OFFICIAL PUBLICATION OF THE TENNESSEE MILITARY DEPARTMENT

TENNESSEE GUARDSMAN

SPECIAL HERITAGE ISSUE

AIR EDITION

FROM THE EDITOR

LT. COL. MARTY MALONE
MANAGING EDITOR

The Tennessee Air National Guard may have only existed for 74 years coinciding with the creation of the Air Force under the National Security Act of 1947. However, the roots of the organization go back to the 1920s when bi-planes and dirt runways were more commonplace than the jets and concrete we see today.

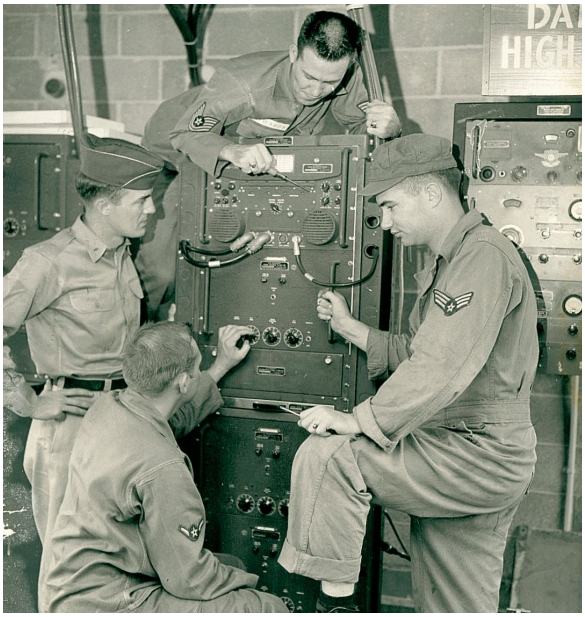
In truth, the Tennessee National Guard goes back to the first muster of Tennesseans before the Revolutionary War. In 1774, the first Tennessee militia formed to aid the Virginians in a conflict that came to be known as Lord Dunmore's War. 247 years later, we are parts and pieces of a long and rich heritage. We now fall on a historic Tennessee timeline with those first militiamen. You are making history each and every day and your contributions could be highlighted in future magazines like this one. Your story is connected to those that came before, and connect to the future.

We in the Tennessee Air National Guard are the Volunteers that follow in the footsteps of other great volunteers like Capt. Evan Shelby, Gen. Andrew Jackson, the 30,000 volunteers that answered the call for the Mexican-American War, Maj. Gen. Roberta Mills and Maj. Gen. James Bassham.

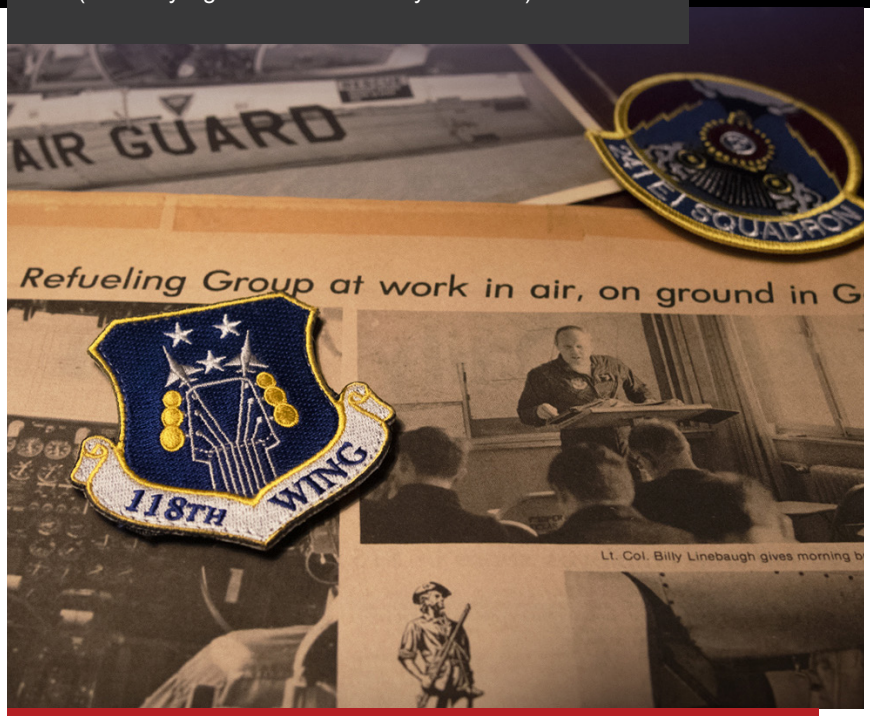
In an effort to keep the 74 years of history alive for the Tennessee Air National Guard, and an even longer history of some of the units therein, we have created this magazine now in your hands; the Tennessee Guardsman Special Heritage Issue-Air Force Edition. I hope you saw the companion edition for the Army and if you did not, I strongly encourage you to find a copy and give it a quality read. It is the perfect accompaniment to this issue with history, heraldry, and heritage of our Tennessee Army Guard units.

You will find in this installment: facts about Tennessee's aircraft, a celebration of 100 years of the 105th Attack Squadron, history of the 119th and the 241st, and a timeline of Tennessee Air Guard aircraft.

Thank you to all the people that contributed to and aided in telling the Tennessee's Air National Guard story. We are indeed fortunate to be a part of the Tennessee National Guard which has such a rich and diverse history.



ON THE COVER: Photos, old newspaper clippings and patches from the Tennessee Air National Guard. (Photo by Sgt. 1st Class Timothy Cordeiro)



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what's that patch mean?

An Airman's patch lets others know what unit they're in and hints at what they do. On the right sleeve you will see the "organizational unit of assignment;" that is usually the Airman's squadron. The left sleeve will display the Higher Headquarters patch which could be the Air National Guard's or their Major Command's patch. The history of unit patches as a unit designator goes back to World War I when the Army Air Service had distinguishing patches on their uniforms, on their iconic leather flight jackets, or painted on their planes. That tradition continued to cloth patches on the uniform and transitioned in the 1950s to flight suits and utility uniforms. The Tennessee Air National Guard has over 50 different patches you might see with 36 distinct squadrons, 13 groups, and 3 wings. In what follows we will highlight the wings and geographically separated units that embody the history, mission, and culture of the Tennessee Air National Guard.

BY LT. COL. MARTY MALONE

118TH WING

Symbolism: The Wing emblem consists of the Air Force shield design with a basic background of ultramarine blue representing the blue sky in which our mission is performed. The shield is edged in Air Force yellow. The focus of the design is that of the head of a guitar, symbolic of the unit location in "Music City, USA," the commercial catchwords most commonly associated with Nashville. The guitar strings are platinum, the uppermost of which vault to the sky as pedestals for the aircraft shown as representative of our mission and history. The platinum alludes to the highest achievement of the music industry which is prominent in Nashville; depicting the high standing for which the unit strives. The three stars are taken from the flag of the state of Tennessee, and are indicative of the state role which the unit must assume. The stars themselves represent the three geographical divisions of Tennessee and are so arranged that a point of each converges on the imaginary center that symbolizes unity; thus in the emblem signifies the unity and teamwork required of the Wing.

The guitar is symbolic of the unit's location in "Music City, USA."

History: The 118th Wing has its roots in the 105th Aero Squadron, a unit that dates back to 1917. The 118th moniker came to exist in Tennessee in 1946 as World War II units were given new designations and assigned to the National Guard as the 118th Fighter Group.

From WWII until 1971 the Wing flew multiple aircraft but it was this year that it converted to the C-130 Hercules and became the 118th Tactical Airlift Wing with as many as 16 aircraft and 1400 members, one of the largest in the air guard at the time.

In 2007 the Wing transitioned to training foreign students for Air Education and Training Command. The 118th is now the 118th Wing and flies the MQ-9 Reaper Remotely Piloted Aircraft. They also now have two Intelligence Surveillance Reconnaissance Groups.

When first added to the Guard, the 105th was assigned to the 30th "Old Hickory" Division, U.S. Army, which gave the unit their insignia, the figure of Andrew Jackson on horseback. They also flew from Blackwood Field directly adjacent to Andrew Jackson's Hermitage.

119TH CYBERSPACE OPERATIONS SQUADRON

Symbolism: The blue alludes to the sky, the primary theater of Air Force operations and yellow refers to the sun and the excellence required of Air Force personnel. The demi-globe represents support supplied by the Squadron to the worldwide Air Force mission. The mountain range represents the Great Smoky mountains and home area of the Squadron. The electronic sweep and aircraft reflect the local direction and control of maneuvers provided by the unit in support of the Tennessee Air National Guard. The blue disc with stars on the red ribbon represents the Tennessee State Flag and the commitment of the Squadron personnel to serve their state.

The Great Smoky mountains, home area of the 119th Squadron.

History: On Oct. 8, 1950, the 119th Air Control and Warning Squadron received federal recognition and for the next several years the unit participated in several field training exercises and projects, learning and perfecting the Air Control and Warning mission set. Throughout the 60's, 70's, and 80's, the 119th continued to demonstrate mission capability with successful participation in exercises and real-world events, including the Berlin Airlift. Utilizing state-of-the-art equipment, the 119th quickly became one of the most respected Air Control Squadrons in the country. From Vietnam to the Persian Gulf, the 119th played an integral part in successfully continuing missions both at home and abroad throughout the latter half of the 20th century.

In March of 1999, in conjunction with U.S. Space Command, the 119th ACS become the 119th Command and Control Squadron officially beginning a space mission. The mission was soon broadened to coordinate and direct the U.S. Strategic Command's global operations center. In 2017, the cyber realm was opened; the unit was re-designated the 119th Cyberspace Operations Squadron supporting command and control of cyberspace operations in partnership with 16th Air Force and the U.S. Cyber Command.

134TH AIR REFUELING WING

Symbolism: The emblem is symbolic of the unit, the National and Air Force colors, blue and golden yellow are used. Blue alludes to the sky, the primary theater of Air Force operations and yellow to the sun and the excellence required of personnel in their assigned tasks. Pegasus, the winged horse, symbolizes the unit's aircraft. The castle represents the unit's long association with Germany. The unit was activated in 1961 during the Berlin Crisis and spent a year in Germany. The three stars and the colors on the left also represent the South and the state of Tennessee. The orange background on the right is symbolic of the eastern part of the state where the unit is located.

Pegasus, the winged horse.

History: In 1957, the 134th Fighter-Interceptor Group and the 151st Fighter-Interceptor Squadron were constituted in Knoxville as part of the Tennessee Air National Guard in order to replace active-duty units. Due to the strategic value and proximity to both Oak Ridge National Laboratories and the Aluminum Company of America, the 134th provided air defense to these facilities.

In 1964 the unit switched to the air refueling mission with the KC-97G Stratotanker, a mission that the 134th continues to support to this day with the KC-135 Stratotanker.

The 151st was the first unit in Knoxville added to the Air Guard. Their patch is derived from the 151st Fighter Interceptor Squadron and was in use when the unit came over from Active Duty. (The Sylvester image depicting the famous cat is used with permission; very few get this honor).

164TH AIRLIFT WING

Symbolism: Ultramarine blue and Air Force yellow are the Air Force colors. Blue alludes to the sky, the primary theater of Air Force operations. Yellow refers to the sun and the excellence required of Air Force personnel. The early muzzle loading firearm with powder horn represents the unit's heritage from the Lexington minuteman and the early settlers of the Volunteer State, such as David Crockett, Andrew Jackson and a host of others. The sternwheel steamboat represents the vehicle, loaded with cotton and other cargo that plied the Mississippi River helping to open up that part of the country. The cotton boll indicates that Memphis is the "Cotton Capitol of the World," the home of the Cotton Carnival and the center of the finest cotton land in the country.

Steamboat on the Mississippi River.

The 155th Patch hearkens back to the days of the WWII and the famous B-17 Flying Fortress whose name and nose art were the Memphis Belle. It was named after the pilot's sweetheart who lived in Memphis. The patch also depicts the iconic bridge that crosses the Mississippi River at Memphis.

History: The history of the 164th Airlift Wing began in 1946 when the Secretary of War authorized the Adjutant of General of Tennessee to organize an Air Unit of the National Guard in Memphis. On Dec. 23, 1946 the 155th Fighter Squadron obtained federal recognition along with the following support units: the Utility Flight of the 155 FS, Detachment B, 218th Air Service Group, and the 155th Weather Station. Total personnel authorized to these four units was 50 officers and 303 enlisted.

In 2012, the 164th Airlift Wing learned it would once again enter aircraft conversion; this time receiving the C-17. The first C-17 arrived at Memphis in November 2012. As of January 2013, the wing is programmed for a fleet of eight C-17 aircraft. The conversion from the C-5 Galaxy to the C-17 Globemaster marks the ninth airplane since 1946 to serve the Tennessee Air National Guard and the United States Air Force from Memphis.

241ST ENGINEERING INSTALLATION SQUADRON

Symbolism: The prominently featured locomotive engine derives its inspiration from the world-famous Chattanooga Choo-Choo made popular by the 1941 song of the same name, performed by Army Air Corps Major Glenn Miller. The locomotive also points to the unit's engineering mission, while the lightning bolts symbolize communications. The centered Tri-Star leaves no doubt as to what state the 241st calls home.

A locomotive engine representing the "Chattanooga Choo Choo" sits at the original Terminal Station which opened in 1909 and ended operations in 1970. The restored facility now serves as a boutique hotel and mixed use commercial area. (Photo by Sgt. Finis Dailey)

History: The 241st Engineering Installation Squadron has always and continues to this day to provide permanent communications infrastructure to government installations around the globe. They work mostly on military installations but have also provided their services to other government agencies to include U.S. embassies and the White House Communications Agency.

The 241st was established in March of 1952 as the Airways and Air Communications Services Flight; at that time they only had seven enlisted members and one officer. Originally meeting wherever they could, they first gathered in the Dome Building in Chattanooga and also used the Army National Guard Armory. In 1959 they moved to Lovell Field at the Chattanooga Airport and in 1961 became a Ground Radio Electronics Engineering Installation Agency Squadron or GEEIA Squadron. Carrying this moniker for many years they eventually transitioned to what we know them as today, Engineering Installations. 2010 marked the end of an era as they left Lovell Field and moved to a new facility. Through all this they have strived to meet their mission statement, "to provide consistently flawless engineering and installation mission service anytime, anywhere during peace and war."

Tennessee Air National Guard TIMELINE

- 118th Wing
- 134th Air Refueling Wing
- 164th Airlift Wing

1944-1945
P-51D Mustang

1961-1967
C-97 Stratofreighter

24 May 1946
155th Fighter Squadron Established

155th Fighter Squadron was allotted to the Tennessee National Guard in Memphis. This would become the 164th Airlift Wing.

1 September 1950
118th Composite Wing

118th Fighter Group is elevated to a Wing as the 118th Composite Wing.

1967-1974
C-124 Globemaster

1943-1944
P-47D Thunderbolt

1950
119th Established

119th Aircraft Warning and Control Squadron activated.

1971-1990
C-130A Hercules

1921-1933
Curtiss JN-6HG "Jennys" and one DH-4B DeHavilland aircraft

1931
0-38

1956-1961
RF-84F Thunderflash

1964-1976
KC-97G Stratotanker

1938
0-47

1953-1955
F-51D Mustang

1974-1992
C-130 Hercules

1920 | 1930 | 1940 | 1950 | 1960 | 1970

1928
0-11 Falcon and 0-17

1935
0-25

26 March 1952
241st Established

241st is established as the 241st Airways & Air Communications Services Flight in Chattanooga.

1973
572nd Band Formed at McGhee Tyson

4 December 1921
105th Observation Squadron

105th Observation Squadron reformed as part of the Tennessee Army National Guard in Nashville from the 105th Aero Squadron.

1957-1960
F-86D Sabre Interceptors

1967-1971
C-124C Globemaster II

1941-1942
Curtiss O-52 Owl

1954-1956
RF-80A Shooting Star

1961-1967
C-97G Stratofreighter

27 August 1917
105th Aero Squadron

105th Aero Squadron, established / organized for World War I. The 105th was one of the 29 original National Guard Observation Squadrons formed before World War II.

15 December 1957
134th Established

134th Fighter-Interceptor Group and the 151st Fighter-Interceptor Squadron were constituted in Knoxville as part of the Tennessee Air National Guard to replace active duty units.

1960-1964
F-104A Starfighter Interceptors

1990-2008
C-130H Hercules

1992-2004
C-141B Starlifter

2012-Present
MQ-9 Reaper

1982-2006
KC-135E Stratotanker

1976-1982
KC-135A Stratotanker

1 October 1995
164th Airlift Wing
164th Airlift Group re-designated 164th Airlift Wing.

2004-2013
C-5 Galaxy

2008-2012
WC-130H Hercules

1980 1990 2000 2010 2020 2030

1 October 1995
134th Air Refueling Wing
134th Air Refueling Group re-designated 134th Air Refueling Wing.

2006-Present
KC-135R Stratotanker

2013-Present
C-17 Globemaster III,

Jan. 20, 2017 - Members of the 119th set up an antenna on a rooftop in Washington D.C. during the 58th Presidential Inauguration. (Photo by Tech. Sgt. Jonathan Young)

119th Cyberspace Operations Squadron:

Air, Space, and Cyberspace Excellence

Story by 1st Lt. Joseph C. Satterfield

It all started in March of 1949, when Air Force Reserve officers learned there was a possibility of a National Guard squadron being organized in Knoxville.

In August of 1950, not long after fighting broke out in the Korean War, an inspector from the National Guard Bureau and Maj. Wesley Royer, air advisor to the 154th Air Control and Warning Group, came to Knoxville to review two proposed sites for the unit. Maj. John R. Douglas, Jr., of Knoxville, was assigned to organize the unit and became the commander shortly thereafter.

Following a month of recruiting and organization, on Oct. 8, 1950, the 119th Air Control

Col. John R. Douglas, Jr. was the first commander of the 119th from 1950-1964. Douglas served in WWII, Korea and three tours of duty in Vietnam.

The new armory, north of McGhee-Tyson Air Base.

and Warning Squadron was formally inspected and given federal recognition by the 14th Air Force.

After multiple activations to active duty, the 119th was released from active service and returned back to East Tennessee in December 1953. It proved difficult to reorganize and replenish the unit's numbers, so recruiting was once again a top priority. Without a true armory, the unit had no real home. Through the tireless efforts of Douglas and other members of the unit, a new $300,000 armory was approved and constructed just north of McGhee-Tyson Air Base.

For the next several years, the unit participated in several field training exercises and events, getting everything fine-tuned and confirming that the 119th could operate independently as a Guard unit. In 1960, the 119th participated in its first federal exercise, known as Operation Bright Star/Pine Cone III, at Shaw Air Force Base.

Throughout the 1960's, 70's, and 80's, the 119th demonstrated time and time again that it was a respected member of the Tennessee Air National Guard and always stood ready to defend this country at a moment's notice. The unit successfully participated in multiple exercises and real-world events, including the Berlin Airlift.

Photos of the 119th throughout the years.
(Photos courtesy Tennessee Air National Guard)

Utilizing state-of-the-art equipment, the 119th quickly became one of the most respected Air Control Squadrons in the country. From Vietnam to the Persian Gulf, the 119th played an integral role in successfully continuing mission sets both at home and abroad throughout the latter half of the 20th century.

As the millennium came to a close, the opportunity for a new unit mission presented itself. In March of 1999, U.S. Space Command awarded the 119th ACS a new mission that would change the future of the unit. The 119th ACS would become the 119th Command and Control Squadron, with the final air control mission completed July 14, 2000.

After working as a mobile Air Control Squadron for so many years, the transition to a fixed site was a tremendous change of pace. In 2003, the 119th officially began its space mission. The mission was soon broadened to coordinate and direct the U.S. Strategic Command's global operations center.

Throughout the 2000s, the 119th supported dozens of real-world contingencies and

Col. Vincent Franklin, outgoing 119th Commander, speaks at the change of command ceremony. (Photo by Tech. Sgt. Daniel Gagnon)

Brig. Gen. Donald Johnson, Tennessee Assistant Adjutant General, Air, passes 119th Cyberspace Operations Squadron guidon to new commander Lt. Col. Chris Smith during a change of command ceremony on Jan. 6, 2018, at McGhee Tyson Air National Guard Base. (Photo by Tech. Sgt. Daniel Gagnon)

exercises, became an official MILSTAR operator university, exercised Tennessee's first-ever Air Operations Center, and installed or upgraded multiple secret compartmental information facilities. In addition, the unit became the first National Guard unit to charter mission expansion by becoming a Global Satellite Communications Support Center. They also completed site construction and installation of the first ever GSC-52A V6 satellite communications earth terminal.

In 2017, under the leadership of Col. Vincent Franklin, the 119th began a new journey towards cyberspace as the unit was re-designated as the 119th Cyberspace Operations Squadron.

Currently, the staff of the 119th consists of over 140 cyberspace professionals supporting command and control of cyberspace operations in partnership with the 16th Air Force and U.S. Cyber Command. The 119th, under the leadership of Col. Chris Smith, conducts mission planning for the Air National Guard's 12 Cyber Protection Team squadrons and operates the Cyber Command and Control Mission System, the Joint Incident Site Communications Capability system for emergency communications, and the Domestic Cyber Mission System system for state cyber support and response.

TENNESSEE AIR NATIONAL GUARD

FLYING GUIDE

A GUIDE TO THE CURRENT AIRCRAFT OF THE TENNESSEE AIR NATIONAL GUARD

134th Air Refueling Wing / KC-135 Stratotanker

164th Air Lift Wing / C-17 Globemaster III

118th Wing / MQ-9 Reaper

KC-135 STRATOTANKER

Mission

The KC-135 Stratotanker provides the core aerial refueling capability for the United States Air Force for more than 60 years. This unique asset enhances the Air Force's capability to accomplish its primary mission of global reach. It also provides aerial refueling support to Air Force, Navy, Marine Corps and allied nation aircraft. The KC-135 is also capable of transporting litter and ambulatory patients using patient support pallets during aeromedical evacuations.

Features

Four turbofans, mounted under 35-degree swept wings, power the KC-135 to takeoffs at gross weights of up to 322,500 pounds. A cargo deck above the refueling system can hold a mixed load of passengers and cargo. Depending on fuel storage configuration, the KC-135 can carry up to 83,000 pounds of cargo. Nearly all internal fuel can be pumped through the flying boom, the KC-135's primary fuel transfer method. One crewmember, known as the boom operator, is stationed in the rear of the plane and controls the boom during in-flight air refueling. A special shuttlecock-shaped drogue attached to and trailing behind the flying boom may be used to refuel aircraft fitted with probes. Some aircraft have been configured with the multipoint refueling system, which consists of special pods mounted on the wingtips. These KC-135s are capable of refueling two receiver aircraft at the same time.

Background

Air Mobility Command manages an inventory of 396 Stratotankers, of which the Air Force Reserve and Air National Guard fly 243 aircraft in support of AMC's mission. The Boeing Company's model 367-80 was the basic design for the commercial 707 passenger plane as well as the KC-135A Stratotanker. In 1954, the Air Force purchased the first 29 of its future 732-plane fleet. Through the years, the KC-135 has been altered to do other jobs ranging from flying command post missions to reconnaissance. The KC-135R and KC-135T aircraft continue to undergo life-cycle upgrades to expand their capabilities and improve reliability. Among these are improved communications, navigation, autopilot and surveillance equipment to meet future civil air traffic control needs.

General Characteristics

Primary Function: Aerial refueling and airlift

Thrust: 21,634 pounds each engine

Wingspan: 130 feet, 10 inches

Length: 136 feet, 3 inches

Height: 41 feet, 8 inches

Speed: 530 miles per hour at 30,000 feet

Ceiling: 50,000 feet

Range: 1,500 miles with 150,000 pounds of transfer fuel; ferry mission, up to 11,015 miles

Maximum Takeoff Weight: 322,500 pounds

Maximum Transfer Fuel Load: 200,000 pounds

Maximum Cargo Capability: 83,000 pounds, 37 passengers

Pallet Positions: 6

Crew: Three: pilot, co-pilot and boom operator. Some KC-135 missions require the addition of a navigator.

Aeromedical Evacuation Crew: A basic crew of five (two flight nurses and three medical technicians) is added for aeromedical evacuation missions. Medical crew may be altered as required by the needs of patients.

Date Deployed: August 1956

Information courtesy U.S. Air Force. Photo by Senior Master Sgt. Kendra Owenby. Photo composite illustration by Rob Pennington.

C-17 GLOBEMASTER III

Mission

The C-17 Globemaster III is the most flexible cargo aircraft to enter the airlift force. The C-17 is capable of rapid strategic delivery of troops and all types of cargo to main operating bases or directly to forward bases in the deployment area. The aircraft can perform tactical airlift and airdrop missions and can transport litters and ambulatory patients during aeromedical evacuations. The inherent flexibility and performance of the C-17 force improve the ability of the total airlift system to fulfill the worldwide air mobility requirements of the United States.

Features

Reliability and maintainability are two outstanding benefits of the C-17 system. Current operational requirements impose demanding reliability and maintainability. These requirements include an aircraft mission completion success probability rate of 92 percent, only 20 aircraft maintenance man-hours per flying hour, and full and partial mission availability rates of 74.7 and 82.5 percent, respectively. The Boeing warranty assures these figures will be met.

The aircraft is operated by a crew of three (pilot, co-pilot and loadmaster), reducing manpower requirements, risk exposure and long-term operating costs. Cargo is loaded onto the C-17 through a large aft ramp and door system that accommodates virtually all of the Army's air-transportable equipment such as a 69-ton M1 Abrams main battle tank, armored vehicles, trucks and trailers. Additionally, the cargo floor has rollers that can be flipped from a flat floor to accommodate wheeled or tracked vehicles to rollerized conveyers to accommodate palletized cargo. The C-17 is designed to airdrop 102 paratroopers with their accompanying equipment.

The design of the aircraft (high-lift wing, slats, and externally blown flaps) allows it to operate through small, austere airfields. The C-17 can take off and land on runways as short as 3,500 feet and only 90 feet wide. Even on such narrow runways, the C-17 can turn around using a three-point star turn and its backing capability.

Background

The C-17 made its maiden flight on Sept. 15, 1991, and the first production model was delivered to Charleston Air Force Base, now identified as Joint Base Charleston, South Carolina, on June 14, 1993. The first squadron of C-17s, the 17th Airlift Squadron, was declared operationally ready Jan. 17, 1995. The Air Force originally programmed to buy 120 C-17s. Due to the unrivaled success of the C-17 to accomplish various mobility missions, additional aircraft were acquired, resulting in a final fleet of 223 aircraft.

General Characteristics

Primary Function: Cargo and troop transport

Thrust: 40,440 pounds, each engine

Wingspan: 169 feet 10 inches (to winglet tips)

Length: 174 feet

Height: 55 feet 1 inch

Cargo Compartment: length, 88 feet; width, 18 feet; height, 12 feet 4 inches

Speed: 450 knots at 28,000 feet (Mach .74)

Service Ceiling: 45,000 feet at cruising speed

Range: Global with in-flight refueling

Crew: Three (two pilots and one loadmaster)

Aeromedical Evacuation Crew: A basic crew of five (two flight nurses and three medical technicians) is added for aeromedical evacuation missions. Medical crew may be altered as required by the needs of patients

Maximum Takeoff Weight: 585,000 pounds

Load: 102 troops/paratroops; 36 litter and 54 ambulatory patients and attendants; 170,900 pounds (77,519 kilograms) of cargo (18 pallet positions)

Date Deployed: June 1993

Information courtesy U.S. Air Force. Photo by Senior Airman James Richardson. Photo composite illustration by Rob Pennington.

MQ-9 REAPER

Mission

The Reaper is employed primarily as an intelligence-collection asset and secondarily against dynamic execution targets. Given its significant loiter time, wide-range sensors, multi-mode communications suite, and precision weapons, it provides a unique capability to perform strike, coordination, and reconnaissance against high-value, fleeting, and time-sensitive targets. Reapers can also perform the following missions and tasks: intelligence, surveillance and reconnaissance, close air support, combat search and rescue, precision strike, buddy-lase, convoy and raid overwatch, route clearance, target development, and terminal air guidance.

Features

The Reaper is part of a remotely piloted aircraft system. A fully operational system consists of sensor/weapon-equipped aircraft, ground control station, Predator Primary Satellite Link, and spare equipment along with operations and maintenance crews for deployed 24-hour missions.

The basic crew consists of a rated pilot to control the aircraft and command the mission, and an enlisted aircrew member to operate sensors and guide weapons. To meet combatant commanders' requirements, the Reaper delivers tailored capabilities using mission kits containing various weapons and sensor payload combinations.

The MQ-9 baseline system carries the Multi-Spectral Targeting System, which has a robust suite of visual sensors for targeting. The unit also incorporates a laser rangefinder/designator, which precisely designates targets for employment of laser-guided munitions, such as the Guided Bomb Unit-12 Paveway II. The Reaper is also equipped with a synthetic aperture radar. The MQ-9 can also employ up to eight laser-guided missiles, Air-to-Ground Missile-114 Hellfire, which possess highly accurate, low-collateral damage, anti-armor and anti-personnel engagement capabilities.

The remotely piloted aircraft can be disassembled and loaded into a single container for deployment worldwide. The MQ-9 has also been modified for extended range operations through the addition of external fuel tanks capable of holding 1,300 lbs of fuel. This provides for greater on station time and further range. The modification also adds an extra blade to the propeller and an alcohol-water injection system to improve takeoff performance.

Background

The U.S. Air Force proposed the MQ-9 Reaper system in response to the Department of Defense directive to support initiatives of overseas contingency operations. It is larger and more powerful than the MQ-1 Predator, and is designed to execute time-sensitive targets with persistence and precision, and destroy or disable those targets. The "M" is the DoD designation for multi-role, and "Q" means remotely piloted aircraft system. The "9" indicates it is the ninth in the series of remotely piloted aircraft systems.

General Characteristics

Primary Function: Intelligence collection in support of strike, coordination, and reconnaissance missions

Thrust: 900 shaft horsepower maximum

Wingspan: 66 feet

Length: 36 feet

Height: 12.5 feet

Weight: 4,900 pounds (2,223 kilograms) empty

Maximum takeoff weight: 10,500 pounds | ER: 11,700 pounds

Fuel Capacity: 4,000 pounds | ER: 6,000 pounds

Payload: 3,750 pounds

Max Speed: 240 KTAS

Range: 1,150 miles | ER:1,611 miles

Ceiling: Up to 50,000 feet (15,240 meters)

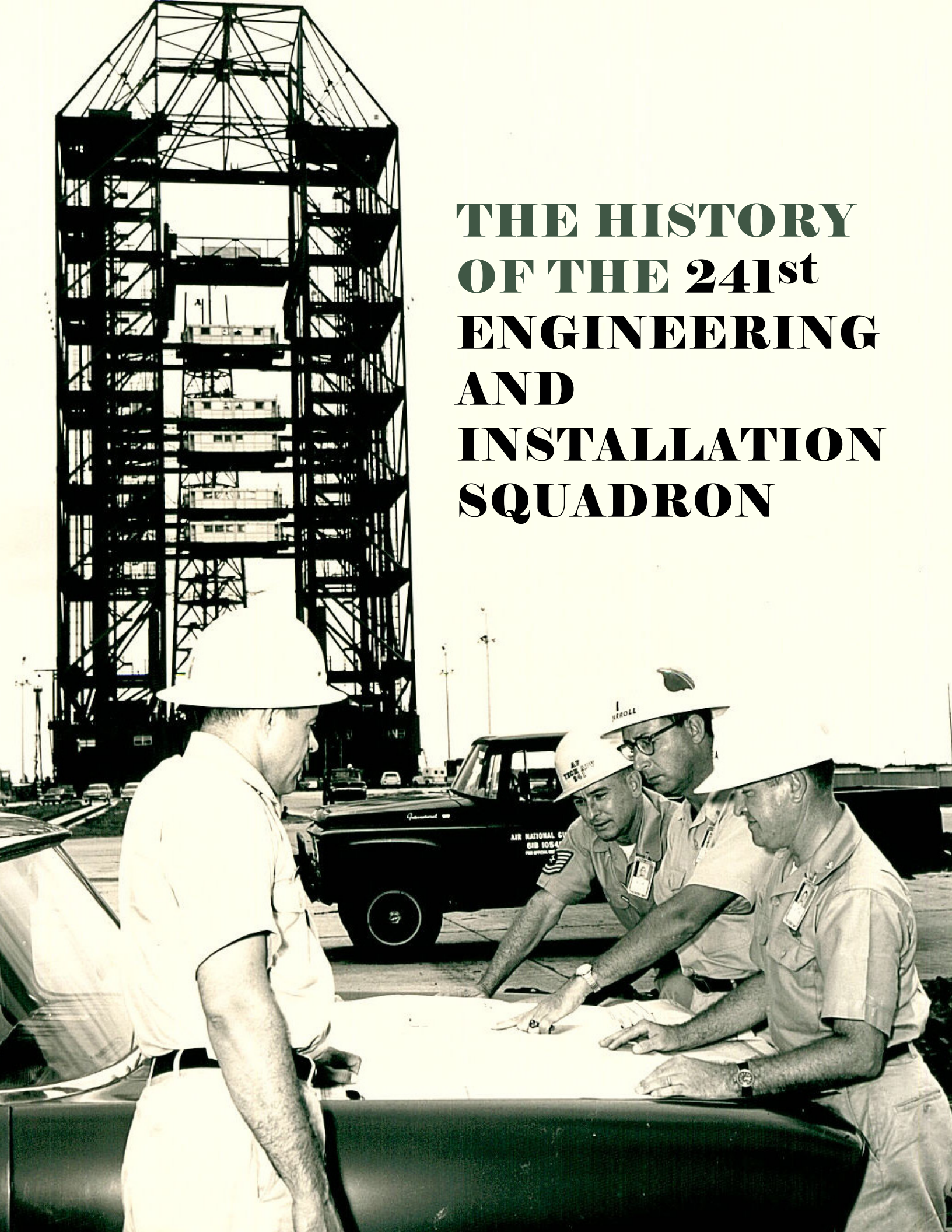
Armament: Combination of AGM-114 Hellfire missiles, GBU-12 Paveway II, GBU-38 Joint Direct Attack Munitions, GBU-49 Enhanced Paveway II, and GBU-54 Laser Joint Direct Attack Munitions

Crew (remote): Two (pilot and sensor operator)

Initial operating capability: October 2007

Information courtesy U.S. Air Force. Photo by Airman 1st Class William Rosado. Photo composite illustration by Rob Pennington.

THE HISTORY OF THE 241st ENGINEERING AND INSTALLATION SQUADRON



STORY BY **1ST LT JACOB POWELL**

241st EIS

The 241st Engineering Installation Squadron is located on Volunteer Air Guard Station in Chattanooga. A Geographically Separated Unit of the 134th Air Refueling Wing, the squadron stands out as the only Air Guard presence in the Southeast Tennessee region. With an authorized strength of 110 Airmen routinely performing over 100 days of active duty per member each year, the unit executes its high demand–low density mission worldwide in both peacetime and contingency environments. Since its establishment in 1952, the 241 EIS has changed names, parent organizations and locations, but its core mission of design and enhancement of communication infrastructure has remained largely intact.

The 241st was organized on March 26, 1952 as the 241st Airways and Air Communications Services Operations Flight under the Military Air Transport Service. The newly established unit first met in downtown Chattanooga's Dome Building before being allowed to use a portion of the local Army National Guard drill hall for several years. Finally, in 1959 the unit would move to a sprawling new facility at Lovell Field Municipal Airport, which would be home to the 241st for the next half century. Historical records indicate that the AACS Flight was originally comprised of only seven enlisted members commanded by a sole officer, 1st Lt. George F. Depriest, who would lead the 241st until

Airmen of the 241st install a communications tower in the mid 1970s.

1963 when, as a lieutenant colonel, he relinquished command of the unit he had quite literally built from the ground up.

Following numerous name and organizational realignments in its first decade, the 241st emerged in 1961 as a Ground Electronics Engineering Installation Agency Squadron. By 1962, the 241st GEEIA Squadron was a 167-member operational force belonging to the massive GEEIA agency, which included over 15,000 personnel located throughout the U.S., Europe, Asia, and Pacific. Over the next 30 years, this agency and its successor, the Air Force Communication Service, were solely responsible for the monumental task of designing and building the permanent communications infrastructure required to support the newly established Air Force they transitioned the tiny air fields and tent cities that characterized the early Air Force into the main operating bases still in existence today. As the Cold War ended, changes in technology and mission requirements eventually led to a reduction in active duty EI units from 20 to one. As a consequence of restructuring, the Air Force Communications Service was dismantled and all EI functions realigned to Air Force Materiel Command in 1993. The 241st is now one of 15 Air National Guard EI Squadrons with only one active duty counterpart.

The need to convert the communications infrastructure on early bases from tactical

Installers use climbing gaffs to climb a telephone pole to install communications cables.

241st members, while part of an Initial Communications Install Team, are at Al Udeid Airbase in October of 2003.

In 2019 Brigadier General Abdul Kareem Abass, Iraqi Army Signal School Commander, greets Lt. Col. Dave Moss, commander of the 241st.

to strategic architecture led to the development of the EI Concept of Operations that remains largely unchanged a half century later. The post-9/11 environment called on EI units to rapidly adapt this Concept of Operations into an expeditionary and more tactical mindset, a call the 241st answered without hesitation, with its Airmen among some of the first Air Guard members deployed to the Southwest Asia region in late 2001. Since that time, the squadron has executed 13 deployments in support of the Global War on Terrorism. Across 10 U.S. Central Command countries and, most recently, four locations in U.S. Africa Command, the unit's Airmen have worked unwaveringly to ensure theater communication capabilities could support the warfighter. These operations, ranging from complex fiber optic rings, radio tower construction, renovation of the U.S. Embassy in Pakistan, and the complete wiring of a Combined Air Operations Center were crucial to the enduring presence the U.S. and its allies established in the region over the last 20 years. EI quickly distinguished itself as a combat capable force rather than a mission support function, thus the unit was realigned under Air Combat Command in 2005 where it remains today.

In addition to its cyclical Air Expeditionary Force deployments, the 241 EIS has also concurrently executed five "Request For Forces" mobilizations in support of Joint Combatant Commanders since 2011. With no inter-service equivalent, EI mission services are in demand throughout the Department of Defense. These "Request For Forces" have supported Army and international mission partners in Afghanistan, Iraq, and the African continent by replacing tactical networks with more robust, reliable, and efficient communication infrastructure. 241st Airmen thrive in joint and combined environments, routinely integrating with Army Signal Corps Soldiers to train them in fixed communication installation techniques. They also build strong relationships with their international counterparts, such as the Australian Force Installation Teams. On their most recent deployment to Iraq in 2018-19, the unit was recognized as the Combined Joint Task Force Team of the Month three out of six months, largely for their support of the Joint Special Operations mission that was key to defeating ISIS. The squadron was subsequently awarded its first-ever Meritorious Unit Award for its exceptional performance in this most demanding of environments.

Although EI now falls under the "Expeditionary Communica-

241st EIS

At the 2010 dedication ceremony, state and local dignitaries, along with Tennessee National Guard leadership, conduct the ribbon cutting for the newly constructed facility. (Photo by Retired Master Sgt. Don Arnold)

tions" umbrella, the 241st maintains a robust peacetime mission. The unit continually supports six Air Guard wings in four states, delivering infrastructure enhancement and emergency communication restoral along with routine maintenance assistance. In a typical year, the unit completes 14 or more peacetime projects, saving over $300,000, and bringing an additional $350,000 in National Guard Bureau funding to Tennessee wings each year. Beyond the Guard, the squadron supports a diverse array of customers. In recent years, the unit has performed high visibility projects for Headquarters U.S. Strategic Command, Headquarters White House Communication Agency, Defense Information Systems Agency, and Headquarters Northern Command among others. The unit's partnership with WHCA spanned nearly five years, during which Airmen completed a state-of-the-art five million dollar redesign and replacement of the security and surveillance system and directly supported presidential operations through communication upgrades to the Oval Office, White House Situation Room, and the Vice President's Residence at the Naval Observatory. Its support of U.S. Northern Command followed the destruction of Tyndall Air Force Base by Hurricane Michael. 241st Airmen installed permanent infrastructure for data and air traffic control, allowing the base to transition away from emergency communications systems without interruption to its

Army Soldiers from the Signal Corps and Airmen from the 241st form the Combined Joint Task Force – Inherent Resolve to install permanent communications infrastructure at Camp Taji, Iraq, in 2018.

Master Sgt. Braqford Ransom and a Soldier from the U.S. Army Signal Corps work together in Iraq.

24/7 Homeland Defense mission. Regardless of the customer, the EI process routinely generates savings between 30-60% over contract costs while delivering a superior product.

The squadron, which moved to a newly constructed facility located on a 26-acre site in 2010, is among the premiere EI units in the National Guard. In its storied history, the 241st has received six Air Force Outstanding Unit Awards along with the previously mentioned Meritorious Unit Award, and was the recent recipient of the General Mark Welsh Award and Air Force Association Tennessee Unit of the Year. These awards are, of course, reflective of the commitment to excellence embodied by the unit's Airmen who won four out of nine categories for individual national EI awards in 2019-2020 plus the Defense Information Systems Agency Company Grad Officer of the Year. The 241st EIS truly lives up to its mission statement, "To provide consistently flawless Engineering Installation mission services anytime, anywhere during peace and war."

105TH ATTACK SQUADRON

Celebrating 100 Years of Aviation in Tennessee

1ST LT KELLY B. BOULDIN

The 105th Attack Squadron, Nashville's own Old Hickory squadron, celebrates its centennial anniversary in 2021 to commemorate a century of service to the United States of America, and the state of Tennessee. A part of the 118th Wing at Berry Field, the 105th has participated in every major combat operation since World War I, and has changed airframes and missions several times throughout their storied history as dictated by the needs of the Air Force. As it celebrates 100 years of service, let's look back at the unit's humble beginnings.

Originally called the 105th Observation Squadron, the Old Hickory squadron was an annex unit of the 105th Aero Squadron of the American Expeditionary Forces at Kelly Field, Texas. Shortly after World War I in 1919, veterans of the 105th living in the Nashville area came together to organize an air element of the Tennessee National Guard. The Militia Bureau, as the National Guard Bureau was called back then, could only fund one Guard unit per state, so these Tennessee Guardsman collected funds and donated their own pay to help fund the construction of their facilities. That money, along with land donation from local entrepreneur H.L. Blackwood enabled the creation of an airfield on the farmland next to Andrew Jackson's home, The Hermitage. By the spring of 1920, the farm was transformed into a 100-acre flying field, complete with a World War I hangar brought in by railroad from Memphis. This was the first official home of the

Members of the 105th Military Airlift Squadron gather around a C-124 Globemaster II in the late 1960's.

105th known as Blackwood Field.

In October 1920, the 105th received formal state recognition as the 1st Squadron Air Service, Tennessee National Guard, the only National Guard flying unit in the South. Only two similar units existed anywhere else in the country; one in California and one in New York. Later, on Dec. 4, 1921, the 105th received federal recognition and became designated the 136th Observation Squadron and assigned to the 30th Old Hickory Division, U.S. Army, which gave us our squadron insignia, the figure of Andrew Jackson on horseback. It's also how the squadron became known as the Old Hickory squadron. Finally, in 1923, the squadron designation was changed from the 136th to the 105th Observation Squadron, the number they still use to this day.

In 1927, the squadron relocated to what was known as McConnell Field, now McCabe golf course, west of downtown Nashville. The Field was named for 1st Lt. Frank B. Brower McConnell, a squadron pilot killed in a flying accident in Langley, Virginia. Just two days prior to his fatal accident, McConnell was a pilot in a formation flight celebrating Charles Lindbergh's return home from Paris after "Lucky Lindy's" historic flight across the Atlantic.

Then in 1931, the 105th moved again to Sky Harbor Airport near Murfreesboro. Sky Harbor belonged to Interstate Airways, the airline now known as American Airlines. Interstate funded the construction for the field and agreed to share their hangar space with the 105th, but squadron members donated their own pay to finance the move and

for construction of additional buildings for training and administration.

The squadron's last move came in 1938 when they transitioned from Sky Harbor to Berry Field, home of the Nashville International Airport, and the current home of the 118th Wing, and 105th Attack Squadron.

The squadron has flown a myriad of airframes including fighters, bombers, observation, airlift, and attack aircraft. The first plane flown by the 105th was the Curtiss JN-1 Jenny. They received eight of these war-weary aircraft in various states of repair, using them to train for the observation mission they were assigned. But changes in aircraft came quickly for the Old Hickory squadron, moving to the Curtiss O-11 and O-17 in 1928, the O-38 in 1932 and the O-25 in 1935. Then in 1938, as the squadron was moving to Berry Field, they received the O-47, their first single wing plane with retractable gear.

As the United States entered World War II, the squadron was briefly deactivated, and members of the 105th were assigned to various units to augment the pilot corps. for the United States. They would fly all types of missions, including coastal patrol, reconnaissance, anti-submarine, and bombardment. From October 1943 to August 1945, the 105th performed with distinction in the Pacific Campaign, conducting over 100 bombing missions in the B-25 Mitchell against Japanese targets. Notably, Old Hickory was one of the first bomber units to bomb mainland Japan after the famous Doolittle Raid.

After the war, Tennessee Guardsman returned to Nashville and the famed 105th was reactivated, reorganized under state control and later granted federal recognition. In 1947, the 105th Fighter Squadron was part of newly formed 118th Fighter Group and the squadron received 25 P-47 Thunderbolts, a high-speed World War II fighter, along with additional support aircraft.

During the Korean Conflict, Old Hickory was again called into active service serving in an air defense role at McGhee Tyson Air Base in Knoxville. Their mission was to defend Oak Ridge National Laboratories from possible enemy attack by intercepting unknown aircraft penetrating the Knoxville Air Defense Identification Zone. Additionally, some squadron personnel deployed to support combat units in Japan, Korea and elsewhere around the world.

In 1952, the unit was released from active duty and was re-designated as the 105th Tactical Reconnaissance Squadron flying the North American RF-51 Mustang. Shortly thereafter, the 105th received its first jet-powered airplane, the Lockheed RF-80 Shooting Star in 1953.

In April 1961, the squadron converted to an airlift mission under Military Air Transport Services and changed its designation to the 105th Air Transport Squadron flying the C-97 Stratofreighter. In 1965 it became the 105th Military Airlift Squadron under the Military Airlift Command and in March 1968 converted to the larger Douglas C-124 Globemaster II. Operating from Nashville during the Vietnam War the 105th

Leadership of the 105th pose for a picture in front of the Old Hickory Squadron.

supported global airlift requirements. Old Hickory flew over 3,000 airlift missions and over 100 aero-medical evacuation missions to Vietnam and locations around the world. In 1965, in addition to flying its own missions, the unit also coordinated all Guard airlift flights to and from Vietnam. This role became known as the Air National Guard Airlift Support Cell, which today is located within the Air National Guard Readiness Center at Andrews Air Force Base outside Washington, D.C.

In March of 1971, the squadron converted to the C-130A model Hercules under the Tactical Air Command and became the 105th Tactical Airlift Squadron. The 105th would eventually take delivery of 16 A-models and tasked with readiness responsibility for all Air National Guard units flying the C-130A model aircraft.

While flying the C-130A, the 105th supported a worldwide airlift mission, flying some of the oldest aircraft in the United States Air Force inventory, and by October 1987, the 105th was the largest C-130A squadron in the entire Air Force.

In 1990, the squadron converted to the C-130H2 model aircraft, and almost immediately, world events brought tremendous demand upon the unit with the Iraqi invasion of Kuwait. The 105th and their parent unit, the 118th Airlift Wing, mobilized 462 personnel during 21 deployments for Operation Desert Shield and Desert Storm in southwest Asia where they flew a record 7,500 hours. In June 1992, the Military Airlift Command reorganized as the Air Mobility Command and the squadron became known as the 105th Airlift Squadron.

By the end of the 90s, the squadron had supported operations such as Provide Promise in Sarajevo, Support Hope in Rwanda, Uphold Democracy in Haiti, Southern Watch over southern Iraq, and Joint Endeavor in Bosnia.

Then, after the terrorist attacks on September 11, 2001, a lone 105th C-130 took to the skies to carry a liver to a patient in Houston, Texas, for a life-saving organ transplant that was already in progress when the attacks began. The flight was one of the only aircraft in the sky after the attacks, and the only means of delivery for this life saving organ. Once again, the

The 105th gathers for a squadron photo at Berry Field.

105th lived up to its reputation as a representative of the Volunteer State.

Following September 11, the squadron's operational tempo skyrocketed. The entire squadron was activated to support the National Homeland Security Plan, Operation Noble Eagle. The 105th deployed aircraft and personnel to bases inside the United States for several months maintaining a vital home-station alert mission. The unit maintained a 24/7 operation from Sept. 11, 2001 until Oct. 5, 2002. In addition to maintaining this alert status, the 105th supported additional military operations with the aircraft and crews to fill airlift shortages in the United States.

Shortly after the unit completed the Noble Eagle mission, they deployed to the Middle East in support of operations in Iraq. In March 2003, the unit deployed 10 C-130s and over 320 personnel to the Middle East, in direct support of combat operations at the beginning of Operation Iraqi Freedom. During this time the 118th was the lead wing in establishing a base at Tabuk, Saudi Arabia in support of the largest contingency of C-130s ever assembled in a combat environment. Forty-six C-130s from Nashville and other guard units were located at a single location supporting combat operations in various countries including Iraq, Kuwait, Oman, and Saudi Arabia. In 2003, the unit deployed to Uzbekistan in support of Operation Enduring Freedom in Afghanistan and would continually rotate crews in Iraq and Afghanistan for the next five years.

During the aftermath of Hurricane Katrina in 2005, the wing deployed personnel, equipment and much needed food and water to New Orleans and the Mississippi gulf coast. Working around the clock, the 105th airlifted supplies into the area, and evacuees out of the devastation to safer locations throughout the nation.

Then, in 2009, after nearly a decade of sustained combat operations in Iraq and

The 118th Wing poses for a group photo to commemorate the transition to the MQ-9 Reaper.

Afghanistan, congressional action reorganized dozens of Air Force and Air National Guard units, including the 105th, and traded the C-130H2s for a small fleet of aging, former Hurricane Hunter WC-130s to become a formal training unit for the Air Education and Training Command specializing in advanced combat flight instruction of allied and multi-national partners. As early as 2009, student aviators from Poland, Norway, the Netherlands, Singapore, and Iraq were amongst the first students graduated by the 105th. Then, after four decades and hundreds of thousands of flying hours in the C-130, the needs of the Air Force came to call and the last HERC left the ramp in September 2012.

As the last aircraft was departing, crews were already enrolled in training programs across the country, mastering the dynamic complexities and innumerable challenges of remotely piloted operations. Seemingly overnight, the 105th was handed the keys to the General Atomic MQ-9 Reaper, reassigned to the Air Combat Command, and for the first time designated as the 105th Attack Squadron. With the squadron flying combat missions 24/7, the operational tempo and activation rate of the 105th has never been higher with the squadron flying almost 40,000 hours since 2016. Not surprisingly, the attack squadron achieved a reputation of excellence, assigned to the most successful task forces and handed the most demanding missions. The squadron supported missions like Freedom Sentinel, Inherent Resolve, and Odyssey Lightning.

What was the 105th Aero Squadron 100 years ago has evolved into the most technologically advanced flying squadron in the Air National Guard. What started as a group of patriotic WWI pilots and mechanics has grown into a major military unit with specialists in flying operations, weapons and tactics, operations support, mission intelligence disciplines, global communications, and combat meteorology.

After a century of service, the one thing that has remained constant is change. From Jennys to Reapers; from Blackwood Field to Berry Field; from 1921 to 2021, the men and women of the 105th have continuously met the needs of a changing world, and no other group of men and women better exemplify service, dedication, and commitment to Tennessee or our nation.

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