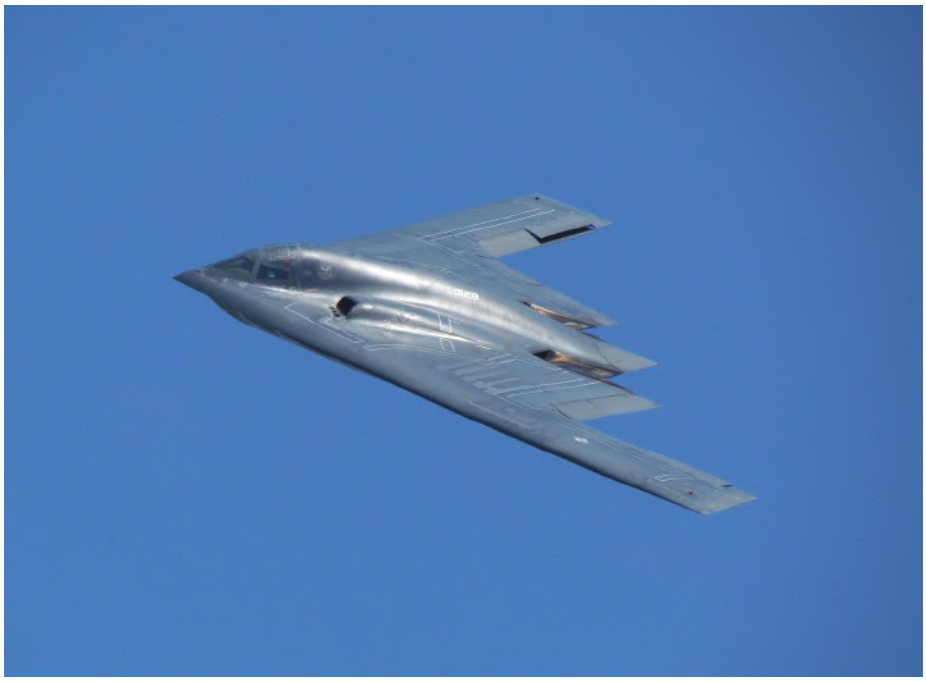
The National Air and Space Museum's Il-2 was obtained in an exchange with Mr. Jeet Mahal. The Il-2 was likely manufactured at the Zavod 18 production facility in the summer or fall of 1943. After being sent to the front lines, it was downed by German anti-aircraft fire in March 1944 while flying alone near the village of Pustoshka. The Il-2 crash-landed on the ice covering Kryakovsky Lake and sank. With so many Il-2s in service, there was no need for the Soviet Air Force to recover the aircraft, and it was left behind.

In 1992, the Il-2 was discovered by a Canadian aircraft broker, and permission was obtained to raise and remove the aircraft from the lake. After being raised from the lake, the Il-2 was sent to an aircraft repair facility in St. Petersburg. Once at the facility, the Il-2 was restored by Russian aircraft mechanics, using parts from three or four different Il-2s to make one complete example. After its restoration, the U.S. Army Center for Military History obtained the Il-2. The organization then donated the Il-2 to the Smithsonian Institution for the National Air and Space Museum.

With no room to display it, the Il-2 was stored for 26 years, unseen by the public. When the National Air and Space Museum announced renovation plans for the museum building on the National Mall, curators decided to include the Il-2 in the new *Jay I. Kislak World War II in the Air* gallery. Museum curators recently restored and assembled the Il-2 and sent the airplane by truck to the National Mall building for installation in the new gallery as the museum renovation is completed.



Northrop/Northrop Grumman B-2A Spirit (1997)



The Northrop, later Northrop Grumman, B-2A Spirit is an American heavy strategic bomber. Often known simply as the "Stealth Bomber", the B-2A is designed to use its low-observable stealth technology to penetrate heavy anti-aircraft defenses undetected. The bomber is designed to carry both conventional and thermonuclear weapons and is the only in-service aircraft capable of carrying large air-to-surface standoff weapons. Development of the B-2 began in secrecy in 1989, with the first aircraft entering service in 1997. The B-2A was first used in combat in 1999 to drop non-nuclear bombs during the Kosovo War. Due to its high development and production costs and the end of the Cold War in the early 1990s, only 21 B-2A Spirits were built for the U.S. Air Force. Currently, 19 of the B-2As remain active in the U.S. Air Force inventory.

Northrop/Northrop Grumman B-2A Spirit

Crew: 2 (1 Pilot (Left Seat), 1 Mission Commander (Right Seat)

Length: 69 ft (21.0 m)

Height: 17 ft (5.18 m)

Wingspan: 172 ft (52.4 m)

Wing Area: 5,140 sq ft (478 m^2)

Powerplant: General Electric F-118-GE-100 non-afterburning turbofans (x4)

Range: 6,000 nmi (11,000 km)

Maximum Speed: 630 mph (1,010 km/h) at 40,000 ft (12,000 m) altitude, Mach 0.95 at sea level

Cruise Speed: 560 mph (900 km/h) at 40,000 ft (12,000 m) altitude

Empty/Gross/Maximum Takeoff Weights: 158,000/336,500/346,000 lb (71,700/152,200/170,600 kg)

Service Ceiling: 50,000 ft (15,200 m)

Armament: Up to 40,000 lb (18,000kg) of ordnance in two internal weapons bays. Ordnance options include Mk-82 or GBU-38 500 lb (230 kg) bombs (x80), CBU 750 lb (340 kg) bombs (x36), Mk-84 or GBU-31 2,000 lb (910 kg) class bombs (x16), B61 or B83 nuclear bombs (x16), AGM-154 Joint Standoff Weapon (JSOW) or AGM-158 Joint Air-To-Surface Standoff Missile (JASSM), GBU-57 Massive Ordnance Penetrator (x2)

Stealth Bomber

Cockpit

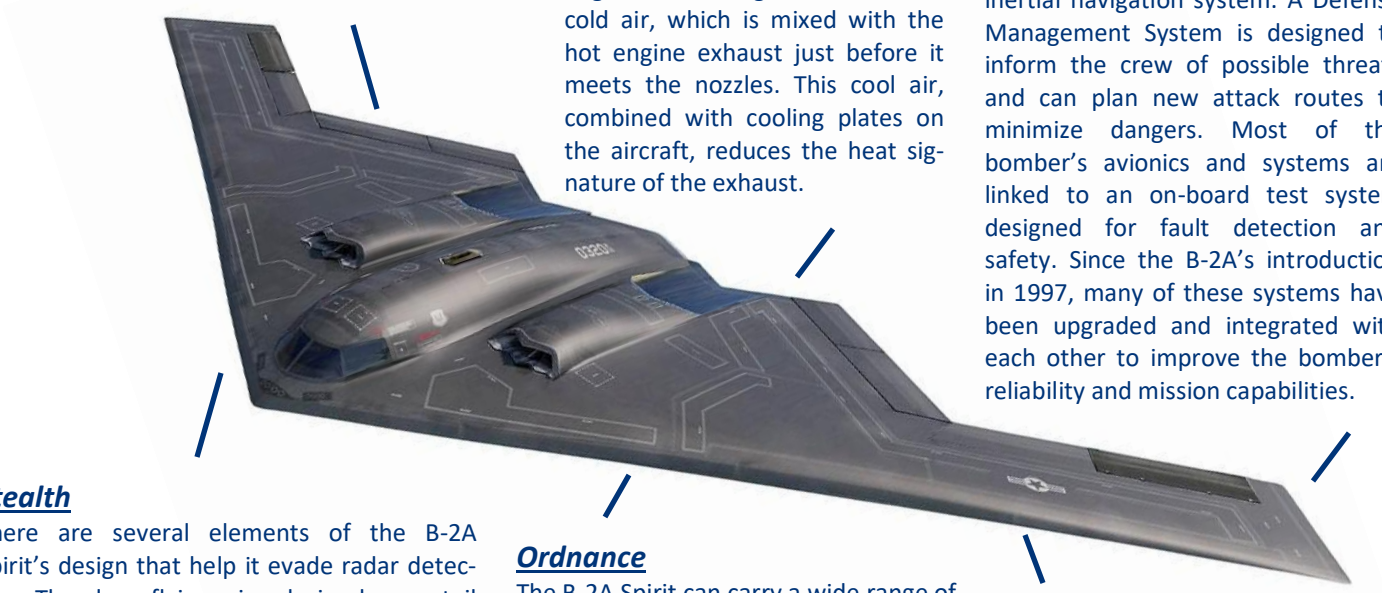
Flying the B-2A Spirit is largely automated thanks to its advanced avionics systems. The large cockpit is designed for crew comfort and long-range missions. Behind the cockpit, a crew rest area features a small camp bed, toilet, and kitchen. The B-2A Spirit usually carries a crew of two consisting of a pilot and a mission commander. On long missions, a third crew member sometimes serves as a relief pilot. B-2A Spirit crew members go through advanced training to fly and command the aircraft at the U.S. Air Force Weapons School at the Nellis Air Force Base in Nevada.

Engines

The B-2A is powered by four General Electric F-118-GE-100A turbofan engines. The engines are buried deep within the fuselage to hide their infrared signature from enemy radar systems. The engines lack afterburners, as they would produce a significant heat signature, and traveling faster than the speed of sound would heat the aircraft's skin, creating an infrared signature. The air intakes for the engines are designed to draw in cold air, which is mixed with the hot engine exhaust just before it meets the nozzles. This cool air, combined with cooling plates on the aircraft, reduces the heat signature of the exhaust.

Avionics And Systems

Due to its flying wing design, the B-2A Spirit is inherently unstable. The aircraft utilizes a quadruplex complex computer-controlled fly-by-wire flight control system. This system automatically manipulates the flight controls continuously without pilot input to maintain flight control. The B-2A Spirit's cockpit also features a fully digital navigation system, terrain-following radar, global positioning system (GPS) guidance, and an astro-inertial navigation system. A Defense Management System is designed to inform the crew of possible threats and can plan new attack routes to minimize dangers. Most of the bomber's avionics and systems are linked to an on-board test system designed for fault detection and safety. Since the B-2A's introduction in 1997, many of these systems have been upgraded and integrated with each other to improve the bomber's reliability and mission capabilities.



Stealth

There are several elements of the B-2A Spirit's design that help it evade radar detection. The clean flying wing design has no tail surfaces, which would generate a radar return. The engines and ordnance are buried deep inside the fuselage to reduce their infrared signature on radar. The aircraft itself is made of graphite composite material and coated with an anti-reflective paint that absorbs radar waves. The B-2A also lacks traditional pitot tubes for its flight control systems, which would generate a radar return protruding from the aircraft. Instead, the B-2A relies on sensors built into some of its surface panels to gather data and measurements for its flight control systems. Unfortunately, the B-2A's advanced design has some drawbacks. The aircraft must be stored in climate-controlled hangars and avoid thunderstorms, as extreme temperatures and weather can damage the anti-reflective paint.

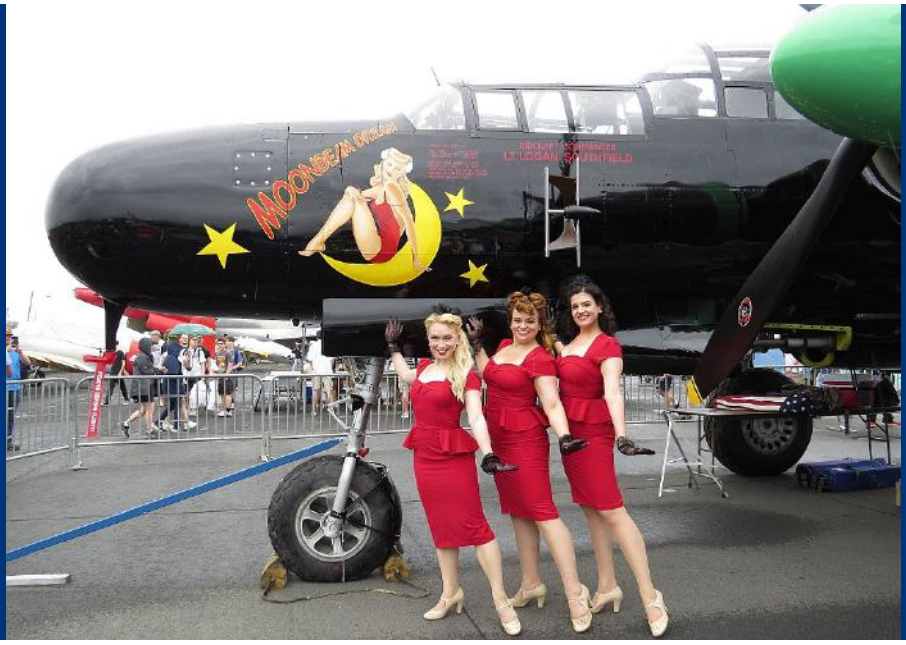
Ordnance

The B-2A Spirit can carry a wide range of conventional and nuclear ordnance in its two internal bomb bays. The official published ordnance capacity of the B-2A is 40,000 pounds (18,000 kg), but it is widely believed the bomber can carry a substantially larger payload. Some ordnance is mounted on a Bomb Rack Assembly (BRA) or a Rotating Launcher Assembly (RLA) installed in the bomb bays. During the recent air strike on Iran's nuclear enrichment facilities, B-2As dropped the GBU-57 "Bunker Buster" Massive Ordnance Penetrator in a military operation. The B-2A is capable of carrying two of these 30,000-pound (13,608 kg) bombs and is the only aircraft in the U.S. inventory capable of delivering this weapon.

Operations

The B-2A Spirit is operated exclusively by the 509th Bomb Wing's 13th and 393rd Bomb Squadrons based at Whiteman Air Force Base in Missouri as part of the U.S. Air Force Global Strike Command. The B-2A's first use in combat operations was in 1999 during the Kosovo War. It has since been used in other U.S. military operations in Afghanistan, Iraq, Libya, and Yemen. Most recently, seven B-2As were used during Operation Midnight Hammer, an air strike to bomb nuclear enrichment facilities in Iran. The B-2A Spirit fleet is expected to remain in service until 2032.

When The Dresses Match The Nose Art



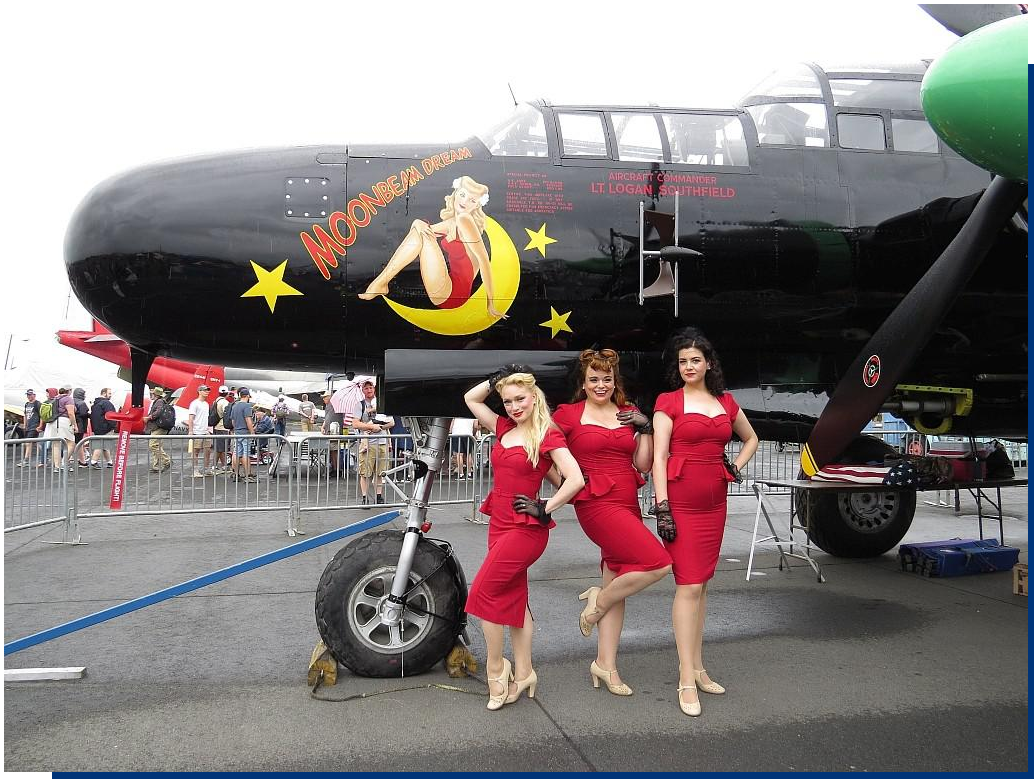
America's Sweethearts girl group members pose with the Mid-Atlantic Air Museum's rare Northrop P-61B Black Widow night fighter during a photo shoot at the museum's 2025 World War II Weekend living history event and airshow. Last year, the Mid-Atlantic Air Museum had the "Moonbeam Dream" nose art painted on the Black Widow. The artwork, featuring a pin-up girl in a red dress sitting in the crescent moon surrounded by stars, was painted by artist Jennifer "Hot Rod Jen" Thomas.

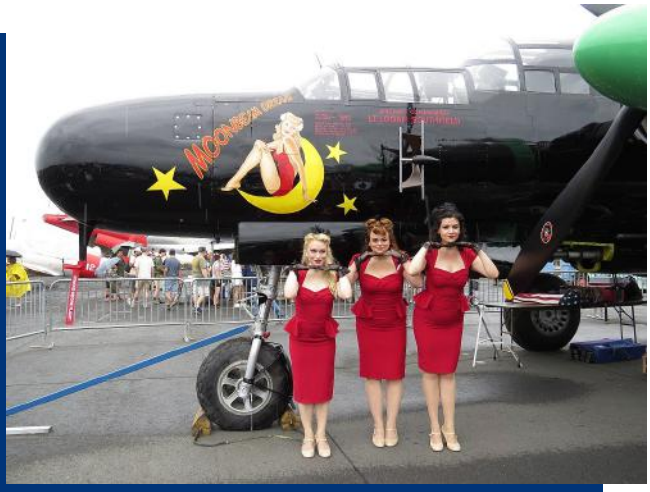
A highlight at the Mid-Atlantic Air Museum's World War II Weekend every year is to see the museum's rare Northrop P-61B Black Widow night fighter on display and check out the progress of the restoration. The P-61B crashed in 1945 in Indonesia and was recovered by museum staff in 1989. Since then, museum volunteers have been slowly restoring the Black Widow with the intention of returning it to flying condition. Last year, shortly after the 2024 World War II Weekend, the P-61B received nose art. The P-61B is now named *Moonbeam Dream* and features nose art of a pin-up girl sitting in a crescent moon surrounded by stars. The nose art was painted by Jennifer "Hot Rod Jen" Thomas, an artist who specializes in automotive pinstriping and aircraft nose art.

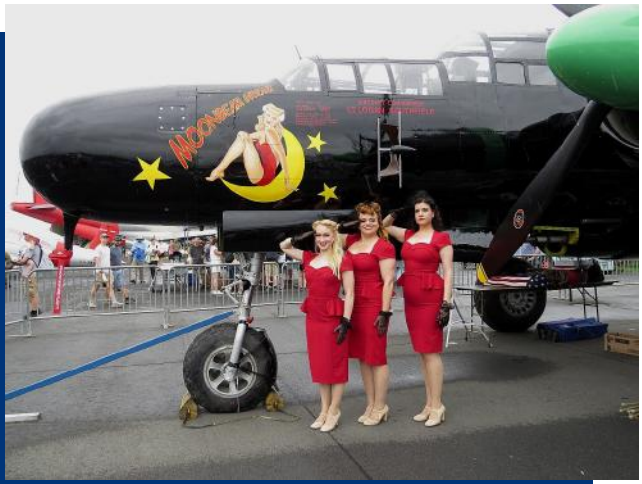
The Northrop P-61 Black Widow was the first U.S. operational warplane designated as a night fighter. An unusual-looking and large aircraft for a night fighter due to the technical requirements that the design had to meet, the Black Widow was an all-metal, twin-engine, twin-boom design equipped with radar and armed with four 20 mm (.79 in) cannon in the lower fuselage and four .50 in (12.7mm) machine guns in a dorsal turret. The Black Widow was crewed by a pilot, radar operator, and gunner. Introduced in 1944, the Black Widow was used successfully as a night fighter in the European Theater, Pacific Theater, China-Burma-India Theater, and the Mediterranean Theater during World War II. Today, only four of the 744 P-61 Black Widows built survive in museums.

The America's Sweethearts are a girl group based in New York City and are one of the annual entertainment groups to perform at the Mid-Atlantic Air Museum's World War II Weekend. The group brings the style of 1940s swing music to audiences at events in theatres, civic centers, nightclubs, museums, and other smaller venues and special events throughout the United States. Musical pieces originally composed and sung by The Andrews Sisters are favorites of the group to perform. The girl group's Retro-style outfits complement their musical performances and pay tribute to the history and style of the musical pieces they perform.

On Saturday morning at this year's Mid-Atlantic Air Museum's World War II Weekend, the members of the America's Sweethearts agreed to a brief photo shoot with *Moonbeam Dream*. The red dresses looked fantastic next to the colorful nose art featuring a pin-up girl wearing a similar style dress. The photo shoot was an excellent opportunity for some unique photos with the girl group and the museum's rare Northrop P-61B Black Widow.


MOONBEAM DREAM
AIRCRAFT COMMANDER
LT. LOGAN SOUTHFIELD

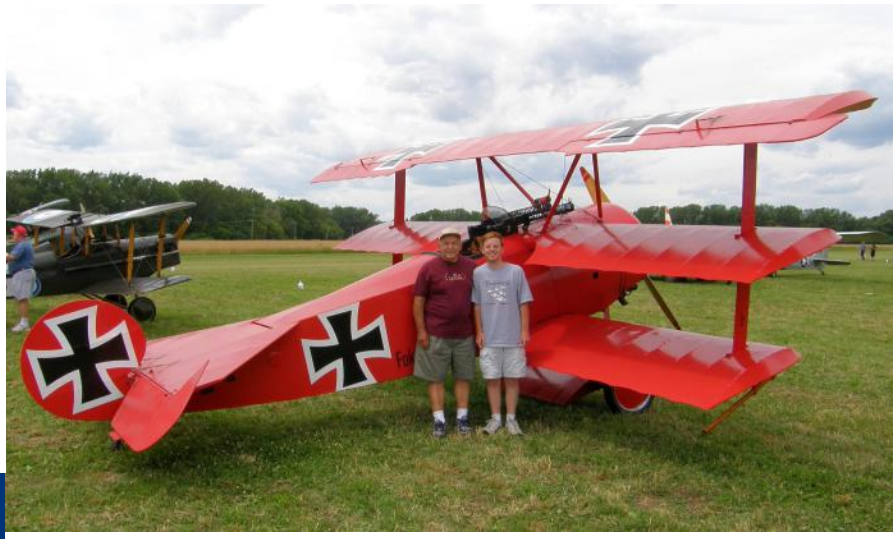

MOONBEAM DREAM


MOONBEAM DREAM

Distelfink Airlines

Est. 2013

ABOUT DISTELFINK AIRLINES



My late grandfather, John Brey, and I at the 2007 Geneseo Airshow. This was one of the few times that we had our photo taken together at an airshow.

The story of "Distelfink Airlines" begins in the early 1990s when my late grandfather, John Brey, began building and flying remote control model aircraft in his retirement. He enjoyed the hobby and quickly amassed a large fleet of model airplanes, which filled his garage and woodworking shop. He gave a name to his fleet of aircraft, "Distelfink Airlines". For the symbol of his fleet, he chose the Pennsylvania Dutch/German hex sign featuring the "Distelfink", a colorful bird that is a symbol of good luck and happiness. This hex sign and symbol is very common on Pennsylvania Dutch/German barns in Eastern Pennsylvania and is an important part of our local culture. He had custom "Distelfink" decals made for all his airplanes and had T-shirts made with "Distelfink Airlines" printed on them. It wasn't long before curious people began asking about "Distelfink Airlines" and what it was. My grandfather told anyone who asked that "Distelfink Airlines" was a new startup airline that was going to be offering service between the Lehigh Valley International Airport and Philadelphia International Airport with more routes to come soon.

In addition to flying his model airplanes, my grandfather enjoyed attending airshows and we traveled to airshows together for almost 20 years. He also enjoyed local aviation history and was particularly fascinated by the history of the Consolidated TBY Sea Wolf, a torpedo bomber that was built locally in Allentown, Pennsylvania during World War II. He also remembered when famous aviator Amelia Earhart visited the Lehigh Valley in the early 1930s to raise funds for her failed attempt to become the first woman to fly around the world.

Established in 2013 in memory of my grandfather, "Distelfink Airlines" is an online aviation newsletter that carries on a tradition of sharing a love for aviation that my grandfather shared with me. This newsletter features photographs and writings on a variety of aviation topics. The logo that was chosen for "Distelfink Airlines" is the hex sign that my grandfather chose for his fleet of remote control model aircraft many years ago. This proud symbol of local Pennsylvania Dutch/German culture is joined by a pair of Consolidated TBY Sea Wolf torpedo bombers, the aircraft that was built locally in Allentown during World War II and is such an important part of our local aviation history. Thank you for reading "Distelfink Airlines" and sharing in the passion for aviation that my grandfather shared with me.