

Pioneer Tanker Crews

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Background on the 1923 first successful tanker refueling

Excerpt from: Mike May. Gas Stations in the Sky. American Heritage. Spring 2004; Volume 19, Issue 4.

In-flight Refueling <http://www.jcs-group.com/military/armyac/refueling.html>

The **first documented scheme** for in-flight refueling came from a young **Russian aviator named Alexander de Seversky**. His father owned a plane and taught him to fly when he was in his early teens. At the age of 21 Seversky, flying for Russia in World War I, attacked a German destroyer. He got shot down before he could drop his bombs, which exploded when his plane crashed. Somehow Seversky survived, but he lost a leg. Less than a year later, wearing a wooden leg, he returned to military aviation, and he soon downed 13 German planes.

In **1917**, now 23, Seversky **proposed a method for extending flight**: One plane could carry extra fuel and deliver it to another through a hose. After the Revolution, Russia's new Bolshevik government sent him to the United States to study aircraft design, and he stayed

there when political developments made his return perilous. He got a job as an aeronautical engineer for the U.S. War Department and was **awarded the world's first patent for air-to-air refueling**, which proposed to provide "large fuel tankers ... to supply fuel to pursuit ships while in flight."

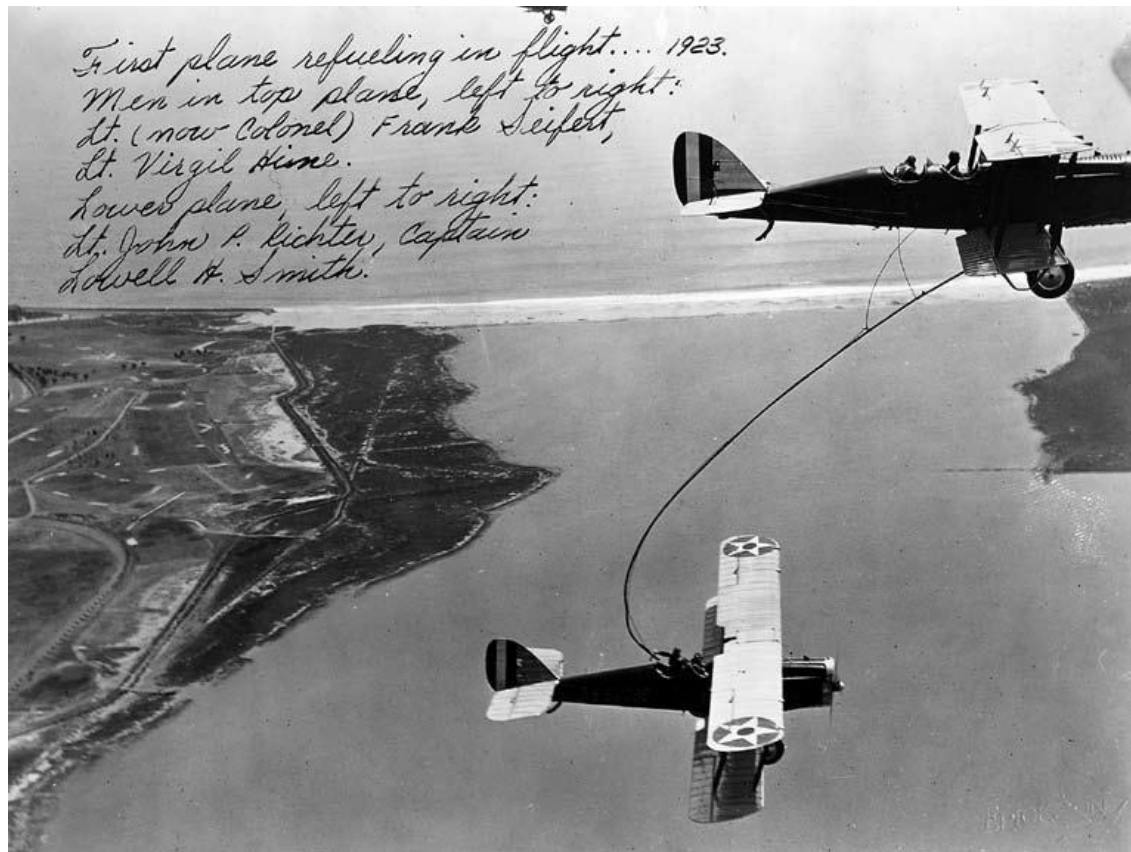
Seversky went on to a distinguished career in airplane design and achieved perhaps his greatest fame as the author of the influential 1942 book *Victory Through Air Power*. He never put his refueling plan in action, though, and other aviators concocted ideas of their own. In **1918 Lt. Godfrey L. Cabot, a U.S. Navy Reserve pilot**, dreamed up the **idea of placing cans of gasoline on floating platforms** in the ocean and picking them up with a hook trailing from a flying plane, much as express trains of the day snatched mailbags. Although Cabot became proficient at picking up cans with this technique, **no one ever used it for refueling**.

On **November 21, 1921**, a completely different method was tried. **Frank Hawks** (who a year earlier had taken Amelia Earhart on her first flight, and who would go on to set numerous speed records as a promotional pilot for the Texas Company, which later became Texaco) flew his Lincoln Standard biplane over Long Beach, California. **Wesley May**, a barnstorming **wing walker**, crawled up onto its top wing. With a five-gallon can of gasoline strapped to his back, May started walking toward the edge of the right wing. Meanwhile, Earl Daugherty, perhaps America's greatest stunt pilot, eased his Curtiss Jenny just above the Lincoln. When Daugherty got his lower left wing within range, May reached up and grabbed a loop on its lower edge. Then Daugherty eased away, with May and his gas can hanging below. **May climbed up onto the lower wing and eventually poured the gasoline into Daugherty's tank.**



In-flight refueling of a less strenuous sort attracted the attention of some military pilots. In World War I, **Lt. John Richter** had complained about having to return repeatedly to base to get more fuel during the St. Mihiel offensive in 1918. In 1923 he flew patrols along the Mexican border with **Capt. Lowell Smith**. Both men grumbled about the abbreviated flights and seemingly constant refueling. Smith suggested refueling the planes in midair and got the go-ahead to try it. Richter turned out to be a good choice to try out the new equipment because he had tested locomotives for the Santa Fe Railroad. For his part, Smith had flown in cross-country races as an official representative of the Army Air Service.

Smith and Richter turned a De Havilland DH-4 two-seater into a tanker by installing a 40-foot hose strengthened with steel cable. To refuel, a crewman in the tanker would toss the heavy hose overboard, and a crewman in another DH-4 flying nearby would try to grab it as it whipped in the wind. Richter even designed a hand pump to put suction on the gas tank in the receiver.



On April 20, 1923, Lt. Virgil Hine and Lt. Frank Seifert, flying the tanker, came in above and behind Smith and Richter and dangled a hose from the cockpit. (The tanker approached from behind to keep the hose from tangling in the receiver's propeller.) Imagine that someone is whipping the hose at a gas station as you try to grab it and that the hose keeps flailing as you put the nozzle in the tank and fill up. That's what Smith and Richter faced on that flight. Somehow one of them managed to grab the hose and hold on to it, and

the two planes kept contact for 40 minutes in this tethered arrangement, though they passed no fuel.

The basic technique seemed to work, so on **June 27, 1923**, the **same teams** transferred fuel between planes. On the **first contact, 25 gallons of gasoline were transferred**. The receiving plane kept flying until it needed fuel again, and a second hookup gave it 50 gallons. Overall, the receiving plane stayed **airborne for 6 hours and 38 minutes**. Beginning the next day, the receiver flew for 23 hours and 48 minutes nonstop, taking on 308 gallons of gasoline. On **August 27 and 28, with 14 refuelings, Smith and Richter stayed aloft for 37 hours and 15 minutes**.

From: https://www.sandiegohistory.org/journal/v51-3/pdf/v51-3_crash.pdf

Thirty-four years later, on March 12, 1968, California State Parks again chose to improve the Airplane Crash Monument, which had become a popular hiking destination. Park maintenance workers broke up the concrete slab, exhumed and 167 The Aircraft Crash Memorial mounted the Liberty V-12 engine on a new, stone rubble and concrete platform, and placed the bronze memorial plaque on the low platform's east-facing side. Clearing the rocks around the engine, they discovered a heavy metal tube. Having no idea what the metal tube represented, they took it back to park headquarters and showed it to Park Supervisor Ronald McCullough, who recognized it as something the U.S. Army would use to hold documents. When McCullough, along with Park Ranger Eugene R. Junette, took off the tube's heavy brass top, he found that it had been sealed carefully with wax to keep out air and moisture. Inside they found three well-preserved copies of the San Diego Union, along with a 1923 Coronado Masonic Lodge calendar, and a paper listing the names of several officers: Major H. H. Arnold, Major H. D. unnikhuysen, Captain R. G. Ervin, Captain William M. Randolph, and First Lieutenants Hine, Richter, Seifert, and Smith. McCullough and Junette were able to locate and contact Seifert, the only survivor on the list, who was a retired colonel living in San Diego. Invited to the park, he told the story of the metal tube's significance. Colonel Siefert summed up the tube's contents by saying, "We just wanted [to leave] a permanent record of the officers who had participated in the search, so we put the tube at the foot of the monument as a sentimental memorial to the two men."⁵³

Lt. Frank W. Seifert was born December 1896 (1900 census) or 29 Sep 1895 (WWI draft registration) or 29 Sep 1896 (California Death Index) in Cincinnati, Ohio – died 2 December 1977 in San Diego, California. His SSN was 562-03-7646. He was married to Bessie (Killeen). His parents were Frank M. (a broom maker) and Estella M.

Seifert left the Army and became a member of the San Diego City Council. Being the first ever to land at Lindberg Field, an airport helped to create while serving on the council, he became known as the Father of Lindberg Field--San Diego's main airport today. He rejoined the Army in different capacities until after serving in WWII in the grade of Colonel. He also

made an unsuccessful attempt at running for US Congress. His home of a few years in San Diego is on the National Register of Historic Places. There is a street and other sites named after him in San Diego.

Lt. Virgil Hine was born 26 Feb 1895 in Arkansas, and was raised between there and Oklahoma. – He died in 1938.

Dr. Ted Hine
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Chris,

He (Virgil Hine) was my dad's brother and my favorite uncle. He stayed in the Air Corps after WWI with his friends H Hap Arnold and Ira Eaker who became famous AF generals during WWII. His wife died very young and his sons were raised here in his home town with me like brothers. His oldest son went down in his B-24 in 1944, and his youngest son died about 10 years ago. Uncle Virgil died in 1938.

If you would like to make contact you have my email address now.

My sister and I are the only surviving members of the family that knew Uncle Virgil. Yes, my dad was Otto Hine. Uncle Virgil's youngest son, Jack, had a daughter who may still be living but who has not communicated with any of the family in years.

I have newspaper accounts and pictures of the refueling as well as other detailed information of the event. Several years ago I saw a replica of the refueling in the Aviation Space Museum at the Smithsonian in Washington, D.C.

Ted

Background on the Question Mark Tankers

TIME Magazine, Question Mark, Monday, Jan. 14, 1929

Endless circles and arcs, endless glissandos of flight. Over Southern California droned the Fokker cabin monoplane Question Mark. At the dawn of the new year five U. S. Army flyers had swooped into the air from Los Angeles. Their resolve was to shatter all existing records for endurance flights, to stay in the sky until men or engines succumbed. Experts had allowed their three Wright Whirlwind motors 400 flying hours before bearings splintered and cracked, poppet valves ceased to pop. The wind-bronzed flyers seemed staunch, infallible.

Back and forth they swept, between Los Angeles and San Diego. Every so often the Question Mark took on fuel. This required uncanny air jockeying. Only, 15 feet directly above the Question Mark flew a fuelling plane piloted by Capt. R. G. Hoyt or Lieut. Odas Moon. From this plane dangled a thin rubber hose. While the planes zoomed at 75 miles an hour Lieut. Harry Halverson aboard the Question Mark reached out, grabbed the hose, thrust it into the tanks. Once there was bungling. Gasoline was spilt. Major Carl Spatz, the commander, was burned. Lieut. Elwood Quesada was overcome by fumes. But later a swinging rope conveyed zinc oxide, balm for the Major. Lieut. Quesada, recovered, idled in his berth, read a magazine. Other ropes were swung, provided oranges, oatmeal, coffee. The larder of the Question Mark was stocked at the start with roast chicken.

Clouds, air pockets, winds, days, nights. Dismayed by enormous puffs of fog the flyers left the seacoast, roared over a 60-mile circuit above Imperial Valley. They broke the U. S. record for re-fuelled flight. They broke the international re-fuelled flight records.* Shortly afterward fell the world's record for sustained flight (heavier-than-air machines).† There remained but two records to pass, that for sustained flight (lighter-than-air machines), and the distance record.**

Bridge was played, innumerable cigarets were smoked. One motor began spurting oil. Sergeant Roy Hooe pussyfooted along the slim runway leading to the spewing machine, did some windy tinkering. Capt. Ira Eaker, at the joy stick, wore a haggard grin. He headed back toward Los Angeles. The day was sunny, the fog had drifted away. The fourth day, the eighty-seventh hour passed. Had the five flown directly eastward the same distance from their starting point they would have been winging over Europe.

And so it flew, now a hovering buzzard, now a darking bee until the seventh day. On the seventh day it rested. The Question Mark ended its airy sentence. After 150 hours. 40 minutes, 16 seconds aloft, the plane came to earth. Out of the fuselage stumbled the crew, shouting greetings. For Lieutenant Quesada, a dish of ice cream; for Sergeant Hooe, a dress suit; for Major Spatz, a shave ; for them all and for the Question Mark there was the acclaim which they had won by keeping a seven days' vigil, so they might snatch from the clouds all existing records.

*U. S.: 37 hours, 15 min., 14 sec.; by Lieutenants Lowell Smith & J. P. Richter at San Diego, 1923.

International: 61 hr., 7 min.; by Adjutant Louis Crooy & Sergeant Victor Groenen, Belgians, 1928.

†Sixty-five hr.. 31 min.; by Johann Risticz & Wilhelm Zimmerman, Germans, 1928. The Question Mark, in one sense, could not break this record. The Germans never re-fuelled.

**Sustained flight (lighter-than-air machines); by the French dirigible Dixmudc. 118 hours, 41

From *Wikipedia*: To deliver the fuel, two Douglas C-1 single-engine transports were modified, s/n 25-428 as Refueling Airplane No. 1 and s/n 25-432 as Refueling Airplane No. 2. The bi-plane C-1s were evolved from the Douglas World Cruiser's design, with the pilots side-by-side in an open cockpit forward of the wing. Each was modified by installing two 150-gallon tanks in its cargo compartment attached to a lead-weighted 50-foot (15 m) length of 2.5-inch (64 mm) fire hose. The nozzle of the hose had a quick-closing valve on the tanker's end and was tightly wrapped with copper wire, one end of which could be attached to a corresponding copper plate mounted in Question Mark to ground the hose.[8] The C-1's would each carry a third crewman in the cargo compartment to reel out the hose or lower a supply rope, and to work the shutoff valve.

Refueling Airplane No. 1 at Rockwell, Pilots: Capt. Ross G. Hoyt, 1st Lt. Auby C. Strickland

Reeling the hose: 2nd Lt. Irwin A. Woodring

Refueling Airplane No. 2 at Van Nuys, Pilots: 1st Lt. Odas Moon, 2nd Lt. Joseph G. Hopkins

Reeling the hose: 2nd Lt. Andrew F. Salter

Four pilots of the 95th Pursuit Squadron, based at Rockwell Field, flew the PW-9 "blackboard planes": 1st Lt. Archie F. Roth, and 2nd Lts. Homer W. Kiefer, Norman H. Ives, and Roger V. Williams.

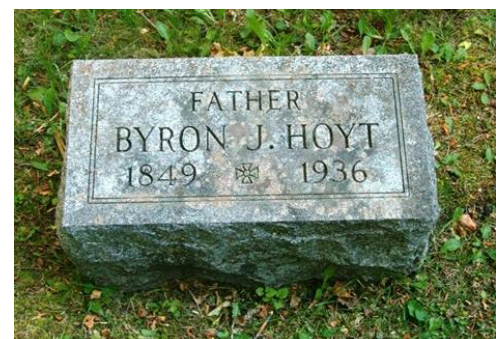
The crews of the tankers went unrecognized. Eventually all six received letters of commendation for their participation, but it was 47 years before their vital role in the operation was recognized with decorations. By then only Hoyt and Hopkins remained living, but both personally received Distinguished Flying Crosses on May 26, 1976.

The United States Census of 1930 shows Lt Moon, Curtis LeMay, Tunner, Spaatz, Maxwell, Elmendorf, Tunner, and many other (future) famous officers stationed at Mather AFB.

Capt. Ross Gordon Hoyt was born 12 Mar 1894 in Traverse City, Michigan – died 7 April 1983 in District of Columbia. His SSN was 578-56-7431. When he left the Army he was an Air Force (temporary) Brigadier General. He retired with a line of duty disability.

His bio is available on Air Force Link. Other details:

On the 1900 census he was 6, living nearby in Clearwater, MI (no longer exists). His parents were Byron and Hortense (Cook), and he was living with his older sister and brother Harriet (Hattie) and Lucius.



In 1910 he was still living with his parents and sister, a little further east in Whitewater, MI.

On the 1920 census he was at the Balloon School in Warwick, VA., married to Evelyn M.

His mother died in 1933. His father died in 1936.

The Air Force Historical Research Agency (AFHRA, at Maxwell AFB) has personal and official papers relating to Hoyt's military career. Includes material concerning the New York to Nome Flight (1929), the Flying Vignettes (1920-1934), and the National Air Races (1929). Also includes articles written by Hoyt on early aviation. Contains numerous news clippings (1929-1979). Also includes **manuscript from Hoyt's autobiography**. Available on microfilm only. Originals retained by Hoyt's heirs.

There is no indication of children, except that **he had heirs** (noted above). Maybe the AFHRA could look into it, see who donated the materials and /or look into the material for more clues?

1st Lt. Aubrey Casey Strickland was born in Braggs, Alabama 17 Dec 1895.

His parents were James H. Strickland and Eligenia M.

His wife was Mary Dell (McCammant, from Texas) died in 1979. According to my findings they have a living daughter (probably Mary Lee) who married Gerry McCabe (1926-1998) and they had a child (living).

On the 1900 census he was at still living in Braggs, AL. with his parents and 4 siblings.

On the 1920 census he was at Camp Pike, Pulaski, AR.

On the 1930 census he was at Schofield Barracks in Honolulu, Hawaii with his wife Mary Dell, his daughter Mary Lee (born in CA in 1926), and his infant son William A. Strickland, as well as his mother-in-law Minnie McCammant.

Brigadier General Aubrey Casey Strickland Retired July 1, 1953. His SSN# was 078-30-8268. He died 16 Aug 1969 in Alexandria, VA.

His son William retired from the Air Force as a Colonel in Sep of 1975, and he died 18 June 2007.

BILL STRICKLAND

WINNSBORO (*South Carolina*) - Colonel William Arthur "Bill" Strickland, Sr., U.S.A.F. (Ret.), age 77, died on Monday, June 18, 2007, at Palmetto Health Baptist. Memorial services with military honors will be held at a later date in Arlington National Cemetery, Arlington, VA.

Son of the late Auby Casey and Mary Dell McCamant Strickland, he was born March 15, 1930, in Hawaii. He was a member of Sion Presbyterian Church where he served as an elder.

Mr. Strickland graduated from West Point Military Academy in June 1953 with a degree in civil engineering and was commissioned as 2nd Lieutenant in the U.S. Air Force. He graduated from Pilot Training School in Mauldin, MO, and served as a pilot in SAC, MAC, and Special Operations Commands, attaining Command Pilot and Flight Examiner status. While stationed at Rhein Main AFB, 1961-1963, during the Cold War and construction of the Berlin Wall, he was selected as Command Pilot to fly the Berlin Corridor to test whether or not Russians would fire on U.S. planes.

Because he was fluent in Russian, Colonel Strickland was selected to fly Secretary of State Chester Bowles to Moscow. During the Bay of Pigs incident, he flew Russian officials to the United States because he was experienced in flying the New York City air space and spoke Russian and Spanish.

He served as Aide to Commanding General, Headquarters Command, Bolling AFB; and he served in Viet Nam, 1970-1971, as Chief of Standard Evaluation for the 14th Special Operations Wing. Colonel Strickland retired from the U.S.A.F. in September 1975.

His many military decorations included the Bronze Star, Air Medal, Distinguished Flying Cross, and Air Force Commendation Medal with three oak leaf clusters.

From 1976 to 1979, he served as Headmaster of Richard Winn Academy in Winnsboro and then finished his education career at Orangeburg-Wilkerson High School, Orangeburg, SC, where he taught Japanese and was the Director of Junior Air Force ROTC. His unit ranked #1 in the nation. He positively influenced the lives of young people there, sending them out to the Air Force Academy and to other colleges on full ROTC scholarships.

Colonel Strickland is survived by his wife, Katherine “Kitty” Shiver Strickland of the home; one son, William A. Strickland, Jr. of Fort Mill, SC; two sisters, Joy Dell McCabe of Alexandria, VA, and Mary Lee O’Neal of Sacramento, CA; and three grandchildren.

Pope Funeral Home is serving the Strickland family.

«Obituary posted: June 21, 2007»

LIVING:

His grandson (William Strickland, Jr.) is 47 years old, living in Fort Mill, SC. (803) 396-7728

2nd Lt. Irwin A. Woodring was born about 1898. (no further info found)

1st Lt. Odas Moon was born about 1891 in Alabama.

On 26 March 1934 at the founding of the Order of Daedalians Capt Odas Moon was elected to the first Daedalian Wing Staff (now called 'National Staff'), and named the 'Wing First Vice Commander'.



Hagley Digital Archives

http://digital.hagley.org/cdm4/item_viewer.php?CISOROOT=%2Fp268001coll33&CISOPTR=616&DMSCALE=12.50000&DMWIDTH=800&DMHEIGHT=500&DMMODE=viewer&DMFULL=0&DMOLDSCALE=2.55102&DMX=0&DMY=0&DMTEXT=%2520moon&DMTHUMB=1&REC=1&DMROTATE=0&x=80&y=75

PHOTO: Personnel of army bomber that 'bombed' New York City the night of May 21, 1929. Left to right - Mr. Bradley Jones, navigator; Lieut. Charles T. Skow, radioman; Lieut. Odas Moon, pilot; Lieut. Eugene Eubank, assistant pilot; Lieut. J.F. Richter, refueller.

Between 1926 and 1940, officers at the air corps tactical school (acts) created the theory and doctrine which would undergird the air strategies practiced in World War II. They became known as the "Bomber Mafia," which included Robert Olds, Kenneth Walker, Donald Wilson, Harold Lee George, Odas Moon, Robert Webster, Haywood Hansell, Laurence Kuter, and Muir S. Fairchild.

Odas died before WWII.

2nd Lt. Joseph G. Hopkins was born in (I think - Manhattan, New York in March of 1900 to Daniel J. and Louisa Hopkins, He married Ernestine L. from Montana in 1929), died 1 March 1978.

Brig Gen Hopkins retired from the Air Force 1955.

Bio from Air Force Link:

Joseph Gerard Hopkins was born in New York, N.Y. in 1900. He enlisted in the New York National Guard on June 28, 1916 and served until March 20, 1917, four months later he enlisted in the Army as a corporal and was assigned to the 106th Machine Gun Battalion until discharged on April 2, 1919. Entering Columbia University in 1920, General Hopkins studied there for three years.

Appointed a flying cadet in March 1925, General Hopkins entered primary and advanced flying schools, graduated one year later and was commissioned a second lieutenant in the Air Reserve, receiving his regular commission as a second lieutenant of Air Corps on June 30, 1927.

First assigned with the 94th Pursuit Squadron at Selfridge Field, Mich., in June 1928, General Hopkins joined the 95th Pursuit Squadron at Rockwell Field, Calif., and in November 1930 was transferred to the 77th Pursuit Squadron at Mather Field, Calif. In January 1933 he was assigned to the 20th Pursuit Group at Barksdale Field, La., and in July 1934 was appointed adjutant of Barksdale Field.

Graduating in June 1937 from the Air Corps Tactical School at Maxwell Field, Ala., General Hopkins then entered the Command and General Staff School at Fort Leavenworth, Kan., graduated a year later and was named secretary of the Air Corps Primary Flying School at Randolph Field, Texas.

Going to Washington, D.C. in June 1940, General Hopkins was assigned duty in the training section, Office of the Chief of Air Corps, where in January 1942 he became chief of the training literature section in that office.

The following June General Hopkins was appointed assistant chief of staff for personnel of the First Concentration Command at Cincinnati, Ohio and in November 1942 became chief of the Organizations Branch in the Office of the Assistant Chief of Air Staff for Plans at Army Air Force Headquarters, Washington, D.C.

Entering the Army and Navy Staff College at Washington, D.C. in October 1943, he graduated in February 1944 and went overseas to become assistant chief of staff for operations of the 10th Air Force in India. Appointed chief of staff of the Army Air Force Training Command in the China-Burma-India Theater in October 1944, two months later General Hopkins was assigned to the Joint Planning Staff of the Southeast Asia Command at Ceylon.

Returning to the United States in July 1945, that September he was assigned to the Fourth Air Force headquarters at San Francisco, Calif. In March 1946 General Hopkins became a member of the Regular Army Board at Fort MacArthur, Calif. He was named deputy commander of McChord Field, Wash., the following month, and in June 1946 was appointed assistant chief of staff for personnel of the 12th Air Force at March Field, Calif.

Becoming deputy commander of the Bermuda Base Command at Kindley Field, Bermuda in May 1947, a year later General Hopkins was appointed commander of the South Sector of the Atlantic Division of Air Transport Command, with station at San Antonio, Texas and in July 1948 was designated comptroller of the Continental Division of Military Air Transport Service at Kelly Field, Texas. He became deputy commander and executive officer of the 1501st Air Transport Wing at Fairfield Suisun Air Force Base, Calif., in October 1948.

Going to Hawaii in July 1949, General Hopkins was named commander of the 1500th Maintenance & Supply Group and a year later assumed the duties of deputy chief of staff for transport operations of the Pacific Division of Military Transport Service at Hickam Air Force Base, Hawaii. In this capacity he was in charge of the Korean airlift.

Transferring to the Atlantic Division of the Military Air Transport Service, Westover Air Force Base, Mass., General Hopkins served as deputy commander from September 1951 to May 1953; assumed command until September 1953; served as deputy commander until February 1954; assumed command until April 1954, and then reverted to deputy commander, moving with the division to McGuire Air Force Base, N.J. on May 31, 1955.

His decorations include the Bronze Star Medal and the Brazilian Military Order of the Southern Cross. He is rated a command pilot, combat observer, technical observer and aircraft observer.

2nd Lt. Andrew F. Salter (no info found)