April 2026

Corey J Beitler's

"Distelfink Airlines"

An Online Aviation Newsletter

National Soaring Museum

Airbus A300-600RF

Built-Rite Boeing B-17 Flying Fortress Picture Puzzle

Hallmark "Legends In Flight" Grumman F-14A Tomcat

Albatros D.Va

Boeing C-17 Globemaster III

Modern Civil Aircraft Bookazine

A 2008 Alexander Schleicher ASK-21 glider owned by the Harris Hill Soaring Corporation sets up for a landing after a training flight at the Harris Hill Gliderport in Elmira, New York. The gliderport is located adjacent to the National Soaring Museum, a transportation museum dedicated to the history of soaring and the design of gliders and sailplanes.

FROM THE EDITOR'S DESK

National Soaring Museum, Albatros D.Va, C-17 Globemaster III, B-17 Bomber Puzzle

Greetings Everyone:

Welcome to the April 2026 edition of Distelfink Airlines! This edition of the newsletter follows closely behind the March edition, which was released a bit later than planned due to some content delays related to winter weather. March was an exciting month for the newsletter, as the newsletter set a new monthly record for readership. Thank you for your support of "Distelfink Airlines" and my aviation photojournalism efforts.

The featured content for the April edition is an article about the National Soaring Museum. Located on Harris Hill in Elmira, New York, this transportation museum features a collection of over 70 gliders and sailplanes, as well as hundreds of smaller artifacts that tell the story of the history of soaring. I visited the museum last year on the way to the National Warplane Museum's Geneseo Air-show and had a wonderful time looking through all the exhibits and talking with the museum staff. If you are ever in the Finger Lakes region of New York and have some time, the National Soaring Museum is definitely worth a visit. The feature is an article that highlights the museum's history and some of its important exhibits. Additional information about the National Soaring Museum can be found at www.soaringmuseum.org.

The "Museum Aircraft Spotlight" section of the newsletter features one of my favorite aircraft, the Albatros D.Va which is on dis-play in the National Air and Space Museum's flagship location on the National Mall in Washington, D.C. Growing up and visiting the museum with my grandfather, this airplane, with its streamlined appearance and colorful wings, was always a favorite of mine. The Albatros family of fighter aircraft were used by the Imperial German Air Service throughout World War I. The D.Va on display inside the National Air and Space Museum is only one of two authentic Albatros fighters on display in aviation museums. This rare German fighter aircraft hangs outside the WWI: The Beginning of Military Aviation gallery inside the museum.

The "Aircraft of Special Interest" section features a look at the Boeing C-17 Globemaster III. This tactical and strategic airlifter is one of the most important aircraft in the U.S. Air Force inventory. The C-17 has played an critical logistical role in nearly every U.S. military conflict that has taken place since its introduction into service in 1995. The C-17 is such a critical asset that U.S. Air Force officials recently held discussions with Boeing about restarting the C-17 production line to build additional aircraft, over 10 years after the last C-17 was built.

Finally, the "Aviation Memorabilia" section highlights a vintage puzzle from Built-Rite, which features an image of an early variant of the B-17 Flying Fortress bomber flying over Washington, D.C. This puzzle remains in excellent condition over 70 years after it was produced and was found at a local flea market several years ago by my grandfather for five dollars.

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 A300-600RF

A FedEx Express Airbus A300-600RF freighter prepares to land at the Lehigh Valley International Airport in Allentown, Pennsylvania. The A300 was built in several variants throughout its long production run, which lasted from 1971 to 2007. Although initially designed as a passenger aircraft, the A300 has been used extensively as a freighter for over 30 years due to its low operating costs, efficient design, and cargo capacity. FedEx Express is currently the largest operator of the A300, with 64 A300-600RF freighters in its fleet.

The Airbus A300-600RF is a freighter variant of the Airbus A300 commercial airliner. The A300 has the distinction of being the first aircraft built by the multinational European aerospace manufacturer Airbus, as well as the world's first twin-engine, wide-body, commercial airliner.

In 1967, aircraft manufacturers in France, West Germany, and the United Kingdom began a collaborative effort to develop an innovative commercial airliner. A new aerospace manufacturer, Airbus Industrie GIE (later Airbus), was established in 1970 to design and build the A300 aircraft. The intention was to build a twin-engine aircraft that was smaller, lighter, and more economical than American three-engine rivals, such as the McDonnell Douglas DC-10 and the Lockheed L-1011 Tristar. The A300 featured several design innovations, including the use of composite materials for weight savings, utilizing center-of-gravity control by transferring fuel between tanks, secondary electronic flight control systems, and safety systems such as an advanced autopilot and wind shear warning system. A pair of General Electric CF6 or Pratt & Whitney JT9D turbofan engines powered early variants of the A300. The first examples of the A300 entered service with Air France in 1974. As an airliner, the A300 is capable of carrying 247 passengers in a two-class layout over a range of 3,340 to 4,660 miles (5,375 to 7,500 km).

With its technological advancements, the A300 was considered a revolutionary aircraft design. In 1984, an improved variant, the A300-600, entered service. The A300-600 featured several design changes, including a glass cockpit with digital technology and electronic displays, more powerful General Electric CF6 or Pratt & Whitney PW4000 turbofan engines, a revised wing with updated control surfaces, and increased interior space. During its production run from 1971 to 2007, the A300 was built in several variants to meet customer demands for diverse roles, including aerial refueling tanker, VIP transport, military airlift, and oversized cargo transport.

Pictured here is a 2007 Airbus A300-600RF operated by FedEx Express. The aircraft was on approach to the Lehigh Valley International Airport in Allentown, Pennsylvania, after a flight from the Bradley International Airport in Windsor Locks, Connecticut.


FedEx
FedEx


FedEx
FedEx

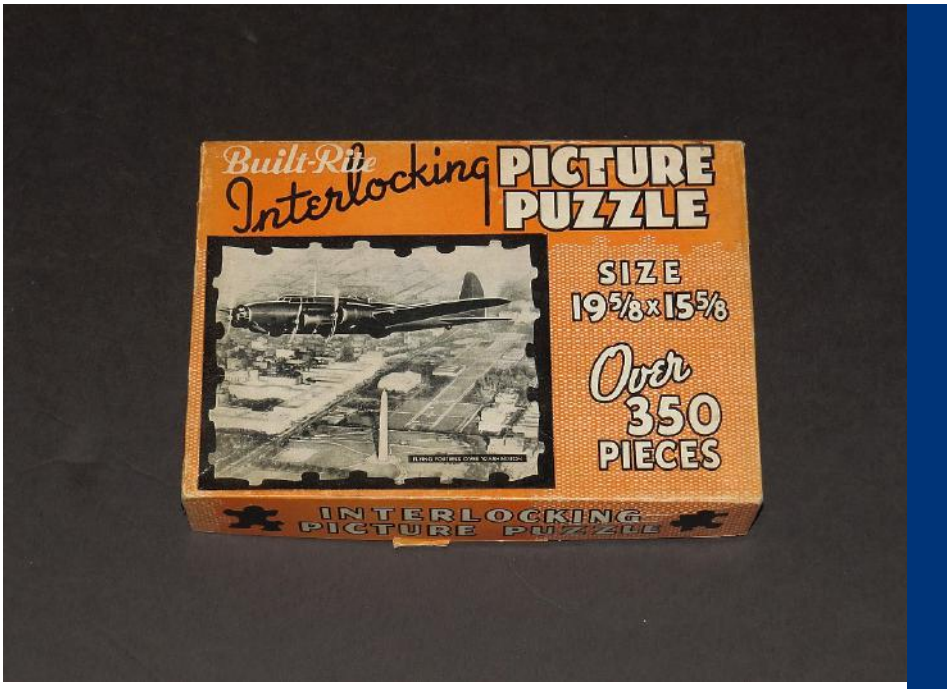
Built-Rite Boeing B-17 Flying Fortress Picture Puzzle

During the late 1930s or early 1940s, Built-Rite sold this jigsaw puzzle featuring an early variant of the Boeing B-17 Flying Fortress bomber flying over Washington, D.C. as part of its "Picture Puzzle" line of jigsaw puzzles. The B-17 Flying Fortress would go on to be one of the most famous American bombers of World War II.

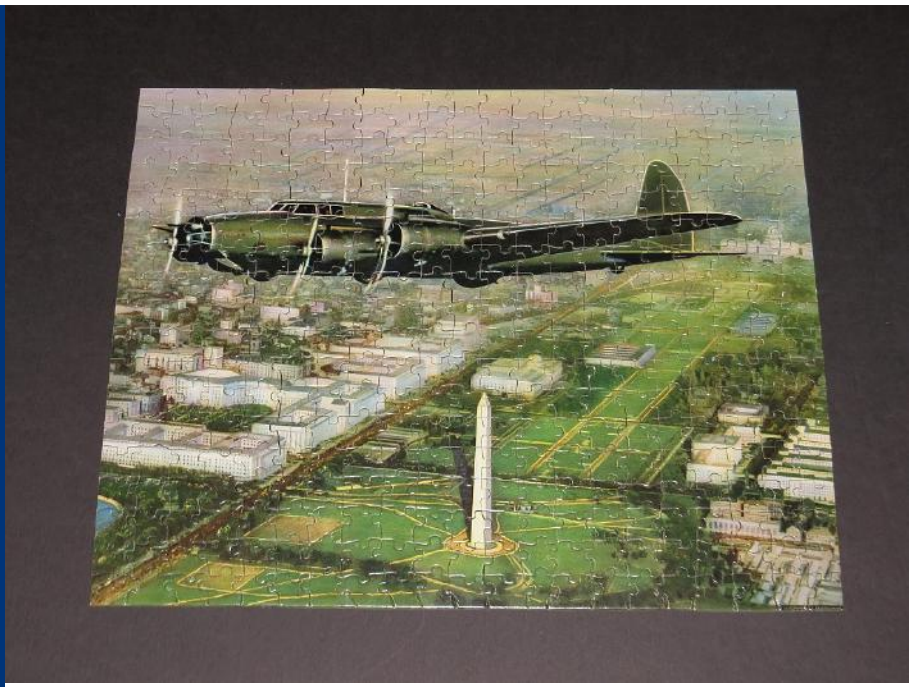
A jigsaw puzzle is a tiling puzzle that requires the assembly of interlocking pieces. Typically, each piece of the puzzle has a portion of a picture or artwork, which is solved by completing the puzzle. Jigsaw puzzles were introduced in the 18th century. Initial versions featured a picture painted onto a piece of wood, and then the piece of wood was cut into smaller pieces. The term "jigsaw" derives from the tools used to cut the images into pieces, usually jigsaws, fretsaws, or scroll saws. Jigsaw puzzles were first commercialized in 1760 by London cartographer and engraver John Spilsbury, with the first designs being world maps cut into pieces representing individual nations for use by students as a geographical teaching aid. Most jigsaw puzzles are now made of interlocking cardboard pieces, incorporating a variety of images and designs. In addition to the puzzles themselves, a range of accessories, including glue, frames, cases, and roll-up mats, has become available for puzzle enthusiasts.

Aviation has been a popular theme for jigsaw puzzles since the early 1930s. Common aviation subjects for jigsaw puzzles have included military and civilian aircraft. Built-Rite was a toy line that was a subsidiary of the Warren Paper Products Company, founded in 1921. As a result of increasing demand in the 1930s, the company founded the Built-Rite product line to produce dollhouse papers made of paperboard, colorful picture puzzles, and paper forts and gas stations. These toys became especially popular during World War II, when metal toys were unavailable due to material shortages. In the 1950s and 1950s, the company continued to produce paper towns, buildings, and bridges, marketing them to toy train manufacturers as accessory pieces. The Warren Paper Products Company discontinued its Built-Rite line of paperboard toys and puzzles in 1976.

This vintage Built-Rite "Picture Puzzle" dates from the late 1930s or early 1940s and features a colorful illustration of an early variant of the Boeing B-17 Flying Fortress bomber flying over Washington, D.C. Designed during the mid-1930s, the Boeing B-17 Flying Fortress would become one of World War II's most famous heavy bombers. Continuously upgraded throughout the war with improved defensive armament, increased armor protection for the crew, and more powerful engines, B-17s were used in all combat theaters during World War II and became famous for their use in the U.S Army Air Force's daylight bombing raids over Europe. Over 12,000 B-17s were built just before and during World War II. This puzzle is an interesting collectible for anyone interested in World War II aviation history or the Boeing B-17 Flying Fortress.



Built-Rite puzzles came in a standard box that noted the number of pieces in the puzzle and its size when completed. To save money on color printing costs, the image of the puzzle on the front of the box was presented in black and white, and the boxes themselves were produced in a solid color, such as orange or red.



This puzzle, when completed, is a beautiful picture of an early variant B-17 Flying Fortress flying over Washington, D.C. Notable landmarks in Washington, D.C., such as the U.S. Capitol and the Washington Monument, can be seen on the ground below.

Hallmark "Legends In Flight" Grumman F-14A Tomcat

Hallmark produced these 1/118 scale models of Grumman F-14A Tomcats in 1999 and 2001 as part of their "Legends In Flight" line of collectible die-cast model aircraft. Despite their small size, the F-14 models feature moving parts, realistic ordnance loads, and accurate colors and markings.

The Grumman F-14 Tomcat is one of the most iconic and powerful naval fighter aircraft ever produced. During its service career in the U.S. Navy, the F-14 served in various roles, including fleet air defense, aerial reconnaissance, air superiority, and as a precision ground-attack aircraft in the twilight of its career. Although its service accolades were extensive, the F-14 became an iconic part of popular culture when it appeared extensively in aerial sequences filmed for the 1986 blockbuster film *Top Gun* starring Tom Cruise. The F-14 was so beloved by fans of the movie and aviation enthusiasts that an encore appearance of the F-14 was worked into the storyline for the 2022 sequel, *Top Gun: Maverick*.

Designed by Grumman in the late 1960s, the F-14 Tomcat was a carrier-capable, twin-engine, twin-tail, supersonic fighter capable of speeds up to two and a half times the speed of sound (Mach 2.5). One of the revolutionary aspects of the F-14's design was its variable-sweep wings. The wings could change position during flight to optimize the performance of the F-14 for either high-speed or low-speed flight. These variable-sweep wings were controlled by the F-14's advanced computerized flight control system. The F-14 was also large by naval fighter aircraft standards, with a length of 62 feet 9 inches (13.19 m), an unswept wingspan of 64 feet 1 and a half inches (19.545 m), a gross weight of 61,000 pounds (27,669 kg), and a maximum takeoff weight (MTOW) of 74,350 pounds (33,725 kg).

The multiple tasks of navigation, target acquisition, electronic countermeasures, and weapons deployment were divided between a two-person crew consisting of a pilot and a radar intercept officer (RIO) seated in the rear cockpit. The F-14 was equipped to carry a variety of weapon systems, including the long-range AIM-54 Phoenix active radar-guided, beyond visual-visual-range air-to-air missile. This missile, combined with the F-14's powerful AN/AWG-9 guidance radar, was the first aerial weapons system capable of engaging multiple targets at once. The AIM-54 Phoenix missiles were complimented by the medium-range AIM-7 Sparrow and the short-range AIM-9 Sidewinder air-to-air missiles as the primary armament of the F-14 Tomcat.

The F-14 Tomcat flew for the first time in 1970 and entered operational service with the U.S. Navy in 1974. The first production models of the F-14, the F-14A, were designed for all-weather interception of enemy aircraft and fleet air defense. In addition to the U.S. Navy, the Islamic Republic of Iran Air Force acquired 79 F-14As before relations with the United States deteriorated following the Iranian Revolution and the Overthrow of the Shah in 1979. Despite embargos on spare parts and weapons, the new Islamic Republic of Iran Air Force (IRIAF) managed to keep their F-14 fleet operational, and these aircraft were heavily involved in the Iran-Iraq War, providing air defense for the Iranian capital, Tehran, and Iranian oil terminals.

In 1987, Grumman introduced the improved F-14B. The F-14B featured General Electric F110-400 turbofans, replacing the original Pratt & Whitney TF30 turbofans found on the A variant, which had been prone to failures and maintenance difficulties. The new F110-400 turbofans offered improved reliability and safety. The new engines were also more powerful than the earlier TF30s and launches from aircraft carrier decks could now be carried out without using afterburners. Grumman built 38 new F-14Bs, and 48 additional aircraft were remanufactured into B variants from F-14As airframes. The F-14B entered operational service in time to participate in Operation Desert Storm in 1991.

The final variant of the F-14 was the D. Nicknamed the "Super Tomcat", the F-14D featured new General Electric turbofan engines, improved digital avionics, a glass cockpit, and a new radar system. The F-14D was equipped with a LANTRN targeting system that allowed the delivery of various laser-guided weapons for precision strikes in air-to-ground combat missions. The F-14D also had capabilities to transmit and receive targeting/reconnaissance imagery in-flight to provide time-sensitive strike capability and tactical reconnaissance in a combat theatre. These missions were carried out using the Fast Tactical Imagery (FIT) system and the Tactical Reconnaissance Pod System (TARPS). Although the F-14D was the definitive variant of the Tomcat, only 37 new-build, and 18 rebuilt F-14s were completed by Grumman, as the F-14 fleet was becoming expensive to maintain, and the fighter was deemed old technology. The F-14's final combat missions with the U.S. Navy were during Operation Enduring Freedom and Operation Iraqi Freedom. The last F-14 missions in the U.S. Navy were flown in July 2006.

Each Hallmark "Legends In Flight" model included a collector's card, which featured a brief history and description of the aircraft represented by the model, as well as its performance specification. Each model also included a certificate of authenticity from Hallmark. This Hallmark F-14 replicates an F-14A flown by the U.S. Navy test and evaluation squadron VX-9. This Tomcat, due to its unique color scheme, was a favorite among photographers, modelers, and U.S. Navy pilots and personnel.

For a smaller-scale model, Hallmark's Grumman F-14A Tomcat featured excellent paint application and accurate markings, although some smaller markings, such as stenciling, were omitted. Each of the F-14 models released by Hallmark featured different color schemes and ordnance loads. This model represents an F-14 flown by the U.S. Navy squadron VF-124 "Gunfighters". VF-124 was the first squadron to fly the F-14 Tomcat.

Today, several F-14s are preserved on display throughout the United States in aviation museums. A few are also displayed as gate guardians or memorials at Veterans of Foreign Wars (VFW) posts. The Islamic Republic of Iran Air Force (IRIAF) still operates a few of its F-14 Tomcats as air superiority fighters. Despite being unable to obtain spare F-14 parts due to U.S. embargos, the IRIAF has kept a portion of its F-14 fleet flying by using the Iranian aerospace and defense industry to reverse engineer engines and other components. The IRIAF F-14s have also been adapted to use Russian and domestic weapons systems and avionics. Until recently, it was estimated that the IRIAF had 20-40 F-14s remaining in service out of the original 79 that were purchased. It is believed that at least some, if not all, of these aircraft were destroyed recently during U.S. and Israeli air and missile strikes as part of Operation Epic Fury.

This 1/118 scale die-cast and plastic model of a Grumman F-14A Tomcat was made by Hallmark Cards Inc. as part of its "Legends In Flight" product line of die-cast and plastic model airplanes. This series of model airplanes was sold by Hallmark Cards Inc. from 1999 to 2001 in Hallmark retail stores in the United States and Canada. The series featured historic aircraft in numbered editions, in scales ranging from 1/48 to 1/100, to fit a standard-sized box used for all the models. Each model came with a collector's card which provided a history and performance specifications of the actual aircraft and a certificate of authenticity. Unfortunately, at the time the "Legends In Flight" aircraft were released, the series received criticism for the lack of detail on some models and its premium price point. As a result of poor sales, Hallmark Cards Inc. discontinued the "Legends In Flight" series after three years. Unlike most aircraft in the series, the F-14A Tomcat was released twice, in 1999 and again in 2001. One of the F-14s was painted in a scheme representing U.S. Navy squadron VF -124 "Gunfighters", which was the first to fly the F-14 Tomcat. The other F-14 is painted to represent "Blackcat", a Tomcat that was flown by the U.S. Navy test and evaluation squadron VX-9.

Hallmark Cards Inc. did a fantastic job replicating the F-14 Tomcat in a smaller scale. The models feature realistic panel lines, accurate ordnance loads, and detailed engine exhaust nozzles. For a smaller model, Hallmark's F-14 Tomcat features a surprising number of moving parts. Each F-14 has working swing wings, rolling wheels, and an opening cockpit canopy.

Another positive attribute of Hallmark's F-14A Tomcat model is that each version has a different ordnance load. The VF-214 F-14 features an ordnance load of AIM-9 Sidewinder, AIM-7 Sparrow, and AIM-54 Phoenix missiles, while the VX-9 version of the F-14 only features the AIM-54 Phoenix missiles. The moving parts on the F-14 Tomcat also work well, with the wheels rolling smoothly and the cockpit opening and closing easily. Finally, both models feature excellent paint application and accurate markings, with each aircraft's colors and squadron markings matching reference pictures of the real F-14 Tomcats they represent.

Hallmark Cards Inc.'s F-14 models do have some shortcomings. Because of their small size, intricate details found on more recent models and on models in larger scales are nonexistent. For example, although the cockpit canopy opens on the F-14 models, there are no details in the cockpit, such as gauges, control sticks, or pilot figures. This lack of detail is also prevalent in the markings applied to each aircraft. Although the markings are accurate, some smaller markings, such as the stenciling labels, were omitted from both of the models.

There are two other notable shortcomings with the F-14 model. The first is that the model does not include any type a display stand. As a result, collectors are relegated to displaying the model on its landing gear on a desk or shelf. Secondly, this model is 1/118 scale. This scale is uncommon and does not match common scales used by other manufacturers for die-cast aircraft, such as the 1/100, 1/144, and 1/200 scales. As a result, the F-14 will look out of place in a collection of aircraft in these scales, either being too large or too small.

The Hallmark Cards Inc. 1/118 scale F-14 Tomcats are an excellent model for a new collector or to introduce someone, such as an older child, to the world of collecting die-cast model aircraft. The models are a perfect size for a desk or bookshelf, or smaller display spaces, such as a nightstand in a child's bedroom. Hallmark Cards Inc.'s F-14 Tomcats also featured well-applied paint finishes, accurate markings, detailed panel lines, and moving parts such as swing wings and an opening cockpit canopy. Despite being produced and sold over 20 years ago, the "Legends In Flight" F-14 Tomcats remain available in mint condition on the secondary market at affordable prices. These miniature models of the F-14 Tomcat are a great addition to the desk or bookshelf of anyone interested in this iconic U.S. Navy fighter aircraft or naval aviation.

Due to their small size and affordable price on the secondary market, the Hallmark "Legends In Flight" F-14 Tomcat models are an excellent choice for entry-level collectors or aviation enthusiasts who just want a small model of the iconic U.S. Navy fighter to display on a desk or bookshelf.

National Soaring Museum

Located on Harris Hill, the historic soaring site that was home to several National Soaring Contests, the Elmira, New York, transportation museum features a large collection of gliders and sailplanes, as well as other artifacts that tell the story of the history of soaring.

A 1999 Alexander Schleicher ASK-21 glider flying at the historic Harris Hill Gliderport located in Elmira, New York. The ASK-21 is a two-seat glider designed for initial flight instruction in gliders, but is also suitable for aerobatic instruction and cross-country flying. The ASK-21 is a popular glider with soaring societies and clubs worldwide.

Historic Harris Hill was selected as the site for the National Soaring Museum because of its close connection to the history of soaring in the United States. The large windows on the front of the museum provide a view of the Harris Hill Gliderport and glider and sailplane operations at the airfield.

Located on historic Harris Hill, adjacent to the Harris Hill Gliderport and near the town of Elmira, New York, the National Soaring Museum is a transportation museum dedicated to preserving the history of soaring, as well as the design and development of sailplanes and gliders. The National Soaring Museum's mission includes promoting a greater knowledge of the sport of soaring, aeronautics, and related physical sciences through education, special events, and community outreach programs.

Harris Hill and the town of Elmira have been connected to the sport of soaring for decades. In 1927, John "Jack" K. O'Meara was the first to soar at Elmira. In 1930, Dr. Wolfgang Klemperer, a German soaring pioneer who had immigrated to the United States in 1924, discovered that Elmira and the surrounding region were an excellent location for soaring. This was due to the geographical features of the region's landscape, which included rolling hills and long ridges that promoted the development of thermals and wave lift, rising air that glider and sailplane pilots can use to fly long distances and at high altitudes.

For this reason, Elmira was chosen as the site to develop a national soaring program in the United States, and soaring sites began dotting the landscape throughout the region. In 1934, a Works Progress Administration (WPA) project developed Harris Hill. The project included building an airport for flying sailplanes and gliders (a gilderport), hangars, and cabins for pilots and crews, a youth camp, and an administration building.

Through a partnership between the Soaring Society of America, Harris Hill Soaring Corporation, and the local chamber of commerce, Elmira, New York, was the host city for the first 13 National Soaring Contests in the United States from 1930 to 1946. When World War II began, Elmira was chosen as one of the first sites in the United States for training glider pilots. Elmira's close connection to soaring in the early years of its development as a sport in the United States helped the city earn the nickname "The Soaring Capital of America".

The first museum display of artifacts dedicated to soaring in Elmira was a small exhibit located within a local history museum at the historic Strathmont Estate. During the National Soaring Contests of the 1950s, competitors and organizers began discussing the construction of a national museum dedicated to the history of soaring. The small collection of soaring artifacts on display at Strathmont Estate was moved to Harris Hill during the 1960s. The Harris Hill Soaring Corporation and Paul A. Schweizer, co-founder of Schweizer Aircraft, organized the movement of these artifacts to Harris Hill.

Schweizer Aircraft has an important connection to the history of soaring and Elmira. For decades, Schweizer Aircraft was the nation's most well-known glider and sailplane manufacturer. The company produced gliders and sailplanes for both civilian and military use and had a factory and test facilities near Elmira in the town of Big Flats. Schweizer Aircraft produced sailplanes, gliders, agricultural aircraft, and helicopters at this location for over 60 years until it was closed in 2012 by Sikorsky Aircraft, which had bought Schweizer Aircraft in 2004.

In 1969, the Soaring Society of America chose Harris Hill as the official site for the National Soaring Museum. Initially, the museum was established as a non-profit corporation in a partnership between the Harris Hill Soaring Corporation, the Soaring Society of America, and Chemung County. In 1972, the New York Department of Education officially chartered the museum as an educational institution. The Soaring Society of America transferred the Soaring Hall of Fame and the corresponding records to the custody of the National Soaring Museum in 1975.

The museum officially opened in 1978. Initially, the museum was located in an old administration building constructed as part of the WPA project to build the airport in the 1930s. This building had been damaged in a fire and was not a permanent home for the museum. In 1979, the National Soaring Museum replaced the building with a new 6,000 sq. ft. (500 m^2) facility.

Gliders and sailplanes are displayed hanging from the ceiling or on the floor throughout the National Soaring Museum. Smaller artifacts and pieces of memorabilia are displayed in climate-controlled glass cases or hung on the walls in the case of photographs, posters, artwork, and maps, throughout the facility.

The National Soaring Museum has a collection of over 70 gliders and sailplanes. Most of these aircraft are on display in the museum building or the nearby "Heritage Hangar". This sailplane is a Briegleb BG -12BD single-seat, wooden sailplane. The BG-12BD was designed in the 1950s as a glider and sailplane for homebuilding, offering high performance for a lower cost than the factory-built sailplanes of the era.

The National Soaring Museum features a dedicated restoration workshop where museum volunteers and conservation specialists restore items in the museum's collection. This glider is a 1979 Schweizer SGS 1 -26E undergoing restoration in the museum's workshop. Several large-scale models of gliders and sailplanes hanging from the ceiling decorate the museum workshop.

One of the interesting aspects of the National Soaring Museum is that it is located adjacent to the Harris Hill Gliderport. Harris Hill Soaring Corporation, which offers glider flight training programs and glider ride, operates this facility. On days when weather conditions are ideal for soaring, visitors can see gliders and sailplanes operating at the gliderport from the museum parking lot. This glider is a 1999 Alexander Schleicher ASK-21 landing safely at the gliderport after a training flight.

To get airborne, most gliders need to be launched either from a tow vehicle, a ground launching system, or be towed into the air by an aircraft. This Piper PA -25 Pawnee, which is based at the Harris Hill Gliderport, is used as a tow aircraft. In addition to being used as a glider tow aircraft, the Pawnee is also used for roles such as banner towing and agricultural spraying.

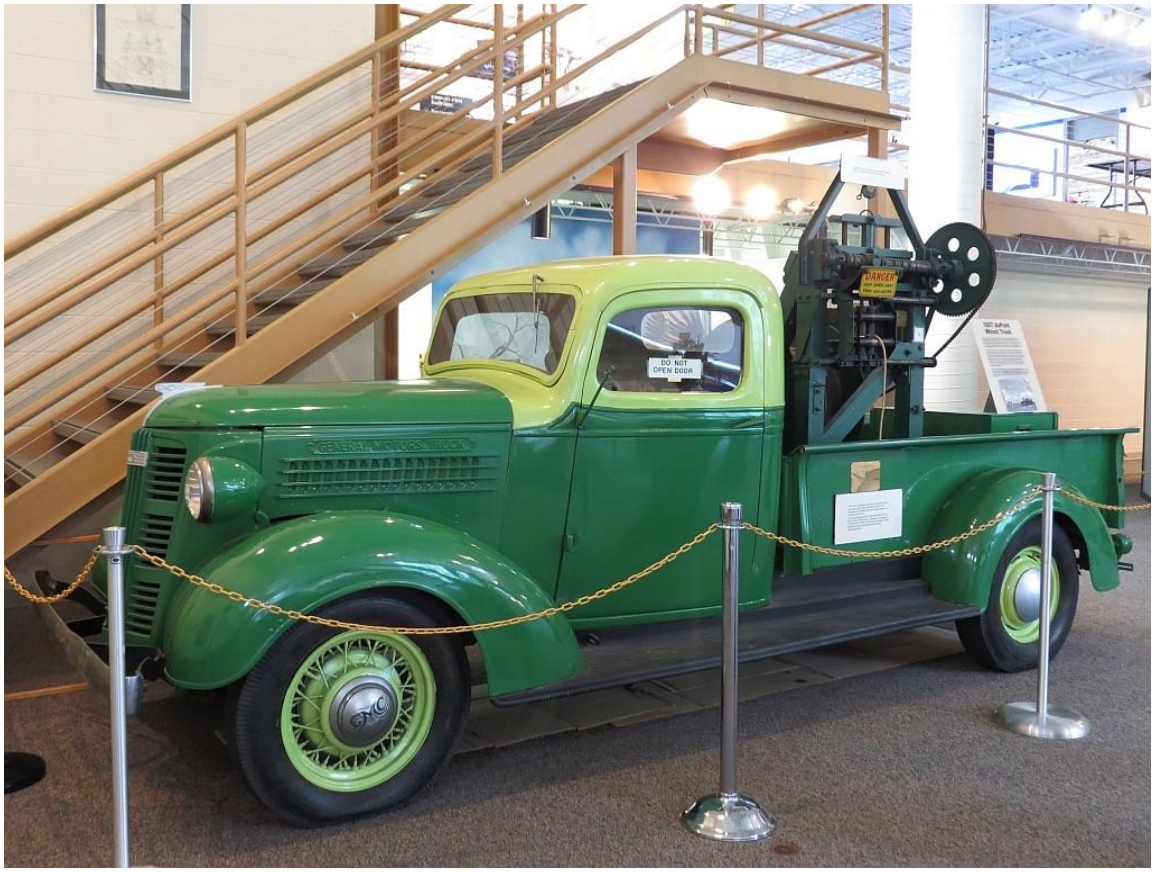
Historic Harris Hill was selected as the site for the National Soaring Museum because of its close connection to the history of soaring in the United States. This historic hangar on the site, the "Heritage Hangar", is also part of the museum and houses several gliders and sailplanes from the museum's collection. Visitors to the museum can visit this hangar by requesting a guided tour from a museum staff member.

As the museum established itself with improved funding, and its collection of gliders, sailplanes, and related artifacts grew, its facility needs also grew. In 1984, the museum expanded by adding a 12,000 sq. ft. (1,100 m^2) addition to the building. In 1993, the museum added a 3,200 sq. ft. (300 m^2) Collections Annex to the facility.

Following the opening of the National Soaring Museum, soaring contests returned to Harris Hill and Elmira in the 1980s. In 1995, the National Soaring Museum and Harris Hill Soaring Corporation hosted the first International Vintage Sailplane Meet held in the United States. The event drew 91 pilots and 49 vintage sailplanes and gliders from around the world to fly off historic Harris Hill. The ten-day event drew over 5,000 people and drew international media coverage. The National Soaring Museum sponsored the event again in 2000, 2005, 2009, 2012, and 2016.

Today, the National Soaring Museum is recognized as the primary historical institution for the sport of soaring in the United States. The museum has 76 gliders and sailplanes in its collection, and hundreds of smaller artifacts that tell the story of the sport of soaring, the design and development of sailplanes and gliders, and the people who flew and designed them. Although most of the items in the museum's collection are displayed on-site, several are in storage awaiting restoration or loaned to other aviation museums. The museum is regularly visited by aviation enthusiasts, historians, academic scholars, and glider and sailplane pilots.

The Harris Hill Soaring Corporation continues to operate the gliderport on Harris Hill, offering glider and sailplane rides, as well as flight training to pilots. Along with the nearby Wings of Eagles Science and Discovery Center and the Glenn H. Curtiss Museum in Hammondsport, the National Soaring Museum is a popular stopping point for aviation enthusiasts and tourists visiting the Finger Lakes region of New York. The National Soaring Museum hosts several special events throughout the year, including festivals, workshops, and STEM activities for all ages.



This 1937 GMC pickup truck was fitted with a winch designed by Stephen du Pont to launch gliders and sailplanes from the Harris Hill Gliderport. This winch truck was used to launch gliders and sailplanes at the gilliderport during the first National Soaring Contests held in Elmira in the late 1930s.

The National Soaring Museum has several significant artifacts on display related to the design and development of gliders and sailplanes in the United States. One of the most significant artifacts on display is not a glider or a sailplane, but a truck. On the museum's first floor is a 1937 GMC du Pont winch truck. The winch, designed by Stephen du Pont, is mounted to a 1937 GMC pickup truck. To get a glider or sailplane airborne, the truck would drive at high speed down the runway, with the glider or sailplane being winched into the air to get it airborne. When the pilot reached a safe enough altitude, the pilot would disconnect the tow rope and ride the air currents off the ridge. In an emergency, the tow cable could be snapped from the winch by the operator.

The GMC du Pont winch truck on display in the museum was used at the nearby Harris Hill Gliderport to launch gliders and sailplanes. The truck was used extensively during the National Soaring Contests held at Harris Hill during the 1930s and 1940s. From the 1930s to the 1950s, winch tows and auto tows were the two primary methods to launch gliders and sailplanes. These methods began to be replaced by the more widespread use of towing aircraft in the 1960s. Today, the use of a truck or vehicle to launch a glider or sailplane is still common practice at many smaller airfields worldwide when an aircraft is not available for towing purposes.

Another significant item on display in the National Soaring Museum with a connection to the early history of soaring in Elmira is the fuselage of the Baker McMillen Cadet II. On July 2, 1930, Jack O'Meara made the first sailplane flight in Elmira. Flying from a ridge south of the town, O'Meara stayed aloft for over an hour and a half in the glider. The successful flight helped lead to the decision to make Elmira the site of the first National Soaring Contests, with Harris Hill chosen as the location for the contests. The flight also highlighted that the ridges around the Finger Lakes region were ideal for soaring. A vintage map on display in the National Soaring Museum shows that several soaring locations existed around Elmira and the surrounding communities.

The fuselage of the Baker McMillen Cadet II glider, flown by Jack O'Meara, on display in the National Soaring Museum. O'Meara made the first successful sailplane flight in Elmira on July 2, 1930, staying aloft for over an hour and a half in his Cadet II. Mounted on the wall behind the glider's fuselage are pictures taken on the day of this historic flight.

Due to the region's geographical features, which consist of rolling hills and ridges that promote the development of thermals and wave lift, Elmira and the surrounding communities became ideal locations for soaring. This map notes the location of several soaring sites in the region. Eventually, most of Elmira's soaring activities became concentrated at the Harris Hill Gliderport once this airfield opened in the early 1930s.

A display of smaller items near the Waco CG-4A Hadrian fuselage in the museum features models, patches, and photographs commemorating glider training and combat operations by the United States Army Air Forces during World War II.

This diorama, on display in the National Soaring Museum, shows visitors how a Douglas C-47 Skytrain would retrieve a CG-4A Hadrian assault glider from a field during combat operations. The C-47 Skytrain was the aircraft most often used by the United States Army Air Forces as a towing aircraft for the CG-4A Hadrian, but the Curtiss C-46 Commando was also capable of acting as towing aircraft for the gliders.

Another noteworthy item on display in the National Soaring Museum is the fuselage of a Waco CG-4A Hadrian troop glider from World War II. During World War II, many nations attempted to land paratroopers and cargo using gliders as part of airborne infantry forces. The CG-4A Hadrian was the most widely used troop and cargo military glider flown by the United States Army Air Forces during World War II. Designed by the Waco Aircraft Company, the CG-4A Hadrian was constructed of fabric-covered wood and metal and crewed by a pilot and a copilot. In addition to being used by the United States Army Air Forces, the CG-4A Hadrian was also used by the United States Navy, as well as the Royal Air Force and the Royal Canadian Air Force.

The CG-4A featured a hinged nose and could carry a 1/4-ton truck or Jeep, a 75mm howitzer, or a 1/4-ton trailer. The glider could also carry 13 paratroopers. The Douglas C-47 Skytrain was usually used as a towing aircraft, although the Curtiss C-46 Commando was sometimes used instead.

The CG-4As were used throughout World War II to land cargo and paratroopers. The gliders were used with varying degrees of success during the Invasion of Sicily, the Normandy Invasion (D-Day), and Operation Market Garden. Over 13,000 CG-4As were built during World War II by the Waco Aircraft Company, Ford, and Gibson Appliance.

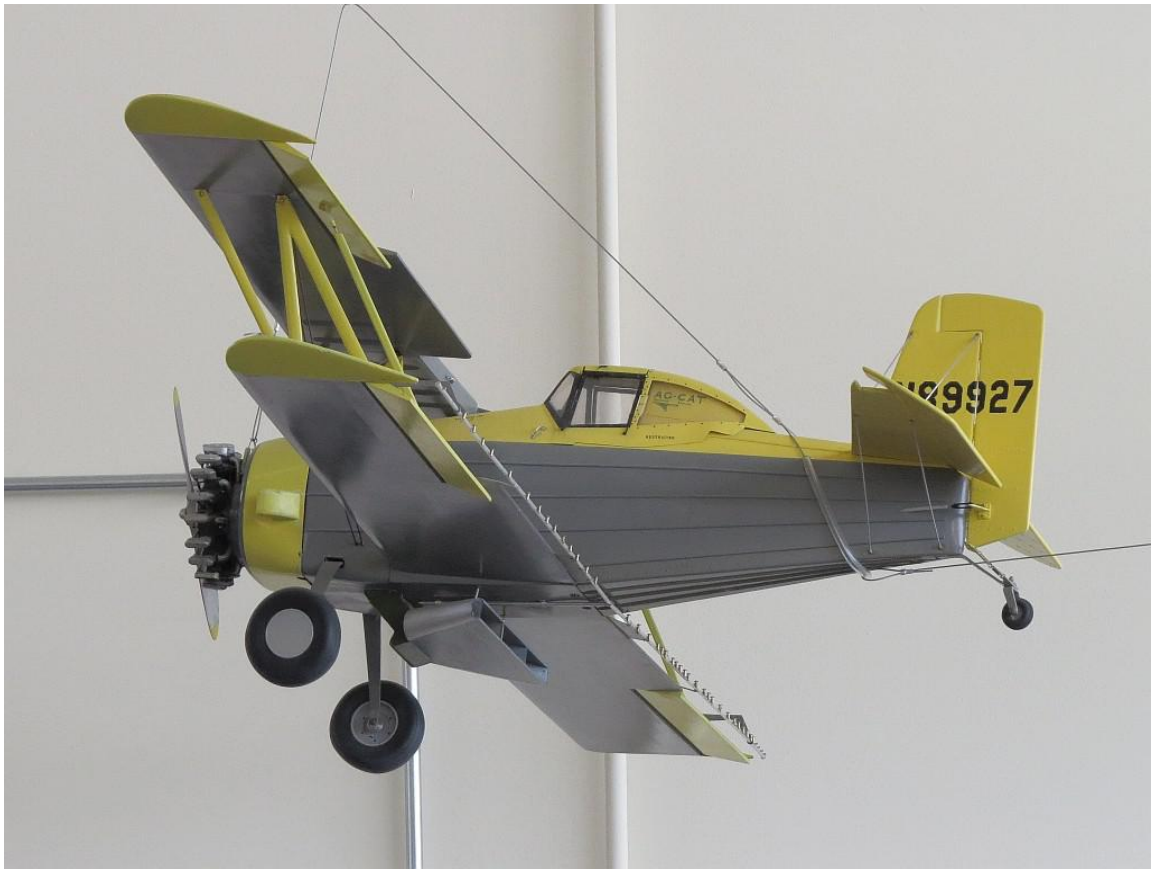
Unfortunately, very few examples of the CG-4A Hadrian survive today in museums. Although many of the gliders used in combat could have been recovered, many Allied commanders simply left them behind in the fields where they landed to rot or be picked clean of useful materials by civilian scavengers and souvenir hunters. CG-4As sold as surplus in the United States after World War II were bought for the wood used in their construction to build shipping crates. Others were bought and converted into cabin homes for hunting or vacation trips. Since Elmira played a significant role in the training of glider pilots during World War II, the CG-4A Hadrian fuselage on display is a natural addition to the museum's collection.

A fuselage of a Waco CG-4A Hadrian assault glider is displayed on the lower floor of the National Soaring Museum. The CG-4A Hadrian was the most widely used troop glider flown by the United States Army Air Forces during World War II. The gliders were used to transport airborne infantry troops and cargo during key battles such as the Invasion of Sicily, the Normandy Invasion (D-Day), and Operation Market Garden.

Due to Schweizer Aircraft Corporation's importance in the history of sailplane and glider development in the United States and the company's long history in the Elmira area, an entire room of the National Soaring Museum is dedicated to Schweizer Aircraft. There are a number of models on display that represent gliders and sailplanes manufactured by the company. Also part of the Schweizer Aircraft exhibit in the National Soaring Museum is a fascinating collection of models representing all the gliders and sailplanes built by the company during its existence. This model collection of over 30 models was donated to the museum by Schweizer Aircraft.

An interesting item displayed in the Schweizer Aircraft exhibit is a model of a Grumman Ag Cat, a biplane designed for agricultural work. The single-engine biplane was introduced in 1957 as a "purpose-built" crop dusting and agricultural aircraft. The Ag Cat turned out to be a needed design in the agricultural community. Unfortunately, Grumman's commitment to military contracts meant it did not have the production capacity to build the Ag Cat on its own. Shortly after production began, Grumman decided to subcontract the entire Ag Cat program to Schweizer Aircraft. From initial production until 1981, Schweizer Aircraft built over 2,500 examples of the Ag Cat. In 1981, Schweizer Aircraft bought the design rights to the Ag Cat outright from Grumman and continued production of the aircraft under the name Schweizer Ag Cat. In 1995, Schweizer Aircraft sold the Ag Cat design to Ag Cat Corporation of Malden, Missouri.

The Ag Cat turned out to be a huge success for Schwezier Aircraft. The basic airframe incorporated many safety innovations long lacking in the agricultural aircraft industry, such as a pressurized cockpit to keep pesticides out, air conditioning, and an airframe that was designed to progressively collapse in the event of a collision. During its long production run, the Ag Cat was built in several variants, incorporating power plant and design changes, which improved its performance and capabilities.



A model of an Ag Cat agricultural aircraft hangs from the ceiling in the Schweizer Aircraft exhibit in the National Soaring Museum. Initially designed by Grumman, the Ag Cat was built under a production license by Schweizer Aircraft from 1957 until 1981. The Ag Cat has been used worldwide for decades as an agricultural aircraft, and has also been used for banner towing, and even as an aerobatic and wing-walking aircraft at airshows.

The large collection of model gliders and sailplanes donated to the National Soaring Museum by Schweizer Aircraft is one of the most impressive displays in the museum. The display shows every type of glider and sailplane designed and manufactured by Schweizer Aircraft during its existence. Each model is accompanied by an informational panel that identifies it by its designation and provides a brief description of its characteristics.

The collection of Schweizer Aircraft models consists of two large displays. This is the second part of the display. One of the interesting models featured in the display is a replica of the SGM 2-37, a powered glider used by the U.S. Air Force Academy as part of its glider training program. A powered or motor glider is a fixed wing aircraft that can be flown with or without engine power.

The SGU 1-7 holds the distinction of being the first glider built by Schweizer Aircraft, for which more than one example was constructed. Although only two SGU 1-7s were built, the basic design layout of the glider served as the basis for several glider designs built by Schweizer Aircraft in the years that followed.

The SGS 1-35 was designed by Schweizer Aircraft as a competition glider in the early 1970s. Unlike most competition gliders built during the 1970s, which were built of fiberglass, the SGS 1-35 was constructed of aluminum. The SGS 1-35 was also equipped with retractable landing gear and plain flaps. A total of 101 SGS 1-35s were built by Schweizer Aircraft between 1973 and 1982.

The TG-3A was designed as a two-place training glider for use by the U.S. Army Air Forces during World War II. Unlike most of Schweizer Aircraft's glider designs, which used aluminum wings, the TG-3A featured wings constructed of wood to follow regulations regarding the use of aluminum, which was considered a strategic material during the war.

In addition to models, the Schweizer Aircraft exhibit in the National Soaring Museum features several full-size gliders and sailplanes on display. One of these gliders is a rare Schweizer SGU 1-7. The first SGU 1-7 was built in 1937, and the second was completed in 1939. The SGU 1-7 was the first Schweizer glider design in which more than one was built. It was also the first Schweizer design that was sold. Although only two SGU 1-7s were built, the type was the start of a long line of gliders produced by Schweizer based on the SGU 1-7's design. This SGU 1-7 was the second one built and the only surviving example.

Also on display in the exhibit is a TG-3A glider built by Schweizer. This glider was designated as the SGS 2-12 by Schweizer Aircraft and built as a two-place training glider for the United States Army Air Forces during World War II. Initially, the U.S. Army Air Forces began training using Schweizer 2-8 gliders, but these gliders had aluminum wings, and aluminum was a strategic material, so its use was to be avoided in training aircraft so it could be saved for combat aircraft. With considerable difficulty, Schweizer redesigned the SGS 2-8 to incorporate wooden wings into the design. Numerous other small design changes were made to make the glider easier to mass-produce. A total of 114 TG-3As were built during World War II. After the war, many of the gliders were sold as surplus to gliding schools and private individuals. Unfortunately, due to their large and heavy wooden wings, which were difficult to remove, many were stored outside. As a result, they deteriorated in the elements, and very few examples of the TG-3A survive today.

Finally, an example of a modern glider built by Schweizer Aircraft is also featured in the exhibit. The SGS 1-35 was a sport and competition glider introduced by Schweizer Aircraft in the early 1970s. Unlike most competition gliders designed in the 1970s, which were made of fiberglass, the SGS 1-35 was constructed of aluminum because of Schweizer Aircraft's concerns about the structural integrity and expense of fiberglass. A total of 101 SGS 1-35s were built between 1973 and 1982.

Flown by John Robinson, the Ross RS-1 "Zanonia", an all-wood glider with gull wings, dominated soaring contests throughout the 1940s. Robinson won the 1940, 1941, and 1946 National Soaring Contests and also set two world records for distances flown in a glider, as well as set a national record for altitude.

Since the Harris Hill Gliderport was built in the 1930s, Elmira has hosted national and international soaring competitions, as well as glider and sailplane meets. The National Soaring Museum's collection of artifacts features several gliders and sailplanes that are famous for setting records in categories such as altitude and distance.

One of the competition gliders on display is the famous Ross RS-1 "Zanonia". The "Zanonia" was a single-seat, gull-winged glider designed in 1937 by Harland Ross for actor Harvey Stephens. The glider was an all-wood design using a dolly for takeoff and a fixed skid for landing. The aircraft was named after the Zanonia macrocarpa tropical flowering plant, the seeds of which are good gliders.

In 1937, with Ross flying it, "Zanonia" took second place in the Eaton Design Contest at the eighth National Soaring Contest. In the U.S. Nationals that same year, Ross placed second with the "Zanonia", but completed his Silver C badge.

The "Zanonia" was later sold to John Robinson, who established the glider's reputation. Robinson dominated national competition flying throughout the 1940s, winning the 1940, 1941, and 1946 National Soaring Contests. "Zanonia" also set two world records for distance flown by a sailplane and set a national altitude record in 1949 when Robinson flew it to a height of 33,500 feet (10,210 m). Robinson also completed the world's first Diamond badge flying "Zanonia" in 1949.

The "Zanonia" remains privately owned and is on loan to the National Soaring Museum from the family of Dale Busque. The glider is on display in the museum with the Bendix Glider Trophy won by John Robinson in 1949 and a beautiful painting that shows "Zanonia" in flight over the Finger Lakes region while setting the national altitude record the same year. Displayed next to the "Zanonia" is the Warsztaty Scybowcowe "Orlik II", a Polish glider with similar design characteristics that was flown by Paul MacCready in the 1948 and 1949 National Soaring Contests. "Orlik II" is also on loan to the museum from the family of Dale Busque.

In this stunning piece of artwork on display in the National Soaring Museum, John Robinson is flying "Zanonia" high above the Finger Lakes region of New York during a flight that set a national record for altitude in 1949.

The "Orlik" was a Polish-designed and built glider that had similar design features to the "Zanonia", such as gull wings. Unfortunately, the start of World War II prevented production of the glider, and only two examples were built. The glider pictured here is the second "Orlik" glider built, the "Orlik II", which won the 1948 and 1949 National Soaring Contest when flown by Paul MacCready.

A Schreder HP-18 glider hangs on display inside the National Soaring Museum. The HP-18 and slightly improved HP-18A are considered one of the best U.S.-designed homebuilt sailplanes. As the HP-18 is a homebuilt glider, individual builders have made improvements and modifications to the design. Some of these improvements include the addition of winglets, aileron modifications, and center stick conversions.

Multiple display cases can be found throughout the National Soaring Museum. These display cases showcase the museum's collection of smaller artifacts related to the history of soaring and the development of gliders and sailplanes. This display case features items from the National Soaring Contests held at Harris Hill in Elmira during the 1930s.

Another interesting glider on display in the National Soaring Museum is the Schreder HP-18. The HP-18 was designed by Dick Schreder as a homebuilt glider, and remains one of the best U.S.-designed homebuilt sailplanes. The glider was designed to be a high-performance sailplane that could be built affordably. The HP-18 could be purchased in kit form for $5,500 and could be built using just hand tools, an electric drill, a rivet gun, and an air compressor. HP-18 and HP-18A kits were offered to amateur homebuilders in the late 1970s and early 1980s. The HP-18 on display was donated to the museum in 1986.

In addition to gliders and sailplanes, the National Soaring Museum features several display cases of smaller items that tell the story of soaring and the design and development of sailplanes. The display cases can be found throughout the museum building and vary in size and the theme of the objects displayed. A large display case on the mezzanine level of the museum contains an extensive collection of trophies, medals, and other awards won in soaring competitions by glider pilots. On the lower level of the museum, a display case focuses on items related to German soaring pilots from the 1930s. Another display case on the lower level of the museum honors the champions of the National Soaring Contests held during the 1930s. Items in these display cases include papers, logbooks, flight gear, flight instruments, models, trophies, and photographs.

In addition to the items found in the display cases, smaller artifacts related to the history of soaring and the design of gliders and sailplanes can be found throughout the walls of the National Soaring Museum. These items include small pieces of gliders and sailplanes, artwork, large photographs, maps, enlargements of postage stamps, and posters. Near the museum's entrance, an interesting wall exhibit features artwork honoring the 15 men who formed the first Board of Directors for the Soaring Society of America when the organization was founded in 1932. The artwork features a portrait of each person as well as the glider or sailplane they flew.

An interesting wall display in the National Soaring Museum features artwork honoring the 15 men who were the Soaring Society of America's first Board of Directors when the organization was founded in 1932. These men were responsible for starting the National Soaring Contests on Harris Hill and in Elmira. A neat aspect of the artwork is that it not only features a portrait of the individual, but also the glider they flew.

The National Soaring Museum also honors NASA astronaut Neil Armstrong with a small display on a wall within the museum. Although Armstrong is famous for walking on the Moon, the NASA astronaut was an accomplished glider and sailplane pilot. Neil Armstrong earned Gold, Silver, and Diamond badges in competitive soaring in the 1960s. Armstrong flew several different sailplanes, with his favorite being a Schweizer 1-26 he purchased jointly with three other pilots. Despite his successful career as a NASA astronaut, Neil Armstrong enjoyed soaring and was always a strong advocate for the sport.

The museum also honors American women who made significant contributions to soaring with a "Wall of Fame" on one of its walls. The wall features the photographs and short biographies of 22 women, such as Anne Morrow Lindbergh, who was the first American woman to hold a glider pilot's license in 1930, and Virginia "Ginny" Schweizer, who completed a Silver Badge and won the National Women's Championship in 1947.

Finally, the National Soaring Museum features an exhibit honoring a local hero. In a small display case in the museum is a display of items honoring NASA astronaut Eileen Collins. Originally from Elmira, Collins served in the U.S. Air Force, rising to the rank of Colonel before joining NASA and becoming an astronaut. In 1995, Collins became the first woman to pilot the Space Shuttle. In 1999, Collins became the first female mission commander in NASA history. Collins flew a total of four Space Shuttle missions, spending a total of 56 days in space during her NASA career before retiring from the space agency in 2006. The exhibit honoring Collins features some magazines and newspapers that published articles about her, a model of the Space Shuttle, a trophy awarded to Collins, photographs of her launching and landing in the Space Shuttle, one of the NASA flight suits worn by Collins, and a shirt and patch worn by the astronaut on one of her NASA missions. Collins pioneering work as a test pilot and NASA astronaut in the 1990s has inspired many women to explore aviation and astronaut careers.

The National Soaring Museum has a small exhibit dedicated to former NASA astronaut and U.S. Air Force Colonel Eileen Collins. Collins grew up in Elmira, and the National Soaring Museum created this small exhibit to honor the former test pilot, astronaut, and local hero.

Another wall exhibit in the National Soaring Museum honors American women who made significant contributions to soaring in a "Wall of Fame". The "Wall of Fame" display includes photos and biographies of 22 different women.

This small wall exhibit in the National Soaring Museum honors NASA astronaut Neil Armstrong. Although famous for walking on the Moon, Neil Armstrong was also an accomplished glider and sailplane pilot as well as an advocate for the sport of soaring.

The National Soaring Museum's layout, with a second-floor mezzanine, allows museum visitors to view gliders and sailplanes displayed on the lower floor from above. The mezzanine also allows visitors to see the aircraft displayed hanging from the ceiling at eye level. This glider is a 1942 Bowlus/BS-100 Super Albatross on floor display viewed from the mezzanine level.

A 2008 Alexander Schleicher ASK-21 glider owned by the Harris Hill Soaring Corporation turns for final approach to land at the Harris Hill Gliderport. Visitors to the National Soaring Museum can observe glider operations at the airfield from the museum parking lot, a grassy area in front of the museum, or an observation area in the museum's Schweizer Aircraft exhibit.

Despite being a smaller aviation museum, the National Soaring Museum is an excellent place to stop during a visit to the Finger Lakes region of New York. The museum features an excellent collection of gliders and sailplanes, as well as other aviation artifacts that tell the story of the history of soaring and emphasize the importance of this often overlooked part of aviation.

The National Soaring Museum is an excellent transportation museum, featuring engaging displays of gliders, sailplanes, and hundreds of artifacts that document the history of soaring. Valuable items are kept in climate-controlled display cases in low light. The museum has creatively made the most of its available space by hanging gliders and sailplanes from the ceiling with their wings removed or partially removed, so more of the aircraft can be displayed. The facility is clean, well-kept, and easy to explore and navigate. The museum staff is friendly and willing to provide guided tours and more information about the artifacts on display as requested.

The museum also maintains an excellent relationship with the Harris Hill Soaring Corporation. A viewing area in front of the museum provides visitors with an up-close and personal view of gliders being launched and landing at the Harris Hill Gliderport. Visitors are also allowed to watch the glider operations from the parking lot and a grassy area directly in front of the museum building.

The National Soaring Museum is located on historic Harris Hill, next to the gliderport operated by the Harris Hill Soaring Corporation. The museum is open seven days a week, with the exceptions of Easter Sunday, Christmas Eve, Christmas Day, New Year's Eve, and New Year's Day. The museum is open from 10 am to 5 pm April 1st to October 31st, and from 10 am to 4 pm November 1st to March 31st. The museum has a gift shop with some snack options, but there is no restaurant on the premises. There are several restaurant options available in the nearby towns of Elmira, Big Flats, and Corning. Admission prices to visit the museum are $10.00 for adults, $5.00 for Youth (Ages 7-17), FREE for Children (Under 6), and $9.00 for Seniors (Ages 60+). The National Soaring Museum also offers a special admission rate of $25.00 for a Family (2 Adults & 2 or more Youth). Group tours are available by appointment by calling the museum. Additional information about the National Soaring Museum and its collections of gliders, sailplanes, and other aviation artifacts can be found at www.soaringmuseum.org.

Albatros D.Va

An Albatros D.Va German World War I fighter hangs on display in the National Air and Space Museum's flagship location on the National Mall in Washington, D.C. The D.Va was the final development of the Albatros family of fighter aircraft built during World War I, which were some of the most prolific fighters used by the Imperial German Air Service during the conflict.

The Albatros D.Va is a single-engine fighter aircraft manufactured by Albatros Flugzeugwerke. It was the final development of the Albatros D.I family of fighter aircraft and the last Albatros fighter to see operational service with the Luftstreitkräfte (Imperial German Air Service) during World War I.

The Albatros firm began building airplanes in 1910. Early in World War I, the firm focused on building two-seat observation aircraft. In 1916, in response to the French Nieuport 11 and British de Havilland D.H. 2 biplanes gaining superiority over the Fokker Eindecker, the German government requested the nation's aircraft manufacturers to design a suitable replacement.

Albatros designer Robert Thelen, with his assistants Gnaedig and Schubert, submitted an advanced design, the Albatros D.I It featured a streamlined fuselage with an almost fully enclosed inline Mercedes engine and a propeller spinner contoured into the nose of the fuselage. The D.I was quickly improved as the D.II variant, which was similar but had its upper wings repositioned slightly to improve pilot visibility. When they entered service in 1916, the D.I and D.II immediately demonstrated superiority over their Allied counterparts. With their 160-horsepower engines and twin machine guns, the Albatros fighters were formidable weapons that overwhelmed the smaller and lightly armed Nieuport 11s and de Havilland D.H. 2s.

In 1917, Thelen developed an improved variant of the Albatros fighter, the D.III. The principal design change was the use of a narrow-chord lower wing, similar to the sesquiplane arrangement of the Nieuport 11 and 17 fighters flown by the French. This wing layout improved maneuverability and the pilot's field of view. Initially, the lower wing was susceptible to structural failures in prolonged dives. The position of the radiator, located in the center of the upper wing, was also problematic. If punctured by gunfire, the pilot could be scalded by the hot water leaking from the radiator. Reinforcement of the wing structure and repositioning the radiator slightly off center in the upper wing solved these problems. The D.III was a favorite of the top German pilots and served with success through the first half of 1917.

In mid-1917, the introduction of the British S.E. 5 and the French SPAD S.VII fighters once again shifted the balance of air superiority in favor of the Allies. This development forced Thelen to refine his sleek Albatros fighter even further in an effort to improve its performance and to gain parity with the Allied fighters.

The next production variant of the Albatros was the D.V. The D.V was initially powered by the same 160-horsepower Mercedes engine that powered the earlier variants, but later replaced with an improved engine that delivered 180 horsepower. The major innovation for the D.V was its elliptical cross-section fuselage, which was more streamlined than the flat-sided fuselage found on the earlier variants. The fuselage also featured a raised headrest for the pilot. This headrest was found to limit pilot visibility, so it was removed on later production models of the D.V.

Unfortunately, soon after it entered service, the D.V began to suffer upper-wing spar failures. The remedy for the problem was to strengthen the wing ribs and spars, which resulted in the designation D.Va. The strengthened wing added weight to the aircraft, negating the performance improvement gained by the uprated engine. The D.V and D.Va also continued to suffer the same lower wing failures that plagued the D.III. Small auxiliary struts connecting the lower wing to the bottom outer wing struts and the fuselage were added to address the issue, but it never fully corrected the problem. German fighter pilots also complained that the D.V and D.Va were heavy on the controls and tiring to fly. Despite the problems, the D.V and D.Va remained in production and widespread service until April 1918, when the superior Fokker D.VII became available.

Over 4,800 Albatros fighters of all variants were built during World War I. The Albatros types were some of the most prolific fighters used by the Imperial German Air Service. Several of the highest-scoring German aces achieved the most of their victories flying Albatros fighters. One of these pilots was Manfred Von Richthofen, "The Red Baron", who, although most associated with flying the Fokker Dr.I Triplane, achieved the majority of his 80 victories piloting Albatros fighters.

Despite their widespread use during World War I, only two authentic Albatros fighters survive today, both D.Va variants. One is on display at the Australian War Memorial Museum in Canberra, Australia. The other is the one in the collection of the National Air and Space Museum.

The National Air and Space Museum's Albatros D.Va has a mysterious history. During its restoration, the serial number D.7161/17 was discovered under several layers of paint on the fin. This serial number makes the D.Va part of the final production order of 550 D.Vas built by Albatros during the war. Museum curators also discovered that the D.Va is comprised of components from at least two different aircraft. The wings show evidence of workmanship of different quality, suggesting they were built at a different time and location than the fuselage.

During its restoration, the original layers of paint showed green and yellow stripes on the tail surfaces. These stripes were the markings for German squadron Jasta 46. This unit was formed at Graudenz in December 1917 as part of Germany's Amerika Program. This program was an effort by the German military to build up rapid strength and deliver a decisive blow to British, French, and other Allied forces before America could enter the war. As a result of this program, the Imperial German Air Service doubled the number of fighter units on strength. The production serial number of the Albatros D.Va fits the timeline of Jasta 46's creation and the squadron's equipping with Albatros fighter aircraft.

There is also evidence that the Albatros D.Va did see combat. A bullet passed through the right machine gun mount, penetrated the emergency fuel tank, and lodged itself in the right magneto. This damage may have forced the pilot of the Albatros D.Va to perform an emergency landing. Throughout the years, many World War I historians have studied historical records to ascertain who flew this Albatros D.Va. Recent research suggests the aircraft was flown by Alois Weber, a reserve lieutenant with Jasta 46 who was forced down behind French lines near the Somme on May 19, 1918. After Weber was captured, the D.Va was sent to a French testing and evaluation airfield. The significance of the name "Stropp" on the fuselage is unknown.

Although the exact circumstances are unknown, at some point, the Albatros D.Va was transferred into American hands and transported to the United States. Once in the United States, it was displayed at public expositions of war weaponry in 1918 and 1919, which served as fund-raisers for the war effort. During these expositions, the airplane began to deteriorate, and parts of it went missing, as it had to be taken apart after display at each public exposition for transportation to the next location.

The D.Va eventually found its way to an outdoor display in Golden Gate Park next to the new building that would become the home of the De Young Museum. The Albatros D.Va was officially transferred to the museum on July 13, 1919, by Julius Kahn, a member of the U.S. Congress representing California's 4th congressional district. Kahn claimed the Albatros D.Va was a gift from the French government. The aircraft remained at the De Young Museum for the next 30 years.

In 1947, Paul E. Garber, the head of the new National Air and Space Museum, visited the De Young Museum after learning of the existence of the rare Albatros D.Va. The museum claimed the German fighter was no longer at the museum, but Garber found the plane stored in pieces in a private area. After Garber inquired about the aircraft, he was told it had been sold at auction to George K. Whitney. Whitney planned to display the airplane at Playland amusement park in San Francisco. Garber met with Whitney and explained to him the historical importance of the Albatros D.Va. Whitney agreed to donate the German fighter to the Smithsonian Institution, provided they pay the shipping and transportation costs to move the airplane.

The museum secured funding to move the Albatros D.Va in 1949. The Albatros D.Va was stored at a temporary storage facility in Park Ridge, Illinois, and later, in Washington, D.C. Due to a lack of funding and other priorities, restoration of the rare fighter had to wait until January 1977. The meticulous restoration of the Albatros D.Va was completed in 1979. Today, the Albatros D.Va is on display at the entrance to the *WWI: The Birth of Military Aviation* gallery in the National Air and Space Museum's National Mall location in Washington, D.C.

Boeing C-17 Globemaster III (1995)

The Boeing C-17 Globemaster III is a large military transport aircraft developed by McDonnell Douglas for the U.S. Air Force during the 1980s and early 1990s. Plagued by design issues, the aircraft performed its first flight in 1991, almost a year behind schedule. The C-17 entered service with the U.S. Air Force in 1995. McDonnell Douglas and later Boeing, produced the C-17 for two decades, with the final example built in 2015. Designed to perform tactical and strategic airlift missions worldwide, the C-17 can also fly humanitarian aid and medical evacuation missions as required. In addition to the U.S. Air Force, the air forces of India, Kuwait, the United Kingdom, Qatar, Canada, the United Arab Emirates, Australia, and the Europe-based multilateral organization NATO's Heavy Airlift Wing all operate the C-17 Globemaster III.

Boeing C-17 Globemaster III

Crew: 3 (Pilots (x2), Loadmaster)

Cargo Capacity: 170,900 lb (77,519 kg) of cargo on pallets or a mixed cargo of personnel, pallets, and vehicles

Length: 174 ft (53 m)

Height: 55 ft 1 in (16.79 m)

Wingspan: 169 ft 9.6 in (51.755 m)

Wing Area: 3,800 sq ft (350 m^2)

Powerplant: Pratt & Whitney F117-PW-100 turbofan engines (x4)

Range: 2,420 nmi (4,480 km) with 157,000 lb (71,214 kg) payload, 6,230 nmi (11,540 km) [Ferry Range]

Cruise Speed: 520 mph (830 km/h) (Mach 0.74)

Maximum Speed: 570 mph (917 km/h) (Mach 0.77)

Empty/Gross Weights: 282,500 lb/585,000 lb (128,140 kg/265,352 kg)

Service Ceiling: 45,000 ft (15,000 m)

Tactical and Strategic Airlifter

Tail

The C-17 Globemaster III features a large T-tail designed to improve aircraft stability. This tail raises the center of pressure even higher above the aircraft's center of mass. The T-tail configuration also lowers drag, as the horizontal stabilizer is positioned away from the vortices generated by the C-17's wings.

Cargo Hold

The C-17 Globemaster III features a cargo hold that is 88 feet (27 m) long, by 18 feet (5.5 m) wide, by 12 feet 4 inches (3.76 m) high. The floor features rollers for palletized cargo, but can be flipped to provide a flat floor for vehicles and other rolling cargo. Cargo is loaded through a large aft ramp in the rear of the aircraft. The cargo bay can accommodate a large battle tank, armored vehicles, trucks, personnel, and palletized cargo. The C-17 can also perform airdrops of cargo or paratroopers in hostile environments where the aircraft cannot land safely. The C-17's cargo hold can also be configured to function as a medical evacuation aircraft.

Wing

The C-17 Globemaster III features an anhedral swept wing configuration. This wing configuration enhances aircraft maneuverability, roll responsiveness, and control authority by reducing excessive stability. The wing also features externally blown flaps, meaning engine exhaust flows directly over them to increase their effectiveness for steep, slow-speed landings. The combination of a high-lift wing, externally blown flaps, leading edge slats, and winglets allows the C-17 Globemaster III to operate from runways as short as 3,500 feet (1,067 m).

Operational History

Since its introduction in 1995, the C-17 Globemaster III has served with distinction in conflicts such as Operation Enduring Freedom and Operation Iraqi Freedom, as well as providing humanitarian relief during natural disasters, including the 2010 Haiti Earthquake and 2023 Turkey-Syria Earthquakes.

Engines

Four Pratt & Whitney F117-PW-100 turbofan engines power the C-17 Globemaster III. These jet engines, with uprated power ratings for military applications, are based on the commercial PW2040 engines used on the Boeing 757. The engines feature advanced thrust reversers, which direct engine exhaust air upwards and forwards, reducing the chance of foreign debris ingestion by the engines when the C-17 uses rough or unprepared airstrips. The thrust reversers provide enough power to back up the aircraft while taxiing or perform a three-point turn on a narrow runway or taxiway.

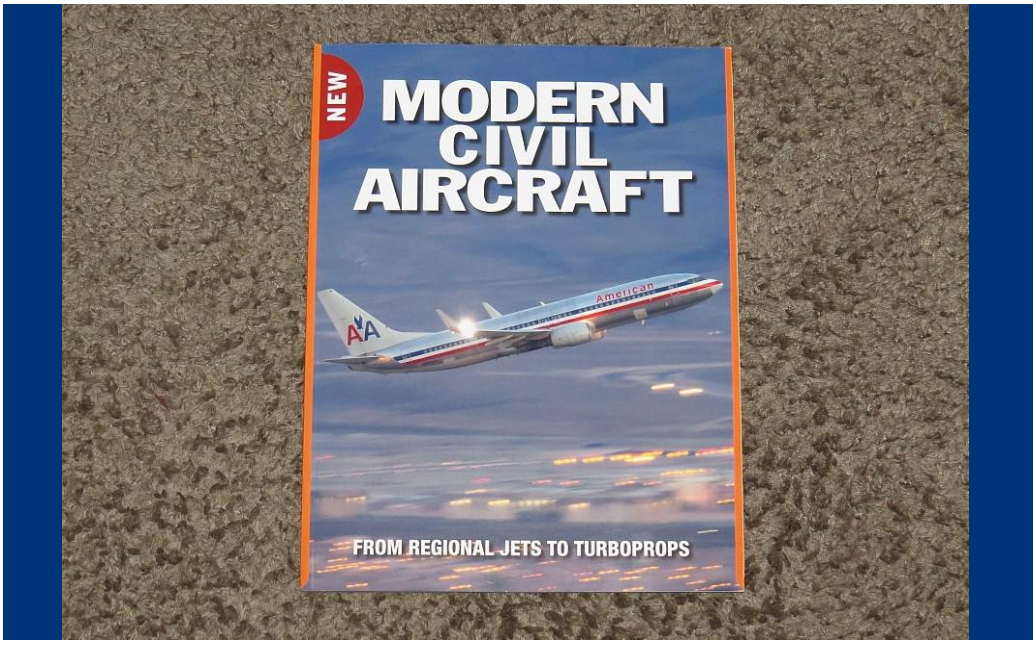
Landing Gear

The C-17 Globemaster III has a front steerable landing gear with two wheels. The main landing gear features two struts on each side of the aircraft, with three wheels per strut. All wheels on the main landing gear are equipped with braking mechanisms, while the front landing gear is not. The main landing gear features a complex set of linkages and rotary axles that rotate the landing gear 90°, which allows it to fit into the sponsons when retracted. A unique feature of the C-17 Globemaster III is that the auxiliary power unit (APU) is located in the forward portion of the right main landing gear sponson rather than the tail. As a result, the right main landing gear sponson is slightly longer and larger than the left one.

Cockpit

The C-17 Globemaster III's cockpit requires a crew of two, including a pilot and copilot. During cargo operations, the flight crew will also include a loadmaster. The cockpit features the Allied Signal AN/APS-133(V) weather and mapping radar. Recent upgrades to the cockpit and avionics suite on the C-17 Globemaster III fleet have focused on improved flight management, the communication/navigation systems, and adding IFF and ADS-B capabilities.

Modern Civil Aircraft Bookazine



Modern Civil Aircraft is a new title now available from publisher Amber Books Ltd. in their continuing series of aviation reference bookazines. The bookazine is an excellent quick reference guide to civil aircraft used by commercial operators worldwide. The bookazine includes performance specifications, cutaway diagrams, profile drawings, and colorful illustrations of each aircraft featured in the publication.

Amber Books Ltd. is a United Kingdom-based publisher of nonfiction illustrated reference books. The company publishes illustrated reference books for children and adults on a wide range of subjects, including military history & technology, animals, pets, photography, travel, natural history, music, health, and transportation. The publishing company currently offers over 1,000 titles that are available in 40 different languages. In addition to publishing reference books under its branding, Amber Books Ltd. also offers book packaging services for clients, publishing titles on their behalf, with the clients paying royalty fees to use the material. In recent years, Amber Books Ltd. began offering some of its military and aviation reference book titles in an affordable and concise bookazine format. Some aviation titles published in this series of reference bookazines have included *Japanese Aircraft of World War II, German Aircraft of World War I*, *Modern Russian Military Aircraft,* and *Chinese Military Aircraft*.

Modern Civil Aircraft covers civil aircraft used by commercial operators worldwide. The 144-page bookazine features color profiles of each aircraft, a brief description of their operational history, and performance specifications. Divided into four sections, *Modern Civil Aircraft* covers transcontinental airliners, regional airliners, propeller-driven airliners, and business aircraft. Iconic types, such as the Boeing 747 and Airbus A380, are featured in the bookazine. Also highlighted in this excellent reference title are newer commercial aircraft such as the Boeing 787 Dreamliner and the Airbus A350. An interesting feature of the bookazine is the inclusion of some lesser-known commercial aircraft, such as the Chinese-built Comac C919, intended to compete with the Boeing 737 family and Airbus A320 family of aircraft, and the seldom-seen Iluyshin Il-96, which was the Soviet Union's first wide-body airliner. The business aircraft section is an excellent addition to the publication, including aircraft such as the Cessna Citation, Pilatus PC-12, Beechcraft King Air, Embraer Phenom, and several other common types. A notable absence in the bookazine is that freighter aircraft used by cargo airlines, such as the McDonnell Douglas MD-11F and the Boeing 747-400F, are not included.

Modern Civil Aircraft is now available at bookstores and newsstands worldwide. In the United States, the bookazine is available at Barnes & Noble bookstores in the magazine/newsstand section. Amber Ltd.'s *Modern Civil Aircraft* is an excellent addition to the publisher's series of aviation bookazines. The title is a great quick reference guide for anyone who enjoys planespotting at airports or learning about modern commercial aircraft.


Boeing 747
Virgin
KOREAN
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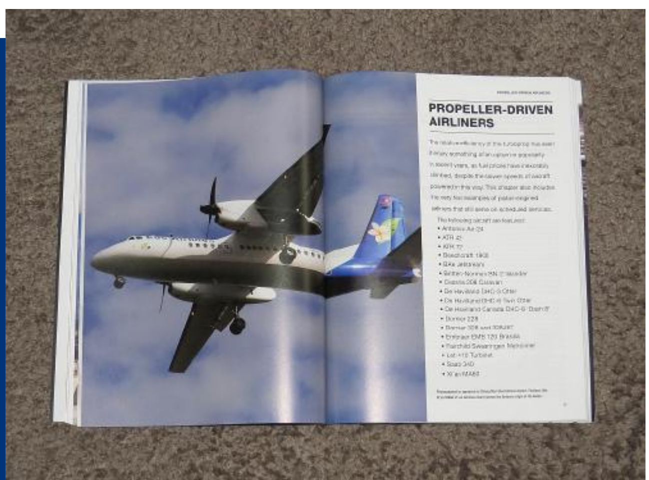
PROPELLER-DRIVEN AIRLINERS


C919

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.