2019

AFIT 100th Anniversary — A Century of Education Excellence: From Inspiration to Innovation

Air Force Institute of Technology

Kathleen Scott [Editor]

AIR FORCE INSTITUTE OF TECHNOLOGY

AFIT 100TH ANNIVERSARY

A CENTURY OF EDUCATION EXCELLENCE: INSPIRATION TO INNOVATION

1919 - 2019

CELEBRATING 100 YEARS OF EDUCATION

FROM INSPIRATION TO INNOVATION

Contents

Symbolism behind coat of arms

AFIT Emblem Significance Statement

SHIELD: Azure, on a solid gear wheel emitting four, barbed lightning flashes saltirewise or, the atomic symbol for oxygen, sable; a base nebuly or.

MOTTO: Anemis Parati (Prepared in Mind).

SIGNIFICANCE: The shield employs the Air Force colors, ultramarine blue and yellow. The atomic symbol of oxygen represents the atomic age and scientific progress, as well as the element which furnishes life to both personnel and power plants of aircraft. The gear wheel depicts engineering and the inception of its functional predecessor, the School of Engineering, under the former Air Materiel Command, while the lightning flashes portray the striking force of science and engineering. The motto is indicative of the organization's mission.

AFIT Leadership

Commander
Air Education and Training Command
Lt Gen Marshall "Brad" Webb

Commander and President
Air University
Lt Gen Anthony Cotton

Director and Chancellor
Air Force Institute of Technology
Todd Stewart, PhD

Interim Vice Chancellor and Dean for Research
Air Force Institute of Technology
Heidi Ries, PhD

Office of Alumni Affairs
Air Force Institute of Technology
Kathleen Scott

AN OFFICIAL PUBLICATION OF

AFIT
Air Force Institute of Technology

2950 Hobson Way
Wright-Patterson AFB, OH 45433

www.afit.edu

Celebrating a century of education excellence

On November 10, 1919, the Director of the United States Army Air Service, authorized Colonel Thurman Bane, Commanding Officer at McCook Field in Dayton, Ohio, to begin instruction at the Air School of Application. Over the past 100 years, that organization has evolved into today's Air Force Institute of Technology – "AFIT," now a highly-regarded, doctoral-granting research university and center for career-long professional continuing education.

During the past century, AFIT and its predecessor organizations have educated literally hundreds of thousands of military professionals – officers, enlisted members and civilians, helping them to become more capable and effective in their service to the nation. This magazine traces the evolution of AFIT through each of the 10 decades leading up to 2019, AFIT's centennial year. It highlights the people and the events that have helped to create AFIT's century-long heritage of education excellence. It also highlights some of the remarkable career achievements of some of AFIT's many distinguished alumni.

We hope you will enjoy tracing the journey from the Air School of Application in 1919 to the Air Force Institute of Technology in 2019. And if you are an AFIT alumni, former member of the AFIT faculty or staff, a current student or a current member of the faculty and staff, thanks for helping to make AFIT – *your AFIT* – into the great education and research institution it is today!

Todd Stewart

TODD I. STEWART, PhD
Major General, USAF (Ret.)
Director and Chancellor

AFIT BY THE NUMBERS

21,000+
ADVANCED DEGREES GRANTED SINCE 1956

8
BUILDINGS

ACROSS **35** ACRES

PROFESSIONAL CONTINUING EDUCATION (PCE)

31,000+
PCE STUDENTS IN FY19

200+
PCE COURSES

$200 million
FY19 BUDGET

2,500 students
AT **350+** CIVILIAN INSTITUTIONS IN **15** FOREIGN COUNTRIES

MASTER'S PROGRAMS **24**

DOCTORAL PROGRAMS **14**

CERTIFICATE PROGRAMS **8**

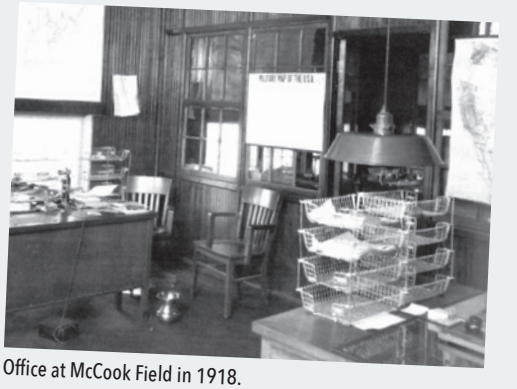
500+
MILITARY, CIVILIAN & CONTRACTOR FACULTY & STAFF

1910

THE ERA OF NEW BEGINNINGS

Col Thurman Bane began instruction at the Air School of Application on November 10, 1919 located at McCook Field near Dayton, Ohio.

Aerial view of McCook Field in 1920.



Office at McCook Field in 1918.

The Wright brothers in Dayton, Ohio in the 1900's.

HIGHLIGHTS

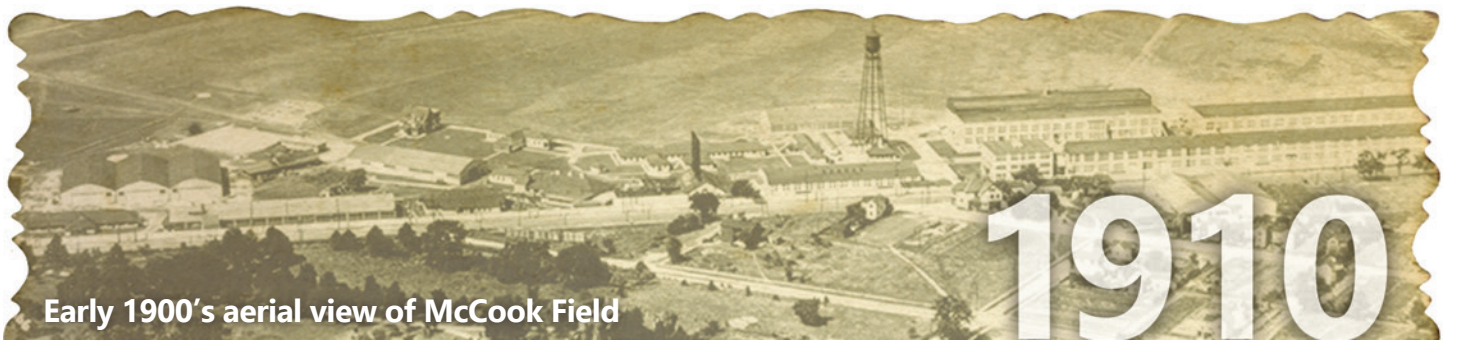
Flight advancements at McCook Field:

The first cantilever monoplane was designed and flown.

The first all-metal plane was designed and flown.

The first wooden monocoque fuselage was created.

The first helicopter was built and successfully flown.



Early 1900's aerial view of McCook Field

10 Nov 1919

Col Thurman H. Bane, commanding officer at McCook Field in Dayton, Ohio received authorization from the Director of the United States Army Air Service to begin instruction at the Air School of Application.

Bane's aim was to "give proper technical training…so that Commanding Officers of flying fields will understand thoroughly technical maintenance of airplanes and motors, machine shop installation, shop management and cost accounting, and the operation of machine tools, power plant installation and operation, electricity, metallurgy, lab testing of fuels, gasoline…and elementary aerodynamics." There was no intention of making aeronautical engineers of the students.

Commandant of McCook Field

Colonel Thurman Harrison Bane

12 Jun 1884 - 22 Feb 1932

Thurman Harrison Bane was born in San Jose, California and joined the United States Military Academy in 1903. He graduated on 14 Jun 1907 and was promoted in the Army to Second Lieutenant, 14th Cavalry. In 1914, after service with the former on the Mexican Border (having participated in the fight at Ojo de Agua) and in the Philippines, he applied for transfer to the then infant United States Army Air Corps. He succeeded the following year and was sent to North Island, San Diego, for flight training.

His rise in the Air Corps was rapid. A year after he started his flight training he became an instructor in aeronautical engineering and four years later became Commandant of McCook Field, the most important aeronautical post in the country. From the planes, motors and instruments developed at the McCook base, American aircraft made a spectacular rise, soaring to world records for speed, altitude, endurance and load in the name of the United States Army Air Corps.

Under Colonel Bane's leadership at McCook Field, the first cantilever monoplane was designed and flown, as well as the first all-metal plane and the first wooden monocoque fuselage. The first helicopter was built and successfully flown by Colonel Bane himself.

In 1922 Colonel Bane retired from the Army at his own request, with the rank of Major, Air Service, which on 21 Jun 1930 was changed to Colonel, United States Army, Retired. He returned to California and entered commercial pursuits. But he soon found that he could not be content away from his chosen field: aeronautics. Its fascination was in his blood. Hence, in 1928, he assisted in the organization of The Aviation Corporation and assumed the duties of Vice President.

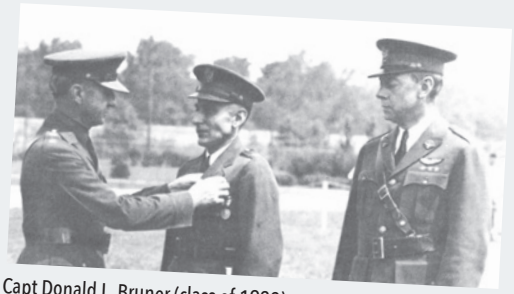
Excerpted from the 63rd Annual Report of the Association of Graduates of the U.S. Military Academy at West Point, New York, 9 Jun 1932, The Monroe Printing Co., Inc., Newburgh, New York.

1920's

THE ERA OF SETTING RECORDS

In 1920, the Air Service Engineering School graduated its first class and by the end of the decade operations moved to Wright Field.

Students of the first graduating class of the Air Service Engineering School in June of 1920. First row, sitting far left, is Lt Edwin Aldrin (father of Col Edwin "Buzz" Aldrin, Jr.) who received the first diploma.



Capt Donald L. Bruner (class of 1923) receiving the Distinguished Flying Cross for his pioneer work in night flying.

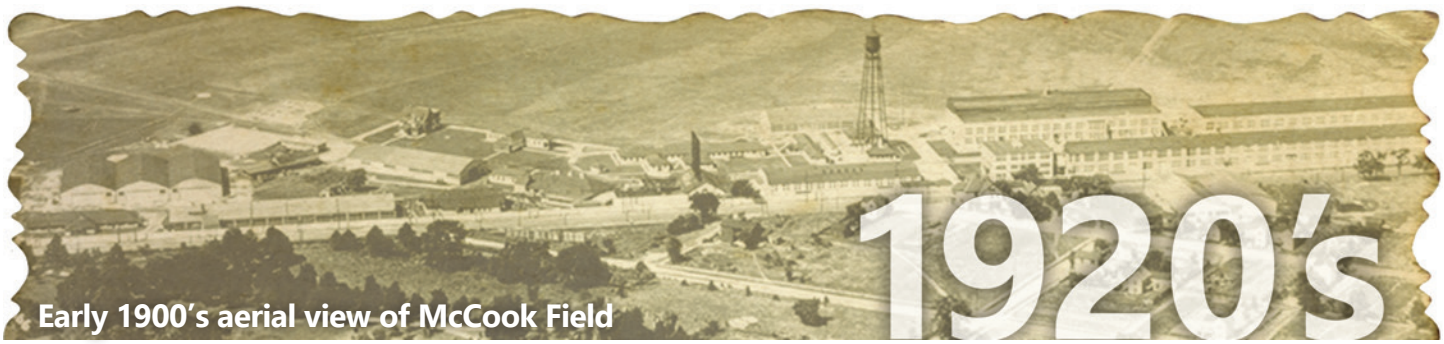
1920's view of Wilber Wright Field.

HIGHLIGHTS

1920: The Air School of Application is renamed the Air Service Engineering School.

1926: Air Service Engineering School is renamed the Air Corps Engineering School.

1928: The Air Corps Engineering School moved from McCook Field to Wright Field.



Early 1900's aerial view of McCook Field

1920's

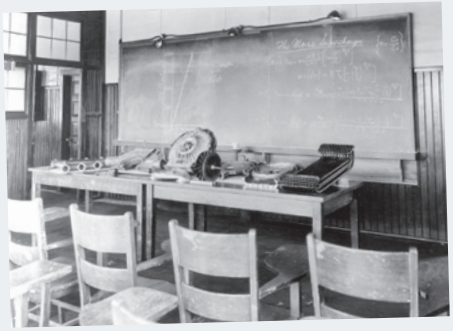
IMAGES FROM THE 1920's

The McCook Field motto posted on the main field hangar in the 1920's. *(Dayton and Montgomery County Library photo).*

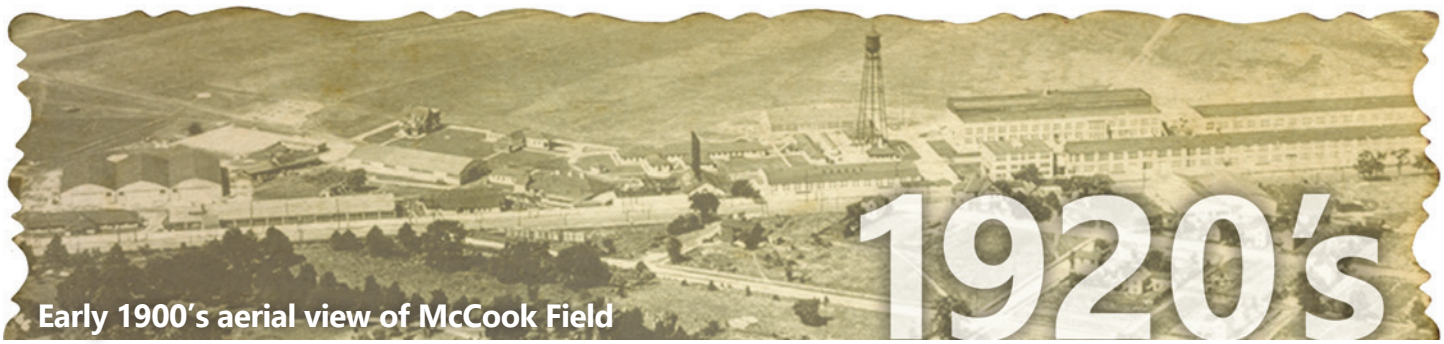
Student and pilot Lt John A. Macready (far left) in the 1920's.

Civilian guards working at the main entrance to McCook Field in the 1920s.

Members of the seventh class of the Air Service Engineering School in 1926.



1920's Air Service Engineering School classroom.



Early 1900's aerial view of McCook Field

4 Jun 1920

The Air School of Application was renamed the Air Service Engineering School and graduated its first class. **Lt Edwin Aldrin**, father of Col Edwin "Buzz" Aldrin Jr., was a member of the graduating class. He stayed on as Assistant Commandant and the only military instructor. Aldrin was said to have received the first diploma, since they were given in alphabetical order.

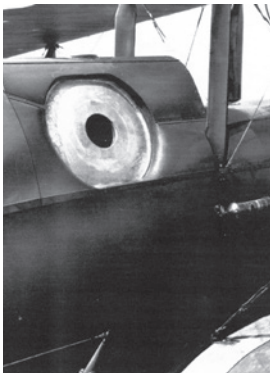
Also in the first class was **Maj Gen Herbert A. Dargue**, then a Colonel, who would become one of the first ten recipients of the Distinguished Flying Cross and the first Army General to die on duty during World War II. Dargue was chosen to lead the investigation of why the U.S. had been unprepared for the Pearl Harbor attack. While flying to Hawaii to take his new post, his B-18 crashed in the Sierra Nevada mountains, outside Bishop, California, and he was killed.

1921

Gen George C. Kenney, a Captain at the time, was in the second graduating class. Best known for serving as the commander of the Allied Air Forces in the Southwest Pacific Area from 1942-1945, he is credited with being the first to use skip bombing with the U.S. Army Air Forces. This is a low-level bombing technique where bombs would "skip" over the surface of the water in a manner similar to stone skipping and either bounce into the side of the ship and detonate, submerge and explode next to the ship, or bounce over the target and miss.

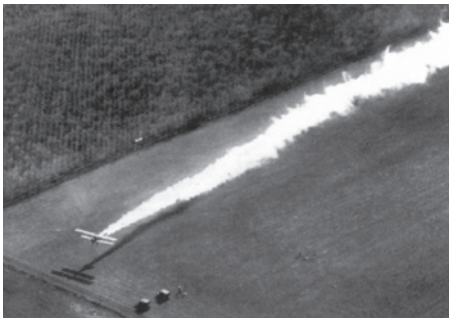
8 Jun 1921

Lt Harold R. Harris (Class of 1922, Air Service Engineering School) became the first pilot to fly a pressurized aircraft when he successfully flew a Dayton-Wright USD-9A with an experimental pressurized cockpit. The plane had an airtight spherical chamber in place of a cockpit with only a control stick and small portholes to view the instruments, which had been relocated outside.

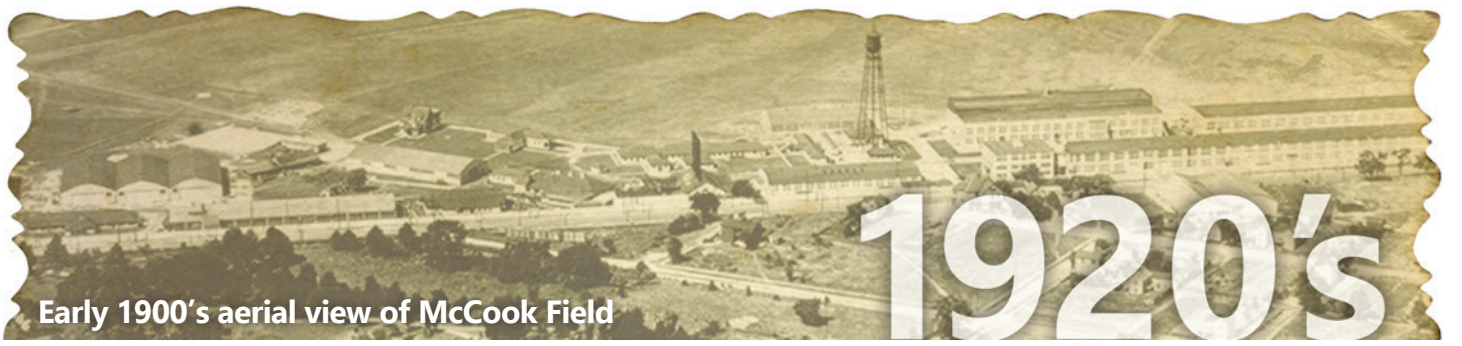


3 Aug 1921

Lt John A. Macready (Air Service Engineering School, 1923) became the first person to test fly an experimental aerial application system for spraying pesticides from an aircraft, flying the world's first "crop duster." The Curtiss JN-4 "Jenny" was modified to spread lead arsenate to kill catalpa sphix caterpillars at a catalpa tree farm near Troy, Ohio. The test was considered highly successful and covered an area in a few minutes that would have taken hours to spray from the ground.



Fellow test pilot and Air Service Engineering School alum, **Lt Harold Harris** (Class of 1922), co-founded the Huff-Daland Crop Dusting Company, the world's first commercial crop-dusting service, in 1924. The company later evolved into Delta Airlines.



1922

Maj Lawrence W. McIntosh assumed command of the Air Service Engineering School from Col Bane.

5 Oct 1922

Lt John A. Macready (Air Service Engineering School, 1923) and Lt O.G. Kelly set a world endurance record of 35 hours, 18 minutes and 30 seconds over San Diego, California. This, and later endurance flights, led to the development of the world's first air-to-air refueling system. The flight earned them the Mackay Trophy which was awarded for the "most meritorious flight of the year" by an Air Force person, persons, or organization.

20 Oct 1922

Lt Harold R. Harris (Class of 1922, Air Service Engineering School) made the first emergency parachute jump in Dayton, Ohio. Harris was flying a Loening monoplane with a modified aileron when the aileron began oscillating badly, pulling the control stick from his hands. Facing a certain crash, Harris bailed out of the stricken aircraft, landing in a backyard grape arbor at a house at 335 Troy St., suffering only bruises on his legs and hand from fighting with the control stick. The Loening crashed into the side yard of a house at 403 Valley St., three blocks away. There were no injuries to anyone on the ground. For his survival, Harris was awarded the first membership in the Caterpillar Club, a club for aviators who have bailed out of stricken aircraft and survived. The name refers to the insect that produces the silk used in parachutes.

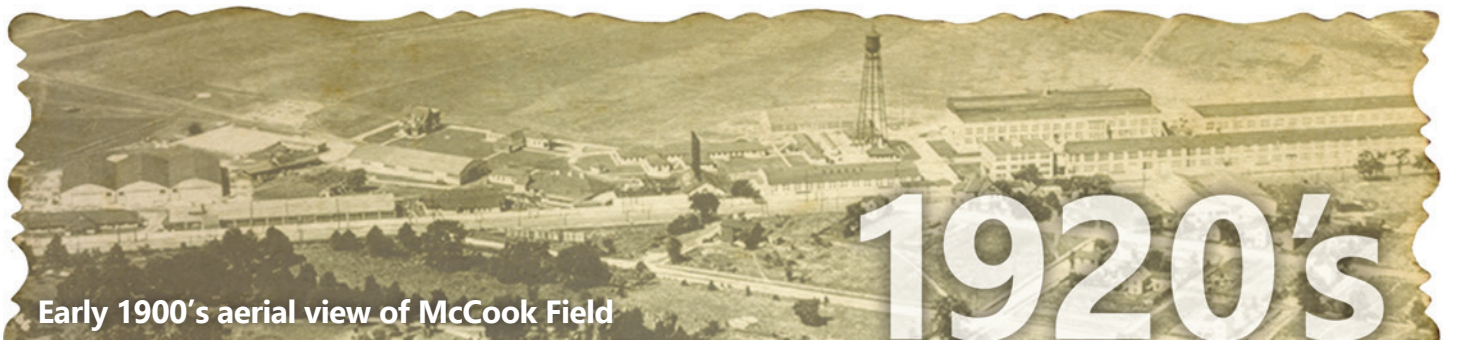
1923

Gen James Doolittle, a Lieutenant at the time, was a graduate of the fourth class. A pioneering holder of speed records and famed World War II air commander, Doolittle received the Medal of Honor for planning and leading the first aerial attack on Japan in 1942.

IMAGES FROM THE 1920's

Charles Lindbergh visits McCook Field while on tour in August 1927.

James Doolittle on his Curtiss R3C-2 Racer, the plane in which he won the 1925 Schneider Trophy Race.



Early 1900's aerial view of McCook Field

Doolittle retired from active duty as a Lieutenant General, but in 1985 was promoted to General, making him the first person in Air Force Reserve history to wear 4 stars.

2-3 May 1923

Lt John A. Macready (Air Service Engineering School, 1923) (left), with Lt Oakley Kelly (right), made the first non-stop coast-to-coast flight, from Roosevelt Field, New York to Rockwell Field, California. The staff at McCook Field modified the base's Fokker T-2 to carry 620 gallons of gasoline. En route, he made

the first in-flight aircraft engine repair in Air Service history, replacing a defective voltage regulator switch while the Fokker mono-plane churned westward. The flight also set a new distance record for a single cross-country flight.

22 Aug 1923

The Barling Bomber made its maiden flight from Wilbur Wright Field in Fairfield, Ohio. At the time, it was by far the heaviest aircraft in the world, and remains large even by today's standards. On its first flight, it was piloted by **Lt Harold R. Harris** (Air Service Engineering School, 1922), and **Lt Muir S. Fairchild** (Air Corps Engineering School, 1929), future U.S. Air Force Vice Chief of Staff. The flight engineer was Douglas Culver. Barling flew along as a passenger. Critics had claimed that the bomber would roll all the way to Dayton before it ever took off, but the aircraft became airborne after a 13-second, 960 ft. takeoff run. The flight lasted 28 minutes and reached an altitude of 2,000 ft.

1924

Lt Col John F. Curry assumed command of the Air Service Engineering School from Maj McIntosh.

13 Jun 1924

Lt John A. Macready (Air Service Engineering School, 1923), became the first pilot to bail out of a stricken aircraft at night. While he was making a night airways flight from McCook Field to Columbus, Ohio and back, his engine died just as he was approaching Dayton. His first idea was to make an emergency landing, but the two flares he released failed to ignite. Even though no one had ever made an emergency jump at night, he decided to trust his parachute and came down safely, though his parachute tangled in a tree and he required help to get to the ground.

28 Jun 1924

Lt John A. Macready (Air Service Engineering School, 1923), flying a Curtiss bomber, set FAI records for altitude of 16,732 feet and duration of two hours, 13 minutes, 49.6 seconds with a payload of 2,204.6 and 3,306.9 pounds.

1925

Lt Gen Hubert Harmon, the "Father of the U.S. Air Force Academy," was a graduate of the sixth class.

2 Jul 1926

The Air Service Engineering School was renamed the Air Corps Engineering School when Congress authorized creation of the Air Corps.

1927

Brig Gen William E. Gillmore assumed command of the Air Corps Engineering School from Lt Col Curry.

Oct 1928

The Air Corps Engineering School along with the operations at McCook Field moved to Wright Field. The school was on the second floor of the administration building, consisting of drafting rooms, classrooms, study space, and offices. Classes resumed after being shut down from 1927-1928 due to the move and a stringency of air corps officers. The courses covered a year's work in general aeronautical engineering.

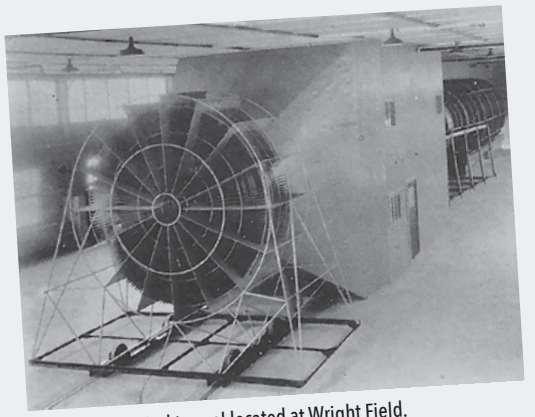
1929

Maj Gen Benjamin D. Foulois assumed command of the Air Corps Engineering School from Brig Gen Gilmore.

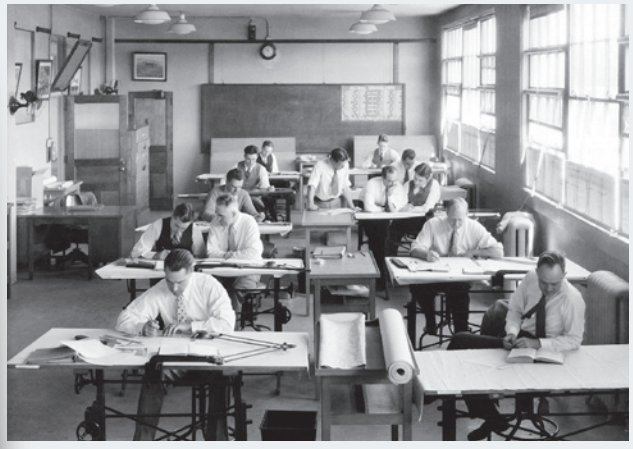
1930's

THE ERA OF ADVANCES IN FLIGHT

The Air Corps Engineering School was comprised of four departments: fabrication, materials and structures, testing, and design.



Experimental wind tunnel located at Wright Field.



Drafting room at the Air Corps Engineering School in the 1930's.

Class of 1932 students of the Air Corps Engineering School.

HIGHLIGHTS

1937: The first entirely automatic landing in aviation history was made.

1939: By order of the Secretary of War new courses were suspended until 1944.

1939: A new transcontinental record was set flying from Los Angeles to New York in just under 9.25 hours in the first B-17B Bomber.

1937 graduates of the Air Corps Engineering School's 17th class

1930

Brig Gen Henry C. Pratt assumed command of the Air Corps Engineering School from Maj Gen Foulois.

24 Nov 1931

The Air Corps of Engineering School Coat of Arms was approved with the saying "Animis opibusque parati" which means "Prepared in mind and resources." The shield is blue, the principal color of the Air Corps; with the cold starts it is representative of the light of the sky, Wright plane indicating the effect of engineering keeping aviation in the light of known quantities, but when obscured by clouds, the quantities become unknown. The crest indicates the advancement of aviation engineering is dependent upon strength and diligent use of the compasses.

1933

Brig Gen Robert F. Travis, then a Lieutenant, graduated. While serving as Commander, 5th Strategic Reconnaissance and 9th Bombardment Wings at Fairfield-Suisun Air Force Base, California, he was killed in the crash of a B-29, 15 minutes after takeoff. Fairfield-Suisun AFB was officially renamed Travis AFB on 20 Oct 1950, in his honor.

1935

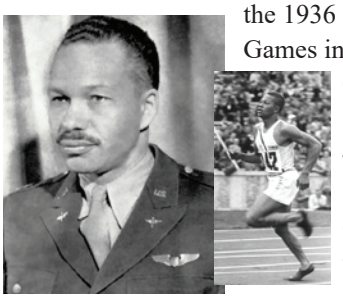
Lt Gen Laurence C. Craigie, then a Lieutenant, graduated. He was the first pilot of the Armed Forces to fly a jet-propelled plane when he piloted the XP-59 on its initial flight at Muroc Dry Lake, California.


Capt Craigie's work being inspected by an instructor.

Brig Gen Augustine Robins assumed command of the Air Corps Engineering School from Brig Gen Pratt.

7 Aug 1936

Archie Williams (B.S. Engineering Sciences, 1950) won the gold medal in the 1936 Olympic Games in Berlin, Germany for the 400m sprint with a time of 46.5 seconds.



23 Aug 1937

Capts George V. Holloman (Air Corps Engineering School, 1935) and Carl J. Crane made the first entirely automatic landing in aviation history. They perfected the Airplane Automatic Landing System through two years of intensive research at the Instrument and Navigation Laboratory at Wright Field and conducted nearly all the flights tests. They won the Mackay Trophy for 1937. Holloman died in a crash in 1946. Holloman AFB in New Mexico was named after him.

22 Jan 1938

Maj Carl F. Greene (Air Service Engineering School, 1926) and **Lt Eugene H. Beebe** (Air Corps Engineering School, 1937) made a successful broadcast from a Lockheed XC-35 from an altitude of 21,000 feet, while **Lt Leonard F. Harman** (Air Corps Engineering School, 1932) flew the airplane. As the Air Corps Newsletter described it, "The windows of the plane were frosted with ice, and the outside thermometer indicated 15 degrees below zero. Inside the supercharged cabin, however, the passengers rode in comfort. Because of engine noise, the broadcasters spoke with their mouths almost against the microphone so that no one in the plane heard what the other was saying, except Lt Harman. Holding the plane steady in somewhat rough air conditions, he smilingly heard everything on his radio receiver, which was tuned in on a Chicago broadcasting station. The broadcast was effected over the National Broadcasting Company network."

1937 graduates of the Air Corps Engineering School's 17th class

Spring 1939

Col Pearl H. Robey, a 1936 alum, co-piloted the YB-17A equipped with superchargers reaching 311 mph of ground speed at an altitude of 25,000,

which was 100 miles faster than any bomber had ever flown before – faster, also, than any fighter plane had ever flown at that altitude.

March 1939

By order of the Secretary of War, new courses were suspended until March 1944.

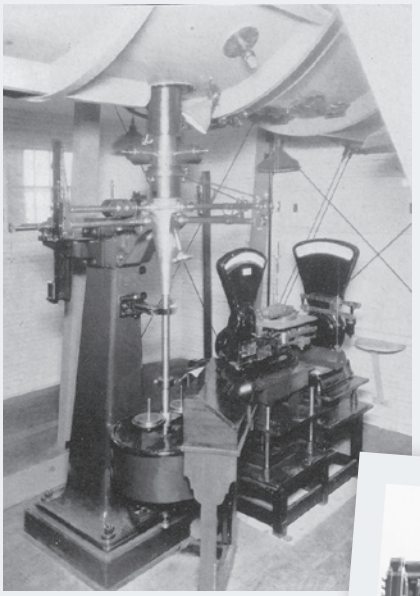
1 Aug 1939

Exactly one month before Hitler invaded Poland, **Lt Col Leonard Harman** (Air Corps Engineering School, 1932) and Col Stanley Umstead flew the first B-17B bomber to a new transcontinental record flying from Los Angeles to New York in just under 9.25 hours.

IMAGES FROM THE 1930's

Aerial view of Wright Field in 1934.

1930's Materiel Division emblem.



N. P. L., wind tunnel, at Wright Field.

A student at the Air Corps Engineering School studies the effects of propeller vibration during the 1930's.

The Air Corps Engineering School is temporarily located in the Army Aeronautical Museum in the late 1930's.

1940's

THE ERA OF THE AIR FORCE

World War II brings multiple changes to the Institution. The U.S. Air Force military service is established in 1947.

Students in 1948 learning through airplane models.

1945 administration staff photo.

Aviation research laboratory circa 1948.

HIGHLIGHTS

1941: The Air Corps Engineering School is closed two days after the attack on Pearl Harbor. It was reactivated as the Army Air Forces Engineering School in 1944.

1942: Lt Col James Doolittle led "Doolittle's Raid" on Tokyo, Japan during WWII.

1945: Army Air Forces Engineering School is renamed the Army Air Forces Institute of Technology.

1947: The Air Installations Special Staff School was established, which eventually was renamed The Civil Engineer School in 2009.

1947: The Army Air Forces Institute of Technology was renamed the Air Force Institute of Technology.

1948: The Civilian Institutions Program was transferred to AFIT.

An experiment in the fuels branch laboratory in 1947

9 Dec 1941

Two days after the attack on Pearl Harbor, the Air Materiel Command closed the Air Corps Engineering School.

18 Apr 1942

In the early morning hours, 16 B-25B Mitchell bombers, led by **Lt Col James Doolittle** (Air Service Engineering School, 1923), struck Tokyo, Kobe, Nagoya and Yokohama. "Doolittle's Raid" inflicted little physical damage to Japan, but it gave a needed lift to morale in the U.S. In Japan, the psychological damage of the attack was more important, and caused the Japanese to extend its defensive perimeter.

Lt Col Frank A. Kappeler (B.S. Industrial Administration, 1949) served as navigator aboard the Doolittle Raid mission #11. He bailed out along with his fellow crewmen when their B-25 bomber engines stopped

10,000 feet over China. With the help of Chinese people he escaped capture by Japanese soldiers.

Lt Col Harry C. McCool (B.S. Industrial

Administration, 1949) served as navigator aboard the Doolittle Raid mission #4. He bailed out in China along with his fellow crewmen when their B-25 bomber turret did not work.

1944

Maj Gen Charles A. Branshaw was named the commander of the Army Air Forces Engineering School.

17 Mar 1944

The Air Corps Engineering School was reactivated as the Army Air Forces Engineering School to conduct a series of accelerated courses to meet emergency requirements.

IMAGES FROM THE 1940's

Lt Col James Doolittle led 16 B-25B Mitchell bombers in "Doolittle's Raid" on Japan in April 1942.

Aerial view of Patterson Field in 1942.

An experiment in the fuels branch laboratory in 1947

1940's

1945

Orville Wright was an honored guest at the graduation ceremony.

1945

Maj Gen Hugh Knerr assumed command of the Army Air Forces Engineering School from Maj Gen Branshaw.

20 Oct 1945

Lt Gen Nathan F. Twining (for whom Bldg 641 is named) led three B-29s in developing a new route from Guam to Washington via India and Germany. They completed the 13,167-mile-trip in 59 hours, 30 minutes. Gen Twining was Chief of Staff of the United States Air Force from 1953 until 1957. As Chairman of the Joint Chiefs of Staff from 1957 to 1960, he was the first member of the Air Force to serve in that role.

1 May 1946

Brig Gen Mervin E. Gross assumed command of the Army Air Forces Institute of Technology. He was a 1933 graduate of the Air Corps Engineering School. Following World War II, Gross was responsible for reorganizing the Air Corps Engineering School as the Air Force Institute of Technology. The Graduate School of Engineering and Management established the Mervin E. Gross Award in his honor. The award is presented annually to the graduating student who has demonstrated exceptional academic achievement and high qualities of character, initiative, and leadership while in a master's graduate program.

18 Oct 1946

Maj Gen Benjamin W. Chidlaw became the acting commander of the Army Air Forces Institute of Technology. He was a 1931 graduate of the Air Corps Engineering School.

7 Feb 1947

Brig Gen Edgar P. Sorenson assumed command of the Army Air Forces Institute of Technology from acting commander Maj Gen Chidlaw.

26 Sep 1947

With the establishment of the U.S. Air Force as a separate military service, the Army Air Forces Institute of Technology was renamed the Air Force Institute of Technology (AFIT).

Oct 1947

The Air Installations Special Staff School was established to cover all aspects of air base construction, operation, and maintenance under the leadership of **Col Glynn O. Mount**. Since then, the school has gone through eight different name changes, finally taking on its current name of The Civil Engineer School in 2009.

1948

Because most new students already had undergraduate degrees, a period of planning to raise AFIT to a graduate school began.

Responsibility for managing officers attending civilian institutions was transferred to AFIT. The Civilian Institutions Program continues at AFIT today managing approximately 1,900 students enrolled in a variety of health profession programs and another 500 line, legal and chaplain officers enrolled in various programs at leading civilian universities and research centers. The office also manages the Air Force's Education With Industry (EWI) program, through which about 40-50 military and civilian Airmen annually spend a year with companies to learn industry best-practices and bring those practices back to the Air Force.

An experiment in the fuels branch laboratory in 1947

May 1948

The Air Installations Engineering Special Staff Officer Course in the Air Installations Special Staff School graduated its first class of 31 students ranging in rank from First Lieutenant to Lieutenant Colonel. Twenty-two graduates were Air Force officers and nine were U.S. Army Corps of Engineers members. Coursework in the 12-week class included subjects such as buildings and structures, master planning, cost accounting, property and supply, and preventive maintenance.

28 Aug 1948

The Air Force Institute of Technology was re-designated as the United States Air Force Institute of Technology and was composed of two colleges: Engineering and Maintenance, and Logistics and Procurement.

3 Sep 1948

Maj Gen Laurence C. Craigie assumed command of the Air Force Institute of Technology from Brig Gen Sorenson. He was a 1935 graduate of the Air Corps Engineering School.

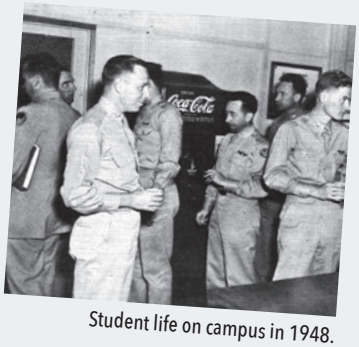
1949

Capt Edward A. Murphy, Jr. graduated with a B.S. in Engineering Sciences. He is best known for coining Murphy's Law which states, "Anything that can go wrong will go wrong."

IMAGES FROM THE 1940's

Students learn the fundamentals of aircraft engine construction by studying an electric model of a reciprocating engine that would see use in the Air Corps planes of WWII.

USAF Institute of Technology classroom in 1949.



Student life on campus in 1948.

1949 Air Force Institute of Technology graduate Capt Edward A. Murphy, Jr.

1950's

THE ERA OF ADVANCED EDUCATION

The first undergraduate engineering degrees are granted in 1956. Two alumni are chosen as members of NASA's Mercury Seven.

Faculty and students observing a recording device used in conjunction with the Reeves Electronic Analog Computer in 1953.

Department of Electrical Engineering faculty in 1954.

Examining an F-84 scale model in the 20-foot low speed wind tunnel in 1953.

Analog computer in the USAFIT computer laboratory which was used in connection with Institute mathematics and computer courses.

HIGHLIGHTS

1950: Command jurisdiction of the Institute shifted to Maxwell Air Force Base.

1956: The School of Engineering was established.

1958: The School of Logistics was established.

1959: The resident college graduated its first female student, Lt Col Mary Strong.

Graduate Air Ordnance Class of 1956

1950

The Air Installations Special Staff School is rededicated as the Installations Engineering School under the leadership of **Col A.M. Musgrove**. The School's Air Installations Engineering Special Staff Officer Course was extended to 20 weeks.

The AFIT Crest is updated from the 1931 version. The moto is shortened to "Animis Parati" which means "Prepared in mind." A description of the crest from the 1952 Integrator yearbook details: the atomic symbol of oxygen represents the atomic age and scientific progress as well as the element which furnishes life to both personnel and power plants of aircraft. The gear wheel depicts engineering and the inception of the institute within the aegis of the Air Materiel Command while the lightning flashes portray the striking force of science and engineering. The crest indicates the torch of knowledge borne aloft upon the powerful wings of the Air Force, while the motto is indicative of the organization's mission.

19 Jan 1950

Maj Gen Grandison Gardner assumed command of the U.S. Air Force Institute of Technology from Maj Gen Craigie. He was a 1927 graduate of the Air Corps Engineering School.

1 Apr 1950

Command jurisdiction of the Institute, redesignated as Headquarters, United States Air Force Institute of Technology, shifted from Air Materiel Command to Air University with headquarters at Maxwell Air Force Base, Alabama.

29 Sep 1950

Capt Richard V. Wheeler (B.S. Engineering Sciences, 1948) made a world-record parachute jump of 42,449 feet (8 miles) at Holloman AFB, New Mexico, a feat which earned him the Distinguished Flying Cross with Oak Leaf Cluster.

20 Jan 1951

Col (later, Brig Gen) Leighton I. Davis assumed command of the U.S. Air Force Institute of Technology from Maj Gen Gardner.

The Institute's progress toward becoming a graduate school was marked by the enrollment of eight officers in the first Advanced Engineering Management class.

The two AFIT colleges (Engineering and Maintenance and Logistics and Procurement) were combined into the Resident College.

1 Oct 1951

Brig (later, Maj) Gen Ralph P. Swofford, Jr. assumed command of the U.S. Air Force Institute of Technology from Brig Gen Davis. He was a 1936 graduate of the Air Corps Engineering School.

Aug 1953

The Air Installations Engineering Special Staff Officer 20-week Course is divided into an eight-week basic course and a 20-week advanced course. The basic course continues today to indoctrinate newly commissioned officers and PALACE ACQUIRE civilians in the civil engineering career field.

31 Aug 1954

President Dwight D. Eisenhower signed Senate Bill 3712 authorizing the Resident College of the U.S. Air Force Institute of Technology to award degrees. The college offered scientific, technological and professional courses to approximately 300 students – all Air Force officers – on the undergraduate and graduate level.

"The right to grant degrees will give our graduates the recognition they deserve and help in building the school to make its contribution to scientific and technological development in the Air Force." – Maj Gen Ralph Swofford, Commandant

1955

The Engineers' Council for Professional Development (a precursor to ABET, Inc.)

Graduate Air Ordnance Class of 1956

accredited the aeronautical engineering and electrical engineering programs at the baccalaureate level.

In response to the growing need for trained senior officers qualified to deal with Air Force worldwide logistics problems, an experimental six-month Advanced Logistics Course (ALC) was started by the Institute. The Ohio State University Research Foundation conducted the first courses on a contract basis; the relationship continued until 1971. The first class of 24 students (20 Air Force officers and four Air Force civilians) graduated on 27 Apr 1956. Also in 1956, the second class of the ALC would expand from a six-month to a nine-month course and included two students from the Royal Canadian Air Force.

1 Sep 1955

The Institute was redesignated as Headquarters, Institute of Technology, United States Air Force.

1 Nov 1955

Maj Gen Julius K. Lacey assumed command of the Institute of Technology, USAF from Maj Gen Swofford.

1956

The first undergraduate engineering degrees were granted. By this time, the Installations Engineering School had graduated 623 students from the basic course and 173 students from the advanced course. The advanced course was extended to 37 weeks.

16 Apr 1956

The Institute was redesignated as Headquarters, Air Force Institute of Technology.

23 Jul 1956

The School of Engineering (later, Graduate School of Engineering) is established as the result of an Air University Board of Visitors recommendation to establish a separate School of Engineering and School of Industrial Administration (Business).

27 Sep 1956

Dropped by a B-50 bomber over the Mojave Desert, **Capt Milburn "Mel" G. Apt** (B.S. Engineering Sciences, 1951) flew the rocket-powered Bell X-2 to a speed record of 2,094 mph. The flight ended tragically when the X-2 crashed, killing Capt Apt. He was the first man to attain speeds faster than Mach 3.

IMAGES FROM THE 1950's

Class of 1950 "celebrating" the end of their program.

Student life on campus in 1955.

Faculty register various degrees of animation toward a laboratory densitometer, which measures the intensity of spectral lines.

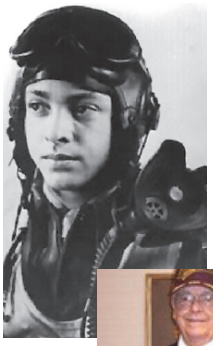
Graduate Air Ordnance Class of 1956

23 Sep 1957

Brig (later, Maj) Gen Cecil E. Combs assumed command of the Air Force Institute of Technology from Col John Taylor who was the acting commander for approximately one month following Maj Gen Lacey.

1957

Lt Col George E. Hardy, a Tuskegee Airman, earned a B.S. in Electrical Engineering and in 1964, an M.S. in Systems Engineering. During World War II, he flew 21 escort and strafing missions in North American P-51C and P-51D Mustangs.



1958

The first graduate degrees in business were granted.

15 Aug 1958

The School of Logistics was established with **Col Eugene R. Magruder, PhD** as the first Dean of the school. The school began to establish a centralized logistics education program for Air Materiel Command (AMC) representing the beginning of the School's Professional Continuing Education (PCE) program. Twenty-three courses with durations of two-13 weeks were created, with each offered one or two times per year. The PCE courses were designed to improve current and long term effectiveness of the professional skills and competence of Air Force logisticians. This program became known as the AMC Logistics Education Center (LEC). By the end of 1959, the LEC had educated 1,029 students.

1959

Lt Col Mary Strong was the first female AFIT graduate of the resident college with an MBA in Applied Comptrollership.

9 Apr 1959

NASA announced the names of the Mercury Seven. These were the first Americans to attempt space flight and the group included 1956 alumni **Gus Grissom and Gordon Cooper**.

To meet the selection criteria, astronauts had to be: less than 40 years old; less than 5 feet 11 inches (1.80 m) tall; in excellent physical condition; have a bachelor's degree or equivalent; be a graduate of test pilot school; have a minimum of 1,500 hours total flying time; and be a qualified jet pilot.

Grissom's and Cooper's contributions to manned space flight would make history. In 1961, Gus Grissom became the second American in space, making a suborbital flight in the Liberty Bell capsule. In 1963, Gordon Cooper orbited Earth for 34 hours in Faith 7, completing the longest American flight at that time. In 1965, while aboard Gemini 5, Gordon Cooper and his crewmate completed the longest flight on record by staying in orbit for eight days: proving man could survive in space long enough for a trip to the moon.

1 Jul 1959

The Institute was redesignated as Institute of Technology.

1960's

THE ERA OF SPACE FLIGHT

Eight alumni went to space as part of the Gemini missions and ten alumni went during the Apollo missions. The first alum in space was Gus Grissom in the Liberty Bell 7 capsule.

Thermodynamics experiment in 1964.

1966 students working on research.

Astronaut Group 3 selected by NASA in October 1963. Four men died in training accidents before they could fly in space. All of the surviving ten flew in the Apollo program; five also flew Gemini missions. AFIT alum circled left to right, starting on the top row: Donn Eisele (1960), David Scott (MIT 1962, AFIT CI Program), Edwin "Buzz" Aldrin (MIT 1962, AFIT CI Program), William Anders (1962), Charles Bassett (Texas Tech College 1960, AFIT CI Program), and Roger Chafee (1963).

HIGHLIGHTS

1960: AFIT's Nuclear Engineering Test Facility was constructed as the Air Force's only nuclear reactor.

1962: The School of Logistics installed its first computer.

1964: The School of Engineering's new building was dedicated by the Secretary of the Air Force.

AFIT's Nuclear Engineering Test Facility Built in 1960

Early 1960's

The Institute was organized into four major areas: The School of Engineering (**Dr. Reginald H. Downing**, Dean), the Civilian Institutions Program (**Col John Tyler**, director), the Civil Engineering Center (**Col Clarence A. Eckert**, director), and the School of Logistics (**Col Donald J. Green**, Dean).

The resident School of Engineering offered both undergraduate degrees in aeronautical and electrical engineering and master's degrees in aeronautical engineering, astronautics, electrical engineering, guidance and control, and nuclear engineering.

The School of Logistics conducted courses for Air Force Logistics Command personnel and an annual Advanced Logistics Course for approximately 25 officers.

15 Feb 1960

The School of Logistics' seventh class of the Advanced Logistics Course begins – the first to have Army (two) and Navy (two) students.

Apr 1960

The School of Engineering became an official graduate school when it was granted initial accreditation from the North Central Association of Colleges and Secondary Schools to award master's degrees.

1961

The Institute began accepting international students.

5 Jul 1961

The DOD released DoDD 1430.6 requiring all procurement courses to be "joint." This greatly influenced the professional continuing education courses at the School of Logistics. The Air Force assigned responsibility to the School for all Air Force-offered courses in contract administration, pricing, and buying.

21 Jul 1961

America's second Project Mercury astronaut, **Capt Virgil "Gus" Grissom** (B.S. Engineering Sciences, 1956), attained an altitude of 118 miles and flew 5,310 mph in a 303-mile sub-orbital space flight from Cape Canaveral in the Liberty Bell 7 capsule. With this flight, Grissom became the first AFIT alum to go to space.

1962

The first program to be offered at a distant location started – the Minuteman On-Site Program at Malmstrom Air Force Base, Montana, led to a master's degree in aerospace engineering.

The School of Logistics was selected to develop and present procurement courses for all procurement personnel of the military services and the various DOD agencies.

The 12-month curriculum of the Advanced Logistics Course was accredited by the North Central Association of Colleges and Secondary Schools and AFIT was authorized to award a Master of Science degree in Logistics.

1 Jan 1962

The Institute was redesignated as the Air Force Institute of Technology.

15 Mar 1962

Col Charles A. "Rocky" Stone became the third Dean of the School of Logistics, and the first Dean of the School of Systems and Logistics. Following his death in 1981, the Wright Memorial Chapter of the Air Force Association established the Col Charles A. Stone award for outstanding contributions to AFIT. The first award was presented in 1982.

24 May 1962

The School of Logistics installed its first computer, an IBM 1620, to support their Log-Man-X simulation game.

18 Jun 1962

The School of Logistics' Advanced Logistics Course was renamed the Graduate Logistics Program.

The new class (63A) of 19 students was the first to receive fully-accredited Master of Science degrees in Logistics from AFIT. The program required a thesis from each student or team of two students, in place of the logistics research project with teams of 2-5 students.

1 Feb 1963

The School of Logistics was re-designated the School of Systems and Logistics and the Civil Engineering Center was re-designated as the Civil Engineering School.

15 May 1963

After 22 orbits around the Earth, **Maj L. Gordon Cooper** (B.S. Aeronautical Engineering, 1956) ended a 34-hour, 20-minute flight in the Mercury capsule Faith 7 before landing in the Pacific, 80 miles southeast of Midway Island. He was the first American to orbit for more than one day and the last pilot in the Mercury series.

28 Aug 1964

The new School of Engineering, Building 640, was dedicated. The Secretary of the Air Force, Eugene M. Zuckert, was the speaker for the occasion. In his speech, Zuckert spoke of the significance of the new building: "It is a symbol of the coming of age of the Air Force Institute of Technology, as the first permanent structure that the Institute has had since its beginning as the Air School of Application in 1919." Since its dedication, the building has served as a hub for the addition of newer facilities as the Institute expanded in size.

12 Oct 1964

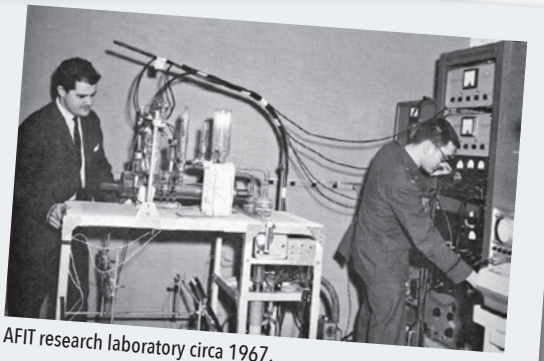
Faculty from the School of Systems and Logistics taught their first course overseas. Course #210 "Maintenance Management Information," a three-week course under the jurisdiction of the Department of Defense, was given at Wiesbaden, West Germany. It was also offered in Tachikawa, Japan starting 30 Nov 1964.

16 Nov 1964

Faculty from the School of Systems and Logistics taught their first on-site course at the Mobile Air Materiel Area (now Air Logistics Centers). The two-week course, "Management of Value Engineering in Defense Contracts," was given 33 times at 26 locations in 1965.

IMAGES FROM THE 1960's

1956 AFIT graduate Maj L. Gordon Cooper was the last pilot in the Mercury series.



AFIT research laboratory circa 1967.

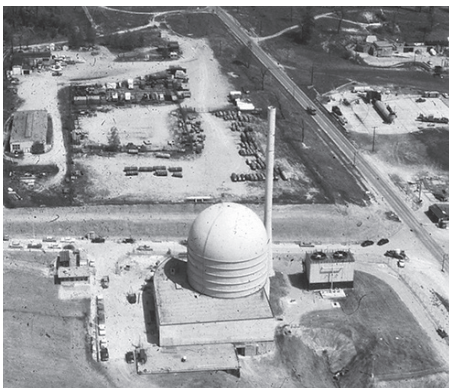
The new School of Engineering was dedicated in 1964.

1965

During the Vietnam War, AFIT established extension courses in the combat zone and participated in project Corona Harvest to glean lessons learned on the use of airpower in Southeast Asia.

5 Apr 1965

AFIT's Nuclear Engineering Test Facility (Building 470), the Air Force's only nuclear reactor, achieved its first nuclear chain reaction. Built in 1960, it was constructed to help develop nuclear powered aircraft engines. At the time it was the nation's seventh largest nuclear



reactor. When the program was canceled, the facility was turned over to AFIT's nuclear engineering program. The 10-megawatt reactor went on-line in 1965 and operated for five years.

1 Sep 1965

Maj Gen Victor R. Haugen assumed command of AFIT from Maj Gen Combs.

3 Nov 1965

Maj Robert A. Rushworth (B.S. Aeronautical Engineering, 1958) flew a

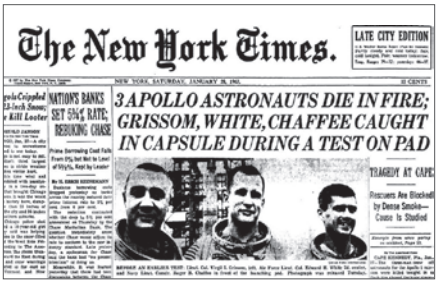
modified X-15A-2 rocket research plane on its first flight. North American Aviation placed two large external fuel tanks on it for Mach 8 flights. Between 1960 and 1966, he made 34 flights in the X-15, the most of any pilot.

1967

AFIT became a member of the Dayton Miami Valley Consortium, which later changed its name to Southwestern Ohio Council for Higher Education (SOCHE). The Council is an association of colleges, universities, and industrial organizations in the Dayton area, which are united to promote educational advancement.

27 Jan 1967

The Apollo spacecraft caught fire at Cape Kennedy, Florida killing three AFIT alumni: **Lt Col Virgil "Gus" Grissom** (B.S. Engineering Sciences, 1956), **Lt Col Edward White** (University of Michigan, M.S. Aeronautical Engineering, 1959 through AFIT's



The New York Times. LATE CITY EDITION

NATIONS BANKS SET 5½% RATE; REBUKING CHASE

3 APOLLO ASTRONAUTS DIE IN FIRE; GRISSOM, WHITE, CHAFFEE CAUGHT IN CAPSULE DURING A TEST ON PAD

TRAGEDY AT CAPE

Civilian Intuitions Program), and Navy **Lt Cdmr Roger B. Chafee** (M.S. Reliability Engineering – left AFIT in October 1963 when he was selected by NASA as one of the third group of astronauts).

1 Nov 1967

Maj Gen Ernest A. Pinson assumed command of AFIT from Maj Gen Haugen.

8 Apr 1968

The Civil Engineer Center is rededicated the Civil Engineering School.

11 Oct 1968

Apollo VII, the first manned mission in the lunar landing program launched from Kennedy Space Center Complex 34 on a Saturn IB booster. The crew, which included **Maj Donn F. Eisele** (M.S. Astronautics, 1960) as command

pilot, transmitted the first live television broadcast aboard a crewed American spacecraft finally splashing down on Oct. 22 after completing 163 revolutions of the Earth.

1969

Maj Gen (then a Lt Col) Donald L. Lamberson, considered the father of lasers in the Air Force, earned a PhD in Aerospace Engineering in addition to his M.S. in Nuclear Engineering from 1961.

20 Jul 1969

Forty-nine years after his father Lt Edwin Aldrin graduated in the first class from the Air Service Engineering School, **Dr. Edwin "Buzz" Aldrin** (Col, USAF, Ret; Massachusetts Institute of Technology, PhD Astronautics, 1962 through the AFIT Civilian Institutions Program; AFIT Distinguished Alumni Award Winner, 1983) served as lunar module pilot for Apollo 11, the first manned lunar landing mission. Aldrin followed Neil Armstrong onto the lunar surface on 20 Jul 1969, completing a two-hour and 15 minute lunar EVA.

4 Aug 1969

A new class of logistics master's students started. The pre-class review was extended to eight weeks with the addition of computer programming, accounting, and economics.

Nov 1969

The first professional continuing education course in the School of Systems and Logistics, "Maintenance Management Information Systems," is accredited to award two semester hours academic credit upon graduation.

IMAGES FROM THE 1960's

Inside the AFIT Nuclear Engineering Test Facility (Bldg 470).

Astronaut Edwin E. "Buzz" Aldrin, Jr. became the first military man to walk on the moon on July 20, 1969.

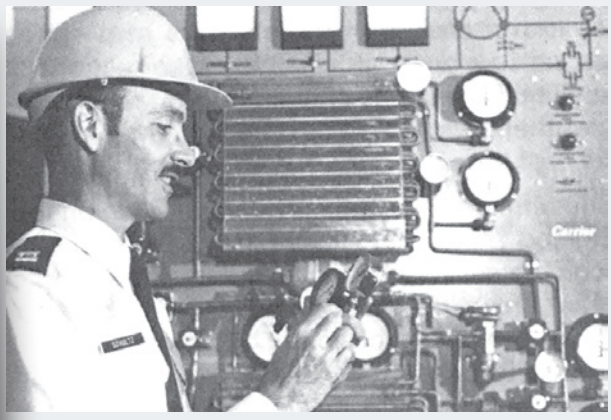
AFIT students in 1966.

1970's

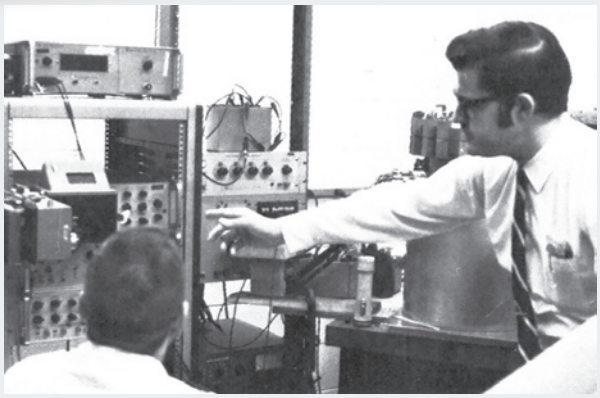
THE ERA OF TECHNOLOGY IN EDUCATION

The Institution is approved to award degrees at the doctorate level. Air University and AFIT become part of Air Training Command in 1978.

AFIT laboratory photo circa 1973.



AFIT laboratory photo circa 1979.



AFIT laboratory photo circa 1973.

HIGHLIGHTS

1970: AFIT's first distance learning course was delivered via recorded video tape and telephone.

1978: Four faculty members from the School of Systems and Logistics completed the first PEACE LOG courses offered in Iran.

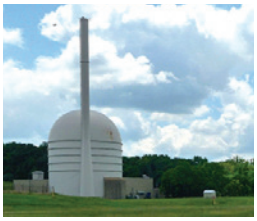
Late 1970s: Two women were welcomed as the first female AFIT faculty members.

4 May 1970

The first professional continuing education instructor, **Lt Col William G. Comstock, PhD** (later to become Dean of the School of Systems and Logistics) received academic rank from Air University. This began the inclusion of professional continuing education faculty in the academic ranks program.

12 Jun 1970

AFIT'S nuclear reactor located in building 470, was decommissioned.



It was a 10-megawatt (thermal) light water, tank-type, test reactor used to test materials in a radiation environment. When it was deactivated, the tank was filled with sand and entombed in concrete. All of the nuclear fuel was removed off base, leaving only the structural materials.

Jun 1970

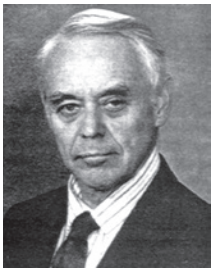
The School of Systems and Logistics' Graduate Education Division obtained a charter for a local chapter of the national honor management fraternity Sigma Iota Epsilon (ΣIE). The local chapter, Sigma Beta (ΣB), was the first ever approved for a military school and the first in a school whose program was solely graduate education. It was also the first chapter at any member school of the North Central Association of Colleges and Secondary Schools, the organization that certifies AFIT to give graduate degrees.

19 Aug 1970

Class 70A graduated 64 students with master's degrees in logistics. Among them was **Capt George T. Babbitt, Jr.**, the only School of Systems and Logistics alum to reach the rank of General. Gen Babbitt served as commander of the Air Force Materiel Command, the successor organization to Air Materiel Command, which petitioned for the creation of the logistics program in 1954.

Fall 1970

Dr. Charles Bridgeman of the Physics Department, delivered AFIT's first distance learning course to students in Albuquerque, New Mexico. He recorded his presentation on video tape, sent it to Albuquerque for replay while he watched a duplicate tape and spoke to the students over the telephone.



30 Jul 1971

Col Gage H. Crocker became the Dean of the School of Systems and Logistics upon the retirement of Col Bard. Following his death in 1973, AFIT and the Wright Memorial Chapter of the Air Force Association established the Col Gage H. Crocker award to an outstanding professor at AFIT. The first award was presented in 1975.

1972

The North Central Association approved the award of degrees at the doctoral level.

1 Sep 1972

Senior non-commissioned officers (E-7...E-9) were allowed to take professional continuing education courses within the School of Systems and Logistics for the first time.

20 Feb 1973

Brig (later, Maj) Gen Frank J. Simokaitis assumed command of AFIT from Maj Gen Pinson.

1974

The Civil Engineering Center and the School of Systems and Logistics first conducted non-resident courses through "Telelecture" or "Teleteach," a combination of one-way TV and two-way telephone contact to students in geographically dispersed classrooms.

Jul 1975

First initiation ceremony for the Mu (M) chapter of Alpha Iota Delta (AIΔ) honorary fraternity for the decision sciences. Fifteen students from Graduate Logistics master's program (75B) were installed.

19 Jun 1977

Capt David M. Sprinkel (M.S. Aeronautical Engineering, 1982) flew his C-5, with a 40-ton superconducting magnet aboard, nonstop from Chicago's O'Hare Airport to Sheremetyevo Airport in Moscow. The 5,124 nautical-mile flight needed two aerial refuelings. This was the first time a Military Airlift Command C-5 landed in the Soviet Union, and the flight received the Mackay Trophy for 1977.

5 Jul 1977

The School of Systems and Logistics relocated from Building 288, Area A, to the new $3.5 million Building 641, Area B. The **Honorable Hans M. Mark**, Under Secretary of the Air Force, was the principal speaker at the dedication on 4 Oct 1977.

27 Apr 1978

Maj Gen Gerald E. Cooke assumed command of AFIT form Maj Gen Simokaitis.

7 Jun 1978

Four faculty members in the School of Systems and Logistics completed the first PEACE LOG courses offered in Iran. PEACE LOG was an effort to help the Imperial Iranian Air Force establish an Air Logistics Command, patterned after the Air Force's Logistics Command. School faculty members developed two courses; one for senior officers and one for junior officers.

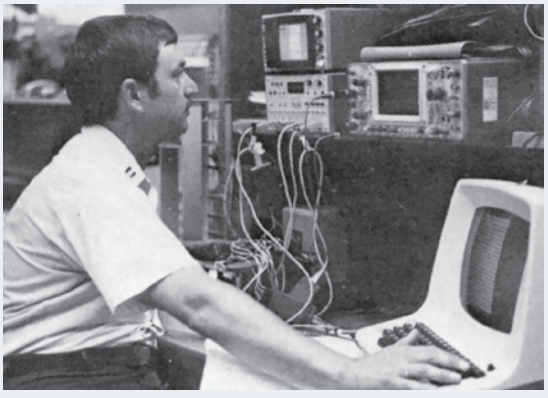
Late 1970's

The first women on AFIT faculty included an instructor in the Civil Engineering School and an assistant professor of humanities in the School of Engineering.

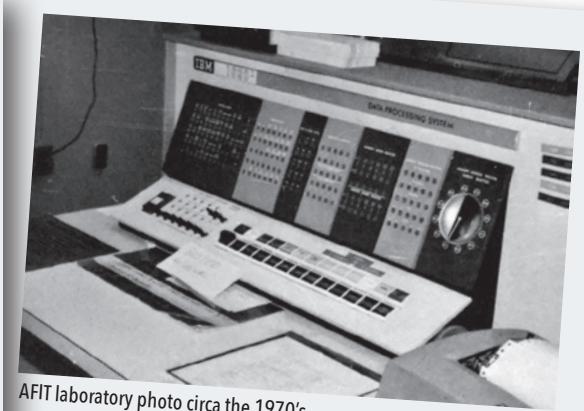
1979

The Civil Engineering School was rededicated as the School of Civil Engineering.

IMAGES FROM THE 1970's



1979 student in an AFIT research laboratory.



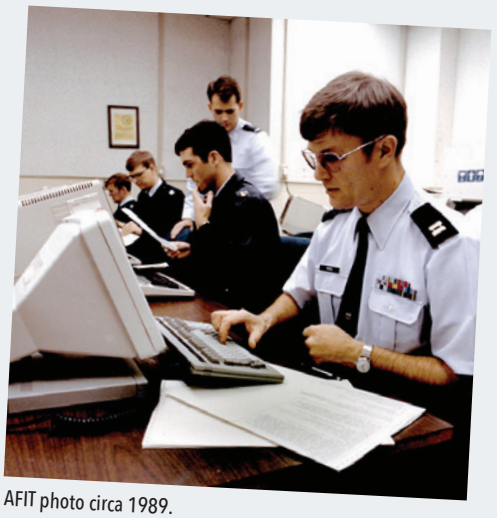
AFIT laboratory photo circa the 1970's.

1980's

THE ERA OF EXPANDED PROGRAMS

AFIT developed programs in information processing, laser technology, signal processing, electro-optics, radiation hardening, advanced composites, and space structures.

Dr. Guion "Guy" Bluford, Jr. served as the mission specialist on NASA's Space Shuttle mission STS-8 in 1983.



AFIT photo circa 1989.

Gen James H. Doolittle was awarded a fourth star, pinned on by President Ronald Reagan and Senator Barry Goldwater in April 1985.

HIGHLIGHTS

1983: Col Guion "Guy" Bluford becomes the first African-American in space.

1984: AFIT alum Richard Mullane served as Mission Specialist on the Space Shuttle Discovery's first flight.

1 Sep 1980

Maj Gen Stuart H. Sherman, Jr. assumed command of AFIT from Maj Gen Cooke.

13 Sept 1982

Maj Gen Herbert L. Emanuel assumed command of AFIT from Maj Gen Sherman.

1 Jun 1983

Maj Gen James T. Callaghan assumed command of AFIT from Maj Gen Emanuel.

30 Aug 1983

NASA Space Shuttle mission STS-8 launched from Kennedy Space Center, Florida with AFIT alum **Dr. Guion "Guy" S. Bluford, Jr.,** (Colonel, USAF, Ret; PhD Aerospace Engineering, 1978 and M.S. Aerospace Engineering, 1974, DG) serving as the Mission Specialist. Dr. Bluford was the first African-American in space. This was the third flight for the orbiter Challenger and the first mission with a night launch and night landing. STS-8 completed 98 orbits of the Earth in 145 hours before landing at Edwards Air Force Base, California, on September 5, 1983.

30 Aug 1984

STS-41-D was the 12th flight of NASA's Space Shuttle program and the first mission of Space Shuttle Discovery. AFIT alum **Richard "Mike" Mullane** (M.S. Aeronautical Engineering, 1975, Distinguished Graduate) served as Mission Specialist on the flight. It was his first spaceflight.

Twenty-seven years later, on 24 Feb 2011, AFIT alum **Col Steven Lindsey** (M.S. Aeronautical Engineering, 1990) served as the Commander of STS-133 – the 39th and final mission of Space Shuttle Discovery.

IMAGES FROM THE 1980's

1986 AFIT student uses the LISP computer to work on an artificial intelligence program that involves satellite management and restoration.

AFIT student participates in motion sickness chair experiements in the Department of Electrical and Computer Engineering in the 1980's.

1985

AFIT implemented personnel procedure for civilian faculty based on the traditional four academic ranks (Instructor, Assistant, Associate, and Professor).

The Institute discontinued its undergraduate program after awarding a total of 920 bachelor's degrees, deciding instead to focus on graduate and doctoral programs.

1 Aug 1986

Brig Gen Richard J. Toner assumed command of AFIT from Maj Gen Callaghan.

Nov 1986

The School of Civil Engineering and Services offers its first services class: Mortuary Affairs.

19 Dec 1986

Retired Senator Barry M. Goldwater received the first AFIT Honorary Doctor of Law (honoris causa) degree. The honorary degree has been granted three additional times to Gen Bryce Poe II, USAF, Ret, Maj Gen William A. Anders, USAFR, Ret, and Congressman David L. Hobson, Ret.

24 Jul 1987

Brig Gen Stuart R. Boyd assumed command of AFIT from Brig Gen Toner.

1987

General Robert T. Herres (M.S. Electrical Engineering, 1960) became the first vice chairman of the Joint Chiefs of Staff. He served in that role until 28 Feb 1990. Gen Herres was posthumously awarded the AFIT Distinguished Alumni Award in 2010.

25 Apr 1988

Professor Virgil R. Rehg received the first **John W. Demidovich** Award—the highest honor that the School of Systems and Logistics faculty can bestow upon its members. This award recognizes research, consultation, and teaching accomplishments, as well as participation in academic and faculty affairs. The award's namesake, Dr. Demidovich, was the model professional continuing education faculty member.

Serving on the School of Systems and Logistics faculty from 1965-1986 as both a military and a civilian member, he established an unparalleled record of achievement in all areas of faculty endeavor. He was best known as a dynamic lecturer and speaker, a champion of new educational methods and technology, and was actively involved in pioneering distance learning efforts at the School.

6 Jul 1989

President George H. W. Bush presented the Presidential Medal of Freedom, the nation's highest civilian award, to retired Gen James H. Doolittle (Air Service Engineering School, 1923) at the White House. General Doolittle led the famous World War II raid on Tokyo.

IMAGES FROM THE 1980's

AFIT photo circa 1989.

Students 1st Lt Thomas Clifford and Capt Hubert Schneider work on the Mobile Autonomous Robot Research System (MARRS) in 1984.

1990's

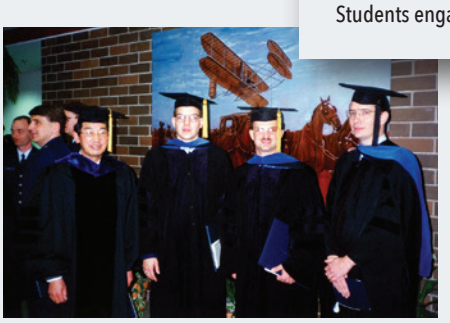
THE ERA OF CAMPUS MODERNIZATION

The Graduate School of Engineering and the Graduate School of Logistics and Acquisition were combined to create the Graduate School of Engineering and Management.

Electro-optics graduating class of 1992.

AFIT laboratory tour in the 1990's.

Students engage with faculty in a 1990's AFIT classroom.



1993 AFIT faculty and graduates.

HIGHLIGHTS

1990: AFIT's modern Science, Engineering, and Support Facility was completed.

1994: AFIT opened its newly-constructed School of Civil Engineering and Services building.

Mid-1990s: AFIT began teaching courses in computer networks and information operations.

6 Aug 1990

Building 642, AFIT's modern Science, Engineering, and Support Facility, was completed and memorialized in memory of **Gen George C. Kenney**.

1991

During this year, the Morale, Welfare and Recreation (MWR) and Services career fields merged and the first integrated MWR/Services course was held by the School of Civil Engineering and Services.

1 May 1991

Col Frederick C. Bauer assumed command of AFIT from Brig Gen Boyd. He earned an M.S. in Aerospace Engineering from AFIT in 1973.

1991

The School of Systems and Logistics separated graduate degrees from the professional continuing education classes to create an independent school, the School of Logistics and Acquisition Management. All told, the School of Systems and Logistics awarded over 3,600 master's degrees from June 1963 through June 1991.

Mar 1992

Col David C. Whitlock assumed command of AFIT from Col Bauer.

1993

This year marked the first use of computer-aided instruction to deliver School of Systems and Logistics courses. Students completed the computer-based portion of the course at their own pace and then were assembled for one week of practical exercises.

Feb 1993

Col Joseph P. Koz assumed command of AFIT from Col Whitlock.

1994

The engineering science doctoral program (the only PhD offered at AFIT at the time) reached its 25th year of awarding the PhD degree.

The Civil Engineer and Services School began using satellite broadcast technology to reach more students and reduce costs.

May 1994

AFIT opened its newly constructed School of Civil Engineering and Services—Building 643. The building was officially named the **Gen Robert C. Thompson** Hall on 30 Mar 2006.

Dec 1994

Col Bennie J. Wilson III assumed command of AFIT from Col Koz.

1 Jan 1995

Col Ronald D. Townsend assumed command of AFIT from Col Wilson.

The Civil Engineer and Services School offered the first complete eight-week course of Introductory Skills Training to new Civil Engineer officers. The course resulted in the award of civil engineer basic career field badges to the new accessions.

Apr 1995

The Advanced Studies in Air Mobility (ASAM) Program started with 10 students in the first class.Taught at the USAF Expeditionary Center at Joint Base McGuire-Dix-Lakehurst, New Jersey, ASAM is a year-long program designed to provide officers assigned to Air Mobility Command the opportunity to further their education in a course of instruction specifically designed to enhance their expertise as operational airlift logistics experts.

Mid-1990's

AFIT began teaching courses in computer networks focused on networking theory and technologies, and information operations focused on vulnerabilities and threats associated with the use of these networks.

Aug 1996

The School of Systems and Logistics hosted and conducted a month-long International Systems Acquisition Workshop. It provided international students from Bangladesh, Botswana, Jordan, Philippines, Saudi Arabia, Netherlands, Indonesia, and Swaziland insights into how the DOD does systems acquisition.

Dec 1996

The Secretary of the Air Force, **Sheila E. Widnall**, made a decision to close AFIT's resident graduate school due to budgetary pressures that the Department of Defense and the Air Force had been experiencing since the end of the Cold War. In anticipation of closure, the institute developed and began a detailed transition and closure plan. Resident PhD students scheduled for fiscal year 1997 were diverted to the Civilian Institution Program and a transition plan for actual closure was developed, identifying manpower positions for elimination in fiscal years 1997 through 2000. Complete closure was planned for March 2000.

18 Feb 1997

The Institute was redesignated as Headquarters, Air Force Institute of Technology.

27 Mar 1997

Col John H. Russell assumed command of AFIT from Col Townsend.

Oct 1997

Both the Graduate Education catalog and the Civil Engineer and Services School catalog, course schedules, and related academic materials were posted on the internet for the first time.

22 Apr 1998

The acting Secretary of the Air Force, **F. Whitten Peters**, announced the reversal of the Air Force decision to close AFIT's resident graduate schools. A cost/benefit study concluded that the benefit of a restructured AFIT was its ability to focus curricula and research on the unique technologies that are critical to the evolution of the Air Force's war fighting capability. The restructure included combining the Graduate School of Engineering and the Graduate School of Logistics and Acquisition to create the Graduate School of Engineering and Management on 1 Oct 1999.

29 Apr 1999

Col George K. Haritos assumed command of AFIT from Col Russell.

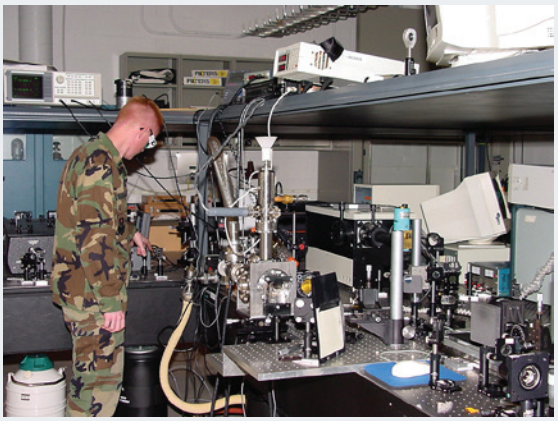
AFIT eagle logo of the 1990's.

2000's

THE ERA OF EMERGING RESEARCH CENTERS

The first group of enlisted students are enrolled in the Graduate School.

Students conduct research in the AFIT clean room in 2003.



2003 research lab work at AFIT.

School of Systems and Logistics course director Michael Mowry teaching class on project management in 2014.

Test pilot school students in the mid 2000's.

HIGHLIGHTS

2001: Campus expansion provided 28,810 additional feet of laboratory space.

2006: The first female commandant assumed command of AFIT.

2008: The new home of the Air Force Center for Systems Engineering and the AFIT Command Section opened, which increased AFIT's overall footprint by 50,000 sq. ft.

2000

Following a reorganization, Defense Acquisition University-Midwest (DAU-M) was established. The School of Systems and Logistics divested all DAU-related programs and faculty to DAU-M. Approximately 40% of the faculty and staff and 60% of the operating budget leave.

The Center for Directed Energy (CDE) was established. CDE research is focused on solving DOD research problems related to directed energy technologies and applications.

2001

AFIT completed an $8.9 million, 30,000 square foot laboratory, Building 644, containing clean room facilities, state of the art physics and environmental labs, and a new wind tunnel.

The Center for Technical Intelligence Studies and Research (CTISR) was established to improve technical intelligence gathering via remote sensing. Current research is focused on signature measurement, phenomenological understanding, and algorithm development for target detection and tracking, battle space combustion characterization, event classification, and material identification.

20 Jul 2001

Col Michael L. Heil assumed command of AFIT from Col Thomas S. Kelso who served as commandant for approximately one month. Col Heil earned an Aerospace Engineering PhD from AFIT in 1986.

31 Jul 2001

A Beechcraft BE-55 from the Wright-Patterson Aero Club crashed at 0845 southeast of Xenia, Ohio. The aircraft had taken off from Wright-Patterson AFB at approximately 0800 killing **Lt Col Charles P. Brothers, Jr.** and Paul Frank, a contract flight instructor. At the time of his death, Lt Col Brothers was serving on the faculty of the Electrical and Computer Engineering Department.

The AFIT Graduate School of Engineering and Management established the Lt Col Charles P. Brothers, Jr., Outstanding Volunteer Service Award. This award recognizes an AFIT faculty or staff member who has established a record of sustained, significant volunteer service to organizations both on-base and in the local communities. Lt Col Brothers believed that by donating one's time and talents to the community, an individual truly demonstrates the qualities of character, integrity, and team spirit. We honor Lt Col Brothers' spirit of service through this award.

2002

The School of Systems and Logistics experienced a major expansion in the Virtual Schoolhouse with production rates for web courses more than doubling. The School replaced satellite courses with internet video streaming.

Mar 2002

The Center for Cyber Research (CCR) was established. The center conducts cyber security and cyber operations research focused on understanding and developing advanced cyber-related theories and technologies, such as critical infrastructure protection, cyber-physical systems, network intrusion detection and avoidance, insider threat mitigation, cyberspace situational awareness, malicious software detection and analysis, software protection, and anti-tamper technologies.

11 Feb 2003

Col (later, Brig Gen) David W. Eidsaune assumed command of AFIT from Col Heil. Brig Gen Eidsaune earned an Aeronautical Engineering master's degree from AFIT in 1987.

Mar 2003

The Center for Operational Analysis (COA) was formally recognized as one of AFIT's Centers of Excellence. The COA, expanding on the mission of the former Center for Modeling, Simulation, and Analysis, is dedicated to research and supporting education in operational and

logistical analysis with an emphasis on enhancing warfighter efficiency and effectiveness at all levels.

2004

Under a 2002 initiative by the Secretary of the Air Force, **Dr. James Roche**, the first enlisted students (eight Air Force and six Marine Corps senior noncommissioned officers) earned master's degrees from AFIT.

2005

The Autonomy and Navigation Center (ANT) is established. The center seeks to identify and solve tomorrow's most challenging navigation and autonomous control problems by focusing on three research thrusts: autonomous and cooperative systems, non-GPS precision navigation, and robust GPS navigation/NAVWAR.

5 Jul 2005

Brig Gen Mark T. Matthews assumed command of AFIT from Brig Gen Eidsaune.

25 Aug 2005

The Base Realignment and Closure Commission voted on the future of the Air Force Institute of Technology and the Naval Postgraduate School. The decision was to maintain both schools with the addition of a permanent oversight board to be located in the National Capital Region.

28 Nov 2005

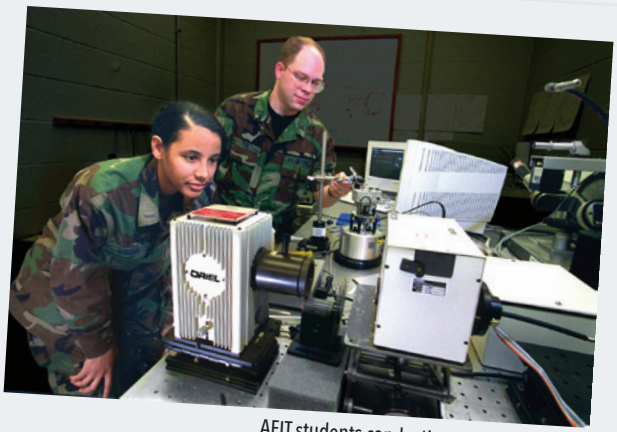
The Honorable Michael W. Wynne (M.S. Electrical Engineering, 1970) was sworn in as the 21st Secretary of the Air Force.

4 Jul 2006

Space Shuttle Discovery launched from NASA's Kennedy Space Center on a mission to the International Space Station (ISS). The 115th shuttle flight included AFIT graduates **Col Steven Lindsey** (M.S. Aeronautical Engineering, 1990) as Commander (his fourth spaceflight) and **Mike Fossum** (M.S. Systems

IMAGES FROM THE 2000's

Space Shuttle Discovery launched from NASA's Kennedy Space Center Station on July 4, 2006. The flight included AFIT graduates Steve Lindsey and Mike Fossum.



AFIT students conducting research in 2000.

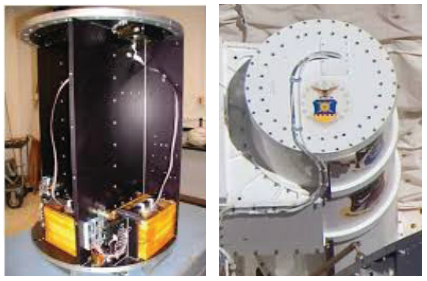
Engineering, 1981) as Mission Specialist (his first spaceflight). The mission of STS-121 was to test new safety and repair techniques introduced following the Columbia disaster of February 2003 as well as to deliver supplies, equipment and European Space Agency (ESA) astronaut Thomas Reiter from Germany to the ISS.

3 Oct 2006

Brig Gen Paula Thornhill assumed command of AFIT from Brig Gen Matthews as AFIT's first female commandant.

11 Mar 2008

Rigidizable Inflatable Get-Away-Special Experiment (RIGEX), an experiment designed and built by AFIT students to study the behavior of structures built using rigidizable/inflatable technology, was flown on NASA Space Shuttle Endeavour Mission STS-123 and



successfully tested in a near zero gravity environment. The first-ever designed/built/tested space flight experiment for AFIT, RIGEX was the collective thesis effort of multiple AFIT students (AF and Navy) across the Aeronautical, Astronautical, Electrical, and Systems Engineering programs.

RIGEX was donated to the National Museum of the U.S. Air Force on April 11, 2014. The RIGEX unit will be used in a museum display to highlight the Air Force role in space science, and in particular, to illustrate how the USAF teaches and uses Science, Technology, Engineering, and Math (STEM) concepts.

25 Sep 2008

Building 646, home to the Air Force Center for Systems Engineering and the AFIT Command Section opened. This

state-of-the-art building increased AFIT's overall footprint by 50,000 square feet and was the first silver LEED (Leadership in Energy and Environmental Design) certified facility at Wright-Patterson AFB.

2009

The School of Systems and Logistics' budget increased over three-fold; over 100 faculty interviews were conducted of civilian and military faculty candidates, the first civilian department heads were appointed in school history, and the School experienced a record number of 23,663 enrollments.

The Civil Engineer School became accredited by the International Association for Continuing Education and Training.

IACET
Standards for Lifelong Learning

1 May 2009

The AFIT/AFRL Library was named the D'Azzo Research Library in honor of **Dr. John J. D'Azzo**, a former civilian AFIT faculty member. He began his career in 1942 as an officer in the Army Air Corps and continued as a Professor, Department Head, and ultimately Professor Emeritus in the Department of Electrical and Computer Engineering within the Graduate School of Engineering and Management.

6 Oct 2009

Maj Gen Walter D. Givhan assumed command of AFIT from Col Barry S. Mines who served as commandant for approximately two months.

2010's

THE ERA OF REVITALIZATION

AFIT celebrated 50 years of continuous accreditation with the Higher Learning commission of the North Central Association of Colleges and Schools.

Students in Fundamentals of Acquisition Management course where they learn about project schedule, cost estimates, and a program budget.

Rick Kappel an Environmental Management Instructor in the Civil Engineer School in 2017.

Students with AFIT mascot at May 2017 graduation.

RIGEX was donated to the National Museum of the U.S. Air Force on April 11, 2014.

HIGHLIGHTS

2012: AFIT welcomed its first civilian Director and Chancellor.

2015: AFIT welcomed its first Provost and Vice Chancellor.

2016: The inaugural class of the School for Advanced Nuclear Deterrence Studies graduated at Kirtland Air Force Base, New Mexico.

In 2010 the Icarus statue was moved to the AFIT campus

2010

AFIT celebrated 50 years of continuous accreditation with the Higher Learning Commission of the North Central Association of Colleges and Schools.

21 Sep 2010

A rededication ceremony was held for the Icarus Memorial Statue which was moved from the National Museum of the Air Force, to its originally intended location in front of the AFIT complex. The AFIT

Foundation initiated, commissioned, and funded, through contributions, the construction of the memorial to graduates of AFIT from the U.S. Air Force and U.S. Army Air Corps who lost their lives while in service to our country. The statue stands 22 feet tall including the five foot granite base and weighs 4,500 lbs. Icarus himself is made of 95% copper and 5% nickel.

Feb 2011

Col Steven W. Lindsey (M.S. Aeronautical Engineering, 1990) served as Commander of STS-133 – the 39th and final mission of NASA's Space Shuttle Discovery. The shuttle is now on display at the National Air and Space Museum, Smithsonian Institution.

1 Jul 2011

Col Timothy J. Lawrence assumed command of AFIT from Maj Gen Givhan. Col Lawrence then served as the Vice Commandant from 2012-2014.

2012

The Office of the Secretary of Defense Scientific Test & Analysis Techniques in Test and Evaluation Center of Excellence (OSD STAT T&E) was established to provide independent advice and assistance to major acquisition programs to increase the understanding and effective use of scientific test and analysis techniques in the Department of Defense's acquisition community.

The Center for Space Research and Assurance (CSRA) was established to discover and demonstrate cutting-edge science and technologies to address current and future defense and national security needs in the space domain.

8 May 2012

Dr. Todd Stewart became AFIT's first civilian Director and Chancellor assuming command from Col Lawrence.

Dr. Stewart served for 34 years with the U.S. Air Force, retiring in 2002 at the rank of Major General.

30 Aug 2012

AFIT Building 646 was named Squier Hall in honor of **Maj Gen George O. Squier**. Maj Gen Squier (pronounced

"square") was the first person in the Army to receive a PhD (Johns Hopkins University in 1893). As executive officer to the Chief Signal Officer, U.S. Signal Corps in 1907, Squier was instrumental in the establishment of the Aeronautical Division, U.S. Signal Corps, the first organizational ancestor of the U.S. Air Force. He also was the first military passenger in an airplane on 12 Sep 1908 and, working with the Wright Brothers, he was responsible for the purchase of the first airplanes by the U.S. Army in 1909.

In 2010 the Icarus statue was moved to the AFIT campus

2014

U.S. Army Master Sgt. Jeffery Morris was the first enlisted student to earn a PhD from AFIT. He completed his doctorate in Systems Engineering with research focused on quantum cryptography.

1 Oct 2014

AFIT received authorization for Air Force military and civilian personnel who are not funded by the Air Force Personnel Center to enroll in courses at no cost on a space-available basis.

28 Jan 2015

AFIT welcomed its first Provost and Vice Chancellor **Dr. Sivaguru S. Sritharan**.

2016

The Air Technology Network (ATN) was reorganized under The Civil Engineer School.

7 Sep 2016

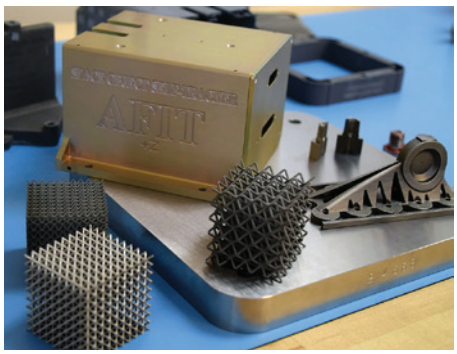
The inaugural class of the School for Advanced Nuclear Deterrence Studies at Kirtland AFB, New Mexico graduated.

16 Jan 2017

The School of Strategic Force Studies was established at AFIT. The school manages the overall execution of space (via the National Security Space Institute at Peterson AFB), nuclear (via the Nuclear College at Kirtland AFB) and cyber professional continuing education (via AFIT at Wright-Patterson AFB). The School of Strategic Force Studies currently provides responsive and relevant continuing education courses to more than 4,800 Air Force and DOD students annually.

16 Mar 2017

The Graduate School of Engineering and Management unveiled a new state-of-the-art metal additive manufacturing system – The Concept Laser M2 3D Metal Printer System. This $1 million investment allows the team to decrease their prototypes weight and increase strength compared to their previous 3D printer.



In 2010 the Icarus statue was moved to the AFIT campus

Jan 2018

The Civil Engineer School pioneered the first Civil Engineer career field officer occupational competency mapping to guide future educational offerings.

Mar 2018

The Civil Engineer School used virtual reality for the first time to deliver education content in its Fundamentals of HVAC Design and Analysis course (WENG 560).

Oct 2018

The October 2018 edition of the Defense Acquisition Research Journal was a special AFIT edition comprised solely of articles authored by AFIT Cost Analysis students and faculty.

2019

The Nuclear Event Analysis and Testing Center for Specialized Research (NEAT CSR) was established in response to long-term strategic needs laid out in the 2018 Nuclear Posture Review and the increased focus on building strong technical capabilities within the Air Force, including multi-domain awareness and nuclear modernization. The objective of the NEAT CSR is to tie together disparate technical areas and disciplines to be at the cutting edge of present and future nuclear technologies while providing nuclear expertise to educational initiatives.

23 May 2019

The new AFIT Pavilion was dedicated. Airmen of the 200th RED HORSE Squadron from the Ohio Air National Guard demolished the condemned pavilion in the fall of 2018 and then completed the rebuild of a new structure in the spring of 2019.

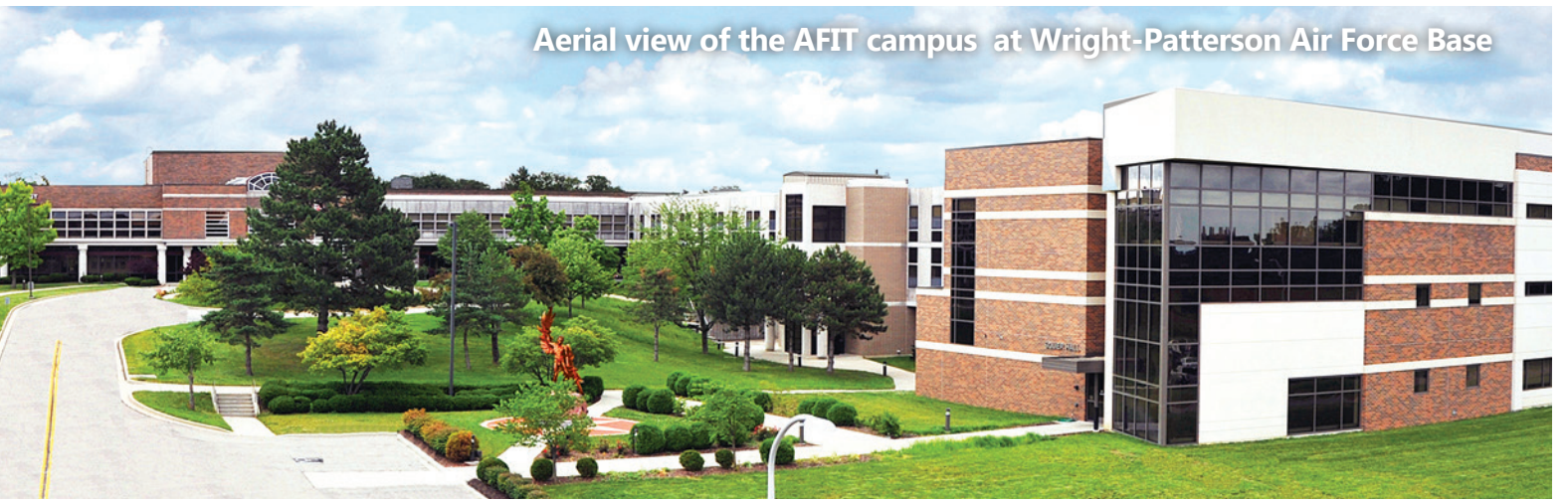
Fall 2019

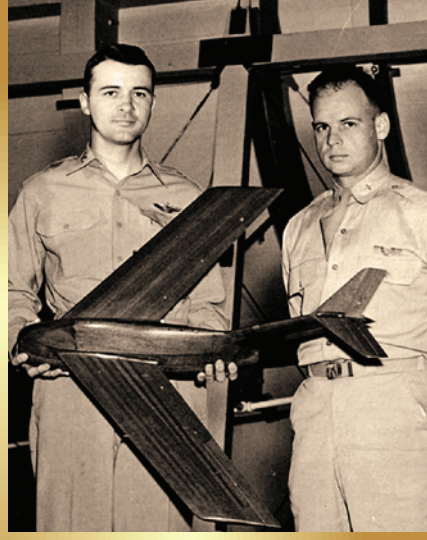
AFIT completed a $4M renovation of Kenny Hall Auditorium. The project included replacing the auditorium fixed seating, carpeting and HVAC system; and installing a state-of-the-art audio/visual system, theatrical lighting and a 27-foot LED wall display.

10 Nov 2019

AFIT celebrated its Centennial year with the theme "A Century of Education Excellence: Inspiration to Innovation."

Air Force Chief Scientist Dr. Richard Joseph served as keynote speaker at the March 2019 Centennial Academic Symposium.


Aerial view of the AFIT campus at Wright-Patterson Air Force Base



AIR FORCE INSTITUTE OF TECHNOLOGY

AFIT

100TH ANNIVERSARY

A CENTURY OF EDUCATION EXCELLENCE: INSPIRATION TO INNOVATION

1919 - 2019

CELEBRATING 100 YEARS OF EDUCATION

FROM INSPIRATION TO INNOVATION