

THE HISTORY OF REPUBLIC AIRPORT

BY ROBERT G. WALDVOGEL

Located in Farmingdale in the center of Long Island, N.Y., Republic Airport is a historically significant airfield to both the region and the world, having played a major part in the development of both military and civilian aircraft. Before its present form as a general use airfield, it was the site of aircraft manufacturers that were a major part of aircraft history for the area as well as the world.

“The Industrial Revolution and airplane manufacture came to Farmingdale during WWI when Lawrence Sperry and Sydney Breese established their pioneering factories in the community,” wrote Ken Neubeck and Leroy E. Douglas in their book, *Airplane Manufacturing in Farmingdale* (Arcadia Publishing, 2016, p. 9). “They were drawn by the presence of two branches of the Long Island Railroad, ... the nearby Route 24, which brought auto and truck traffic to and from the Fifty-Ninth Street Bridge in Manhattan; the level outwash plain, which provided land for flying fields and the proximity to skilled workers...”

The area’s first aviation roots, however, were planted as far back as 1917. The Lawrence Sperry Airplane Co., incorporated that year with \$50,000 of capital and located on Rose and Richard streets in the village of Farmingdale, produced its first aircraft in the form of the Messenger.

Designed by Alfred Verville of the U.S. Army’s Engineering Division at McCook Field, the minuscule, 17.9-foot-long, all-wood biplane was intended for “aerial motorcycle” missions, alighting in small clearings to drop off and pick-up messages from field commanders, thus earning its name. Powered by a 60-hp Lawrence L-4 radial, the 862-pound aircraft sported a 20-foot wingspan and could operate within a 45- to 97-mph airspeed envelope. Subsequently provisioned with an in-flight

hook, the Messenger was first dropped from Army blimp TC-7 on October 23, 1924, and first re-connected to blimp TC-3 two months later, on December 12. Eventually, Sperry would construct 42 airplanes, including prototypes, which were track-launched as “aerial torpedoes” in order to test various airfoils, cambers, and tapers before the definitive configuration was chosen.

The succeeding Verville-Sperry R-3 Racer, a low-wing, aerodynamically sleek monoplane built at the Sperry Rose Street factory, introduced the first retractable undercarriage. Completed in 1921, the same year that the company relocated to the 10-acre flying field on Motor Avenue in South Farmingdale, the aircraft, powered by a 350-hp Wright H-2 engine, could achieve 216 mph.

Farmingdale’s aviation roots were equally cultivated by Sydney Breese, whose Breese Aircraft Co., located on Eastern Parkway, designed the Penguin. Resembling the Bleriot XI, the mid-wing airplane, powered by a two-cylinder, 28-hp, roughly-running Lawrence engine, was a non-flying, preflight trainer intended to aid U.S. Army pilot transition from primary to operational types. Deployed on the open prairies of Texas, it sported a wingspan too short to produce lift, but allowed fledgling aviators to gain the feel of pre-departure aerodynamic forces on their horizontal tails. Of the 301 produced, only five were ever used for this purpose; the remainder were placed in storage.

Fairchild Aviation

If Lawrence Sperry and Sydney Breese laid Farmingdale’s aviation foundation, then Sherman M. Fairchild cemented it.

Initially interested in aerial photography equipment,



The diminutive Sperry M-1 Messenger was one of the first aircraft built in the Farmingdale. (G. Balzer collection, AAHS-D0102857)



The Verville-Sperry R-3 racer developed in 1921 in the Farmingdale area was an innovative design at the time. (G. Balzer collection, AAHS-D0102860)



This aerial view shows the former Fulton Truck Factory in 1927, which was used by McAvoy Homes inc. just before Sherman Fairchild bought the property and developed his factories and flying field there. The factory lies between the Long Island Railroad (LIRR) and Conklin Street. Sherman Fairchild built pontoons in this building in 1927. (Courtesy of the Long Island Republic Airport Historical Society (LIRAHS))

Fairchild founded the Fairchild Aerial Camera Corp. in 1920, selling two such devices to the Army, and further developed the company into Fairchild Aerial Surveys to engage in map-making when he had received a contract for an additional 20. Seeking to replace the myriad of airplane types he operated with a single, specifically-designed camera platform, Fairchild devised the required specifications for one, but could not locate a manufacturer able to build it at a reasonable cost. Thus he ended up doing this himself and he established his third aviation company, the Fairchild Aviation Corp., and moved into the Sperry factory in South Farmingdale that was vacated as a result of founder Sperry's tragic death in December of 1923.

The high-wing, strut-braced, single-engine utility aircraft, designated FC-1 and first flying in prototype form in 1926, featured an enclosed and heated cabin to protect the pilot and his camera equipment, but its original OX-5 engine proved inadequate. Retrofitted with a higher-capacity Wright J-4, it was redesignated FC-1A.

The FC-2 production version, supported by wheels, floats or skis, featured increased cabin volume. Powered by a 200-hp Wright J-5, the aircraft, intended for commercial operations, sported a 31-foot overall length and 44-foot wingspan. Accommodating a single pilot and four passengers, or up to 820 pounds of cargo, it had a 3,400-pound gross weight and could attain a maximum 122-mph speed and a range of 700 miles.

It would make several historic flights. On October 19, 1927, for example, it operated the first float-equipped airmail service from Key West, Fla., to Havana, Cuba, with Pan American Airways, and subsequently conducted one of the first scheduled passenger services, between Lima and Talara, Peru, the following year. In its FC-2W2 guise, and named "Stars and Stripes," it enabled Richard Byrd to undertake his Antarctic expeditions.



This Fairchild FC-2W2 has been restored in American Airways livery and was once owned by Herb Harkom. This photo was taken in August 1964 at Ottumwa, Iowa. (Photo by Charles E. Stewart, AAHS-D000251)

Demand at the South Farmingdale factory soon eclipsed capacity. After aerially surveying the region, Fairchild himself chose a 77,967 acre alternate on the south side of Route 24 and Conklin Street in East Farmingdale, a site that offered prevailing, South Shore winds and multiple-mode ground access by means of a railroad line and the major Route 110 corridor, which would facilitate both personnel and raw material transport to the new field. Repackaged into airplanes, the latter could then fly out.

"The 77,967 acre Fairchild Flying Field was developed in the late winter and early spring of 1928 and was originally owned and operated by the Fairchild Engine and Airplane Manufacturing Co.," according to the Long Island-Republic Airport Historical Society. "The first flights from (it) took place in (the) late spring of 1928 after the Fairchild Airplane and the Fairchild Engine factories were completed and aircraft were produced (there). Fairchild built Model 41, 41A, 42, 21, 100, and 150 airplanes..."

Soon the area would be populated by companies such as the Fairchild Airplane factory, the Fairchild Engine factory and the Fairchild Flying Field, after Faircam Realty, Inc., purchased the land and its initial layout was established on November 3, 1927. The complex's first offspring, an FC-2W, saw the light of day the following May.

Fuselage stretches, wingspan increases, greater powerplant capacities and improved passenger accommodation progressively added to the baseline FC-2, resulted in several successive versions, the penultimate of which was the Model 71. Its 71A derivative, introducing wing sweepback and a revised cabin, was produced at the Fairchild Aircraft Ltd. facility in Longueuil, Quebec, and was followed by the 71C. Sporting a 35.10-foot overall length and 50-foot wingspan, the airplane, powered by a nine-cylinder, 420-hp Pratt and Whitney engine, could accommodate seven and had a 6,000-pound gross weight. The comparable Model 71CM introduced a metal fuselage skin, while the Super 71, resting on floats, featured an eight-foot greater wingspan and accommodated eight. Both the U.S. Army Air Service and the Royal Canadian Air Force operated versions of the versatile Fairchild design.

Although it produced multiple models at its new Long Island aviation center, Fairchild's roots would quickly prove tenuous. Moving its headquarters to Hagerstown, Maryland, in

1931, after only three years, it vacated its facilities, which were almost immediately reoccupied by the American Corporation, or AVCO, who's Airplane and Engine divisions produced the Pilgrim 100 transport for American Airways. But the Depression, at this time had, severely diminished demand for it, since aircraft acquisitions were high on a company's cost reduction list, and its presence proved shorter than Fairchild's. By mid-1932, it had also disappeared.

Grumman Aircraft Engineering

Initially located in Valley Stream, where it designed floats, the Grumman Aircraft Engineering Corp. moved further east, to the Fairchild Flying Field, and took up residence in the former Fulton Truck factory, where it hatched its first production fighter, the FF-1. Powered by a single, 750-hp Wright engine, the biplane, with a retractable undercarriage, was also offered in scout configuration, as the SF-1.

The most significant aircraft to emerge from the East Farmingdale production line, however, was the Duck. Tracing its origins to the Loening Aeronautical Engineering Corp.'s XO2L-1, it had been submitted to the U.S. Navy in 1931, but, since Loening himself lacked the required facilities to build it, he turned to Leroy Grumman, his former colleague, who re-submitted it in modified form. Accepted on April 25, 1933, the biplane, called XJF-1, was powered by a 700-hp Twin Wasp engine, which drove a three-bladed Hamilton Standard propeller. Its bracing, consisting of one set of struts outboard of the fuselage and a second one, of wires, between the two wings, was minimal for its day. Water operations were supported by a centerline, under-fuselage float, into which the undercarriage retracted, and a small outrigger mounted below either wing's rear underside, near the tip.

Standard crew, accommodated beneath the telescoping canopy, consisted of the pilot and rear gunner, although there was also provision for two passengers in the main float, aft of the wing. Armament included two, 100-pound, below-wing bomb racks and an aft-facing machine gun.

The first of 27 JF-1 Ducks was delivered to Norfolk Naval Air Station in May of 1934, and the basic design was developed into several successive versions. The JF-2, ordered by the Coast Guard and powered by a Wright 1820 Cyclone engine, set a world speed record of 191 mph on December 4, 1935. After the JF-3, its designation changed to the J2F series, whose derivatives included the J2F-1 through -6, the latter the most powerful, with a 1,050-hp Wright 1820-54 Cyclone and was the most extensively built with a production run of 330 for the Navy and the Coast Guard. Sporting a 34-foot length and 39-foot wingspan, this version had a 7,325-pound maximum takeoff weight.

In all, 632 JF and J2F Ducks were produced and used in various multiple-role service. Grumman's Farmingdale presence would eventually exceed that of all others to the point of needing more factory space requiring a relocation in 1937 to



In 1927, Grumman moved to nearby Bethpage and Seversky Aircraft took over the Grumman factory. The Seversky Aircraft factory is center right, and the Ranger Aircraft Engines division of Fairchild is at the upper right. (Courtesy of the Connecticut Air Museum)

larger space in nearby Bethpage, Long Island.

Seversky Aircraft

Seversky Aircraft Corp. next took center stage in Farmingdale when it relocated there from the EDO Corp.'s floatplane factory located in College Point in Queens, occupying the former AVCO factory.

A decorated WWI ace, Alexander P. de Seversky, like Igor Sikorsky, immigrated to the U.S. from Russia, and in 1923, developed the first gyroscopically-stabilized bombsight at the Sperry Gyroscope Co., before establishing his own Seversky Aero Corp., which focused on aircraft instruments and parts.

Seversky's first major design, the SEV-3, was both aerodynamically sleek and progressive, reflecting Seversky's aviation-intuitive nature. Powered by a single, 420-hp, nose-mounted, Wright J-6 Whirlwind engine, the all-metal, low-wing aircraft, accommodating a pilot and two passengers in sliding, tandem canopied cockpits, was either supported by a wheeled undercarriage or floats and in 1933 established a world speed record for piston amphibians. Two years later, on September 15, it sustained a 230-mph airspeed.

The foundation of many subsequent versions that externally exhibited only minor variations over the basic design, it evolved into the next major iteration, the BT-8. As the first all-metal, enclosed cockpit design operated by the U.S. Army Air Corps, it featured a 24.4-foot length and 36-foot wingspan. Powered by the 400-hp Pratt & Whitney R-985-11, the 4,050-pound airplane, accommodating two, had a 175-mph maximum speed. Thirty were built. It led to the definitive version.

After several design iterations that were originally based upon the privately financed SEV-2XP, the Seversky P-35 pursuit fighter, powered by a tightly cowled Pratt & Whitney R-1830-9 twin-row radial engine driving a three-bladed propeller, featured a 36-foot elliptically shaped, low-mounted wing, rearward retracting wheels, and both .30- and .50-caliber machine guns. An Army Air Corps contract for 77 aircraft was awarded at the end of 1936.

An export version, designated EP-1-06 and by then produced by Republic Aviation, introduced an updated,



Major Seversky is standing next to three 3M-WW amphibians built for Colombia in front of the 1928 Fairchild Airplane factory. The word "American" is visible on the smokestack is in reference to American Airplane, part of the Aviation Corp. conglomerate that acquired Fairchild Airplane in 1929, and folded in 1932. (Courtesy of Seversky Archives via LIRAHS)

1,200-hp R-1830-45 engine, a .30-caliber machine gun installed in each wing and a 6,723-pound gross weight. It could attain a maximum 290-mph speed at 12,000 feet, although its service ceiling was almost triple this height, at 31,400 feet, and it had a 950 statute mile range. Although the Royal Swedish Air Force ordered 120 of the type, half of them were retained for U.S. use after the outbreak of WWII, in which guise they were dubbed P-35As.

Originally occupying Hangar 2 (located on New Highway and today used by the American Airpower Museum), Seversky Aircraft took over the Grumman factory in 1937 when it had relocated to Bethpage, thus maintaining two facilities. But, echoing the short history of the East Farmingdale airfield's tenants, it came to an abrupt end when Seversky, who possessed the necessary design skills to create progressive airplanes but lacked the necessary managerial skills needed to devise a

proper and profitable business plan to market these aircraft. At one point, there was a \$550,000 loss by April of 1939. Later in the year, while conducting a European sales tour, on October 13 he was ousted by his own board of directors, who voted for his removal from the very company he had founded. It would be reorganized and rebranded the "Republic Aviation Corp."

Republic Aviation

Fairchild Flying Field's fortune was about to change. With the outbreak of WWII, the fledgling Republic Aviation Corp. would explode in size and its roots would become so deeply implanted in Farmingdale soil that it would be decades before they could be unearthed. Instrumental in that war was the Republic P-47 Thunderbolt.

Succeeding the Seversky P-35, it was the result of Army Air Corps requirements, which included a 400-mph airspeed, a 25,000-foot service ceiling, at least six .50-caliber machine guns, armor plating protection, self-sealing fuel tanks, and a minimum fuel capacity of 315 gallons. It was designed around the new 18-cylinder, two-row, 2,000-hp Pratt & Whitney Double Wasp XR-2800-21 radial engine -- then the largest, most powerful of its type -- it was intended to offer ultimate, high-altitude performance partly attained by its tail-installed turbo-supercharger that considerably increased its power production in rarefied air.

The XP-47B prototype, for which a contract was awarded on September 6, 1940, first took to the skies the following May and orders for 171 P-47Bs and 602 P-47Cs were subsequently placed, the latter of which featured external, range-increasing fuel tanks and a longer fuselage to improve maneuverability.

The P-47D, numerically the most popular version, had a 36-foot, 1.75-inch overall length and a 40-foot, 9.75-inch wingspan, which resulted in a 300-square-foot area. Powered by the 2,000-hp Pratt & Whitney turbo-supercharged R-2800-63 piston engine, whose four-bladed, 12-foot-diameter propeller



The inside of the Seversky final assembly area with Seversky and company officials admiring the BT-8 production line. (Courtesy of Seversky Archives via LIRAHS)



The Defense Plant Corp. finished building this final assembly hangar for Republic in 1942. Republic's first control tower was located on the southwest corner of the building. This historic hangar now houses the American Airpower Museum at Republic Airport. (Courtesy of Republic Aviation Archives via LIRAHS)



The 1943 Republic Aviation final assembly hangar nearing completion. This building is now Hangar 4 at Republic Airport housing Invictus Jets. (Courtesy of Republic Aviation Archives via LIRAHS)

could only be given sufficient ground clearance with a nine-inch telescoping, retractable main landing gear, the 19,400-pound aircraft, armed with eight .50-caliber, wing-mounted machine guns and 2,500 pounds of bombs, could cruise at 428 mph at a 30,000-foot altitude, yet attain 42,000-foot maximum ceilings. Range peaked at 1,700 miles. The Republic P-47 Thunderbolt dwarfed all other aircraft and was the world's largest, heaviest, single-engine, single-seat WWII fighter, offering unequalled dive speeds.

First entering service with the USAAF in 1942, the type was deployed in the European theatre the following April, initially performing high-altitude escort and fighter sweep missions in skies whose only other counterpart was the Focke-Wulf Fw 190A. The aircraft appeared in the Pacific theatre two months later, in June. The final version, the P-47N, was intended for long-range bomber escort sorties and featured extended wings, an additional 100 gallons of fuel, and a 20,700-pound gross weight -- or more than double the weight of the P-40s it often replaced.

War-fueled growth of the officially renamed "Republic Airport" resulted in the expansion of the company's existing factory on the south side of Conklin Street, as well as the construction of three additional buildings, the installation of a control tower, and the lengthening of its existing runways, all in an effort to support P-47 production, which totaled 9,087 units in Farmingdale alone and required a work force of 24,000 by 1944. Employees filtered in by the thousands every day. A round-the-clock production line spat a completed aircraft out of the factory every hour, and these were then ferried by the Women Air Force Service Pilots, or WASPs. Republic Aviation, one of the country's primary defense arteries, pumped man-and-machine into the agricultural plains of Farmingdale and transformed them into an arsenal of democracy within an 18-month period.

The P-47 Thunderbolt achieved an impressive array of accomplishments. With 15,579 built, it attained the highest production total of any previous U.S. fighter. It flew more than 546,000 combat missions, destroying some 11,874 enemy aircraft, 9,000 locomotives and 6,000 armored vehicles and

tanks between March of 1943 and August of 1945. The first piston aircraft to exceed 500 mph in airspeed, it could out dive any allied or enemy aircraft, and is considered the forerunner of today's multi-role fighter.

"By 1945, Republic was contributing more than 30 percent of the Army Air Force fighters to the war effort against the Luftwaffe in the skies of Europe," wrote Leroy E. Douglas in his "Conklin Street Cut-Off" article published in the September 1984 issue of *Long Island Forum* (p. 182). "Thus, Republic, Ranger, and its 23,000 plus workers — more than half of whom were women — did their part to win the war."

When the war ended, so, too, did the wartime effort of the Thunderbolt factory, and Republic was forced to diversify its product range in terms of purpose and powerplant, converting military Douglas C-54 Skymasters into commercial DC-4 airliners, producing 1,059 civilian RC-2 Seabee amphibian aircraft, and attempting to design a passenger transport of its own.

One of the first post-war efforts was the Republic XF-12 Rainbow -- along with the competing, and identically-



The Republic final assembly line in 1946 shows the RC-3 Seabee in production on the left and F-85 Thunderjet on the right. Visible in the back is an XF-12 Rainbow (Courtesy of Republic Aviation Archives via LIRAHS)



The Ranger Aircraft Engines factory complex in East Farmingdale in December 1941, shortly before the massive Republic Aviation factory was built to the left of this facility, and before the U.S. built a 160,00 square foot addition and hangar for Ranger in 1942. (Courtesy of Farmingdale Bethpage Historical Society via LIRAHS)

powered, Hughes XF-11 -- both received a contract for two. Emulating the graceful lines of the Lockheed Constellation, the Rainbow, featured a 93.9-foot overall length and incorporated design experience amassed during Republic's fighter aircraft development, exuded an appearance quintessentially captured by *Aviation Week and Space Technology* magazine when it reported, "The sharp nose and cylindrical cigar shape of the XF-12 fulfills a designer's dream of a no-compromise design with aerodynamic considerations."

Sporting a 129.2-foot wingspan of high-aspect ratio and straight taper with square tips, the XF-12 was powered by four, 3,250-hp Pratt & Whitney R-4360-61 piston engines, which drove four-bladed, Curtiss Electric propellers. Powerplant design and configuration, equally expressing advancement, incorporated sliding cowls, which replaced the otherwise standard, but excessive-drag cowl rings and promoted cooling. The air ordinarily used for this purpose was ducted through the nacelle in flight to the rear exhaust, increasing per-engine thrust by the equivalent of 250 hp at 40,000 feet. Air intake, oil coolers, and intercoolers all consisted of a single, between-engine, leading edge port, a configuration that considerably reduced individual intake-related drag. Its cabin was subdivided into three aft photographic compartments, each equipped with a six-inch, Fairchild K-17 camera, as well as 18 high-intensity photo-flash bombs that were located in the belly hold and ejectable over the desired target area.

With its first flight on February 4, 1946, the XF-12, which exceeded its design goals, had a 65,000-pound empty and 101,400-pound maximum takeoff weight. Climbing at 5,000-fpm, it had a 45,000-foot service ceiling and a maximum, 470-mph speed. Its range was 4,500 miles. Peace proved the aircraft's enemy. The close of WWII obviated the need for this aircraft, as well as the comparable Hughes XF-11. However, because of its long-range, high-speed and altitude, day and

night, limited-visibility photo-reconnaissance capability, it was ideal as a territory-mapping platform. On September 1, 1948, the second of only two aircraft built photographed its transcontinental flight path from the Air Force Flight Test Center in Muroc, Calif., to Mitchel Field in Garden City, Long Island, during Operation BIRDS EYE.

Republic entered the jet aircraft era with a P-47 Thunderbolt successor. Featuring a 37.5-foot length, the design, conceived shortly before the end of the war in 1944, retained the straight wings associated with propeller airplanes that spanned 36.5 feet. First flight took place on February 28, 1946, and the 19,689-pound fighter-bomber was able to climb at 4,210-fpm, along with establishing a national speed record of 611 mph. It was powered by the 3,750-thrust-pound J35-GE-7 and it had a range was 1,282 miles along with a service ceiling of 40,750 feet.

Designated F-84 Thunderjet, the aircraft, initially powered by the 4,000 thrust-pound J35-GE-15, was delivered to the 14th Fighter Group at Dow Field. Successive versions introduced a 12-inch stretch to increase pilot space in the bubble-canopied cockpit, additional fuel capacity, increased weights and higher-thrust engines.

Flying aerial refueling missions at the start of the Korean War, the fighter, in EF-84E guise, crossed the Atlantic, provisioned through its port-wing, mid-span refueling probe. Pioneering the military jet era, it was the first single-seat aircraft capable of carrying a tactical nuclear weapon and the last subsonic, straight-wing fighter-bomber to enter service with the U.S. Air Force. F-84 Thunderjet production totaled 4,455 units.

Development of its successor began in 1949. Because of an Air Force funding shortage, Republic reduced development costs by retaining commonality, to the tune of 60 percent, with the F-84, but introduced swept wings. The aircraft, powered by a 4,200 thrust-pound Allison XJ35-A-25 engine and initially designated YF-96A, first flew on June 3 of the following year, three months before it was renamed F-84F Thunderstreak.

Korean War sparked funding increases that enabled Republic to complete a second prototype that first flew on February 14, 1951, with a YJ65-W-1 engine, and it was followed by the first production example, which took to the skies on November 22, 1952. The type was deployed by NATO countries during the Cold War. F-84F Thunderstreak production totaled 2,713 airplanes.

Areconnaissance version, designated RF-84F Thunderflash, sported a 47-foot, 7½-inch length and 33-foot, 7¼-inch swept wings of considerable anhedral. A nose-mounted camera replaced the air intake, two of which were now wing root-located, and the 27,000-pound design, powered by the 7,800 thrust-pound J65-W-7 engine, had a feisty climb rate of 8,000 fpm and maximum speed of 620 mph. Seven hundred fifteen were built.

The F-84F Thunderstreak was succeeded by the F-105
American Aviation Historical Society Journal, Summer 2017



The beginning and the end - celebrating the end of the line of 7,833 F-84 model, including the Thunderjet, Thunderstreak and Thunderflash variants produced. (Gerald Balzer collection, AAHS-D102859)

Thunderchief. A highly swept, mid-wing, single-seat, supersonic tactical fighter-bomber, it exhibited a drooped leading edge, low-speed ailerons, and high-speed spoilers for lateral control. Armament included a 20-mm cannon, 4,000 pounds of external munitions carried in four wing-pylons and under the fuselage, and an 8,000-pound internal bomb bay.

The first two of 15 test aircraft, designated YF-105As, were powered by Pratt & Whitney J57-P-25s, and the inaugural, October 22, 1955, flight attained Mach 1, supersonic speeds. Retrofitted with J75-P-3s and renumbered F-105B Thunderchief, introduced forward-swept air intakes to control shock wave formation and a drag-reducing area-rule fuselage, first flew two years later, on May 24, a year before it was initially delivered to the Air Force. Seventy-five F-105Bs, along with three JF-105Bs photo reconnaissance versions, were produced.

The F-105D, initially serving with the 4th Wing Squadron and the 4520th Combat Crew Training Wing at Nellis Air Force Base, had a 64.5-foot overall length and 34.11-foot wingspan. Powered by a 24,500 pound thrust J75-P-19W turbojet, the version, with all-weather capability, could climb at 34,500 fpm and had a maximum 1,390-mph speed at 38,000 feet. Its gross weight was 52,550 pounds.

An amended contract, for a fully operational mission trainer, resulted in the F-105F, which introduced a longer fuselage for instructor and student accommodation, and a taller vertical fin. The Air Force eventually operated 143 of the type.

As the primary aircraft of the Tactical Air Command, the Thunderchief became one of the Air Force's most important weapons during North Vietnam bombing attacks.

Ken Neubeck and Leroy E. Douglas summarized Republic-based aircraft manufacturing by stating in their book, *Airplane Manufacturing in Farmingdale* (pp. 7-8). "While aviation started in Farmingdale with cloth-covered triplanes and biplanes and prop

engines, after WWII Republic helped moved the United States into the jet age with the F-84 and F-84F, which assisted U.S. forces in Korea and NATO nations in the 1950s."

Fairchild Republic

Although Fairchild departed the very airport it had created in 1931, that absence was short-lived. Reappearing three years later, it took up residence in its former engine factory as the newly formed Ranger Aircraft and Engine Corp. and remained there until 1948. But, for a second time, history was to come full cycle.

Acquiring Hiller Helicopters nine years later, it became Fairchild Hiller, and in July of 1965, it purchased the majority of Republic stock, resulting in the Republic Aviation Division of Fairchild Hiller. Fairchild had thus returned to the soil in which it had planted its first seeds. In 1971, it continued its buying spree, purchasing Swearingen and producing and marketing the 19-passenger,

twin-turboprop Fairchild-Swearingen Metro commuter airliner. The following year, the company adopted the official title of "Fairchild Republic."

The company was in precarious financial shape at this point. Employment was barely over 1,500 people and the company lived and died by single prime USAF program. It was at this point that the company was one of several that would bid on the new A-X program for the United States Air Force. The concept was an Air Force requirement for a close air support aircraft incorporating simplicity, ease of maintenance, and short-field performance, in order to operate from small forward air bases close to the battle line.

Sporting 57.6-foot straight wings and twin vertical fins, the initially designated YA-10 was designed to operate at low airspeeds so that it could see, identify, and take aim at small targets, such as tanks, and then execute tight turns within the immediate area so that they would always remain in sight. Because this low-and-slow flight realm rendered the pilot particularly vulnerable to attack, titanium fuselage skins and a



The aircraft model produced in the Farmingdale facility was the Fairchild Republic A-10 - represented here by YA-10A 71-1369 making its first flight at Edwards AFB. (Gerald Balzer collection, AAHS-D102858)



Republic Aviation's factory buildings are toward the top of this aerial photographs of Republic Airfield taken in the early 1960s. (Courtesy of Republic Aviation Archives via LIRAHS)

thick canopy were employed, and fuel tank areas were equally provisioned with fire protection and extinguishing systems.

Powered by two aft-fuselage mounted, 9,065 thrust-pound, airliner-type, GENERAL ELECTRIC TF34-GE-100 high bypass ratio turbofans, it was able to offer low fuel consumption. Armament consisted of a 30-mm GAU-8/A Avenger seven-barreled cannon mounted on the nose with a 1,174-round, 3,500 foot-per-second muzzle velocity, as well as 11 external stores stations collectively capable of accommodating 16,000 pounds of bombs, allowing it to execute a three-phase attack profile of climb, lock-on, and launch, the latter from two-mile distances.

So maneuverable was the 50,000-pound close air support design, which had been officially named A-10 Thunderbolt II and unofficially nicknamed "Warthog," that it could climb at 6,000 fpm, yet turn at 25 degrees per second within a 1,200-foot radius while maintaining 300 knots. Fairchild unleashed its YA-10 into the sky on May 10, 1972, receiving a contract for six development, test, and evaluation airframes. This would lead to a production run of 713, with the last A-10 delivered to the Air Force in 1984.

The A-10 would be an orphan when Fairchild Republic closed in 1987 but despite various attempts to scrap the aircraft, it would become a major force in Operation DESERT STORM in 1991 in Kuwait. The aircraft continues to fly to this date, the last aircraft built by the Fairchild Republic Co.

Although Republic Airport and its aviation companies had been associated with mostly-military aircraft design and manufacture, several diverse commercial and space components also emerged from its doors.

Integral to the Boeing 747, for instance, were the leading edge slats, trailing edge flaps, spoilers, and ailerons built by the Republic Aviation division of Fairchild Hiller, while it was also contracted to provide a similar role in its proposed, but canceled, supersonic 2707 airliner.

Equally integral to the Space Shuttle were the Fairchild Republic components manufactured in Farmingdale. After awarded a \$13 million contract by Rockwell International

on March 29, 1973, Fairchild Hiller designed and developed six aluminum vertical tail stabilizers, which sported 45-degree leading edges and measured 27 feet high by 22 feet long, in Hangar 17, along with their associated rudders and speedbrakes. The first, installed on test vehicle *Enterprise*, facilitated its atmospheric launch from a piggy-backed 747 platform over Edwards Air Force Base on February 18, 1977, while the others were mounted on Space Shuttles *Columbia*, *Challenger*, *Discovery*, *Atlantis*, and *Endeavor*. In November of 1979, Boeing continued its subcontracting relationship with Fairchild Republic by selecting it to build the leading edge slats for its twin-engine 757.

Expanding the commuter airliner involvement initiated with the Swearingen Metro, Fairchild Republic signed an agreement with Saab-Scania of Sweden on January 25, 1980, to launch the SF-340, in what became the first fully collaborative venture between a U.S. and European aviation

manufacturer. Fairchild Republic was contracted to design and build the wings, engine nacelles, and vertical and horizontal tail surfaces, with final assembly occurring in Sweden.

Fairchild Swearingen was assigned North American marketing responsibility, while a jointly owned Swedish company, Saab-Fairchild HB, established an office in Paris to fulfill this function elsewhere. Powered by twin turboprop engines, the aircraft accommodated 34 passengers in a four-abreast configuration with a central aisle. After completing some 100 wing sets, however, Fairchild terminated its contract work on the regional airliner, withdrawing from all civil projects, and the aircraft was redesignated the Saab 340.

In 1982, Fairchild Republic won a contract to build two new-generation Air Force T-46A training jets; but, the milestone, initially envisioned as a monetary lifeline, only provided the reverse effect. Although the prototype was first rolled out three years later, it lacked some 1,200 parts. While the second prototype made a successful, 24-minute maiden flight in July of 1986, the contract, fraught with controversy, was canceled, resulting in the layoffs of 500 employees.

Like so many companies dependent upon military contracts for survival, Fairchild Republic, without choice, ceased to exist by the end of 1987, leaving its abandoned factory buildings and a legacy that had begun six decades earlier. Ironically, the two names that had been the most instrumental in the airport's beginning and growth — Fairchild and Republic — were the same two that had been involved in its demise. The doors of the Farmingdale airfield's primarily-military aircraft manufacturing and testing chapter thus closed, and those to its general aviation one opened.

Changing Roles

Passed the ownership torch on March 31, 1969, Republic Airport was thereafter operated by the Metropolitan Transportation Authority (MTA), which continued to transform it into a public-use entity by acquiring 94 adjacent acres from the U.S. government and purchasing an additional 115

privately owned ones to the south and southwest. “The Metropolitan Transportation Authority took title to Republic Airport as a first step in converting it into a general aviation (field),” according to the Long Island-Republic Airport Historical Society.

Initiating a modernization program, it made several improvements. High-intensity lights were installed on 5,516-foot Runway 1-19 and 6,827-foot Runway 14-32, for example, the latter of which was also equipped with an instrument landing system (ILS). The Fulton Truck Factory, the airport’s original structure dating from 1916, was razed, while Flightways transformed a 10-acre site on the north side of Route 109 into a complex of new hangars, administration buildings, fuel storage tanks, and aircraft tie-downs. A dual-level Administration, Terminal, and Maintenance building opened in 1983, not far from, and shortly before, the operational phase-in of a 100-foot, \$2.2 million FAA control tower.

In order to promote economic development of the surrounding region, New York State legislature transferred ownership, for a third time, to the New York State Department of Transportation (DOT) on April 1, 1983, which was advised by a nine-member Republic Airport Commission. It hardly curtailed the modernization momentum. In April of 1993, ground was broken for a \$3.3 million, 20,000-square-foot SUNY Farmingdale Aerospace Education Center on the east side of Route 110.

“With the company experiencing major financial problems in 1986-1987 and with the loss of support for the T-46A program in Congress, Fairchild terminated both the SF-340 and T-46A production after building only four aircraft,” according to Ken Neubeck and Leroy E. Douglas in *Airplane Manufacturing in Farmingdale* (p. 99). “Thus, by the fall of 1987, seventy years of airplane manufacturing in Farmingdale ended with employment and economic loss to the community and the New York metropolitan area.”

Airline Service

In 1966, a year after ownership of Republic Airport was transferred from Fairchild Hiller to Farmingdale Corporation, it was officially designated a general aviation (civil) facility, fielding its first landing, of a twin-engine Beechcraft operated by Ramey Air Service from Islip, on December 7. In order to transform it into a gateway by facilitating airline connections at the three major New York airports, the Metropolitan Transportation Authority contracted with Air Spur to provide this feeder service four years later, assessing \$12 one-way fares.

Although Republic was never envisioned as a major commercial airport, its central Long island location, proximity to the Route 110 corridor, and considerable infrastructure poised it for limited, scheduled and charter service to key business and leisure destinations within neighboring states. Yet its inherent operational limitation was succinctly stated in the *2000 Republic Airport Master Plan Update*.

“At Republic Airport,” it explained (Chapter 3, p. 8), “the



By the 1980s, there were close to 10,000 Fairchild Republic employees working on the A-10 and various subcontract programs with about six buildings making up the company campus. (Courtesy of Fairchild Republic Archives via LIRAHS)

New York State Department of Transportation implemented an aircraft weight limitation of 60,000 pounds in 1984. This weight limitation restricts the operation of aircraft over 60,000 pounds actual gross weight without the written consent of the airport operator.”

It also cited examples of some of these high-weight types. “In the range of aircraft using Republic Airport,” it stated (Chapter 3, p. 8), “the (then-designated) Gulfstream G-IV (design group D-II), Gulfstream G-II (design group D-II), Gulfstream G-III (design group C-II), and the Canadair CL-600 (design group C-II) are the most demanding on the airfield.”

The carrier also briefly attempted to offer two daily scheduled round-trips to Boston on its 52-passenger CV-440s in 1980. Atlantic City, the airport’s primary charter destination, attracted several other, similar operators, offering mostly single-day junkets.

Long Island Airlines, for instance — flying de Havilland of Canada DHC-6 Twin Otters — catered to high rollers; Manny Constantine, long associated with Atlantic City packages, served Merv Griffin’s Resort, and six weekly flights with British Aerospace BAe-31 Jetstreams took passengers to Harrah’s Casino Resort; Trump’s Castle Shuttle, operating 13-passenger Beechcraft B200 high-density commuter King Airs and 19-passenger Beech B1900Cs to Pomona International Airport, offered nine weekly round-trips, departing as early as 1030 and as late as 1700, depending upon the day and charging \$69.00 for the service. The price included the air transportation from the Republic Airport Terminal, round-trip transfers, \$10.00 in coin vouchers, and use of a hospitality day room in the hotel. The schedule included three departures on Fridays and two on Saturdays.

Mimicking Cosmopolitan, several airlines equally attempted to gain scheduled footholds in Farmingdale. Atlantic Express, for instance, established the otherwise general aviation airport as an operational base, indicating its importance by including an outline of Long Island in its April 18, 1983



Building 5, the original 1928 Fairchild Airplane Manufacturing factory, in one of the last remaining historic Fairchild Republic Co. building still intact, although gutted. It has been abandoned since 1987. (Courtesy Ken Neubeck)

timetable and its four aerial gateways: La Guardia, JFK, and Long Island MacArthur were indicated by a dot. Republic was marked with a heart. Operating a fleet of 19-seat Fairchild Swearingen Metro SA-227 IIIs, it offered up to four weekday nonstops to Albany, which continued to Syracuse, and five to Boston, two of which were routed to Presque Isle, thus serving the three northeastern states of New York, Massachusetts, and Maine.

Facilitating this scheduled service growth was the construction of a passenger terminal. “The terminal building, completed in 1983, has approximately 50,000 square feet of useable floor space and houses airport service vehicles, maintenance, fire protection, public terminal space, and rental areas on the first floor, plus administration offices on the second floor. Approximately 70 employees work in the building,” according to the *2000 Republic Airport Master Plan Update* (Chapter 1, p. 17).

Attempting to establish a link between Farmingdale and the major New York metropolitan airport of Newark International in order to feed its departures, PBA Provincetown Boston Airline commenced shuttle service with Cessna C-402 commuter aircraft, connecting Long Island by means of a 30-minute aerial hop with up to five daily round-trips and coordinating schedules with PEOPLExpress Airlines. It advertised avoidance of the excessive drive-times, parking costs, and longer check-in requirements otherwise associated with larger-airport usage, and offered the convenience of through-fares, ticketing, and baggage check to any PEOPLExpress final destination. Demand soon necessitated replacement of the C-402 with a larger, 19-seat Embraer EMB-110 Bandeirante.

When Continental acquired PEOPLExpress, PBA provided the same feed to its route system through Newark. Emulating Cosmopolitan’s and Atlantic Express’s scheduled service attempts, Precision Airlines, operating 19-passenger Dornier Do-228-200 regional turboprops and branded “Northwest Airlink,” inaugurated service to Boston and Albany in May of 1993, adding its own brief chapter to Republic Airport’s scheduled airline service book. Unable to attract sufficient passengers in order to render the operation economically viable, however, it quickly followed those that had preceded

it after a five-month trial, leaving its red sign above the check-in counters as the only evidence that it had ever existed.

Balancing its casino coverage, Charter Air Transport and Empire Aviation also operated flights to the Mohegan Sun Hotel in Uncasville, Connecticut, but these were discontinued in June of 2009. All of this flight activity, needless to say, resulted in annual passenger total increases—from 13,748 in 1985 and 30,564 in 1990 to 33,854 in 1995.

All of these brief, unsuccessful scheduled attempts, nullifying local residents’ ill-founded concern that Republic would ultimately develop into a major commercial airport and inflict its noise on close-proximity ears, failed to attract the needed traffic to render them self-supporting, emphasizing several airport-specific factors. This included the fact that the airport was consistently associated with general or non-schedule operations during recent years as well as competing with nearby Long Island MacArthur airport in Islip that had established itself as the island’s principle commercial facility,

The airfield’s latest scheduled venture entailed the transport not of people, but of animals. Nebraska-based Suburban Air Freight, operating a fleet of windowless, kennel-provisioned Beech 1900Cs as Pet Airways and located in the Nassau Flyers terminal, inaugurated service on July 14, 2009, eventually spreading its wings to Atlanta, Baltimore, Chicago, Denver, Ft. Lauderdale, Los Angeles, Omaha, and Phoenix. Additionally, the airport has had horse planes arriving on occasion to bring racing horses to the area to race in nearby tracks such as Belmont and Aqueduct.

“Republic Airport has had service by various commuter airlines and each has ceased service...,” according to the *2000 Republic Airport Master Plan Update*. “The commuter service market area is limited, geographically, taking into account the larger airports, such as La Guardia, Kennedy, and MacArthur and the service they offer.”

“Since 1969, Republic Airport has accommodated the region’s need for an airport devoted to private and business aircraft, as well as charter and commuter operations,” it also stated (Chapter 1, p. 1). “Because Republic is situated in the midst of residential, commercial, and industrial development, its role is inconsistent with that of a scheduled air carrier airport for commercial jet transport.” With the number of annual passengers having consistently increased—from 13,748 in 1985 and 30,564 in 1990 to 33,854 in 1995 — its future commuter role could not be entirely ruled out. “While past efforts by commuter airlines have not been successful, the potential for future service exists and is to be considered in the planning for the airport,” it concluded (Chapter 2, p. 10). The airport is the third busiest in New York State.

The Future

Unlike Roosevelt and Glenn Curtiss fields, which succumbed to modern-era pressures and swapped their runways for shopping malls, 526-acre Republic only surrendered a small portion of itself to the Airport Plaza Shopping Center.



Republic Airport as of 2017: (1) Location of the Fairchild Republic manufacturing facilities - now a shopping mall; (2) Republic's final assembly building - now housing the American Airpower Museum; (3) Hangar 4 - housing Invictus Jets; Building 5 - currently abandoned. (Google Earth)

Instrumental in early-aviation development and in the Korean, Vietnam, Gulf, and Iraq wars, it transformed itself into a general aviation facility, peaking with 546-based aircraft and becoming the third-largest New York airport in terms of movements after JFK International and La Guardia. There is a historical marker that is located near the shopping center that commemorates the building of the P-47 Thunderbolt at that location.

Billing itself as “the corporate airbridge for Long Island’s 21st-century economy,” this westernmost Long Island general aviation facility accounts for 1,370 jobs and \$139.6 million of economic activity, supporting 60 on-airport businesses. The 110,974 movements recorded in 2008 encompassed 52 by non-rigid airships, 7,120 by rotary wing, 76,236 by single-engine pistons, 6,310 by twin-engine pistons, 5,028 by turboprops, and 16,228 by pure-jets. The latter, its second-highest total, emphasizes its increasing role as the “Teterboro of Long Island,” perhaps pointing the way to its future. Indeed, companies considering the area for their corporate locations cite the airport as a major asset, since it provides close-proximity aerial access for personnel and materials.

Toward that end, the State of New York approved funding in April of 2009 for a Vision Planning process to collect data from residents, employees, businesses, and users, and then plot its future course. Specifically, the program had a three-fold purpose—namely, to define the airport’s role, to determine how it will fill that role, and, finally, to ascertain how it will

work with the community to attain the desired operational and economic goals.

“As part of the National Plan of Integrated Airport Systems (NPIAS), Republic Airport is designated as a reliever airport with commercial service,” according to the *2000 Republic Airport Master Plan Update* (Chapter 1, p. 1). “Under ownership by the New York State Department of Transportation, there are specific state development and policy procedures which are followed.”

Although it may never eclipse its current general aviation role, its importance was not to be underestimated. ““Republic Airport is an important regional asset,” it stated (Chapter 1, p. 1). “It provides significant transportation and economic benefits to both Suffolk and Nassau counties. The policy of the New York State Department of Transportation and the Republic Airport Commission shall be that Republic Airport continue to better serve Long Island.”

There is 100 years of aviation history recorded at this location and it is acknowledged by the plaque hung in the passenger terminal by the Long Island-Republic Airport Historical Society, “honor(ing) the tens of thousands of men and women who labored here in East Farmingdale, contributing significantly to aviation technology and aircraft production.” Those men and woman turned the wheels of the 11 aviation companies based there, as follows:

1. Fairchild Aviation Corp., 1927-1931.
2. American Airplane and Engine Corp., 1931-1932.
3. Kirkham Engineering and Manufacturing Corp., 1932-1934.
4. Grumman Aircraft Engineering Corp., 1932-1937.
5. Seversky Aircraft Corp., 1934-1939.
6. Ranger Aviation Corp., 1935-1948.
7. Republic Aviation Corp., 1939-1965.
8. Fairchild Engine Division, 1948-1965.
9. Fairchild Hiller Corp., 1972-1987.
10. Fairchild Republic Corp., 1972-1987.
11. EDO Corp., 1972-1989.

Much of what has been presented in this article is in the book, *AIRPLANE MANUFACTURING IN FARMINGDALE* (Neubeck, Douglas, Arcadia Books, 2016) that include many photographs of the different aircraft that were made in this area, along with the landscape at different times during the almost-100 year history of the airport. ➔

Acknowledgements

Special thanks goes to Ken Neubeck and the Long Island Republic Airport Historical Society that reviewed and supplied many of the photos illustrating this article.

About the Author

Robert G. Waldvogel is a writer in the aviation field, specializing in the history of New York airports such as the Old Rhinebeck Aerodrome.