

# WINGS OF WAR

AN ILLUSTRATED HISTORY OF  
KIRTLAND AIR FORCE BASE, 1941-1960

Author  
Kristen Reynolds

Graphic Design  
Tracey L. Fedor

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## PREFACE

This history traces the evolution of Kirtland Air Force Base from a hastily constructed World War II advanced flying school to a Cold War bastion of high-tech research and development. *Wings of War: An Illustrated History of Kirtland Air Force Base, 1941-1960* is a product of a Memorandum of Agreement between Kirtland Air Force Base and the New Mexico State Historic Preservation Officer for the Demolition of 13 Historic Buildings, in accordance with Section 106 of the National Historic Preservation Act of 1966, As Amended. Coincidentally, but most fortuitously, the book's printing falls on Kirtland Air Force Base's seventy-fifth anniversary.

While the history of this Air Force base has been detailed in numerous books and reports—this publication provides a new look at military life and work on the desert scrublands south of Albuquerque. Special care has been taken to represent not just the official missions of the installation, but the social history of those stationed here during its early years. The majority of the photographs within these pages have never before been seen in print. Their sheer youth and vitality is palpable in the images of aviation cadets who trained here prior to World War II combat duty. Some of these airmen would suffer terrible deprivation as prisoners of war. Many never came home, having made the ultimate sacrifice for the sake of peace. Postwar, the most elite airmen in the country—the “Megaton Blasters”—called Albuquerque home for a time—as the base entered the Atomic Age.

The author would like to give thanks to the many professionals who assisted with this project. Foremost, James A. “Al” Moyers, DAFC, provided extensive assistance. Center Historian for the Air Force Nuclear Weapons Center at Kirtland Air Force Base, Al Moyers spent considerable time culling the majority of these images and ephemera from the base archive, and edited the final draft for factual and technical accuracy. Historians Dr. Robert W. Duffner, Chief, and Elena Friot, Pathways Intern, graciously provided the author use of pertinent archival materials at the Phillips Research Site History Office (Kirtland Air Force Base) of the Air Force Research Laboratory. Archivists deserving gratitude for their time and effort include Glenn Fye of the Albuquerque Museum, Sandy Fye of the National Museum of Nuclear Science & History, Nancy Brown-Martinez of the Center for Southwest Research at the University of New Mexico, and Lucinda Whitehorse of the New Mexico Tech Skeen Library. Michael Howell, Insignia Committee Chairman of the Cavalcade of Wings, generously allowed the reproduction and use of materials from his own personal collection of militaria and that belonging to Cavalcade of Wings. Lastly, many thanks are due to current and former base 377 MSG/CEIE Cultural Resources Managers, Dustin Akins and Valerie Renner, respectively, for their supervision and support of this endeavor.



# CLASSROOMS OF THE CLOUDS

## THE ARMY AIR CORPS ARRIVES

**“As Albuquerqueans look forward to the first glimpse of great flying fortresses in majestic formations in our sky, they marvel at the speed with which base facilities for these defense eagles have been constructed.”**

*– Albuquerque Progress,  
March 1941*

The initial focus of mission support buildup—and base headquarters—was located on the west side of the north-south runway, which had been lengthened in preparation for the Army Air Corps’ B-17 *Flying Fortresses*. This aerial dates to September of 1941. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.380)

War clouds gathered over Europe and Asia during the late 1930s, as Germany and Japan sought to expand their empires. With the outbreak of World War II in autumn 1939, the Allies and Axis powers squared off in what would become the deadliest conflict the world had ever seen. Though the United States remained isolationist at war’s outset, it quickly began mobilizing the military.

American air forces, in particular, were a focus of concern given the awe-inspiring power already demonstrated by Germany’s Luftwaffe. President Franklin D. Roosevelt called for a massive expansion of the Army Air Corps (AAC). In April 1939, Congress allocated \$300 million for AAC buildup.

In New Mexico, Albuquerque city leaders had been trying since 1935 to get an air base in hopes of “a bigger payroll than the Santa Fe Railroad.”<sup>1</sup> The city’s year-round sunny weather was ideal for aviation. In late 1939, the War Department selected the brand new Albuquerque Municipal Airport to be an Army Air Station. Adjacent acreage was leased, and the north-south runway doubled in length.<sup>2</sup>

Contractors Frank Shufflebarger of Albuquerque and J.E. Morgan & Sons of El Paso were contracted to build the base adjacent to the airport. Construction began in January 1941 on land a soldier later referred to as “a fair-sized pasture of cactus and thistle.”<sup>3</sup> The Albuquerque Army Air Base, under the jurisdiction of the Army Air Forces’ (AAF) Western Flying Training Command, was completed three months before Pearl Harbor.

The 19<sup>th</sup> Bombardment Group (BG), the base’s first tenant, arrived in the summer to train for combat duty in the Pacific. B-17 *Flying Fortress*



aircrews thundered over New Mexico practicing precision, high altitude, and formation flying. In October, squadrons began departing in phases for Clark Field in the Philippines.<sup>4</sup> The 19BG would come under Japanese attack the day after Pearl Harbor.

The Albuquerque Army Air Base supported another crucial mission during summer 1941. The Royal Air Force in England desperately needed Boeing B-24 *Liberator* bombers. The Air Corps Ferry Command Four-Engine Transition School, run by Trans World Airlines (TWA), began training Air Corps pilots in June to deliver or “ferry” the aircraft. TWA, the only domestic airline to fly four-engine aircraft, used its own pilots as instructors. The AAF took over the facility and renamed it the Combat Crew Training School (Four Engine), before relocating to Tennessee in July 1942.<sup>5</sup>

Following the 19BG’s departure and American entry into World War II, Albuquerque Army Air Base was chosen to host a bombardier school.<sup>6</sup> This would be its primary World War II mission. Lt. Col. John P. Ryan was put in charge, and the first personnel arrived the week after Pearl Harbor.<sup>7</sup> Ryan, having helped develop the Norden bombsight, was known as “the father of modern bombing.”<sup>8</sup> The new AAF Advanced Flying School, under the jurisdiction of the West Coast Air Corps Training Center, was officially activated the day before Christmas 1941.<sup>9</sup>

Advanced Flying School was the third phase in aviation cadet training for bombardiers. Potential cadets—following enlistment—underwent two days of rigid medical examination and a battery of psychological and psychomotor tests.<sup>10</sup> Those who passed muster were delegated for pilot, navigator, or bombardier training based on their test results. Basic training took four (later nine) weeks at a Replacement Training Center.<sup>11</sup>

Advanced Flying School featured 12 weeks of classroom and flight training. Cadets began flight training during Week 4 in AT-11 *Kansans* (dubbed “Classrooms of the Clouds”). The facility was renamed the AAF Bombardier School in 1943, and the program extended to eighteen weeks to include navigation training.<sup>12</sup> Graduates were promoted to second lieutenants, presented with silver wings, and assigned to an aircraft and crew for combat duty.

Albuquerque Army Air Base became Kirtland Field in February 1942. Base personnel, instructors and aviation cadets were subject to rough conditions early on, before additional base construction in 1942 and 1943. Many of the school’s operations were carried out in flimsy pyramidal tents adjacent to the runway.<sup>13</sup> One serviceman remembered, “The cadets used to drop into Major [Antone] Borecky’s [Commandant of Cadets] office shack to warm up around the stove.”<sup>14</sup> Lt. Col. Ryan turned a GI Opera House into the school’s headquarters. The first class of bombardier cadets graduated March 7, 1942.<sup>15</sup>

While Kirtland Field’s primary and longest mission was bombardier training, it supported numerous other training programs during the war. A Base Air Mechanics School operated from February 1942 on. Dubbed the “Men Who Keep ‘Em Flying,” these airmen were trained in aircraft engines, electricity, propellers, hydraulics, instruments, and carburation.<sup>16</sup> A Glider Replacement Center opened in July 1942. Glider pilots, or the “Men with Silent Sings,” took classes in instrument flying and practiced in Link trainers while awaiting assignment to a permanent glider school. However, the whole AAF Glider Training Program was inactivated in February 1943.<sup>17</sup>

A contingent of the Women’s Army Auxiliary Corps (WAAC) was assigned to Kirtland Field in May 1943. Shortly thereafter renamed the Women’s Army Corps (WAC), the program enlisted women to serve in noncombatant support roles—other than nursing—for the first time ever. Positions in bombsight maintenance, radio operation, and parachute rigging expanded WAC options over time beyond switchboard operation, typing and motor transport. The 736<sup>th</sup> WAC Post Headquarters Company saw the transfer of numerous personnel overseas during the war.

The AAF Bombardier School also provided facilities for a Provisional B-24 *Liberator* Pilot Transition program during 1943. The nine-week transition course qualified pilots to be B-24 bomber commanders.<sup>18</sup> Major Harry E. Campbell, a TWA pilot before the war, directed the program. Campbell also took command of the AAF Bombardier School following Lt. Col. Ryan’s transfer to Carlsbad Army Air Field in August 1943.<sup>19</sup>

Two miles east of Kirtland Field, a second AAF base was established during this era. Unofficially named Sandia Base, the Air Depot Training Station (ADTS) was a facility of the Air Service Command. Its mission was to train ground crews to repair, supply, and service aircraft before deployment overseas.<sup>20</sup> The station operated from June 1942 to October 1943. With the closure of the ADTS, the base was redesignated Albuquerque Army Air Field.

The Albuquerque Army Air Field reactivated in early 1944 to serve as an AAF Convalescent Center for approximately one year. A nearby former boarding school served as a hospital for wounded airmen. Ambulatory patients lived in former ADTS quarters, and took occupational therapy classes ranging from typing and business to celestial navigation.<sup>21</sup> After the war, the base served briefly as a storage location for old or obsolete aircraft to be sold or demolished on site.<sup>22</sup>

During the war, tens of thousands of acres were acquired south of Kirtland Field and Sandia Base for the New Mexico Proving Ground (NMGP). Everly John “Jack” Workman, chairman of the University of New Mexico’s Physics Department, directed the NMGP. The proving ground was established for testing a new proximity or variable timing (VT) fuze for use with antiaircraft artillery. The fuze eventually proved effective at destroying German V-1 buzz bombs, and caused a sensation in the press over its success in Europe.

At Kirtland Field, the AAF Bombardier School operated into early 1945. The last class—143 graduates including 24 Chinese airmen—earned their wings on February 24. It was the 51<sup>st</sup> class to graduate from the school, which had trained more than 5,000 bombardiers during its three years in operation.<sup>23</sup>

Kirtland Field was transferred to the Second Air Force in March 1945, and devoted to B-29 *Superfortress* support. Once again, aircrews trained extensively for combat duty. The Boeing B-29 was the most sophisticated bomber flown during World War II. A critical component of the U.S. strategy for defeating Japan, it was used extensively in day and night bombings, and chosen for the atomic bomb drops on Hiroshima and Nagasaki. B-29 *Superfortress* support was Kirtland Field’s last wartime mission. With German and Japanese surrender in 1945, World War II came to an end.



**Lembke Construction Company** of Albuquerque built 100 houses (Opposite) specifically for non-commissioned officers who were married. This housing development was located northeast of the headquarters and mission support area. Sixteen of the units featured three bedrooms; the rest offered two bedrooms.<sup>26</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)

**During the initial buildup** of Albuquerque Army Air Base in early 1941, the U.S. Army Corps of Engineers oversaw the construction of 110 buildings including barracks, mess halls, warehouses, and a chapel. The price tag was \$1,455,401.<sup>24</sup> (Courtesy Cavalcade of Wings)

**Many of the buildings** were two-story, wood-framed with gable roofs, seen here nearing completion. The base was designed to house 225 officers and 1,970 enlisted men—comprising base support personnel and the 19th Bombardment Group.<sup>25</sup> (Courtesy Albuquerque Museum Photoarchive, PA1980.61.423)





**A group of workers** takes a break from painting houses to pose for a photographer. These men were members of Local Union No. 823 of the Brotherhood of Painters, Decorators and Paperhangars of America. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.380)







**In April of 1941,** Col. Frank D. Hackett took command of the Albuquerque Army Air Base. The colonel, a graduate of the Massachusetts Institute of Technology, was a former command pilot. A small cadre of officers and enlisted men arrived with Hackett from March Field in California. (Courtesy Air Force Nuclear Weapons Center Office of History)



**Five hundred soldiers** disembarked from the troop trains and boarded trucks for the final leg of the journey to their new post. These first arrivals served as base support personnel. (All Images Courtesy Air Force Nuclear Weapons Center Office of History)



**Pictured here** the first troop trains bound for Albuquerque Army Air Base arrived in the summer of 1941 via a three-mile AT&SF railroad spur off the main line. California contractors Sharp & Fellows had built the railroad spur in just 26 days.<sup>27</sup>







**The earliest base accommodations** included tent-houses, as seen to the right in this photograph. They featured wood-sided walls and conical canvas roofs. Many of these structures were unheated. (Courtesy Albuquerque Museum Photoarchive, PA1993.20.3)



**A non-commissioned officer (NCO)** takes advantage of Albuquerque's copious sunshine to dry clothing outside his rustic living quarters. (Courtesy Albuquerque Museum Photoarchive, PA1968.1.240)



**This tent-house** featured double bunks aggregated around a cast iron stove. The clothing hanging in the corners displays the chevron bars of the sergeant and corporal ranks. (Courtesy Albuquerque Museum Photoarchive, PA1968.1.239)



**The two-story barracks** buildings featured large spaces, as pictured here, crammed with metal cots. Clothes were hung along the side walls; shoes went under the bed. (Courtesy Albuquerque Museum Photoarchive, PA2007.17.68)

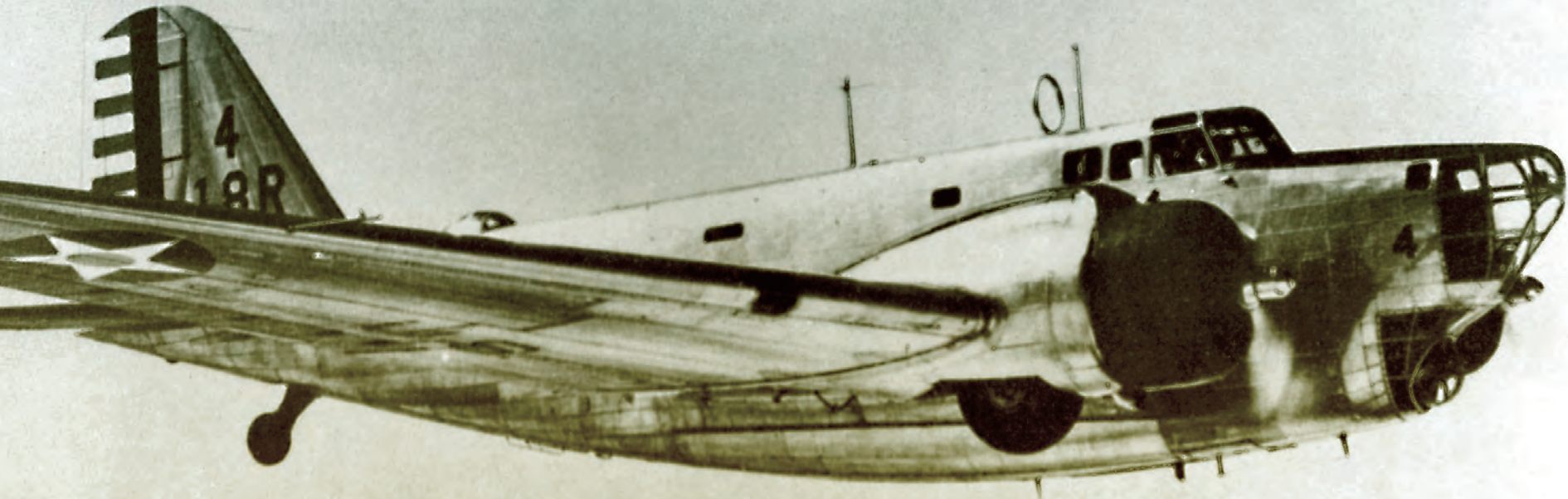


**Members of bombardier Class 44-6** relax in the barracks in early 1944. They may have been readying for departure rather than moving in. (Courtesy Steve Fasnacht)



# 19th Bombardment Group

The very first aircraft to arrive at the Albuquerque Army Air Base was a Douglas B-18 *Bolo*, piloted by Lt. Sid Young.<sup>28</sup> The B-18 *Bolo* would figure prominently in the base's future role as a bombardier school (Courtesy Phillips Research Site History Office, Air Force Research Laboratory, KAFB, NM)

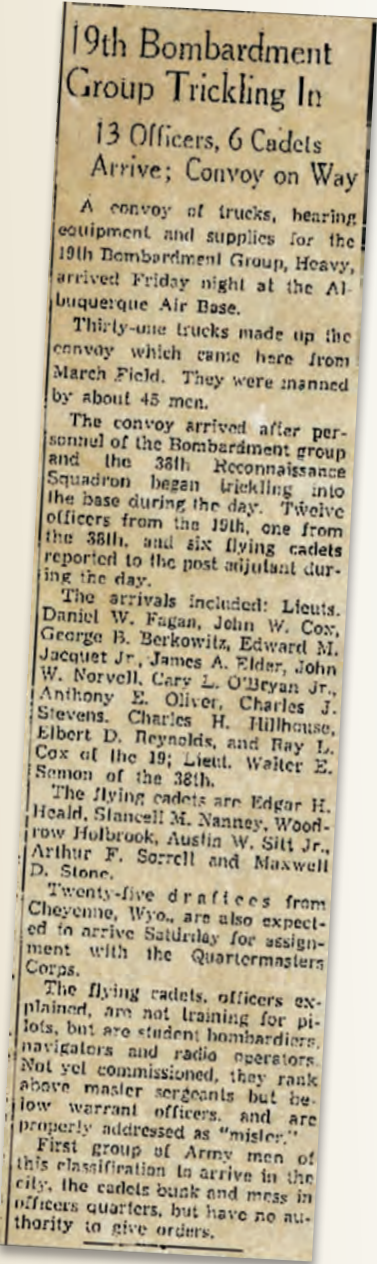


**The 19th Bombardment Group** (Above, pictured at March Field) arrived on base from California in June 1941 to train on Boeing B-17 *Flying Fortresses* for combat duty in the South Pacific. Precision, high altitude and formation flying were emphasized. (USAAC Photograph)

**Lt. Col. Eugene L. Eubank** was commanding officer of the 19th Bombardment Group. Eubank insisted his pilots also cross-train as navigators and bombardiers while in Albuquerque. Eubank went on to become Brigadier-General before retiring in 1954. (Courtesy Air Force Nuclear Weapons Center Office of History)



**This newspaper article** ran in the *Albuquerque Journal* on June 7, 1941. A series of such articles about the 19th Bombardment Group during 1941 conveyed the air of expectation in Albuquerque.







**The 19th Bombardment Group's** air echelons departed in phases for Clark Field in the Philippines between October and December of 1941. The day after Pearl Harbor, the unit suffered losses of men and aircraft when the Japanese bombed Clark Field. Here a 19th aircrew stands with their *Flying Fortress*—likely in Australia—early 1942. (USAAC Photograph)

**“We weren’t surprised that we were ordered to the Philippines... As one of the top priority groups in the Air Corps, naturally we would expect that if anything happened we were bound to be part of it.”**

– Brig. Gen. Eugene L. Eubank, 1982<sup>9</sup>

**In August 1942**, Major David R. Gibbs of the 19th Bombardment Group was posthumously awarded the Distinguished Service Cross for his heroism and leadership during the Japanese attack on Clark Field. He was reported missing in action two weeks later. Gibbs’ wife, pictured here, takes the pass-in-review during the presentation ceremony at Kirtland Field. (Courtesy Cavalcade of Wings)





# Air Corps Ferry Command Four-Engine Transition School



The base hosted a school for training pilots on four-engine, Consolidated B-24 *Liberator* bombers from July 1941 to July 1942. The first pilot trainees were to deliver or “ferry” the American-made aircraft to the UK’s Royal Air Force. Trans World Airlines (TWA) ran the school first before its transfer to the Army Air Forces. In this image, a B-24 flies over Albuquerque. (Courtesy Albuquerque Museum Photoarchive, PA1968.1.111)

In this Issue  
**FLYING BOMBERS ACROSS THE ATLANTIC**  
McGraw-Hill Publishing Company, Inc. MAY, 1941 Price 35c. per copy 40c. in Canada

# AVIATION

The Oldest American Aeronautical Magazine

**6,000 mile Deliveries**

On their delivery flights from San Diego to England, Consolidated Liberators cover 6,000 miles of land and open ocean. The speed and ease with which they are completing these flights demonstrate once again American leadership in long-range bombardment aircraft. Each Liberator gets its power from four dependable Pratt & Whitney Twin Wasp engines.

**PRATT & WHITNEY AIRCRAFT**  
EAST HARTFORD, CONNECTICUT

A 1941 issue of *Aviation Week* addressed the importance of the B-24 ferrying mission: “Mass flights of bombers across the Atlantic, in mid-winter and over the great-circle route, have now been demonstrated as a feasible delivery system. It is faster and safer than shipping them by boat, and serves to release many tons of shipping for other needed war supplies.” (Courtesy Aviation Week)



In early 1942, the Albuquerque Army Air Base was renamed Kirtland Field in honor of the recently deceased Col. Roy C. Kirtland. One of the first U.S. Army pilots, Kirtland directed American troops in France during World War I, and later became commandant of Langley Field in Virginia.

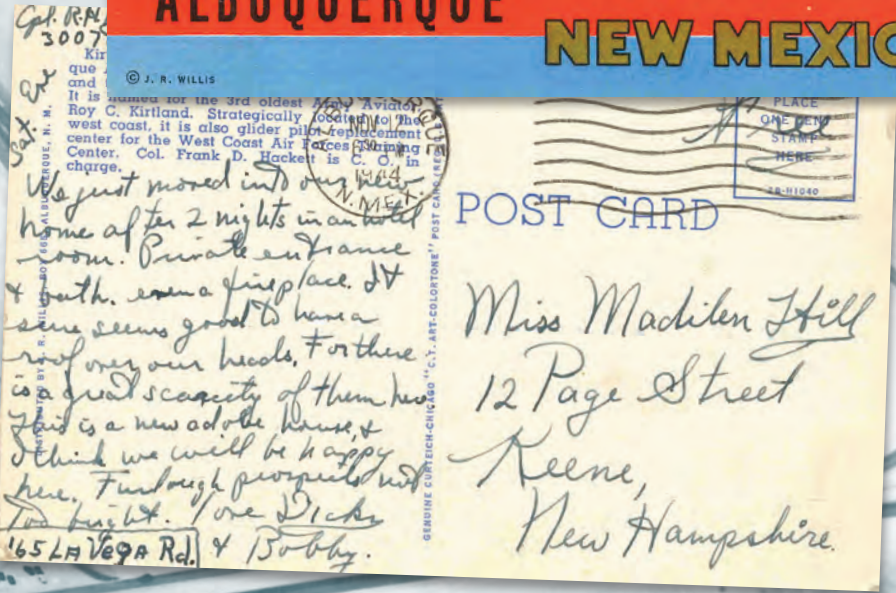
He suffered a fatal heart attack shortly after returning to active duty. (Courtesy Air Force Nuclear Weapons Center Office of History)



Kirtland Field continued to develop and expand during 1942 (Opposite) and 1943 with contracts for new cold storage, mess, hospital, hangar, barracks, and recreational facilities. By 1944, the base housed 402 buildings.<sup>29</sup> (Courtesy Cavalcade of Wings)



Memorabilia Courtesy National Museum of Nuclear Science & History and Author





# Army Air Forces Advanced Flying School

**Bombardier cadets**  
(Above) had to be between 18 and 26 years old, and 60 to 76 inches tall. No one weighing more than 200 pounds could qualify for any aircrew position.<sup>30</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)



**“Bombardier schools are located at Chandler, Arizona; Kingman, Arizona; Victorville, California; Albuquerque, New Mexico; Carlsbad, New Mexico; Hobbs, New Mexico; Roswell, New Mexico; and Midland, Texas.”**

– USAAF Pamphlet Above

**With the departure** of the 19th Bombardment Group, the base was chosen to host an advanced training school for bombardiers. The AT-11 *Kansan*, seen here lined up at Kirtland Field, was the standard aircraft for such training. The *Kansan* was often referred to as a “Classroom of the Clouds.” (Courtesy Steve Fasnacht)



Lt. Col. John P. "Paddy" Ryan (standing) was the first director of the Advanced Flying School. Ryan was an internationally recognized authority on aerial bombing, and had helped develop the Norden bombsight during the 1930s. (Courtesy Air Force Nuclear Weapons Center Office of History)



# A Word From Your Director Of Training

HEADQUARTERS  
ARMY AIR FORCES ADVANCED FLYING SCHOOL  
Office of the Director of Training  
Bombardier Training School  
Kirtland Field, Albuquerque, New Mexico

Welcome, Mister:

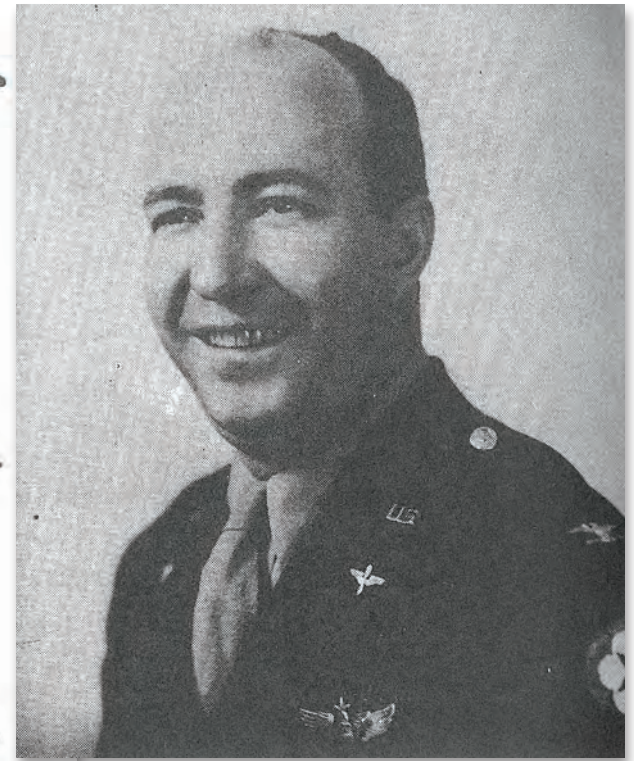
The next twelve weeks will be the most important period in your Army career.--During that period you will either become an officer and a Bombardier, or you will face elimination from Cadet training. Your success or failure will depend largely upon your own study habits and personal attitude.

Our schedule here is rigid and our standards are high. The very nature of the job for which you are training makes discipline and perfection a must!

But you will not find us unbending.--This is the oldest bombardier school in America and you have the advantage of having men as your instructors who have reaped the full harvest of Kirtland Field's experience in training the many classes which have graduated before you. These officers can develop maximum proficiency in you, but only if you put your utmost into every phase of instruction while you are here.

So work hard, never be careless, study hard and strive for perfection--and remember, we want you to make good!--and in making good you will uphold the tradition of Kirtland Field.

*John P. Ryan*  
JOHN P. RYAN  
Colonel, A. C.  
Director of Training

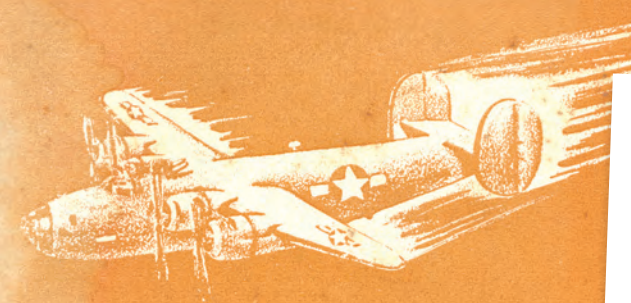
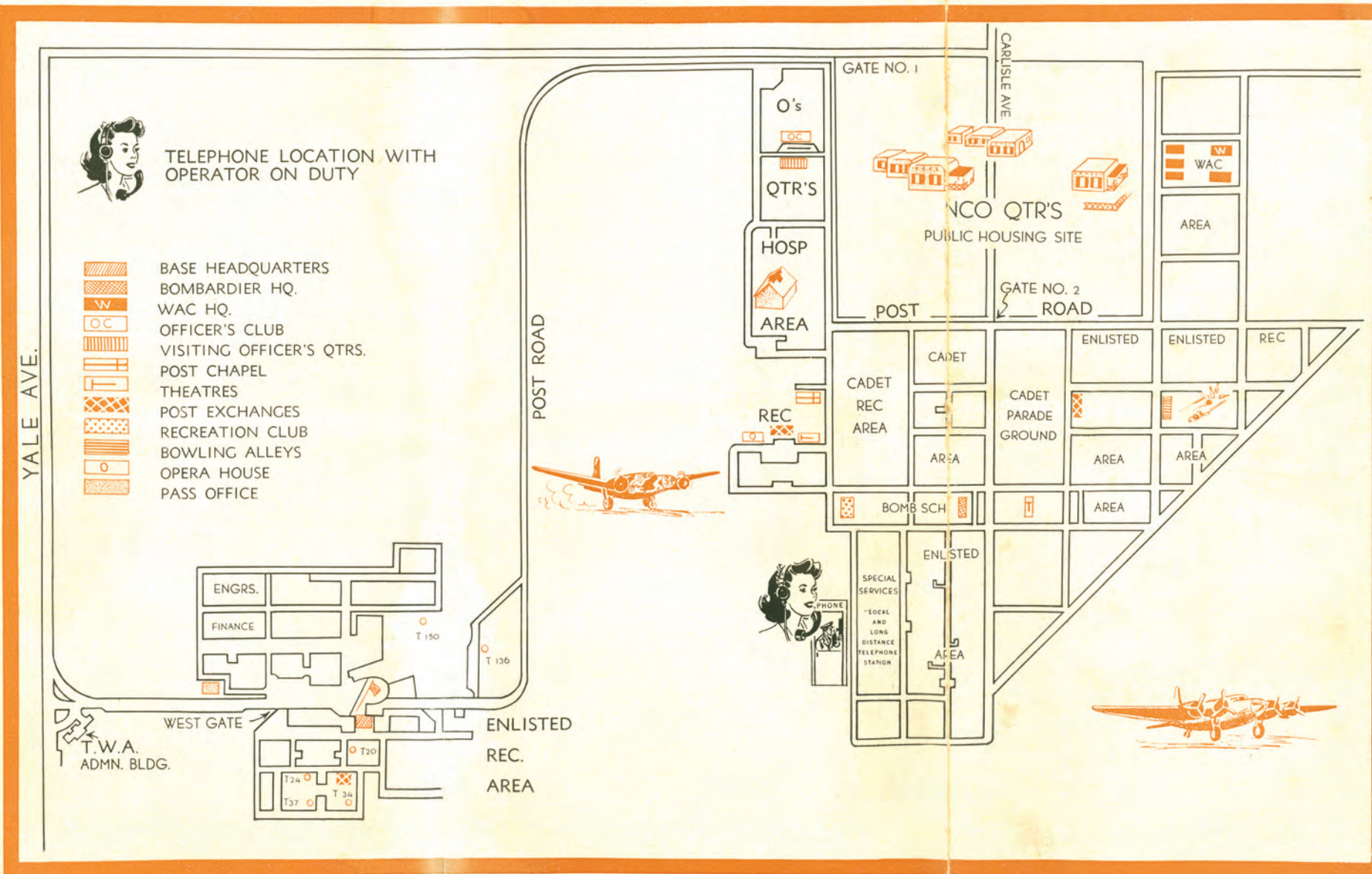


This letter of introduction from Lt. Col. Ryan appeared in the 1943 *Bombs Away!*, an orientation booklet for aviation cadets new to the Advanced Flying School for bombardiers at Kirtland Field. Cadets were addressed as "Mister" by all ranks due to their status as junior officers. (Courtesy Air Force Nuclear Weapons Center Office of History)



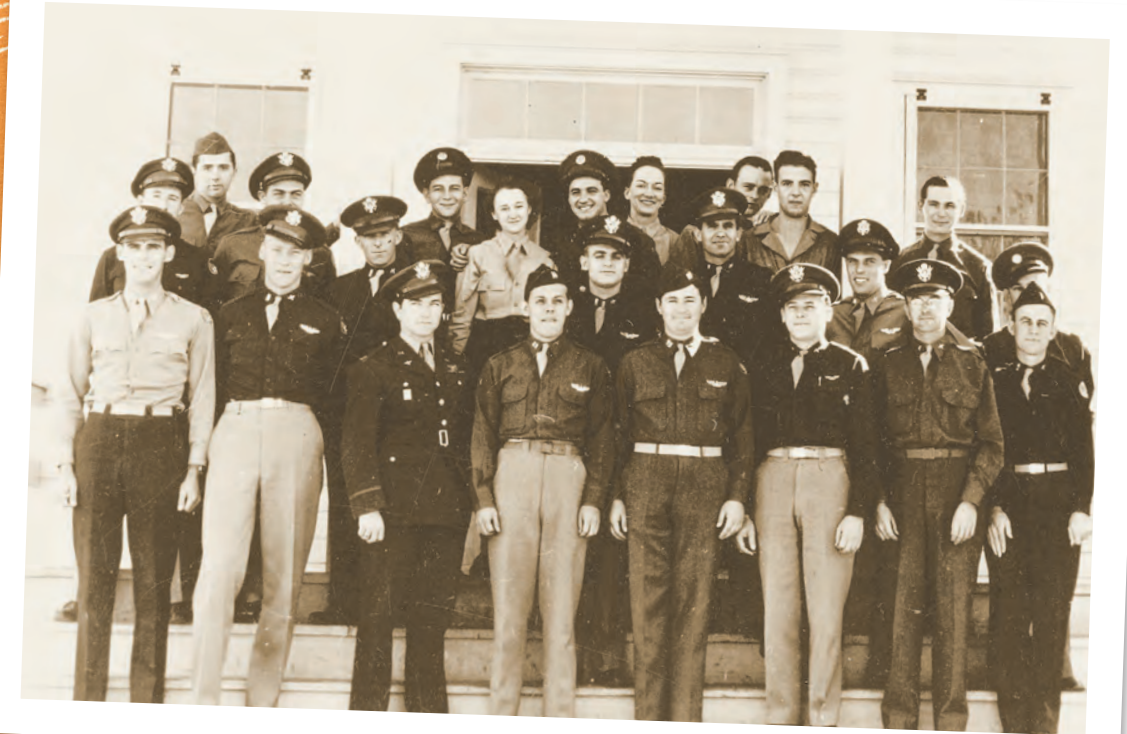
A. A. F. BOMBARDIER SCHOOL, KIRTLAND FIELD  
ALBUQUERQUE, NEW MEXICO

December, 1943—GKD



Kirtland  
field

# INFORMATION

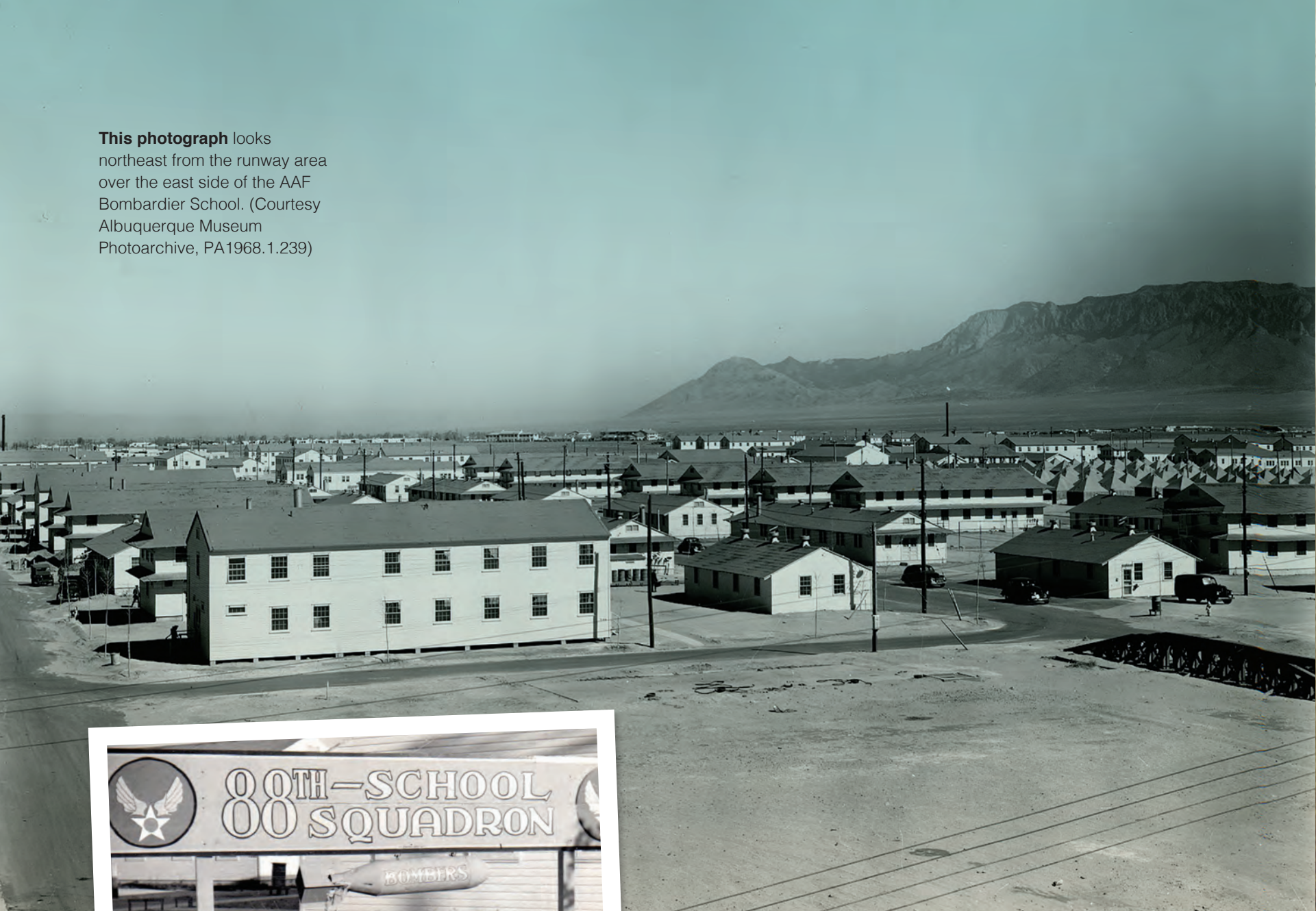


**The aviation cadet area** (Opposite) was located on the east side of the base. Upon arrival, the men were immediately issued their bedding, footlocker, and other cadet equipment. Supply issue was followed by an orientation lecture addressing daily life—the barracks, mess hall, laundry services, etc. This brochure helped to orient cadets with their new surroundings. (Courtesy Air Force Nuclear Weapons Center Office of History)

**The new Army Air Forces** Advanced Flying School was an intense 12-week training program. It was expanded to 18 weeks in mid-1943. A group of students and instructors (Above) pose in front of a classroom building. (Courtesy Air Force Nuclear Weapons Center Office of History)

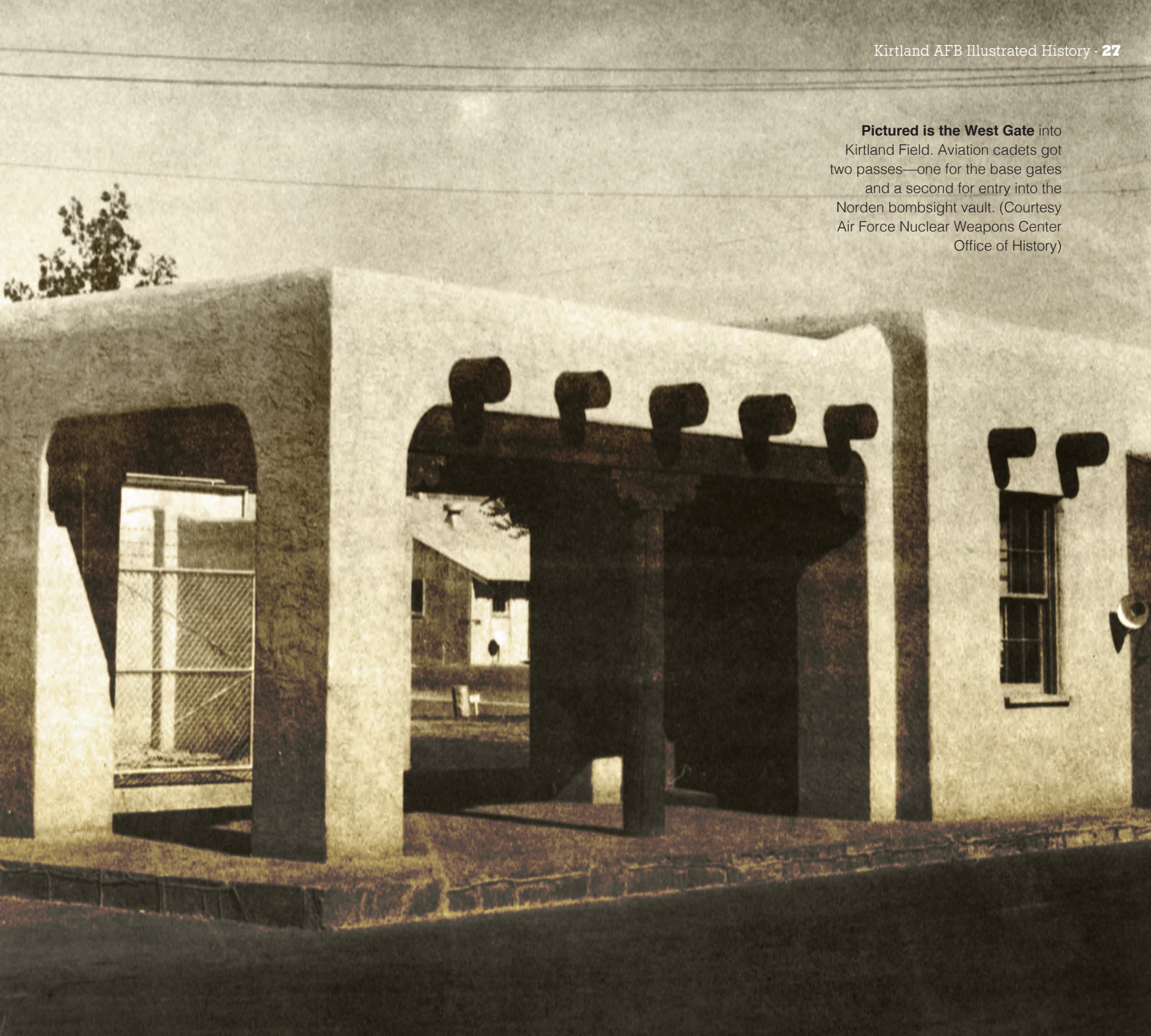


**This photograph** looks northeast from the runway area over the east side of the AAF Bombardier School. (Courtesy Albuquerque Museum Photoarchive, PA1968.1.239)



**The 88th School Squadron** was one of the first training squadrons transferred to the new Advanced Flying School at the Albuquerque Army Air Base. In this image, B-24 flight engineer Sgt. George Skamanich poses at the headquarters sign. (Courtesy Air Force Nuclear Weapons Center Office of History)

**Pictured is the West Gate** into Kirtland Field. Aviation cadets got two passes—one for the base gates and a second for entry into the Norden bombsight vault. (Courtesy Air Force Nuclear Weapons Center Office of History)







**Bombardier Cadet  
Flight A Schedule**

**Weeks One to Three:**  
0415            Clean Barracks; Breakfast  
0600-1300 Bomb Trainer Classes  
1300            Lunch  
1430-1830 Ground School Classes  
1830            Supper  
2100            Bed Check

**Weeks Four to Nine:**  
0430            Clean Barracks; Breakfast  
0630-1400 Flight Training  
1400            Lunch  
1530-1830 Ground School  
1835            Athletics; Supper  
2100            Bed Check

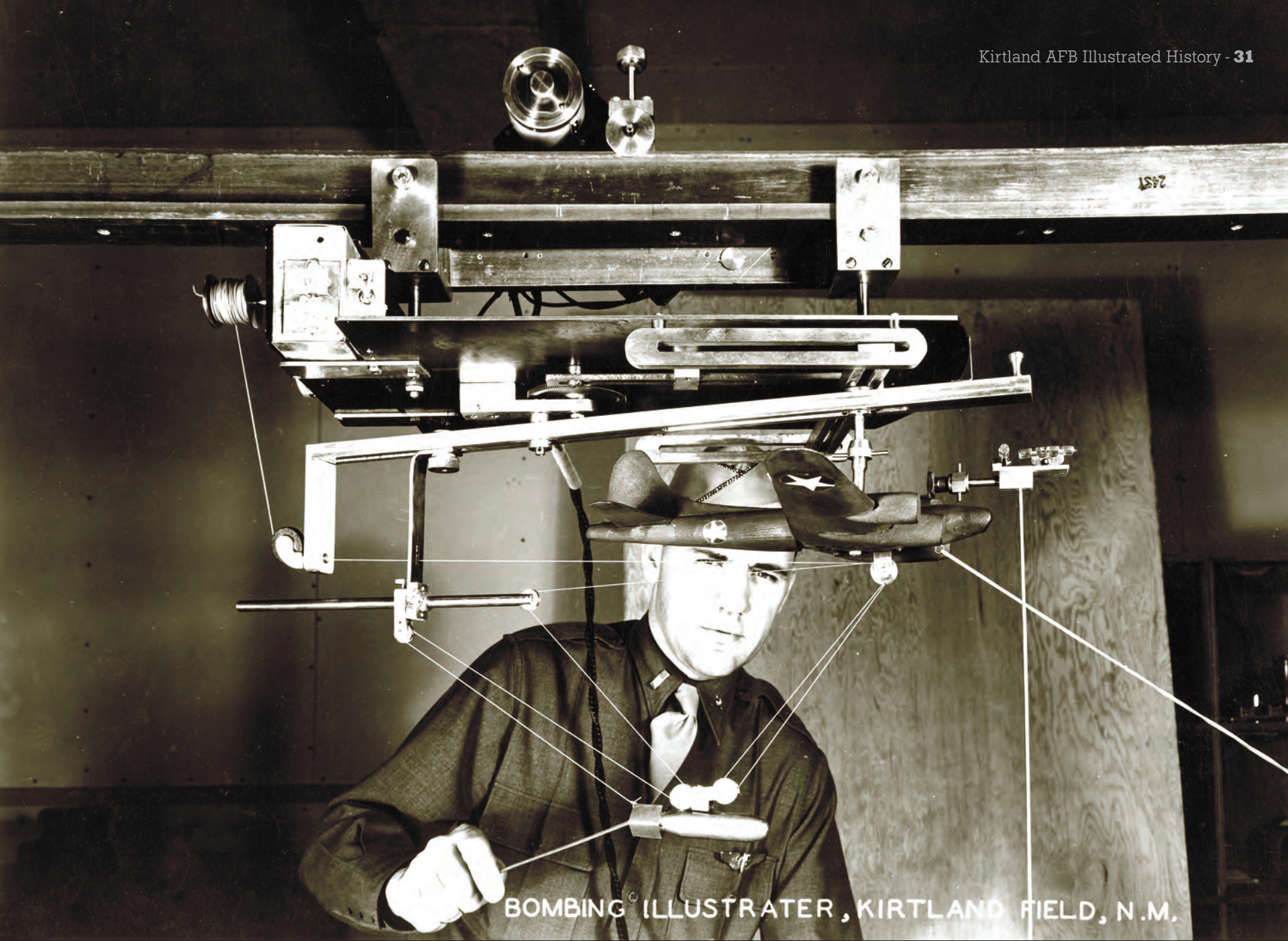
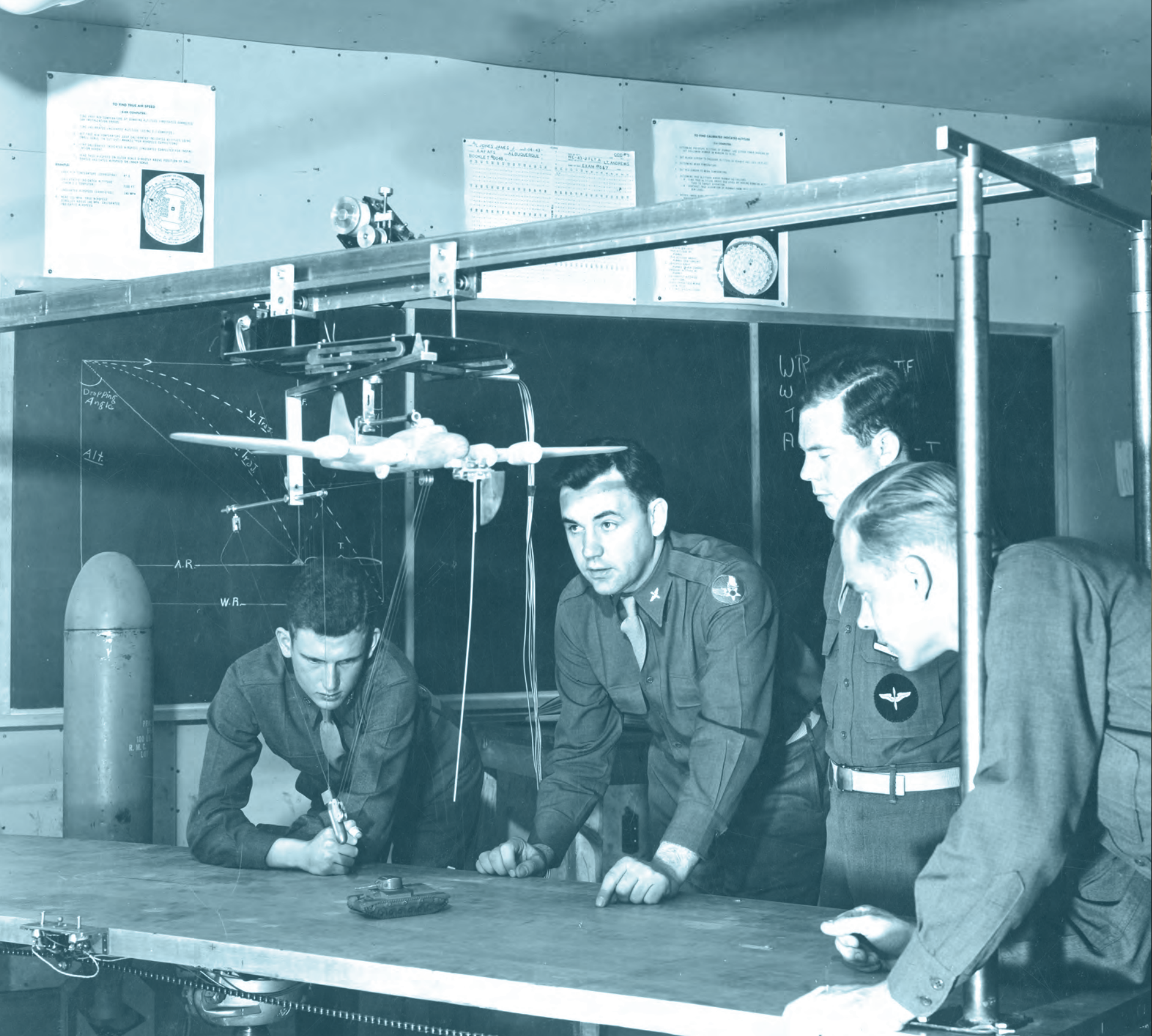
(Schedule from *Bombs Away!*)

Each new group of aviation cadets was divided into smaller units called "Flights" upon arrival. Flights A, B, and C each had their own barracks and followed similar, but staggered, daily schedules. Pictured is West Coast Class 42-8, Flight A in June 1942. (Courtesy Author)

Aviation cadets marched in formation (Opposite) to and from all activities—meals, classes, athletics, etc. The weekends concluded with a formal dress parade at 1500 on Sunday afternoons. Bombardier trainee Pvt. Herbert A. Bradley Jr. later remembered, "Each squadron passed in review at the parade ground, band playing – the works!"<sup>31</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)







BOMBING ILLUSTRATER, KIRTLAND FIELD, N.M.

**Cadets studied a device** (Opposite) called the Bomb Illustrator—a miniature airplane on a series of pulleys. A tiny model bomb, located on the underside of the airplane, illustrated how a real bomb would fall when the release was switched on. (Courtesy Air Force Nuclear Weapons Center Office of History)



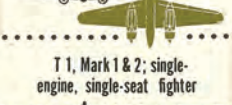


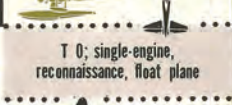


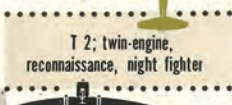


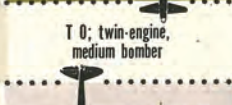
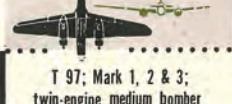

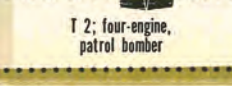

**Two Kirtland Field instructors** invented the Bomb Illustrator. This training tool could simulate bombing up to an altitude of 60,000 feet. (Courtesy Air Force Nuclear Weapons Center Office of History)



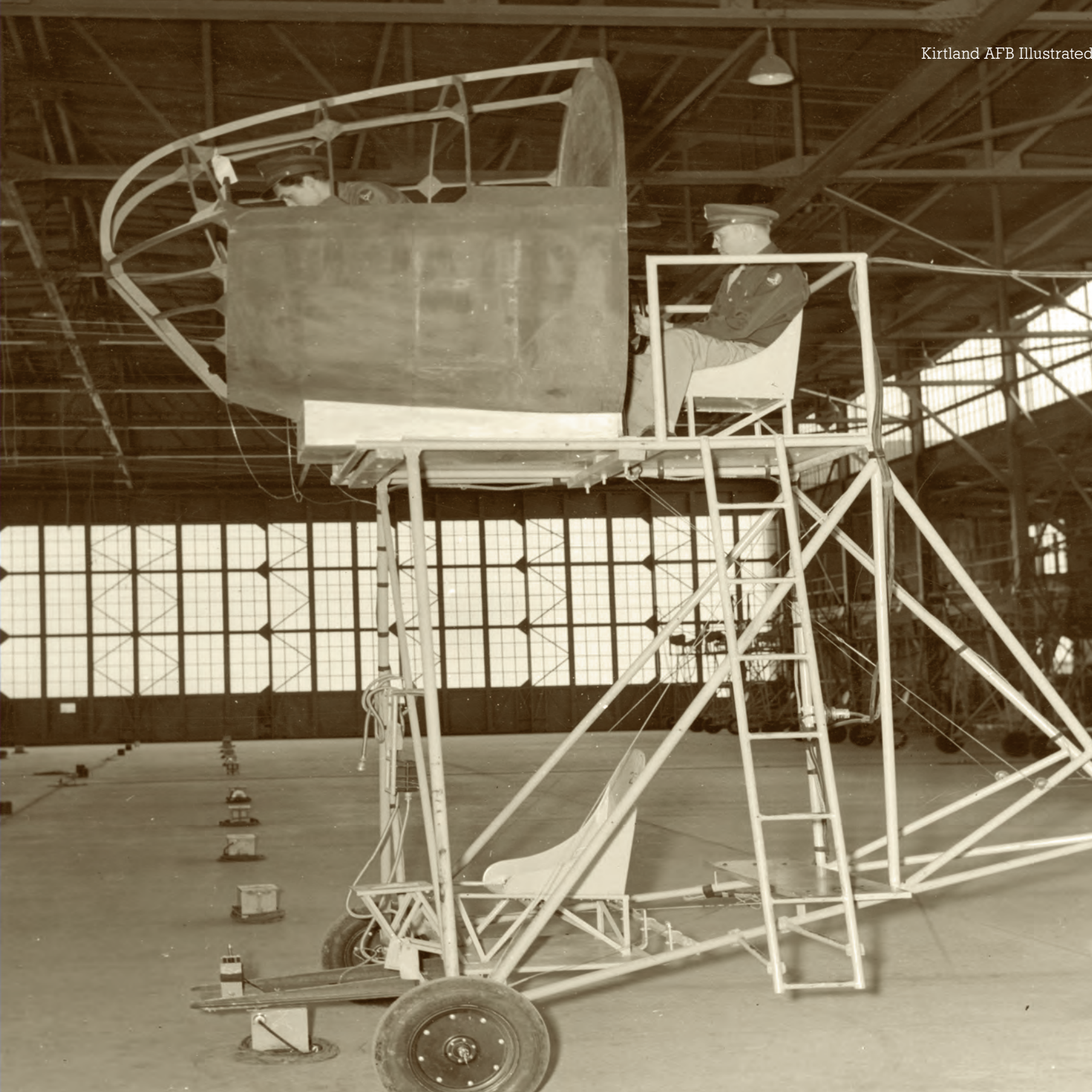


**Bombardier trainees** attended Ground School classes on basic bombing theory, construction and operation of the Norden bombsight, aircraft identification (Above), navigation, and meteorology. (Courtesy Air Force Nuclear Weapons Center Office of History)

**Aircraft identification** was an important part of training for all aviation cadets. This illustration of Japanese aircraft types appeared in the September 1944 issue of *Air Force* magazine.

SOME OPERATIONAL TYPES OF JAP AIRCRAFT		
CODE NAME	DESIGNATION AND TYPE	
TONY		T 3; single-engine, single-seat fighter
TOJO		T 2, Mark 1 & 2; single-engine, single-seat fighter
NICK		T 2; twin-engine, two-seat fighter
OSCAR		T 1, Mark 1 & 2; single-engine, single-seat fighter
ZEKE		T 0, Mark 1 & 2; single-engine, single-seat fighter
HAMP		T 0; single-engine, single-seat fighter
RUFÉ		T 2; single-engine, single-seat, fighter, float plane
PETE		T 0; single-engine, reconnaissance, float plane
JAKE		T 0; single-engine, reconnaissance, float plane
DINAH		T 100, MARK 1 & 3; twin-engine, reconnaissance
JUDY		T 2; single-engine, reconnaissance
IRVING		T 2; twin-engine, reconnaissance, night fighter
VAL		T 99; single-engine, dive bomber
KATE		T 97; single-engine, torpedo bomber
BETTY		T 1; twin-engine, medium bomber, torpedo bomber, reconnaissance
HELEN		T 0; twin-engine, medium bomber
LILY		T 99; Mark 1 & 2; twin-engine, light bomber
SALLY		T 97; Mark 1, 2 & 3; twin-engine, medium bomber
NELL		T 96, Mark 2; twin-engine, medium bomber, torpedo bomber
EMILY		T 2; four-engine, patrol bomber

**The Ground Trainer** (Opposite) was a simulated aircraft nosecone—rigged with a Norden bombsight—set high on a three-wheeled metal framework. The projectile was a small brass plump-bob. A small target called a “bug” was motorized to move as training advanced. The instructor sat behind the student to direct and correct mistakes. (Courtesy Air Force Nuclear Weapons Center Office of History)







After the initial three weeks of school, aviation cadets were ready to begin in-flight bombardier training. Accordingly, the men were issued the necessary flight gear. (Courtesy Air Force Nuclear Weapons Center Office of History)

The cadet pictured here picks up his jacket and radio headset. Flight gear also included special pants, boots and gloves, goggles, an oxygen mask, and parachute. (Courtesy Air Force Nuclear Weapons Center Office of History)



**Bombardier cadets** line up to march to the flight line for daytime flight training. There were two cadets, the pilot and instructor on each flight. Each cadet dropped approximately 160 bombs during training, with precise records kept of his hits and misses. (Courtesy Steve Fasnacht)





**Orders for bombardier cadets** were posted daily on a flight mission board, as pictured in both of these images. The board listed each cadet's name with an assigned pilot and instructor for the flight. In this image, members of Class 44-6 check the daily orders for March 26, 1944. (Courtesy Steve Fasnacht)

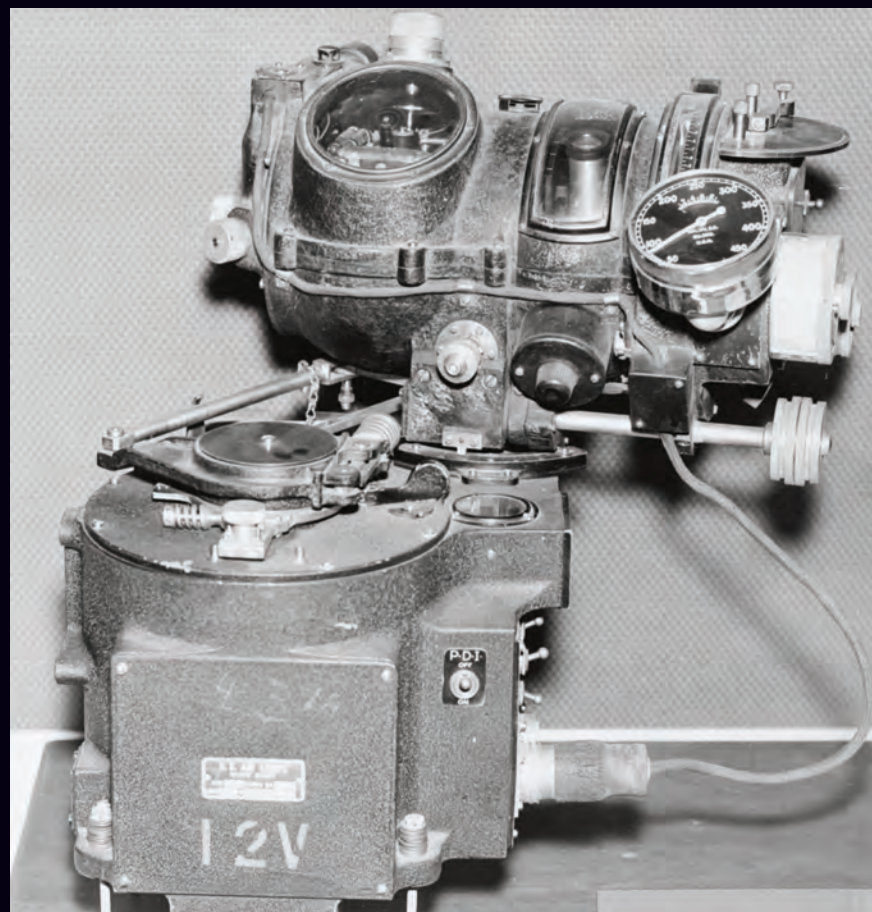


**In the mission room**, cadets of Class 44-6 review paperwork and prepare for the day's flight training. It was either nighttime or very early in the morning. (Courtesy Steve Fasnacht)



### The Bombardier's Oath:

"Mindful of the secret trust about to be placed in me by my Commander in Chief, the President of the United States, by whose direction I have been chosen for bombardier training...and mindful of the fact that I am to become guardian of one of my country's most priceless military assets, the American bombsight...I do here, in the presence of Almighty God, swear by the Bombardier's Code of Honor to keep inviolate the secrecy of any and all confidential information revealed to me, and further to uphold the honor and integrity of the Army Air Forces, if need be, with my life itself."



**Each trainee** had to take The Bombardier's Oath (Opposite). In this photograph, the aviation cadet has placed his hand on the canvas bag containing the top-secret Norden bombsight. (Courtesy Air Force Nuclear Weapons Center Office of History)

**The Norden bombsight** was the key element of bombardier training. The top secret device dramatically improved bomb target accuracy. At Kirtland Field, it was stored in sentry-guarded vault a block away from the Advanced Flying School.







**Aviation cadets** carry cameras for their bombardier training flight. Each cadet photographed the other's bomb drops in order to record the hits and misses. (Courtesy Steve Fasnacht)



**The bombardier's section** of the aircraft was sometimes called "the greenhouse" due to its appearance. This student bombardier at Kirtland Field sits in the greenhouse of a Douglas B-18 *Bo/o*. Visible below it is the nose gunner's station. (Courtesy Air Force Nuclear Weapons Center Office of History)



**Another view** of the bombardier's position is presented in this B-18 *Bo/o* training photograph. The image was shot from the perspective of the nose gunner's station below. (Courtesy Phillips Research Site History Office, Air Force Research Laboratory KAFB, NM)





During the latter half of 1942, bombardier training flight crews at Kirtland Field included movie star and pilot Jimmy Stewart. This *Look* magazine cover photograph of Stewart was taken at Kirtland Field. The actor later flew combat missions over Germany with the 445th Bombardment Group. (Courtesy Author)



The Norden bombsight was transported to and from its vault in a canvas bag. As shown in this photograph, armed guards at front and rear escorted the training crews carrying the top-secret device for each and every practice bombing session. (Courtesy Air Force Nuclear Weapons Center Office of History)

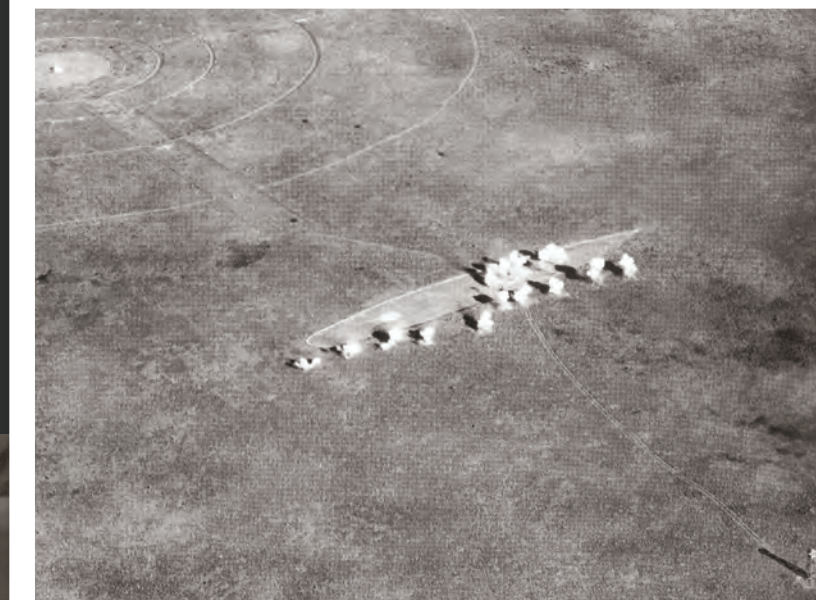




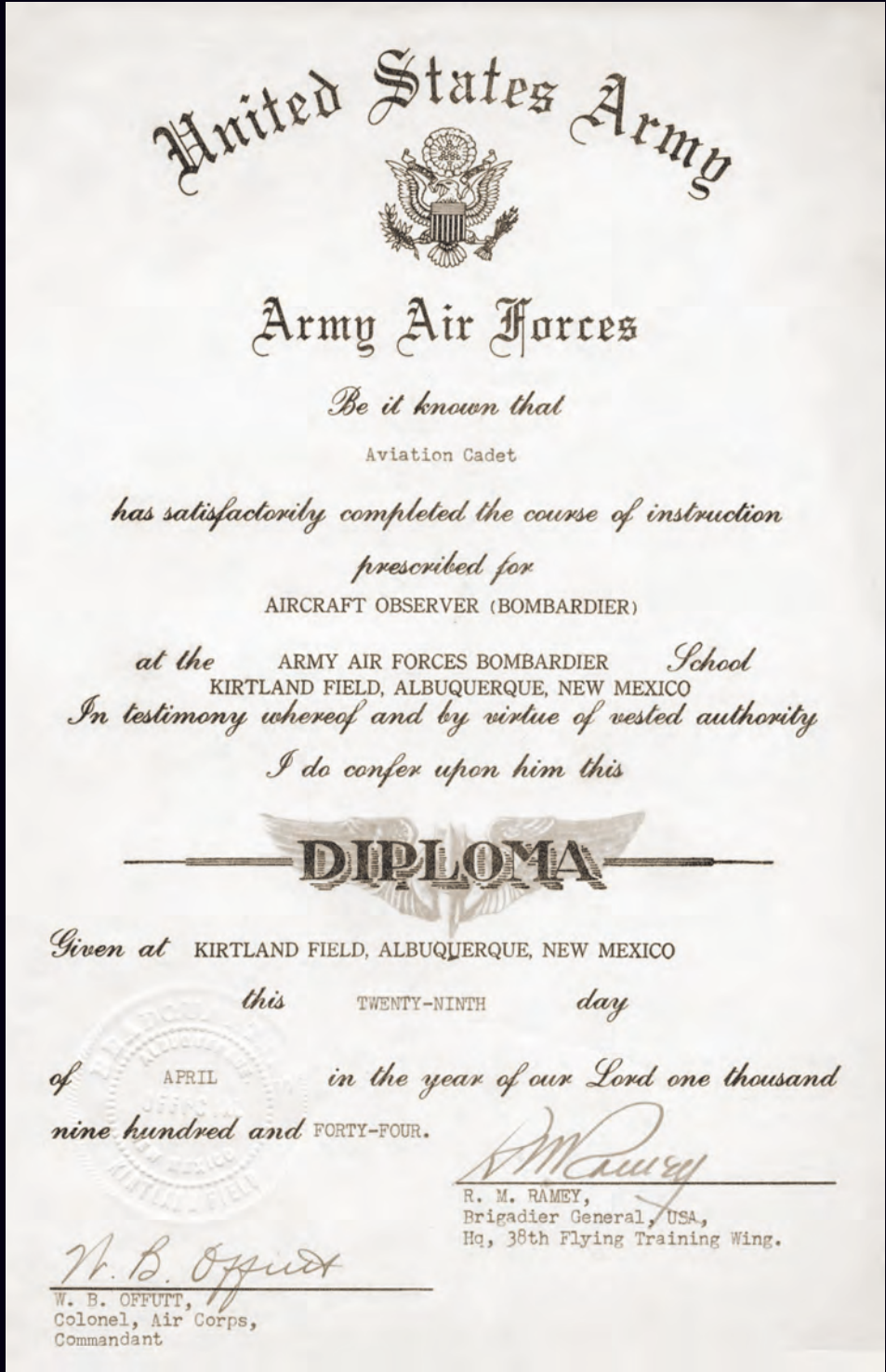
**Training bombs** (Above) are loaded onto an AT-11. The bay held ten 100-lb practice bombs. These inert bombs were filled with sand. A black powder charge exploded when the bomb hit the ground, allowing its target accuracy to be judged by the in-flight instructor. Cadets (Left) work out a navigation problem prior to their practice bombing mission. (Both Images Courtesy Air Force Nuclear Weapons Center Office of History)

**This group** discusses the missions prior to takeoff. Each student practiced dropping five bombs. While one student practiced with the bombsight, the other student took photographs of the drops. The images were later analyzed for accuracy.

**Bombardier students** practiced dropping the “dummy” bombs over ranges laid out in unpopulated areas west and southwest of Albuquerque. In this photograph, the targets were laid out in the shape of a warship. (Both Images Courtesy Air Force Nuclear Weapons Center Office of History)







**“With the final mission flown, the new Second Lieutenant, with just pride on graduation day, receives his gold bars, silver wings, diploma and a hand shake, wishing him well, and is sent to a tactical unit to take his post in the world’s best bombers.”**

Bombardier Class 42-3 Yearbook, 1942

**Commander Hackett** hands out the diplomas in this 1942 graduation photograph. Lt. Col. William C. Lewis (far left) handed out the bombardier wings.<sup>32</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)







Because 97 percent of aviation cadet hopefuls wanted to be pilots, the USAAF sought to glamorize bombardiers and navigators in order to encourage recruitment and happiness with these particular aircrew roles. With this in mind, RKO Pictures was given permission to film *Bombardier* at Kirtland Field in 1942. Its production played a role in the USAAF's overall push to publicize the bombardier program.<sup>33</sup> (Courtesy Author)

*Bombardier* was a docudrama about six aviation cadets undergoing advanced bombardier training. Kirtland Field bombardier cadets served as extras for the film, while the school's flight instructors flew the B-17 flying sequences. Pat O'Brien and Randolph Scott shoot a scene during filming at Kirtland Field. (Courtesy Air Force Nuclear Weapons Center Office of History)





**“A War of defense undertaken by a peace loving people binds them together in heart and effort... The Army Chapel is the symbol of that unity under God; for under its roof every soldier finds opportunity to worship his God in his own way—our heritage of religious liberty.”**

Kirtland Field 1943 Yearbook

**Attending a mass** at the base chapel are (Opposite, left to right) actor Pat O'Brien, Father Michael S. Ragan, Commander Frank Hackett, and actor Randolph Scott. “The base chapel (Below) served the soldiers’ spiritual needs. The base had a Protestant chaplain as well as a Catholic chaplain. (Both Images Courtesy Air Force Nuclear Weapons Center Office of History)





# Base Air Mechanics School

**Kirtland Field** also hosted a Base Air Mechanics School beginning in February of 1942. The school trained students to be specialists in aircraft engines, electricity, propellers, hydraulics, instruments, and carburation. (Courtesy Air Force Nuclear Weapons Center Office of History)

**Aircraft undergoes inspection** (Opposite Top), and welding is performed on an AT-11 twin-row radial engine (Opposite Bottom). Many of the Base Air Mechanics School students were members of the various Bombardier Training Squadrons stationed at Kirtland Field. These men maintained the AT-11s for training at the Advanced Flying School. (Images Courtesy Air Force Nuclear Weapons Center Office of History)



**“He doesn’t wear a pair of silver wings, in fact, he’s probably wearing a pair of greasy overalls. Yet the man in the greasy overalls is largely responsible for the remarkable success of our aircraft in combat. He is the Air Corps Mechanic.”**

*Bombsight*, June 15, 1943



# Women's Army Corps



A contingent of the Women's Army Auxiliary Corps (WAAC) arrived for duty at Kirtland Field in May 1943. The 736th WAAC Post Headquarters Company performed a wide range of duties from stenography to radio operation to Norden bombsight maintenance. In 1944 Kirtland Field's *Bombsight* magazine reported: "We've sent WACs...to all the combat theaters." (Courtesy Air Force Nuclear Weapons Center Office of History)



The WAAC was incorporated into the USAAF as the Women's Army Corps (WAC) in July 1943. Crowds line Central Avenue in Albuquerque as a Kirtland Field WAC regiment marches in procession. Seen at left, the Kimo Theater was playing *Five Graves to Cairo*, a 1943 World War II movie. (Courtesy Air Force Nuclear Weapons Center Office of History)



Cpl. George O. Thorne interviews WAC Edith L. Swinehart for the radio show "Around Kirtland, the Air City." Swinehart, a Pennsylvania schoolteacher prior to enlistment, was on the *Bombsight* staff at Kirtland Field.<sup>34</sup> She had recently been promoted to corporal, as illustrated by her arm patch. (Courtesy Air Force Nuclear Weapons Center Office of History)





**These six enlisted soldiers** competed on base in fall 1942 to win a spot to perform on the Tommy Dorsey radio show. Sgt. M. C. Reed (fourth from left) won the all-expenses-paid trip to Hollywood, where he sang on the radio show.<sup>35</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)

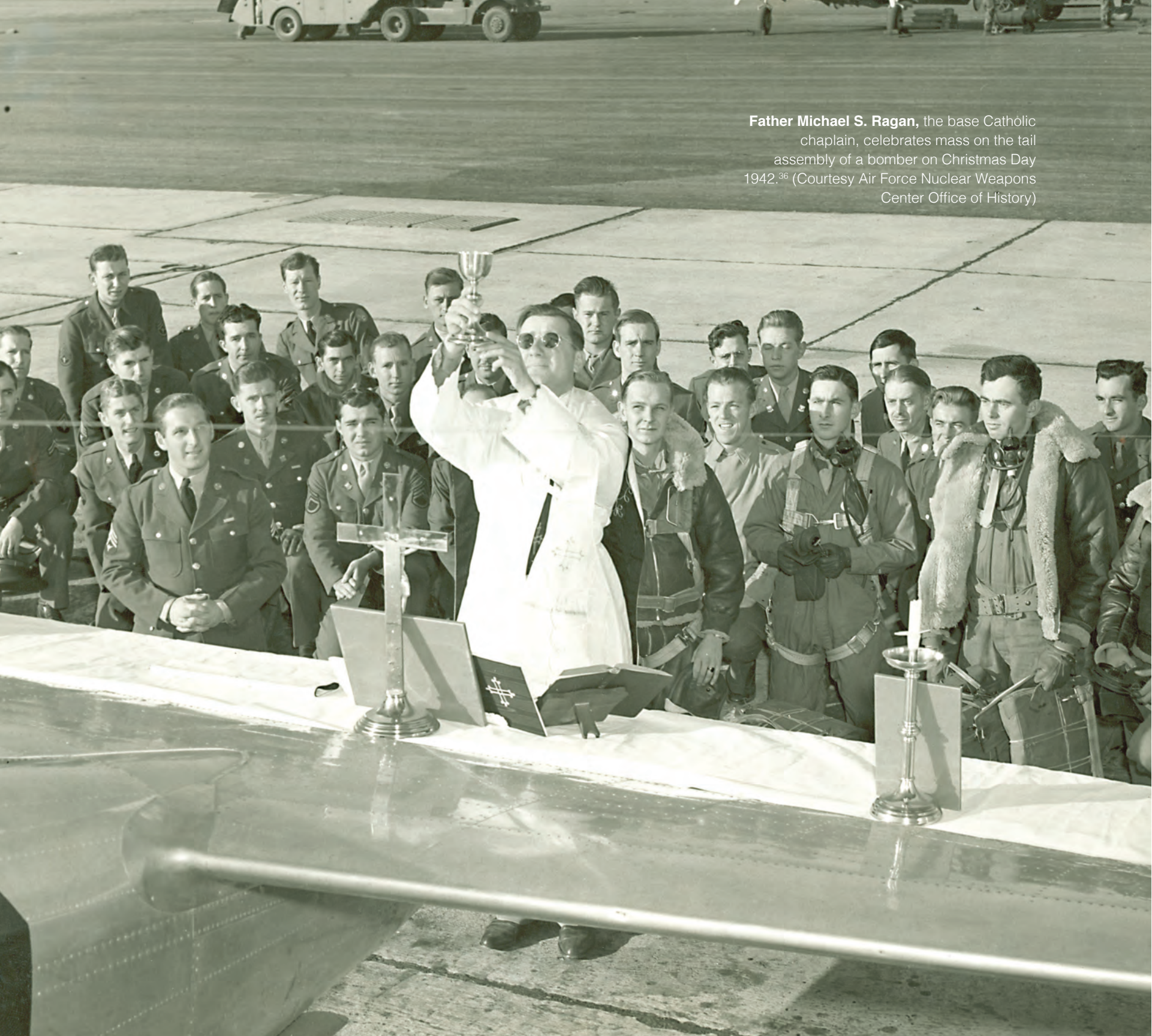
**Couples** enjoy a Halloween costume party at Kirtland Field. Holidays were always celebrated with social events in order to keep morale high. (Courtesy Private Collection)



**The 31st Army Air Forces Band** counted former members of notable orchestras. The band performed on *Salvos from the Sky*, Kirtland Field's radio show broadcast on Thursday evenings. It also helped to sell more than \$800,000 during a 1943 war bond drive throughout New Mexico. (Courtesy Air Force Nuclear Weapons Center Office of History)



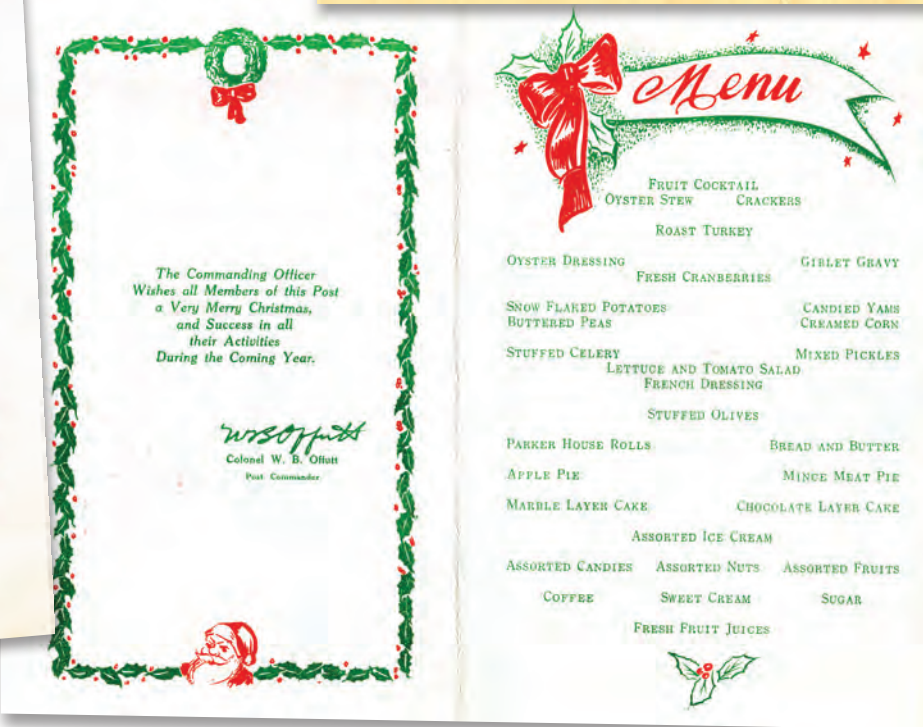
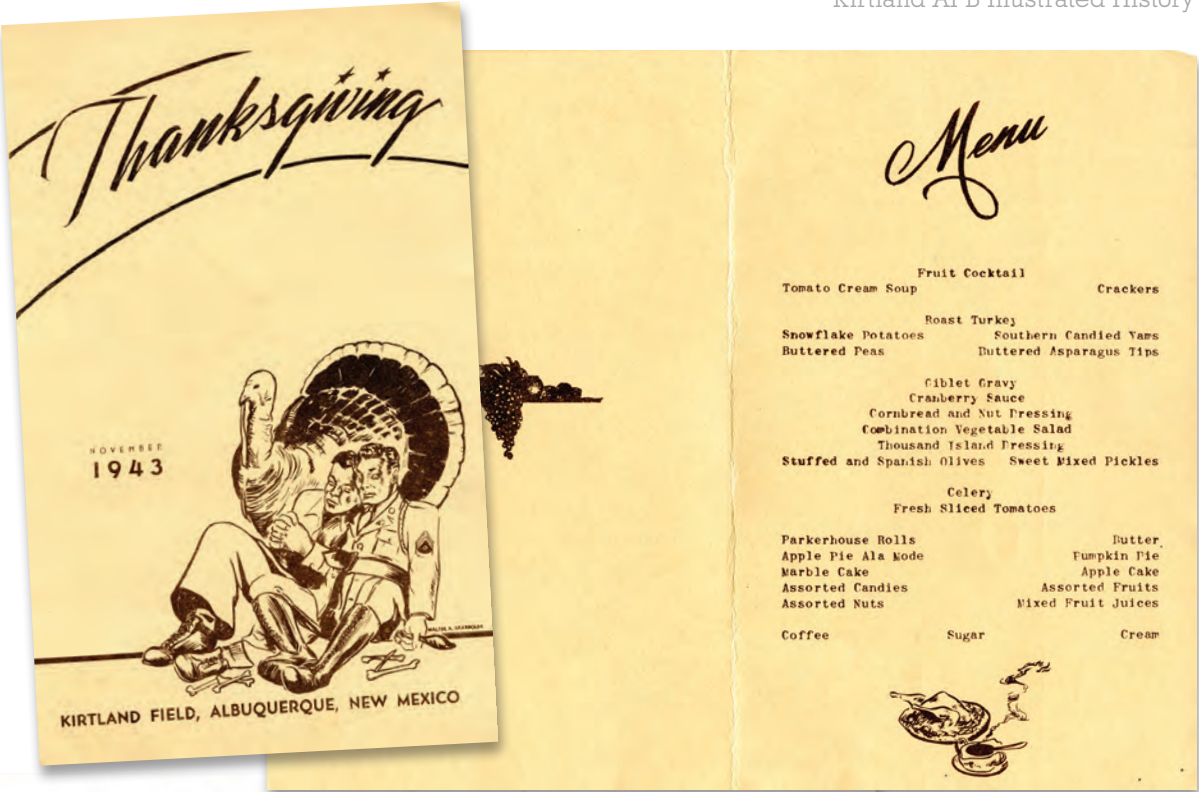




Father Michael S. Ragan, the base Catholic chaplain, celebrates mass on the tail assembly of a bomber on Christmas Day 1942.<sup>36</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)

**“Good food, well cooked and in adequate quantities, is perhaps the most important single factor in maintaining good morale and good health among the men of our armed forces.”**

Kirtland Field 1943 Yearbook



**One Thanksgiving** holiday, Kirtland Field GI's put away 800 pounds of roast turkey and 800 pounds of baked ham.<sup>37</sup> Many servicemen enjoyed the holidays off-base with Albuquerque families—a civilian effort encouraged by the local Defense Recreation Board. (Courtesy National Museum of Nuclear Science & History)





**Base Commander Frank D. Hackett** (Opposite, far left), his Executive Officer, Lt. Col. Ernest H. Bruss (Center), and other men enjoy hot dogs and beer on an outing to the Doc Long Picnic Area in the Sandia Mountains. (Courtesy Cavalcade of Wings)

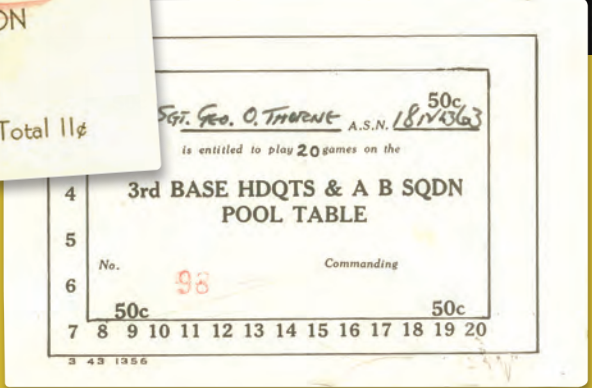
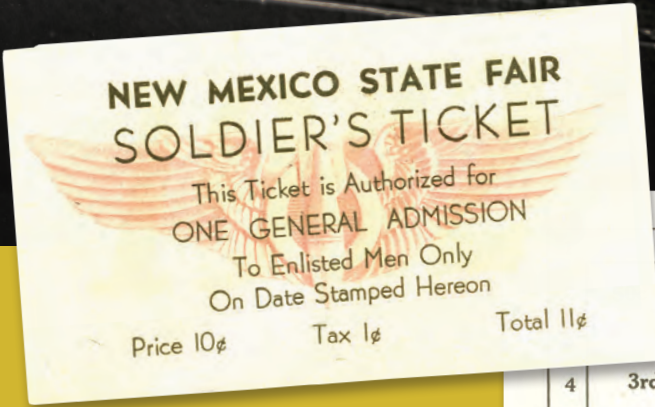
**A large group** from Kirtland Field poses for a photograph to commemorate their afternoon off in the mountains. Col. Frank Hackett can be seen to the right of center. (Courtesy Cavalcade of Wings)







This undated image depicts a local dance for World War II servicemen. With the air base establishment, Albuquerque started a Social Recreation Activity Defense Program that encouraged local clubs, civil groups, and churches to hold social functions for the soldiers. (Courtesy Air Force Nuclear Weapons Center Office of History)



Memorabilia Courtesy Air Force Nuclear Weapons Center Office of History

Kirtland Field had an Officer's Club, Enlisted Men's Service Club, and 18 general recreational buildings. A group of enlisted men enjoy playing pool in this image. (Courtesy Private Collection)





(Top) The United Service Organization (USO) Club was located at Broadway and Tijeras in downtown Albuquerque. It opened in March 1942. (Courtesy Albuquerque Museum Photoarchive, PA2007.17.3)

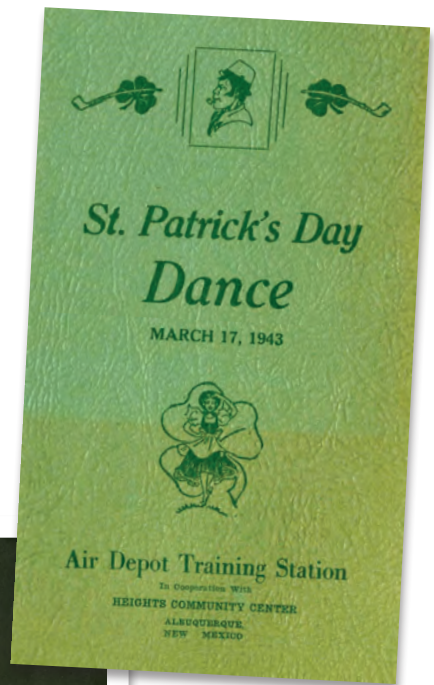
(Above) The USO Club had writing and lounge rooms (pictured here), a soda fountain, and bowling alley. (Courtesy Albuquerque Museum Photoarchive, PA2007.17.4)

(Top) The Heights Community Center was another popular gathering place for soldiers (seen here in the courtyard). The center hosted bingo parties, picnics, roller skating parties, hayrides, and countless dances in their honor. (Courtesy Cary Blair Photograph Collection (PICT 000-542), Center for Southwest Research, University Libraries, University of New Mexico)

(Above) The Heights Community Center hosted Sunday afternoon open houses—by invite—for Kirtland Field servicemen. Soldiers could also get their clothing mended or altered by center volunteers. In June 1942—one month alone—242 items of clothing were modified.<sup>38</sup> (Courtesy Cary Blair Photograph Collection (PICT 000-542), Center for Southwest Research, University Libraries, University of New Mexico)

“The entire atmosphere of the party seems to be enhanced if the soldiers are required to come in uniform, and if the dancing partners wear long dresses or attractive afternoon dresses. The type of apparel chosen should be uniform for all the guests.”

– Recommended Standards for Social Recreation Activity: Defense Program, Albuquerque, New Mexico<sup>39</sup>



The Heights Community Center carefully arranged the attendance of young ladies at all events. Dances were invite-only. Female chaperones oversaw all activities, and escorted the girls to and from home. (Dance Program and Photograph Courtesy Cary Blair Photograph Collection (PICT 000-542), Center for Southwest Research, University Libraries, University of New Mexico)



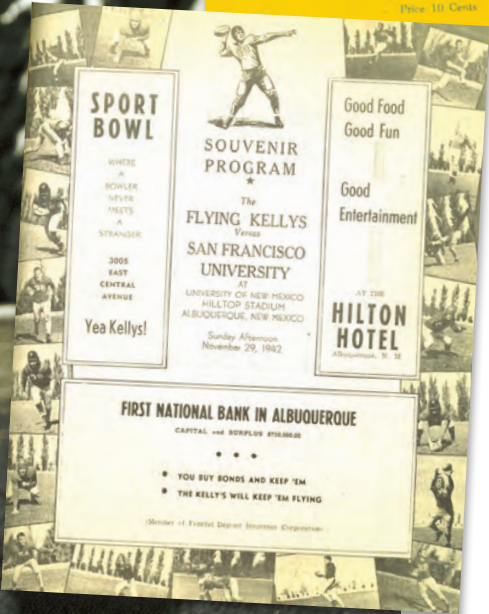
“There was the time Colonel Hackett cut down all work like it was Christmas so we could have a track and field day.”

PFC Paul Weeks, 1944<sup>40</sup>



**Kirtland Field** held numerous track and field sporting events. Kirtland GI's competed at cross-country racing, the shot put, football throw, high jump, and the 100-yard dash. Capt. Ted Shipkey, a former All-American end with Stanford University and the base athletic director, stands at far left.<sup>41</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)

This quarterback was a member of Kirtland Field's Flying Kellys football team in 1942. During that season, the Flying Kellys played teams from the Lubbock and Colorado Springs Army Flying Schools as well as the Wichita Pro Aero Commandos and the Arizona State Teachers.<sup>42</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)



Program Courtesy Phillips Research Site History Office, Air Force Research Laboratory, KAFB, NM

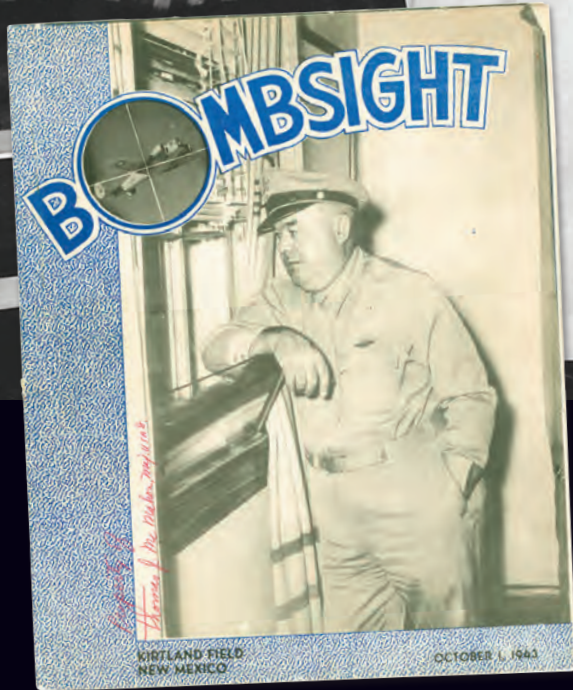




**Wearing an Albuquerque Dons uniform** (Opposite), famed New York Yankees center fielder Joe DiMaggio stands between Lt. Col. Hackett (left) and former Governor Clyde Tingley. DiMaggio played for Santa Ana Air Base against Kirtland's Flying Kellys on April 18, 1943. The Kellys won 3 to 2.<sup>43</sup> (Courtesy Cavalcade of Wings)

**Kirtland Field's Flying Kellys** baseball team was quite good. With players including "Texas Ted" Wright, "Schooner" Beers, "Cowboy" Thornton, and "Pork Chop" Bergold, the team was part of the Southwest Army Air Forces League during World War II. (Courtesy Air Force Nuclear Weapons Center Office of History)

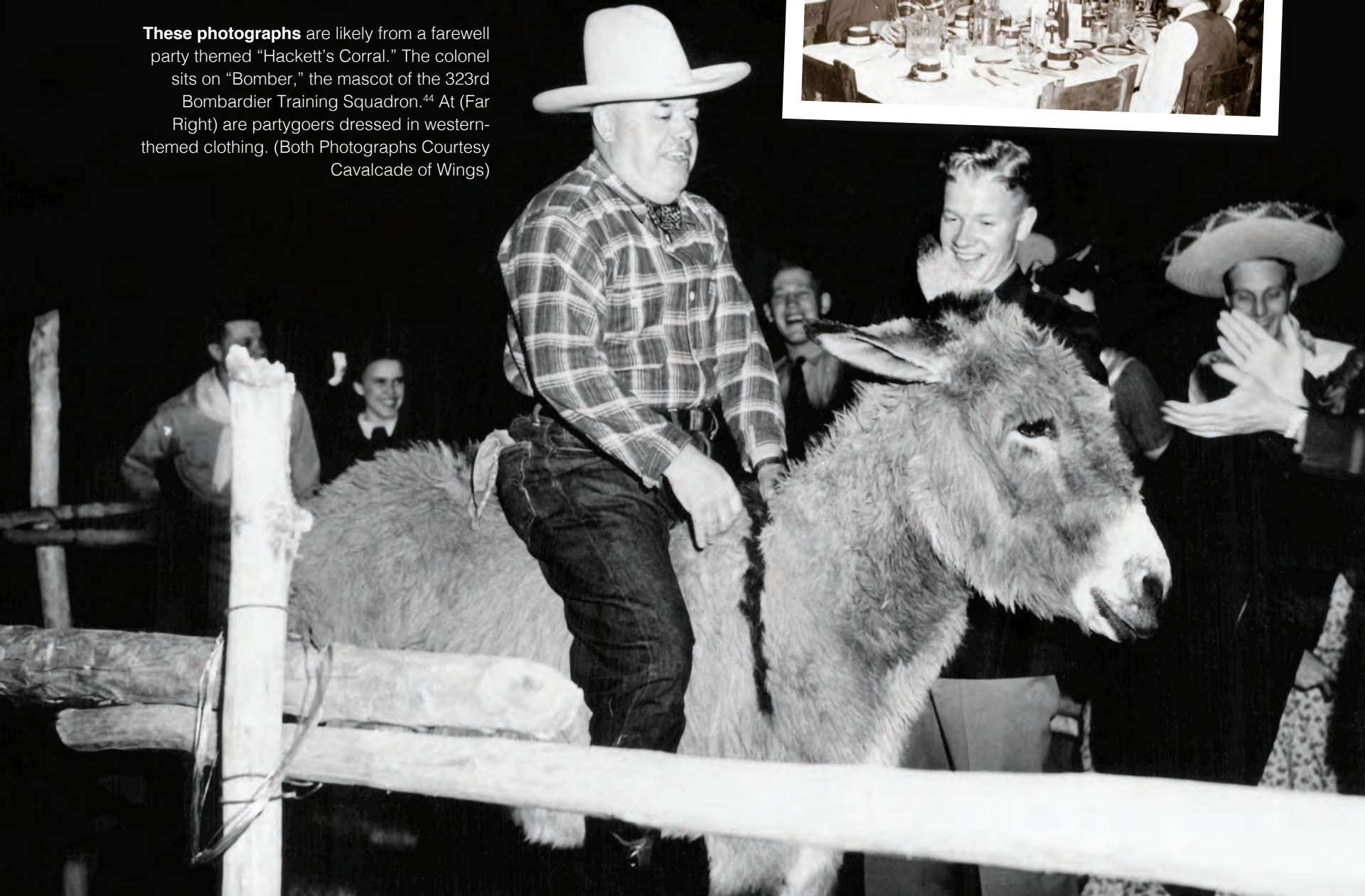




**Col. Frank D. Hackett** was transferred from Kirtland Field in the fall of 1943. He went on to serve as Commander of the Bengal Air Depot in the China-Burma-India Theater, where he was promoted to Brigadier General. This issue of the *Bombsight* was dedicated to Hackett.

**Col. Hackett's transfer** from Kirtland Field was accompanied by a host of festivities including a farewell dinner at the Officer's Club. At a formal event, Col. Hackett and wife, Sara, pose with Lt. Col. Ernest H. Bruss and his wife, Faye. Bruss, the base Executive Officer, was Hackett's second in command. (Courtesy Cavalcade of Wings)

**These photographs** are likely from a farewell party themed "Hackett's Corral." The colonel sits on "Bomber," the mascot of the 323rd Bombardier Training Squadron.<sup>44</sup> At (Far Right) are partygoers dressed in western-themed clothing. (Both Photographs Courtesy Cavalcade of Wings)





**“To all the men of my new command... Morale is that unexplainable something that tempers each of the critical qualifications which endow the American fighting man with a hard-hitting and daring spirit. I shall make every effort to maintain morale on its present high plane.”**

Col. William B. Offutt, 1943

A full Colonel, William B. Offutt was only 37 years old, and had a brand new baby. He had previously served two years with the 19th Bombardment Group. Offutt was transferred from his post as commander of Mather Field in California in order to take over Kirtland Field.<sup>45</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)



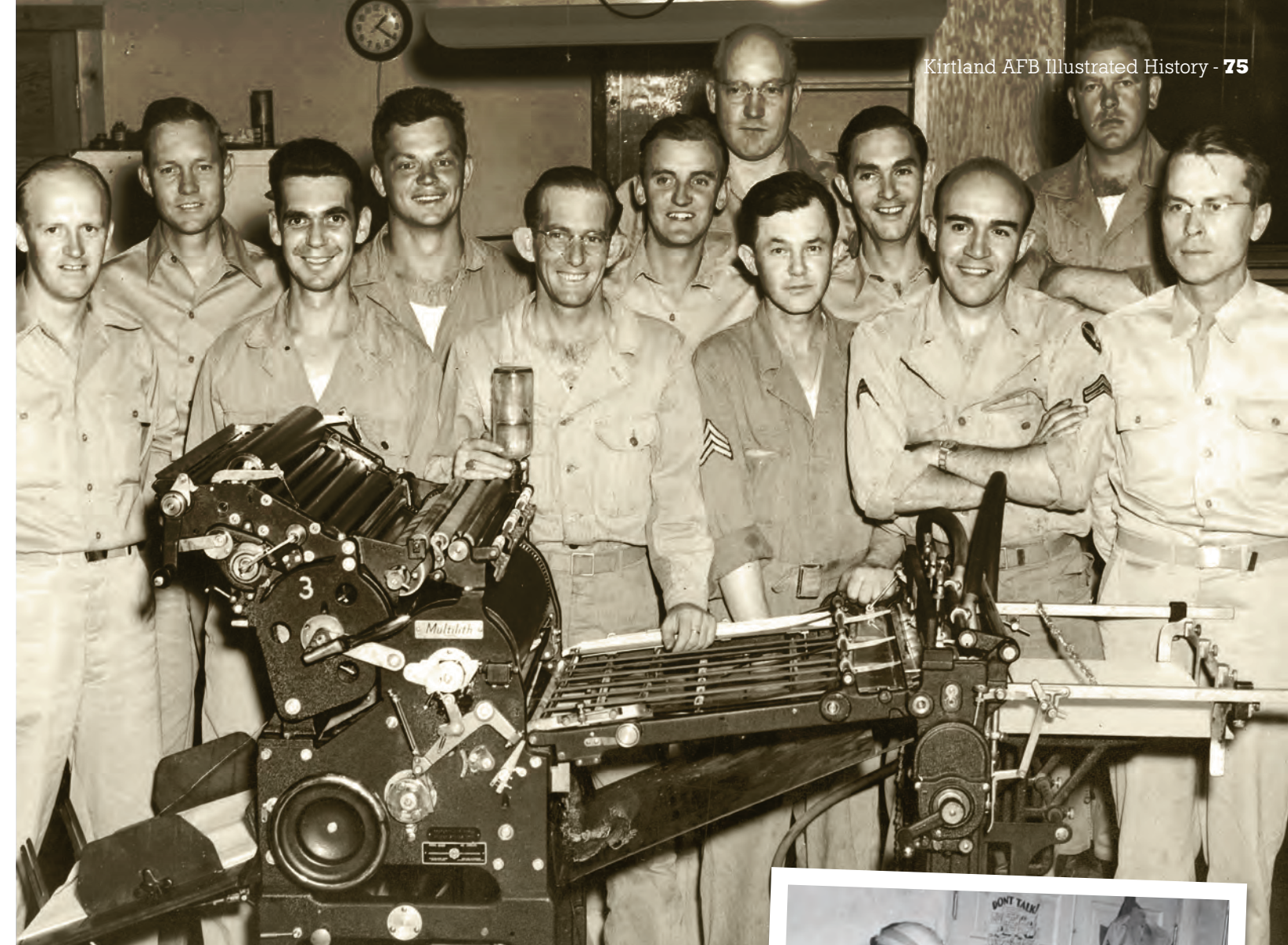
In September 1943, Col. William B. Offutt assumed command of Kirtland Field from Col. Frank D. Hackett. In this photograph of the change in command ceremony are Hackett (front right) and Offutt (front left). The ceremony included a parade in honor of Hackett. (Courtesy Air Force Nuclear Weapons Center Office of History)







**The Military Justice Section,** staffed by attorneys, handled the legal needs of all servicemen from wills to taxation matters. It also handled all prosecution of courts-martial cases. (Courtesy Air Force Nuclear Weapons Center Office of History)



**Pictured are staff** members of the base's Reproduction Center. It was a print shop for forms, pamphlets, instruction manuals, the Bombsight base magazine, etc. It was located in the basement of the Headquarters Building. (Courtesy Air Force Nuclear Weapons Center Office of History)

**Here two Reproduction Center employees** don their gas masks while performing their duties. It was the base Chemical Warfare branch's responsibility to make sure all men were properly trained to use their gas masks. Alerts were issued frequently, requiring all servicemen to go about their daily routines wearing their gas masks. (Courtesy Air Force Nuclear Weapons Center Office of History)





**Civilian employees** of the 3rd Sub Depot work on parachutes. Parachute riggers were specially trained to maintain, repair and pack the lifesaving equipment. (Courtesy Air Force Nuclear Weapons Center Office of History)



**An unidentified master sergeant** does paperwork at his desk. This image illustrates the typical office interior during the World War II era at Kirtland Field. (Courtesy Air Force Nuclear Weapons Center Office of History)



**The base Military Police** march in a parade at Kirtland Field. (Courtesy Air Force Nuclear Weapons Center Office of History)





# Air Depot Training Station



**The USAAF Air Service Command** (Top) activated an Air Depot Training Station at the former Oxnard Field, east of Kirtland Field, in May 1942. A skeleton staff of four officers was first to arrive.<sup>46</sup> (Courtesy National Museum of Nuclear Science & History)

**The base** (Opposite) initially featured just a dozen buildings. Construction continued into the summer on barracks, mess halls, shops, administration and training buildings.<sup>47</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)

**Each Air Depot Group** (Right) was readied for overseas combat duty, where they would repair, supply, and service aircraft. This image ran on the cover of the April 1943 issue of *Albuquerque Progress* magazine. (Courtesy Albuquerque Museum Photoarchive, PA1982.18.994)







**(Opposite Top Left) Privates William Tyson,** Jack Bedford, and Richard Stachmire check the bolts on an aircraft engine.<sup>48</sup> (Courtesy Albuquerque Museum Photoarchive, PA1980.61.432)

**(Opposite Top Center) Corp. Patty Lombardelli** buffs out scratches on the plexiglass of an A-20 Havoc light bomber intruder aircraft. (Courtesy Albuquerque Museum Photoarchive, PA1980.61.424)

**(Opposite Top Right) Pvt. Anthony C. Cycoveck** works on the hydraulic controls of an A-20's flaps. (Courtesy Albuquerque Museum Photoarchive, PA1980.61.429)

**(Opposite Bottom Left) Jo Hatch,** a civilian instructor, shows two ADTS students the hub section of a hydromatic propeller. (Courtesy Air Force Nuclear Weapons Center Office of History)

**(Opposite Bottom Right) Capt. August E. Esenwein** communicates with a radio operator at ADTS. Students were also trained how to send and receive radio code. (Courtesy Albuquerque Museum Photoarchive, PA1980.61.447)

**(Below) In this image,** men of the Air Depot Training Station undergo a gas drill. Such drills were ordered without warning in order to simulate an unexpected poisonous gas attack on combat duty. Everyone had to wear their gas mask on Tuesdays, regardless of duty. (Courtesy Albuquerque Museum Photoarchive, PA1982.18.995)





Despite its short existence, the Air Depot Training Station produced its own book highlighting its various units and training activities. (Courtesy Author)

In this graduation photograph, men of the ADTS pose with their diplomas in front of a Douglas A-20 Havoc. (Courtesy Air Force Nuclear Weapons Center Office of History)



# War Bond Drives



Downtown Albuquerque saw lots of war bond drive parades during World War II. Units from the Air Depot Training Station (Top Left) drive their jeeps down Central Avenue. Bombardier School cadets (Top Right) show off their training bombs. The Japanese submarine (Bottom) depicted in this image was displayed in similar parades around the country.<sup>49</sup> (Courtesy Albuquerque Museum Photoarchive, PA1980.185.380)





# Army Air Forces Convalescent Center



**Students practice** (Right) using octants for celestial navigation—an essential skill for determining the position of an aircraft in the sky. (Courtesy Albuquerque Museum Photoarchive, PA1980.61.549)

**Lt. Cletus J. Gumbold** (Below Left) gives instruction to pilot Lt. William O'Neal sitting in the Link Trainer. The flight simulators were key training aids for pilots during World War II.<sup>52</sup> (Courtesy Albuquerque Museum Photoarchive, PA1980.61.552)

**Lt. William Prince**, (Below Right, far right) a radio operator and gunner with the 19th Bombardment Group, takes a refresher class in transmitting radio code. Staff Sgt. Russell Sells (left) and Sgt. John Lowe (center) send and receive messages, respectively.<sup>53</sup> (Courtesy Albuquerque Museum Photoarchive, PA1980.187.619)



**This former elite** (Top Left) boarding school for girls was modified into a hospital for wounded airmen and ground crew attending the AAF Convalescent Center in the former Air Depot Training Station quarters. The first patients—a group of 26 soldiers—were flown in from California in April 1944 to begin their recuperation.<sup>50</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)

**The AAF Convalescent Center** (Top Right) offered numerous educational classes intended to help ease soldiers' transition back to civilian life. Business courses included accounting, bookkeeping, shorthand, and typing as depicted in this image. (Courtesy Albuquerque Museum Photoarchive, PA1980.61.544)

**Instructor Hal Zieger** (Left) leads an AAF Convalescent Center class in navigation in this photograph. "If the master compass in your bomber ever reads like this, you' d better make a big correction and get back on course," warned Zieger.<sup>51</sup> (Courtesy Albuquerque Museum Photoarchive, PA1980.61.548)



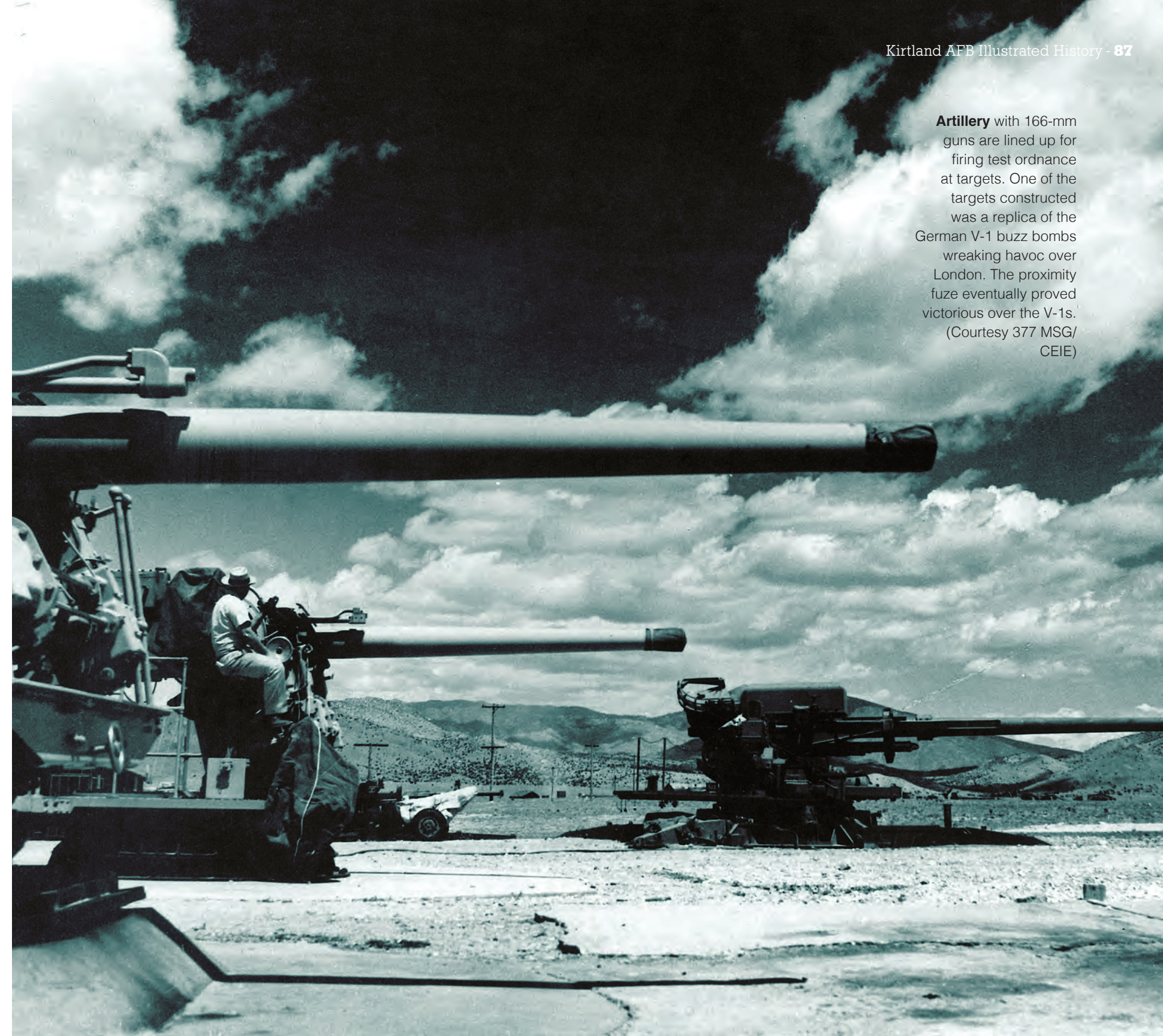


# New Mexico Proving Ground

**The New Mexico Proving Ground** was established to test the electrical components of a new proximity fuze for antiaircraft artillery. In this image (Right), a target aircraft replica is coming down from the top of a tower.<sup>54</sup> (All Images Courtesy New Mexico Tech Skeen Library)

**There were two** 247-foot-high oak towers (Below Left), erected 400 feet apart, to support targets for ordnance testing. Many of the aircraft replicas were constructed of balsa wood and covered with chicken wire.

**During the war,** the New Mexico Proving Ground occupied some 30,000 acres south of Kirtland Field and Sandia Base. Pictured here (Below Right) are some of the buildings at the field headquarters.



**Artillery** with 166-mm guns are lined up for firing test ordnance at targets. One of the targets constructed was a replica of the German V-1 buzz bombs wreaking havoc over London. The proximity fuze eventually proved victorious over the V-1s. (Courtesy 377 MSG/CEIE)



# B-29 Superfortress Base

In early 1945, Kirtland Field was transferred to the Second Air Force to be a Boeing B-29 *Superfortress* support facility. Bomber crews arrived in April to train on B-29s for the upcoming incendiary raids on Japan. (Courtesy Albuquerque Museum Photoarchive, PA1980.184.211)

Kirtland Field's *Twenty-niner* newspaper (Opposite) reports Japan's surrender to the Allies in August 1945. The war was over. All base personnel were given a two-day holiday to celebrate. (Courtesy National Museum of Nuclear Science & History)



“There is no higher priority than we in B-29s. The eyes of the nation now look west with undivided attention.”<sup>55</sup>

Col Frank A. Kurtz, 1945



Col. Frank A. Kurtz served as commander of Kirtland Field from March to October 1945. Kurtz had been with the 19th Bombardment Group in the Philippines in late 1941. A highly decorated pilot, Kurtz named his daughter (actress Swoosie Kurtz) for his famed B-17—the Swoose. (Courtesy Air Force Nuclear Weapons Center Office of History)



# INTO THE STRATOSPHERE

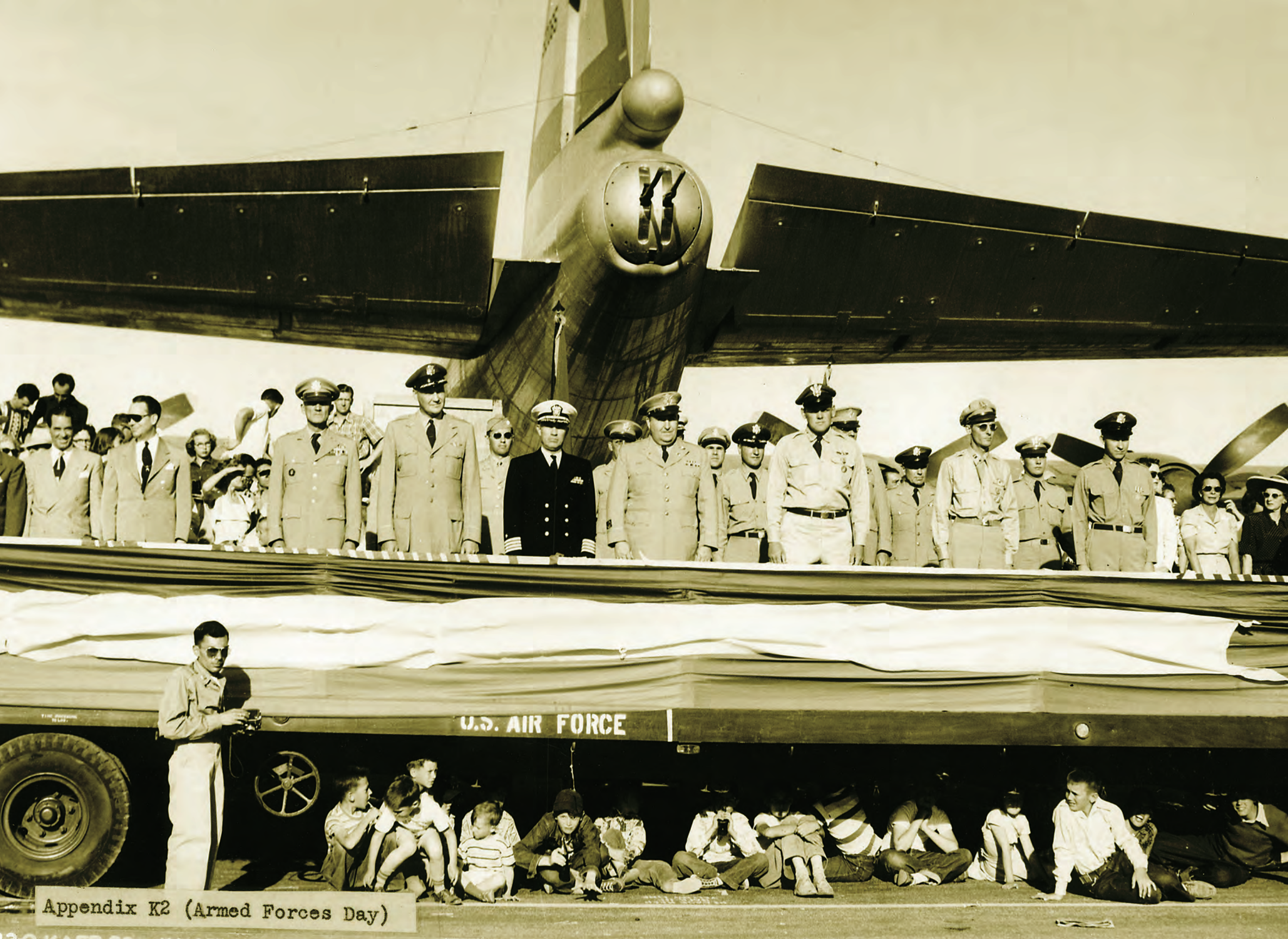
## THE ATOMIC AGE OF KIRTLAND AIR FORCE BASE

“A rain of ruin from the air, the like of which has never been seen on this earth” ended World War II in summer 1945. President Harry S. Truman’s characterization of the atomic bombings of Japan captured the utter devastation wrought in their wake. Devised in total secrecy by the Manhattan Project, 100 miles north of Kirtland Field, the weapons of mass destruction ushered in the Atomic Age. The military and scientific community of the Manhattan Project quickly focused its efforts on further research and development (R&D) of nuclear weapons.

The immediate post-war period at Kirtland Field was filled with speculation about its future. The base’s exclusion from an October list of AAF bases recommended permanent suggested it was headed for deactivation.<sup>57</sup> When Kirtland Field was put on temporary inactive status beginning December 31, former Governor Clyde Tingley suggested that the word “temporary” was just “a nerve soother,” and permanent closure was imminent.<sup>58</sup> But within a short period of time, it became clear that Kirtland Field would take a leading role in nuclear weapons R&D for the AAF. Between late 1945 and 1948, the base underwent a dizzying series of AAF command and commander changes as its role was fully clarified.

The key to Kirtland Field’s survival was the relocation of the Manhattan Project’s bomb assembly and testing group to the adjacent Albuquerque Army Air Field or “Sandia Base” in the summer of 1945. Named for its leader Dr. Jerrold Zacharias, the Z Division took over the old Air Depot Training Station quarters. The mission was to oversee the assembly and field-testing of nuclear weapons, and take charge of the

**Brig. Gen. Howard G. Bunker** (front row, second from left) and other base leaders review troops at the very first Armed Forces Day Open House. The base estimated that more than 30,000 people attended the May 1950 event.<sup>56</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)



Appendix K2 (Armed Forces Day)



small nuclear weapons stockpile.<sup>69</sup> Its first task was to improve the design of the Fat Man bomb.<sup>60</sup> The Z Division's responsibilities led to the establishment, in the nearby foothills, of a logistics support facility that later became known as Manzano Base. The Z Division was the precursor to Sandia National Laboratories.

Due to its geographical proximity, Kirtland Field was the AAF base chosen to support the activities of the Z Division. As such, the Flight Testing Section of the 509<sup>th</sup> Composite Group, the AAF unit that had dropped the atomic bombs on Japan, relocated to Albuquerque in late 1945. Its mission was to assemble nuclear weapons and pair or “marry” them with aircraft for transportation and delivery. In June 1946, a full-scale Ground Training Program was launched in preparation for Operation Crossroads—the second and third tests of atomic bombs at Bikini Atoll that summer.<sup>62</sup> Personnel from Sandia Base and Kirtland Field played significant roles during the operation.

The AAF formally designated Kirtland Field its first facility devoted to atomic weapons research and development in 1947. Gen. Curtis Lemay, the AAF Deputy Chief of Staff for Research and Development, assigned Col. Howard G. Bunker the task of establishing a USAF field office at Kirtland Field to liaise with the Atomic Energy Commission (AEC).<sup>63</sup> The AEC had been established the year prior as a federal agency charged with overseeing the development, use, and control of atomic energy. By the end of 1947, the AAF became the United States Air Force (USAF), its own military branch separate from the Army. Kirtland Field was renamed Kirtland Air Force Base (AFB).

The personnel pioneering the USAF nuclear weapons program at Kirtland AFB during the late 1940s were organized first as the Tactical and Technical Liaison Committee (1947-1948), and then the USAF Field Office for Atomic Energy (1948-1949).<sup>64</sup> One of the base's assignments was to modify a Convair B-36 *Peacemaker* to carry atomic bombs.<sup>65</sup> The B-36 strategic bomber served as the primary aircraft with nuclear weapons capability until the 1955 introduction of the Boeing B-52 *Stratofortress*.

The Air National Guard (ANG) was one of Kirtland AFB's first Cold War tenants. The New Mexico ANG, as the 188<sup>th</sup> Fighter Bomber Squadron (later Fighter Interceptor Squadron), was assigned to the base in 1947 to defend the skies in case of enemy attack. There were approximately 100 officers and airmen in the squadron. The 188<sup>th</sup> was equipped with both Douglas A-26 *Invader* bombers and North American F-51 *Mustang* fighters.<sup>66</sup> The unit would go on active duty during the Korean War, and fly 1,411 combat missions over Korea.<sup>67</sup>

On the global front, relations between the U.S. and the Soviet Union grew increasingly strained in the postwar years. The Hiroshima and Nagasaki attacks had spurred the Soviet Union to begin its own nuclear weapons R&D. At the center of the Cold War between the superpowers was an arms race for nuclear superiority. After the Soviet Union detonated its first atomic bomb in 1949, the U.S. declared deterrence to be the national military strategy. The threat of massive retaliation in the event of nuclear attack, deterrence necessitated the proliferation and variation of U.S. nuclear weapons. “The principal deterrent to another world war is and will remain the offensive strength of our constantly improving atomic weapons,” stated Lt. Gen. James H. Doolittle, “and our ability to deliver them with accuracy and certainty by strategic airpower against the sources of Soviet military might.”<sup>68</sup>

President Truman's announcement that the Soviet Union had exploded an atomic bomb shocked the nation. With the realization that the U.S. no longer held atomic supremacy, continental air defense was prioritized. New Mexico was a particular area of concern due to

activities at Los Alamos, Sandia Base, Site Able, and Kirtland AFB. The Newspaper Enterprise Association (NEA) dubbed New Mexico the “Atomic Heart” of the U.S. “The installations which gave birth to the atomic and hydrogen bombs,” explained the NEA, “have been made into a defensive ‘island’ in the overall U.S. plan to avert a possibility of an atomic ‘Pearl Harbor.’”<sup>69</sup>

The 81st Fighter Wing, under the jurisdiction of the USAF Air Defense Command, was assigned to Kirtland AFB in June 1949. Flying F-86 *Sabre* jets, the fighter pilots maintained a constant alert status near the runways in the event of an attack. In 1950, Air Defense Command established the Albuquerque Air Defense Sector with headquarters at Kirtland AFB.<sup>70</sup>

When the 81st Fighter Wing relocated to Larson AFB in 1950, its 93rd Fighter Interceptor Squadron (FIS) stayed at Kirtland AFB.<sup>71</sup> The 93<sup>rd</sup> FIS maintained a constant alert status, manning two 12-hour shifts daily in a state-of-the-art alert hangar.<sup>72</sup> One newspaper detailed, “The men on duty, especially trained and equipped for flying in any weather, day or night, eat, sleep and lounge here, ready at a moment's notice to make sure whether the unidentified speck on the radar screen is a wayward plane—or the enemy.”<sup>73</sup>

In December 1949, the Air Force Special Weapons Command was established as one of the distinct commands within the USAF, and headquartered at Kirtland AFB. Brig. Gen. Howard G. Bunker, who had established the first USAF field office to interface with the AEC, was the first Commanding Officer. A West Point graduate and highly decorated pilot, Bunker had led the AAF's Air Technical Section of Headquarters, European Theater of Operations, during the war.<sup>74</sup>

In October of 1950, Maj. Gen. John S. Mills succeeded Brig. Gen. Bunker as commanding officer of the Air Force Special Weapons Command. Mills had been commander of the 450<sup>th</sup> Bomb Group in Africa, and later chief of operations for the Mediterranean Allied Forces during the war. He was appointed Assistant to the Deputy of Atomic Energy at USAF headquarters in Washington, D.C. prior to his assignment to Kirtland AFB.<sup>75</sup>

Operating under the AFSWC were the 4910<sup>th</sup> Air Base Group serving as the base host, the 4901<sup>st</sup> Support Wing (Atomic), and the 4925<sup>th</sup> Test Group (Atomic). Only the most elite airmen—pilots, bombardiers, navigators, etc.—were chosen for the 4925<sup>th</sup> Test Group (Atomic). Their mission was to determine the ballistics of all nuclear weapons, and marry them with applicable USAF aircraft. The group operated out of Area Charlie—a highly guarded complex protected by double barbed wire fencing. All personnel had to pass a 15-year background check by the FBI in order to obtain Atomic Energy Commission “Q” Clearance.<sup>76</sup>

The Air Force Special Weapons Command was re-designated the Air Force Special Weapons Center (AFSWC) in 1952, and placed under the Air Research and Development Command (ARDC). Under the ARDC, the AFSWC was able to focus on its own research and development of atomic weapons and aircraft pairing—something Maj. Gen. Mills had advocated for. “Atomic bombs in a stockpile won't win a war,” explained one AFSWC representative quoted in *Aviation Week* magazine. “We must have a fast, guaranteed method of delivery.”<sup>77</sup> By 1953, the AFSWC had successfully modified numerous aircraft to carry nuclear weapons. These included the Boeing B-47 *Stratojet*, Convair B-36 *Peacemaker*, North American B-45 *Tornado*, and Boeing B-50 *Superfortress* bombers. Modified fighter jets included the Republic F-84G *Thunderjet*. The organization also reviewed designs in progress for all new USAF aircraft for special weapons capability. The AFSWC had approximately 5,000 personnel by the mid 1950s.<sup>78</sup>



The 4925<sup>th</sup> Test Group (Atomic) was primarily responsible for supporting the Atomic Energy Commission during atmospheric testing of live nuclear weapons.<sup>79</sup> They took a leading role in atmospheric tests conducted in the Marshall Islands and in Nevada during the early 1950s.<sup>79</sup> The AFSWC assumed oversight of the Indian Springs Air Force Base in Utah in 1952, in support of testing at the Nevada Proving Grounds. In 1953, the 4926<sup>th</sup> Test Squadron (Sampling) was created as a squadron of the 4925<sup>th</sup> Test Group (Atomic). The 4926<sup>th</sup> squadron's mission was to fly through and sample the radioactive clouds produced during live tests.

By 1956, there was a need for a permanent air task group for atmospheric testing. The 4950<sup>th</sup> Test Group (Nuclear) was established in order to assume all responsibility for atmospheric test support. The 4926<sup>th</sup> Test Squadron (Sampling) was transferred to the new group. The 4925<sup>th</sup> Test Group (Atomic) then focused on AFSWC's mission to pair special weapons with USAF aircraft.<sup>80</sup>

The AFSWC was tasked with developing a nuclear missile during the mid-1950s. The result was the MB1 or Genie rocket, an unguided air-to-air rocket with a nuclear warhead. Other weapons designed during the decade included the Matador surface-to-surface tactical missile and the Snark, an intercontinental cruise missile.<sup>81</sup> Another AFSWC focus during the late 1950s was design criteria for underground structures to be able to withstand a nuclear explosion. The ARDC transferred the Blast Effects Structures Group from Wright Patterson AFB to Kirtland AFB in 1956.

The U.S. Navy established its own version of the AFSWC at Kirtland AFB in 1949. It was unofficially dubbed the “Rio Grande Navy.” The Naval Air Detachment's mission was to work on providing naval aircraft with nuclear weapons capability. As such, it also worked closely with the Atomic Energy Commission and Sandia Laboratory. The program was expanded, and renamed the Naval Air Special Weapons Facility (NASWF) in 1952. The NASWF also participated in the atmospheric testing ongoing in Nevada and the Pacific.<sup>82</sup>

New Mexico continued to be a top priority of the Air Defense Command throughout the decade. The 34<sup>th</sup> Air Division (Defense) was activated at Kirtland AFB in January 1951.<sup>83</sup> The group oversaw air defense activities for all of New Mexico and Arizona, and portions of Utah, Colorado, and West Texas.<sup>84</sup> Its mission was to “detect, identify, intercept, and destroy hostile airborne forces.”<sup>85</sup> On 24-hour alert, the 34<sup>th</sup> Air Division (Defense) was likened to “a spider web of radar surveillance stations.”<sup>86</sup>

Surveillance information streamed in from numerous USAF Aircraft Control and Warning (AC&W) squadrons manning area radar stations. The Ground Observer Corps (GOC)—an organization of volunteer civilians—also searched the skies with binoculars in a national initiative dubbed “Operation Skywatch.”<sup>87</sup> GOC headquarters were housed in the Albuquerque Air Defense Filter Center downtown. The headquarters of the 34<sup>th</sup> Division (Defense) monitored a steady stream of incoming surveillance data via telephone, teletype, and radio transmitters. Within five minutes of orders by the division to scramble, the 93<sup>rd</sup> FIS jet fighters could be airborne.

The development of missiles, however, soon redirected air defense concerns from shooting down enemy aircraft to detecting intercontinental ballistic missiles. The 34<sup>th</sup> Air Division (Defense) was accordingly disestablished in 1959. The ANG took over responsibility for national air defense beginning in 1960.<sup>88</sup> The NMANG's 188<sup>th</sup> FIS had been redesignated the 150<sup>th</sup> Tactical Fighter Group, and was the first ANG unit to receive F-100 *Super Sabre* aircraft.

By the end of the 1950s, one significant development at the international level affected operations on Kirtland AFB. The Nuclear Test Ban Treaty signed by the U.S. and Soviet Union in 1958 ended all aboveground atmospheric testing of nuclear weapons. One of AFSWC's primary roles—supporting atmospheric testing—was no longer a military priority. In response to the treaty, the AFSWC began designing ways to simulate the effects of nuclear weapons—an effort that would come to fruition over the next two decades.

Lastly, Kirtland AFB underwent a dramatic expansion of facilities between 1950 and 1960. During this time, the AFSWC oversaw the completion of a seven-year base master plan to build new infrastructure and buildings. It was the first post-war construction program at Kirtland AFB. The base gained new headquarters buildings, testing facilities, specialized aircraft hangars, multiple barracks and officer's quarters, mess halls, laundry facilities, a grade school, a base theater, a gymnasium, weapons storage igloos, a steam plant, etc. The base's east-west runway was expanded in 1955 to 13,373 feet, making it one of the longest in the nation and the longest high-altitude runway in the world.<sup>89</sup>



# Postwar Kirtland Field

The bomb-loading pit at Kirtland Field (Right) was built for equipping B-29 *Silverplate* bombers with Manhattan Project ordnance in preparation for the WWII bombings of Japan. Post war, it was used extensively in the mission to equip AAF aircraft with special weapons. (Courtesy Air Force Nuclear Weapons Center Office of History)

**Operation Crossroads** was the name of the second and third tests of atomic bombs in the Marshall Islands (Below) during the summer of 1946. Many personnel from Sandia Base and Kirtland Field participated in the tests. (USAAF Photograph)



**Kirtland Field executive officer** Lt. Col. John T. Ford (Left) greets Air Chief Marshall Sir Guy Garrod (center), head of the Royal Air Force in the U.S. Garrod was headed to Long Beach Army Air Field when his B-29 stopped to refuel at Kirtland Field in July 1946.<sup>90</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)

**Dave's Dream** (Below, pictured postwar at Kirtland Field) was a B-29 *Superfortress* assigned to the 509th Composite Group and used during Operation Crossroads. Originally named *Big Stink*, the bomber had participated in the August 1945 American attack on Nagasaki. (Courtesy National Museum of Nuclear Science & History)







**Base Chaplain Elmer L. Patterson** (Above) speaks to the crowd at the Army Air Forces Day Open House in August 1946. (Courtesy Air Force Nuclear Weapons Center Office of History)

**Spectators enjoy an airshow** (Right) featuring B-29 *Superfortresses* flying in formation during Army Air Forces Day of 1946. Featured aircraft also included the P-61 *Black Widow*, P-80 *Shooting Star*, B-17 *Flying Fortress*, and C-54 *Skymaster*. (Courtesy Air Force Nuclear Weapons Center Office of History)



**Members of a local 4-H club** pose in front of Lady Mary Margaret V (Left), a P-80 *Shooting Star* jet fighter, on Army Air Forces Day 1946. (Courtesy Air Force Nuclear Weapons Center Office of History)



**Pictured on Army Air Forces Day 1947** (Below) is the reviewing stand including Lt. Col. McLyle G. Zumwalt (far left), deputy commander of Kirtland Field. Some 2,000 Albuquerque residents attended the open house. (Courtesy Air Force Nuclear Weapons Center Office of History)





**Airmen pose** for a group promotion ceremony in front of a Douglas C-47 *Skytrain* on November 21, 1947. The *Skytrain* was a military transport aircraft. (Courtesy Air Force Nuclear Weapons Center Office of History)



**An aircrew** heads toward a B-36-*Peacemaker* at Kirtland Field. One of the base's first assignments as the USAF's first atomic weapons R&D facility was to modify a *Peacemaker* to carry nuclear weapons. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.867)



**Attendees of the Bomb Commander Class** of January 24, 1947 pose at Kirtland Field. All of these officers served active duty during the war, and participated in post war atmospheric testing in the Pacific. (Courtesy Phillips Research Site History Office, Air Force Research Laboratory, KAFB, NM)

**Lt. Col. Zumwalt**, commander of Kirtland Field poses in 1946 with Brig. Gen. Charles G. Sage, who had recently been appointed Adjutant General of New Mexico. Sage had led the 200th Coast Artillery during the war, and been imprisoned by the Japanese for three years. (Courtesy Air Force Nuclear Weapons Center Office of History)





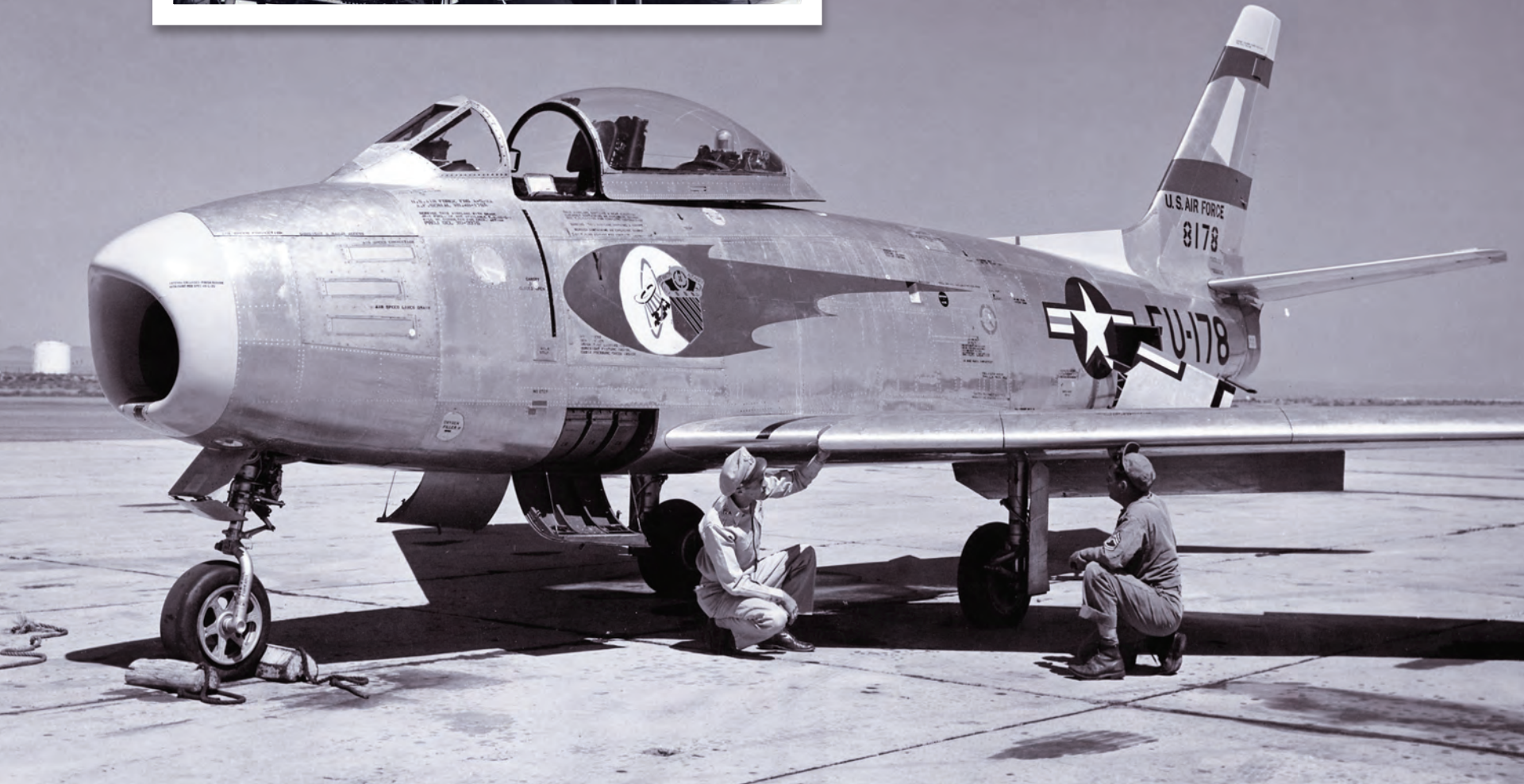
# 81st Fighter Wing

**F-80 Shooting Star** jet fighters undergo maintenance in a hangar along the runway. F-80 aircraft were equipped with a pilot ejector seat in case of emergency bailout. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.799)

An **F-86 Sabre** belonging to the 81st Fighter Wing (Opposite) is readied for flight in 1949. The *Sabre*, capable of flying more than 600 miles per hour, was the primary U.S. air-to-air jet fighter during the Korean War. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.799)



**Air defense** of New Mexico (Left) was an extremely high priority due to the nuclear weapons development at Sandia Base and Los Alamos. The 81st Fighter Wing was assigned to Kirtland AFB in 1949, and maintained a 24-hour alert status. This pilot readies for takeoff in an F-80. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.844)





# New Mexico Air National Guard



**Pictured is the air traffic control tower** (Above) at Kirtland AFB in 1949. Because of the presence of civilian airlines at the Albuquerque Airport, the federal Civil Aeronautics Administration manned the tower. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.795)



**Civil Aeronautics Administration** (Top) air traffic controllers man the tower at Kirtland AFB in 1949. By the early 1950s, the average number of takeoffs and landings was 16,000 per month or 540 per day. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.793)

**In this image**, a pilot checks out a parachute from the Personal Equipment Section (Above) in preparation for a flight in 1949. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.803)



**The wing guns** of an F-51 *Mustang* belonging to the 188th Fighter Interceptor Squadron are inspected at Kirtland AFB before a practice flight in 1949. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.817)



**Col. Howard G. Bunker** (back row, third from right), commanding officer of Kirtland AFB, poses with New Mexico Air National Guardsmen in front of an F-51 *Mustang*. The New Mexico ANG earned the nickname the “Enchilada Air Force,” and served active duty during the Korean War. (Courtesy Air Force Nuclear Weapons Center Office of History)



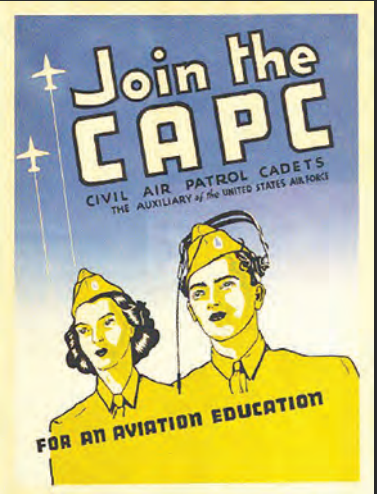
**F-51 Mustangs** return from a practice aerial gunnery mission in 1949. These bomber aircraft belonged to the New Mexico Air National Guard’s 188th Fighter Interceptor Squadron, one of Kirtland AFB’s first Cold War tenants. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.861)



# Civil Air Patrol



A unit of the Civil Air Patrol began operating out of Kirtland Field in 1946. This group of CAP cadets was attending a 10-day summer encampment at Kirtland Field in August of 1947. (Courtesy Air Force Nuclear Weapons Center Office of History)



Dr. Marie Pope Wallis (Below Left) was a WAC during WWII, and later an associate professor of languages at UNM. A licensed pilot, she became coordinator of women's activities for the Civil Air Patrol in 1952. (Courtesy Marie Pope Wallis Papers (MSS 577 BC), Center for Southwest Research, University Libraries, University of New Mexico)

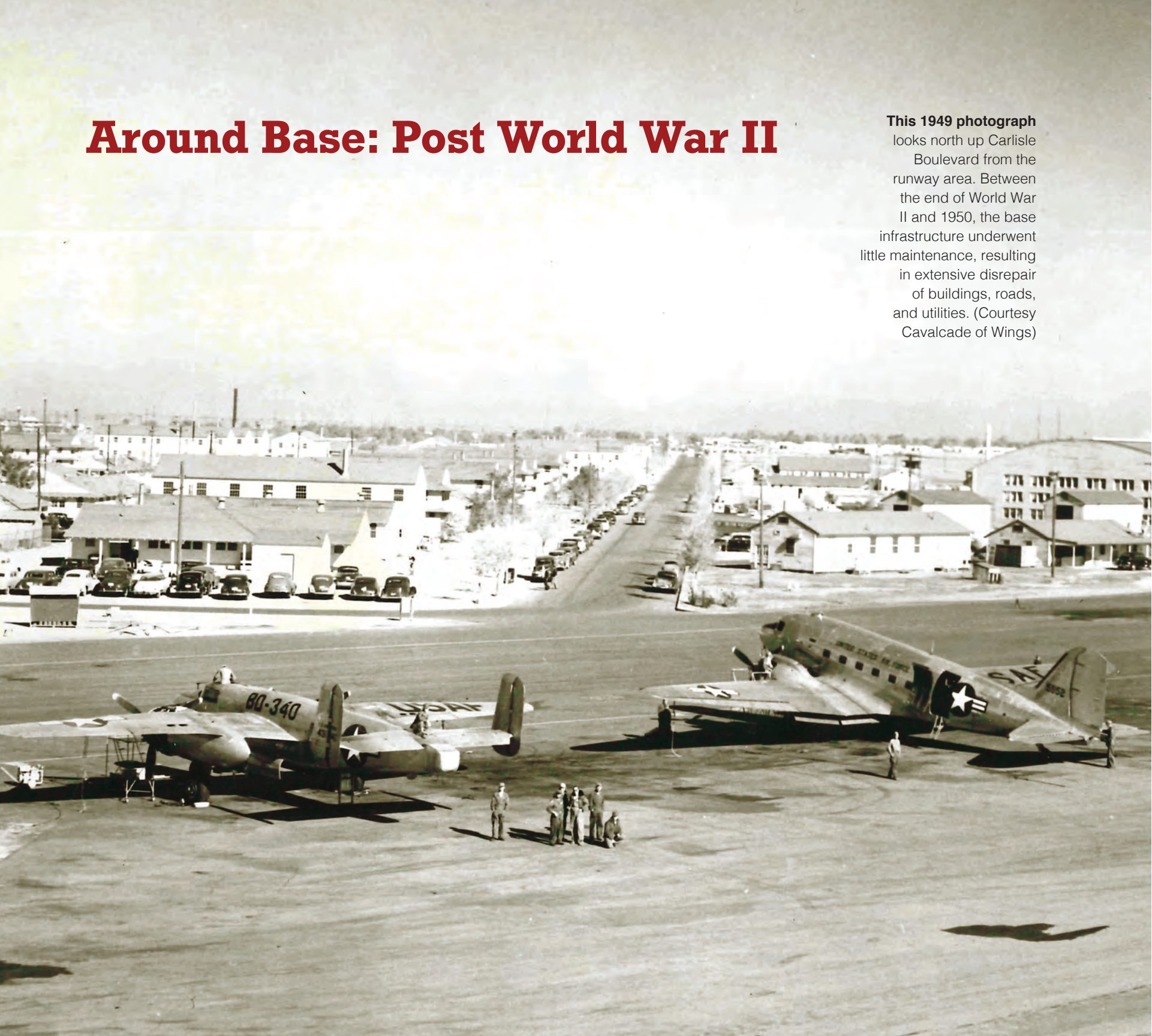


Civil Air Patrol cadets (Below) inspect a P-80 *Shooting Star* on Air Force Day 1947. Established just prior to Pearl Harbor, the CAP was made an official auxiliary of the USAF in 1948. (Courtesy Air Force Nuclear Weapons Center Office of History)



# Around Base: Post World War II

This 1949 photograph looks north up Carlisle Boulevard from the runway area. Between the end of World War II and 1950, the base infrastructure underwent little maintenance, resulting in extensive disrepair of buildings, roads, and utilities. (Courtesy Cavalcade of Wings)



This photograph of the Kirtland AFB headquarters (Above) building appeared in a 1949 issue of *Albuquerque Progress*.<sup>91</sup> At the time the base was under the jurisdiction of the Air Materiel Command's Research and Development Directorate. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.806)

Kirtland AFB's Supply System Office and personnel (Right) are pictured in this 1949 image. This office handled all requisition, inventory, and distribution of supplies and equipment on base. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.808)







**Albuquerque Public Schools** established a kindergarten and elementary school (Above) for grades 1 to 3 on base in the postwar era. Students are lined up for a fire drill in this 1949 photograph. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.813)

**Pictured in this image** (Right) are a few of the NCO houses originally built in 1941. By the late 1940s, both officers and enlisted personnel with families were living in the 100-unit housing complex. Trees and grass had beautified the formerly barren landscape. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.812)



**Trailer parks** were established to alleviate the major housing shortage experienced by the USAF post World War II. This 54-unit park (Opposite) at Kirtland AFB featured two large bathhouses and a laundry. (Courtesy Albuquerque Museum Photoarchive, PA1980.185.814)





**Members of the Air Force Association** and their spouses attend a dinner dance at the Albuquerque Hilton on Air Force Day 1947. (Courtesy Air Force Nuclear Weapons Center Office of History)



**Families enjoy Thanksgiving dinner** (Below) in the Consolidated Mess Hall on base in 1947. (Courtesy Air Force Nuclear Weapons Center Office of History)



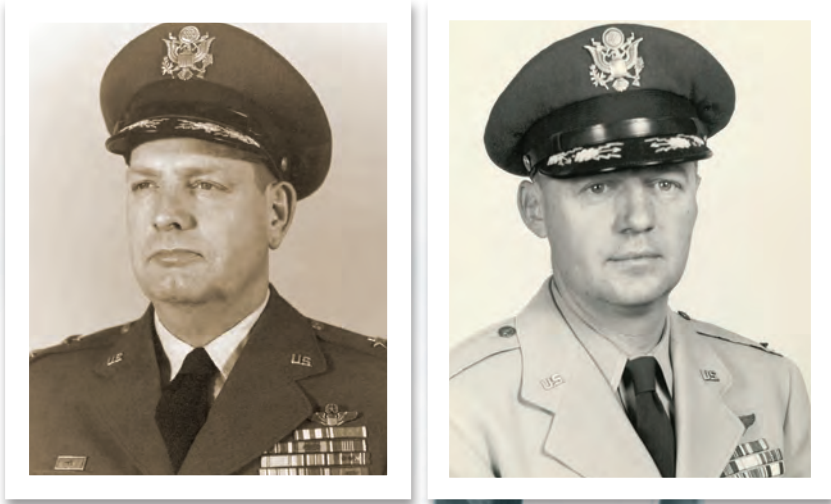
**Santa Claus** (Above) hands out presents at the base nursery school on December 1, 1947. The nursery offered both day and night care for small children. Unlimited nursery privilege cards cost \$1 per month during the 1950s.<sup>92</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)



# Air Force Special Weapons Center

**The 4925th Test Group (Atomic)**  
(Below) counted the best of the best American airmen and support personnel. They were dubbed the "Megaton Blasters," and conducted all the live atomic weapons tests in Nevada and the Pacific Ocean during the 1950s.  
(All Images Courtesy Air Force Nuclear Weapons Center Office of History)

**Maj. Gen. John S. Mills**  
(Right) was commander of the Air Force Special Weapons Command (later Center) from 1950 to 1954.  
**Col. Henry G. Hamby, Jr.**  
(Far Right) was commander of Kirtland Air Force Base from 1952 to 1957.



**Members of the 4925th**  
(Right) depart from a briefing following a 24-hour delay in their mission during Operation Teapot in Nevada during 1955.

**Indian Springs Air Force Base**  
(Below) in Nevada came under the jurisdiction of the Air Force Special Weapons Center in July 1952. The base's mission was to support atmospheric testing of nuclear weapons ongoing at the Nevada Proving Grounds.

**These eleven men** (Lower Right) with the 4925th Test Group (Atomic) were the flight crew of a Convair B-36 Peacemaker during Operation Teapot. Their pressure suits and helmets were designed to withstand decompression resulting in certain death above 50,000 feet. (All Images Courtesy Air Force Nuclear Weapons Center Office of History)







**Captain William L. Hickey**, (Top Left) a bomber pilot with the 4925th Test Group (Atomic), is pictured here in 1955 at the controls of a B-36 *Peacemaker* during Operation Teapot in Nevada. (Courtesy Air Force Nuclear Weapons Center Office of History)

**Major Dwight E. Durner** (Left) was a bombardier with the 4925th Test Group (Atomic). Durner dropped the first airborne hydrogen bomb from a B-52 *Stratofortress* over the Pacific during 1956.<sup>93</sup> (Courtesy Phillips Research Site History Office, Air Force Research Laboratory, KAFB, NM)

**Major Marvin L. Speer** (Above) was a B-47 bomber pilot and flight commander with the 4925th Test Group (Atomic). (Courtesy Phillips Research Site History Office, Air Force Research Laboratory, KAFB, NM)

**Donning the pressure suits** required a lot of assistance. An oxygen tank strapped to the leg inflated tubes in the suit causing it to tighten dramatically. The pressure was so great, it forced the wearer to breathe backwards, i.e. relax to let oxygen into the lungs and then forcefully expel it.<sup>94</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)







During the mid 1950s, the Air Force Special Weapons Center began missile R&D. The center oversaw the development of the MB-1 Genie, an air-to-air, unguided nuclear-tipped rocket. (Courtesy Air Force Nuclear Weapons Center Office of History)

In this image, an F-106 launches the MB-1 Genie rocket in 1957. The weapon detonated at 20,000 feet over the Nevada Test Site. (Courtesy Air Force Nuclear Weapons Center Office of History)



A Blast Effects Research Group was transferred to the Air Force Special Weapons Center in 1956. This Eric H. Wang Shock Tube Facility, pictured here, simulated nuclear shock waves to study their effects on underground structures. (Courtesy Phillips Research Site History Office, Air Force Research Laboratory, KAFB, NM)



Seen here at a formal event (Right) for the Air Force Special Weapons Center are (left to right): Col. Henry Eichel, Edgar D. Nunns, Kay Nunns, Irene Eichel, and an unidentified man. Col. Eichel and Nunns were both with the 4925th Test Group (Atomic). (Courtesy Phillips Research Site History Office, Air Force Research Laboratory, KAFB, NM)



Members of the Army Navy Air Force Club enjoy the swimming pool and diving board during the summer in this 1950s image.



The Army Navy Air Force Club (Above) hosted many social and recreational activities for personnel of both Sandia Base and Kirtland AFB. (Courtesy Air Force Nuclear Weapons Center Office of History)

Col. Osmond J. Ritland, (Right) an elite test pilot, was the commanding officer of the 4925th Test Group (Atomic). Ritland eventually became Chief of the Atomic Energy Division at HQ USAF. The commander is pictured here with his wife and daughters. (Courtesy Phillips Research Site History Office, Air Force Research Laboratory, KAFB, NM)



Pictured are attendees (Above) of an island-themed costume party at the Army Navy Air Force Club. (All Images and Memorabilia Courtesy Air Force Nuclear Weapons Center Office of History)

- ANAF CLUB, SANDIA BASE**

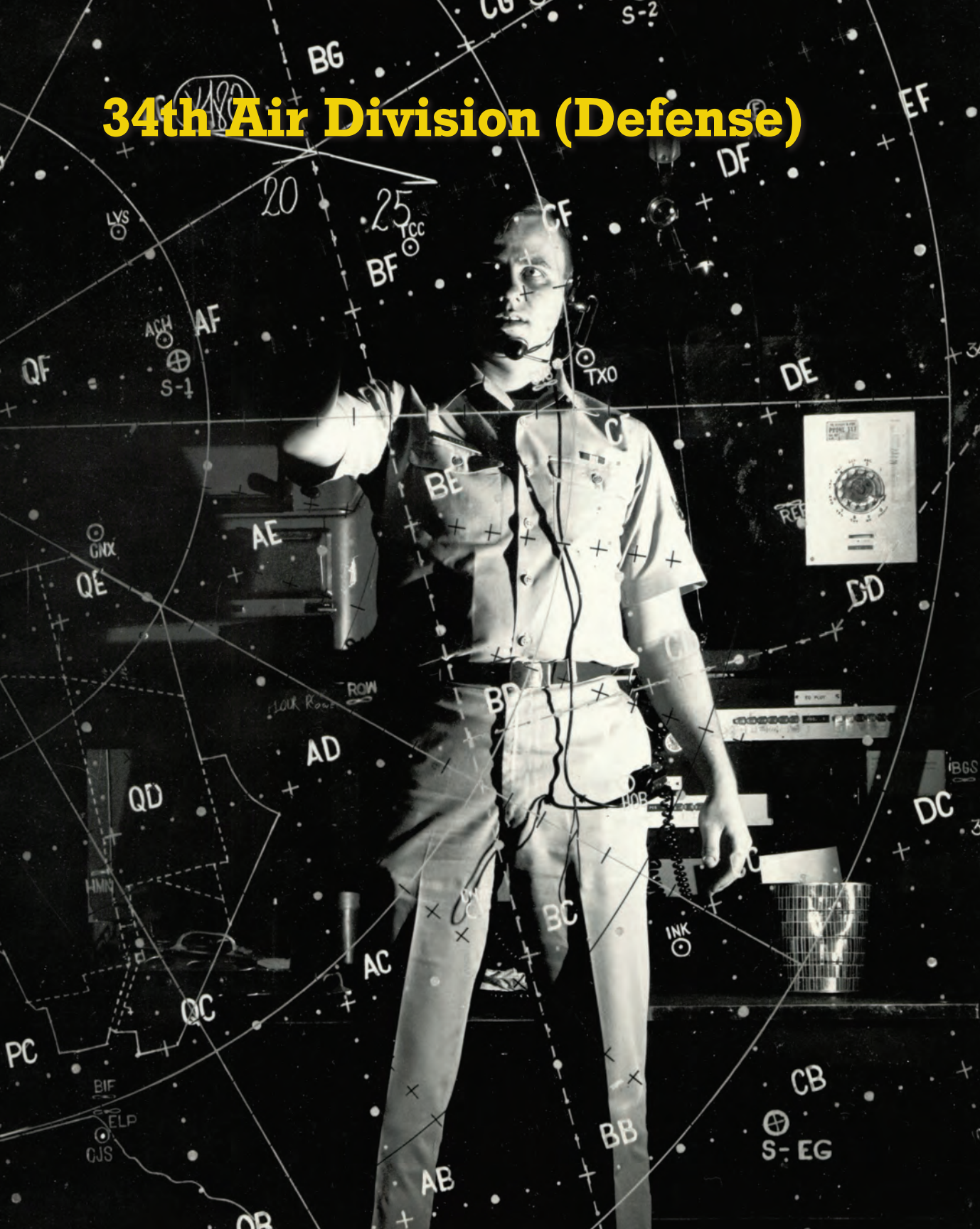
  1. Cribbage Tournament—2030 hrs.
  2. TV—Duffy's Tavern—1730 hrs.
  3. Dog Day's Dance—The Sk liners—2030 hrs.
  4. Santa Fe Fiesta—1230 hrs.—Game Night—2030 hrs.
  5. Labor Day Hop—Lou Pinger—2030 hrs.
  6. Learn to Dance—Glenna Wells—2030 hrs.
  7. Zingo—2030 hrs.
  8. Bridge Tournament—2030 hrs.
  9. TV—Best of Groucho—2000 hrs.
  10. Redskin Romp—The Skyliners—2030 hrs.
  11. Horse-back Riding—1230 hrs.—Chess Tournament—1930 hrs.
  12. Junior Hostess Meeting—1430 hrs.—Dream Time Drag—Sol Chavez—2030 hrs.
  13. Learn to Dance Class—Glenna Wells—2030 hrs.
  14. Zingo—2030 hrs.
  15. Pool Tournament—2030 hrs.
  16. TV Nite—"Dragnet"—2100 hrs.
- Program for September, 1954**

  17. School Daze Dance—The Skyliners—2030 hrs.
  18. Monte Carlo Night—2030 hrs.
  19. Autumn Nocturne Stomp—Phil Graham—2030 hrs.
  20. Learn to Dance Class—Glenna Wells—2030 hrs.
  21. Zingo—2030 hrs.
  22. Pinochle Tournament—2030 hrs.
  23. TV Nite—"Texas Rasslin"—2000 hrs.
  24. Football Fling—The Skyliners—2030 hrs.
  25. Horse-back Riding—1230 hrs.—Happy Birthday Party—2000 hrs.
  26. Sombrero Swing—Orlie Wagner—2030 hrs.
  27. Learn to Dance Class—Glenna Wells—2030 hrs.
  28. Zingo—2030 hrs.
  29. Coffee and Donuts—1945 hrs.—ANAF Varieties—2030 hrs.
  30. TV Nite—2000 hrs.

Kathryn Smoot—Club Director  
Kate Barrett—Recreation Director

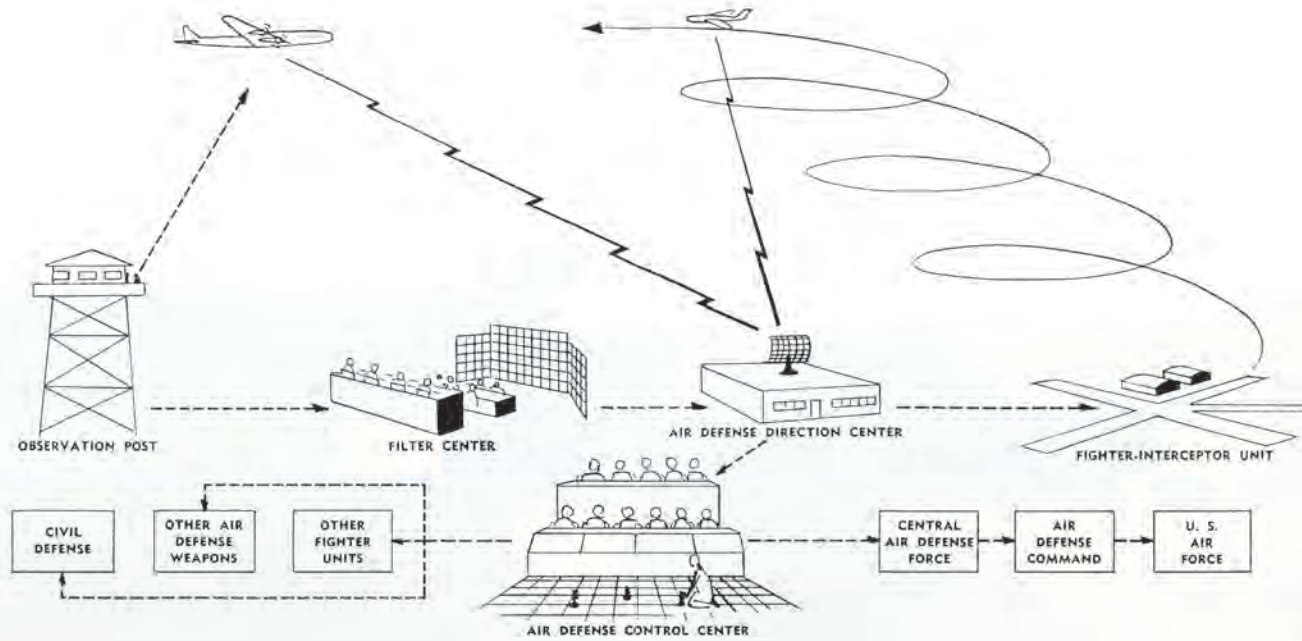


# 34th Air Division (Defense)



**34th Air Division**  
(Defense) personnel plotted all reported aircraft sightings. Each sighting was then checked against all known military, commercial, and private flight plans. (Courtesy Phillips Research Site History Office, Air Force Research Laboratory, KAFB, NM)

**The mission** (Right) of the 34th Air Division (Defense) was to detect, identify, intercept, and destroy hostile airborne forces over New Mexico. On 24-hour-alert, it could order jet fighters into the air at a moment's notice. (Image from November 1955 issue of *Albuquerque Progress*)



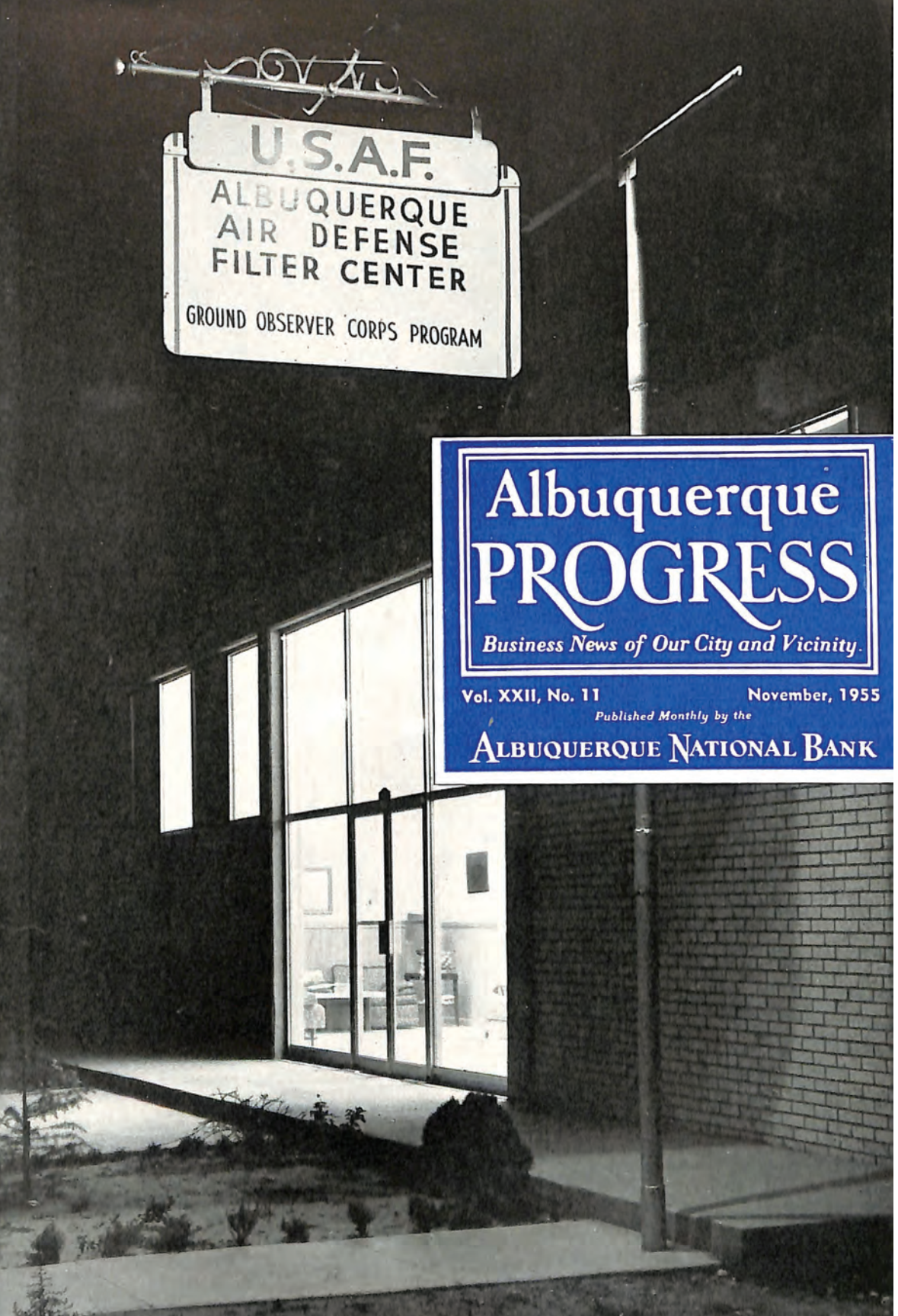
**The 34th Air Division** (Defense) headquarters were within a highly guarded complex of proto-hardened buildings including the Air Defense Direction Center (Below) pictured here. (Courtesy Phillips Research Site History Office, Air Force Research Laboratory, KAFB, NM)





**34th Air Division (Defense)** personnel await the pinning of decorations at a Kirtland AFB monthly review in July 1952. (Courtesy Air Force Nuclear Weapons Center Office of History)

**The Albuquerque Air Defense Filter Center** (Opposite) was the headquarters for the Ground Observer Corps. GOC volunteers manning regional aircraft observation posts communicated with the Filter Center by radio and telephone.



**Brig. Gen. Wendell W. Bowman** commanded the 34th Air Division (Defense) from Kirtland AFB between 1953 and 1957. Bowman was a command pilot and communications specialist. (Courtesy Air Force Nuclear Weapons Center Office of History)

**“It may not be a cheerful thought, but the Reds right now have about a thousand bombers quite capable of destroying 89 cities in one raid...Won’t you help protect your country, your town, your children?”**

- Ground Observer Corps radio spot



# 93rd Fighter Interceptor Squadron

Kirtland AFB was one of only 20 installations to receive this state-of-the-art Alert Hangar from the Air Defense Command.<sup>95</sup> *Flying* magazine featured a photograph of Kirtland's new hangar, which it dubbed "the firehouse of the atomic age."<sup>96</sup> F-86 *Sabre* jets are visible inside the hangar. (Courtesy Air Force Nuclear Weapons Center Office of History)



**Children** from Monte Vista Elementary School pose with 93 FIS personnel on a class trip in 1952." (Courtesy UNM Archives, Center for Southwest Research, University Libraries, University of New Mexico)



**The 93 FIS** manned two 12-hour shifts daily in its Alert Hangar.<sup>97</sup> One newspaper detailed, "Within five minutes of orders by the 34th Air Division (Defense) to scramble, the jet fighters were airborne."<sup>98</sup> In this image, F-86 *Sabre* jets fly over the base. (Courtesy Air Force Nuclear Weapons Center Office of History)



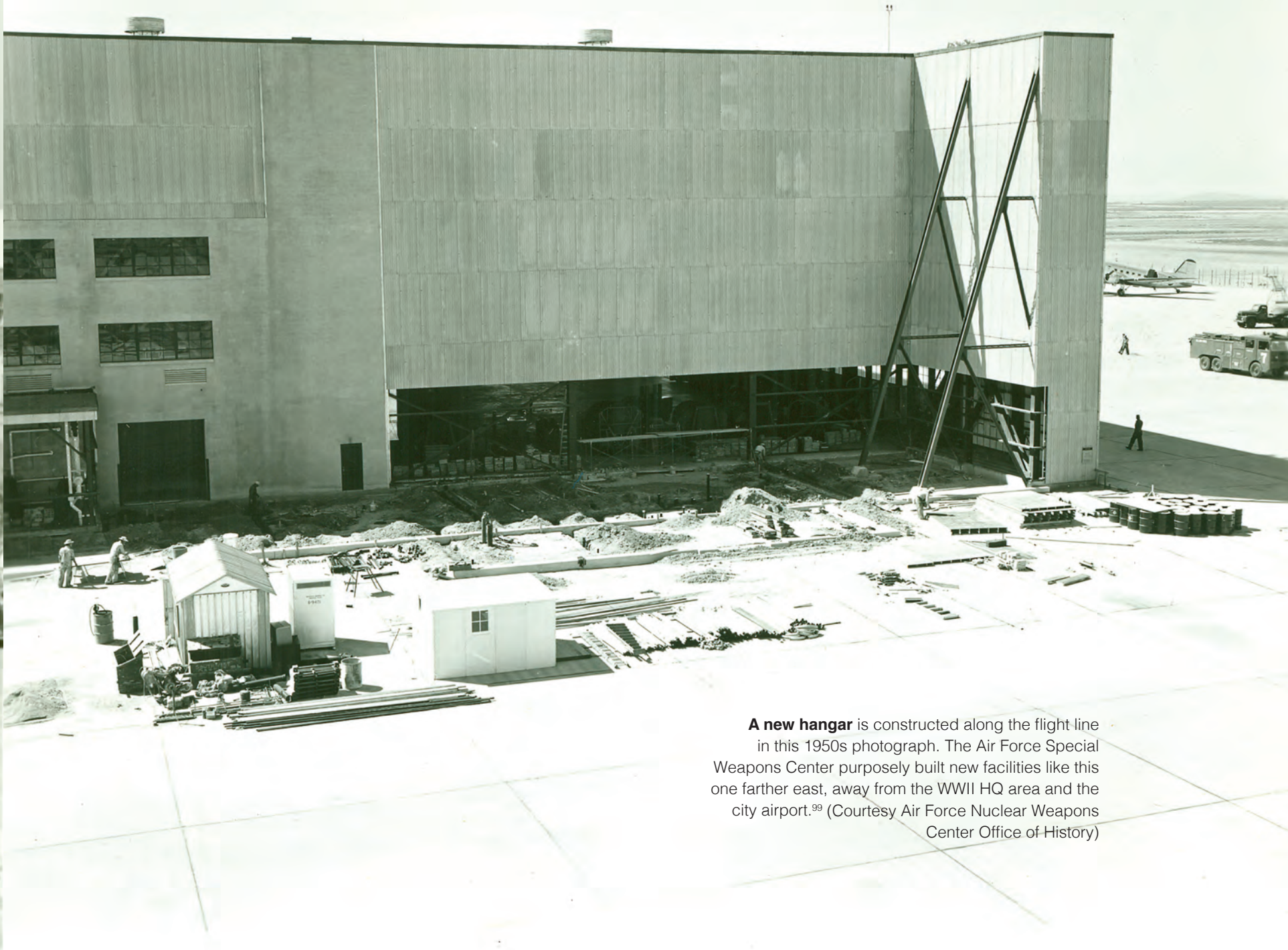


# Base Buildup of the 1950s



**Kirtland AFB** initiated a seven-year base master plan in 1950 including many new buildings and the extension of the east-west runway. In this image (Left), work begins on a new swimming pool. Air Force Special Weapons Center aircraft hangars are visible in the distance.

**This overview** (Below) looking west depicts the original WWII-era base headquarters and hangars area. Additional aircraft ramp space is being constructed in the foreground in this early 1950s photograph. (Images Courtesy Air Force Nuclear Weapons Center Office of History)



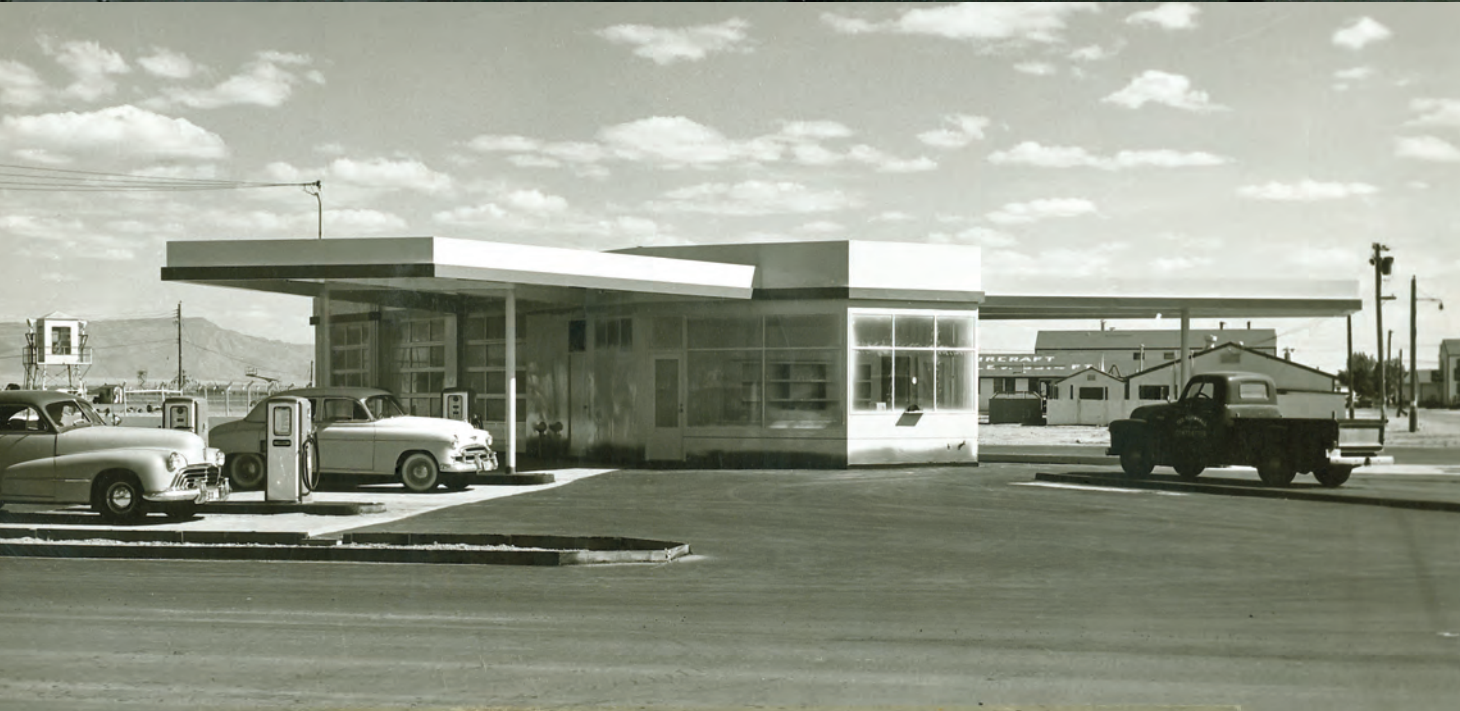
**A new hangar** is constructed along the flight line in this 1950s photograph. The Air Force Special Weapons Center purposely built new facilities like this one farther east, away from the WWII HQ area and the city airport.<sup>99</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)





**This building** (Right) was the first permanent barracks constructed on the east side of the base in March 1952.

**The newly renovated Service Club snack bar** (Bottom) is depicted here in July 1952. (Images Courtesy Air Force Nuclear Weapons Center Office of History)



**Pictured here** (Top) is a newly constructed Kirtland AFB dining hall, one of many new facilities built during the 1950s.

**This photograph** (Left) of a brand new gas station was taken in May 1953. (Images Courtesy Air Force Nuclear Weapons Center Office of History)





**A large crowd** (Below) of servicemen and family members attend the grand opening of a new base commissary in 1952. A sign reads: "Welcome, We're Here to Help You SERVE YOURSELF!"

**Maj. Gen. John S. Mills** (Inset at Right) cuts the ribbon in celebration of the new base commissary. Commissary Officer Thomas L. Lehmann looks on. (Images Courtesy Air Force Nuclear Weapons Center Office of History)



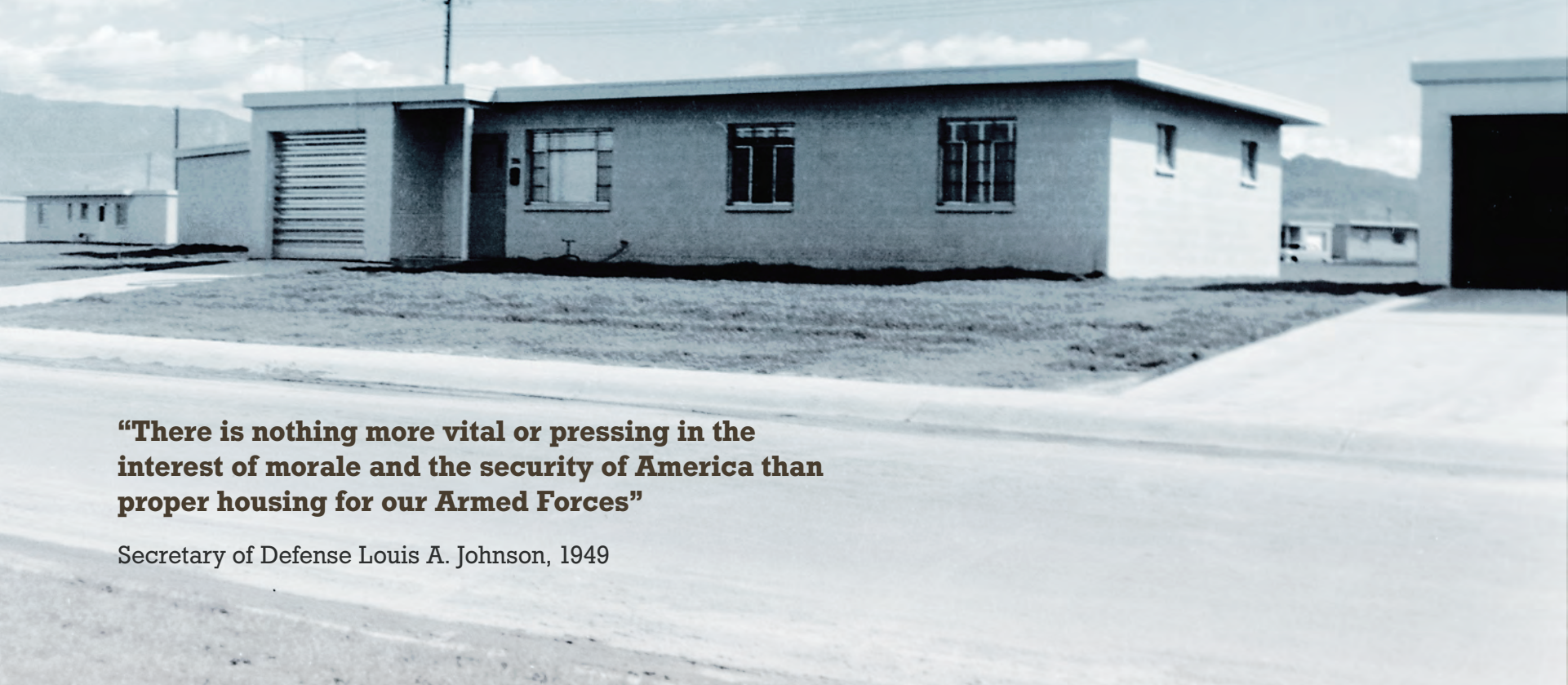
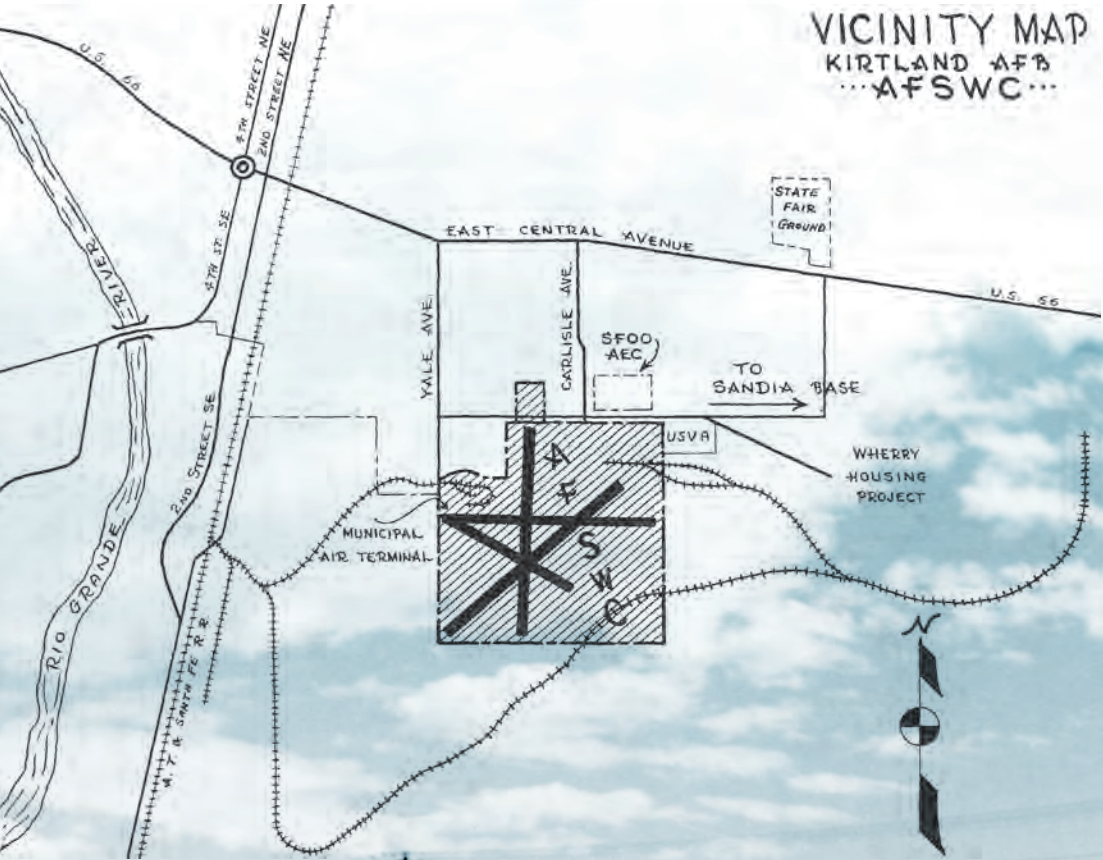
**Maj. Gen. John S. Mills** enjoys the first cup of coffee from a new mobile exchange in 1953. Capt. Cornelius Shearin, base exchange officer, stands to the right. (Courtesy Air Force Nuclear Weapons Center Office of History)



**Constructed in 1951**, the Wherry housing complex had 760 units rented by personnel of both Sandia Base and Kirtland AFB. It was built and run by a private developer, known as a Wherry “sponsor,” before being acquired by the U.S. government in 1958.<sup>100</sup> (Courtesy Air Force Nuclear Weapons Center Office of History)

**This Air Force Special Weapons Center** map (left) shows the location of the Wherry housing complex in 1953.

**Wherry houses** (Below) like the one pictured offered from one to three bedrooms. The front door generally opened into a combined living/dining room with the kitchen to the rear. Storage space was limited. (Courtesy Air Force Nuclear Weapons Center Office of History)

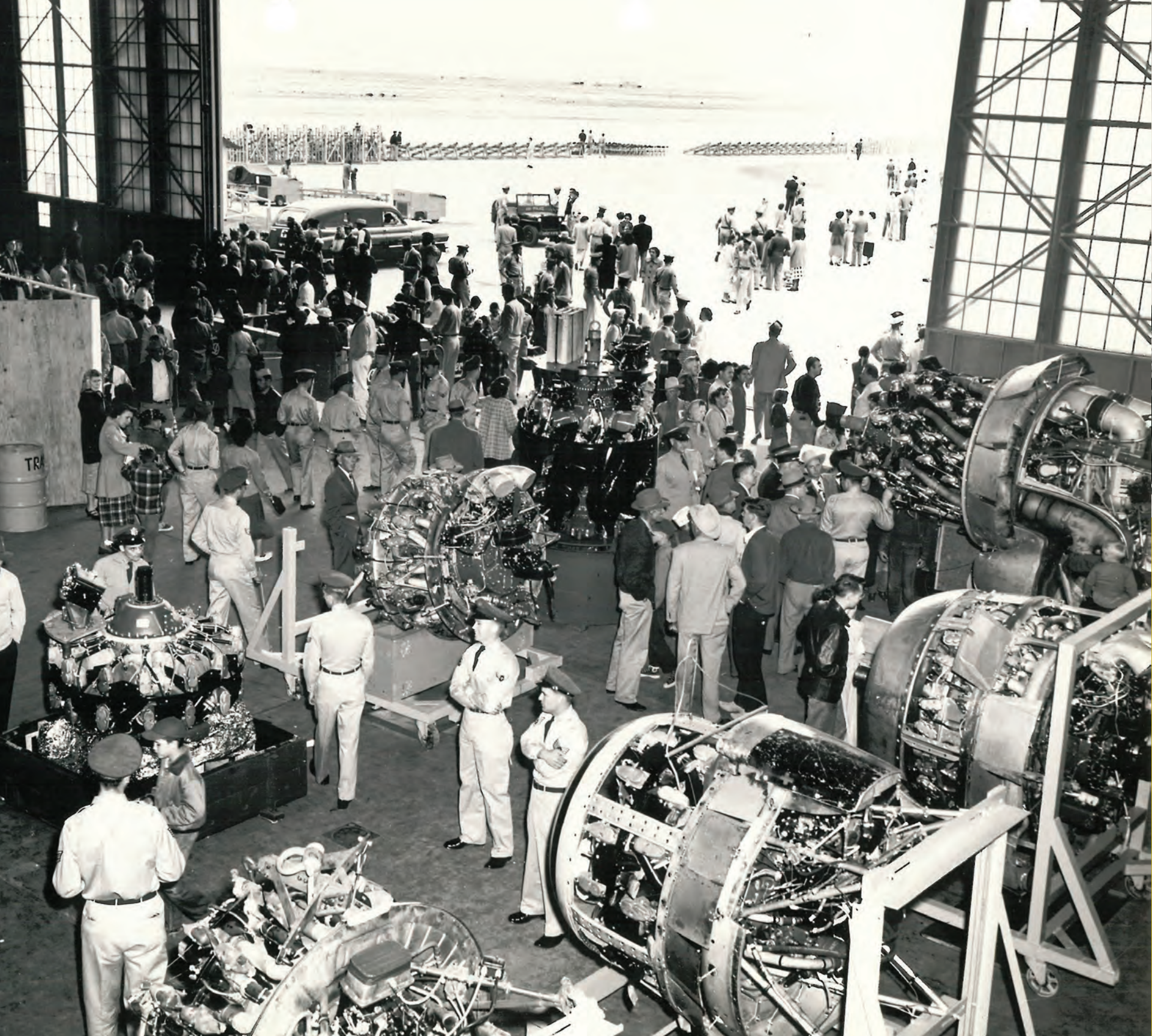


**“There is nothing more vital or pressing in the interest of morale and the security of America than proper housing for our Armed Forces”**

Secretary of Defense Louis A. Johnson, 1949







**This B-36 *Peacemaker*** (Above) belonged to the 4925th Test Group (Atomic). A metal walkway led viewers up past the bomber's station to the very top, where they could look down into the cockpit. (Courtesy Air Force Nuclear Weapons Center Office of History)

**During the 1950s**, (Opposite) Kirtland AFB celebrated Armed Forces Day with open houses for the public. Festivities included air shows, aircraft and other displays. Concession stands sold cold drinks and sandwiches. Thousands of local people attended these events. (Courtesy Air Force Nuclear Weapons Center Office of History)

**The fire department** (Top Right) offered free rides for kids, and set an obsolete C-47 *Skytrain* alight to demonstrate their skills. (Courtesy Air Force Nuclear Weapons Center Office of History)

**A scientist** (Left) shows off an elaborate laboratory exhibit to local elementary school children. (Courtesy Air Force Nuclear Weapons Center Office of History)





**ENDNOTES**

<sup>1</sup> Don E. Alberts, *Balloons to Bombers: Aviation in Albuquerque 1882-1945* (Albuquerque: Albuquerque Museum, 1987), 56.

<sup>2</sup> Karen Van Citters and Kristen Bisson, 2003, "National Register of Historic Places Historic Context and Evaluation for Kirtland Air Force Base, Albuquerque, New Mexico," p. 59.

<sup>3</sup> Pfc. Paul Weeks, "On Every Fighting Front They're Saying 'I'm From Kirtland,'" *Bombsight* (19 February 1944).

<sup>4</sup> Col. Louis W. Proper, Album of Station Information for Commanding General, Army Air Forces Western Flying Training Command, 18 December 1944. On file, Phillips Research Site History Office, Air Force Research Laboratory, KAFB, NM.

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> Alberts, *Balloons to Bombers*, 65.

<sup>8</sup> See John P. Ryan Papers, 1907-1960, New Mexico State University Library, Archives and Special Collections, Las Cruces, NM.

<sup>9</sup> Proper, Album of Station Information.

<sup>10</sup> Wesley Frank Craven and James Lea Cate, eds., *The Army Air Forces in World War II, Vol. 6: Men and Planes* (Chicago: University of Chicago Press, 1955), 549-551.

<sup>11</sup> Maj. Gen. Barton K. Yount, "Airmen by the Thousands," *Flying* 31(1): 81-82.

<sup>12</sup> Bruce Ashcroft, *We Wanted Wings: A History of the Aviation Cadet Program* (Randolph AFB, TX: HQ AETC Office of History and Research, 2005), 45.

<sup>13</sup> Proper, Album of Station Information.

<sup>14</sup> Weeks, "On Every Fighting Front."

<sup>15</sup> *Albuquerque Journal*, "Bombardiers Get Wings Saturday," 6 March 1942, p. 8.

<sup>16</sup> Kirtland Field, 1943, Yearbook.

<sup>17</sup> Proper, Album of Station Information; Kirtland Field, Yearbook.

<sup>18</sup> Proper, Album of Station Information.

<sup>19</sup> *Bombsight*, "Maj. Campbell is New Director of Training," 1 Nov. 1943, p. 7.

<sup>20</sup> Air Depot Training Station, Air Depot Training Station Yearbook (Baton Rouge: Army and Navy Publishers Company of Louisiana, 1943).

<sup>21</sup> Van Citters and Bisson, NRHP Historic Context KAFB, 78.

<sup>22</sup> Van Citters and Bisson, NRHP Historic Context KAFB, 79.

<sup>23</sup> *Albuquerque Journal*, "143 Bombardiers Graduated in Final Kirtland Field Class," 25 February 1945, p. 3; Alberts, *Balloons to Bombers*, p. 69.

<sup>24</sup> Alberts, *Balloons to Bombers*, 61-63.

<sup>25</sup> Ibid.

<sup>26</sup> *Albuquerque Progress*, "Air Base Construction Nearly Completed," March 1941.

<sup>27</sup> Kirtland Field, Yearbook.

<sup>28</sup> Harold A. Skaarup, *New Mexico Warbird Survivors* (Lincoln, NE: Writers Club Press, 2002).

<sup>29</sup> Proper, Album of Station Information.

<sup>30</sup> U.S. Army Air Forces, Keep 'Em Flying: Aviation Cadets Train for Air or Ground Crews (United States Army Recruiting Publicity Bureau, c. 1942).

<sup>31</sup> Herbert A. Bradley, Jr. was a graduate of Class 43-11, and later served with the 453<sup>rd</sup> Bombardment Group. George A. Lindsley and Margaret E. Lindsley, 1999, *Always Out Front: The Bradley Story*, Electronic document, <http://ibiblio.org/hyperwar/AAF/Bradley/index.html> (accessed 15 February 2016).

<sup>32</sup> *Albuquerque Journal*, Caption: "More Bombardiers," 23 March 1942.

<sup>33</sup> Bruce Ashcroft, *We Wanted Wings*, 34, 46.

<sup>34</sup> *Bombsight*, "46,000 WACs Needed Now by AAF" 1 Nov. 1943, *Pottstown Mercury*, "Edith Swinehart Made Corporal, in WACS," 22 Nov. 1943, p. 8.

<sup>35</sup> *Albuquerque Journal*, Caption: "Star In Uniform," 29 Sept. 1942, p. 5.

<sup>36</sup> *Albuquerque Journal*, Caption: "Peace on Earth—Good Will to Men," 25 Dec. 1942, p. 1.

<sup>37</sup> Kirtland Field, Yearbook.

<sup>38</sup> The Heights Community Center kept copious records, and provided monthly reports of all its activities. See the Cary Blair Papers, 1936-1955, Center for Southwest Research, University Libraries, University of New Mexico.

<sup>39</sup> Ibid.

<sup>40</sup> Weeks, "On Every Fighting Front."

<sup>41</sup> Kirtland Field, Yearbook.

<sup>42</sup> Team schedule included in game program adjacent to this photograph.

<sup>43</sup> *Gallup Independent*, "Personal Mention," 19 April 1943, p. 4.

<sup>44</sup> Kirtland Field, Yearbook.

<sup>45</sup> *Bombsight*, "Col. W. B. Offutt Takes Over as Kirtland Field Commandant," 15 October 1943.

<sup>46</sup> Air Depot Training Station, Yearbook.

<sup>47</sup> Ibid.

<sup>48</sup> All personnel identification on this page was detailed in *Albuquerque Progress*, "Who Really Keep 'Em Flying: The Story of Albuquerque's Air Depot Training Station," April 1943.

<sup>49</sup> Richard Melzer, *New Mexico: A Celebration of the Land of Enchantment* (Layton, UT: Gibbs Smith, 2011), 46.

<sup>50</sup> *Albuquerque Journal*, Caption: "First Patient for New Convalescent Center," 20 April 1944, p. 1.

<sup>51</sup> *Albuquerque Progress*, "AAF Convalescent Hospital in Albuquerque Makes Important Contribution to Victory," November 1944.

<sup>52</sup> Ibid.

<sup>53</sup> Ibid.

<sup>54</sup> For information on the New Mexico Proving Ground, see Van Citters and Bisson, NRHP Historic Context KAFB.

<sup>55</sup> *The Twenty-Niner*, May 1945.

<sup>56</sup> *Albuquerque Journal*, "Armed Forces Day Attracts 37,500 at Two Bases Here," 21 May 1950, p. 1.

<sup>57</sup> *Albuquerque Journal*, "Kirtland Field Not in the List Recommended," 16 October 1945, p. 1.

<sup>58</sup> *Albuquerque Journal*, Last Ditch Effort to Save Kirtland, 26 October 1945, p. 1.

<sup>59</sup> Leland Johnson, *Sandia National Laboratories: A History of Exceptional Service in the National Interest* (Albuquerque, NM: Sandia National Laboratories, 1997), 15-20.

<sup>60</sup> Karen Van Citters and Deborah Butcher, 2003, National Register of Historic Places Historic Context and Evaluation of Manzano Base, Kirtland Air Force Base, New Mexico, p. 16.

<sup>61</sup> Ibid. 27; Van Citters and Bisson, NRHP Historic Context KAFB, p. 103.

<sup>62</sup> Van Citters and Bisson, NRHP Historic Context KAFB, p. 103.

<sup>63</sup> Robert Hotz, "Center Mates Planes to Atomic Weapons," *Aviation Week* 59(7), 17 August 1953, pp. 91-95.

<sup>64</sup> Air Force Special Weapons Center, 1953, Facilities.

<sup>65</sup> Van Citters and Bisson, NRHP Historic Context KAFB, pp. 99-100.

<sup>66</sup> Michael Benolkin, A Brief History of the 150<sup>th</sup> Fighter Group/188<sup>th</sup> Fighter Squadron, Electronic document, <http://www.cybermodeler.com/history/nmang/nmang1.shtml> (accessed 10 February 2016).

<sup>67</sup> Ibid.

<sup>68</sup> Hotz, "Center Mates Planes to Atomic Weapons."

<sup>69</sup> Doyle Kline, NEA Correspondent, "How Air Force Guards U.S. 'Atomic Heart,'" *Indiana Gazette*, 21 May 1953, p. 14.

<sup>70</sup> North American Aerospace Defense Command (NORAD) Office of History, 2013, A Brief History of NORAD.

<sup>71</sup> Van Citters and Bisson, NRHP Historic Context KAFB, pp. 108-109.

<sup>72</sup> Steve Lowell, "Cold War is for Keeps With Front Line Pilots of ADC," *Alamogordo Daily News*, 26 May 1955, p. 8.

<sup>73</sup> Kline, "Atomic Heart."

<sup>74</sup> Craven and Cate, *Men and Planes*, p. 238; *Albuquerque Journal*, "Col. Bunker New Kirtland Field CO," 1 May 1947, p. 1, 3; U.S. Air Force, "Major General Howard G. Bunker," electronic document, <http://www.af.mil/AboutUs/Biographies/Display/tabid/225/Article/107565/major-general-howard-g-bunker.aspx> (accessed 7 April 2016).



