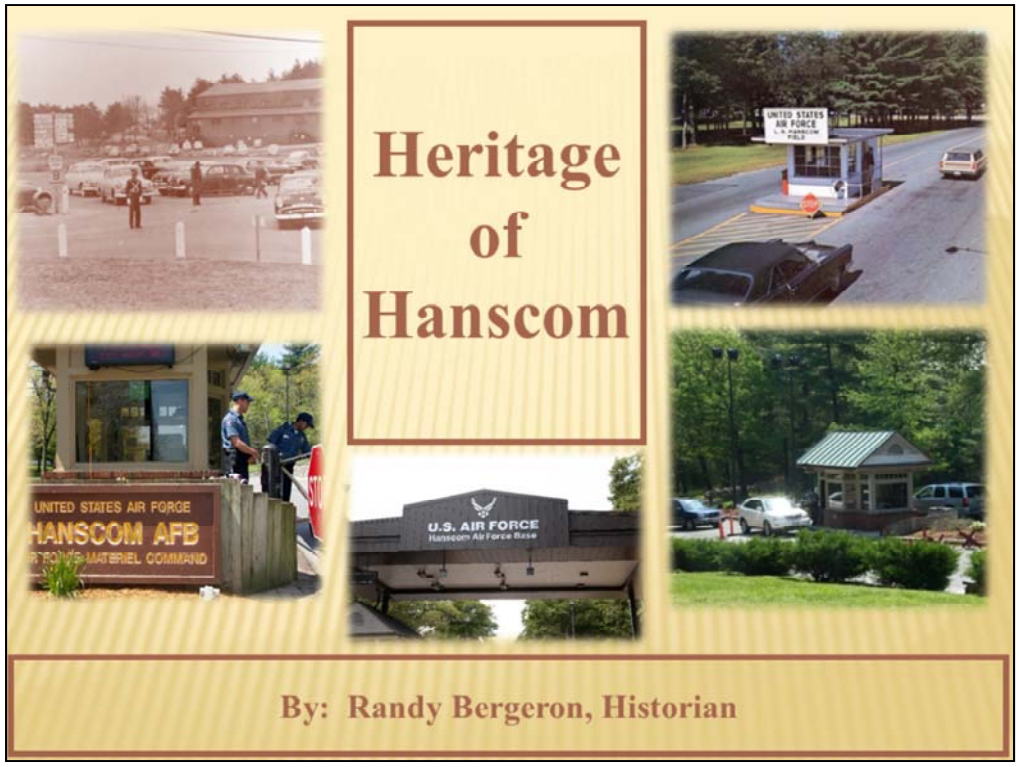
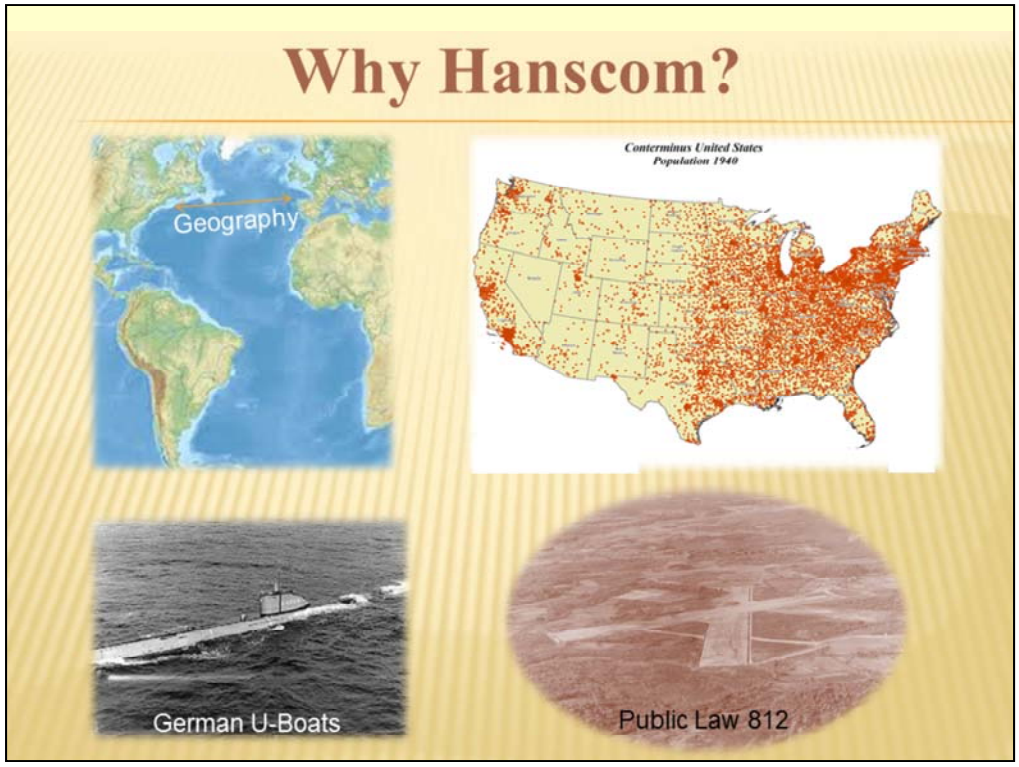


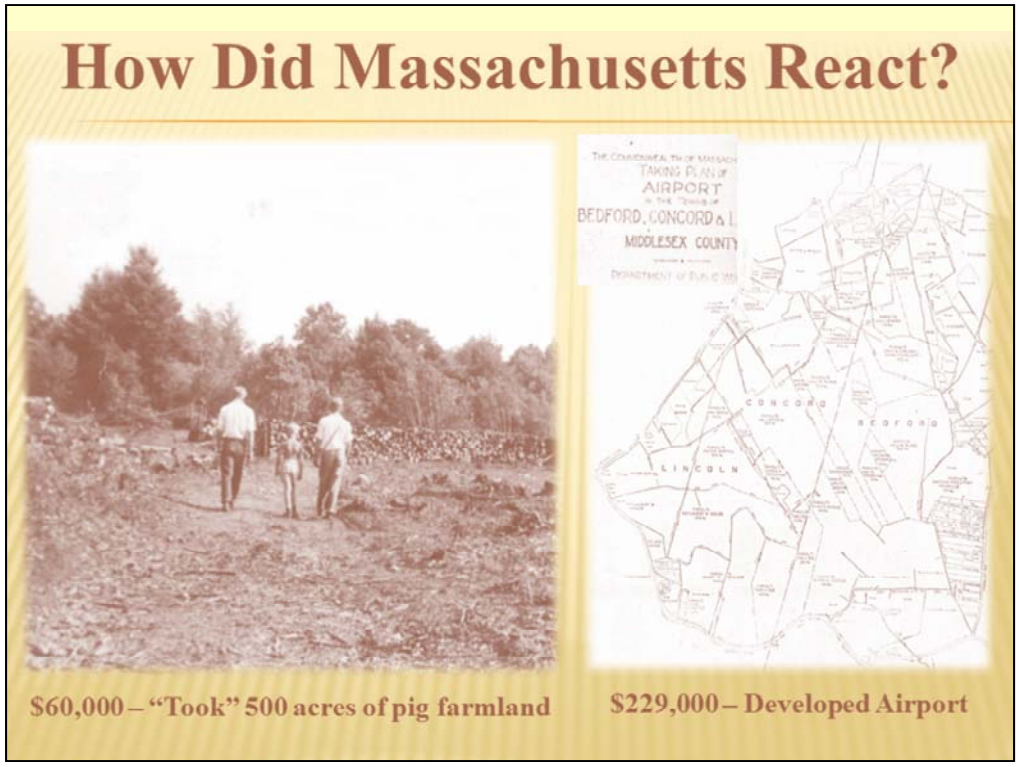
Heritage of Hanscom

It's been said history makes you smart, but heritage makes you grateful. The following will not focus on who, what, where, and when; after all that is just fact memorization. Rather, the information presented will examine why and how to help you gain an even greater appreciation for the significant contributions Hanscom Air Force Base, Massachusetts has made towards the national security of the United States.



Why Hanscom Air Force Base?

Geography, population, World War II, and huge public works programs were all reasons for Hanscom's existence. Few realize how far the northeastern United States geographically extends into the Atlantic Ocean. As German U-Boats moved closer to the east coast where 80 percent of the nation's population existed between Boston, Massachusetts and Richmond, Virginia, the United States looked to a new weapon system called the "airplane" to defend the shoreline. In 1940, Public Law 812, known as the Defense Landing Act, authorized money appropriated for public works programs to be used to build 250 airports.

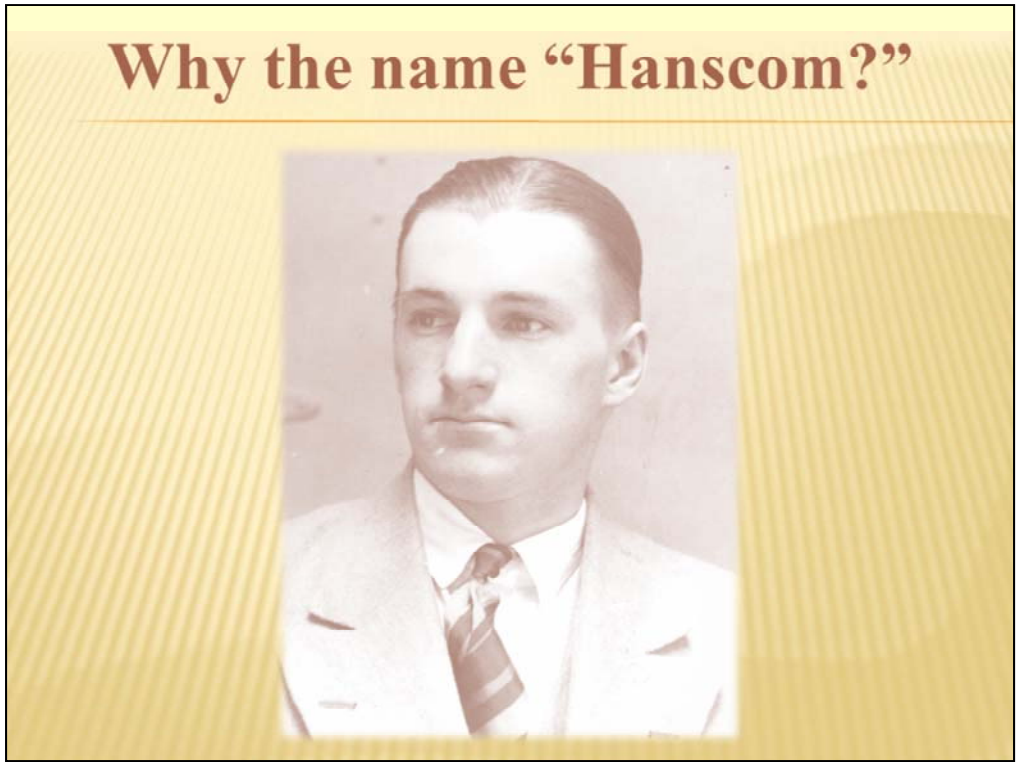


How Did Massachusetts React to Public Law 812?

In response to the Defense Landing Act, Massachusetts advocated the "taking" of land in Bedford, Concord, and Lincoln for an airport to be built through the Department of Public Works. In 1941, at a cost of $60,000, Massachusetts authorized the purchase of approximately 500 acres of pig farmland for the airport. Ten days later the Civil Aeronautics Administration advised the Massachusetts Commissioner of Public Works that $229,000 was available for development of the airport.

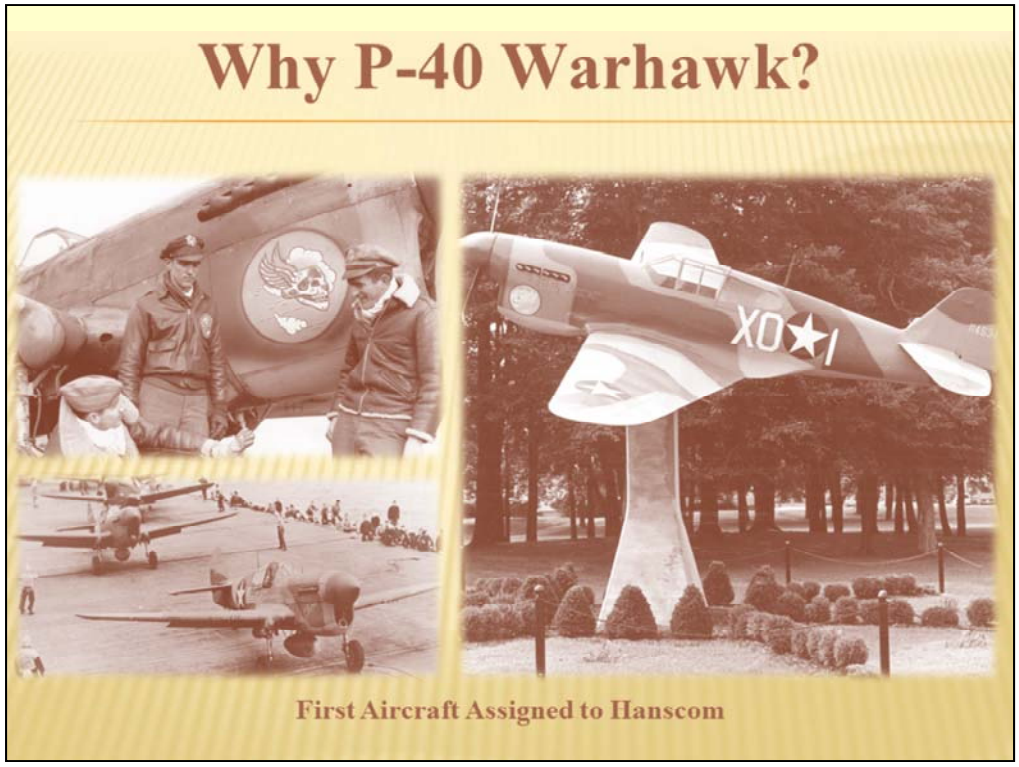
Why the Name "Hanscom"?

Like most Air Force Bases, Hanscom began during World War II; however, unlike most bases, it is named in honor of a civilian and not the usual military flyer. In 1941, Laurence Gerard Hanscom was killed in an air crash. An airplane enthusiast, Hanscom was a state house reporter for the Worcester Telegram-Gazette who promoted the idea of an airport in Bedford. In 1941, Massachusetts passed a resolution to name the airport to be built near Bedford in honor of Laurence G. Hanscom.



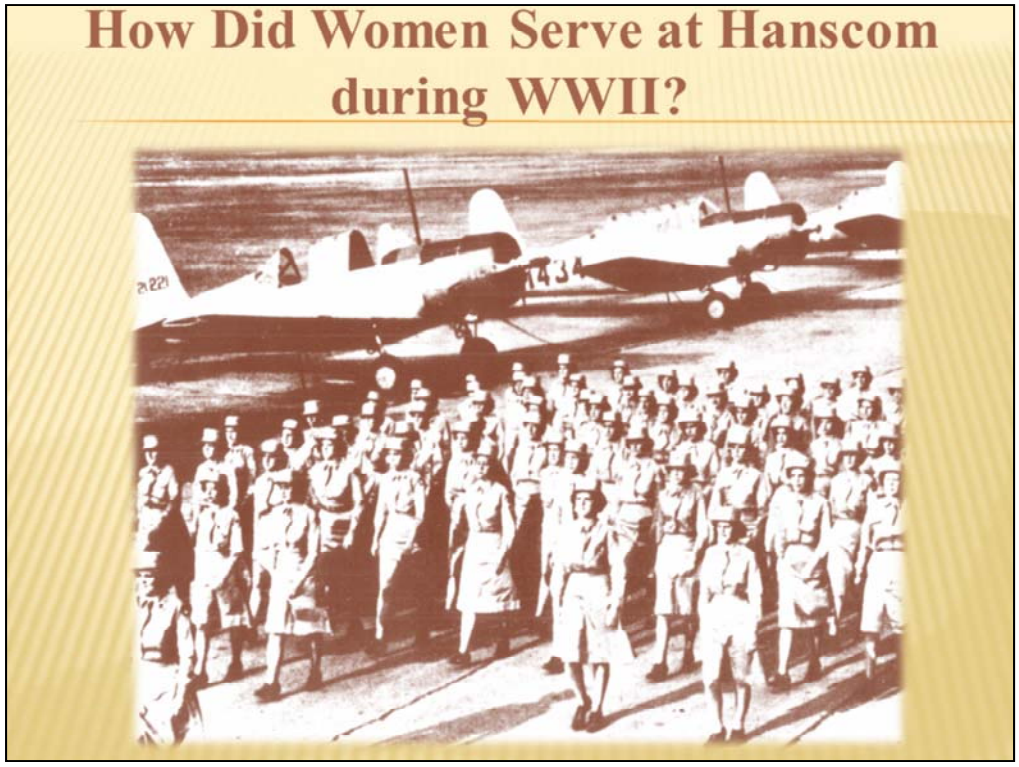
Why the Name "Hanscom"?

Also in 1941, the official groundbreaking took place to build Hanscom Field. A year later in 1942, the airfield was completed and Massachusetts, through the Department of Public Works, immediately leased the Boston auxiliary airport at Bedford to the Federal Government, specifically to the War Department. In 1943, the airport at Bedford was officially dedicated as Laurence G. Hanscom Field. Today, Hanscom is only one of three active air force bases named after a civilian (Sheppard AFB, TX and Langley AFB, VA are the other two).



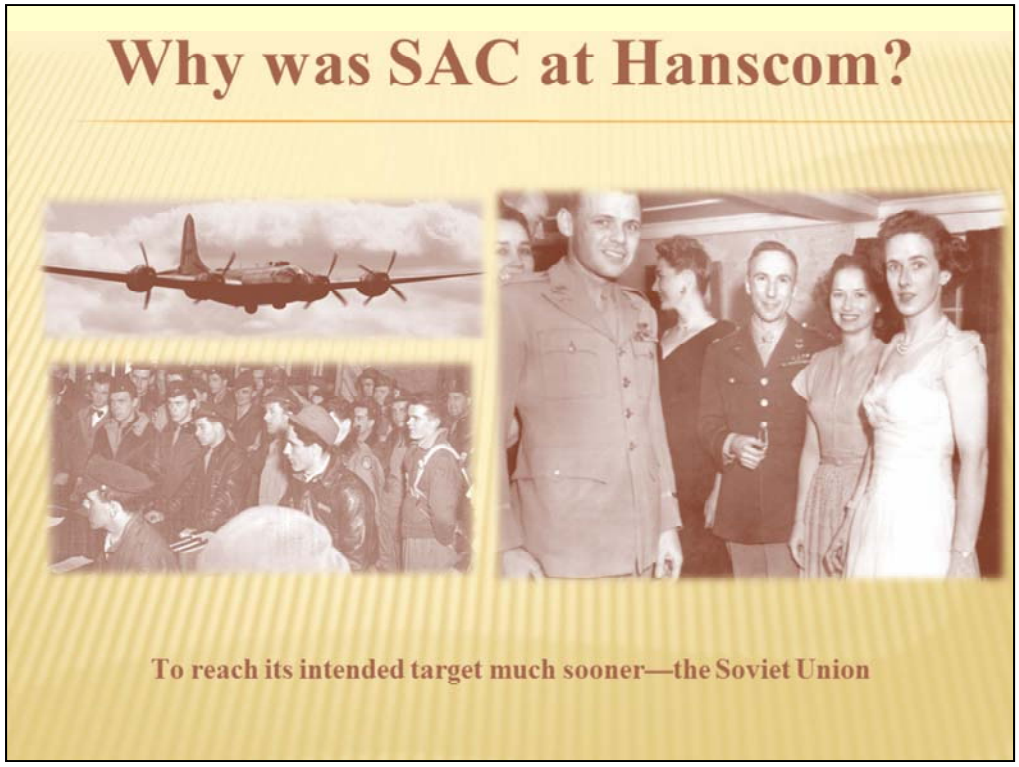
Why P-40 Warhawk on static display?

A day after Massachusetts leased the airport to the War Department in 1942, the Army Air Forces arrived with P-40 aircraft. Aircrews trained at Hanscom and then most ended up in the Mediterranean Theater fighting the German Luftwaffe over northern Africa.



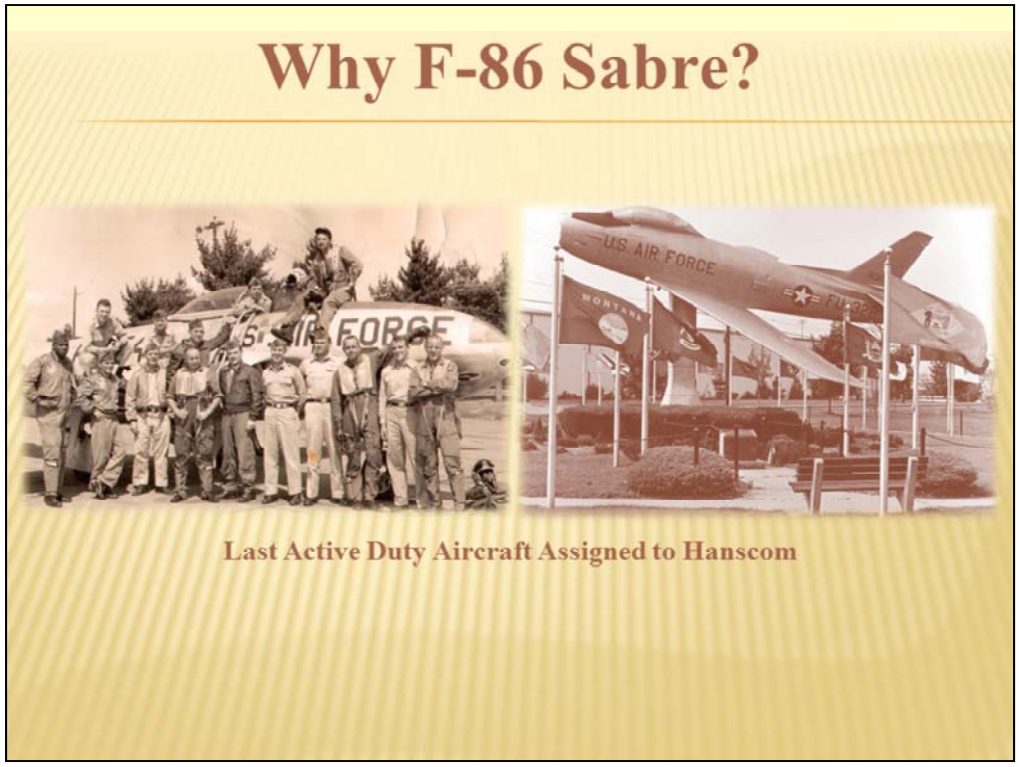
How did women serve at Hanscom during WWII?

Shown here, a company of Women's Army Corps (WAC) ground support personnel march on the flightline at Hanscom Field in front of Vultee Aircraft Company BT-13 standard training aircraft. Civilian women pilots, members of the Women's Air Service Pilots (WASPs), ferried aircraft and towed targets at Hanscom Field during World War II.



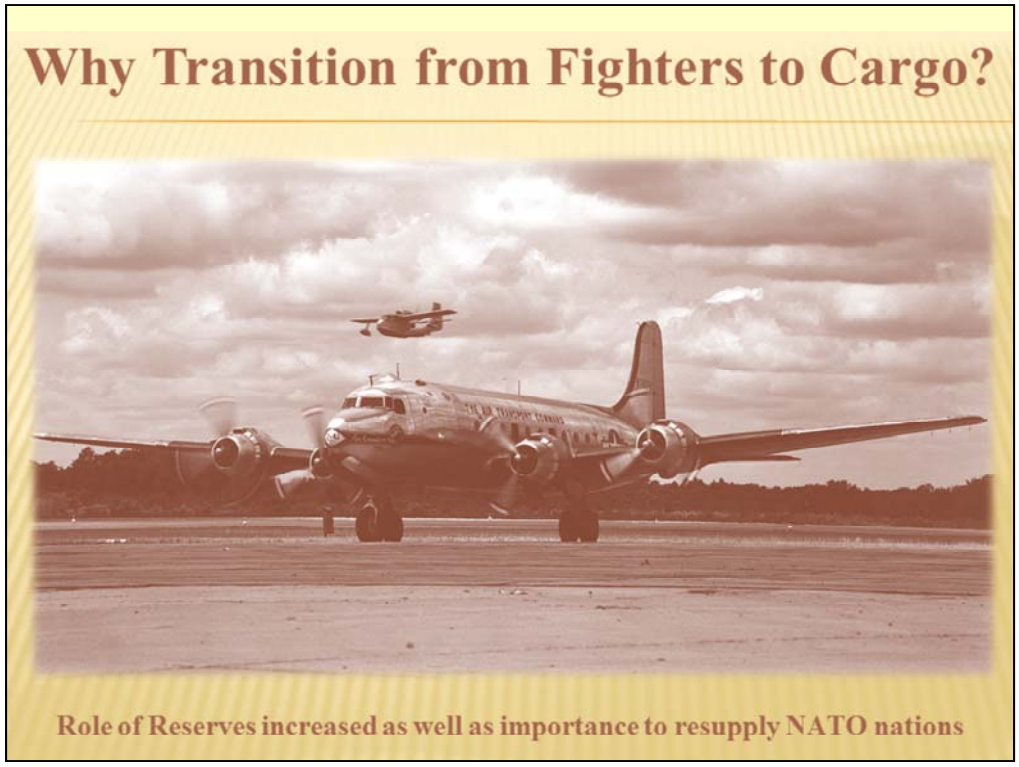
Why was SAC at Hanscom?

In the late 1940s and early 1950s, strategic bombers such as the B-25 and B-29 could also be found on Hanscom as the "glory days" of Strategic Air Command (SAC) was beginning to take shape. Bomber aircraft appeared on many northeastern United States Air Force Bases to reach its intended target much sooner—the Soviet Union—as the Cold War began.



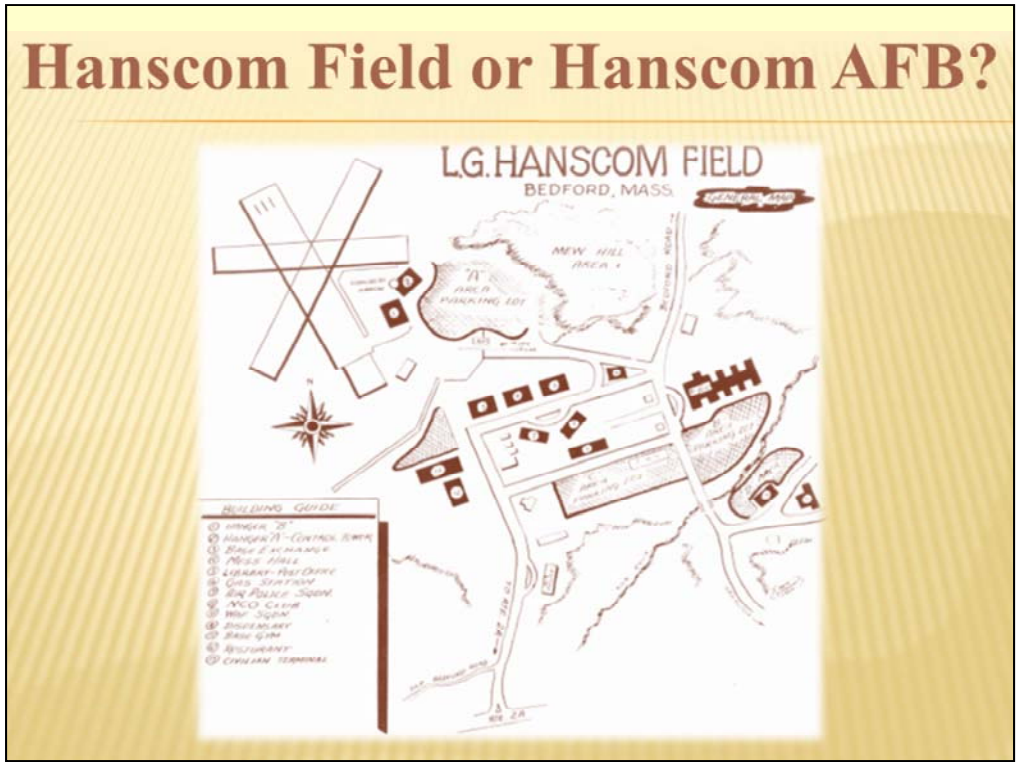
Why F-86 Sabre on static display?

In addition to the training and bomber missions, during WWII and the Korean War Laurence G. Hanscom Field hosted other aircraft and flying missions to include the the P-47, P-51, P-80 (aircrew shown left), T-6, and T-33 aircraft. Following the Korean War, the intercept mission dominated the Hanscom skies from 1956-1960 with two flying squadrons of F-86 Sabre aircraft. The F-86 would be the last active duty aircraft assigned to Hanscom.



Why transition from fighters to cargo?

After active duty fighters left Hanscom in 1960, the base transitioned to Air Force Reserve cargo aircraft. Between the Korean and Vietnam Wars the role of the Reserves increased as well as the importance to resupply North Atlantic Treaty Organization (NATO) nations in Europe. While active duty forces primarily maintained the intercept mission, Reserve forces took on a prominent role in the airlift mission. Throughout the 1960s cargo aircraft such as the C-46 Commando and C-124 Globemaster II could be found on Hanscom. In 1972, the Reserve aircraft relocated from Hanscom to Dobbins AFB, Georgia.

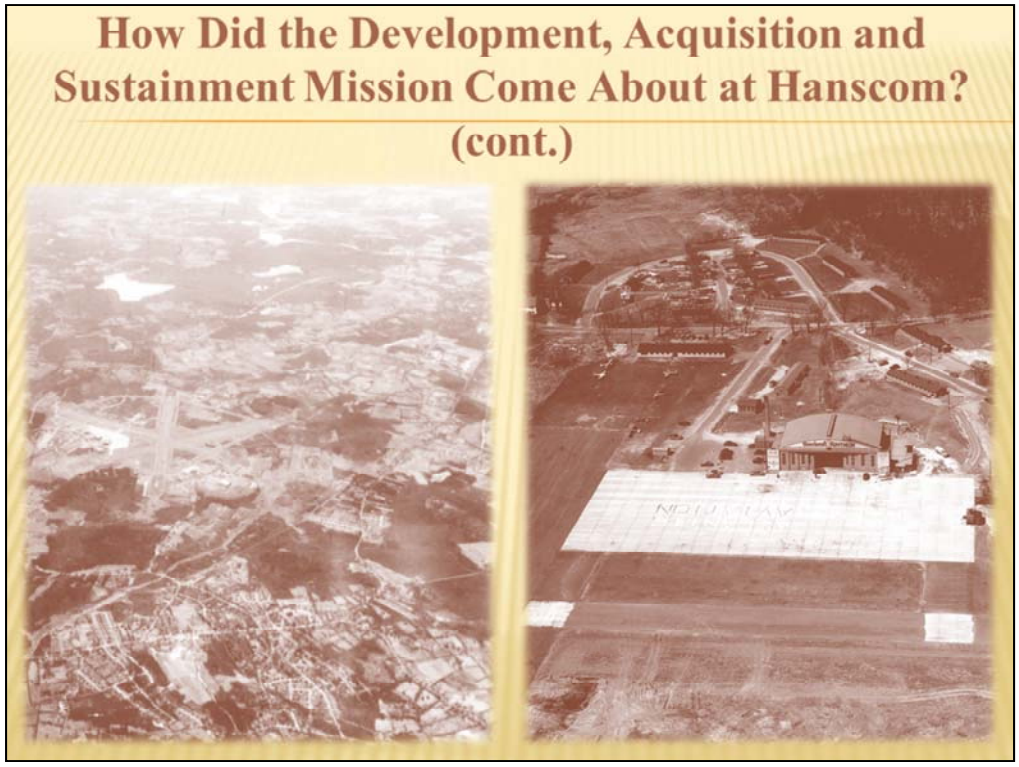


Is it called Hanscom Field or Hanscom Air Force Base?

In 1973, Air Force flying activities officially terminated at Hanscom Field. The following year, the Air Force terminated the lease of the airfield portion of Hanscom. The facilities portion of Laurence G. Hanscom Field remained under Air Force control and was redesignated Laurence G. Hanscom Air Force Base under Department of the Air Force Special order GA-34. The airfield reverted back to state control and continued the name "Laurence G. Hanscom Field." In 1977, Laurence G. Hanscom Air Force Base was redesignated "Hanscom Air Force Base" in a move throughout the Air Force to use only last names. The Massachusetts Port Authority followed with "Hanscom Field."

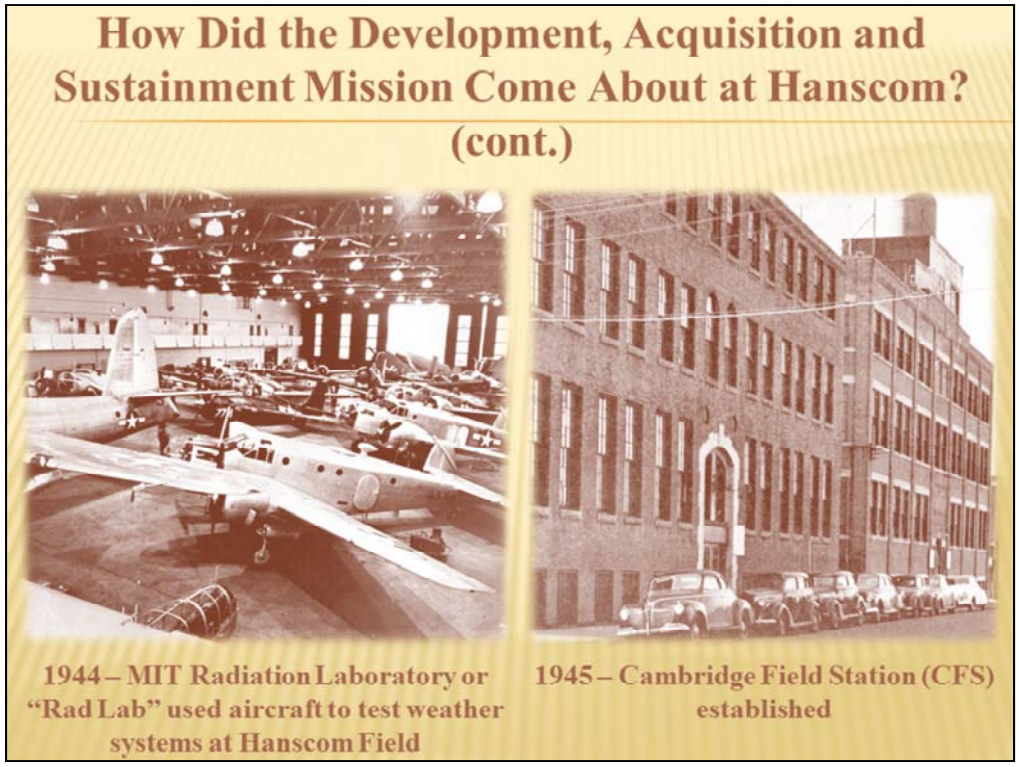
How did the development, acquisition and sustainment mission come about at Hanscom?

At the start of World War II, the majority of the nation's greatest minds were at the Massachusetts Institute of Technology (MIT). There you could find many frustrated professors because they had great ideas, particularly in the area of Radio Detection and Ranging or "Radar," but no way to fund them. One such professor was Dr. Vannevar Bush, who had the idea of microwave-based radar. Not only was Dr. Bush an American engineer and inventor, he was also an influential administrator and could envision solving his funding challenges through the application of science to develop weaponry.



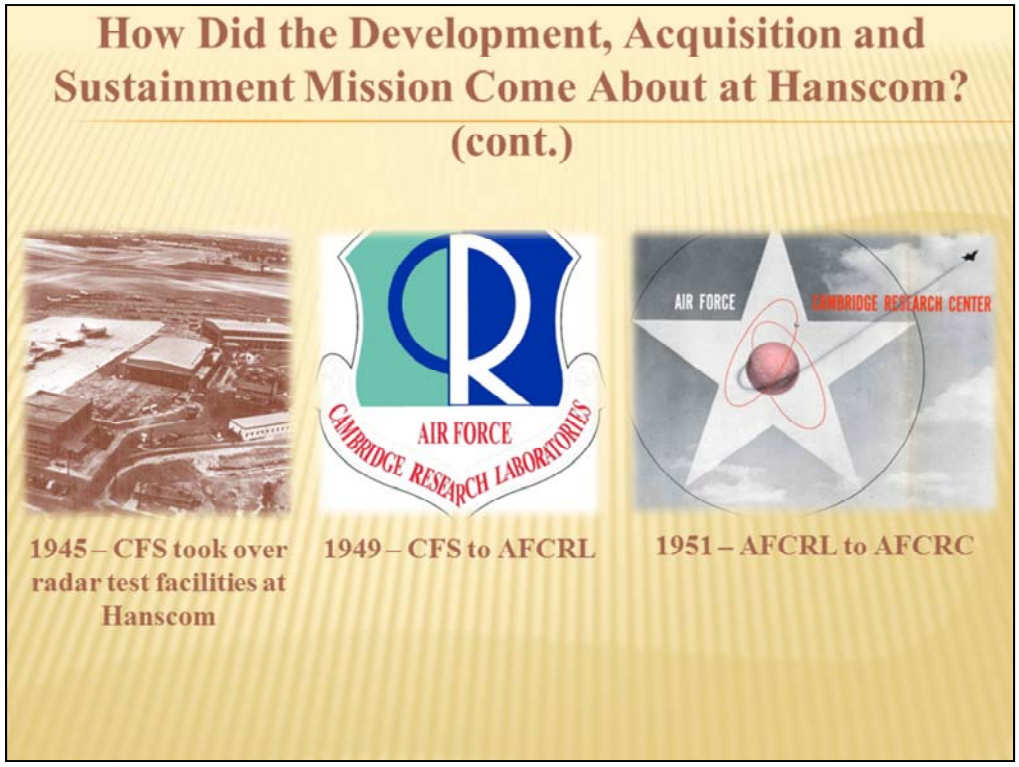
How did the development, acquisition and sustainment mission come about at Hanscom (cont.)?

Dr. Bush became head of the U.S. Office of Scientific Research and Development (OSRD) as MIT became the largest recipient of contracts during World War II. He coordinated the activities of 6,000 scientists whose research eventually led to the atomic bomb, the computer, and the internet. As a result, he is known as the "Architect of the military-industrial complex"—a complex whose majority after WWII rested along the Route 128 corridor (shown left) that included such companies as Raytheon (shown right) who are to this day instrumental in laser technology. In the 1950s the Boston area became known as the "Athens of America" and "America's College Town."



How did the development, acquisition and sustainment mission come about at Hanscom (cont.)?

In 1942, MIT established the Radio Research Laboratory (RRL) to develop countermeasures to radar. In 1943, RRL moved to Harvard; however in 1944, the MIT Physics Department formed Radiation Laboratory or "Rad Lab" which ultimately developed half of the radar systems used in the Allied war effort. By late 1944, the Rad Lab used airplanes to test both airborne and ground weather systems at Hanscom (shown left). In 1945, the Air Technical Services Command (ATSC) at Wright Field, Dayton, Ohio established the Cambridge Field Station (CFS) at 224 Albany Street, Cambridge, Massachusetts (shown right) because of the proven success of the Rad Lab and RRL.



How did the development, acquisition and sustainment mission come about at Hanscom (cont.)?

By late 1945, CFS had taken over the experimental radar test facilities at Hanscom Field. In 1949, the Air Force redesignated the Cambridge Field Station as the Air Force Cambridge Research Laboratories. By 1951, the laboratories had grown to become the Air Force Cambridge Research Center (AFCRC). On 1 August 1951, AFCRC became the landlord of Hanscom Field as the major command with the acquisition mission has been the host organization ever since.

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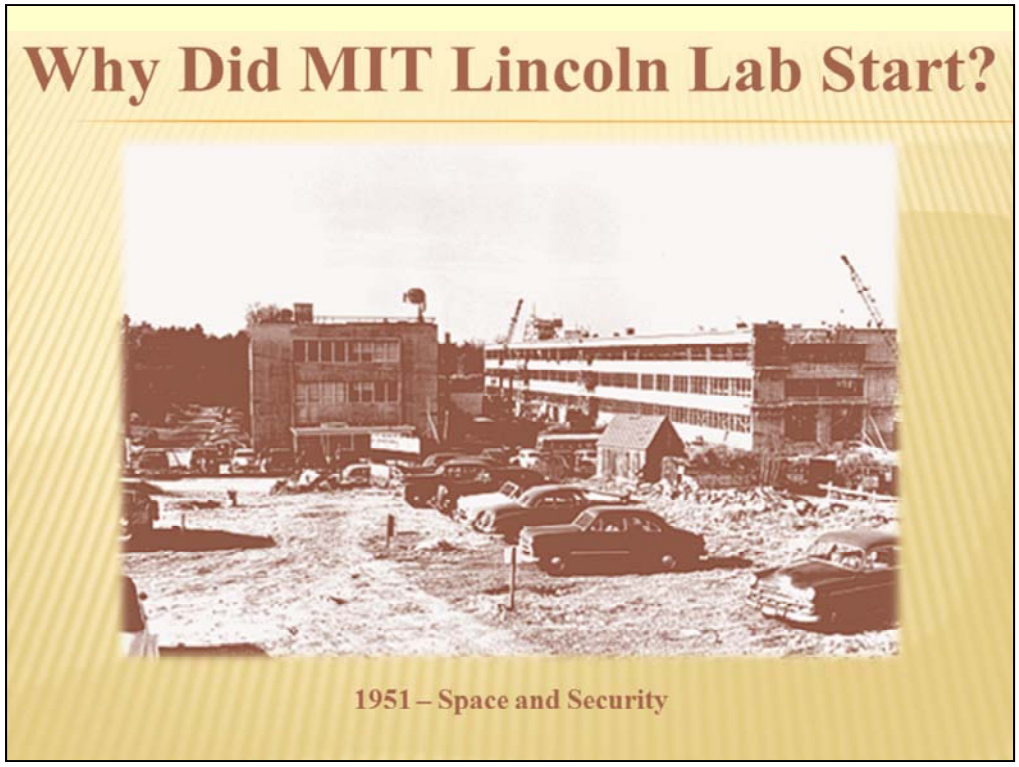
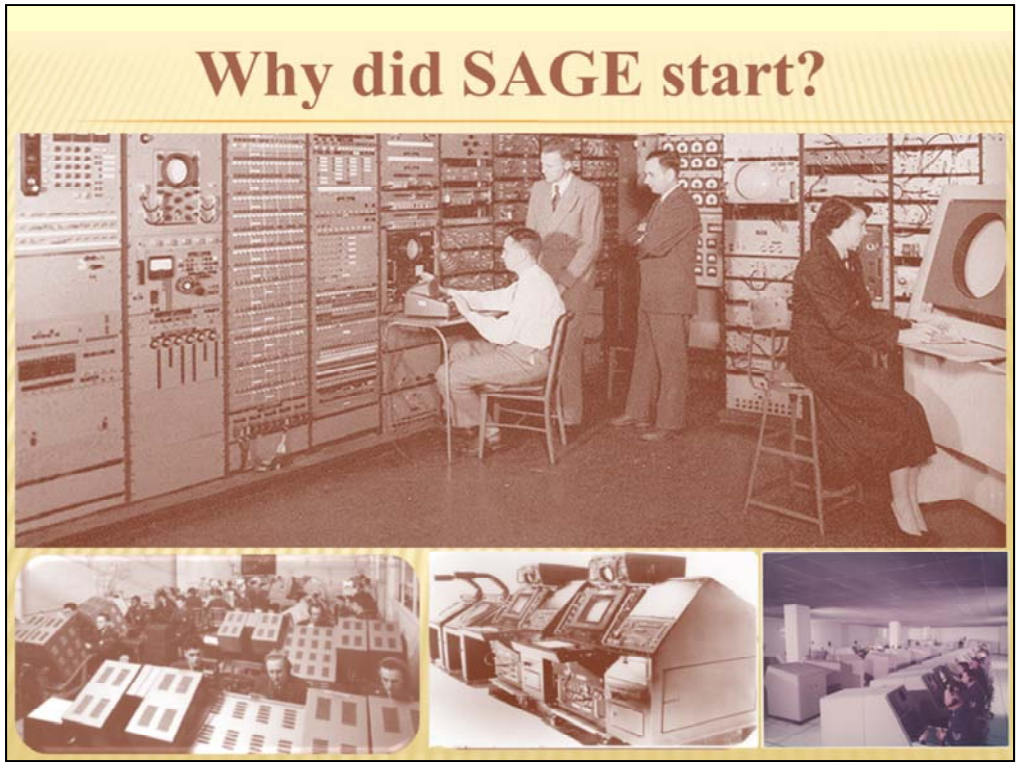
Why Electronic Systems Division?

By 1961, Hanscom had numerous research and development organizations. In an effort to consolidate the growth, the Air Force formed the Electronics Systems Division (ESD) and equated the newly formed organization as a numbered air division. When the growth stopped following the end of the Cold War, the Air Force downsized divisions into centers. Thus, in 1992 ESD was redesignated the Electronic Systems Center (ESC). Due to further budgetary constraints, in 2012 the Air Force combined ESC with the Aeronautical Systems Center (ASC) at Wright-Patterson AFB, Ohio, with the establishment of the Air Force Life Cycle Management Center (AFLCMC) and Headquartered the new organization at Wright-Pat.



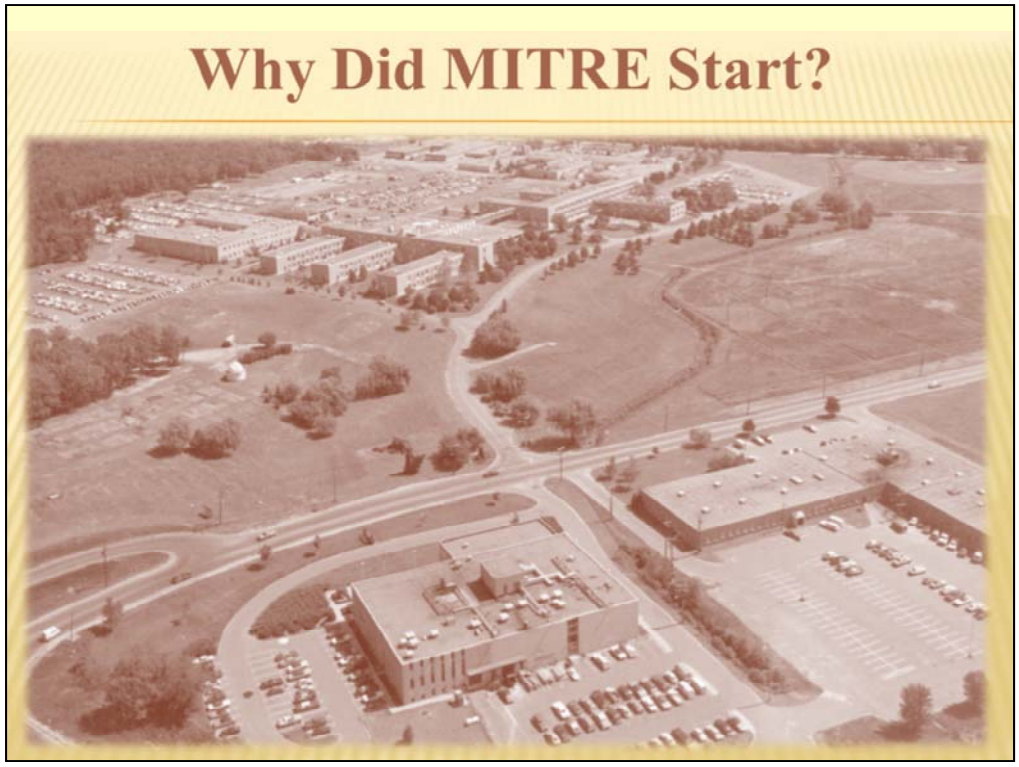
Why did MIT Lincoln Lab start?

In 1951, Operation Project Lincoln began because of space and security challenges at the Cambridge campus. The Bedford-Lincoln-Lexington area had space for new construction and offered a comfortable distance from Cambridge. MIT believed it had an obligation to disseminate research results conducted on campus. Thus, classified research was inherently incompatible with this obligation. The name "Lincoln" was chosen because there had already been a Project Bedford (antisubmarine warfare) and a Project Lexington (nuclear propulsion of aircraft). MIT Lincoln Lab started with 300 employees, went to 1,300 by 1952, and 1,800 by 1953, a level that remained fixed for several years.



Why did SAGE start?

The Semi-Automatic Ground Environment (SAGE) air defense system protected the U.S. against Soviet bomber threats. In the 1950s, SAGE was Hanscom's main focus. Although it relied on telephones, some of SAGE's contributions led to huge advances in online systems, interactive and real-time computing, and data communications using modems. SAGE is considered one of two systems that advanced the computer—the other being NASA's Apollo missions. Today, cell phones have more capability than a SAGE- or Apollo-computer filled room and is ancestor to today's Combined Air & Space Operations Center (CAOC). Fully operational from 1963-1983, SAGE never ordered an attack against a Soviet bomber. Still it was tremendously important to our nation's deterrent effort.



Why did MITRE start?

In 1958, Congress chartered The MITRE Corporation as a private, not-for-profit corporation that provided engineering and technical guidance for the federal government—with an initial focus on defense needs. The new company first pioneered system engineering and ongoing support for the SAGE continental air-defense system. SAGE's complexity demanded an organization that reached across traditional boundaries among the military, industry, and academia. MITRE was incorporated one month following the installation of the first of 23 national SAGE centers.

How did Hanscom support the war effort in Vietnam?

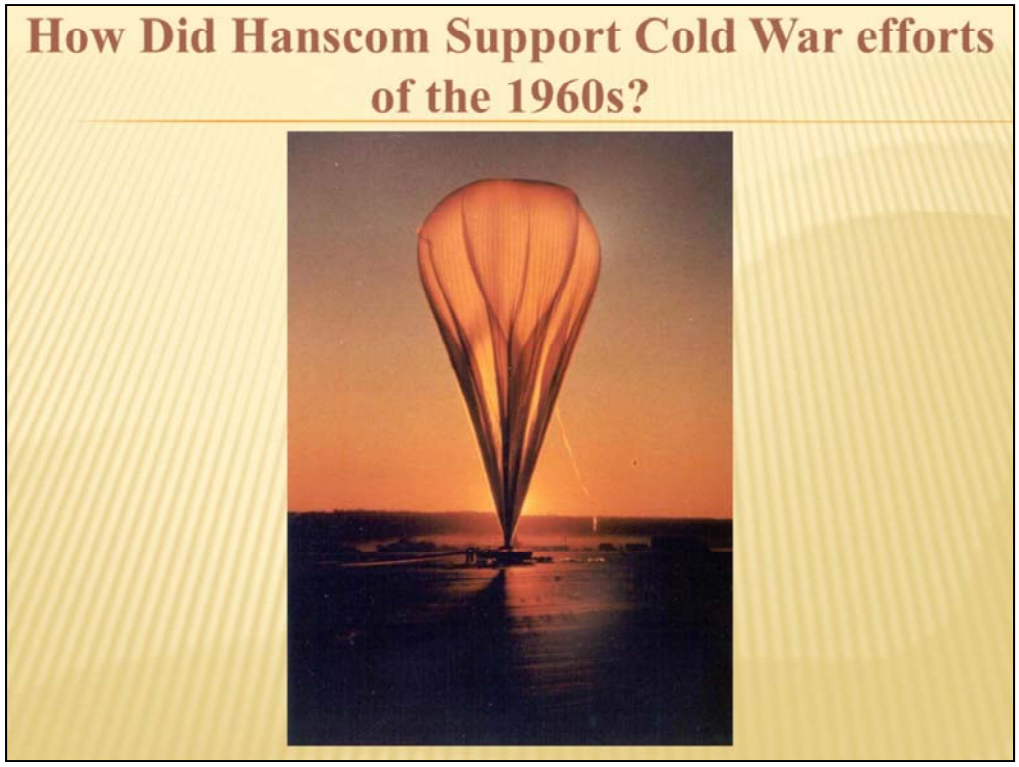
Hanscom has a legacy of improving secure ways the warfighter communicates—whether it's over land-lines, online, or SATCOM (satellite communications). During the Vietnam war, the Ho Chi Minh Trail hid dangerous numbers of North Vietnamese soldiers under thick foliage. In response to this mission challenge, Hanscom developed an advanced type of automatic radio telephone system specially adapted for military use by Air Force forward air controllers (FAC). Without these FAC, jet aircraft had no hope of hitting such targets. Improved radios by Hanscom personnel enabled controllers to talk to both strike aircraft and ground troops which vastly improved bombing accuracy.

How does improved radio systems help in today's fight against terrorism?

Air Force special operators, known as Air Commandos, began fighting the enemy just 33 days after the terrorist attacks. They entered Afghanistan at an average age of 33 and with an average of 10 years' experience. Today, they enter the battlefield at an average age of 23 and with little experience. Making up the difference is improved equipment, some of which is developed at Hanscom. So successful have Combat Controllers been that their demand has grown exponentially. Their insertion to Operational Detachment Alpha (ODA) teams has affected the transformation of Air Force special operations in such a way that no one could have foreseen—thanks in part to Hanscom's acquisition mission.

Why did Hanscom grow in the 1960s?

In the 1960s, Hanscom experienced growth to numerous programs that supported the Cold War: traffic control navigation and landing systems, weather observation and forecasting systems, and ballistic missile early warning sites. As part of Space exploration, the Apollo/Range Instrumented "Snoopy" Aircraft permitted voice communication from Houston Space Center to the capsule once astronauts were beyond the range of ground-based or ship-borne. Started in 1961 and completed in 1966, Hanscom equipped the NORAD operations center. In addition, Hanscom developed a 100-site Mediterranean Communications System that linked Spain, Sardinia, Sicily, Italy, Greece, Crete, and Turkey—all important allies to the United States.

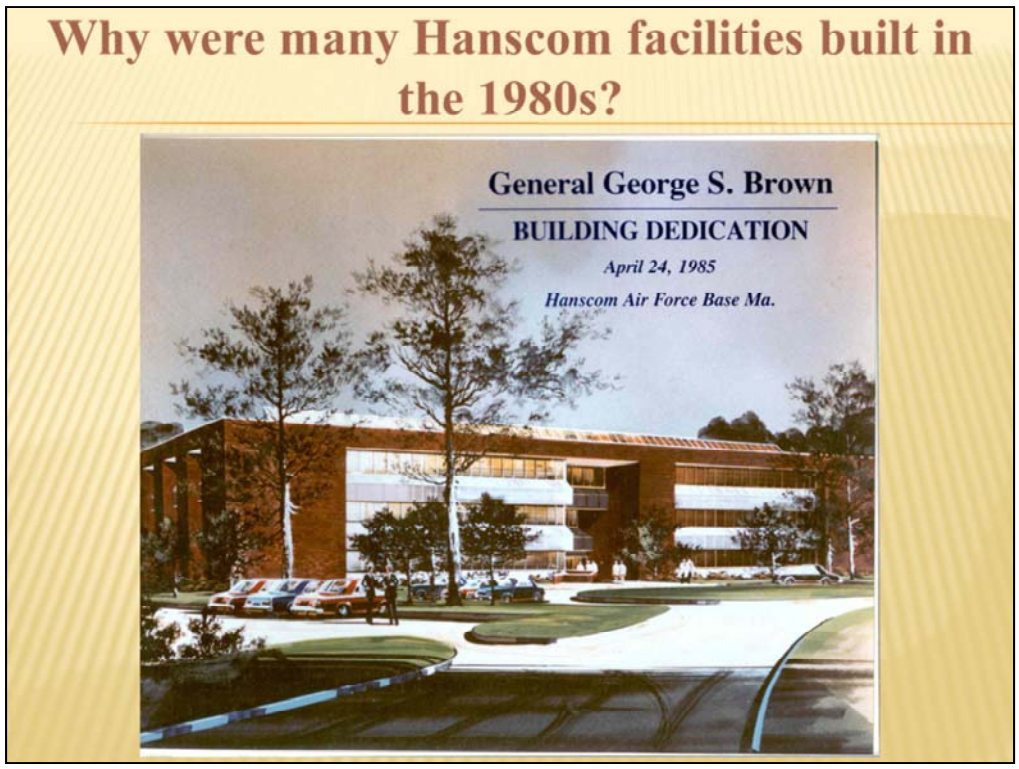


How did Hanscom support the Cold War efforts of the 1960s?

Hanscom supported Cold War efforts in the 1960s through much research that obtained valuable measurements, which in turn developed needed weaponry. For example, in 1968, the Air Force Cambridge Research Laboratories at Hanscom Air Force Base, Massachusetts launched the largest research balloon to 158,000 feet from White Sands Missile Range, New Mexico. The polyethylene sphere balloon carried instruments for atmospheric measurement. The flight ended near Needles, California, after 18 hours.

How Did Hanscom Support the Warfighter in the 1970s and 1980s?

Two airborne radar systems of the 1970/80s were Airborne Warning and Control System (AWACS) and Joint Surveillance Target Attack Radar System (JSTARS). The E-3 Sentry AWACS provided the warfighter with situational awareness, command & control, battle management, and early warning of enemy actions. The E-8C JSTARS provided the warfighter with ground surveillance to support attack operations and targeting that contributed to the delay, disruption and destruction of enemy forces. Two ground based phased array radar systems were COBRA DANE and PAVE PAWS (Phased Array Warning System) while the sea-based radar system, from both water and ship, included COBRA JUDY.



Why were many Hanscom facilities built in the 1980s?

Also in the 1980s Hanscom experienced a second wave of construction. Why? The Reagan Build-up. The base saw four new systems management engineering facilities (the O'Neill, Brown, Shiely, and Bond buildings). For base personnel, there were new service facilities - medical, youth, and family support centers - as well as additional housing and a temporary lodging facility.

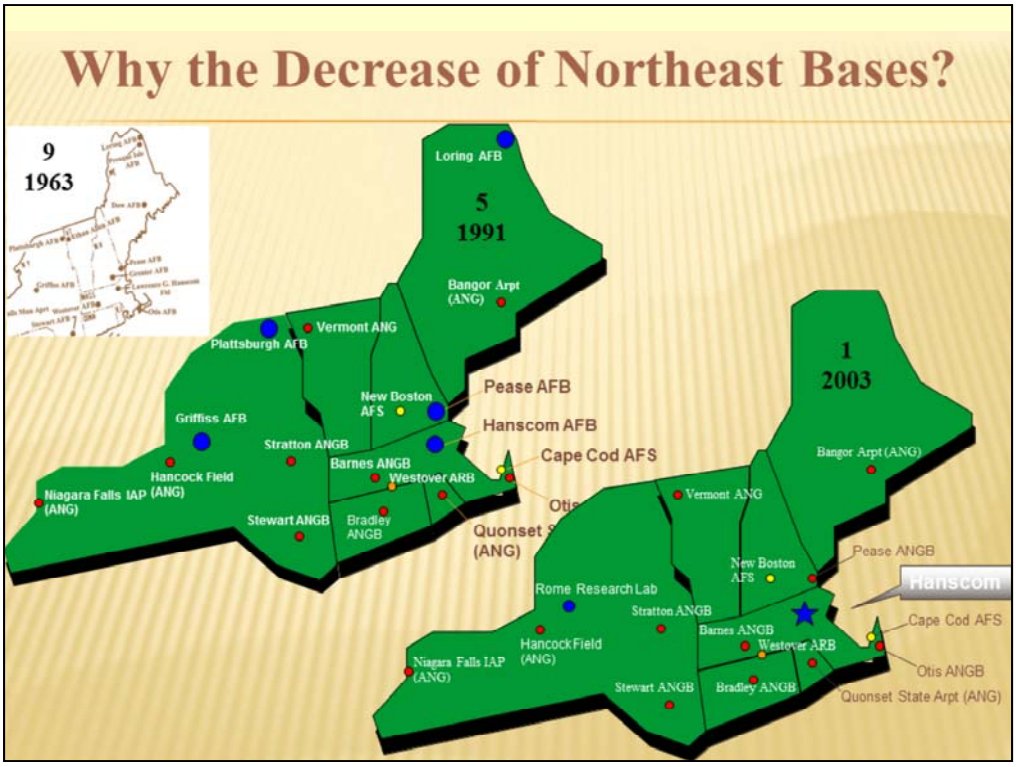
How Did Hanscom Support the Warfighter in the 1990s?

Air and Space Operations Centers (AOCs)

Balkans			Africa		
Year(s)	Operation	Country	Year(s)	Operation	Country
1992-1994	Provide Promise	Yugoslavia	1992-1993	Restore Hope	Somalia
1993	Deny Flight	Yugoslavia	1993-1995	Continue Hope	Somalia
1995	Deliberate Force	Bosnia	1994	Support Hope	Rwanda
1995-1996	Joint Endeavor	Bosnia	1995	United Shield	Somalia
1996	Joint Guard	Bosnia	1996	Assured Response	Liberia
1996	Search & Rescue for Commerce Secretary Ron Brown CT-43 Crash	Croatia	1996	Guardian Retrieval	Uganda
1997	Silver Wake	Albania	1996	Guardian Assistance	Rwanda
1997	Guardian Angel	Yugoslavia	1997	Firm Response	Republic of Congo
1999	Allied Force	Serbia/Kosovo	1997	High Flight	Namibia

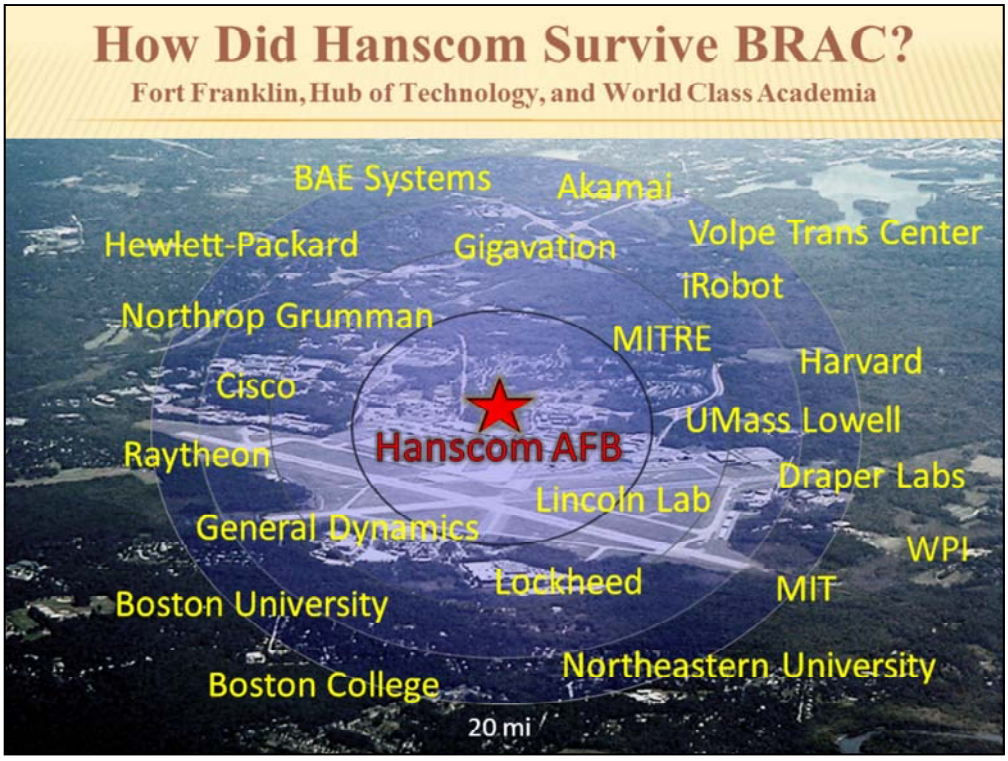
How did Hanscom support the warfighter in the 1990s?

In 1990-91, Operations Desert Shield and Desert Storm demonstrated the need for an improved Air and Space Operations Center. Soon after the Persian Gulf War Hanscom created an Air Sovereignty Operation Center followed by the Combined Air and Space Operations Center (CAOC). In 1994, Hanscom organized the Fort Franklin Battlespace Laboratory that visualized joint systems in action and tested technologies. Later exercises in 1995-96 led to the development of the Command and Control Unified Battlespace Environment (CUBE). AOC development culminated in the success of Operation Allied Force when the Air Force applied the CAOC at Vicenza, Italy, during the Air War Over Serbia.



Why the decrease of northeast bases?

In 1963, the number of active duty AFBs in the northeast peaked at nine. By 1991 it decreased to five. By 2003, Hanscom remained the one base in New England. Why the decrease? Primarily due to politics, geography, and end of Cold War. In 1972, politics eliminated two bases (Westover to Reserves and Otis to Guard) when MA was the only state not to vote for President Nixon. Ironically, geography, a reason for expansion so an alert force could reach sooner, now pulled back to allow more time to launch. After the Berlin Wall fell in 1989, two rounds of Base Realignment and Closure (BRAC) occurred. The formula used for BRAC considered costs of maintaining a base which placed northern bases at a disadvantage.

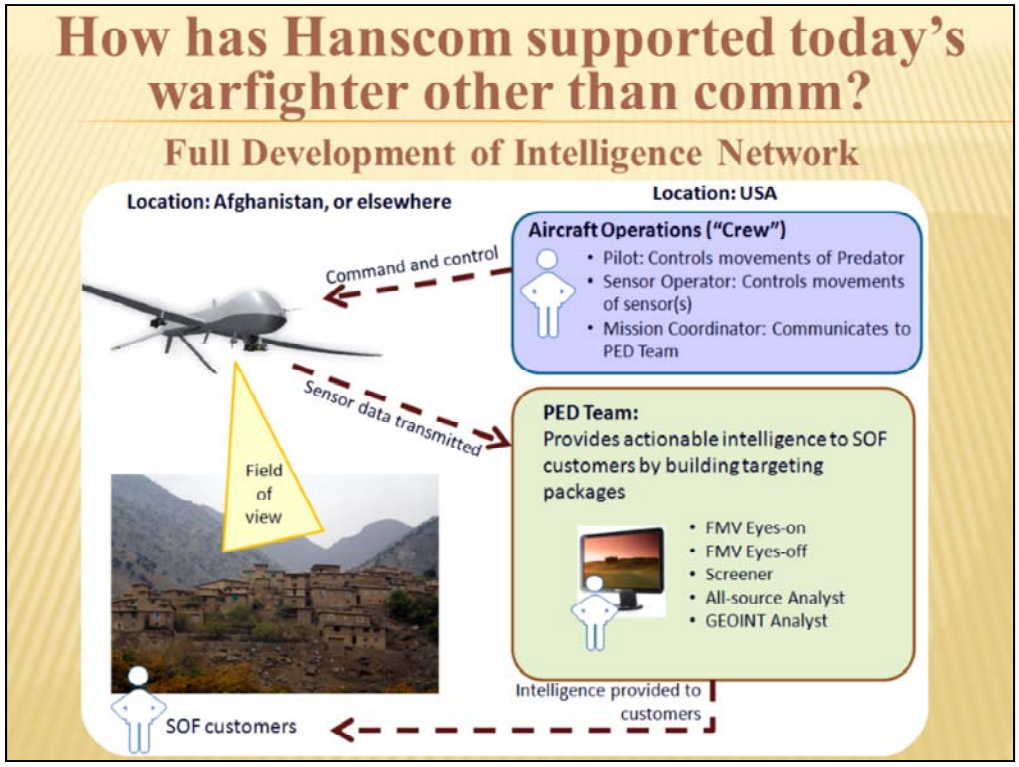


How Did Hanscom Survive BRAC?

Primarily three reasons: Fort Franklin, Hub of Technology, and World Class Academia. During the 1990s, when two BRACs occurred, Hanscom was in the middle of developing the AOC. Showing committee members Fort Franklin and demonstrating the institutionalization of testing of systems and integrating them into the (AOC) proved invaluable. In addition to its important mission, the location, being a hub of nearby technology firms as well as a resource of high quality people that graduate from nearby quality universities and colleges, has proven Hanscom's worth. With over 300 companies and schools within Boston's 90-mile radius, the Hanscom region has a unique concentration of brainpower.

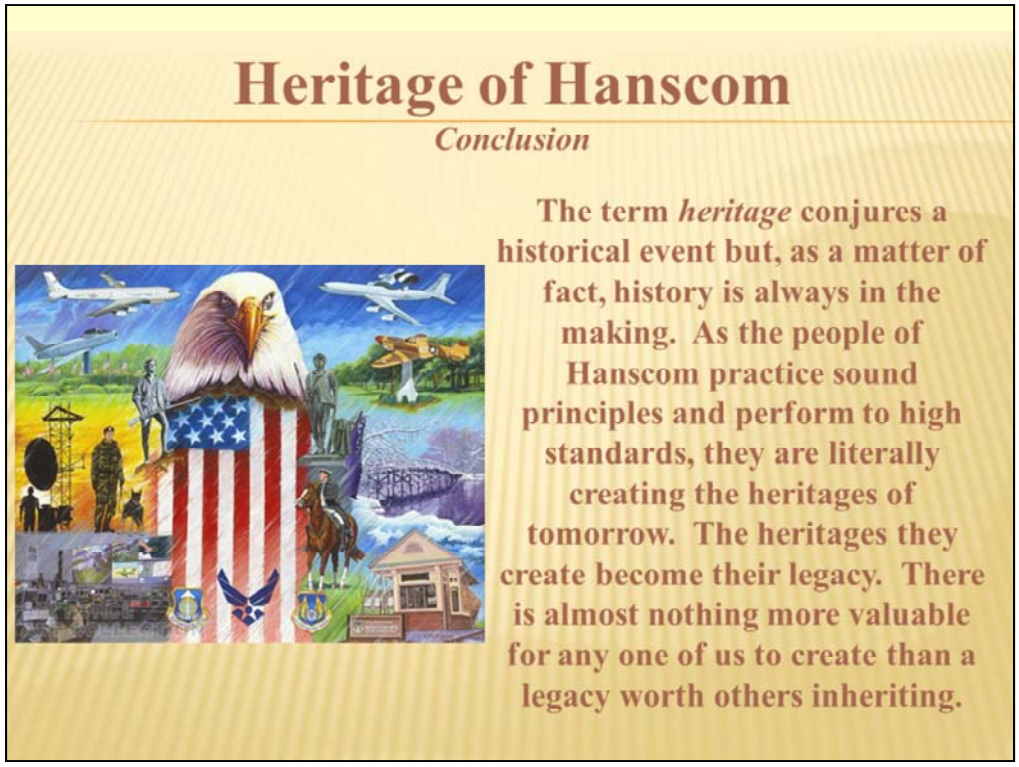
How has Hanscom continued its comm legacy since 9/11?

In 2002, Hanscom began the Roll-on-Beyond Line of Sight Enhancement (ROBE) Program when the first KC-135 Stratotanker relayed tactical communications data from F-15 fighters and an E-8C (Joint Stars) aircraft to Hanscom AFB. The ROBE, carried on pallets onboard tankers, serves as the relay platform for a war-fighting network, while still allowing tankers to perform what they do best—offload fuel. In 2008, Hanscom began the Battlefield Airborne Communications Node (BACN) Program when the first E-11A with BACN deployed. The high altitude system overcomes challenges associated with operating in mountainous terrain with limited line-of-sight by giving warfighters the ability to share data via an airborne server.



How has Hanscom supported today's warfighter other than comm?

On average, Hanscom supports approximately 300 programs. For example, the base played a critical role in locating terrorists with full development of an intelligence network. In 2005, special operations forces (SOF) remotely flew MQ-1 Predators, but shared time with conventional Air Forces. Soon they neared capture of Abu Musab al-Zarqawi, mastermind behind terrorist activity in Iraq, when time elapsed. Meanwhile Hanscom helped develop a processing, exploitation, and dissemination (PED) intelligence network. In 2006, Air Commandos gathered data from now-dedicated MQ-1s. The aircraft, combined with PED capabilities, followed an enemy's pattern of life. Not coincidentally, Zarqawi was killed later that year.



Heritage of Hanscom

Conclusion

Shown here is the one painting on loan through the Air Force Art Program assigned to Hanscom. It is located at the Minuteman Commons. It is an accurate portrayal of the base's legacy and the local area's history. Also shown here is a paraphrased quote from Bob Galvin, former CEO of Motorola. When you put the heritage of Hanscom into context, you begin to see it doesn't matter if you are a brand new second lieutenant becoming a program manager for one of the weapon systems, or a civilian who engineers one of the systems, or an Airmen who guards the gate, we here at Hanscom are one team and as we perform a significant role in our nation's security, we all are creating a legacy worth others inheriting.