

Forgotten Air Pioneers:

The Army's Rockwell Field at North Island

Wallace R. Peck

San Diego is a Navy town. Everyone knows that. Just look around. With one of the best harbors in the nation, coupled with unparalleled weather, it is home port for one-third of the U. S. Pacific Fleet, with mammoth nuclear-powered aircraft carriers, guided missile-equipped cruisers and destroyers, sleek attack submarines, loaded transports, and a vast array of other warships and various vessels, entering and leaving the bay regularly. All utilize facilities at the Naval Base, San Diego (the 32nd Street Naval Station) and at the Naval Base, Point Loma, while being supported by the Naval Weapons Station, the Naval Amphibious Base, Coronado, the Space and Naval Warfare Systems Center, the Fleet Anti-Submarine Base, the Broadway Complex, and numerous other installations, plus the Marine Corps at Miramar and at Camp Pendleton. In the heart of these activities is the Naval Air Station, North Island, visible as the mooring site of the great carriers and the base for over 220 naval aircraft, with a population often reaching 36,000. Certainly prominent, perhaps even dominant, is the Navy—today and for a long time past.

But these truths obscure the fact that North Island itself was once the center of *Army* aviation, and for a quarter of a century was the hub of the development of all United States military air power, not just the Navy's, but the Army's, too. Decades before North Island was honored as the "Birthplace of Naval Aviation," it was known as the "Cradle of Army Aviation."¹ Both the Army and the Navy were midwives at the birth and nurturing of infant aviation, and North Island was their common incubator. A review of some of that forgotten history might refresh lost memories and restore recognition to some of those pioneer Army aviators who were once a vital part of San Diego and of the nation.²

Early North Island

In ancient geologic times, North Island was truly a separate island, as were Point Loma and Coronado. Shifting sands, debris, mud, and other detritus from coastal rivers and ocean currents over thousands of years slowly filled in the spaces, connecting Point Loma to the northern mainland and the other two islands to one another and to the southern mainland by an elongated sandy beach, producing a peninsula that ran south to what is now Imperial Beach, resulting in the creation of San Diego Bay.³ North Island became covered with local vegetation, brush, and scrub, some large enough to be called trees. Native American tribes often camped on the island, which abounded with sea lions, otters, rabbits, and other small game, while a variety of fish were plentiful nearby.⁴

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Coronado, with North Island and Point Loma in the background, ca. 1886-87. ©SDHS #1290B.

Early maps and drawings show North Island to have been far smaller than it is today, with water on three sides and an uneven shoreline shaped something like a ragged pennant jutting into the bay. It was separated from the south “island” (now Coronado) by a shallow slough, later called the Spanish Bight, with a sand bar about two hundred yards in length that created a flimsy barrier between the bay and the ocean. Serving as a land bridge to the south, this connection was often underwater at high tide, making North Island a real island for at least part of the time. On the west side, near the entrance to the bay and across from Ballast Point, was another shallow slough that came to be known to some as Whaler’s Bight.

In 1602 the island was briefly explored by men from the ships of the Spanish explorer, Sebastián Vizcaíno, who rowed across the narrow strait from Ballast Point to find fresh water flowing from a spring on what was described as “a large sand bar in the middle of the bay...surrounded by sea so that it appears to be a sand island.”⁵ The ships left after a few days, with permanent settlement of San Diego not beginning until 1769. No significant use was found for the island until many years later in 1846 when it was made part of a 4,185-acre land grant from the last Mexican governor, Pío Pico, to a prominent and well-connected citizen, Don Pedro C. Carrillo. The grant of the *Yslas o Penínsulas de San Diego* encompassed not only the island, but, also, today’s Coronado and the Silver Strand.⁶ Even though given without any cost to Don Pedro, the new owner could not make productive use of the property, and within a few years sold out. Title changed hands several times over the ensuing decades, with plans of American entrepreneurs to subdivide never being fulfilled. By 1903, the entirety of North Island ended up in control of wealthy John D. Spreckels, the sugar scion, who included the Hotel del Coronado among his many business interests in and around San Diego. Spreckels maintained a bridle path around its perimeter for horseback riding by hotel guests, and often there were hunting parties for the chasing and shooting of quail and rabbits.⁷ At the northeast corner, he built a ship repair facility in 1887, called Marine Ways,

where sailing vessels, fishing boats, yachts, and other ships could be pulled ashore on underwater rails for maintenance and repair.⁸ By 1909, the only permanent change was the planting of 40,000 eucalyptus trees along the eastern side of the island on the bluffs overlooking the Spanish Bight to shield that bleak eyesore from the sight of vacationing hotel guests.⁹

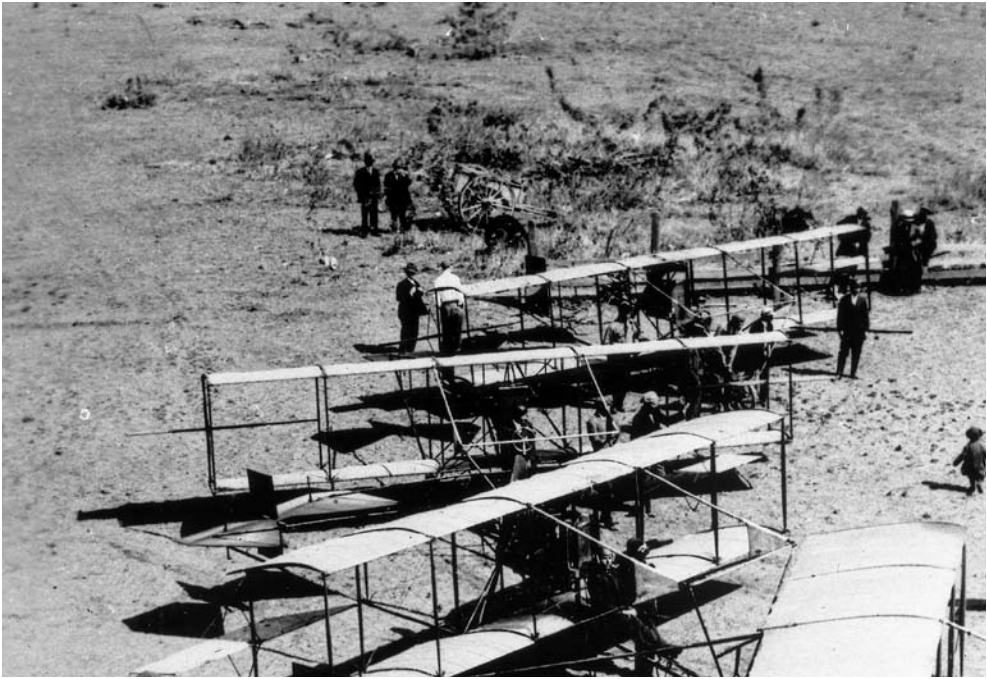
Meanwhile, the United States government had its eyes upon at least part of North Island. In 1893, it condemned slightly more than eighteen acres at the southwestern corner for about \$10,000 to build a 7,500-foot jetty to protect the entrance to the bay. Construction was started the following year, taking eleven years to complete. Then, in 1901, another 38.56 acres were condemned near the same location for about \$20,000 to install a gun emplacement to guard the entrance to the bay and to augment the batteries being situated on the other side at Fort Rosecrans. By 1904, two 3-inch, 15-pound guns were in place, and the fortification christened Fort Pio Pico in honor of the last Mexican governor who had granted the land nearly sixty years before.¹⁰ Most of the rest of the island remained in its natural state.

Arrival of Aviation

Across the continent, bicycle makers Orville and Wilbur Wright made their first controlled flights in a powered “flying machine,” as they called it, on December 17, 1903, at Kitty Hawk, North Carolina—a startling accomplishment adapting a catapult and a 12-horsepower, four cylinder engine, to get off the ground and, on their fourth and last flight of the day, to stay aloft fifty-nine seconds and cover a distance of 852 feet.¹¹ For the most part of the next three years, the public knew little about the development of human flight. The Wrights spent the time secretly perfecting their invention, while unsuccessfully seeking to interest the skeptical U. S. government, European nations, and the Japanese in the new contraption. Others, here and abroad, were actively experimenting with various designs, trying to keep them in the sky.¹²

One entrepreneur was Glenn H. Curtiss of Hammondsport, New York, another bicycle maker who became interested in manufacturing and racing motorcycles. He became “the fastest man alive” by setting a record in 1904 of 136.29 miles per hour. He then turned to flying gas-inflated airships powered by motorcycle engines, which he designed and manufactured, and finally in developing true aircraft.¹³ Working initially with Alexander Graham Bell, inventor of the telephone, and a group that organized itself as the Aerial Experiment Association, Curtiss established the first airplane manufacturing company in the United States. He flew his first “aerodrome” in March 1908, assisted greatly by Dr. Bell who conceptualized the idea of ailerons in lieu of the Wrights’ wing-warping for in-flight banking and turning.¹⁴ By July of that year, Curtiss had perfected his third model, the June Bug, versatile enough to win the trophy being offered for a flight of one kilometer (3,281 feet), which he did at a speed of thirty-nine miles per hour.¹⁵ By 1909, he was participating in flying meets and aerial demonstrations throughout the country and in Europe with improved variations of his machines.¹⁶

The first “international” (there was at least one foreign pilot) air tournament in the United States was held in January 1910 at the old Domínguez Rancho, a few miles south of today’s Compton, California. Curtiss and his team of two other pilots



Curtiss School of Aviation on North Island, 1911. ©SDHS #87:16425.

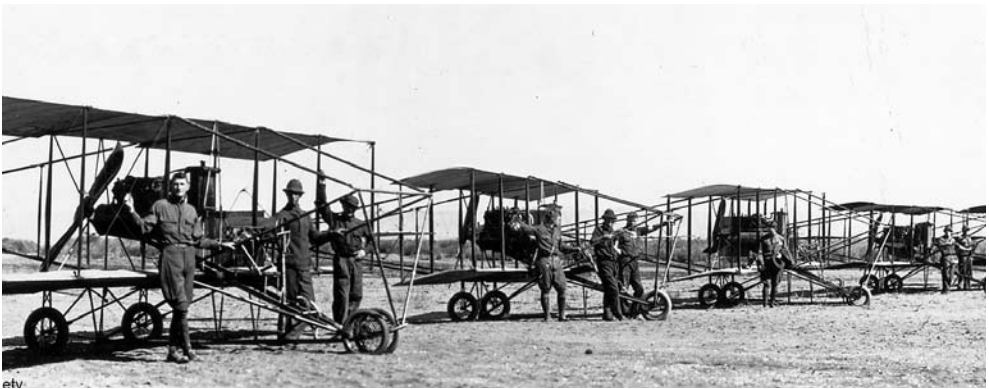
participated, flying before crowds in the grandstands exceeding 25,000 people, with thousands more in surrounding areas, watching new speed records (nearly 55 miles per hour) and altitude records (4,140 feet) being established by competition among the fliers.¹⁷ This led to San Diego's first exposure to manned flight in a controllable powered machine.¹⁸ Responding to an offer of \$5,000 by San Diego merchants promoting a fund-raiser for the planned Panama-California Exposition, one of Curtiss's pilots, Charles Hamilton, brought his plane to San Diego on a railroad flat car, and made the first local flight on January 23, 1910, taking off from and returning to the Polo Field in western Coronado near the Spanish Bight. Two days later, while unsuccessfully trying for an altitude record, he made an untimely forced landing on the sand dunes of North Island—a dramatic, but unscheduled, introduction of the airplane to the future home of Army and Navy aviation.¹⁹

Glenn Curtiss visited isolated North Island at the start of the following year. He found it ideal for the operation of a winter flying school (Hammondsport, in western New York on the banks of frozen Lake Keuka, hardly being suitable during that part of the year). It was also a superb site for trying to convince the military to buy his planes. The Spanish Bight was made to order as a place to perfect a hydroaeroplane that could take off and land on water, a venture he thought might entice the Navy. With the urging of the newly formed San Diego Chapter of the Aero Club of America, Spreckels' Coronado Beach Company agreed to a three-year lease to Curtiss, without the payment of any rent, to use the vacant island as an aviation school starting in January of 1911—the genesis of manned flight on North Island.²⁰

The Curtiss School of Aviation took over an abandoned hay barn and converted it into a hangar. The San Diego Aero Club built two more shelters, which were

covered with only canvas and tarpaper, and helped clear brush for landings and takeoffs. Curtiss solicited the military to send students for training, free of charge. The first class consisted of six neophytes—three Army officers and one Navy officer, plus two (later, three) civilians. The school's aircraft consisted of four Curtiss-built planes, three with 60-horsepower, 8-cylinder engines (the type used by Curtiss to win the newly-created Gordon Bennett Trophy at Rheims, France, in 1909), and a smaller one that was adapted mainly for ground work by student pilots, which they called "grass cutting."²¹

Four years earlier, on August 1, 1907, the U. S. Army had taken its first tiny step into the new world of aeronautics when it established an Aeronautical Division as part of the Signal Corps to take charge of ballooning and "to study the flying machine and the possibility of adapting it to military purposes." "Division" was hardly an apt description, as it consisted only of a captain and two subordinates. The first plane was purchased from the Wrights in 1909, and a few officers learned to fly by individual instruction. It took another two years until any candidates were picked for training at a formal flying school—the Curtiss School of Aviation on North Island. The three Army officers, selected from thirty volunteers, who joined the first class in 1911, were: 35-year-old First Lieutenant Paul W. Beck, Second Lieutenant George E. M. Kelly (who later that year became the first Army



Aircraft and crews of the Army's First Aviation School on North Island, 1914. ©SDHS #80:1714.

fatality), and Second Lieutenant John C. Walker, Jr., all three having been assigned the previous year as Army observers of the air meets at Los Angeles and San Francisco. The only Navy officer in the first class was Lieutenant Theodore G. Ellyson.²²

The Curtiss School of Aviation at North Island continued with classes in the winters of 1912 and 1913, attracting students through heavy advertising, each being charged \$500 for the course (\$600 for hydroaeroplane instruction), which could be applied toward purchase of a plane. The classes included students from Japan, Greece, and India, one single woman, and two married couples. By this time, Curtiss had designed aircraft with dual controls, making instruction a bit easier than running alongside of planes on the ground while shouting commands, although there were still problems with foreign students who had difficulties with the English language.²³

The Army Arrives

Curtiss invited the Navy, and later the Army, to share North Island with him. The Navy responded first. Having purchased three planes (two from Curtiss, one from the Wrights), it was seeking a winter location for its new Naval Aviation Detachment (four officers and six seamen). It selected North Island over Guantánamo Bay, Cuba. In January 1912, a Navy detachment set up camp, informally called “Camp Trouble,” on the northeast corner of the island, with tents serving as hangars (one for the Curtiss planes and one for the Wrights’) and other tents for personnel. The Navy operated alongside the Curtiss school for the next few months, but on May 3, 1912, the entire group was ordered to Annapolis, Maryland, the camp was disbanded, and the Navy left the island, not to return for five years.²⁴

That same year, 1912, the Army started looking for a place to establish a permanent flying school. Sporadic pilot training had taken place at College Park, Maryland, where a military school had been started the previous year, but it could not be fully utilized during winter months, requiring the temporary transfer of all activities to Augusta, Georgia, where rain and cold were also problems.²⁵ The belief at the time was that excessive wind was a major limiting factor to flying the unstable machines of the day, so the Army undertook a nationwide survey of possible sites—weather, temperature, and wind velocity were measured—concluding that the best location, as far as wind was concerned, was near Phoenix, Arizona, but it was much, much too hot, and the next was Los Angeles, but, surprisingly, it was said to have no available space. The third choice was North Island, a proven location, ready, waiting, and almost empty, with an average wind velocity of 5.6 miles per hour, only slightly greater than Phoenix at 4.1 and Los Angeles at 4.42.²⁶

The decision was made to use North Island, accepting Curtiss’s offer, and on November 4, 1912, the first Army detachment of eight enlisted men arrived, followed a couple of weeks later by the commanding officer and soon thereafter by ten more officers and ten more enlisted personnel. Aircraft from College Park arrived in December—a total of two planes, a 60-horsepower Curtiss and a 40-horsepower instruction plane. This was the beginning of the Army’s twenty-six year presence.²⁷

A camp was established at the north end of the island, near the Marine Ways dock of the Spreckels Company. Hangars were constructed out of canvas, and tents set up as shelters for other materials and personnel. Some planes and equipment were housed in Curtiss’s hangars at a cost to the government of \$25 per month, with additional personnel and planes arriving from Texas City, Texas. New aircraft were received from time to time from the Wright Brothers in Dayton, Ohio, and from Curtiss in Hammondsport, New York. By November 1913, a year after the first arrivals, the primitive station was named the Signal Corps Aviation School, San Diego. During that first year, at least twelve officers were qualified as Military Aviators.²⁸

Flying in those early days was perilous. Perched out front in the open on a canvas wing, the pilot sat close to a rudimentary engine, exposed to the wind and elements—and without a parachute. Sudden death or severe injury was not unexpected in case of a mechanical malfunction or an error in judgment. Twelve

out of the first 48 Army pilots—25 percent —were killed in flying accidents. They were truly guinea pigs, experimenting in the unknown, learning by trial and error.²⁹ The first accident at North Island occurred in February 1913, followed by the first death in April (Lieutenant Rex Chandler, the first person to be killed in a “flying boat” on his one and only flight), another death in May (Lieutenant Joseph D. Parks, holder of the altitude record of 8,700 feet, which he set only two weeks before), and two more, in the same plane, in November (First Lieutenant Eric L. Ellington, the instructor, and Second Lieutenant Hugh M. Kelly, the student).³⁰

Much public controversy ensued from the string of accidents and deaths. The principal cause was attributed to the use of “pusher” aircraft, those with the engine and propeller in the rear, which was the original design of the Wrights and of the early planes of Curtiss. Crashes, even at the low speeds of the day, would often dislodge the engine, catapulting it forward, crushing the pilot who was precariously seated in front of the engine. The front page of the *San Diego Union* was devoted to the details of the Ellington/Kelly crash, under the headline “Intrepid Navigators of Air Crushed, Mangled to Death in Fall of Government Biplane,” with charges that the aviators were “slaughtered” by a parsimonious government using antiquated machines.³¹ Another officer, Lieutenant Henry B. Post, also made front-page headlines³² when he was killed a few months later in February 1914, his Wright-manufactured plane smashing into the bay after attempting a new altitude record.³³ This crash led to the grounding of all pusher-type planes in favor of the “tractor” type, which had the engine and propeller forward of the crew. The grounding left the Army’s air school at North Island with just five planes, and only two of those were flyable, the other three being under repair and barely serviceable.³⁴

The years 1913-15 were times of both daring and experimentation at North Island, small steps in the development of the military air service, although with minimal financial backing from the government. In December 1913, Lieutenant Joseph E. Carberry and Lieutenant Walter R. Taliaferro, flying together, set a new American altitude record for a plane carrying two persons of about 7,000 feet, which Lieutenant Carberry and another bettered the following month by reaching 11,690 feet. Endurance records also went into the books, with Lieutenant Taliaferro staying aloft for 9 hours and 45 minutes in September 1915, before landing with a dead motor starved for gas. Previously, he had set a distance record, flying 220 miles in about 3 1/2 hours. Unfortunately, he met the fate of many others, after doing his first and last “loop the loop” in a Curtiss tractor, the plane suddenly dived into the bay, killing him instantly, only a month after setting the endurance record.³⁵ The accident filled the front page of the *San Diego Union* with several articles, his recently taken wedding picture, and photographs of rescuers searching the bay for his body.³⁶

The Army’s exclusive occupancy of North Island was interrupted by a Marine invasion in July 1914, when the Fourth Regiment of the Marine Corps set up camp under the command of Colonel Joseph H. Pendleton (for whom Camp Pendleton was later named). Some 1,400 officers and men moved in, pitched hundreds of tents, set up field kitchens, dug latrines, cleared land, laid out roads, piped in water, provided electricity and telephone service, established a rifle range, and repaired the dock, creating an orderly, Marine-efficient facility in an area near the Spanish Bight, but away from the flight operations of the Army. It was called Camp



North Island, Army Signal Corps School, 1916. ©SDHS #15620.

Howard. This occupation lasted only for about five months until December of that year, when the regiment was reassigned to various other duties, although a few Marine caretakers were left on the island until 1916 for patrolling purposes and to operate the rifle range.³⁷

Organizing for War

The occupation of North Island by the Army was always somewhat tenuous, having established an operational base at the invitation of Curtiss, who had a rent-free lease for only three years to operate a private flying school. There was some uncertainty about the legal status of the military presence from the beginning. The three-year lease period ended in early 1914, by which time the Army's military school was in full operation with planes, hangars for twelve aircraft, personnel, and support facilities—and Curtiss had left. Of course, Spreckels and his Coronado Beach Company knew this, giving permission for the continued construction of temporary buildings by the Army, while expressly conditioning their consent on its not being interpreted or construed as conferring any permanent right to the Army. As a consequence, although a number of buildings, including hangars and machine shops, were erected in a semicircle at the north end of the island near the shoreline of the bay, they were all buildings that could be dismantled or even abandoned, when and if necessary.³⁸

Starting in 1913, attempts were made by the Army to buy North Island, without result. The situation was aggravated in December 1915, when the Coronado Beach Company sent a notice to vacate the property "as soon after March 31, 1916, as possible," since the company, which had been paying taxes on the property all along, declared that it wanted to subdivide and sell lots as "high class residential property," as it had tried to do with the South Island. But the Army stayed put, continuing to build, albeit only impermanent structures, so that by June 1916, there

were twenty-two buildings making up the Army facility.³⁹ America's entry into the First World War in April 1917 brought matters to a head. After a joint Navy/Army board concluded that North Island "is the best location in this country for the establishment of a joint Army and Navy aviation station for the primary training of pilots," and with the urging and politicking of San Diego's Congressman William Kettner, Congress authorized the president to issue an executive order seizing the property, with compensation to the owners to be determined later.⁴⁰ President Woodrow Wilson signed the order on August 1, 1917, and the Army immediately assumed control in the name of the United States of America, although Spreckels was allowed to continue to operate his Marine Ways dock for a time.⁴¹

As is often the case, the government and the Coronado Beach Company had vastly different views on what should be paid for the land. A condemnation trial followed, with the jury fixing the value of the entirety of North Island at five million dollars. Appeals were taken, with the United States asserting that the original 1846 grant by Governor Pío Pico to Don Pedro Carrillo was made under Mexican law, which reserved to the national government the right to use the property for defense purposes, and, therefore, the United States, as the new sovereign and successor to the government of Mexico, did not have to pay anything at all! When the case finally reached the Supreme Court of the United States in 1921, Justice Oliver Wendell Holmes gave that argument short shrift, declaring it "wholly incredible" that the Mexican law would allow taking of private property without compensation, and the verdict was upheld.⁴² Over seven years after taking the property, the federal government finally ended up paying the owners \$6,098,333, which was the amount of the award plus accumulated interest of over one million dollars.⁴³

The years immediately prior to America's involvement in World War I found the nascent air arm of the Army trying to organize itself into something more than a few rudimentary planes and a struggling flight school. In 1914 the name Aeronautical Division of the Signal Corps was changed to the Aviation Section of the Signal Corps, which, arguably, was an improvement. Congress authorized a nationwide complement of 60 officers and 260 enlisted men, requiring the officers to be unmarried lieutenants of the line.⁴⁴ Trying to establish some kind of military structure, the first formal regulation for aviation schools (there was only one such school in the United States) was issued in January 1915—General Order No. 1, which covered pressing matters, such as:

Dogs without collars and muzzles will be shot.

Horses will be tied on the picket line provided for private mounts, and not to trees, fences, water pipes or buildings.

Officers will be required to devote a minimum of six hours per week to professional study or reading.

Detailed typewritten instructions were also handed to new student pilots, with dire warnings such as:

If you hate work, don't take up aviation.

If you are the sort of person who likes to keep his hands clean, don't take up aviation.

If you are a bluffer, don't take up aviation, you can not expect to bluff the atmosphere.

If you expect to be married soon, or are in love, don't take up aviation.⁴⁵



Wartime scouts and trainers of Army Air Service at Rockwell Field, 1918. ©SDHS #15665.

Another unexpected difficulty appeared. As a totally new branch of the military, operating in an unexplored environment, utilizing recently invented machines that required coordinated skills, daring, and specialized training, the pilots being produced were all young, seemingly very young—mostly in their twenties. Who were to command these neophytes? An attempt was made to remedy the problem by admitting to the school older and established infantry and artillery officers. In 1916, two colonels and one lieutenant colonel were sent to the flying school at North Island.⁴⁶ There is no report on the success of this program, but one of the colonels was aboard a plane that became lost and ended with a forced crash landing in the delta of the Gulf of California below the border. The two officers were not found for eight days, with the colonel barely alive. The pilot, the young lieutenant who got lost, was able to walk about thirty miles for help leaving the colonel behind, so maybe age was important in some respects.⁴⁷

When the war broke out in Europe in August 1914, the entire tactical air strength—that is, ready combat units—of the U.S. Army consisted of six airplanes, 12 officers, and 54 enlisted men. A dramatic expansion of the Army's air capabilities followed. By the end of hostilities in November 1918, the Air Service had 185 squadrons, with 8,000 aircraft, 20,568 officers, and 274,456 enlisted men.⁴⁸ North Island was heavily involved in this phenomenal growth, both before and during the war. The first organized fighting unit of planes and men, the First Aero Squadron, was formed there in 1915 under the command of one of the Army's original pilots, Capt. Benjamin D. Foulois (called by some the "father of U. S. military aviation").⁴⁹ Although it was short on aircraft, in July the squadron was sent by railroad train to Ft. Sill, Oklahoma—15 officers, 11 enlisted men, one civilian—and eight planes. The next year Capt. Foulois and the squadron saw the nation's first aerial combat duty, somewhat futilely attempting to assist General

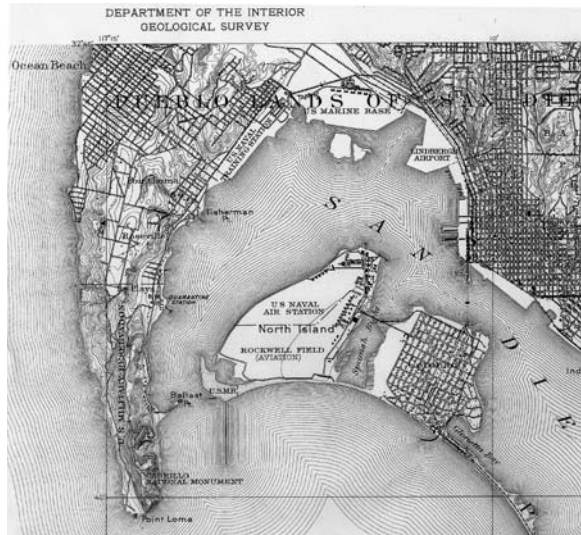
John J. Pershing and his expedition chasing Francisco “Pancho” Villa in Northern Mexico by flying search and reconnaissance missions.⁵⁰ In September 1917 the squadron arrived in France—but without any aircraft, having to rely upon the British, French, and Italians for modern planes.⁵¹

The Army assembled another group at North Island, the Second Aero Squadron, which in December 1916 was sent to the Philippine Islands. The next year, it created the Sixth Aero Squadron and dispatched it to Hawaii, and then organized and assigned the Seventh Aero Squadron to Panama.⁵² It was clear that the Air Service was expanding during the 1914-16 period, but its growth was gradual. In June 1915, the Army’s flying school at North Island consisted of 30 officers, 185 enlisted men, 12 civilians, and 30 planes. Two years later, even though the war had been raging in Europe since August 1914, with daily aerial combat almost from the beginning, the school was slightly larger, but not by much. By the time the United States did enter the war in April 1917, there were only about 37 Army officers, 387 enlisted men, and 50 civilians on North Island. Nevertheless, things had started to happen, and it was no longer the sole flying school, as two others had been set up in other parts of the country. By the end of the war in late 1918 there were twenty-eight such schools.⁵³

Shortly after the start of American involvement in the hostilities in Europe, the Army’s Aviation School on North Island received a more formal name, being changed on July 20, 1917 to Rockwell Field, in honor of Second Lieutenant Lewis C. Rockwell, a young pilot killed along with his passenger, Corporal Frank S. Scott, in 1912 in a crash at College Park, Maryland.⁵⁴ The following year, in May 1918, the formal status of the air operations of the Army was also upgraded, when the Aviation Section was separated from the Signal Corps, its home since first established in 1908, and designated as the Army Air Service. It held that designation for the remainder of the war and until 1926 when it was again restructured and elevated to become the Army Air Corps.⁵⁵

The Navy Returns

Life on North Island, especially from the Army’s viewpoint, changed drastically in 1917—not just because of the onset of the war, but because the Navy returned. When Congress approved acquisition of the island, it was for the express purpose of accommodating aviation training schools of both the Army and Navy, and as soon as the property was acquired in August, the Navy immediately started appearing on the scene. The Army, not particularly enamored about this radical change, having opposed



1930 U. S. Geological Survey Map showing the boundary between Rockwell Field and the Naval Air Station as fixed in 1918. University of San Diego archives.

usurpation by the Navy for years, had no choice. After considerable negotiations, a dividing line between the two bases was established, with the Army agreeing to abandon to the Navy the northern part near the bay and to shift its operations to the southern side of the island. Despite the agreement, the Army refused to budge until new buildings were constructed for its planes and personnel, and the Navy could not move in until the Army moved out. An interservice squabble developed, with the Navy's commanding officer and its personnel being quartered for several months across the bay in Balboa Park, far from the island. By March 1918, things were finally settled, the boundary was redrawn, and as contractors finished new buildings for the Army, it turned over its existing structures to the Navy. By June, the Army had fully evacuated the north end, the Navy was finally able to fully move in—over ten months after the property was acquired—and the Naval Air Station launched.⁵⁶ About the same time, construction of a causeway over the Spanish Bight for automobiles and railway trains provided a permanent connection of North Island to Coronado, tying in at Fourth Street, and relieving the island's historic dependency on tugs, barges, ferries, and other watercraft.⁵⁷

On the Rockwell Field portion, the war brought on rapid expansion, with new ground facilities being constructed—officers' quarters, a hospital, a research laboratory, three hangars—with about five hundred Army aircraft utilizing the field. In August 1918 Rockwell Field's mission was changed from its traditional primary pilot training to a pursuit and gunnery school.⁵⁸ Space was cramped, especially with the Navy then occupying over half, and additional sites were needed for aerial and ground gunnery practice as well as for flight training. Two vacant areas to the south were acquired by the Army Air Service for use as auxiliary airfields. One was Ream Field near Imperial Beach, named in honor of Major William R. Ream, the first flight surgeon at Rockwell Field who was killed in an air crash while participating in a Liberty bond promotion, and the other on Otay Mesa which was simply called East Field (today's Brown Field).⁵⁹

The gargantuan expansion of the armed forces of the United States ended abruptly with the conclusion of World War I on November 11, 1918. "Demobilization" was the watchword of the day, and it took place with lightning speed. The order came from Washington to stop all construction of permanent buildings at Rockwell Field, and to return all unspent funds to the U. S. Treasury. The school itself was shut down and all training operations ceased in January 1919. Without hesitation, 1,200 enlisted men were promptly discharged, leaving about 400 men to deal with the base's three hundred planes, which were then dismantled and crated. By late 1919, the field was almost back to its prewar condition, with only 84 officers and 381 enlisted men, and by the middle of 1920 it was down to 34 officers and 153 enlisted men, having started a policy of out-sourcing—replacing enlisted personnel with civilians.⁶⁰

The Army at Rockwell Field had certainly done its part in the war effort, first training over 800 pilots, then during the last few months of the conflict serving as a pursuit and gunnery training facility for several hundred accomplished airmen.⁶¹ It nurtured some of the heroes of the first great conflict and many of the leaders of the second. In celebration of the Armistice, 212 planes were assembled for an aerial show over San Diego on November 27, 1918, with the Army sending aloft 141 planes and the Navy 71. It was a spectacle to behold and long remembered, all of the planes flying together in various formations, filling the skies like flocks of

migrating birds, while interspersing aerial stunts. How far aviation had advanced was indicated by the headline the following day in the *San Diego Union* with its back-handed complement: "212 Planes Go Through Daring Feats in Mass Flight Without Mishap."⁶² Flying had come a long way in fewer than fifteen years.

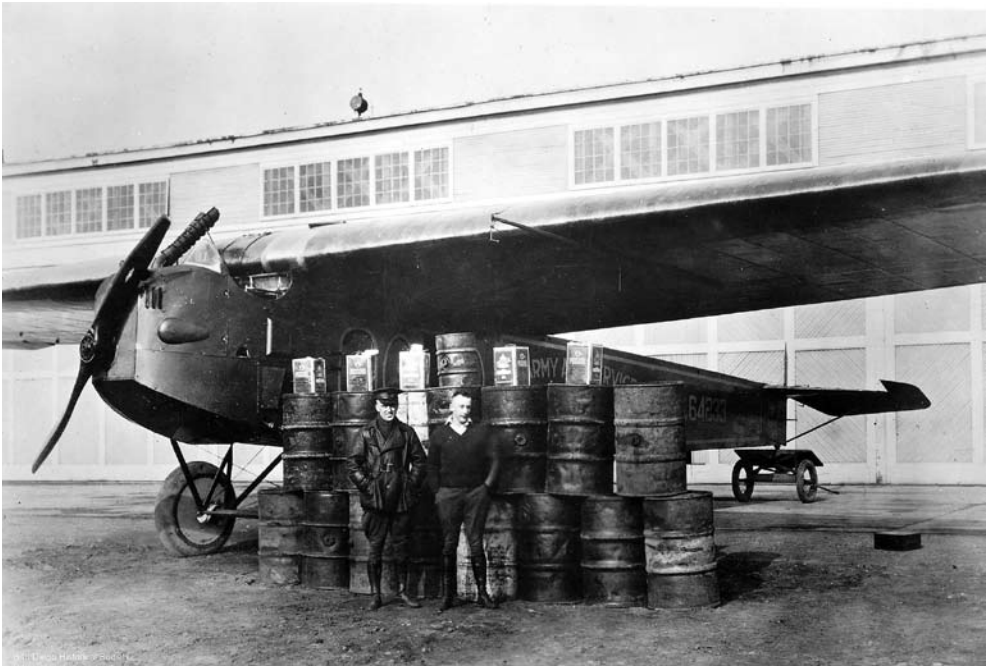
Postwar Adjustments and Times

Postwar military life was different. With the shortage of funds supplied to the military, both branches of the service had to fight for the money needed for improved aircraft, modern facilities, and trained personnel, with only limited success. The Army and Navy continued to have spats over the joint occupancy of North Island, perhaps important at the time, but seemingly minor from today's vantage point. Each unsuccessfully wished the other would leave, yet each accommodated the other. When the Navy started using the island in 1920-21 for lighter-than-air operations, the Army objected, but was ignored. Yet in 1924, when the Navy needed mooring facilities for the arrival of the giant airship *Shenandoah*, space was provided by the Army at Rockwell Field.⁶³ Interservice rivalry was always present, but never dominant. They got along—mostly.

With the war over, new purposes for the continued existence of the Army air arm had to be found, and skills had to be maintained by existing pilots and developed in new pilots. In 1919-20, Army planes from Rockwell and nearby March Field in Riverside County were used for daily forest patrols, flying over the Cleveland National Forest, looking for fires that periodically ravaged the area. By this time, the aircraft were equipped with radios, but they were unreliable in mountainous areas. Adopting a practice perfected by the Navy, the patrol planes carried homing pigeons, which were released with a message when a fire was sighted. This could hardly be classified as high-tech communications, but it was seemingly effective. Altogether, over 34,000 miles were flown and twenty-four fires reported, so a beneficial peacetime use was found, at least for a while.⁶⁴

Another interim task was undertaken in 1919 by the Ninth Aero Squadron stationed at Rockwell Field, which engaged in daily patrolling of the international border. Flying from North Island to sixty miles east of Yuma, Arizona, in the morning, and returning in the afternoon, they were not looking for aliens who might be coming into the United States, but were searching for smugglers that might be transporting arms and ammunition into Mexico. Auxiliary fields were established at Calexico and Yuma. The pilots were often unsuccessful in navigating over the wilderness along the border, and planes were sometimes lost on both sides of the international dividing line. This task had to be suspended at the beginning of 1921 when the squadron was transferred to other California air fields. The permanent contingent at Rockwell was reduced to only twelve officers, two warrant officers, and supporting personnel, although three flying cadets and nine enlisted men were left with the thankless job of patrolling for a short while.⁶⁵

In 1920 Rockwell Field was designated as an Aviation General Supply and Repair Depot, and in 1921 was again renamed the Rockwell Air Intermediate Depot. Instead of being the center of exciting flights of hundreds of aircraft, training of both fledgling and experienced pilots, developing combat pursuit tactics, and practicing aerial gunnery, the base became responsible for the mundane, but undoubtedly important, task of supplying and repairing Army



The T-2 and Pilots Lieutenants Macready and Kelly demonstrating the amount of gasoline and oil used on a nonstop cross-country flight, 1923. ©SDHS #10658.

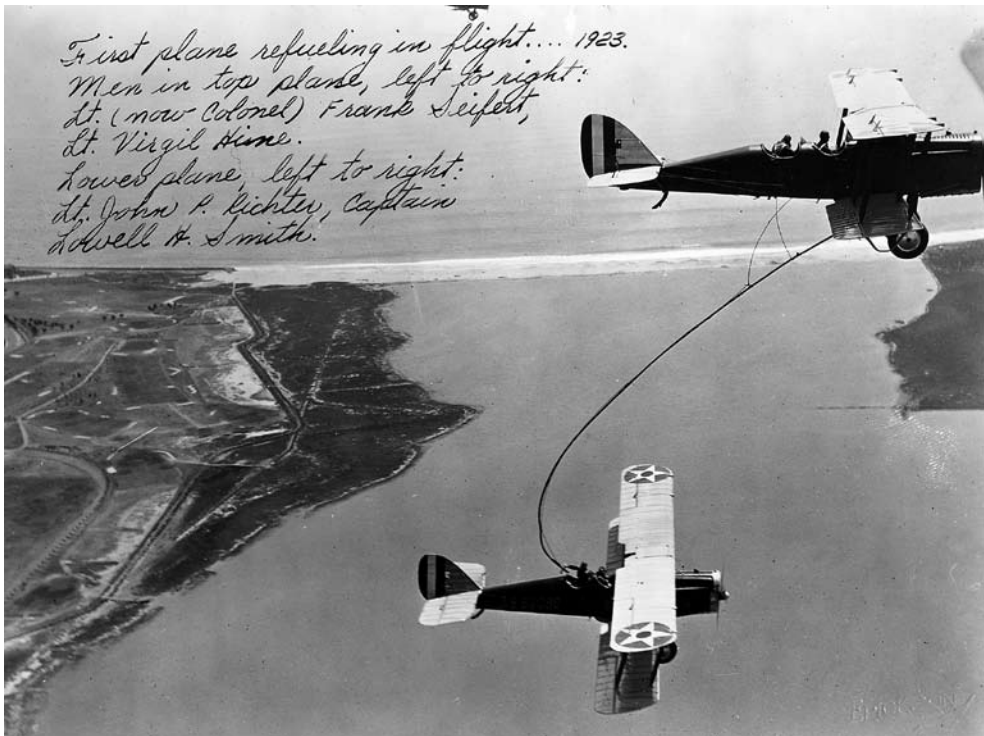
aircraft for the Ninth Corps Area, which covered Hawaii and the Philippine Islands.⁶⁶ The next year, on October 13, 1922, one of the nation's pioneer pilots and future five star general, Major Henry H. "Hap" Arnold, started his two-year tour as commanding officer of Rockwell Field, having previously served at Rockwell as a lieutenant in 1914, as a captain in 1916, and a major in 1919 when he was the district supervisor and base commander.⁶⁷

Despite its pedestrian assignment, the Army's Rockwell Field continued to be the center of record-setting events during the 1920s. In 1922, Second Lieutenant James H. "Jimmy" Doolittle, who had trained at Rockwell, had been a gunnery instructor there during World War I, and was a pilot of one of the 212 planes over San Diego celebrating the Armistice, made two record-breaking long distance flights that terminated at Rockwell Field. The first was in May, when he and Lieutenant L. S. Andrew flew from San Antonio, Texas, in a DeHavilland DH-4, with intermediate refueling stops at El Paso and Nogales, taking 12 hours and 10 minutes at an average speed of 100 miles per hour.⁶⁸ Later that year, he flew solo in a DH-4, coast-to-coast, from Pablo Beach, Florida, to North Island, with only one intermediate refueling stop at San Antonio, Texas, covering over 2,000 miles in 21 hours and 20 minutes.⁶⁹ This flight broke the solo record set the previous year by Lieutenant William D. Coney who flew from Rockwell Field to Jacksonville, Florida, in 22 hours and 32 minutes flying time (not total time), but was killed trying to establish a new record on his return flight.⁷⁰

The same year as Doolittle's record cross-country flight, two other pilots who had trained at Rockwell Field attempted to fly nonstop across the United States, something that had never been accomplished. Lieutenant John A. Macready and Lieutenant Oakley G. Kelly set out to prove that it could be done. They used one

of the two (only two were ever made) single-engine, Netherlands-built Fokker F.IV, high-wing monoplanes, purchased by the Army Air Service, but equipped with a 420-horsepower American Liberty engine, and redesignated as the T-2. It took three tries.⁷¹ The first flight, starting from Rockwell Field on October 5, 1922, heavily laden with gasoline and oil, failed to achieve sufficient altitude to clear the mountains and fog just before reaching Banning, California, so the pilots turned back, but then elected to stay aloft, and in so doing set an unofficial endurance record of 35 hours and 18 minutes before landing.⁷² The second try, undertaken a month later, made it as far as Indianapolis, Indiana, over 2,200 miles away, where the flight was aborted due to cracked cylinder heads, which had been kept functioning by pouring the pilots' drinking water, consommé, and coffee into the radiator. They first landed on the Indianapolis Speedway, but then unwisely elected to go on to nearby Fort Benjamin Harrison for repairs, where the engine froze due to overheating just prior to touching down, with the pilots having to run from the plane out of fear of a potential fire from the dead but smoking engine.

Undeterred, a third attempt was made the following spring, this time starting on the east coast at Roosevelt Field on Long Island, New York. The plane barely made it off the ground being loaded with 737 gallons of fuel and 40 gallons of oil. The flight successfully ended at Rockwell Field on May 3, 1923, after 26 hours and 50 minutes in the air, at an average speed of 99 miles per hour for the nearly 2,700 miles. The two crew members alternated at the controls for six-hour periods at a time, with the operating pilot sitting high up front in the nose of the plane, out in



First air-to-air refueling. Lieutenants Smith and Richter were in the receiving plane while Lieutenants Hine and Seifert were in the tanker, 1923. ©SDHS #6051.

the open, with the engine by his right side and the propeller a few feet away, while the other pilot was hidden down inside the fuselage, and although he had controls, he had no forward vision. In triumph, the plane, with "Army Air Service Non Stop Coast to Coast" emblazoned on each side, buzzed down San Diego's Broadway only 100 feet above waving crowds, before landing at Rockwell Field to a waiting throng. The pilots received congratulatory telegrams from the president and his cabinet, as well as many others, and were awarded the Mackay Trophy. The T-2 was immediately donated to the Smithsonian Institution in Washington, D. C., where it is still on display over eighty years later, now a part of the National Air and Space Museum since its opening in 1976.⁷³

Still another memorable flying experiment took place in San Diego skies starting in June 1923, when air-to-air refueling was successfully demonstrated by Rockwell Field officers of the Army Air Service. Two DeHavilland DH-4s were modified in the shops at Rockwell to permit the transfer of fuel from one to the other by a dangling 40 to 50-foot hose while airborne. Auxiliary tanks for gasoline and water were added to both planes. In June, the first flight took place, which lasted about six and one half hours, with two transfers of gasoline, the pilot in the rear cockpit having to grab the hose and insert it into the receiving plane's fuel tank—establishing that it could be done.⁷⁴ The following day, having shown how to do it, the same pilots unsuccessfully tried to set an endurance record. They stayed in the air nearly 24 hours, but when fog intervened, and transfers had to be made below 100 feet, an earlier than planned ungraceful landing became necessary, as the plane was forced to set down in the marsh east of North Island, where it nosed over. The two men aboard were uninjured.

After repairing the plane and building a second tanker, another attempt at an endurance record was made in August 1923, when the moon was full and night transfers could be more easily made. This flight, involving fifteen fuel deliveries through the hose, totaling 687 gallons of gas and 38 gallons of oil, with four hot meals being lowered in a basket from one plane to the other, lasted 37 hours and 15 minutes, covered about 3,293 miles, setting new endurance, distance, and speed records, while proving the feasibility of air-to-air refueling, as well as the durability of the engine and of the crew. Manning the open cockpits of the endurance plane on each of the three flights were Lieutenant Lowell H. Smith, the pilot, and Lieutenant John P. Richter, the receiver who had the critical task of handling the hose.⁷⁵ To further demonstrate the flexibility of mid-flight refueling, two months later in October 1923, the same two airmen flew nonstop from the Canadian border to the Mexican border, about 1,250 miles, rendezvousing with refueling planes over Oregon and Central California, before landing at Rockwell Field after 12 hours and 13 minutes in the air.⁷⁶

Today, North Island is mostly paved over, with two huge concrete runways, one over 9,000 feet long, plus taxiways, ramps, parking areas, hangars, shops, support buildings, and streets. Not much has been left bare. But it wasn't always so. For over two decades after the arrival of airmen, much of the island was sand dunes and the landing and takeoff areas were just plain dirt, with several planes often taking off side by side, causing many problems—clouds of dust and sand in the dry season, puddles and mud in the wet. As Army and Navy aircraft became heavier, and the engines larger, the problems became aggravated. It was not until 1933 that a paved landing and takeoff area, circular in shape and 2,200 feet in



Rockwell Field is in the foreground while the Naval Air Station is near the bay, 1924. ©SDHS #7660.

diameter, was constructed for the Army, and not until much later were solid runways built for the Navy.⁷⁷ Until then, keeping the grass down was a continual chore.

Another major difficulty was the proliferation of jackrabbits. They had always been present on the two islands, and proved to be a nuisance to the new residents of Coronado, who saw their freshly planted flowers and shrubbery disappear overnight to the voracious animals.⁷⁸ But as more and more houses were built in Coronado, the nuisance faded. Not so on the mostly-primitive North Island. In her appropriately titled history of North Island, *Jackrabbits to Jets*, Elretta Sudsbury delightfully describes the jackrabbit encounters of the 1920s.⁷⁹ In 1923, for example, a shooting event was staged with rabbits the target. In years following, there were annual roundups, involving Army and Navy personnel, as well as civilians, armed with sticks and clubs, marching line-abreast, herding the varmints toward the water where they would be clubbed or drowned. To enliven things even more, starting in 1928, "Ford Rabbit Derbies" were held, involving Model-Ts with two occupants in each, chasing rabbits with only clubs as weapons, which makes it seem doubtful that many jackrabbits were eliminated, but the fun is obvious. Various rabbit hunts were continued until at least 1940, after which field expansion slowly minimized "the great rabbit menace."

Perhaps the most famous historic event took place in 1927, when Rockwell Field was peripherally involved in the flight of 25-year-old Charles A. Lindbergh

across the Atlantic Ocean. Lindbergh learned to fly as a civilian before enrolling as an Army Reserve flying cadet, following which he was commissioned a first lieutenant in the Missouri National Guard, and then became an airmail pilot. Although many crewmen had flown in thirteen separate flights across the Atlantic, the first as early as 1919, a \$25,000 prize was now being offered for the first to fly nonstop from New York to Paris. Several pilots and manufacturers had their sights on the prize, as did Lindbergh who decided to attempt the venture flying solo. Using a newly designed plane, the *Spirit of St. Louis*, built by the Ryan Airlines of San Diego in only sixty days, Lindbergh made 23 test flights over San Diego during an 11-day period, landing and taking off at Dutch Flats, Camp Kearny, and Rockwell Field. When it came time to start across country to his New York jumping off point, Rockwell was selected because the field was large enough to handle his heavily loaded aircraft, although Lindbergh was not too happy about the bumpy condition of the field. Having taken on at Rockwell only half of the gasoline he would later carry, he started his first leg, a 1,500-mile flight to St. Louis, Missouri, on the afternoon of May 10, 1927, accompanied by three other planes—two from the Army, one of which was carrying the base commanding officer, and one from Ryan, with company representatives aboard. After circling North Island, Dutch Flats, and the city, the four planes headed east. About thirty-five minutes later, the escorting planes left Lindbergh on his own over the mountains of San Diego County as he continued on to St. Louis, then New York, and finally to fame and fortune in Paris, France, eleven days later.⁸⁰

The name Lindbergh is forever identified with San Diego, and when the mud flats adjacent to Dutch Flats were filled with dredged materials from deepening the bay for the Navy's new aircraft carriers, the airport that was created was named Lindbergh Field, which was dedicated on August 16, 1928.⁸¹ As part of the dedication ceremonies, the military put an armada of 222 planes in the air—140 from the Navy, 82 from the Army—with most of the planes taking off from North Island, all passing together over the new airport and the 50,000 watching citizenry and dignitaries. Once again, the *San Diego Union* was enthusiastic, with its headline: "Dedicate Lindbergh Field with Great Aerial Spectacle," but had to add, much as it had in 1918 Armistice celebration, in another banner heading accompanying a great picture of about 100 low-flying aircraft: "Mighty Aerial Drama Staged Without Single Accident," with a subheading: "No Accidents to Fliers or Spectators."⁸² Total confidence in aviation was still lacking, even in 1928, after a quarter of a century of powered flight.⁸³

The beginning of 1929 found Rockwell Field pilots and personnel engaged in another try at an air-to-air refueling endurance record. For takeoffs and landing, the newly opened Los Angeles Metropolitan Airport (now the Van Nuys Airport) was used because of its better weather, while Rockwell Field was one of the two sites where refueling aircraft were waiting. Flying a mono-wing, trimotor, Fokker C-2A, named the *Question Mark* because of the uncertainty as to how long it could stay aloft, it took to the skies on New Year's Day, 1929.⁸⁴ Manning the Fokker were four officers, each of whom would become world-renowned in World War II—Maj. Carl A. Spaatz, Capt. Ira C. Eaker, 2d Lieutenant Elwood R. Quesada, and Lieutenant Harry A. Halverson—and their mechanic, Sgt. Roy W. Hooe. The flight was followed daily on the front pages of major newspapers, especially in San Diego. To save weight, no radios were installed, and communications were



San Diego Historical Society

The Question Mark and its Crew—Major Carl Spaatz, Captain Ira Eaker, Second Lieutenant Elwood Quesada, First Lieutenant Harry Halverson, and S/Sergeant Roy Hooe, 1928. ©SDHS #14863:1.

by holding up signs, by dropping messages, and by firing flare pistols. The first message to them said: “Don’t Forget Rose Bowl,” which was being played that day between Georgia Tech and the University of California (Tech won, 8 to 7). The crew knew the publicity value of the flight and remembered to fly over the game.

Initially, the *Question Mark* cruised back and forth between Rockwell Field and the Metropolitan Airport, refueling by a 50-foot, 2.5-inch thick, fire hose hanging beneath the tanker airplane. The commander of the operation, Major Spaatz (then spelling his name “Spatz”), standing in an open hatch, was responsible for grabbing the swinging hose, attaching a grounding wire, and then inserting the hose into the reception tank. Unfortunately, the hose had only one shut-off valve, and this was far from his reach on the tanker plane. Shortly after midnight of the first day, Spaatz was drenched with fuel when turbulence yanked the hose out of his hands. On the next refueling, he appeared totally nude, except for a parachute harness, worried about the effects of the gasoline on his skin. On three occasions he was sprayed with fuel and considered bailing out for medical attention, but found that oil and zinc oxide took care of possible skin and eye problems, so he stayed aboard, once again fully clothed.

Among his many repair and maintenance duties, Sergeant Hooe had to walk on open catwalks under the wing to service the two outboard engines. When one engine began acting up, the plane stayed close to the Metropolitan Airport in case

an emergency landing was necessary. Finally, when the left engine died, the flight was ended after covering about 11,000 miles and being refueled 43 times—12 of these at night—with 5,660 gallons of fuel and 245 gallons of oil. The plane landed on January 7, after 150 hours and 45 minutes—nearly seven days in the air—a new record and great publicity for the Army Air Corps at a time when funds and support were scarce. Each crewmember was awarded the Distinguished Flying Cross (except Lieutenant Eaker who only received an oak leaf cluster on the one he already had).⁸⁵

The Navy Wins, The Army Leaves

For more than a decade, the Army and Navy kept asserting conflicting demands, each wanting the other to leave North Island. It seemed inevitable that the Navy would prevail, since the Army had many airfields throughout the country, even though its growth was severely hampered by budgetary restrictions during the late twenties, while the Navy, although similarly limited on funding, was taking on expanded functions, focusing on the development of aircraft carriers and the perfecting of various forms of seaplanes. San Diego Bay was ideal for both enterprises. As a consequence, North Island became overloaded with fleet squadrons, Marine aircraft, and Army Air Corps planes. The situation became aggravated about 1928 when Rockwell Field was designated as headquarters for the Army's Seventh Bombardment Group, the Eleventh Bombardment Squadron, and the Ninety-Fifth Pursuit Squadron, each with its complement of additional aircraft, causing pilots to complain that often the field was hidden all day under a cloud of dust from the vast number of planes operating off of the unpaved fields.⁸⁶ At the same time, the Army announced plans for the construction of more quarters, barracks, hangars, shops, and other facilities.⁸⁷

In 1929 another joint Army/Navy board was formed to investigate the congestion on North Island. It recommended that the Army leave as soon as suitable accommodations could be found elsewhere. Not surprisingly, the Secretary of the Navy promptly ratified the recommendation, but, also not surprisingly, the Secretary of War (as the civilian Army head was then called) demurred on the basis of the costs involved. An offer was received from Chula Vista of 769 acres of land for a new airfield to replace Rockwell Field, but the site was rejected as inadequate. Further offers were made by the counties of Marin and Alameda in Northern California for locating new bases, which the Army ultimately accepted, but still did not move.⁸⁸ When it was reported in 1931 that three tactical Army units with 37 planes would be moved from Rockwell to March Field later that year, the *San Diego Union* headlined: "Army Air Units Drift from Rockwell Field, Navy Ready to Step In."⁸⁹ The Navy was ready, but the Secretary of War again squelched its hopes in 1932 by declaring that: "It is believed that military need for the area will be constant," which was followed by Army Chief of Staff General Douglas MacArthur's assertion that the base was not crowded at all; he unequivocally affirmed that "the Army has adopted . . . the definite policy of the retention of this field as it is a component part of our defense system."⁹⁰

The year 1932 saw another major change. Almost no new facilities had been constructed since the end of World War I and "temporary" buildings were still in use. Now, the Great Depression was underway, resulting in even greater

cuts in military funding for both the Army and the Navy. Yet the attempt to get the unemployed back to work led to expenditures for new public works projects, which, much to the chagrin of the Navy, resulted in \$1.6 million being appropriated for new construction at Rockwell Field of buildings previously planned for 1928 but stymied by the Navy, including ten homes for officers, thirty homes for noncommissioned officers, new sewer, water, and gas systems, roads, walks and other modernizing improvements—hardly indicative of a prospective departure by the Army.⁹¹ Also included was the first hard-surface landing area on Rockwell Field, previously described, replacing the dirt utilized for twenty years. The Army appeared to be solidifying its position. National Guard and cadet units used the base for pilot training, air navigation classes were increasing, and then in 1933 the Army announced plans to move its overhaul facilities to Alameda County and to replace them with 75 to 100 more operational planes, with the field becoming home to the Nineteenth Bombardment Group of 40 heavy bombers. This was too much for the Navy, which already had about 350 aircraft stationed there with multiple sorties each day. When the Army was offered land in El Cajon Valley for a new airfield in 1934, the Secretary of the Navy promptly endorsed the proposal, but again the Secretary of War declared the proposed site was unsatisfactory, that over five million dollars had been invested at Rockwell Field, and that reopening the matter was completely out of the question. The turf war seemed unending.⁹²

But end it did. Less than a month after assurances from a visiting House of Representatives subcommittee that the Army would stay and another squadron of planes added,⁹³ the dispute between the two services was resolved by the intervention of the president of the United States, Franklin D. Roosevelt, a former assistant secretary of the Navy and a rabid Navy supporter, who visited North Island on October 2, 1935. A few weeks later he executed an executive order that had been carefully negotiated between the War and Navy Departments terminating the joint use of not one, but four separate military facilities, by transferring jurisdiction of the entirety of North Island to the Navy, along with all of Ford Island in Hawaii, and Old Bolling Field near Washington, D. C., while giving the Army exclusive use of the Naval Air Station at Sunnyvale, California. Major flight operations by the Army Air Corps at Rockwell Field were promptly discontinued, with its squadrons moving north to March Field near Riverside, but the supply and repair depot was allowed to remain until it could find a place to relocate. A formal ceremony was held transferring control to the Navy, which immediately started landing its planes on the Army's prized circular mat, and the name Rockwell Field became "South Field," although the Army continued to use the old designation.⁹⁴ Eighteen years of joint use had come to an end, it was thought—yet the Army still held on.

It took over three more years before the Army Air Corps fully abandoned its surviving foothold on North Island. During this time, it continued to occupy an administration building, storehouse, repair shops, several small hangars, noncommissioned officer quarters, and a couple of duplex quarters, all of which formed a surviving outpost of sorts, mostly grouped closely together on the southeast side. Meanwhile, the Navy took possession of over 130 structures, quickly demolishing many of the old wartime buildings, while making use of most of the permanent facilities.⁹⁵ But the clock was ticking. At long last, at the

repeated urgings of the Navy, starting in October 1938, the Army finally began packing up and moving what remained, with most of the remnants and the 350 officers, enlisted men, and civilians, going to the newly constructed Sacramento Air Depot in Northern California. A final farewell dinner party was held at the close of business on January 31, 1939 by the Navy base commander (who was away in Washington, D. C.)⁹⁶ Nice words were undoubtedly exchanged by all, but as Richard Pourade wrote, "It was not a happy hour for the Army."⁹⁷ The Army's twenty-six years on North Island, which had started in 1912 with two flimsy airplanes and fewer than a dozen men, were finished. The Navy has been there, in exclusive control, ever since.

In 1967, the State Department of Parks and Recreation, in cooperation with the City of Coronado, dedicated a small monument, which stands today in Sunset Park at the end of Ocean Boulevard, near the Gate 5 entrance to the North Island Naval Air Station, with a plaque tersely summarizing a wealth of history:

Site of First Military Flying School (U. S. Naval Air Station, North Island).
The flat lands beyond have been part of aviation history since Glenn Curtiss founded the first military flying school in America on January 17, 1911. The Army operated Rockwell Field until January 31, 1939. The Navy commissioned the present air station on November 8, 1917.⁹⁸

Concluding Thoughts

North Island today is nothing like the barren, scrub-covered, rabbit-infested sand bar tramped by Vizcaíno's crew in 1602 and first deeded to Don Pedro Carrillo in 1846. Extensive filling has smoothed its ragged contours, adding over five hundred new acres, primarily on the north and west sides. The historic Spanish Bight, where Glenn Curtiss tested his first hydroaeroplane, is no more, having been filled in and covered with a golf course, tennis courts, roads, buildings, and other facilities. The original island has lost its separate geographic identity, making North Island and Coronado part of a single land mass, truly a peninsula as described in the original rancho grant signed by Governor Pico. But the name North Island endures, as should the memories of the thousands of pilots, and their toiling mechanics and ground crews, who passed through the portals of Rockwell Field for over a quarter of a century. Their achievements were many, often being recognized by capturing many awards, prizes, and trophies. One of these, the Mackay Trophy, was established in 1911 as an annual award to the most meritorious flight of the year by an Army pilot. Fliers that served at Rockwell Field were awarded this prestigious trophy thirteen separate times between 1912 and 1934, (and further research would probably uncover even more honorees).⁹⁹ The multiple awards and citations help to confirm that Rockwell Field was a principal center of aviation development during its formative years. Of course, the many speed, altitude, distance, and endurance records of the day rapidly faded, as each was surpassed by even greater achievements by others.¹⁰⁰ Yet each was a major step in the unparalleled progress and growth of air power, exhibiting what was feasible at the time by intrepid men and their flying machines. The famous and the unsung—they are all part of our heritage and should be remembered. It is

hoped that a mention here of just some of them, as well as a few of their exploits and accomplishments, can be deemed an overdue salute to all of the Army air personnel who served right here in San Diego—at Rockwell Field on North Island.

NOTES

1. In 1963, the House Armed Services Committee designated North Island as the “Birthplace of Naval Aviation,” (Naval Air Station North Island Web site: <http://www.nbc.navy.mil/index.asp?fusaction=NBCInstallations.NASNI> (accessed August 7, 2006), but as early as 1923, it was described as the “Cradle of Army Aviation.” H. H. Arnold, *The History of Rockwell Field*, (privately printed, 1923), 1, 20. In 1928 Major T. C. Macaulay, a pilot who had trained at Rockwell Field but was then executive secretary of the San Diego Chamber of Commerce, used the same title in reviewing the Army’s history in “North Island—Cradle of Army Aviation,” *San Diego Magazine* 4, no. 9 (1928). A bit more expansive and promotional was the claim made by local boosters in the late 1920s that San Diego was the “Air Capital of the West.” Richard F. Pourade, *The Rising Tide* (San Diego: The Union Tribune Publishing Company, 1967), 123. In fact, this was the title given to the 1991 edition and the recently published second edition of Mary L. Scott, *San Diego: Air Capital of the West* (Virginia Beach: The Downing Company Publishers, 2005).
2. The most detailed and thorough history of North Island, through 1967, with abundant historic photographs, but no index, was written for the North Island Historical Committee by Elretta Sudsbury, *Jackrabbits to Jets, The History of North Island, San Diego, California* (San Diego: Neyenesch Printers, Inc. 1967). This was updated and republished by the San Diego Publishing Company, under the auspices of the NAS North Island Jackrabbits to Jets Committee in 1992. All references herein are to the 1967 edition. The Navy maintains a history of North Island on its Web site: www.nasni.mil/history.htm (accessed August 7, 2006). A narrower history, limited to the Army’s involvement through 1923, was written by Major H. H. Arnold, who served as the commanding officer of the Army base, *The History of Rockwell Field*. Typewritten copies can be found at the San Diego Historical Society Research Library and at the San Diego Aerospace Museum Library & Archives. Archivists at the latter institution hope to have it published sometime in the future. A short history of Rockwell Field, with photographs of remaining buildings, by the National Park Service, is part of its “Aviation: From Sand Dunes to Sonic Booms” at www.cr.nps.gov/nr/travel/aviation/rok.htm (accessed August 7, 2006).
3. Iris Engstrand, *San Diego: California’s Cornerstone* (San Diego: Sunbelt Publications, 2005), 5-6.
4. Katherine Eitzen Carlin and Ray Brandes, *Coronado: The Enchanted Island* (Coronado: The Coronado Historical Association, 1987), 16.
5. Richard F. Pourade, *The Explorers* (San Diego: The Union-Tribune Publishing Company, 1960), 65-68; Engstrand, *California’s Cornerstone*, 45-46.
6. Cecil C. Moyer, *Historic Ranchos of San Diego* (San Diego: Union-Tribune Publishing Co., 1969), 95.
7. Sudsbury, *Jackrabbits to Jets*, 4-5.
8. Carlin and Brandes, *Coronado*, 39.
9. *Ibid.*, 108-09.
10. Arnold, *History of Rockwell Field*, 19; Sudsbury, *Jackrabbits to Jets*, 4, 224. The brick fort survived until February 4, 1941, when nearby dredging caused it to forlornly tumble into the bay.
11. Valerie Moolman, *The Road to Kitty Hawk* (New York: Time-Life Books Inc., 1980), 149-58. A replica of the first Wright plane is on display at the San Diego Aerospace Museum.
12. For a history of these early developments, see Henry Serrano Villard, *Contact! The Story of the Early Birds* (Washington, D. C.: Smithsonian Institution Press, 1987).
13. C. R. Roseberry, *Glenn Curtiss: Pioneer of Flight* (New York: Syracuse University Press, reprint 1991), 18-58.
14. A Frenchman named Robert Esnault-Pelterie had come up with the same idea as early as 1904. Bill Gunston, ed., *Chronicle of Aviation* (Liberty, MO: JL International Publishing Inc., 1992), 44.
15. Roseberry, *Glenn Curtiss*, 102-114.

16. Ibid., 183-225.
17. Carlin and Brandes, *Coronado*, 89-91; Sudsbury, *Jackrabbits to Jets*, 5-6; Roseberry, *Glenn Curtiss*, 231-34.
18. San Diego may have been the site of the first controlled flight of any kind, although verification of the facts is in dispute and there are many doubters. John J. Montgomery (1858-1911) is said to have flown his glider a distance of 600 feet on Otay Mesa as early as 1883. "John J. Montgomery," SDHS, www.sandiegohistory.org/bio (accessed August 7, 2006); Scott, *Air Capital*, 8-10. Montgomery Field, on John J. Montgomery Drive, is named in his honor, as is the John J. Montgomery Middle School on Ulric St., the Montgomery High School on Palm Ave., and the neighboring Montgomery-Waller Park. At the site of the flight there is a weather-beaten and fading memorial of the event which declares: "He opened for all mankind the great highway of the sky" (California Register of Historic Resources, No. 711). Montgomery died at age 53 in the crash of one of his gliders.
19. Sudsbury, *Jackrabbits to Jets*, 6-9. Charles Hamilton, a heavy-drinking, reckless but daring pilot, died in bed in 1914 at the age of 32 of an internal hemorrhage after surviving many wrecks and two nervous breakdowns. Roseberry, *Glenn Curtiss*, 296-97.
20. Sudsbury, *Jackrabbits to Jets*, 9-10; Carlin and Brandes, *Coronado* 109-12; Richard F. Pourade, *Gold in the Sun* (San Diego: The Union-Tribune Publishing Company, 1965), 121-24. The Aero Club of San Diego was formed in January 1911, with over 300 members. The membership fee was \$5 while dues were \$1 per month. Edward L. Leiser, *San Diego Flying Days*, unpublished, San Diego Aerospace Museum Library & Archives, vol. 1, chap. 5, 1.
21. Gary F. Kurutz, "The Only Safe and Sane Method...The Curtiss School of Aviation," *The Journal of San Diego History* (JSDH) 25, no. 1 (1979). For details of the embryonic, but exciting, contest at Rheims in August 1909, involving 10 different makes of flying machines and the world's few top pilots, see Villard, *Contact!*, 73-84, and Roseberry, *Glenn Curtiss*, 183-200.
22. Lieutenant Theodore G. "Spuds" Ellyson, a 26-year-old graduate of the Naval Academy, became the first Navy officer to learn to fly. He worked closely with Glenn Curtiss in developing and flying a hydroaeroplane at the Spanish Bight. Sudsbury, *Jackrabbits to Jets*, 9-20. Still in the Navy, with the rank of commander, he was killed along with two others in 1928 when his plane disappeared on a night flight in the fog near Annapolis, Maryland. Roseberry, *Glenn Curtiss*, 331; Scott, *Air Capital*, 31; Sudsbury, *Jackrabbits to Jets*, 126-27.
23. See Kurutz, "The Only Safe and Sane Method."
24. Sudsbury, *Jackrabbits to Jets*, 23-26.
25. Alfred Goldberg, ed., *A History of the United States Air Force 1907-1957* (Princeton: D. Van Nostrand Company, Inc., 1957), 7.
26. Arnold, *History of Rockwell Field*, 20-21. Even before the invention of the airplane, the aviation engineer and glider pioneer Octave Chanute (1832-1910) used the San Diego area because of its low wind velocities to carry out studies involving the science of flight, including the photographing and analysis the flight of gulls and pelicans. Fred A. Carpenter, *The Aviator and the Weather Bureau*, (Harrisburg, PA: Mount Pleasant Press, 1917), 7; Pourade, *Gold in the Sun*, 17, 34; Scott, *Air Capital*, 9.
27. Arnold, *History of Rockwell Field*, 22-23.
28. Ibid., 26-28.
29. Goldberg, ed., *History*, 7.
30. Arnold, *History of Rockwell Field*, 24. For details of Lieutenant Chandler's crash, see *San Diego Union*, April 9, 1913; for Lieutenant Park's crash, see *San Diego Union*, May 10, 1913. Lieutenant Eric L. Ellington was something of a phenomenon. Born in North Carolina in 1889, the son of a Confederate officer, at the age of 16 he was admitted to the Naval Academy at Annapolis, where he graduated third in a class of 300 in 1909. He petitioned to be transferred from the Navy to the Army in order to get into the flying program, and President William Howard Taft granted his request by an executive order, the first time such an order had been issued. After serving in the cavalry, he was transferred to the air branch in 1912 and quickly became a leading Army pilot, being made an instructor only two months before the fatal crash at age 24. Ellington Field (later Ellington Air Base, and now Ellington Field, again) near Houston, Texas, was named in his honor. The Early Birds of Aviation, Inc. www.earlyaviators.com; obituary from *Clayton News-Star*, www.geocities.com/Hearthland/Plains/3975/Ellington/elleric.html (both accessed August 8, 2006).

31. *San Diego Union*, November 25, 1913. A scathing front page article, critical of the “parsimonious policy” of the government, was written by Lincoln Beachey, one of the first students of Curtiss and a leading civilian stunt pilot of the day, who, too, lost his life in 1915 when the wings of his monoplane folded and he crashed into San Francisco Bay where he drowned. Roseberry, *Glenn Curtiss*, 307; Gunston, ed., *Chronicle*, 124. The San Diego Aerospace Museum has a large exhibit honoring the exploits of Beachey and his Curtiss aeroplane.
32. *San Diego Union*, February 10, 1914.
33. Lieutenant Henry B. Post was born in 1885, served in the Twenty-Fifth Infantry and was in the First Aero Squadron at the time of his death at age 28. He is buried at Arlington National Cemetery near other early aviators and also near a number of American astronauts. Henry Post Field, the airfield for Fort Sill, outside of Lawton, Oklahoma, was named in his honor. Arlington National Cemetery, www.arlingtoncemetery.net/hbpost.htm (accessed August 8, 2006).
34. Arnold, *History of Rockwell Field*, 24, 30; Sudsbury, *Jackrabbits to Jets*, 28-29.
35. *Ibid.*, 39, 50-51. Lieutenant Walter R. Taliaferro was born in Kentucky in 1880, served as an enlisted man in the artillery for seven years before being commissioned as an officer in 1908. He did surveying work in the Philippine Islands prior to being assigned to the Army’s aviation branch of the Signal Corps. He was buried in the Mount Hope Cemetery in San Diego. Camp Taliaferro, the World War I flight-training center near Ft. Worth, Texas, utilized by the RAF as well as others, was named in his honor. Lieutenant Joseph E. Carberry had a longer career. Born in Wisconsin in 1887, he was an honor graduate from West Point, served with the First Aero Squadron during the Mexican Expedition in 1916, and was on the staff of General Pershing, responsible for establishing airfields in France during World War I. He retired as a lieutenant colonel in 1924, was a contributor to military publications, and lived until 1961, passing away in Arcadia, California, at the age of 74. “The Early Birds of Aviation, Inc.,” www.earlyaviators.com (accessed August 8, 2006).
36. *San Diego Union*, October 12, 1915.
37. Sudsbury, *Jackrabbits to Jets*, 30-35; Arnold, *History of Rockwell Field*, 32. This was the second use of North Island by the Marines. In 1911, in reaction to unsettling conditions in Mexico, the newly-assembled 4th Provisional Marine Regiment camped on the island from March until June, calling the base Camp Thomas. Tension eased before the Marines could cross the border, and the regiment was disbanded. Mark J. Denger, “A Brief History of the U.S. Marine Corps in San Diego,” The California State Military Museum, www.militarymuseum.org/SDMarines.html (accessed Sept. 27, 2006).
38. Sudsbury, *Jackrabbits to Jets*, 29; Arnold, *History of Rockwell Field*, 28-29.
39. Sudsbury, *Jackrabbits to Jets*, 35.
40. Act of July 27, 1917, ch. 42, 40 Stat. 247. See Lucille Clark Duvall, “William Kettner: San Diego’s Dynamic Congressman,” *JSDH* 25, no. 3 (1979). Congressman Kettner opposed confiscation of the property without payment, insisting that fair value be paid. Joan M. Jensen, “The Politics and History of William Kettner,” *JSDH* 11, no. 3 (June 1965).
41. Sudsbury, *Jackrabbits to Jets*, 38-39.
42. *United States v. Coronado Beach Co.*, 255 U.S. 472 (1921). If the government’s argument had prevailed, the U. S. could have taken over, without cost, any privately owned property that once had been part of any Mexican land grant. Much of the land in California, and elsewhere, would have been at risk, even today.
43. Carlin and Brandes, *Coronado*, 144; Moyer, *Historic Ranchos*, 99.
44. Congress also created a new category of pilots: Junior Military Aviators to add to Military Aviators. Goldberg, ed., *History*, 8.
45. Arnold, *History of Rockwell Field*, 38-39.
46. *Ibid.*, 56-57.
47. *Ibid.*, 59-61. In 1917, the lieutenant, now captain, W. A. Robertson, established a new altitude record of 17,230 feet over North Island. National Aeronautics and Space Administration, www.history.nasa.gov/Timeline/1915-19.html (accessed August 8, 2006). Later, as a major, he became the commanding officer of the Aerial Gunnery School at Cazaux, France, during World War I. Arnold, *History of Rockwell Field*, 75.

48. United States Air Force Web site: www.af.mil/history/overview.asp; National Aeronautics and Space Administration, www.history.nasa.gov/Timeline/1915-19.html (both accessed August 8, 2006). The Navy expanded, too, ending the war with over 2,100 planes and nearly 40,000 officers and men in Naval and Marine aviation. See also Sudsbury, *Jackrabbits to Jets*, 55-56.

49. Captain Benjamin D. Foulois was born in Washington, Connecticut, in 1879, enlisted in the infantry, saw combat in the Philippines, was commissioned as a lieutenant in 1901 and assigned to the Signal Corps where he operated the first dirigible balloon purchased by the U.S. Government. In 1909, he started, but due to other assignments, was unable to complete flight training with the Wright Brothers. When the Army purchased its first plane from the Wrights, he was instructed to take charge of it, take it to Texas, and learn to fly it. He did, teaching himself, soloing and becoming, at the time, the only active duty pilot in the military. It was said that he was the only "pilot navigator, instructor, observer and commander" in U. S. Army from November 1909 to April 1911, during which time he made many improvements to the Wright plane, including the substitution of wheels for skids. He retired in 1935, after 37 years of service, and lived until 1967, passing away at the age of 87. See United States Air Force, www.af.mil/history (accessed August 8, 2006).

50. It was learned that the planes of the day could not handle the mountains, winds, and dust storms. The operation was a "near fiasco." Within a month, only 2 of the 8 planes were still operational, and they ended up being scrapped. Goldberg, ed., *History*, 10.

51. Gunston, ed., *Chronicle*, 149. In World War I, the U.S. bought 4,881 planes from the French and 143 from the British. Goldberg, ed., *History*, 16.

52. Arnold, *History of Rockwell Field*, 42, 52, 124.

53. *Ibid.*, 45, 64. Arnold's history actually says there were 73 officers as of April 1917, but this seems to be a typographical reversal of digits; the number probably should be 37. Later, in June, he reports there were then 38, which seems more accurate.

54. *Ibid.*, 65. Second Lieutenant Lewis C. Rockwell came from Cincinnati, Ohio. He was a West Point graduate, class of 1907, who served in the infantry until volunteering and transferring to the Aviation Section. Learning to fly at the school at College Park, Maryland, he had the dubious distinction of being one of the two killed in the first multiple-fatality air crash, when the Wright plane he was piloting on September 28, 1912, plunged to the ground killing him and his passenger, Corporal Frank S. Scott. At that time, he was the fourth military officer to meet death in an aviation accident. See "The Early Birds of Aviation, Inc.," www.earlyaviators.com. Corporal Frank S. Scott, the passenger on the fatal flight with Lieutenant Rockwell, was the first enlisted man to be killed in an air accident. Born in Braddock, Pennsylvania, in 1883, he was orphaned in 1889 after losing his parents in the Johnstown flood. He was in the field artillery before the Signal Corps, becoming a chief mechanic for the Wright Type-B plane. Scott Field (later Scott Air Force Base) in Illinois, about 25 miles east of St. Louis, Missouri, was named in his honor. Air War College, www.au.af.mil/au/awc/awcgate/documents/frankscott.htm (article by Scott AFB History Office) (accessed August 9, 2006).

55. See United States Air Force History, www.af.mil/history/overview.asp (accessed August 9, 2006).

56. Sudsbury, *Jackrabbits to Jets*, 38-47.

57. *Ibid.*, 50; Arnold, *History of Rockwell Field*, 76-77. The causeway lasted until 1945 when it was torn down after the filling of the Spanish Bight and the building of a surface street to Coronado. Sudsbury, *Jackrabbits to Jets*, 252.

58. Arnold, *History of Rockwell Field*, 71-72.

59. *Ibid.*, 74. For the history of Ream Field, see the Imperial Beach Chamber of Commerce, www.ib-chamber.biz/IB-history.htm (accessed /August 9, 2006).

60. Arnold, *History of Rockwell Field*, 81, 95-96.

61. *Ibid.*, 71.

62. *San Diego Union*, November 28, 1918, which also marveled: "The fact that not even a slight accident occurred is considered miraculous."

63. The plan to make North Island a permanent lighter-than-air Navy base was canceled in late 1922, and thereafter the base was only a terminal point for such airships. Sudsbury, *Jackrabbits to Jets*, 71, 80, 101. The *Shenandoah* crashed during a storm over Ohio on Sept. 3, 1922, killing 29 of the 43 aboard. Gunston, ed., *Chronicle*, 225.

64. Arnold, *History of Rockwell Field*, 84-86. For a number of years, from 1918 to the mid-1920s, the Navy raised and maintained homing pigeons near the West Beach on North Island, which were carried in all planes and balloons for emergency communication. Sudsbury, *Jackrabbits to Jets*, 102-03.

65. Arnold, *History of Rockwell Field*, 86-96. The Navy, too, was trying to make productive use of its planes. In 1919-20, responding to a request from the California Department of Fish and Game, it used its aircraft to radio the location of schools of sardines for local canneries, whose catches were in serious decline until helped out by the Navy. Sudsbury, *Jackrabbits to Jets*, 75-76.

66. Arnold, *History of Rockwell Field*, 95, 99.

67. Ibid., 30, 54, 104, 120. Major Henry H. "Hap" Arnold, born in Gladwyne, Pennsylvania, in 1886, was a West Point graduate, class of 1907. After serving in the infantry, he was taught to fly in 1911 by the Wright Brothers in Dayton, Ohio, becoming the first Army officer to be certified as a Military Aviator. One of the first flight instructors, he established many records, including an altitude record in 1912 of 6,540 feet, and was awarded the Mackay Trophy that same year for "the most outstanding military flight of the year," an extended reconnaissance flight in one of the early Wright planes. He received his second Mackay Trophy in 1934 for leading ten Martin B-10 bombers on a round trip from Washington, D. C. to Fairbanks, Alaska. He was an early advocate of air power, particularly strategic bombing with four-engine bombers, supported General Billy Mitchell at his court-martial trial, with his career also being threatened, held many offices and duties leading up to World War II, when he was named the commanding general of the Army Air Force with the rank of four-star general, accumulating numerous medals and decorations from throughout the world. Three years following his retirement in 1946, after 43 years of service, he was awarded a fifth star, becoming the first to hold the rank of General of the Air Force. He was an author of military books, both before and after the war, and of boys books encouraging flying. He died in 1950, age 63. Among many biographies, see United States Air Force, www.af.mil/bios (accessed August 9, 2006).

68. The DeHavilland, originally a British airplane, was redesigned in 1917 by the U. S. for use with the powerful, American-built, 400-hp Liberty engine. Designated as the DH-4, 3,431 were manufactured in the United States for the Army Air Service, 1,213 saw service in France during World War I, and many were used for more than a decade after the war. U. S. Centennial of Flight, www.centennialofflight.gov (accessed August 16, 2006).

69. Arnold, *History of Rockwell Field*, 102; Sudsbury, *Jackrabbits to Jets*, 86; Gunston, ed., *Chronicle*, 196. Lieutenant James H. "Jimmy" Doolittle was among the most famous of Army pilots. Born in Alameda, California, in 1896, he attended the University of California and then trained at Rockwell Field, being commissioned a second lieutenant in March 1918. Following the establishment of various flying records in 1922, he entered the Massachusetts Institute of Technology, obtaining a master of science degree in 1923 and a doctor of science degree in aeronautics the following year. In 1925 he was attached to the Navy to fly high-speed seaplanes setting a record for such aircraft of 232 mph, receiving the Mackay Trophy for this accomplishment. In April 1926 he broke both ankles in a fall in Chile, but went on to perform aerial demonstrations with his ankles in casts. He became commanding general of the Twelfth Air Force in North Africa, later the Fifteenth Air Force in the Mediterranean Theater, and then the Eighth Air Force in Europe and the Pacific, ending his active military career in 1946 as a lieutenant general when he went on reserve status, fully retiring in 1959, having been named "aviator of the decade" in 1950. A quarter of a century later, in 1985, he was honored with a fourth star. He died in 1993 at the age of 96 and is buried at Arlington National Cemetery. United States Air Force, www.af.mil/bios (accessed August 9, 2006); Gunston, ed., *Chronicle*, 264, 298, 460.

70. Arnold, *History of Rockwell Field*, 97; Gunston, ed., *Chronicle*, 184. The flight of Lieutenant Coney was extensively covered in the *San Diego Union*, starting on February 22, 1921, with headlines and photos of the pilot and his plane, and ending on March 31, 1921, with his death several days after crashing in Louisiana. A reporter called Lieutenant Coney the "most spectacular and daring night flier that the army has developed since the war."

71. All three flights are described by Lieutenant Macready in "The Non-Stop Flight Across America," *The National Geographic Magazine*, July 1924, 1-92.

72. Since the record was not officially recognized, the two pilots did it again over Dayton, Ohio, in April 1923, staying aloft, on their third attempt, even longer for a record 36 hours, 5 minutes. Ibid., 47-49.

73. Arnold, *History of Rockwell Field*, 111; Sudsbury, *Jackrabbits to Jets*, 95; Gunston, ed., *Chronicle*, 203; Scott, *Air Capital*, 44. For details regarding the T-2, see Smithsonian National Air and Space Museum,

www.nasm.si.edu/research/aero/aircraft/Fokker_t2.htm (accessed August 9, 2006). Lieutenant John A. Macready was another great flying trailblazer, born in San Diego in 1887. During his younger days, he was the Pacific coast amateur lightweight boxing champion, a miner, a businessman, and a justice of the peace in Searchlight, Nevada. He graduated from Stanford University in 1912 with a degree in economics, enlisted in the Air Service in 1917, receiving his wings at Rockwell Field, became an instructor, and authored a book on basic flight training. For six years he was assigned to the Experimental Test Center at McCook Field, Ohio, where he was a test pilot, setting records for high altitude (40,800 feet), making the first night parachute jump, demonstrating the first aerial crop dusting, and participating in the first aerial photographic expedition across the U. S., taking eight weeks and covering about 10,000 miles (which is detailed in the same 1924 issue of *National Geographic* that contains Lieutenant Macready's article regarding the endurance flight (see note 72, above). During one period, he held records for altitude, endurance, and distance. He was awarded the Mackay Trophy in 1921 (for an altitude record of 34,509 feet), in 1922 (with Kelly for an endurance record of over 36 hours), and in 1923 (with Kelly for the cross-country non-stop flight), the only person to receive three such awards. He resigned from the service in 1926, but was recalled to active duty in World War II, commanding several Air Force groups until retiring in 1948. He died in 1979, nearly 92 years old. "John A. Macready," SDHS, www.sandiegohistory.org (accessed August 9, 2006). Lieutenant Oakley G. Kelly, the other pilot aboard the T-2, started as a flying cadet in the Signal Corps Reserve, receiving a regular commission in 1920. His first assignment was as a flying instructor at Rockwell Field. He served 30 years in the Air Force (and its predecessors), rose to the rank of colonel, saw action over the Mediterranean, spending his later years as an air inspector for the Eighth Air Force and Twelfth Air Force in England and Africa. His hometown of Grove City, Pennsylvania, celebrates *Oakley Kelly Day* on the first weekend in May of each year, and the town's airport is located on Oakley Kelly Drive. He died in 1966. See Bolling Field history at www.dcmilitary.com/airforce/beam (accessed August 9, 2006).

74. In 1921 there was a previous aerial refueling, of a sort, when a daredevil stepped from the wing of one plane onto the wing of another with a 5-gallon can of gasoline strapped to his back. See Aviation Timeline at www.aerofiles.com/chrono.html (accessed August 9, 2006). It is doubtful if anyone in the Army Air Service thought that this was a practical alternative.

75. Arnold, *History of Rockwell Field*, 115-16; Sudsbury, *Jackrabbits to Jets*, Grunston ed, *Chronicle*, 205; Scott, *Air Capital*, 44. The two aboard the tanker plane were Lieutenant Virgil Hine and Lieutenant Frank W. Seifert. Seifert later became a San Diego city councilman.

76. Arnold, *History of Rockwell Field*, 123; Sudsbury, *Jackrabbits to Jets*, 97. Lieutenant Lowell H. Smith was another one of those pioneer airmen whose name keeps reappearing in histories of air development. Born in 1892, he started his flying career in 1915 as a pilot for Pancho Villa in Mexico before joining the Army Air Service in 1917. In addition to perfecting the first air-to-air refueling, he commanded the Army's famous Around-the-World-Flight in 1924, which, after being serviced at Rockwell Field, formally started from Seattle with four planes and ended with two of them, including his, circling the globe, taking five months and over 371 hours of flying, for which he received decorations and, with the others, the Mackay Trophy. He died in 1945 and is buried at Arlington National Cemetery. www.arlingtoncemetery.net/lsmith.htm (accessed August 9, 2006).

77. As money became available, more and more warm-up and operating areas were paved in the Navy section, so that by the mid-30s, about 450,000 square yards of bituminous pavement and 120,000 square yards of concrete pavement had been laid covering about 178 acres, reducing but not eliminating the various pests that made their home on the island. Sudsbury, *Jackrabbits to Jets*, 123.

78. Carlin and Brandes, *Coronado*, 30. Another problem was gophers. In 1897, the Coronado city council authorized the payment of 5 cents a head for gophers, dead or alive. Coronado Museum of History and Art Exhibit.

79. Sudsbury, *Jackrabbits to Jets*, 134.

80. Charles A. Lindbergh, *The Spirit of St. Louis* (St. Paul: Minnesota Historical Society Press, reprint 1993), 118-36, 503-04.

81. Engstrand, *California's Cornerstone*, 133.

82. The *San Diego Union*, August 17, 1928, reported that there were 222 planes in the sky, although the plan was to put up 400 planes. Pourade, *The Rising Tide*, 123-25, agrees with these numbers, but Sudsbury, *Jackrabbits to Jets*, 128-30, gives the total number as 304, with the Navy having 222 and the

Army 82. Who could tell?

83. The mayor of San Diego was equally effusive and proud, writing that despite unfavorable flying conditions, "not a single mishap occurred to personnel or plane." Harry C. Clark, "The Mass Flight and Dedication in Retrospect," *San Diego Magazine* 4, no. 9 (1928).

84. In the interests of full disclosure, the author of this article should mention that he has a very personal interest in the historic undertaking of the *Question Mark*, as it was during its flight that his father, a private in the Army Air Corps, who was a member of its ground support crew, met his mother, who was a waitress at the Metropolitan Airport cafe. They married six months later, and the author appeared the following year.

85. Details of the flight were reviewed in Walter J. Boyne, "Question Mark," *Journal of the Air Force Association* 86, no. 3 (2003), which can be found at www.afa.org/magazine (accessed August 9, 2006). See also, Scott, *Air Capital*, 49. It is remarkable that one flight involved so many future leaders of World War II. Captain Carl A. "Tooey" Spaatz, the commander of the *Question Mark* is a name right near the top of all Air Force leaders. Born in Boyertown, Pennsylvania, in 1891, he graduated from West Point in 1914, serving with the infantry in Hawaii before being assigned to the Air Service. Training at Rockwell Field, he obtained his wings in 1915, and then became part of the First Aero Squadron flying from New Mexico over Mexico looking for Pancho Villa. After a distinguished career, he retired in 1948, serving in many organizations until his death in 1974, age 83. He is buried at the Air Force Academy in Colorado.

Captain Ira C. Eaker, the chief pilot of the *Question Mark*, is another Air Force great. Born in Field Creek, Texas, in 1896, he started his military career in the reserves until commissioned a second lieutenant in the infantry of the Regular Army in late 1917. In 1918, he received flight training in Texas, and upon qualifying was assigned to Rockwell Field. In 1945 he became deputy commander of the Army Air Forces and chief of the Air Staff. Having logged over 12,000 flying hours in 30 years of flying, and having accumulated numerous medals and foreign decorations and awards, he retired in 1947, after which he was promoted to lieutenant general. In 1985, twenty-eight years after his retirement, special Congressional legislation awarded him a fourth star. He passed away in 1987, over 90 years old.

Lieutenant Elwood R. "Pete" Quesada reached comparable heights. Born in Washington, D. C., in 1904, he attended a seminary school, then the University of Maryland and Georgetown University, before enlisting as a flying cadet in 1924, receiving his wings and commission in the reserve. After his assignment at Rockwell Field and his participation in the flight of the *Question Mark*, he was an attaché in Cuba for years, an aide to the assistant secretary of war, and flew the famous explorer Martin Johnson throughout Africa collecting animals for the New York Museum of Natural History. He retired in 1951, later serving for three years as the director of the Federal Aviation Agency. He died in 1993, at the age of 88. United States Air Force, www.af.mil/bios (accessed August 9, 2006).

Lieutenant Harry A. Halverson the fourth officer aboard the *Question Mark*, also had an interesting career. Born in Boone, Iowa, in 1895, he started in the Army as a private, receiving his commission and wings as a second lieutenant in the Air Service in July 1918, serving in various locations, including Rockwell Field, and participating in operations surrounding the Around-the-World flight in 1924. Active during World War II in China and North Africa, he held numerous command assignments before retiring in 1946. He died in 1978, age 83. History of the 376th Bombardment Group, www.376hbgva.com/history; Maxwell Air Force Base, AFHRA Personal Papers, www.maxwell.af.mil (both accessed August 9, 2006).

Sergeant Roy W. Hooe, the sole enlisted man aboard the *Question Mark*, was born in Charles Town, West Virginia, in 1892. He joined the Army Air Service in 1920. In 1921 he was assigned to then Colonel Billy Mitchell and was aboard the first aircraft to drop a bomb down the smokestack of a naval ship. In 1927 he was chief mechanic for Lieutenant Lester Maitland and Lieutenant Albert Hegenberger (another Rockwell Field alumnus) on their cross-country flight preparatory to the two pilots becoming the first to fly from California to Hawaii. He died in 1973 at the age of 78 and is buried in the Arlington National Cemetery. He was inducted into the Airlift/Tanker Hall of Fame in 2001. Airlift Tank Association, www.atalink.org/hallfame/hooe.html (assessed August 9, 2006).

86. Sudsbury, *Jackrabbits to Jets*, 128.

87. Major J. H. Houghton, "Great Expansion and Construction Program Starts at Rockwell Field," *San Diego Magazine* 4, no. 9 (1928).

88. Sudsbury, *Jackrabbits to Jets*, 142-43, 152.

89. *San Diego Union*, September 30, 1931.

90. Sudsbury, *Jackrabbits to Jets*, 150.
91. William & Watts Architects, "The Architectural/Historical Significance of Building at Naval Air Station, North Island, San Diego," May, 1988, a survey prepared for the U. S. Navy. Most of these structures are still being used, part of the Rockwell Field Historic District, and since 1991 have been listed on the National Register of Historic Places as being exemplary of mission and Spanish colonial revival architecture.
92. Sudsbury, *Jackrabbits to Jets*, 175-77; Leiser, *San Diego Flying Days*, 198, 203, 204, 210.
93. Leiser, *San Diego Flying Days*, 1.
94. Sudsbury, *Jackrabbits to Jets*, 190-91.
95. Ibid., 190-91.
96. Ibid., 214-15. *Coronado Citizen*, February 2, 1939.
97. Pourade, *The Rising Tide*, 224.
98. California Registered Historical Landmark, no. 18, November 8, 1967.
99. The years were 1912, 1913, 1914, 1915, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1931, and 1934. No awards were given for 1916 and 1917. National Aeronautic Association of the USA, www.nasm.si.edu/research/aero/trophy/mackay.htm (accessed August 9, 2006).
100. By way of example, the *Question Mark's* record of 150 hours in the air in 1929 was topped later that same year, first by a flight of 172 hours and then by one of 420 hours. The next year, records of 553 hours and then 647 hours (almost 27 days) were established. Aviation Timeline, www.aerofiles.com/chrono.html (accessed August 9, 2006).